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**Towards a low carbon economy in Latin America:
policy options for energy efficiency
and innovation**

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This report was prepared by Francesco Badioli, an external consultant, who led the evaluation. Working under the overall guidance of Raúl García-Buchaca, Deputy Executive Secretary for Management and Programme Analysis of the Economic Commission for Latin America and the Caribbean (ECLAC), and Sandra Manuelito, Officer-in-Charge of the Programme Planning and Evaluation Unit of the Programme Planning and Operations Division, the consultant came under the direct supervision of Irene Barquero, Programme Officer in the same Unit, who provided strategic and technical guidance, coordinated the evaluation and offered methodological and logistical support. The evaluation also benefited from the assistance of María Victoria Labra, Programme Assistant, also of the Programme Planning and Evaluation Unit.

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ACRONYMS

Acronym	Definition
ADEME	French Environment and Energy Management Agency
BIEE	Base Indicators for Energy Efficiency
CARICOM	Caribbean Community
CFLs	Compact fluorescent lamps
CNE	National Energy Council (El Salvador)
CNEE	National Committee for Energy Efficiency (Paraguay)
CONEE	National Council for Energy Efficiency (Guatemala)
CONPET	Programme for Fuel Saving in Carriers
CONUEE	National Commission for the Efficient Use of Energy (Mexico)
DEE	Division of Energy Efficiency
DOE	Department of Energy
DSE	Energy Sector Directorate
EC	European Commissions
ECPA	Energy and Climate Partnership of the Americas
EEPB	Energy Efficiency in Public Buildings Project
ESCOs	Energy Service Companies
EU	European Union
FODEE	National Energy Efficiency Fund (Guatemala)
FUDAEE	Uruguayan Trust for Energy Saving and Efficiency
GEF	Global Environmental Facility
GIZ	German Agency for International Cooperation
IEA	International Energy Agency
IDB	Inter-American Development Bank
INER	National Institute for Energy Efficiency and Renewable Energy (Ecuador)
IPEEC	International Partnership for Energy Efficiency Cooperation
LAC-EE	Latin American and Caribbean Network for Energy Efficiency
LED	Light Emitting Diode
MDGs	Millennium Development Goals
MIEM	Ministry of Industry and Mines (Uruguay)
MINAEM	Ministry of Environment, Energy and Seas (Costa Rica)
OLADE	Latin American Energy Organization
OAS	Organization of American States
PAEE	Strategic Plan for Energy Saving and Efficiency (Plurinational State of Bolivia)
PEER	Regional Programme on Energy Efficiency
PESIC	Programme for Energy Efficiency in the Industrial and Commercial Sectors (Honduras)
PIEE	Integrated Energy Efficiency Plan (Guatemala)
PLANE	National Energy Efficiency Plan (El Salvador)
PROURE	Programme for the Rational and Efficient Use of Energy (Colombia)
SE4ALL	Sustainable Energy for All

Acronym	Definition
SNE	National Secretariat of Energy (Panama)
TCG	Technical Coordination Group
TWh	TeraWatt/hour
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
UREE	National Policy for the Efficient Use of Energy (Panama)
URSEA	Regulatory Body for Energy and Water Services (Uruguay)

EXECUTIVE SUMMARY

Scope of the evaluation

The project “Towards a low-carbon economy in Latin America: policy options for energy efficiency and innovation” was designed within the framework of the Development Account programme for implementation during the period 2012-2015. It sought to strengthen the capacity of national governments in Latin America and the Caribbean in their efforts to establish a path to low-carbon economic growth, through the design and implementation of public policies on energy efficiency, with particular attention to policies on innovation. According to United Nations rules and regulations, programmes must be evaluated periodically as part of the general strengthening of the evaluation function to support and inform the decision-making cycle. The final assessment of the project should look at all project activities and consider both anticipated and unanticipated key results.

Methodology

The assessment encompassed three different stages of the project (i.e. design, implementation and results) and was structured around four main standard criteria: relevance, efficiency, effectiveness and sustainability. To complete the analysis, two additional factors were considered: complementarities and ECLAC value added. A set of evaluation questions based on the above-mentioned criteria was prepared to guide the data collection and analysis. The main modalities for the information and data collection were (a) collection of primary data through: (i) a set of direct interviews with the main stakeholders; and (ii) an online survey of all participants in the main project activities; and (b) collection of secondary data to supplement the Commission’s substantial database using other national and regional sources, to provide insight into recent developments.

Mission activities

In accordance with the methodology outlined above, the focus at the start of the activities (in early February 2015) was on three main areas: collection of secondary data from different sources, preparation of the online questionnaire and selection of and contact with the persons to be interviewed. Two groups were selected for the interviews: national institutions (13 persons, 8 interviewed) and ECLAC officials and external consultants (eight, all interviewed). The online questionnaire was designed to address the universes of “beneficiaries” appearing on the lists of participants of the events organized by the project. The questionnaire was sent out twice to 175 addresses: the first time on 26 February and the second time on 12 March. Responses were received from 42 participants or 24% of the universe) which was a satisfactory result. However, the direct answers were quite limited and, as such, the results of the questionnaire were not very conclusive. Moreover, three countries (Mexico, Venezuela, Ecuador, the major oil producers in the region) accounted for 40% of total responses. Some marginal limitation to this evaluation exercise is attributable to the basic modality: the evaluation was carried out mainly as a desk study. Consequently, it depended on data and information produced by the project’s stakeholders, with very limited capacity for triangulation with other sources. Moreover, the relatively low amount of answers to the questionnaires, especially for the most structured questions detracts from the validity of this source of information.

Structure of the project

In 2011, ECLAC launched the Base Indicators for Energy Efficiency (BIEE) project, prompted by the realization that Latin American and Caribbean countries lacked the necessary statistics and performance indicators for quantifying the results of national energy efficiency programmes. The aim was to introduce the operating logic of the European Commission’s ODYSSEE Programme, with the expectation that a set of indicators would be generated to determine the evolution of national energy efficiency programmes, analyse the results and (as a consequence) facilitate the appropriate policy decisions. This project was supported by resources from the German Agency for International Cooperation (GIZ) and by technical support from the French Environment and Energy Management Agency (ADEME) in the framework of the

International Partnership for Energy Efficiency Cooperation (IPEEC). The countries that took part in the BIEE from its inception are Argentina, Brazil, Chile, Paraguay, the Plurinational State of Bolivia and Uruguay. Endowed with a budget of US\$ 478,000, Development Account project 234-8, was launched at the beginning of 2012 and its main activities were completed in December 2015. The programme was coordinated by a Directing Committee composed of ECLAC (as Chair), ADEME, the Latin American Energy Organization (OLADE) and participating countries with the support of a Technical Coordination Group (TCG), consisting of ECLAC, ADEME, one European expert (a specialist on ODYSSEE) and the national coordinators. During this four-year period the management spent 98.1% of the direct available resources, but was also able to collect additional resources from external donors to the tune of US\$ 370,000; the final amount shows then an impressive multiplier of 175% on the initial budget.

Project activities and results

The activities and results (see chapters 4 and 5 for a full presentation) show that the project was very successful: four times as many countries benefited than originally planned, and the number of meetings and workshops was also higher. These results were partly due to the additional resources received but mainly to the fact that the project responded to a real demand from the beneficiaries. Many of the interviewees said that the timing was right, since oil prices stood at around US\$ 130 per barrel. But the success was also due to the fact that the focus on a specific issue—the establishment of energy efficiency indicators—meant that all the other contents of the project document could be left aside. This shifted the emphasis from a “supply-driven” project to a “demand-driven” one. By identifying the real demand, the management succeeded in attracting other countries. Initially, the intention was to cover six South American countries (Argentina, Brazil, Chile, Paraguay, Plurinational State of Bolivia and Uruguay). However, after the 2013 Dialogue, other would-be participants expressed an interest and ECLAC extended an invitation to eight other countries (the Central American States of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama, along with the Dominican Republic and Mexico) and, subsequently, to the remaining countries (Bolivarian Republic of Venezuela, Colombia, Cuba, Ecuador and Peru), bringing the total number of participating countries to 19. The huge success of the project was not foreseen in the project document: in fact, the indicators for project success were surprisingly low. Moreover, the planned expected results make no mention of the regional database (even though it is included in the list of activities as “a web-based regional network of EE practitioners”). The regional database is an important outcome of the project and represents a significant value added for energy efficiency practitioners.

Relevance and design

Energy efficiency measures implemented in a strategic manner offer the opportunity to advance societal objectives by transforming the productivity and resilience of country energy systems. Responsible for about 9% of global greenhouse gas emissions, countries in Latin America face increasing challenges driven by changing weather patterns and concerns about the energy-water-food nexus. Fluctuating oil prices, coupled with an awareness of global climate change, triggered an interest and a wave of investments in energy efficiency. The Latin American and Caribbean region has the cleanest electricity matrix, with its share of renewable sources far exceeding that of other regions in the world. Nevertheless, this statement should not be misinterpreted. Indeed, aggregate figures mask sharp differences between countries. The Latin American and Caribbean region is no exception. The aggregate figure for Latin America and the Caribbean is strongly influenced by the six largest economies.

The need to reduce the impact of climate change, together with the fluctuation in oil prices, made the proposal to work on energy efficiency indicators very relevant in the Latin American environment at the moment of its implementation. Moreover, debates on energy efficiency reveal a host of sharply opposing positions and policies, each of which needs to be carefully assessed. Hence, the establishment of energy efficiency indicators is a unifying issue for all potential beneficiaries. ECLAC is to be commended for its efforts to convene the Latin American and Caribbean governments around this goal and to provide the instruments to achieve it. The development of state-of-the-art indicators is a complex task and data collection and analysis are costly and time-consuming. Recent efforts by European countries to collect more

detailed end-use data through specific shared programmes have helped to develop energy efficiency indicators that provide important information for understanding past trends, assessing the potential for energy savings and enhancing energy efficiency policies.

Energy indicators are an important tool for analysing interactions between economic and other human activity, energy consumption and carbon dioxide (CO₂) emissions. The relevance of energy efficiency in Latin America has been stressed in many documents as well as in political decisions. ECLAC, as a provider of technical assistance to Latin American countries, correctly identified energy efficiency and especially energy efficiency indicators as an important topic within the policy decisions for beneficiary countries. As far back as 2009, ECLAC produced a first report on energy efficiency in Latin America, followed, in collaboration with the Caribbean Development Bank, by a meeting on the theme “Promoting energy efficiency in the Caribbean” in May 2010. Since 2009, there has been an increase in the funds available for energy efficiency activities, in some cases encouraged by the need to meet environmental objectives relating to climate change. The potential for energy efficiency improvements is dynamic, and various estimates highlight the importance of improving energy efficiency in the region.

To offer a new instrument to gauge the efficacy and impact of different energy efficiency policies fits in well with the institution’s mandate: it appears as a main topic in the Commission’s priorities for 2010/2011 and again in the priorities set out for the following years, where the close relationship between energy efficiency and climate change was clearly stressed. The Commission’s objective was clear: to strengthen the capacity of Latin American and Caribbean national governments to establish a path to low-carbon economic growth through energy efficiency policies and measures, with particular attention to innovation policies.

The project’s theory of change was based on the assumption that the design and implementation of indicators of the effectiveness of public policies on energy efficiency would strengthen the capacity of Latin American and Caribbean governments to promote low-carbon economic growth, with emphasis on innovation. To achieve this objective, the project sought to increase policymakers and government technical staff’s capacity to implement national-level energy efficiency and innovation policies. The construction of the required statistical platform to generate a set of official energy efficiency indicators would enable countries to establish their current baseline and monitor their advance towards a low-carbon growth path. The project objective would also be achieved through enhanced regional cooperation in the development of energy efficiency policies, indicators, and databases; and through the exchange of information on opportunities to capture economic benefits from gains in efficient energy use and technological innovation.

The institutional framework should identify the authority responsible for delivering the outcomes, along with the required instruments, resources and capacities. Increased cooperation and coordination between different ministries would be required to increase the effectiveness of energy efficiency policies and programmes. Appropriate economic and financial management and support are needed to sustain activities which are lacking in many countries as they depend in many cases on international funds, thus producing a “stop-and-go” on policies. The project is appropriate in cases where governments and institutions face constraints on their progress towards better energy efficiency.

The most decisive component of the project management was the presence of European institutions both as advisers with extensive experience and as providers of additional resources. ECLAC and GIZ have a long-standing relationship. The other partner —ADEME— is an institution within the French Cooperation Agency dedicated to the transfer of know-how and the provision of technical assistance on energy issues to developing countries. The European experience in energy efficiency indicators is based on two major programmes: ODYSSEE and MURE. The ODYSSEE database focuses on energy efficiency indicators while the MURE database provides an overview of the most important energy efficiency policy measures in European Union member States.

Efficiency

Initially, the project was designed to serve six South American countries (Argentina, Brazil, Chile, Paraguay, Plurinational State of Bolivia and Uruguay). However, as other countries expressed an interest in participating, ECLAC extended the project to the Central American countries (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama), the Dominican Republic and Mexico, and then subsequently to the Bolivarian Republic of Venezuela, Colombia, Cuba, Ecuador and Peru, bringing the total number of participating countries to 19. The main beneficiaries of the project were national offices in charge of energy efficiency policies within the ministries or departments of energy of the participating countries. Other ministries, statistical offices and national institutions were also involved in the process of production and compilation of basic information.

From the outset, the management wisely decided to invest a substantial amount of resources in the most important activities listed in the project document: four technical workshops and a European study tour organized for officials from 11 Latin American countries. At the same time, the European consultants prepared the template for the collection of data and launched their programme of assistance in the first countries in the area of the Southern Common Market (MERCOSUR). As much as 65% of the total budget was disbursed during the first year of implementation. This decision was important for two reasons: (a) it demonstrated to a wider public of potential beneficiary countries the opportunities offered by the project; and (b) it proved that the project had the capacity to deliver, thereby building trust and promoting commitment on the part of the beneficiaries. The other constructive decision concerned the involvement of other dedicated donors: besides the choice of ADEME and ENERDATA as the main technical sponsors, the managers, capitalizing on the long-term relationship with GIZ, were able to secure additional funding from this source. It was thus possible to increase the number of participating countries without stress for the project management.

The problem analysis revealed a weakness in the regional institutions responsible for energy efficiency policies and monitoring. The first step was therefore to put together a credible and focused training package. However, a further decision was necessary. As stated in the project document, the main objective was to strengthen the capacity of Latin American and Caribbean national governments in the design and implementation of public policies on energy efficiency. This called for the development of energy efficiency indicators and statistical databases as a complementary tool. But from the start the project managers focused on the indicators: this was a wiser and more productive decision. Energy efficiency policies can be developed in accordance with a broad set of tools and regulations: it could then be difficult to find an approach valid for all beneficiary countries. However, given the need in all cases for an analysis of the current situation and for monitoring and assessing the impact of policies, the construction of indicators and the analysis of their data can be considered as the unifying approach to energy efficiency solutions and one that would appeal to and rally all stakeholders while at the same time increasing effectiveness, thanks to the use of standard packages for training and assistance.

This is, in effect, how the project developed its activities: that is through the repetition of a set of standard training workshops and meetings where the contents and the modalities were almost the same, notwithstanding some modifications after the first sessions and marginal adaptations to the different contexts. The main outputs of the project can be easily identified in the national reports and the regional database. The main problems encountered during the production of the national reports were (a) a few countries lacked the internal capacity in terms of human resources to implement the work; (b) in a number of countries, the data were not immediately available as they depended on institutional arrangements between different organizations; and (c) lack of data was a problem in almost all countries, especially as regards energy consumption at the lowest economic levels (households and enterprises). With reference to point (a) it should be noted that, as a condition for joining the project, the countries had to commit to a contribution in kind, including staff-hours of its officials. However, in some cases, local resources were so limited that progress was severely hampered. Therefore, ECLAC offered the support of external local consultants for some countries (using direct project resources or funds received from the external donors).

In almost all countries this was the first time energy efficiency data were being collected. This meant that there was no immediate knowledge of how to access the data and no established procedure for obtaining them, even once the availability was assured. A third problem was the unavailability of specific data, especially on energy consumption at the household or enterprise level, as these had never been collected, not even by the official statistical institute. In many cases then, thanks to the support of the European consultants, estimates were made, using the methodology already utilized in Europe for similar cases. One of the unexpected outcomes of the data collection process was the increased awareness that the collection of specific data on energy was essential for efficient energy management in the country. It is hoped that this new awareness will lead to the establishment and institutionalization of a new statistical procedure. This could be an area where support from ECLAC might produce best practices based on past experience and the lessons learned from other countries. Indeed, the systematic collection of specific data on energy is a prerequisite for sustainability and should be pursued as a matter of priority.

Effectiveness

Most of the events were aptly termed “focused training” and as such were attended by only a small number of participants, mainly officers from the institutions in charge of energy efficiency and who were qualified to benefit fully from the opportunity to learn new analysis tools. Nevertheless, as pointed out by the European consultants, the success in transferring know-how depended to a great extent on each national team. Brazil sent qualified people eager to learn. The Paraguay team was equally enthusiastic but was starting from scratch and faced greater challenges. Other countries showed less real interest: this probably will mean that the consolidation process will not be the same everywhere and ECLAC should take pains to provide careful follow-up. In general, local officials were the main actors in the production of national reports: this, along with continuous support from the European consultants, helped to consolidate their know-how. All interviewees said that it was this support that enabled them to complete the report. The availability of the national reports is the first indication that national institutions’ capacity to deal with energy efficiency indicators has been increased: five reports have already been published and distributed, seven will soon be finalized while the others are still in progress. It is too soon to expect any further analyses and documents on energy efficiency in the various countries.

Ensuring the consolidation and institutionalization of the process would be more relevant as a first step towards mastering the new tools now available. Contrary to expectations, not all participants were familiar with the project outcome documents. Appreciation for the contents was quite high as was the acknowledgement of the potential impact on national policies. The reports do not appear to have been widely distributed, but once the remaining documents have been published it will be possible to complete the assessment. The statements collected during the project events —at which each beneficiary country was requested to make a presentation on its activities and achievements— attest to the relevance of the instrument especially insofar as it successfully filled the voids in former rules and regulations and improved the future structure and management of new energy efficiency policies. The country presentations requested by project management for workshops were a useful instrument, encouraging countries to implement the activities while fostering competition between the different teams. This was also supposed to be an opportunity to develop South-South cooperation and exchange. However, it should be noted that each country has a different way of working as well as different levels of commitment and institutional and technical capacities so the cooperation was not immediate. Further efforts should be made in the future to increase such exchange. The reports contain a wealth of new information and should be made available to the wider population, which so far does not appear to be a generalized option.

Visits to the regional database on energy efficiency developed by the project increased steadily since its inception with the number of hits stabilizing at around 300 per month one year after the launch. Admittedly, the overall number is not great but this is a very specialized topic which interests and affects only the officials and policymakers directly involved in energy management. The number of hits is expected to increase in the future provided ECLAC is more active in indexing contents and data. The fact that 73% are new visits could imply that the site has greater visibility but at least one more year should pass before any conclusions are drawn. Nevertheless, three points may be stressed: (a) almost 50% of the

hits came from the three countries that are most advanced in energy efficiency management and while the other countries may be expected to follow suit, this will happen only after the awareness is better consolidated, which is still an ongoing process; (b) the fact that most visitors looked at just over one page shows that the database is not really being consulted but simply accessed, thus site managers may need to make adjustments to encourage a longer visit; (c) the appeal of the regional database depends largely on its capacity to offer up-to-date figures and data, which clearly depends on the capacity of each country to update its national database, hence the need for consolidation and continuity.

The questionnaire reveals an even less positive picture: only 50% of participants actually visited the site and only fleetingly (and to these should be added those who did not respond to the questionnaire). Again, it appears that there is a need to increase the appeal of the site.

If and when this new awareness produces effective results-based energy management policies depends mostly on each national environment: for the time being, the variety of institutional set-ups and the availability of resources appear to simply confirm that the most advanced countries will continue while the others will need additional support. The capacity to embed the new instrument depends on the national context (the political will and the existence of institutions, personnel and resources). Another critical constraint is the reluctance to use indicators: politicians are notoriously averse to identifying specific quantified objectives so that no blame can be attributed to them in case of non-achievement. The use of quantified indicators for energy could carry the same risks: having such an effective instrument would be excellent, but there could be some reluctance to apply it in the real world.

Sustainability

The project's undeniable success in terms of participation and appreciation of the contents and know-how is difficult to live up to when it comes to consolidation. Individual countries appear to need customized approaches, whereas one of the added values of the methodology is its standard package, which implies the capacity to consolidate the measures and to offer opportunities for comparisons and analysis of best practices. According to the interviewees, the collection of data on energy efficiency following the methodology has not been completely "institutionalized" in the beneficiary countries with the exception of Brazil, Chile and Mexico: this means that contacting the sources of information (which, in many cases, delayed the production of national reports) will remain a problem. Specialized, customized assistance is needed in each country to define the place, tasks and procedures in some sort of institutionalized form as a condition for continuation of the practice. Failing this, there is a risk that sustainability will be low, the same problems will recur, and, without the support of an external donor, the exercise will be extremely difficult. Unless updates are received regularly from national reports, the quality and appeal of the regional database will be undermined and the long-term usefulness of the tool will be impaired.

By including energy in the Sustainable Development Goals, the United Nations sought to spur investment in energy policies. A framework for global monitoring and reporting will provide transparency to the commitment process and promote sharing of best practices. However, as many interviewees remarked, the technical capacity to measure energy efficiency accurately and continuously was and still is quite minimal. Each of the Latin American and Caribbean countries has a unique regulatory framework for energy efficiency, which rules out the establishment of simple "common denominators" for the region. The new approach presented by the project fitted in well with ongoing processes. Despite persistent differences between countries in terms of commitments and interests, there is no doubt that the project methodology was well received. The fact that all the countries produced the national report or are finalizing it attests to the need for energy indicators. However, the same differences have an impact in terms of the capacity to apply the acquired know-how and to standardize performance. Countries that lack resources and personnel and whose institutions are weak require additional support; some show little evidence of any steady improvement or any continuation of the process. Specific analysis and an extension of the technical support will no doubt be needed, Costa Rica, Mexico and Paraguay are already using the new know-how.

The risk that the experience will remain a one-off effort is real (at least for some countries): institutional problems must be addressed as energy efficiency issues need to be debated at multiple levels; data-collection also calls for inter-institutional collaboration as sources of data are multiple and some agencies are not keen to collaborate in the absence of a formal mandate. Consolidation needs to be assessed at two levels: at the country level and at the regional level. With the help of the European consultants the project consolidated data at the regional level and proceeded to publish the regional report on its website. Although all country representatives who were consulted confirmed their interest in continuing with the exercise and updating the national database, at the same time, they pleaded lack of resources or the difficult institutional set-up. Thus, only the countries with more consolidated experience in energy efficiency management will find it easy to continue, while the rest, in the absence of a convincing “exit strategy”, appear to depend on receiving continued support from ECLAC or other international donors. The lack of qualified personnel and of resources could hamper the continuation of the practice.

Many interviewees cited the need for a template better adapted to the local context. This may be acceptable as a first step but, subsequently, specific templates will be needed in line with the characteristics and the features of the local economy and local consumer behaviour. It is also important to increase the appeal of the practice for local stakeholders and, consequently, to have more access to the necessary resources. At the regional level, ECLAC is the main player. The need for the regional database is well acknowledged by all stakeholders: it should be a central instrument for benchmarking policies at the national sectoral level, for comparing results, diffusing best practices and transmitting lessons learned on policies and approaches. However, to be an attractive tool, the regional database must be continuously updated, that is, receive updated information from countries that must be processed and consolidated. ECLAC is currently engaged in updating the database, but there is no certainty that ECLAC will be able to do so indefinitely. Not only is it beyond the organization’s mandate but furthermore ECLAC does not have the resources or the technical capacity in house. The management of the regional energy efficiency database remains a hot issue for the future.

Horizontal cooperation was strengthened during project implementation. These collaborative moments fostered the creation of new skills and positive models through the sharing of best practices and experiences and will be conducive to the development of regional partnerships. Thus, consolidation of the “space” is the most crucial prerequisite for furthering horizontal cooperation and promoting the exchange of best practices. All stakeholders should immediately join together in the search for an agreed and consolidated exit strategy. Three options may be considered for speeding up consolidation of the process. The first envisages a stronger participation by the private sector and by public opinion, to whom energy efficiency (including a set of measures and indicators) can be “sold” as a means of lowering costs. A second option is to strengthen collection and analysis of data relating to transport and subsidies, sectors that exist in all countries and which have a significant impact on energy efficiency. This should generate interest and the resources to continue. The third option is to consolidate the governance process for energy efficiency management and within this process to give a prominent role to the collection, analysis and distribution of data on energy consumption.

Coordination, complementarities and visibility

The management unit has been intent on promoting coordination and synergies with other ECLAC programmes and other international agencies (including other United Nations bodies) in the belief that the message would then reach a larger number of beneficiaries and be consolidated. From the project design phase, other ECLAC divisions demonstrated clearly their willingness to become involved and identified the future programmes most open to coordination and collaboration. The novelty of the project approach and methodology in Latin America and the Caribbean enhanced the Commission’s profile as a provider of focused and effective technical assistance. Through coordination with other ECLAC projects and other United Nations organizations, significant synergies were built culminating in a request to be the main coordinator for the collection and analysis of energy efficiency indicators within the Sustainable Energy for All (SE4ALL) initiative.

Two major international initiatives underscore the importance of having energy efficiency indicators: the Paris Agreement and the United Nations SE4ALL. The first was signed recently in Paris at the twenty-first session of the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) and is viewed by many interviewees as a strong inducement to include energy efficiency indicators as a standard component of the policy mandate for energy institutions. The BIEE will be useful as a tried and tested instrument for fulfilling the obligations set forth in the Paris Agreement. This Agreement sets out specific quantitative commitments for all signatory countries. Thus, it will be incumbent on all countries to measure and control progress.

The ECLAC programme of work for the 2016-2017 biennium for the Natural Resources and Infrastructure Division clearly provides for collaboration with other United Nations organizations as well as with other regional institutions. Energy efficiency is a shared objective in many projects. Moreover, the Latin American Energy Organization (OLADE) has for many years collected and published data on energy production and distribution in the region. According to the experts, the data collected by BIEE are different from those collected by OLADE in its database, the Economic and Energy Information System (SIEE). BIEE focuses on energy consumption at the economic unit level (households, enterprises) and builds the national database while SIEE focuses on the energy production matrix and distribution at the national and international levels. The compatibility of the data coming from the two databases has not yet been assessed and could be an important issue for the future.

Even without a proper communication strategy, project activities and outcomes received some attention from local media, which expanded their outreach. The management used standard tools to enhance visibility with satisfactory results. The project established a special site for the project as a depository for the main documents and achievements. Moreover, using the United Nations social network system, Unite Connections, it implemented the BIEENET social network, which all participants have been invited to join.

ECLAC value added

The success of the project and the attention it received from policymakers and international organizations have enhanced the Commission's image. The project activities have consolidated the role of ECLAC as a leading institution which provides credible services and assistance to Latin American and Caribbean organizations and institutions of different levels. The national representatives who were interviewed confirmed their appreciation for this assistance and many respondents to the questionnaire recommended that such projects should be replicated as ECLAC is considered a valuable source of information and support. European experts were esteemed for their competence, accessibility and constant support. The three international "dialogues", which were attended by politicians, academics and business representatives from the region and Europe, further boosted the ECLAC image and visibility, and consolidated its leadership in data compilation and distribution and in the provision of technical assistance. During the project events, ECLAC acted not only as organizer but also as provider of specific support as witness the presentations offered by ECLAC officials and the documentation distributed.

Although no gender-specific impact has been associated with energy efficiency policies promoted by ECLAC, the work to strengthen government institutional capacity in this policy area is expected to have positive spillover effects on other related policies such as improved access to energy services and quality fuels by low income and rural groups. Such spillover effects have been shown to directly benefit women's work through healthier cooking and an improvement in the quality of the household environment. In terms of participation, the collected data show that the participation of women was well below 50%, a statistic that has been confirmed by the responses to the questionnaire. It is true that the topic is one where men play a dominant role, both at national level and at ECLAC, however, the project managers could possibly have made a greater effort to increase the participation of women.

Main findings and lessons learned

Whereas energy efficiency concerns generated much interest and enthusiasm in the project in the early stages, the persistently low oil prices could put a damper on things. . This trend should not divert attention from the objective and the good results achieved to date. The project outcomes will depend on long term sustainability and the ability to establish a standard practice.

Finding 1. The project was very successful as the number of planned activities and the list of beneficiary countries were exceeded. The overall results are very positive and attest to the efficiency and effectiveness of the management in handling these additional activities, thanks to funding from external donors.

Finding 2. The final success of the project is due to the credible theory of change on which the design was based. The assumption that better information from authoritative sources, coupled with focused local activities based on the new information, would produce the expected changes in term of awareness as a first step towards action has been validated by the project results and by the debates held during the events.

Finding 3. The project contributed to the establishment of new energy efficiency indicators. The project events and activities shed light on the relevance of indicators for energy efficiency monitoring.

Finding 4. The project promoted the distribution of information and exchange of experiences (horizontal cooperation) between region countries. Thanks to the special site and the database, the project developed regional dissemination tools that offer comparative data and started to define the benchmarks.

Finding 5. The project enhanced governments' capacity to promote policymaking based on data. Although many countries do have energy efficiency legislation, they often lack regulations and quantitative targets. Efficiency indicators will facilitate the establishment of more precise targets.

Finding 6. Some beneficiary countries face constraints in terms of their capacity to fulfil project commitments. In some cases, the completion of the national reports was beset with difficulties due to local constraints. Careful assessment during implementation is needed to adapt modalities and actions.

Finding 7. Transfer of technical know-how needs to be facilitated especially when new concepts and instruments are distributed. The interest of beneficiary countries in project activities was well justified but some problems in the packages provided reduced the immediate impact.

Finding 8. With this project ECLAC confirms its capacity to offer focused, essential technical assistance to the countries of the region. The success of the project, attributable to the relevance of the issue selected and the mode of implementation, confirmed once again that ECLAC is the leader in the region for providing valuable and credible technical assistance to beneficiary countries in the region.

The lessons learned are described below.

Lesson 1. For “supply-driven” actions, the right timing is essential. The project’s success was due largely to the “timing”, that is the proposal of an energy efficiency approach at a time when oil prices were high.

Lesson 2. The focus on a single major issue heightens interest and maximizes impact. The project managers wisely decided to concentrate on the indicators and methodology and to expend a large percentage of their resources in the first year in order to create trust and interest. This decision was crucial to the success of the project.

Lesson 3. To increase effectiveness, relationships with long-term sponsors are vital. The expected results of the project were exceeded thanks mainly to the management’s capacity to secure the additional funding required from external donors.

Lesson 4. In dealing with beneficiaries that are less prepared to absorb new approaches, follow-up action will help to consolidate the outcomes. The project did well to accept all interested beneficiaries but, in such cases, provision for technical follow-up is necessary.

Lesson 5. Improved local capacity is one of the main outcomes of the technological support provided to beneficiaries. The transfer of know-how for the benefit of the local environment is an essential factor for building local capacity.

Lesson 6. To consolidate the impact of BIEE, the regional database must continue. Further action is needed to fully institutionalize the regional database, which is vital for enhancing awareness and disseminating information on energy efficiency.

Lesson 7. Better coordination between donors working on energy efficiency issues can increase overall effectiveness. International cooperation continues to play an important role in energy efficiency projects and programmes in the region, but steps should be taken to avoid overlaps between institutions and programmes and to research possible synergies more thoroughly.

Recommendations

The best recommendation, considering the success of the project and the expectations it aroused, is quite simple: “Do not lose the momentum” and interviews with ECLAC officials indicate that they are already committed to pursuing the initiative. As a final assessment, however, a few points should be made. The future of the initiative should be based on two principles: consolidation and institutionalization. Consolidation refers mainly to know-how and methodology while institutionalization refers to the decision to include energy efficiency indicators as an essential part of any energy policy. The two principles are strongly interconnected and interdependent and should be considered jointly in any future step. The former is more closely related to the Commission’s capacity for intervention. Specific recommendations based on the overall assessment of project activities and outcomes are set out below.

Recommendation 1: Refine and adapt the methodology (findings 3 and 6 and lessons 4 and 5). Steps to this end should include the publication of a full Spanish text describing the methodology; the design and development of an online training course with the help of a group of regional experts; the adaptation of the methodology in the countries of the region and the compilation of a directory of all the regional experts in energy efficiency indicators to facilitate their interaction and collaboration, as well as the reorganization of the structure and contents of the BIEE website, including indexing of the contents and data in order to increase visibility and visits.

Recommendation 2: In the framework analysis of energy efficiency indicators, provide for the inclusion of indicators on issues common to the region, such as transport and subsidies (paras. 71-74, findings 3 and 4 and lessons 2 and 5). Owing to their relevance for energy efficiency policies, the application of energy efficiency indicators to these two extremely important areas must be the subject of a specific study.

Recommendation 3: Institutionalize the BIEE at the national level (para. 75, finding 6 and lesson 4). A local authority should be appointed to achieve the objectives and provide the required instruments, resources and capacities.

Recommendation 4: Design and construct a credible institutional set-up for the management of the regional database (finding 4 and lesson 6). The importance and the value added of a regional BIEE are well acknowledged and the experience in Europe can confirm the validity of its existence and approach.

Recommendation 5. Ensure an appropriate follow-up in order to maintain the momentum. This should be part of the project from the design stage and sufficient resources should be allocated for the purpose (findings 6 and 7, lessons 4 and 5). It is in the interest of ECLAC to create and cultivate the network.

Recommendation 6. Build synergies in international cooperation efforts for energy efficiency (finding 8 and lessons 3 and 7) The success of BIEE and the establishment of a regional database could give ECLAC the impetus to promote better coordination and build synergies with the different donors.

Recommendation 7. Develop communication messages on energy efficiency indicators (findings 3, 6 and 7 and lessons 4 and 6). The use of energy efficiency indicators can produce positive results that deserve to be communicated to the wider public. It will also enhance the image of ECLAC and increase the positive externalities generated by the project.

Recommendation 8. Encourage stakeholders to commit to the project activities and outcomes by presenting the issues through local cases and experiences (findings 4, 6 and 7 and lessons 4 and 5). During the capacity-building events, increased interest and commitment were generated when specific cases of public and private best practices were presented.

1. EVALUATION METHODOLOGY

1.1. SCOPE OF THE EVALUATION

1. Established in 1997, the Development Account, is a mechanism for funding capacity development projects of the economic and social entities of the United Nations. Adopting a medium- to long-term approach, it helps countries to better integrate social, economic and environmental policies and strategies in order to achieve inclusive and sustained economic growth, poverty eradication and sustainable development by building the socioeconomic capacity of developing countries through collaboration at the national, subregional, regional and interregional levels. The Development Account's operational profile is further reinforced by the adoption of pilot approaches that test new ideas and eventually scale them up through supplementary funding and the emphasis on integration of national expertise in the projects to ensure national ownership and sustainability of project outcomes.
2. The project "Towards a low-carbon economy in Latin America: policy options for energy efficiency and innovation" was designed within the framework of the Development Account programme for implementation during the period 2012-2015 for a total budget of US\$ 478,000. It sought to strengthen the capacity of national governments in Latin America and the Caribbean in their efforts to establish a path towards low-carbon economic growth, through the design and implementation of public policies on energy efficiency, with particular attention to policies on innovation.
3. According to United Nations rules and regulations, programmes must be evaluated on a regular, periodic basis as part of the general strengthening of the evaluation function to support and inform the decision-making cycle. The final assessment of the project should look at all project activities and consider both expected and unexpected key results. The main objectives will be:
 - To analyse the design of the project as well as the relevance of its stated goals to the thematic area and to the region where it is implemented.
 - To assess the project's efficiency in implementing its activities, including its governance and management structures.
 - To take stock of the results obtained by the project and evaluate the extent to which it achieved its objectives.
4. The assessment should be conducted in line with the norms, standards and ethical principles of the United Nations Evaluation Group (UNEG).
5. The evaluation will determine whether the project meets the Development Account criteria:
 - Results in durable, self-sustaining initiatives to develop national capacities, with a measurable impact at the field level, ideally having multiplier effects.
 - Is innovative and takes advantage of information and communications technology, knowledge management and networking of expertise at the subregional, regional and global levels.
 - Uses the technical, human and other resources available in developing countries and effectively draws on existing knowledge, skills and capacity within the United Nations system.
 - Creates synergies with other development interventions and benefits from partnerships with non-United Nations stakeholders.
6. Special attention should be given to gender concerns, that is whether gender issues were incorporated into the project, whether the project design and implementation incorporated the needs and priorities of women, whether women were treated as equal players, and whether the project served to promote women's empowerment. During the evaluation process, the evaluator, following the well-established gender and human rights perspective enshrined in development

instruments since the mid-1980s, will give all beneficiaries the opportunity to participate or to be adequately represented and will create an environment conducive to the free expression by participants of their views and feelings.

7. Even though this exercise is not a fully-fledged evaluation (since the data collected and analysed are less extensive and the evaluation criteria are less comprehensive than in fully-fledged evaluations), the guiding principles advocated by ECLAC have been adhered to. Special consideration will be taken to assess the extent to which human rights have been upheld and promoted. This includes a consideration of whether beneficiaries were treated as equals, the rights of minorities were safeguarded and whether the projects helped to empower civil society. The target audience and principal users of the evaluation are project partners and beneficiaries, the Programme Manager of the Development Account (Department of Economic and Social Affairs), as well as other regional commissions and agencies in the United Nations system.

1.2. METHODOLOGY

8. The assessment encompassed three different stages of the project design, implementation and results) and it was structured around four main standard criteria: relevance, efficiency, effectiveness and sustainability; in addition, to complete the analysis, complementarities and ECLAC value added were considered. A set of evaluation questions based on the above-mentioned criteria was prepared to guide the data collection and analysis. The main evaluation criteria are defined below:
 - Relevance: the extent to which the project and its activities match the priorities and policies of the region and countries at the time of formulation and the extent to which they are linked or related to the ECLAC mandate and programme of work.
 - Efficiency: measurement of the outputs (qualitative and quantitative) in relation to the inputs.
 - Effectiveness: the extent to which the objective and expected accomplishments are fulfilled.
 - Sustainability: the extent to which the benefits of the project are likely to continue after funding has been withdrawn.
 - Complementarities: the extent to which the project activities and outcomes complement other actions of ECLAC, other United Nations bodies and local organizations.
 - ECLAC value added: the extent to which the project activities and outcomes have confirmed the advantages of the ECLAC intervention, with special reference to the promotion of human rights and gender equality.
9. The main modalities for the information and data collection have been:
 - Collection of secondary data: credible, confirmed data are the basis for any evaluation exercise; the data existing in ECLAC statistical bases were supplemented with relevant data obtained from other national and regional sources which were deemed useful for understanding recent developments.
 - Collection of primary data: two approaches were used: (a) the main stakeholders at ECLAC and at the country level were interviewed directly; (b) all participants in the workshops and dialogues were invited to complete an online survey.
 - Local project managers, international consultants and the external donor were all interviewed as were the members of the ECLAC team in charge of the project.

1.3. MISSION ACTIVITIES

10. At the start of the activities (beginning of February 2015) the expert focused, according to the above methodology, on three main areas:
- Collection of secondary data from different sources
 - The preparation of the online questionnaire
 - Selection of and contact with the potential persons to be interviewed from ECLAC and local organizations
11. For the collection of secondary data, the expert accessed the documents from a “drop-box” file created by the ECLAC management team. Documents from other sources were read at the ECLAC website or at those of other organizations (the United Nations Industrial Development Organization (UNIDO), SE4ALL, World Bank, the Inter-American Development Bank (IDB) and the European Union, among others). The ECLAC management unit’s reports and the focal point’s notes were substantial sources of information.
12. For the interviews, the suggestions set out in the available documentation were followed: two groups were selected, the local beneficiary institutions and the ECLAC officials and external consultants who worked on implementation. The first group consisted of 13 persons (one from each country, eight of whom were interviewed); the second group consisted of eight persons (all of whom responded to the expert’s invitation and were interviewed).
13. The online questionnaire was designed to address the main research topics: (a) identification of the person (country, sex, education, workplace, type of engagement); (b) participation in project activities; (c) knowledge of project outputs and documents; (d) appreciation and use of project outputs and outcomes; and (e) qualitative assessments of different aspects of the project. In general, all the main questions were “closed” to facilitate completion of the survey. The main working hypothesis was to address the universes of “beneficiaries” as recorded in the list of participants. According to the figures presented by the management team, 211 persons participated in the events. However, this number included those without an electronic address, who could not be contacted, ECLAC officials, as well as representatives of donors and other international organizations, all of whom were excluded as the questionnaire was designed to investigate the use and impact of the new knowledge by local and regional institutions. The result was a universe of 175 names. The questionnaires were sent out initially on 26 February and for the second time (because of the low response rate) on 12 March. The overall results are summarized in the table below. It will be noted that the reminder produced only a very limited improvement and does not change the overall situation.

Table 1
Answers to the online questionnaire

First deadline: 11 March					
Addressees	Unreachable	Reached	Responses	Responses/reached	Responses/universe
167	46	121	39	32.3%	23%
Second deadline: 22 March					
Addressees	Unreachable	Reached	Answers	Answers/reached	Answers/universe
175	46	129	42	32.5%	24%

14. The following comments may be useful:

- As many as a quarter of the persons in the universe were unreachable. This may be because: (a) participants changed positions or address; or (b) the addresses were incorrectly recorded or not recorded at all. Considering that the capacity to reach out to participants through the most updated communication media is extremely important in any awareness-building strategy (as in the case at hand), the systematic collection of the right addresses should be a real priority for ECLAC.
- The number of answers as a percentage of the universe is within the standard for this type of questionnaire. However, this number is quite limited in itself and as such the results of the questionnaire cannot be used as solid “proof”. In fact, a few questions received such a poor response as to be of only superficial significance. A note of caution must be raised on the validity and significance of the questionnaire responses: not only is the number too low to support credibility but also the bulk of responses came from just three countries (accounting for 40% of the total): the Bolivarian Republic of Venezuela, Ecuador and Mexico, which happen to be the major oil producers in the region.
- This low response rate could be due to: (a) the time elapsed since the events; (b) the view that the questionnaire was too complicated (even though, as mentioned above, all questions were closed); (c) lack of interest; or (d) lack of time. Thus, there are certain limitations associated with using the questionnaire results as sound indicators of the project’s efficacy and impact: the responses cannot be used as a basis for general considerations but only as support for existing ones. If “lack of interest” is the explanation (although further research would be needed to confirm this), then the communication strategy should be rethought.

15. The next step was to **process and organize the data or information**: the Information Matrix (presented in the inception report) was used for this purpose; the evaluation questions are the basis on which the information matrix is built. The processed information (presented in full in annex 2) contains an analysis of each evaluation question in the light of each judgment criterion, based on the results for each key performance indicator.

16. The assessment was conducted in line with the norms, standards and ethical principles of the United Nations Evaluation Group (UNEG). The evaluation also focused on the capacity of the project outcomes to respond to the Development Account criteria referred to above in section 1, paragraph 5.

17. Special consideration was given to whether the Commission’s activities and products respected and promoted human rights. In particular, ECLAC interventions were examined to ascertain if beneficiaries were treated as equals, the rights of minorities were safeguarded and promoted and steps were taken to empower civil society. During the evaluation process, the evaluator’s approach ensured that participants were able to express their views freely.

18. The basic approach used in this evaluation exercise resulted in some marginal limitations. Indeed, the evaluation was performed mostly as a desk study and without any direct relationship with final beneficiaries, except for a few interviews with local officials. Consequently, it depended on data and information produced by the project stakeholders, with very limited capacity to triangulate with other sources. Moreover, as already mentioned, the relatively low number of responses to the questionnaires, especially for the most structured questions reduced the validity of this source of information.

2. BACKGROUND OF THE PROJECT

2.1. STRUCTURE OF THE PROJECT

19. The project entitled Base Indicators for Energy Efficiency (BIEE) was launched by ECLAC in 2011 to remedy the lack of quality statistics and performance indicators of national energy efficiency programmes in Latin American and Caribbean countries. The aim was to overcome this deficiency following the technical and political process and the operating logic of the European Commission's ODYSSEE Programme, with the expectation that a set of indicators would be generated to determine the evolution of national energy efficiency programmes, to analyse the results and facilitate appropriate policy decisions. This project was supported by resources from the German Agency for International Cooperation (GIZ) and by technical support from the French Environment and Energy Management Agency (ADEME) in the framework of the International Partnership for Energy Efficiency Cooperation (IPEEC). The countries that took part in the BIEE from its outset are Argentina, Brazil, Chile, Paraguay, the Plurinational State of Bolivia and Uruguay.
20. The Development Account project started at the beginning of 2012 and completed its main activities by December 2015. The programme was implemented through the coordination of a Directing Committee composed of ECLAC (as Chair), ADEME, OLADE and participating countries. Each country participating in the programme appointed a national coordinator (focal point), whose main tasks were: (a) to act as a national counterpart for all technical and administrative matters; (b) to coordinate the work carried out by the national team (which is responsible for the technical work of gathering the information needed to calculate the indicators); (c) to attend technical workshops and seminars; and (d) to report on progress to the Directing Committee. In addition, in close collaboration with ECLAC and international consultants hired under the programme, each country appointed a national team to collect data on energy consumption (total and by sector), determine technical and economic factors, and carry out a detailed interpretation of the indicators and energy efficiency ratios used.
21. Moreover, a Technical Coordination Group (TCG) was created, consisting of ECLAC, ADEME, one European expert (specialist on ODYSSEE) and the national coordinators. The role of the group was: (a) to develop appropriate methodologies for data collection, surveys and the calculation of indicators; (b) to carry out training; (c) to provide an online service to assist the national teams; (d) to develop a common database, manage it and produce indicators; (e) to draw up a report on regional trends in energy efficiency; and (f) to prepare the technical documents for the workshop. The goal was to conclude with a final seminar organized around four main themes: (a) findings, conclusions and recommendations on data collection, organization and use of the database, as well as the calculation and interpretation of indicators and ratios on energy efficiency; (b) the state of the art in the implementation of a permanent structure for the evaluation and comparison of energy efficiency, including established procedures, limitations and difficulties, institutional, human and financial resources required; (c) terms of reference for cross-country comparisons to be carried out successively; and (d) the operational and financing scheme for the BIEE programme in future years. During the implementation, other countries joined the programme, including the Bolivarian Republic of Venezuela, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama and Peru, bringing the total membership to 19.
22. The following table was compiled by the author from data of project progress reports for 2013 and 2014 (the 2015 report is still missing but the disbursement values are available). It shows the trend in budget allocations and use of resources.

Table 2
Use of project resources

Use of project resources and additional funds						
Object class	Description	Budget / allotment	2013	2014	2015	Total
602	General temporary assistance	24,000.00	23,040.19	477.85	163.87	23,681.91
604	Consultants and expert groups	142,000.00	98,682.01	23,063.11	16,300.00	138,045.12
608	Staff travel	80,000.00	29,103.11	22,354.54	24,859.11	76,316.76
612	Contractual services	10,000.00	6,838.79	3,027.36	...	9,866.15
616	Operating expenses	6,000.00	1,218.59	2,997.95	1,498.11	5,714.65
621	Fellowships, grants and contributions	216,000.00	148,679.29	18,065.36	49,255.35	216,000.00
Total allocation		478,000.00	307,561.98	69,986.17	92,076.44	469,624.59
Extra resources		cash	in kind			
ADEME		110,000.00	110,000.00		220,000.00	
GIZ		60,000.00	60,000.00		120,000.00	
From ECLAC regular budget		30,000.00			30,000.00	
TOTAL		200,000.00	170,000.00		370,000.00	

Source: Prepared by author.

23. Some comments:

- One of the most important decisions made by the management was to invest a significant proportion of its resources in the very first year. This was possible because, according to 2011 documentation, the project had actually started earlier, although this was not mentioned in the basic document sent to the Development Account management unit. Nevertheless, it was a good decision as it allowed the project to immediately gain the trust of the beneficiaries.
- Funding was secured from external donors who were partially involved in the project activities; the final amount is quite impressive as it shows a multiplier of 175% on the initial budget (final figures yet to be confirmed).

2.2. MAIN PROJECT ACTIVITIES

24. Table 3 compares the implemented versus planned activities:

Table 3
Implemented versus planned activities

Main activities	Planned	Implemented
A1. Preparation and publication of a policy guidance and methodology documents	<p>Preparation and publication of a policy guidance and methodology document in order to:</p> <p>(a) Estimate the potential benefits of energy efficiency and innovation policies in the Latin American and Caribbean countries, on the basis of technical and economic feasibility criteria.</p> <p>(b) Recommend best practices, instruments and policies for national energy efficiency and innovation programmes.</p> <p>(c) Propose a statistical methodology for building national databases of indicators to evaluate the results of energy efficiency and innovation policies in Latin America and the Caribbean.</p>	<p>- With the assistance of a select group of experts and consultants, inputs were prepared for the publication of a position paper on innovative mobility strategies and energy efficiency.</p> <p>- The project produced training materials adapted to enhance the experience of beneficiary institutions in the construction of indicators and in the interpretation and analysis of energy efficiency trends (capacity building).</p> <p>- Project consultants prepared the framework for data collection and update of the data template for presentation at the training workshops (<i>Methodological Guidelines for BIEE Data Template</i>), which describes in detail the template from which the energy efficiency indicators were obtained.</p>

Main activities	Planned	Implemented
A2. Technical assistance to selected countries for development of national databases	Technical assistance to policymakers and technical staff in at least four countries in the development of national databases of energy efficiency indicators (see A1 above) and in the design, implementation and evaluation of energy efficiency policies and measures and in seizing opportunities for low-carbon economic growth.	<ul style="list-style-type: none"> - The project led and supported 13 countries in the collection of data sets covering the period 2000 to 2012 and comprising around 80 different energy efficiency indicators. - Thirteen countries finalized their data sets: Argentina, Brazil, Chile, Costa Rica, Dominican Republic, Ecuador, El Salvador, Mexico, Nicaragua, Panama, Paraguay, Plurinational State of Bolivia and Uruguay. - Five reports have been published officially, namely those of Argentina, Brazil, Chile, Nicaragua and Uruguay; others are expected in 2016. - A total of 19 countries participated in the project; six are still working on their national reports. - Special consultants were hired for Uruguay (Ms. Salgado), for Plurinational State of Bolivia (Ms. Crespo), for Paraguay (Mr. Buzarquis), for Costa Rica (Mr. Zúñiga), for El Salvador (Mr. Cortez), Panama (Mr. Correa), Nicaragua (Ms. Membreno Centeno), Guatemala (Mr. Castellanos).
A3. Training and capacity-building workshops	Training and capacity-building workshops in at least four countries of the Latin American and Caribbean region, and one workshop/study tour in Europe to observe how databases of energy efficiency indicators are used and analytical methodologies applied in that region.	<ul style="list-style-type: none"> - In 2013: four capacity-building workshops were conducted (two for South American participants and two for Mesoamericans). - From 20 to 30 May 2013, 11 officials from 11 countries visited various organizations and participated in events in Germany, France and the Netherlands as part of a European technical tour. - In 2014, five capacity-building workshops on methodologies for the development of energy efficiency indicators were held in Colombia, Costa Rica, Dominican Republic and Ecuador. - In 2015, three capacity-building workshops on methodologies for the development of energy efficiency indicators were held (Colombia, Brazil).
A4. Regional seminar/workshop	Organization of the final outreach activity of the project: a regional seminar/workshop to be held (possibly in Santiago) for policymakers, government experts, technical staff and members of the private sector to promote regional collaboration and information exchange on low-carbon economic growth with emphasis on energy efficiency and innovation policies.	<ul style="list-style-type: none"> - In 2014 and 2015 two regional meetings of the BIEE programme were held to follow up on the capacity-building process in the 19 participating countries. - In 2013, 2014 and 2015, ECLAC, with the support of the project, organized the fourth, fifth and sixth regional political dialogues on energy efficiency. - At the regional meeting, a comprehensive regional report on energy efficiency trends in Latin America was presented. - A final international outreach event was organized to present the main results of the project to the international community of experts, international organizations and policymakers.
A5. A web-based regional network of energy efficiency practitioners	Development of a web-based regional network of energy efficiency practitioners in participating countries, to promote regional collaboration, information exchange, and dissemination of project findings and outputs. Once the project has finalized its activities, ECLAC will continue to act, as "community manager" in order to boost the network.	<ul style="list-style-type: none"> Using the United Nations social network system, Unite Connections, the social network BIEENET was launched http://www.ECLAC.org/drni/BIEENET. - An interactive database with maps and graphs was uploaded to the BIEE site and facilitates the analysis of energy efficiency in the region.

2.3. MAIN PROJECT RESULTS

25. Table 4 presents the project results as corroborated in various documents:

Table 4
Project results versus expected results

Expected accomplishments	Specific accomplishments and indicators	Accomplishments
<p>Expected accomplishment 1. Increased knowledge of policymakers and technical staff of the opportunities for low-carbon economic growth through the implementation of energy efficiency and innovation policies</p>	<p>1.1. a. At least three Latin American and Caribbean government institutions have used the analytical outputs, indicator methodologies, and databases developed through the project.</p> <p>Indicators: - Number of Latin American and Caribbean government institutions that have used the tools. - Monitoring of the use of project outputs by agencies and government institutions. - Evidence of effective use of project outputs by at least three agencies or government institutions.</p> <p>1.1. b. Percentage of professionals from governmental and non-governmental institutions who benefited from the training events.</p> <p>Indicator: Number of government institutions participating in events organized to promote energy efficiency policies and low-carbon economic growth through innovation.</p>	<ul style="list-style-type: none"> - The BIEE project brought together participants from 19 countries, starting with six South American countries (Argentina, Brazil, Chile, Paraguay, Plurinational State of Bolivia and Uruguay), followed by eight countries (Central American countries: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama plus Dominican Republic and Mexico,) and later the remaining countries (Bolivarian Republic of Venezuela, Colombia, Cuba, Ecuador and Peru). - All 19 countries participating used the methodology in their national reports on energy efficiency. - Most of the participating countries used the project outputs to coordinate and implement activities relating to their own national energy efficiency development agenda. In most cases, the programme inputs were used to draw up a national energy efficiency plan outlining the policies and savings programmes for the coming years. <p>More than 140 national public officials from these 19 countries participated in the different activities (meetings and workshops) of the project. In the surveys conducted following each event nearly 100% of the participants stated that they had benefited from the training process and would be better able to formulate information-based energy efficiency policies and programmes</p>
<p>Expected accomplishment 2. Strengthened capacity of policymakers and technical staff to design, implement and evaluate energy efficiency policies and measures which promote particularly the dissemination of innovative technologies that contribute low-carbon economic growth</p>	<p>1.2. At least two Latin American and Caribbean countries undertook studies and actions to identify knowledge and technical barriers to the design, implementation and evaluation of national energy efficiency policies and measures.</p> <p>Indicators: Number of Latin American and Caribbean countries that comply with recommendations.</p> <p>The target/goal for this indicator is that at least one country should take concrete steps to study and identify barriers to the promotion of innovative initiatives and technologies that contribute to low-carbon economic growth.</p>	<ul style="list-style-type: none"> - Thirteen countries finalized data sets: Argentina, Bolivia, Brazil, Chile, Costa Rica, Dominican Republic, Ecuador, El Salvador, Mexico, Nicaragua, Panama, Paraguay and Uruguay. - Five reports are officially available: Argentina, Brazil, Chile, Nicaragua and Uruguay; six other drafts of the National Reports are scheduled to be published in 2016. - Several countries (notably, El Salvador, Nicaragua, Paraguay and the Plurinational State of Bolivia) benefited from the project and saw an improvement in the quality of their data. - Presentation of the results of a detailed study on mobility and energy efficiency, which resulted in technical assistance missions in Ecuador and Nicaragua. - According to reports published by beneficiary governments, new validated and innovative tools for the statistical measurement of the impacts of energy efficiency policies and measures have been mastered and are being applied at the sectoral level.

Expected accomplishments	Specific accomplishments and indicators	Accomplishments
<p>Expected accomplishment 3. Increased collaboration of stakeholders and energy authorities at the international, national and regional levels, for the promotion of policies on energy efficiency and innovation to promote low-carbon economic growth.</p>	<p>1.3 (a) At least three governmental energy efficiency initiatives at the national level, or inter-governmental collaboration at the subregional level promoting low-carbon economic growth, have been initiated.</p> <p>Indicators: Evidence of at least three governmental and/or intergovernmental initiatives.</p> <p>1.3 (b) Increased percentage of government's institutions participating in seminars, workshops and training events organized by the project, who acknowledge having benefited from its activities and recommendations to improve the promotion of policies on energy efficiency and innovation to promote low-carbon economic growth.</p> <p>Indicators: Number of government institutions participating in the events.</p>	<p>In 2013, 2014 and 2015, the project organized the fourth, fifth and sixth regional political dialogues on energy efficiency at which one session was devoted to the BIEE project.</p> <p>- Surveys conducted show that 100% of the participants benefited from the experience; these events strengthened technical links with world-class experts and institutions and were a unique opportunity to exchange experiences with other participating public officials, leverage useful conversations and strengthen professional relationships.</p> <p>More than 140 national public officials from the 19 countries participated in the different activities (meetings and workshops) during the course of the project.</p>

Source: Project design and reports.

26. The following comments may be useful:

- Activities and results show that the project was very successful. Four times as many beneficiary countries participated as originally planned, and similarly, the number of meetings and workshops was higher. This may be partly due to the additional resources secured but the main reason is that the project was able to respond to a real demand from the beneficiaries. Many of the interviewees said that the timing was right for promoting energy efficiency as oil prices were high (at around US\$ 130 per barrel) and rising. Another factor was the project's focus on the establishment of energy efficiency indicators, while treating all the other contents of the project document as "consequences of the main actions".
- As a result of this, the project, which started as "supply-driven" (that is, offering the opportunity to receive focused technical assistance), became substantially "demand-driven", thanks to the capacity of the management to identify the real demand, generate the interest of other countries to participate in the project and, at the same time, negotiate the additional resources needed from other donors to respond to this increased demand.
- At the outset, the project targeted six South American countries (Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay). However, after the 2013 Dialogue, a number of other countries applied to take part and it was extended to the Dominican Republic, Mexico and the Central American countries (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama), and subsequently to the remaining countries (Bolivarian Republic of Venezuela, Colombia, Cuba, Ecuador and Peru), bringing the total number of participating countries to 19.
- The remarkable success of the project was not foreseen in the project document: in fact, the indicators for project success were surprisingly low: for result 1, "At least 3 Latin American and Caribbean government institutions have used the analytical outputs"; for result 2 "At least 2 Latin American and Caribbean country undertake studies and actions" with also "at least 1 country that concretely advances in studying and identifying barriers"; and for result 3, "At least 3 governmental energy efficiency initiatives at the national level".

- Furthermore, the expected results fail to mention the regional database (described in the list of activities as “a web-based regional network of energy efficiency practitioners”); the regional database is an important outcome of the project and one of the most credible examples of value added for energy efficiency practitioners.

3. ANALYSIS

3.1. RELEVANCE AND DESIGN

27. Latin American and Caribbean countries must, as a matter of urgency, bring about progress in priority areas such as health, education and infrastructure in order to promote economic development and social welfare. Given the vulnerabilities in the energy sector, it is difficult to see an obvious path to the enhanced social and economic ambitions of Latin American and Caribbean societies without energy programmes. Energy efficiency measures implemented in a strategic manner have the potential to advance societal objectives by transforming the productivity and resilience of national energy systems. Responsible for about 9% of global greenhouse gas emissions, countries in Latin America face increasing challenges due to changing weather patterns and concerns relating to the energy-water-food nexus, which require the implementation of soft and hard resilience measures to adapt to a potential 'new normal'. In addition to adapting to these risks, countries face the challenge of maintaining their high environmental performance as they address societal and economic inequalities. Sustainable energy is not only an opportunity to transform societies and boost economies, but also a necessity - a prerequisite for meeting the escalation in demand and for reducing the country's carbon footprint. Balancing the three core dimensions of energy (security, sustainability and equity) is a strong basis for prosperity and competitiveness of individual countries. Secure energy is critical for fuelling economic growth and social development. Energy must be accessible and affordable at all levels of society, and the impact of energy production and energy use on the environment needs to be minimized in order to combat climate change and maintain environmental quality.
28. Fluctuating oil prices, coupled with a growing awareness of the dangers of global climate change, generated strong interest as well as higher investment in energy efficiency. Total primary energy needs in Latin America and the Caribbean are expected to soar by 63% in 2030 compared with 2006; compared with 2010, regional demand will be 30% higher for oil, about 100% higher for natural gas and about 150% higher for coal. Regional electricity needs are expected to expand by more than 91% by 2040, reaching over 2,970 terawatt hours (TWh). This means the region will need to add nearly 1,500 TWh to meet its electricity requirements. Broadly speaking, this figure is equivalent to eighteen times the electricity generated in 2014 by the largest hydroelectric power station in Latin America and the Caribbean (and the third largest in the world), the Itaipu dam on the border between Paraguay and Brazil. Thus, an unprecedented amount of new energy infrastructure will need to be planned and financed. Electricity demand will primarily be driven by the residential sector, which is expected to use four times as much electricity in 2030 as in 2003, and industry, which is expected to double its electricity consumption. Transportation needs in Latin America and the Caribbean are also growing rapidly, and the International Energy Agency forecasts that transportation fuel use will expand by 70% by 2030 over the 2004 figure. Furthermore, a lack of diversification of energy sources has left Latin America and the Caribbean particularly vulnerable to fluctuating oil prices, supply constraints, and changing weather patterns, which affect large hydropower projects.
29. The Latin American and Caribbean region has the cleanest electricity matrix, with the share of renewable sources accounting for a significant proportion compared with other regions in the world. However, aggregate figures mask wide differences between countries. The Latin America and Caribbean region is no exception. Indeed, the six largest economies account for more than 80% of the region's total electricity generation. For instance, if Brazil's production is not included, the share of renewables falls from 52.4% to 38.2%. Although it still has the cleanest power matrix (even if Brazil is excluded, the region is not as clean as it seems to be).

30. Climate change alleviation efforts, coupled with fluctuating oil prices, made the proposal to work on energy efficiency indicators very relevant in the Latin American environment. Energy efficiency covers a broad range of controversial issues, which must all be addressed, hence the establishment of relevant indicators is a commendable effort and one that is potentially beneficial for all stakeholders.
31. For decades, countries have used the data contained in energy balances as a means of tracking energy consumption by type of energy source and by major sector, and as a way of developing aggregate indicators (such as total energy per capita). The advantage of aggregate indicators is that they are often readily and widely available: thus, they reveal high-level developments in energy consumption in simple terms. However, their usefulness is limited and results can be misleading if such aggregate figures are used inappropriately. For example, it would be incorrect to rank energy performance according to a country's total final consumption per gross domestic product or per capita bearing in mind that this indicator is influenced by many factors (for example, climate, wealth or economic structure). Energy balances do not take into account the various underlying factors that influence each sector, particularly end-use sectors. Recent efforts by European countries to collect more detailed end-use data through specific shared programmes have helped to develop energy efficiency indicators that provide important information for understanding past trends, assessing the potential for energy savings and enhancing energy efficiency policies.
32. Energy indicators are an important tool for analysing interactions between economic and human activity, energy consumption and carbon dioxide (CO₂) emissions. These indicators show policymakers where energy savings can be made. Energy efficiency indicators can be used not only to provide information on past energy consumption trends but also to help model and forecast future energy demand and to determine the extent to which improvements in energy efficiency affect energy intensity in different countries. Changes in activity, economic structure and other exogenous factors that influence the demand for energy must be distinguished from changes in energy intensities (which are a proxy for energy efficiency). A decomposition approach is used to separate and quantify the impact of individual factors of changes in activity, structure and energy intensities on final energy consumption in each sector and country.
33. Energy efficiency enables countries to alleviate the financial burden of oil imports on their balance of trade and also improves energy supply security. As many countries are faced with low economic growth and high unemployment, energy efficiency is seen as the best strategy for improving the competitiveness of industry, by reducing energy costs and stimulating economic growth and job creation. In developing and emerging economies, energy efficiency also makes the best use of existing assets to improve energy access. Efficient electricity consumption has two benefits: it slows down the rise in electricity demand and reduces the investment needed for expansion of the electricity sector. Furthermore, in cases where oil prices are subsidized, price volatility will have less of an impact on the balance of trade and on subsidies.
34. The relevance of energy efficiency in Latin America has been stressed in many documents as well as in political decisions. ECLAC, as provider of technical assistance in the economic area for Latin American countries, correctly identified energy efficiency and especially the indicators of energy efficiency as an important policy issue for the beneficiary countries. According to the International Energy Agency (IEA) (see *World Energy Outlook. 2012*), energy efficiency policies currently in effect or planned would take advantage of just a third of all economically viable energy efficiency measures. Thus, there is ample room for improvement and new opportunities. According to IEA, about 80% of potential energy savings would result from measures taken by energy consumers in end-use sectors, with much of the remaining 20% attributable to fuel switching and supply-side efficiency measures.
35. Since 2005, interest in promoting energy efficiency has gained momentum throughout Latin America and the Caribbean. The escalation in oil prices between 2004 and 2014, together with a greater sensitivity to environmental issues, particularly climate change (namely, the belief that climate

change is a reality and that one of the most effective ways to contribute to the mitigation of its effects is to apply cost-effective energy efficiency policies) –heightened interest in energy efficiency in the region. Energy efficiency programmes, mechanisms and policies were launched. In order to be sustainable over time, policies, programmes and mechanisms must be rational and well-coordinated. Strategic lines, actions, instruments and measures must be defined and carefully assessed to determine their feasibility and effectiveness. As these conditions were not always met, the policies sometimes failed to produce substantial results, hence the decision by ECLAC to develop specific actions in favour of energy efficiency.

36. An initial report on energy efficiency in 26 Latin American countries, produced by ECLAC in 2009, revealed differences in the relevant regulatory frameworks. Many countries have since sought to create (or strengthen) national energy efficiency programmes, underpinned by the necessary legal and regulatory support. Most of the countries faced major financial constraints. The key actors overseeing public sector energy efficiency activities, projects and programmes are ministries, national commissions and energy management secretariats and their visibility and influence vary from one country to the next. The involvement of public and private actors depends on four main factors: (a) political support from government; (b) continuity of efforts and institutional structures; (c) access to funding; and (d) capacity for promoting and providing information on energy efficiency measures. In most cases, funding for energy efficiency programmes comes from the national budget and all countries, except those with active energy efficiency policies, face serious limitations in this regard.
37. The above-mentioned report was prepared for the regional intergovernmental meeting “Energy Efficiency in Latin America and the Caribbean”, which was held in September 2009 with support from the German Agency for International Cooperation (GIZ). A few months later, in collaboration with the Caribbean Development Bank, ECLAC convened a meeting entitled “Promoting Energy Efficiency in the Caribbean” for May 2010. The meeting had its genesis in the convening of consultations in 2009 with Latin American and Caribbean countries and members of the Latin American Energy Agency. It resulted in a report calling for greater awareness of energy efficiency among Caribbean countries, so as to provide the impetus for the development of a regional strategy. As in a number of other ECLAC documents, attention was drawn to certain institutional weaknesses in some Latin American and Caribbean countries. Efforts to support the region’s institutions, face the constraints due to energy market fluctuations and promote actions to reduce the effect of greenhouse gases appear to be perfectly compatible with the ECLAC mandate to foster a more effective participation by Latin American and Caribbean countries in the reduction of CO₂ emissions. This entails initiatives such as studies, cooperation programmes, technical assistance, production of ad hoc documentation, and training.
38. Since 2009 there has been an increase in the funds available for energy efficiency activities, in some cases encouraged by the need to meet climate change objectives. One lesson that does emerge clearly from the region’s experience is that the existence of energy efficiency legislation does not in itself guarantee a rational reduction in energy demand. This will not occur unless energy efficiency activities, projects and programmes in line with national realities are developed and systematically implemented. The State has difficulty monitoring —and, where the law provides, sanctioning— behaviours that do not conform to legal requirements. Economic and cultural barriers in Latin American and Caribbean societies hinder the full enforcement of energy efficiency standards, while a lack of human resources (due to budgetary constraints) means that monitoring and enforcement systems are inefficient.
39. Many prospective studies based on different scenarios have been carried out in Latin America and the Caribbean to estimate the potential for improving energy efficiency. This potential is determined by the technology mix, national circumstances, knowledge of available resources, estimated socio-economic trends, conditions linked to the global context, and assumptions about the progress of access equity, to name a few. The potential for energy efficiency improvements is dynamic, and various estimates highlight the importance of improving energy efficiency in the region. During project implementation, a

- radical shift in the energy market become apparent. At the start, oil prices stood at around US\$ 130 per barrel following an upward trend over the preceding years. This accounts for the immediate success of the ECLAC proposal. Following the adoption of the Paris Agreement on climate change, the project objectives and expected results not only remained relevant but actually gained priority.
40. The development of a new instrument to gauge the efficacy and impact of different energy efficiency policies is therefore fully compatible with the Commission's mandate. Indeed, it appears as one of the priorities for the biennium 2010-2011 and again for the following years, where the close relationship between energy efficiency and climate change was clearly stressed. The objective of the organization was clear: to strengthen the capacity of Latin American and Caribbean national governments to establish a path to low-carbon economic growth through energy efficiency policies and measures, with particular attention to innovation policies.
 41. The project was approved in the 8th tranche under the code 1213AD. The project objective is in total agreement with the priorities outlined in the Strategic Framework established for the period 2012-2013 (subprogramme 9, Natural Resources and Infrastructure) by the Natural Resources and Infrastructure Division of ECLAC. At the same time, the project objectives support actions provided for in the framework of the internationally agreed development goals, Millennium Development Goal 7 and major United Nations Conventions, such as the conferences of the Parties to the United Nations Framework Convention on Climate Change and the United Nations Conference on Sustainable Development (Rio+20). Collaboration with other ECLAC divisions was envisaged in the project document and successfully implemented. The project is closely related to a former Development Account project managed by the same unit "Strengthening national capacities to design and implement sustainable energy policies for the production and use of bio-fuels in Latin America and the Caribbean". This earlier Development Account project also focused on institution-building and capacity-building of national energy authorities for policy development and use of quantitative statistical tools (LEAP model) for the planning of energy policies. The new project complied with the criteria established and takes into account the capacity of the entity responsible for executing the project activities.
 42. However, a basic difference in this project should be mentioned. The Commission's actions were not formally requested by the governments but were articulated as an offer to beneficiary countries to participate in a technical assistance programme ("supply-driven" as opposed to the standard "demand-driven" approach typical of the institution). It means that the offer was distributed to the potential beneficiaries to find "buyers" clearly interested and committed to the future actions. Stakeholders in the region would be provided with analytical studies and systematized information and data on the monitoring of energy efficiency policies in the context of the Millennium Development Goals. Priority would be given to the provision of technical assistance services to countries, with particular emphasis on the economic and social impacts of energy sustainability, and regulation of public utility and infrastructure services. Support would be given to discussion forums to disseminate new policy options and the functioning of knowledge networks for sharing best practices and lessons learned. The project was designed primarily for government authorities and officials of countries in the region, especially those concerned with management of energy issues.
 43. However, neither the project document presented to the Department of Economic and Social Affairs nor those available at the Development Account site mention either of the two main issues: (a) that a project called BIEE designed to define and build energy efficiency indicators for Latin American countries based on the European experience had been in progress since 2011; or (b) that substantial resources were received from the German and French cooperation agencies. This probably would not have changed the funding capacity, the structure or the modalities of implementation, but the definition of the expected results and main indicators might have been different.
 44. Former ECLAC studies and the project document recognize the realities and challenges facing the Latin American and Caribbean region and establish a framework of requirements and opportunities

- in the area of energy efficiency. The main objective of applying energy efficiency policy measures is to create the necessary conditions for speeding up the development and deployment of efficient equipment and services. Nevertheless, energy efficiency is an important instrument for development and social improvement. But all policies and measures need to be monitored in order to assess the impact and avoid errors: this confirms the validity of establishing (or defining) indicators as an instrument. Most of the countries of the region are actively engaged in research on new instruments (institutions, laws, regulations or policies. Indicators are tools that can be applied to any situation.
45. The project document makes reference to the studies and reports produced by ECLAC in recent years as major sources of knowledge on the situation of energy efficiency in the Latin American and Caribbean region.. Energy efficiency policies had received growing attention in Latin America and the Caribbean, reflecting the large, untapped potential that exists. Many countries in the region had incorporated energy efficiency goals into the public policy agenda (understood as the set of actions, laws, institutions, and economic and regulatory instruments needed to implement programmes and plans). Past experience with energy efficiency measures that had been carried out in the region allowed the project to highlight the major issues, and consequently focus on the innovative approach proposed. However, given the abundance of data and studies on the topic, the justification for the project could have been articulated more convincingly.
 46. The capacity assessment undertaken in the 2009 ECLAC report identified the development of national energy efficiency indicators and their associated statistical base as a key element in institution-building in Latin America and the Caribbean and in enabling governments to implement effective energy efficiency policies. Stakeholder capacity (public, private, academic and non-governmental associations) would also be strengthened, enabling these entities to assess and address the different needs of men and women in the area of energy efficiency and renewable sources. Lessons learned from the success or failure of past policy and programmes in the region can help to overcome barriers and explore opportunities for increased action on energy efficiency. Quantified short-, medium- and long-term targets can also help to accelerate the adoption of energy efficiency measures. The evaluation of energy efficiency programmes has typically not been prioritized in the region and improved data collection will help to draw firmer conclusions about the success of national programmes.
 47. The project's theory of change was based on the assumption that the design and implementation of indicators would enable governments in the region to measure the effectiveness of public policies on energy efficiency, with particular attention to policies on innovation, thereby promoting low-carbon economic growth. Emphasis was placed on strengthening the capacity of policymakers and technical staff in implementing national policies in this field. By constructing a statistical platform, countries would be able to establish their current baseline and monitor their advance along a low-carbon growth path. The project objectives were also intended to be achieved through closer regional cooperation in the development of energy efficiency policies, indicators and databases and the exchange of information on opportunities for capitalizing on economic benefits from gains in efficient energy use and technological innovation. The institutional framework should identify the authority responsible for delivering the outcomes along with the required instruments, resources and capacities. Increased cooperation and coordination between different ministries would be required to increase the effectiveness of energy efficiency policies and programmes. Appropriate economic and financial management and support would be needed to sustain activities which depend on international funding, in order to avoid a "stop-and-go" on policies.
 48. The project is suitable in cases where governments and institutions face various constraints and are not in a position to fully proceed towards energy efficiency. For example, without adequate testing laboratories, efforts to establish standards and labelling programmes for equipment and appliances are thwarted. The transport sector is identified as another high-priority sector in the region where massive opportunities exist for increased efficiency. Lack of financing for energy efficiency improvement and innovation is an example of the common barriers shared by a number

of Latin American and Caribbean economies. Energy Service Companies (ESCOs) are not well-developed in the region, and generalized subsidies reduce the benefits of energy efficiency over the long term while sending the wrong signal to consumers.

49. The ECLAC Division of Natural Resources and Infrastructure in Santiago was responsible for overall coordination and implementation of project activities in the region. The Division was tasked with the substantive implementation of the project activities in close collaboration with the national authorities responsible for development of energy efficiency policies and statistics, and low-carbon policy initiatives in participating countries. To increase the impact of the capacity-building and technical assistance activities, ECLAC invited authorities, policymakers, policy practitioners and academics, as well as civil society and private sector representatives, to join a regional network. Identifying project stakeholders as “project clients” was practical and judicious.
50. The presence of European institutions both as suppliers of advanced experience and as providers of additional resources was a strong advantage. ECLAC and GIZ have a long-standing partnership, based on a strategic agreement on priority areas for action. The other partner, ADEME, is an institution within the French Cooperation Agency dedicated to transferring know-how and providing technical assistance on energy issues to developing countries. The European experience in energy efficiency indicators is based on two major programmes: ODYSSEE and MURE. The ODYSSEE database on energy efficiency indicators was set up to facilitate monitoring and evaluation of realized energy efficiency improvements and related energy savings. The database, which covers the 27 European Union countries, together with Croatia and Norway, encompasses various types of indicator. The MURE database provides an overview of the most important energy efficiency policy measures adopted by European Union member States, along with Norway and Croatia. It is structured by final energy consumption sectors (household, tertiary, industry, transport) and includes a general cross-cutting section.
51. The project consists of four main components: (a) To develop a database to evaluate the results of energy efficiency and innovation policies in Latin America and the Caribbean, and to evaluate the impact of alternative public policies on income, employment and prices on carbon emissions; (b) To estimate the “attainable” potential benefits of energy efficiency and innovation policies depending on technical and economic feasibility criteria; (c) To prepare and publish a document setting out the main findings of the project; (d) To develop jointly the databases referred to in activity (a) above. The original budget was intended to cover the main activities. Substantial support was also received from other external donors already active in the project and who, ultimately, along with funds from the ECLAC general budget, contributed US\$ 370,000 over and above the initial project allocation of US\$ 478,000, resulting in overall resources 175% times the original estimate. Ideally, the total budget allocation, including additional resources, should be estimated as early as possible. However, thanks to the external donors, the demand generated by the additional participants was readily met.

3.2. EFFICIENCY

52. As mentioned already, the remarkable success of the project was not foreseen in the basic project document where the indicators for project success were very low in terms of participation and outputs. It is not easy to understand why the aims of the project were set so low: the problem analysis was correct and the activities actually began before the official project was launched, so there was already some knowledge of the demand coming from potential beneficiaries. The point is that, based on the official quantitative objectives, the resources as well as the planned activities appear excessive.
53. The main beneficiaries of the project were national offices in charge of energy efficiency policies within the ministries or departments of energy in the 19 participant countries. Other ministries, statistical offices and other national institutions that are also involved in the process of production and compilation of basic information were also incorporated into the project, in particular, the ministries of planning, economic development, transport and social welfare. The beneficiary institution was

responsible for selection of the participants from each country. The lists of participants and the questionnaire suggest that the selection facilitated the transfer of knowledge to technically well-prepared young officials, working in the right institutional setting and with the competence to assimilate the new experiences.

54. From the outset, the management wisely decided to invest a substantial amount of resources in the most important activities listed in the project document: four technical workshops (Montevideo, Uruguay, April 2013; Mexico City, April 2013; and Panama City, September 2013) and a European study tour organized for officials from 11 Latin American countries (Argentina, Brazil, Chile, Costa Rica, El Salvador, Guatemala, Mexico, Panama, Paraguay, Plurinational State of Bolivia and Uruguay). At the same time, the European consultants prepared the template for the collection of data and launched their programme of assistance in the first countries in the MERCOSUR area, which had already received some assistance before the official start of the project. As much as 65% of the total budget was disbursed during the first year of implementation. This decision was important for two reasons: (a) it demonstrated to a wider public of potential beneficiary countries the opportunities offered by the project; and (b) it proved that the project had the capacity to deliver, thereby building trust and promoting commitment on the part of the beneficiaries.
55. The other constructive decision concerned the involvement of other dedicated donors: besides the choice of ADEME and ENERDATA (the technical arm for energy of the French Cooperation and the technical institution in charge of ODISSEE and MURE programmes in Europe, respectively) as the main technical sponsors, the managers, capitalizing on the long-term relationship with GIZ —and its former participation in funding the first phases of the BIEE project, were able to consolidate their presence in the enlarged project activities. This capacity of the management to convince and involve extra sponsors is surely one of the reasons for the success of the project: in fact, given the increasing demand for participation from beneficiary countries, the management secured additional funding from this source. It was thus possible to increase the number of participating countries without stress for the project management and to gain visibility and status for the organization. The substantial increase in the budget enabled the management not only to respond positively to the additional demand but also to support beneficiary countries that were not in a position to produce their national reports unaided.
56. The problem analysis revealed a weakness in the regional institutions responsible for energy efficiency policies and monitoring. The first step was therefore to put together a credible and focused training package. However, a further decision was necessary. According to the project document, the main objective was to strengthen the capacity of Latin American and Caribbean national governments in the design and implementation of public policies on energy efficiency. This called for the development of energy efficiency indicators and statistical databases as a complementary tool. But from the start, the project managers focused on the indicators: this was a wiser and more productive decision. Energy efficiency policies can be developed in accordance with a broad set of tools and regulations, as they depend on the context, history, consumer behaviour, budgetary constraints and imbalances in external accounts. It could therefore be difficult to find an approach valid for all beneficiary countries. However, given the need in all cases for an analysis of the current situation, and for monitoring and assessing the impact of policies, the construction of indicators and the analysis of their data can be considered as the unifying approach to energy efficiency solutions that would appeal to and rally all stakeholders while at the same time increasing effectiveness, thanks to the use of standard packages for training and assistance. This is in effect how the project activities were developed, that is through the repetition of a set of standard training workshops and meetings where the contents and the modalities were almost the same, notwithstanding some modifications after the first sessions and marginal adaptations to take account of the different contexts.

Box 1

List of events organized by the project

- Tercer Taller Técnico sobre Indicadores de Eficiencia Energética BIEE/América del Sur, Montevideo, 8-9 April 2013
- Primer Taller Técnico sobre Indicadores de Eficiencia Energética BIEE/Mesoamérica, Mexico City, 10-11 April 2013
- Reunión Técnica de Trabajo del Programa BIEE Sudamérica/Mesoamérica, Panama City, 24-25 September 2013
- Reunión Técnica de Trabajo del Programa BIEE, San José 24-26 February 2014
- Meeting to present the Base Indicators for Energy Efficiency (BIEE) programme for countries of the English-speaking Caribbean, Aruba, 27 February 2014
- Reunión Técnica de Trabajo del Programa BIEE para las Repúblicas de Colombia y Ecuador, Quito, 8 May 2014, Taller Técnico, Cartagena de Indias, Colombia, 11 June 2014
- Presentación oficial del Programa BIEE y Taller de capacitación sobre Indicadores de Eficiencia Energética, Ministerio del Poder Popular de la Energía Eléctrica, Caracas, República Bolivariana de Venezuela, 28 August 2014
- Taller Trabajo Técnico del Programa BIEE, Santo Domingo, República Dominicana, Santo Domingo, 9-10 September 2014
- Taller de Trabajo Técnico del Programa BIEE, Bogota, Colombia, 24-25 March 2015
- Taller de Capacitación del Programa BIEE (Phase 2), Rio de Janeiro, Brazil, 27 August 2015
- Taller de Capacitación del Programa BIEE (Phase 1), Rio de Janeiro, Brazil, 28 August 2015

57. The training materials adapted to the Latin American context were produced by the technical coordinator (the European consulting company, ENERDATA) and improved during the course of the project. Eleven training sessions were organized, with the main energy efficiency indicators presented by sector. The training was designed for officials who had little knowledge of energy efficiency indicators or who needed to expand their expertise in the field. All the sessions were in English and PowerPoint presentations were used to provide key performance indicators relevant for the Latin American region, illustrated by case studies and with emphasis on definitions and concepts. The training sessions also enabled the teams to strengthen their capacity, analysis and interpretation of indicator trends. In particular, countries' representatives were asked to prepare several presentations based on the results obtained by their countries with the technical assistance.
58. As a collaborative tool and to ensure substantive follow-up and project effectiveness, a social network (BIEENET) was set up at the beginning of the project, based on the United Nations social network system, Unite Connections. The Information and Communications Technologies Section of ECLAC had suggested using Unite Connections as the tool for development of the network. However, although the site served as a centralized repository for all the project documents, it did not result in an increased collaborative work process. This tool offered a rich set of features for team collaboration, but after initial efforts, the participants opted to continue using standard e-mail. In fact, many partners seemed to be unfamiliar with this type of instrument and technological shortcomings and cultural differences became an obstacle to successful collaboration.
59. The collection of data required for the calculation of indicators began with the creation of an Excel template, adapted from the data template, which all European Union member countries fill in to update the ODYSSEE database. The adaptation involved adding the energy sector, simplifying data on space heating, adding industrial activities specific to some Latin American countries (e.g., in mining) and, lastly, providing further details on the agricultural sector. The data template, which was presented and explained at the workshops, consists of seven main sheets corresponding each to a sector: macro (for general macroeconomic and energy balance data), energy, industry, households, services, transport and agriculture. Some participants lamented that the presentation was only in English (although each entry on the template contained a Spanish translation), but, in general, the questionnaires completed at the end of each session showed a genuine appreciation for the quality of the teaching.

60. The main outputs of the project can be easily identified in the national reports and the regional database. The main problems during the production of the national reports were (a) some countries did not have the internal capacity in terms of human resources to write the report; (b) in a number of countries, the data were not immediately available owing to institutional arrangements between different organizations; (c) in almost all countries, energy consumption data were generally unavailable for the lowest economic actors (households and enterprises). With reference to point (a) as a condition for joining the project, the countries had had to commit to a contribution in kind, consisting of man-hours of its officials. However, in some cases, local resources were so limited that the whole process was held back. Therefore, ECLAC offered the support of external local consultants for some countries (using direct project resources or those offered by the external donors). Given that the local beneficiary institution had the primary responsibility to proceed with the data collection process and drafting of the national reports, in some cases there were delays, due partly to the limited local resources and partly to difficult inter-institutional relations. In almost all countries, the collection of energy efficiency data was a first: which meant that there was no immediate knowledge of where the data were and no established procedure for obtaining them, even after the availability was assured. In fact, some officials claimed that the institution in charge of energy efficiency did not have the mandate to collect statistical or economic information from other sources; consequently, they needed to make specific arrangements with all sources, which demanded time and commitment. This was one of the reasons for the delay observed in many countries. The third problem was the unavailability of specific data, especially on energy consumption at the household or enterprise level, as these had never been collected, not even by the official statistical institution. Thus, in many cases, thanks to the support of the European consultants, estimates were made, using the methodology already established in Europe for similar cases.
61. One of the unexpected outcomes of the data collection process is the increased awareness that the collection of specific data on energy is essential for efficient energy management in the country. It is to be hoped that this new awareness will give rise to the establishment of a new rigorous statistical procedure. The Commission's support could produce best practices in this area on the basis of past experience and the lessons learned from other countries. Indeed, the systematic collection of specific data on energy is a prerequisite for sustainability and should be pursued as a matter of priority.

3.3. EFFECTIVENESS

62. Most of the events were aptly termed "focused training" and as such were attended by only a small number of participants mainly officials from the institutions in charge of energy efficiency and who were qualified to benefit fully from the opportunity to learn new analytical tools. Nevertheless, as pointed out by the European consultants, the success in transferring know-how depended to a great extent on each national team. Brazil sent qualified people eager to learn. The Paraguay team was equally enthusiastic but was starting from scratch and faced greater challenges. Other countries showed less real interest: this probably will mean that the consolidation process will not be the same everywhere and ECLAC should take pains to provide a careful follow-up. In general, local officers were the main actors in the production of national reports: this, along with continuous support from the European Consultants helped to consolidate their know-how. All the interviewees said that it was this support that enabled them to complete the report.
63. The production of national reports is the first signal that national institutions' capacity to deal with energy efficiency indicators has improved: five reports have already been published and distributed, seven will soon be finalized while the others are still in progress. It is too soon to expect any further analyses and documents on country energy efficiency. Consolidating and institutionalizing the process would be more relevant as a first step towards mastering the new tools now available.

Table 5
Participants' comments
(Based on questionnaires completed at the end of the events)

Event	Overall assessment (% answers)			Content (% answers)		
	Excellent	Good	Satisfactory	Excellent	Good	Satisfactory
Chile 24/9/2013	57	43		43	57	
Chile 25/9/2013	78	22		89	11	
Visit to France	67	33		42	58	
Dominican Republic 9/9/2014	75	25		75	25	
Colombia 11/6/2014	72	48		72	48	
Colombia 12-13/6/2014	87	13		80	20	
Costa Rica 26/2/2014	87	13		75	25	
Colombia 8/5/2014	100	0		75	25	
Venezuela (Bol. Rep. of) 28/8/2014	36	64		43	50	7
Brazil 26/8/2015	56	44		61	39	
Brazil 27/8/2015	50	45	5	60	35	5
Brazil 28/8/2015	29	71		43	57	
Colombia 24/3/2015	40	60		60	40	
Dialogue 2012	59	39	2	50	46	4
Dialogue 2013	43	57		48	43	9
Dialogue 2014	58	36	6	36	56	6
Total	66	32	2	58	39	3

64. The most effective mode of knowledge transfer was through the national officials' participation in the preparation of the national reports. This was confirmed by all those who were interviewed. However, because of understaffing, experts and national consultants were sometimes hired to provide technical assistance, improve data collection and to identify and analyse energy efficiency indicators obtained from the database. In some cases, they also helped to write the national reports. Designed to avoid delays, this arrangement was used in eight countries where there were not sufficient competent local staff to produce the report: Costa Rica, El Salvador, Guatemala, Nicaragua, Panama, Paraguay, the Plurinational State of Bolivia and Uruguay. Since many countries have complained about the lack of resources, the new expertise may not be quickly internalized in the institutions. According to some interviewees, while interest in energy indicators is high, the local institution does not always have a full mandate for the necessary research and consequently the allocation of specific resources may be difficult. This means that, even though all country officials interviewed confirmed their interest in continuing the exercise and updating the national database, only a few countries may succeed in doing so.

Table 6
Participation in project events

Description	Number	Percentage
Beneficiary countries	145	68.5
ECLAC	20	9.5
International donors	26	12.5
International organizations	20	9.5
Total	211	100

65. Two sources were used to determine the extent to which the project outputs were appreciated: the questionnaires completed at the end of each event and the responses to the final questionnaire distributed during this evaluation. These responses show a substantial and consistently positive reception of the project's offer and its contents: on average two thirds of the participants rated the events as excellent. With reference to the contents, the rating is marginally lower: the only point to remark is that in the case of the workshops in those country that are more advanced in energy

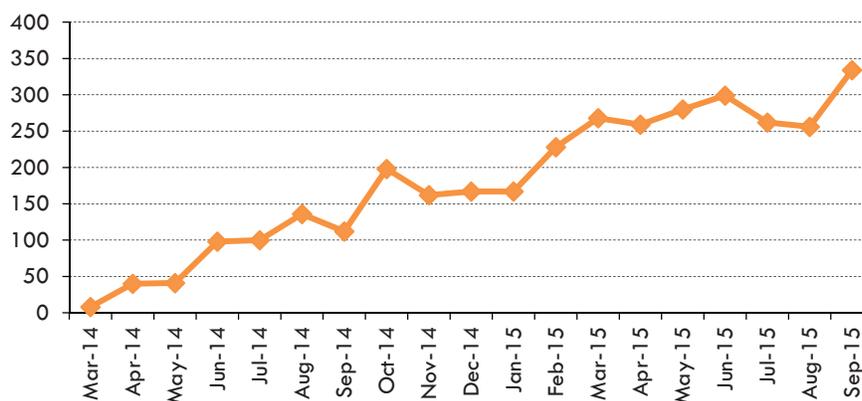
efficiency (i.e., the Bolivarian Republic of Venezuela and Brazil) or at the “dialogues”, there is a higher percentage of people who state that they are slightly less satisfied. This could be interpreted as a suggestion that the contents should be adapted to suit a better qualified public, something that the management could contemplate in the future. The responses to the evaluation questionnaire confirm the appreciation although the caution already expressed in terms of validity should be taken into account. From the interviews and the responses to the questionnaire, it emerges clearly that the beneficiaries are conscious of the fact that extensive data collection on energy consumption as the statistical base for building energy efficiency indicators is a decisive step towards real energy efficiency. Moreover, the project gave an impetus for a new definition of inter-institutional relations with a view to reorganizing the data collection process in a number of countries.

Table 7
Responses in the questionnaire in relation to expectations

Did the project activities and events in which you participated live up to your expectations?		
Response options	Percentage	Number
Yes	86.8	33
No	13.2	5

66. Knowledge of the documents produced by the project is quite uneven (although all participants in the project events would have been expected to know about them). Appreciation for the contents is quite high as was the acknowledgement of the potential impact on national policies. The reports do not appear to have been widely distributed, but the assessment should not be completed until the remaining documents are published (to date, only five reports have been officially published). The statements collected during the project events —at which each beneficiary country was requested to make a presentation on its activities and achievements— attest to the relevance of the instrument especially insofar as it successfully filled the voids in former rules and regulations and improved the future structure and management of new energy efficiency policies. The country presentations requested by project management for workshops were useful, encouraging countries to implement activities while fostering competition between the different teams. This was supposed to be an opportunity to develop some south-south cooperation and exchange. However, it should be noted that each country has a different way of working as well as different levels of commitment and institutional and technical capacities so the cooperation was not immediate: more efforts should be developed in the future to increase such exchanges. The reports contain a wealth of new information and should be made available to the wider population, an option which so far does not appear to be generalized.

Figure 1
Hits on the BIEE site



67. Visits to the regional database on energy efficiency developed by the project increased steadily since its inception with the number of hits stabilizing at around 300 per month¹ one year after the launch. Admittedly, the overall number is not great but this is a very specialized topic which interests and affects only the officials and policymakers directly involved in energy management. The number of hits is expected to increase in the future, provided ECLAC is more active in indexing contents and data. The fact that 73% are new visits could imply that the site has greater visibility but at least one more year should pass before any conclusions are drawn. Nevertheless, three points can be stressed: (a) almost 50% of the hits come from the three countries that are most advanced in energy efficiency management; the other countries may be expected to follow suit but this will happen only after the awareness is better consolidated —something that is still an ongoing process; (b) the fact that most visitors looked at just over one page shows that the database is only accessed in a cursory manner: site managers may need to make adjustments to encourage more thorough visits; (c) the appeal of the regional database is mostly dependent on its capacity to offer up-to-date figures and data; this clearly depends on the capacity of each country to update its national database, hence the need for consolidation and continuity. The questionnaire reveals an even less positive picture: only 50% of participants actually visited the site and only fleetingly (and to these should be added those who did not respond to the questionnaire). Again, it appears that there is a need to increase the appeal of the site.
68. It is difficult to see any change in the values of indicators as the energy efficiency programmes have been implemented only recently in some countries, no baseline analysis exists and no impact can yet be discerned in terms of trends in energy efficiency indicators. Clearly, the launch of the BIEE project in 2011 was an important step: it is probably too soon to see any real consequences in terms of policies and strategies, but the new instrument is widely recognized and will eventually have the desired impact. Three beneficiary countries (Costa Rica, the Dominican Republic and the Plurinational State of Bolivia) are planning to introduce new legislation or amendments and there is a common agreement that the existence of energy efficiency indicators will offer new strength to the policies and to actual implementation.
69. If and when this new awareness produces effective results-based energy management policies depends mostly on each national environment: for the time being, the variety of institutional set-ups and the availability of resources appear to simply confirm that the most advanced countries will continue while for others will need additional support. The capacity to embed the new instrument depends on the national context (the political will and the existence of institutions, personnel and resources).
70. Another critical constraint is the reluctance to use indicators; politicians are notoriously averse to identifying specific quantified objectives so that no blame can be attributed to them in case of non-achievement. The use of quantified indicators for energy could carry the same risks: having such an effective instrument would be excellent, but there could be some reluctance to apply it in the real world.

3.4. SUSTAINABILITY

71. The project's undeniable success in terms of participation and of appreciation of the contents and know-how is difficult to live up to when it comes to consolidation. Individual countries appear to need customized approaches, whereas one of the added values of the methodology is its standard package, which implies the capacity to consolidate the measures and to offer opportunities for comparisons and analysis of best practices. According to the interviewees, the collection of data on energy efficiency following the methodology has not been completely "institutionalized" in the beneficiary countries with the exception of Brazil, Chile and Mexico. This means that contacting the sources of information (which, in many cases, delayed the production of the national reports) will

¹ For purposes of comparison, the ODYSSEE site receives approximately 5,000 hits per month – but has existed for more than 20 years and boasts 27 full-fledged members.

- remain a problem. Specialized customized assistance is needed in each country to define the place, the tasks and the procedures in some sort of “institutionalized” form as a condition for continuation of the practice. Failing this, sustainability will most probably be low and the same problems will recur and, without the support of an external donor, the exercise will be extremely difficult. Unless updates are received regularly from national reports, the quality and appeal of the regional database will be undermined and the long-term usefulness of the tool will be impaired.
72. By including energy targets in the Sustainable Development Goals, the United Nations seeks to spur investment in the three main objectives of energy policies: energy access, energy efficiency and renewable energy. A framework for global monitoring and reporting will provide transparency to the commitment process and promote sharing of best practices. It will also increase awareness of the wide range of actions underway, and the opportunities for synergies, partnerships, and coordination. It is true that high oil costs had sparked a new wave of interest in energy efficiency, resulting in the establishment of special institutions and the drafting of new laws. However, as many interviewees remarked, the technical capacity to formulate sound energy efficiency measures, based on the selection of basic data and qualified indicators for monitoring progress and the impact of policies was and still is minimal. In most countries, the activities, projects and programmes relating to the promotion and development of energy efficiency are public sector initiatives, under the direction of ministries, commissions, departments or national organizations. Most countries have shown clear improvements over the past 10 years, albeit to varying degrees. Each of the Latin American and Caribbean countries has a unique regulatory framework for energy efficiency, which rules out the establishment of simple “common denominators” for the region. However, most countries tend to establish national energy efficiency programmes (or to strengthen existing ones), backed by the legal and regulatory support necessary to uphold government policy on energy efficiency.
73. The new approach presented by the project fitted in well with ongoing processes, as the increased demands to participate from beneficiary countries shows. Despite persistent differences between countries in terms of commitments and interests, there is no doubt that the project methodology was well received. The fact that all the countries produced the national report or are finalizing it attests to the need for energy indicators. However, the same differences have an impact in terms of the capacity to transform the acquired know-how into a standard performance. Countries that lack resources and personnel and whose institutions are weak require additional support. At present, confirmed evidence of a continuous strengthening process is not available for all countries. The difference stems from the local context. As one interviewee said: “Local situations are very different: in Costa Rica and Panama the institutions are consolidated, in Nicaragua and the Dominican Republic less so”. As a result, it is uncertain whether all countries will be in a position to continue the process and specific analyses and probably an extension of the technical support will be needed. The interest from national institutions depends on local history and constraints. It is well known that Brazil and Mexico are at the forefront of energy efficiency policy in the region. Innovative efficiency programmes have transformed Mexico into a leader in energy efficiency investment in Latin America. Both countries have consolidated capacities and confirmed their appreciation for the project and their willingness to continue.
74. Costa Rica, Mexico and Paraguay are already using the new know-how. Mexico is a partner in the Organization for Economic Cooperation and Development (OECD), which makes it obligatory to provide data on energy consumption and efficiency. In 2013, 2014 and 2015, Mexico, with support from IEA, was able to produce an acceptable set of data, albeit not fully compliant with requirements. Now, thanks to BIEE, it will be able to supply the right information. Moreover, Mexico will accede to IEA officially, a procedure which calls for the same type of information. Costa Rica and Paraguay are debating new energy efficiency legislation and the experience from energy efficiency indicators will enable them to include more accurate quantitative objectives while at the same time supporting monitoring.

75. The risk that the experience remains a one-off effort is real (at least for some countries). Institutional problems must be addressed as energy efficiency issues need to be debated at multiple levels; data collection also calls for inter-institutional collaboration as sources of data are multiple and some agencies are not keen to collaborate in the absence of a formal mandate. Consolidation needs to be assessed at two levels: at the country level and at the regional level. The project was a resounding success probably because the timing was right, with oil prices hovering at the time at around US\$ 130 per barrel and rising. Energy efficiency became an option for lowering costs without the need for major investments. The proposal offered new ideas for energy efficiency management and the availability of energy indicators to gauge the effectiveness and impact of different energy policies and regulations was readily acknowledged as a decisive improvement. Consequently, interest in participating in the project increased and produced the results that gave credibility and visibility to the project and ECLAC.
76. Each participating country made an effort to start the collection of data and then produce the national report. With the help of the European consultants, regional data were consolidated and the regional report was published on the project site. All the country representatives consulted confirmed their interest in continuing with the exercise and updating the national database, but cited lack of resources or a difficult institutional set-up as a major constraint. Only those countries with more substantial experience in energy efficiency management will find it easy to continue. The others, in the absence of a convincing “exit strategy”, seem to depend on continued support from ECLAC (which they requested in many forms) or other international donors. As already stated, the difference in local conditions affects the capacity to continue the practice. The example of labelling is a typical feature of the situation. Although levels of progress vary, all countries have taken action to implement the energy labelling of electrical and gas equipment. However, a major difficulty in implementing labelling programmes has been the lack of adequate testing laboratories. This type of problem (lack of qualified personnel and insufficient resources) could hamper the continuation of the practice. Interviewees have also stressed the need to adapt the template to the local context. This may be acceptable as a first step but, subsequently, specific templates will be needed in line with the characteristics and the features of the local economy and the local consumer behaviour. It is also important to increase the appeal of the practice for local stakeholders and consequently, to have more access to the necessary resources.
77. At the regional level, ECLAC is the main player. The need for the regional database is well acknowledged by all stakeholders: it should be a central instrument for benchmarking policies at the national sectoral level, for comparing results, diffusing best practices and transmitting lessons learned on policies and approaches. However, if it is to be a valuable tool, the regional database will need to be updated constantly, that is to receive updated information from countries that must be processed and consolidated. The European consultants ensured this update, but now it is time to plan for future consolidation. ECLAC is currently engaged in updating the database, but it may not be able to do so indefinitely. Not only is it beyond the organization’s mandate but furthermore ECLAC does not have the resources (the BIEE has been funded totally with external resources, but the donors are worried that no exit strategy has been studied) or the technical capacity in house (technical support was granted by external consultants). Management of the regional energy efficiency database should therefore be entrusted to a specific institution, following the European example.
78. Horizontal cooperation was strengthened during project implementation, especially during those events where participants shared and debated new ideas around the table with all participants on the same level. This was especially relevant during the policy dialogues where the participants came from different categories and countries (ministries, politicians, members of parliament, academics and consultants). These collaborative moments fostered the creation of new skills and positive models through the sharing of best practices and experiences and will be conducive to the development of regional partnerships. It was encouraging to see the most advanced countries keen to offer their experience to the others. The project and “dialogues” created the “institutional space” for these exchanges to occur. Thus, consolidation of the “space” is the most crucial prerequisite for furthering

horizontal cooperation and promoting the exchange of best practices. Everything hinges now on whether the project is continued and on support from international donors, but, as mentioned in the foregoing paragraph, some sort of institutionalization is needed. The option of having OLADE as main actor was put forward, but unfortunately the credibility of this institution is too low to offer a really sustainable solution.

79. All stakeholders should immediately come to an agreement on a consolidated exit strategy. Three options may be considered for speeding up consolidation of the process. The first envisages a stronger participation by the private sector and by public opinion, to whom energy efficiency (including a set of measures and indicators) can be “sold” as a means of lowering costs. The importance of involving enterprises and the private sector in energy efficiency policies is well documented. Some interviewees affirmed that the private sector is interested in understanding the critical issues and above all in learning about practices implemented with success in other countries or sectors. Experiments implemented in the region with support from UNIDO produced credible results (see the Ecuador case). However, private sector investors clearly see energy efficiency as a cost problem. But although cost-cutting will invariably attract the attention of the private sector and consumers, this will turn the problem into a political and social issue with unforeseeable consequences. Nevertheless, private sector interest in comparisons arising from the regional database could, although not yet tested, lead to commitments and resources. Furthermore, the private sector has access to substantial amounts of data on consumption and could through closer collaboration reveal important information in particular on transport and automobile production).
80. A second option is to strengthen the data collection and analysis relating to transport and subsidies, sectors that exist in all countries and which have a significant impact on energy efficiency.
81. Sharing experiences in the transport sector, which offers myriad opportunities for promoting energy efficiency, could be very fruitful. The current challenges in the transport sector are well known. In 2011, final energy consumption in the transport sector in Latin America stood at more than 1,500 million barrels of oil equivalent, representing 35% of total energy consumption. In many countries, this sector accounts for the largest share of energy consumption. Energy consumption in the transport sector is clearly growing: between 1990 and 2010 it more than doubled in all Latin American and Caribbean countries. Given that this sector is a major source of fossil-fuel consumption and greenhouse gas emissions, Latin American and Caribbean countries must as a matter of urgency review their energy consumption patterns and improve their transport efficiency. Road networks have not kept pace with the expansion of the vehicle fleet and the growing number of cars per capita. Congestion in the large cities in Latin America, carries high economic costs and has a negative impact on the quality of life of citizens, on comfort and commuting times, and on air pollution.
82. Countries in the Latin American and Caribbean region could address transport efficiency through improved technologies and methods of use. Although technological advances are important in improving transport efficiency, they represent only part of the equation. It is essential to work on changing consumption patterns and promoting more efficient transportation, using a more holistic approach to enhance system efficiency. The efficiency of the transport sector will not improve spontaneously, and governments have a critical role in formulating strategies and policies to drive the change. A major barrier to the promotion of energy efficiency in transport is the focus on the end uses of power, with limited coverage of the transport sector. No doubt the diverse modes and equipment characteristic of this sector, not to mention the various types of users and purposes, make it even more challenging to promote energy efficiency. Although transport services and related infrastructure are crucial for integrating the region into the global market, effective policies to reduce and manage energy consumption and emissions in this area have yet to be applied in the region.
83. The other area for exchange of experience could be subsidies. High oil prices since the second half of the 2000s increased pressures on countries to provide energy subsidies—despite their fiscal costs

and non-transparent effects on efficiency and distribution. Their negative implications for macroeconomic management, fiscal sustainability, and the environment have heightened policymakers' interest in this issue. A recent study by the World Bank suggests that energy subsidies in the region were equivalent to 1.8% of GDP, on average, in 2011–13, with fuel subsidies representing about 1% of GDP, and those for electricity about 0.8%. This measure of subsidies constitutes a lower bound, as it does not include forgone tax revenues or the cost of negative externalities, which can increase the share to about 3.8% of GDP. There is considerable variation in the size and types of energy subsidies across Latin America and the Caribbean. In some cases, energy subsidies are permanent rules-based policy choices (e.g., to provide below-cost energy to targeted users), but in many others they arise as a discretionary response to events. Fuel subsidies tend to be larger and more entrenched in oil-rich countries, while electricity subsidies are more common in low-income countries and particularly in Central America and the Caribbean. Energy subsidies are a drain on countries' long-term growth and competitiveness, as they not only divert resources away from other spending priorities but also discourage efficiency, enhancing investment in the energy sector. Overconsumption also results in negative externalities, including for the environment. Vested interests that capture most benefits from subsidies further complicate reform. Reform is most difficult when subsidies have existed so long as to be perceived as a *de facto* entitlement. Successful reform of subsidy policy is easier in periods of falling international oil prices as are occurring now and this affords a good opportunity to place energy efficiency high on the agenda. For a credible reform there is a need for more precise quantitative indications on the impact of subsidies on energy consumption and on fiscal deficit, together with the benefits to be derived from their elimination: analysis that the presence of consolidated programmes of energy efficiency indicators can provide.

84. The third option is to consolidate governance of energy efficiency and to give priority to the collection, analysis and distribution of data on energy consumption. Many country representatives who were interviewed pointed out that unless data collection and analysis are properly institutionalized (that is, unless a law or regulation is introduced indicating the tasks, responsibilities and obligations), countries will be forced to start from scratch once again every time they are required to update the existing report and will face the same difficulties. Institutionalization would also help in obtaining the needed resources in terms of personnel and services. Improved energy efficiency is a critical response to the pressing issues of climate change, economic development and energy security facing many countries. But improvements in this sphere can be difficult to achieve. A combination of technological development, market mechanisms and government policies is needed to influence the actions of millions of energy consumers, from large factories to individual households. Governments, stakeholders and the private sector must work together in order to achieve the scale and timing of energy efficiency improvements required for sustainable economic development. Experience shows that successful policy outcomes in this area are more likely if an effective system of energy efficiency governance is established. From the legal frameworks and institutions that develop and implement policy to the stakeholders who participate in implementation in the market place, energy efficiency governance is a complex, and yet critical, part of the energy efficiency delivery system. Time and again, actions to improve energy efficiency have failed to deliver their full potential, in part, because of limited attention to energy efficiency governance arrangements.
85. As shown in the letters of thanks received, all countries participating in the project benefited from the methodology introduced. All the participating countries have used the project outputs to coordinate and implement activities relating to their own country's energy efficiency development agendas. All of them acknowledge that ECLAC was able to provide essential support for achieving public aims.
86. Given the success of the project (19 countries are now participating and, presumably, in the near future will be joined by others – those of the English-speaking Caribbean), ECLAC approached the usual donors, GIZ and the French Cooperation (ADEME), to urge their continued support. The relevant agreement is almost finalized but this should not obviate the need for the search for an “exit strategy” at the national and regional levels.

3.5. COORDINATION, COMPLEMENTARITIES AND VISIBILITY

87. The search for coordination and synergies with other ECLAC programmes and other international agencies (including United Nations bodies) has been a constant concern of the management unit, which is convinced that this approach would increase the number of direct beneficiaries and reinforce the message. Since the project design stage, other ECLAC divisions were actively involved in identifying future programmes that would lend themselves to coordination and collaboration. Opportunities for collaboration were sought and taken advantage of during project implementation. As indicated in the interviews, the commonality of interests was conducive to collaboration. Special attention was given to a study on mobility and energy efficiency undertaken by the Natural Resources and Infrastructure Division, whose results were presented at project events. As a consequence of these interactions, two technical assistance missions were carried out (in Ecuador and Nicaragua).
88. The novelty of the project approach and methodology in the Latin American and Caribbean region assured a solid visibility to ECLAC as provider of focused and effective technical assistance. Coordination with other ECLAC initiatives and with other United Nations organizations has created successful synergies culminating in a request for ECLAC to be the main coordinator for the collection and analysis of energy efficiency indicators under the SE4ALL initiative.
89. Two major international initiatives underscore the importance of having energy efficiency indicators: the Paris Agreement, signed at the recent Conference of the Parties to the United Nations Framework Convention on Climate Change and the United Nations Sustainable Energy for All Initiative (SE4ALL). The Agreement was referred to in many interviews as a strong inducement for the adoption of energy efficiency indicators as a standard component of the policy mandate for energy institutions. The BIEE will be useful as a tried and tested instrument for fulfilling the obligations arising from the Paris Agreement. The latter sets out specific quantitative commitments for all signatory countries. Thus, it will be incumbent on all countries to measure and control progress. As many interviewees commented, the BIEE is an essential component of this instrument. Some indicators may need to be adapted, but the overall methodology is fully functional. This message should be used in communications and public relations campaigns to convince governments of the need to allocate resources for the continuation of this programme. Regional databases can, like MURE in Europe, also be used to collect and analyse policy decisions in energy management. This is an area where comparisons can promote the diffusion of best practices that might lead to achieving effective cost reductions by promoting the use of tried and trusted methodologies and practices.
90. In 2014 the Hub Americas of the Global United Nations Initiative SE4ALL was formed. Because countries should monitor this goal, the BIEE Programme, today, is the only regional and official initiative designed to enable competent national offices to measure and monitor energy efficiency. The obligations arising from the signed agreement are based on accurate, quantitative results, most of which reflect energy efficiency. Governments will realize that policies cannot be effective unless the results are monitored and controlled. Agreement should be reached on resource allocation for establishing energy monitoring indicators.
91. The “SE4ALL Global tracking framework sets 2010 as the starting point against which the progress of the initiative will be measured. The framework provides an initial system for regular global reporting, based on indicators. For energy access, household survey evidence is used to determine the percentage of the population with an electricity connection and the percentage with access to non-solid fuels. As a proxy for energy efficiency, the framework takes the compound annual growth rate of energy intensity of gross domestic product (GDP) measured in purchasing power parity (PPP) terms, complemented by an analysis of underlying factors disaggregated by sector. For renewable energy, the indicator is the share of total final energy consumption deriving from all renewable sources (bioenergy, aerothermal, geothermal, hydro, ocean currents, solar and wind). The launch of the SE4ALL initiative coincided with the start of the project. Complementarities in approach, contents and procedures are so important that a

close relationship with BIEE was required. A coordinated approach will continue in the future with solid advantages on both sides. Given the numerous points in common between the project and the SE4ALL initiative, a common approach is not just possible but advisable.

92. The goal is to create a system that leads to better information for better results and better tracking of resources. Reliable statistics for energy access, renewable energy, and energy efficiency are needed to establish a starting point for the SE4ALL and ensure political commitment until 2030. While credible global energy databases exist, they need to be adapted to track progress towards the three objectives. The Accountability Framework complements the Global Tracking Framework by measuring progress on the voluntary public-private commitments made to advance the initiative's three objectives. Together the Accountability and Tracking Frameworks will ensure that the initiative is well defined and can successfully track both commitments to action and overall progress on the three objectives.
93. The ECLAC plan for 2015-2016 for the Natural Resources and Infrastructure Division is very clear on the subject of collaboration with other United Nations organizations as well as with other regional institutions. Under the subprogramme, the Division will continue to consult and work in close collaboration with United Nations specialized agencies, programmes and funds that participate in the Commission on Sustainable Development and other organizations concerned with areas such as mining, energy and water resources, including: OLADE, the Latin American Mining Organization (OLAMI), the Latin American Parliament (PARLATINO), the Union of South American Nations (UNASUR), MERCOSUR, Initiative for the Integration of the Regional Infrastructure of South America (IIRSA), the Committee on Ports of the Organization of American States (OAS), the International Association of Maritime Economists (IAME), the Central American Commission on Maritime Transport (COCATRAM), and bilateral and multilateral organizations such as the World Bank, the Inter-American Development Bank (IDB) and ADC.
94. It is true that energy efficiency is a shared objective in many initiatives. Moreover, for many years OLADE has collected and published data on energy production and distribution. According to the experts, the data collected by BIEE are different from those collected by OLADE in the Economic and Energy Information System (SIEE) database. BIEE focuses on energy consumption at the economic unit level (households and enterprises) and builds the national view while SIEE focuses on the energy production matrix and distribution at the national and international levels. The compatibility of the data coming from the two databases has not been assessed until now and could be an important issue for the future.
95. The project design referred to the need for appropriate visibility and suggested that ad hoc instruments should be prepared. Even without a proper communication strategy, project activities and outcomes received some attention from local media and this expanded their outreach. The management used standard tools to enhance visibility with satisfactory results. A special site was established as a depository for the main documents and achievements. Moreover, using the United Nations social network system, Unite Connections, the project managers launched the BIEENET social network, which all participants have been invited to join. This platform has been useful as a repository, organized chronologically, of all the teaching materials presented during the capacity-building workshops and all the presentations made by the countries.

3.6. ECLAC VALUE ADDED

96. The number of beneficiaries was increased from the four countries originally targeted in the project document to a total of 19 countries. The project managers have constantly sought to expand the project to a wider range of beneficiaries. The success of the project and the attention it received from policymakers and international organizations have enhanced the Commission's image. The project activities consolidated the role of ECLAC as a leading institution that provides credible services and assistance to Latin American and Caribbean organizations and institutions of different

levels. The national representatives who were interviewed confirmed their appreciation for this support and many respondents to the questionnaire recommended that such projects should be replicated as ECLAC is considered a valuable source of information and support. European experts were held in high esteem for their competence, accessibility and constant support. The three international “dialogues”, which were attended by politicians, academics and business representatives from the region and Europe, further boosted the ECLAC image and visibility, and consolidated its leadership in data compilation and distribution and in the provision of technical assistance. This attests to the appreciation and validity of the technical assistance provided, of the support offered under the project and of the Commission’s prominent role in promoting energy efficiency in Latin America and the Caribbean.

97. During the project events, ECLAC acted not only as organizer but also as provider of specific support as witness the presentations offered by ECLAC officials and the documentation distributed. A methodological document (Methodological Guidelines for BIEE Data Template), which presents the main features of the database template from which the energy efficiency indicators were obtained, was produced and disseminated. This document, available at the BIEE site, continues to be consulted.
98. The project managers presented the results of their efforts at many regional and international events and were commended for the quantity and the quality of the outcomes, as well as for the modalities of the activities, with a positive impact on the Commission’s image.

Box 2

Participation and dedicated sessions of the BIEE Programme in other events

- Encuentro Nacional para el establecimiento de la Nueva Política Nacional de Eficiencia Energética del Estado Plurinacional del Bolivia, La Paz, 23 -24 April 2013,
- Reunión de Seguimiento del Sistemas de Información Económica Energética, OLADE, Quito, 2 May 2013,
- Energy efficiency policies: a worldwide panorama, organized in Paris by the World Energy Council (WEC), the Conseil Français de l'Énergie (CFE) and the Agence de l'environnement et de la maîtrise de l'énergie (ADEME), 27-28 May 2013 (during the European Study Tour),
- Cuarto Diálogo Político Regional sobre Eficiencia Energética, Mexico City, 21-22 November 2013,
- Lanzamiento de la Década de la Energía Sostenible para Todos en las Américas (SE4ALL AMERICAS), Santiago, Chile, 15-17 October 2014,
- Quinto Diálogo Político Regional sobre Eficiencia Energética, Lima, Peru, 27-28 October 2014,
- Sustainable Energy Training for Latin America, Santiago, Chile, 10-14 November 2014,
- Sexto Diálogo Político Regional sobre Eficiencia Energética, Oranjestad, Aruba, 29-30 October 2015
- Side Event organized by ADEME at the Twenty-first Conference of the Parties to the United Nations Framework Convention on Climate Change: French contribution to energy efficiency policy evaluation for climate change strategies, 7 December 2015.

99. Although no gender-specific impact is associated with energy efficiency policies promoted by ECLAC, the work to strengthen government institutional capacity in this policy area is expected to have positive spill-over effects on other related policies such as improved access to energy services and quality fuels by low income and rural groups, which have been shown to directly benefit women's work through healthier cooking and the environmental quality of the household. In terms of participation, the collected data show that the participation of women was well below 50%, a statistic that has been confirmed by the responses to the questionnaire. It is true that the topic is one where men play a dominant role, both at the national level and at ECLAC, however, the project managers could possibly have made a greater effort to increase the participation of women.

Table 8
Total participants
(Based on the consolidated list provided by the project)

Total participants	211
Women	46
Percentage of women	21.8

Table 9
Gender of questionnaire respondents

Response options	Response percentage	Response count
Male	81	34
Female	19	8

Table 10
Attendance at project events
(Based on the quality questionnaires provided by the project)

Event	Participant	
	Male	Female
Chile 24/9/2013	4	3
Chile 25/9/2013	7	2
Visit to france	8	4
Dominican republic 9/9/2014	9	3
Colombia 11/6/2014	23	6
Colombia 12-13/6/2014	12	3
Costa rica 26/2/2014	5	3
Colombia 8/5/2014	3	1
Venezuela (bol. Rep. Of) 28/8/2014	11	2
Brazil 26/8/2015	11	7
Brazil 27/8/2015	12	5
Brazil 28/8/2015	5	2
Colombia 24/3/2015	4	1
Dialogue 2012	32	12
Dialogue 2013	17	6
DIALOGUE 2014	23	12
TOTAL	186 (72%)	72 (28%)

4. MAIN FINDINGS AND LESSONS LEARNED

100. The year 2016 has seen what is perhaps the first truly free oil market since the pioneering days of the industry. In today's world, oil producers sell as much as possible for whatever price can be obtained. Just a few years ago, such a free-for-all would have been unimaginable but today it is the reality to which each actor should adapt, unless, contrary to expectations, producers change their output maximization strategy. The long-term consequences of this new era are still not fully understood. For some time now analysts have tried to understand when the oil market will return to balance. Oil supply and demand will certainly not be aligned before 2017 but the enormous stocks being accumulated will put a damper on the pace of recovery in oil prices until the market, once more in balance, starts to draw down those stocks. Barring an even larger-than-expected fall in non-OPEC oil production in 2016 and/or a major growth spurt in demand, it is hard to see oil prices recovering significantly in the short term from their present low levels. These persistently low prices could possibly divert attention from energy efficiency, counteracting the enthusiasm and interest aroused at the start of the project, which had led so many countries to participate. ECLAC should therefore be careful lest the oil price trend detracts from the attention and positive results achieved to date. Indeed, the major risk for the project outcomes is linked to long-term sustainability and to difficulties in transforming a one-off event into a standard practice. It will be important for ECLAC to continue to provide assistance and support to national organizations to avoid this risk.
101. Energy efficiency can easily be sold as a win-win strategy for meeting policy objectives in areas as diverse as supply security, climate change, competitiveness, the balance of trade, declining investment in the energy sector in emerging countries where demand is rising, as are pollution problems. Moreover, by lowering the energy bills of consumers, energy efficiency diminishes their vulnerability to price increases or supply disruptions and also improves economic competitiveness in industry by reducing manufacturing costs. For some groups, especially vulnerable populations, it can reduce poverty or improve living conditions. Lastly, an energy-efficient asset, whether a factory or building, has a higher asset value and improves working and living conditions.
102. In Latin America and the Caribbean, increased action on energy efficiency started to reduce the vulnerability of energy systems, improve the socio-economic environment, delay investments in energy infrastructure, mitigate the negative impacts on the local environment, and diminish the already relatively low level of emissions in the region (a result of its diversified energy balance, with high proportions of natural gas, LPG, hydropower and biomass). This action also enhanced international negotiations and trade.
103. While more and more countries are adopting national energy efficiency programmes with quantitative targets, this is not as evident in Latin America and the Caribbean. The adoption of energy efficiency laws or energy laws with a strong energy efficiency component in quantitative terms could reinforce the institutional setting for this goal. Energy efficiency agencies are increasingly valuable as instruments that foster the implementation of energy efficiency policies, but few of these institutions exist in the region.
104. Regulations could be part of the policies for energy efficiency, in part because they have been proven to be effective in lowering the energy consumption of specific appliances and equipment, in speeding up the diffusion of energy-efficient equipment and in promoting energy savings practices and investments. They will, however, need to be enforced and to have the necessary instruments (laboratories, and energy consumption data) to keep them effective. Economic incentives aim at encouraging investments in energy-efficient equipment, buildings and processes by reducing the investment cost either directly (financial incentives) or indirectly (fiscal incentives). Energy-savings obligations are an innovative measure in which energy companies have a legal obligation to offer energy-efficient options to their customers.

105. Because it represents a negative quantity (i.e. energy not expended), energy efficiency is often perceived as an intangible concept. Its value is not always apparent to investors, consumers or policymakers, and its role in enabling the achievement of diverse economic and social goals is often obscured. The actual scope of investment indicates that energy efficiency measures are undervalued in the market, by both private sector actors and government policymakers. Even the concept of energy efficiency operating as a market is somewhat novel. Improved understanding of the potential for investment in the energy efficiency market needs to be supported by a larger set of data than the project has been producing, in particular in terms of their ability to improve the knowledge about the benefits that energy efficiency can deliver in real terms to the different actors.
106. **Finding 1. The project was very successful as the number of planned activities and the list of beneficiary countries were exceeded.** The overall results are very positive and attest to the overall high efficiency and effectiveness of the management: (a) more activities than projected were carried out, thanks to additional resources from external donors; (b) the number of beneficiary countries was increased from four to nineteen; (c) most of the expected results were achieved (but, as mentioned early in the report, the original formulation was not very ambitious in terms of quantity and quality, and during the implementation was not revised).
107. **Finding 2. The ultimate success of the project is due to the credible theory of change on which the design was based.** The assumption that better information from authoritative sources, coupled with focused local activities based on the new information, would produce the expected changes in terms of awareness as a first step towards actions has been validated by the project results and by the debates held during the events.
108. **Finding 3. The project contributed to the establishment of new knowledge on energy efficiency indicators and methodologies.** The project events and activities contributed to increased awareness of the importance of comprehensive energy efficiency monitoring using indicators. This improved the quality and quantity of data, enhancing the quality and detail of the research and creating a common awareness that energy efficiency data are essential for energy policy management and are conducive to the creation of stable links between data sources and users.
109. **Finding 4. The project promoted the distribution of information and exchange of experiences (horizontal cooperation) between countries in the region. 4.** Thanks to the special site and the database, the project developed data dissemination tools for data comparison at the regional level that offer comparative data on energy efficiency trends; this led to the definition of benchmarks and consequently the possibility of learning from other countries' experiences and sharing best practices.
110. **Finding 5. The project enhanced governments' capacity to promote policymaking based on data.** Although many countries do have energy efficiency legislation, they often lack regulations with quantitative targets. With the use of indicators it will now be possible to establish more precise targets and define monitoring criteria. National offices in charge of energy efficiency have developed collaborative networks for future activities. At the same time, this new approach created a new demand for technical assistance to improve the quality of the indicators and adapt them to the local environment.
111. **Finding 6. The beneficiary countries' capacity to fulfil project commitments varies significantly between participant countries.** In some cases, the completion of the national reports was beset with difficulties due to local constraints. Many reports were delayed because of difficulties in obtaining data owing to the fragmentation of sources, the lack of credible data and the absence of proper institutional channels. This was compounded by the fact that many countries do not have a proper institution with a specific mandate to collect energy efficiency data and may not be able to continue with data collection and consolidate their gains. In some countries, the entity responsible for energy efficiency occupies a very subordinate place in the organizational structure of the ministries and/or departments, which conspires against the consolidation of the programme. Even when an institution

does exist, resources (personnel and funds) available at the national level are limited with consequent delays and the need for external support. Such institutions are unable to retain qualified personnel and the significant resources and time invested in their training is lost.

112. **Finding 7. Transfer of technical know-how needs to be facilitated especially when new concepts and instruments are distributed.** The interest of beneficiary countries in project activities was well justified given the new instruments on offer and their importance and usefulness were readily understood. The novelty of the instruments was at the core of the training session. However, national counterparts reported that the template was not very user-friendly and therefore difficult for local technicians to master especially as the training sessions were too short to complete the transfer of know-how; the use of English as the language of tuition complicated the issue as participants did not all have the same level.
113. **Finding 8. With this project, ECLAC confirms its capacity to offer focused and essential technical assistance to countries of the region.** The success of the project, due to the relevance of the issue selected and the mode of implementation, confirmed once again that ECLAC is the leader in the region for providing valuable and credible technical assistance to beneficiary countries in the region.
114. The lessons learned are described below.
115. **Lesson 1. For 'supply-driven' actions, the right timing is essential.** The project's success was due to a large extent to the right timing", that is the proposal of an energy efficiency approach at a time when oil prices were high and on the rise. In addition, the technical partners were well-chosen given their invaluable experience in Europe and their unwavering commitment and support.
116. **Lesson 2. The focus on a single major issue heightens interest and maximizes impact.** The sustained interest generated by the project, together with the number of completed outputs and achieved outcomes, may also be attributed to the project managers' judicious decision to concentrate on the indicators and the methodology, leaving aside more generic talks and analysis. Similarly, the decision to spend a significant percentage of the resources in the first year in order to create trust and interest helped to consolidate the project's role as a source of new know-how for the beneficiary institutions.
117. **Lesson 3. To increase effectiveness, relationships with long-term sponsors are vital.** The expected results of the project were exceeded thanks mainly to the management's success in securing the additional funding required from external donors. This was achieved through the Commission's long-standing relationship with one of its sponsors. This generated further interest, as the management was able to continue to promote the "package" across the region, secure in the knowledge that the offer proposed was consistent with the available resources.
118. **Lesson 4. In dealing with beneficiaries that are less prepared to absorb new approaches, follow-up action will help to consolidate the outcomes.** It was wise to accept all interested beneficiaries and to encourage other countries to participate, as it was clear that the novel approach proposed was an immediate hit. However, precisely because of its novelty, the package offered should provide for technical follow-up to consolidate the capacities: this was achieved thanks to the good will of the European partners, but ideally, it should be taken into account in the planning phase.
119. **Lesson 5. Improved local capacity is one of the main outcomes of the technological support provided to beneficiaries.** The transfer of know-how for the benefit of the local environment is an essential factor for building local capacity. When specific technical exercises (such as the production of energy efficiency reports) are used in the context of a broader technical support initiative, care should be taken to ensure that the transfer of technical capacities to the local environment is transparent and controlled. The management took the necessary steps to achieve this with through direct technical assistance and the use of external technical experts.

120. **Lesson 6. To consolidate the impact of BIEE the regional database must continue.** Further action is needed to institutionalize the regional database, which is vital for enhancing awareness and disseminating information on energy efficiency. Not only must the database be well consolidated but, as an instrument for benchmarking, it will need to receive updated information from current and future participating countries and to have new functionalities to improve the experience of users.
121. **Lesson 7. Better coordination between donors working on energy efficiency issues can increase overall efficiency and effectiveness.** International cooperation continues to play an important role in energy efficiency projects and programmes in the region, but steps should be taken to avoid overlaps between institutions and programmes and to research possible synergies more thoroughly. International cooperation is crucial, but if the only reason for activating a project is in order to tap into available cooperation funds, the national policy or strategy on energy efficiency (which may not be delegated) may be unsustainable.

5. RECOMMENDATIONS

122. The best recommendation, considering the success of the project and the expectations it generated, is quite simple: “Do not lose the momentum”. Interviews with ECLAC officials reveal that they are already engaged in pursuing the initiative. As a final assessment, however, a few points should be made.
123. The future of the initiative should be based on two principles: consolidation and institutionalization. Consolidation refers mainly to know-how and methodology, while institutionalization refers to the decision to include energy efficiency indicators as an essential part of any energy policy. The two principles are strongly interconnected and interdependent and should be considered jointly in any future step. The former is more closely related to the Commission’s capacity for intervention. Specific recommendations based on the overall assessment of project activities and outcomes are set out below.
124. **Recommendation 1: Refine and adapt the methodology (findings 3 and 6 and lessons 4 and 5).** The actions to be developed for this result could be:
- To produce the full text of the methodology in Spanish with specific comments on the context of the region and make it available on the BIEE site.
 - To build a comprehensive online training course in Spanish accessible by interested persons from government institutions and private organizations; the participation of the European consultants will be necessary for the preparation of the contents but they should work closely with a group of regional experts as they will train the first core group of local experts, who will thereafter be in a position to run the course.
 - To study ways and means of adapting the methodology to the context of the countries of the region, especially for those sectors requiring in-depth analysis; this is essential for purposes of comparison and for the transfer of best practices.
 - To draw up a directory listing all the regional experts in energy efficiency indicators. Local experts can then be contacted as necessary to strengthen the process.
 - To confirm the continuation of technical support for beneficiary countries once a new commitment is reached with the technical partner, ADEME.
 - To rearrange the structure and contents of the BIEE website, incorporating a complete index of the contents and data in order to increase visibility and visits.
125. **Recommendation 2: In the framework analysis of energy efficiency indicators, provide for the inclusion of specific space and indicators for issues that are common throughout the region: transport and subsidies. (paras. 71-74, findings 3 and 4, lessons 2 and 5).** These two areas are extremely important for any energy efficiency policy in the region. It will be important to study the specific use of energy efficiency indicators for them in order to show the consequences of policy decisions (or lack of decisions) relating to the economic and social situation of the population. The practice of providing generalized subsidies (instead of targeting the most economically vulnerable sectors of the population) means that energy rates do not accurately reflect market cost. This practice threatens the profitability of energy efficiency projects, prolonging the recovery period of the investment, and hampering implementation, all the more so since these investments compete, at the business level, with others (for example, raising production levels, research and development, market-driven developments or working capital).
126. **Recommendation 3: Institutionalize the BIEE at the national level (para. 75, finding 6 and lesson 4).** A local authority should be appointed to achieve the objectives and to provide the required instruments, resources and capacities. Energy efficiency is a cross-cutting issue: many of the areas it encompasses fall outside the scope of energy policy and require the agreement of other areas such as transport, industry, housing, health and education. Only in rare cases are the different sectors

satisfactorily coordinated. The sustainability of an energy efficiency programme depends largely on appropriate economic and financial management. A well-defined institutional framework is necessary in order to obtain the necessary resources and ensure the feasibility of the programme over the long term. In most countries, funding for promoting and developing energy efficiency comes primarily from the national budget. This could restrict the capacity of any institution appointed for this purpose. It is important to design policies that motivate the private sector to participate and consequently to invest in energy efficiency as a key step in enabling durable financial flows for energy efficiency. The necessary funding for policy design, implementation and evaluation should be a priority, and its availability should be an integral part of the programme or strategy itself. Capacity-building efforts should be undertaken to strengthen institutions that are already operating, with more involvement on the part of electricity and fuel providers. ECLAC can propose some final support to find the best solution for each country: the exchange of experiences coming from more advanced countries will be very helpful. Consideration could be given to the possibility of levying a small contribution in energy bills (electricity and oil).

127. **Recommendation 4: Design and construct a credible institutional set-up for the management of the regional database (finding 4 and lesson 6).** The importance and the value added of a regional BIEE are well acknowledged and the experience in Europe can confirm the validity of its existence and approach. A credible institutional set-up is needed to enhance the quality of the outputs and guarantee the service on a long-term basis. Funds should come initially from a combination of donors and beneficiary countries (in the case of the latter, the regional institution should receive a share of the funds allocated for national energy efficiency activities).
128. **Recommendation 5. Ensure an effective follow-up in order to maintain the momentum since project design should then receive sufficient resources (findings 6 and 7, and lessons 4 and 5).** It is in the Commission's interest to create and cultivate the network. In fact, the network of interested stakeholders will be useful for future developments. Indeed, the different stakeholders showed a keen interest in the project throughout the implementation phase. ECLAC should now find ways of continuing to distribute information supported by credible experiences. The most up-to-date technology must of course be applied, but technical assistance and face-to-face interaction are just as important.
129. **Recommendation 6: Build synergies in international cooperation efforts for energy efficiency (finding 8 and lessons 3 and 7).** The different donors play a vital role in the sector and this is generally acknowledged. The success of BIEE and the establishment of a regional database could give ECLAC the impetus to improve coordination and build synergies with the different donors. Policies and results can be assessed and analysed jointly with the distribution of data. This could be a first step towards a more coordinated approach to energy efficiency in the region and ECLAC, thanks to the positive image projected throughout the project, could act as the leader.
130. **Recommendation 7: Develop communication messages on energy efficiency indicators (findings 3, 6 and 7, and lessons 4 and 6).** The energy efficiency indicators are a useful instrument and their application to national and regional policies can produce positive results that deserve to be communicated to the wider public in order to increase support for their continued role as an instrument for promoting transparency and democracy in the energy sector, which is dominated by consolidated interests. ECLAC, with the consolidated data available, can promote communication campaigns to show the benefits of energy efficiency indicators in the framework of SE4ALL. The energy efficiency communication should also be part of the efforts to increase visits to the website and to build user trust. The distribution of the message "Energy efficiency indicators in Latin America and the Caribbean: a new tool for energy policy" throughout the region and abroad will also help to improve the image of ECLAC and increase the positive externalities generated by the project.

131. **Recommendation 8. Encourage stakeholders to commit to the project activities and outcomes by presenting the issues through local cases and experiences (findings 4, 6 and 7, and lessons 4 and 5).** During the capacity-building events, increased interest and commitment were generated when specific cases of public and private best practices were presented. An additional effort and greater resources are clearly needed but in terms of effectiveness, the project showed a clear value added. Hence the importance of presenting the project objectives and concrete benefits, and of providing proper training material based on local examples. To increase the impact, frequent activities and staff visits and communications are important to keep up the momentum.

ANNEXES

ANNEX 1	LIST OF STAKEHOLDERS CONSULTED THROUGH INTERVIEW
ANNEX 2	INFORMATION MATRIX
ANNEX 3	EVALUATOR'S REVISION MATRIX

ANNEX 1

LIST OF STAKEHOLDERS CONSULTED THROUGH INTERVIEW

Name	Country	Charge	Institution
Didier Bosseboeuf	France	Coordinador Eficiencia Energética	Agencia Francesa para la Matriz Energética y el Medio Ambiente (ADEME)
Ryan Carvalho	Mexico	Associate Economic Affairs Officer	ECLAC - Mexico
Luis Chang	Guatemala	Director Técnico	Ministerio de Energía y Minas
Manlio Coviello	Chile	Chief of the Natural Resources and Energy Unit	ECLAC - Santiago
Andrés Schuschny	Chile	Research Assistant	ECLAC - Santiago
Eriafna Gerardo	Dominican Republic	División de Eficiencia Energética	Comisión Nacional de Energía
Ricardo Gorini	Brazil	Superintendente, Superintendencia de Estudos Economicos e Energeticos	Empresa de Pesquisa Energética
Luiz Augusto Horta	Brazil	Pesquisadores	Núcleo Interdisciplinar de Planejamento Energético
Juergen Janssen	Germany	Manager Partnership for Sustainable Textiles	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
Bruno Lapillonne	France	Director	ENERDATA
Jorge Leiton	Bolivia	Director General de Planificación e Integración Energética	Ministerio de Hidrocarburos y energía
Arturo Molina	Costa Rica	Ingeniero área desarrollo y planificación estratégica	Dirección Sectorial de Energía
Juan Ignacio Navarrete	Mexico	Director General Adjunto de Políticas y programas	Comisión Nacional para el Uso Eficiente de la Energía
Daniel Puentes	Paraguay	Jefe de departamento de planificación y estadística	Viceministerio de Minas y energía
Hernan Sepulveda	Chile	Analista	Ministerio de energía
Hugo Ventura	Mexico	Economic Affairs Officer	ECLAC - Mexico

ANNEX 2

INFORMATION MATRIX

The Information Matrix follows the structure presented in the Inception Report.

Please note that the preliminary answers to each question are at the end of each section in the cells with **YELLOW** background.

Information Matrix EQ 1	
Evaluation Question 1	
Is there evidence that the project and its activities addressing energy efficiency were suited to the priorities and policies of the LAC region and countries at the time of its formulation and continues to be relevant during implementation? Were the project and the activities well related to the ECLAC mandate and program of work?	
List of Judgment Criteria (JCs) under the EQ 1	
JC- 1.1	The project's objective and expected accomplishments were relevant to the beneficiary countries' development needs and priorities
JC- 1.2	The project's objectives and accomplishments remained relevant throughout its implementation
JC- 1.3	The project's objective and accomplishments were and are aligned with ECLAC's mandate and the relevant sub-programs and create positive synergies with other actions
JC-1.1: The project's objective and expected accomplishments were relevant to the beneficiary countries' development needs and priorities	
List of Key Performance Indicators (KPIs) under JC 2.1 (codes and definition)	
KPI-1.1.1	Presence of energy efficiency issues and challenges in LA countries policies
KPI-1.1.2	Evidence of awareness of potential energy efficiency benefits in LA countries policies / decisions at national / regional level
KPI-1.1.1: Presence of energy efficiency issues and challenges in LA countries policies	
Main Findings on KPI-1.1.1:	
<p>Energy efficiency enables more energy service demand to be met; yet its role in the energy system is often overlooked. This "virtual supply" from energy efficiency is increasingly competing with oil, gas, electricity and other more traditional components of energy matrix. Energy efficiency investments offer diverse returns that go beyond the financial benefits to governments, industry and individuals. Many of the key strategic objectives of diverse stakeholders around the world can be furthered through energy efficiency. Investments in efficient buildings, transport and, industrial processes can, for example, deliver economic, social and environmental benefits. Beyond a few exceptions like Mexico and Brazil, it could be argued that it was not until about 2005 that the implementation of energy efficiency policies, mechanisms and programs gained momentum in the LAC region. In general, before that date, actions in the direction of countries implementing energy efficiency were limited and taken in response to deficits in energy supply. Some countries went a step further, implementing progressive tariff schemes that sent a signal designed to prevent wasteful use of energy, as well as time-differential rates in order to encourage a better management of demand.</p>	
<p>The combination of fluctuating oil prices and awareness of global climate change created an increase in interest and investment in renewable energy worldwide. Total primary energy needs in LAC are estimated to increase 63% by 2030 with respect to 2006 and by 2030; LAC's demand for oil will be 30% higher than in 2010, its demand for natural gas about 100% higher and its demand for coal about 150% higher.</p>	

Electricity demand is projected to grow particularly rapidly, in a way that over the next decade generating capacity will need to be increased by about 90 GW -nearly 50% more than current generating capabilities. Electricity demand will primarily be driven by the residential sector, which is expected to use nearly four times as much electricity in 2030 than in 2003, and industry, which is expected to double its electricity use. Transportation needs in the LAC region are also growing rapidly, and the International Energy Agency forecasts that transportation fuel use will expand 70% by 2030 with respect to 2004. Furthermore, a lack of diversification of energy sources, has left LAC particularly vulnerable to fluctuating oil prices, supply constraints, and changing weather patterns that affect large hydropower projects

Since 2005 interest has increased in promoting energy efficiency throughout the whole LAC region. The significant increase in oil prices that began in 2004 (with a historical peak in 2007), as well as an increased sensitivity to environmental issues —particularly those related to climate change (namely, the belief that climate change is a reality and that one of the most effective ways to contribute to the mitigation of its effects is to apply cost-effective energy efficiency policies)— were key factors that contributed to the increased interest in energy efficiency in the region. This interest was reflected in an increased effort to promote energy efficiency through the implementation of programs, mechanisms or policies. It should be remarked that energy efficiency *policies* require the existence of a well-oiled, coordinated machinery of programs and mechanisms, sustainable over time, that follow standardized patterns of behavior. A policy requires the definition of strategic lines, actions, instruments and measures; further, the feasibility, viability and effectiveness of these lines should have been subjected to careful analysis. These conditions were not always present in the country that started the energy efficiency effort: this can partially explain why the policies did not produce substantial results and why consequently ECLAC was correct in developing special actions toward energy efficiency. In effect there is substantial opportunity for a much improved energy scenario for LAC, with increased sustainable energy businesses in the region, motivated by climate change pressures combined with the abundance of competitive renewable energy sources. First and foremost, energy efficiency measures across sectors will help to reduce demand before addressing the amount of investment required for additional supply. For example, according to a World Bank study, over the next ten years investing \$16 billion in LAC in energy efficiency measures could save approximately \$53 billion in avoided fossil fuel power plant investments.

In 2009 ECLAC produced a first report on the situation of Energy Efficiency in Latin America. Analysis of the 26 countries showed differences, from one country to another, among the regulatory frameworks associated with energy efficiency. Since then in many of the countries there was a trend toward creating (or strengthening) national energy efficiency programs, and providing them with the legal and regulatory support necessary to further the government's policy decisions in this area. Most of the countries —according to the study— faced major challenges in obtaining resources to promote energy efficiency. Analysis of the *key actors in energy efficiency and their effective roles* shows that public sector activities, projects and programs for promoting and developing energy efficiency are overseen by ministries, national commissions and/or energy management secretariats, which have varying degrees of visibility and influence, depending on the particular country. The wide range of public and private actors involved in the region's energy efficiency programs appears to be the result of four main factors: (a) political support from government; (b) continuity of efforts and institutional structures; (c) access to funding; and (d) capacity for promoting and providing information on energy efficiency measures. With regard to *resources and funding mechanisms for energy efficiency programs*, in the vast majority of countries funds for promoting and developing energy efficiency come from national budgets. This means that, except in countries with active energy efficiency policies, there are serious limitations on the mission. The study remarked the difficulties in implementing energy efficiency policies in the region:

1. **Regulatory and institutional contexts differ widely**, and because these realities must be tailored to each country's conditions, they cannot be standardized. Thus, it makes no sense for countries to “copy” regulations used in other countries, even if they have been highly successful there. They must instead be adapted to individual circumstances. This, however, does not mean ignoring success stories or missing opportunities to evaluate possible adaptations of other countries' experiences to local realities.
2. In a number of the region's countries, there is a critical **lack of continuity in energy efficiency policy**,

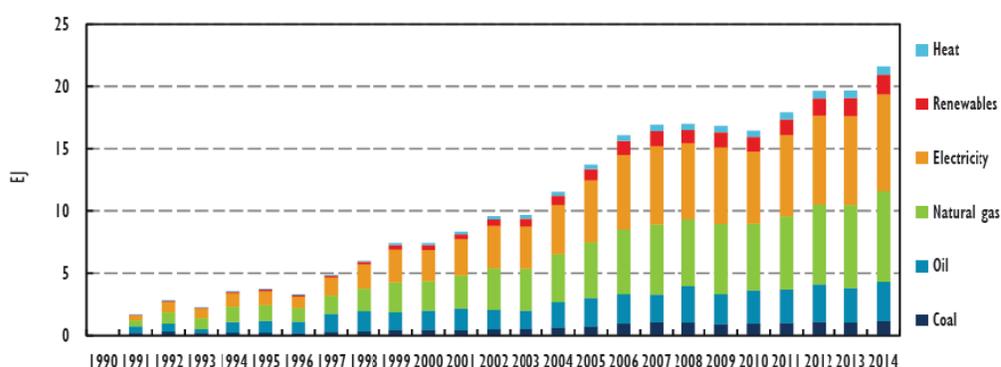
which has not been integrated, as it should be, with State policy. The lack of continuity creates a risk that there will be **insufficient articulation among high-capacity technical teams**. Numerous years of continuous work are required to train national experts to work with energy efficiency programs.

3. Most of the countries studied here have no (or very few) **specific domestic sources of funding** for energy efficiency programs. Energy efficiency programs are still **excessively dependent on international cooperation**, although energy price signals have begun to reflect conditions of scarcity and the growing need for investment as a means of increasing supply. There need to be stronger national initiatives to rationally and efficiently reduce consumption.
4. The **mere existence of laws, decrees or regulations** making energy efficiency measures mandatory does not guarantee the success of national programs. **Lack of knowledge on the part of users** continues to create major barriers to more efficient use of energy.
5. There are clearly **difficulties in monitoring the results of energy efficiency programs** in the countries examined. The absence of key indicators of success (or failure) is a major shortcoming of national programs.
6. Energy regulators in the region responsible for electricity or fuels—with the exception of Brazil's ANEEL—have practically no role in promoting energy efficiency. Moreover, in only a very few cases do energy distribution firms promote energy efficiency among their clients, and when they do, their efforts are aimed at reducing peak demand. Few firms have a corporate policy that calls for demand management.

One lesson that does emerge clearly from the region's experience is that the mere existence of energy efficiency legislation in no way guarantees that there will be positive effects on (a rational reduction of) energy demand. This will not occur unless energy efficiency activities, projects and programs that are adapted to national realities are developed and systematically implemented. The State has difficulty monitoring—and, where the law provides, sanctioning—behaviors that do not conform to legal requirements. Economic and cultural barriers in Latin American and Caribbean societies hinder the full enforcement of energy efficiency standards, while a lack of human resources (due to budgetary constraints) means that monitoring and enforcement systems are inefficient.

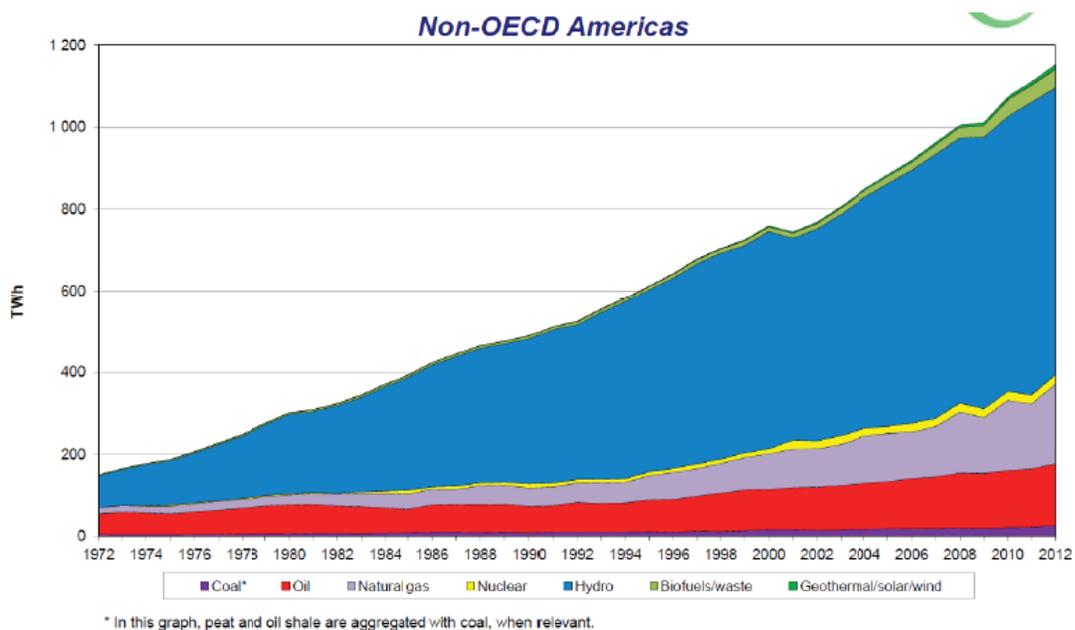
KPI-1.1.1 (i) Data, figures and tables: (with explicit source referencing)

Figure ES.1 Avoided TFC in IEA countries from energy efficiency investments made since 1990



Geographical region		GDP per capita (PPP, US\$)	Industrial sector (% of total GDP)	TPEP/TPEC ¹	Population with access to electricity (%)	Energy affordability (US\$ per kWh) ²	Energy intensity (koe per US\$, PPP)	Emission intensity (kCO ₂ per US\$, PPP)	CO ₂ emissions per capita
Asia	Asia	21,851	29.3	0.82	90.1	0.19	0.14	0.29	5.12
	High-GDP countries	43,737	27.1	0.56	99.9	0.19	0.14	0.32	9.84
	Low-GDP countries	7,261	31.7	0.99	83.5	–	0.14	0.28	1.97
Europe	Europe	29,486	26.7	0.69	100.0	0.23	0.15	0.29	5.85
	Western Europe	42,313	23.5	0.58	100.0	0.25	0.14	0.22	6.88
	Eastern Europe	17,774	29.3	0.79	100.0	0.19	0.17	0.36	4.90
Lat. Am. & Caribbean		13,670	26.5	0.90	94.0	–	0.14	0.26	3.66
Middle East & North Africa	Middle East & N. Africa	34,347	42.0	1.88	96.2	0.15	0.14	0.35	10.70
	GCC countries	58,708	48.1	2.01	98.7	0.15	0.17	0.38	18.45
	Non-GCC countries	21,059	39.0	1.82	95.0	–	0.13	0.34	6.83
North America		37,993	28.4	1.12	99.7	0.11	0.15	0.34	11.75
Sub-Saharan Africa		5,454	27.3	4.53	40.3	–	0.21	0.18	0.92
Global average		22,031	29.5	1.65	85.5	0.21	0.16	0.27	5.26

(2015 Energy Trilemma Index, Benchmarking the sustainability of national energy systems)



KPI-1.1.1 (ii) Key extracts from documents: *(with explicit source referencing)*

The purpose of the present study is to analyze the situation and perspectives for actions and instruments associated with energy efficiency in the 26 Latin American and Caribbean countries that are members of the Latin American Energy Organization (Organization Latino Americana de la Energy, or OLADE).

The study focused on determining the following aspects of each country's national energy programs: (i) recent advances in policy, regulatory and institutional frameworks; (ii) key actors in energy efficiency and their effective roles; (iii) resources and funding mechanisms for energy efficiency programs; (iv) results of energy efficiency programs to date; and (v) lessons learned.

The study also attempts to analyze the **results of energy efficiency programs** to date. For each country, the depth at which the results could be evaluated depended on the quantity and quality of available information. Within those constraints, information from the parties involved, whether direct (from interviews or reports) or from relevant websites, was assumed to be accurate.

Analysis of the available information suggests that the quality of the statistics and performance indicators that make it possible to quantify results is still inadequate (except, with some limitations, in the cases of Mexico and Brazil). Due to these shortcomings in quantity and reliability of information regarding specific results, it is impossible to draw concrete, accurate conclusions (excepting, again, with regard to Mexico and Brazil).

ECLAC: *"Energy efficiency in Latin America and the Caribbean: situation and outlook"*, 2009

At the Latin American and Caribbean Summit on Integration and Development of the Region, in December 2008, there was wide consensus on the urgent need for efforts to ensure regional cooperation, complementation and integration in the energy sector. Given the interrelationship between energy and climate change, in addition to the recent financial crisis, the importance of conservation and efficient use of energy resources were particularly stressed. At the same time, the investment in and advancement of new technologies for efficient renewable energy production is crucial for economic and social development for the region. There are already many options that are cost effective and commercially viable, even given the recent financial crisis.

IDB- WB: *"SECOND MEETING OF THE FINANCE MINISTERS OF THE AMERICAS AND THE CARIBBEAN: Implementing Renewable Energy and Energy Efficiency Measures"*, 2009

Previous U.N ECLAC and other international publications have highlighted the significant opportunities that Latin American and Caribbean countries have of pursuing low carbon economic growth through energy efficiency gains. Although some countries have experimented with efficient lighting and equipment replacement programs (i.e. Brazil, Mexico etc.), to date however, most countries in the region still lack comprehensive national-level energy efficiency policies to deploy the broad range of interventions required to materialize the large potential energy efficiency gains available to them.

The main problem identified is the weak institutional and technical capacity of LAC governments to deploy and implement effective energy efficiency policies and programs at the national level. There is an obvious lag in the development and current state of energy efficiency policy in most countries of our region, when compared to the continued progress of energy efficiency policies deployed by OECD countries during the last three decades. This lag in the development of national-level energy efficiency policies in Latin American and Caribbean countries is presumed as a major obstacle to sustainable development in the decades ahead.

(BIEE Project Document, ECLAC 2011)

KPI-1.1.1: (iii) Information from interviews and questionnaire (with explicit source referencing)

KPI- 1.1.2: Evidence of awareness of potential energy efficiency benefits in LA countries policies / decisions at national / regional level

Main Findings on KPI-1.1.2:

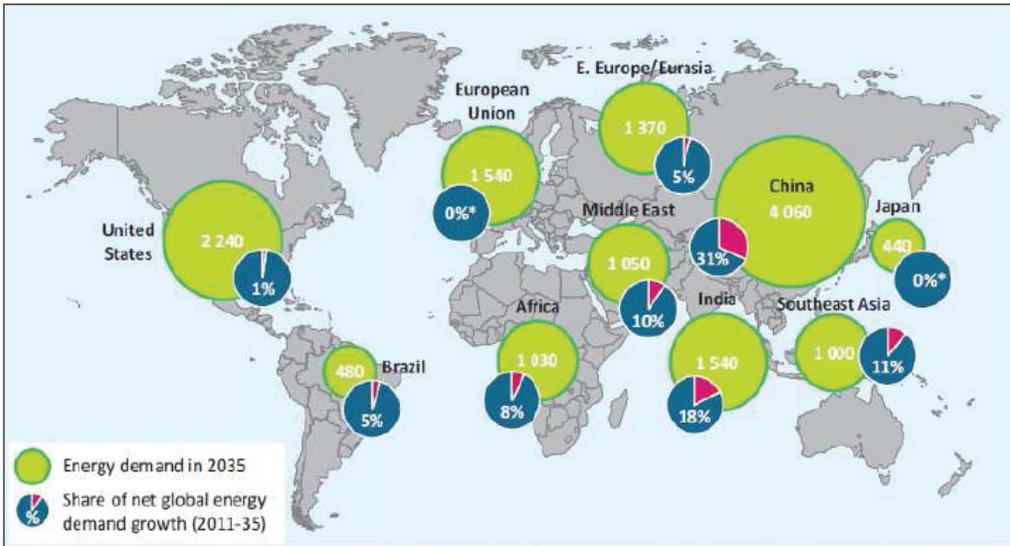
The interest for energy efficiency is increasing in the region. The ECLAC 2009 study contained a very clear and comprehensive analysis of the main stakeholders, useful to build an effective project strategy and communication campaign. Since 2009 there has been an increase in the funds available for energy efficiency activities, in some cases encouraged by the need to meet environmental objectives related to climate change. For example, Bolivia is designing a Bolivian Energy Efficiency Fund, Uruguay has created the Uruguayan Trust for the Development of Energy Efficiency (FUDAE), and Argentina is establishing a development fund for energy efficiency projects with assistance from the Global Environmental Facility (GEF) and the World Bank. Chile is implementing the National Energy Efficiency Program, which has involved a substantial increase in funding.

In recent years, there has also been a moderate increase in the number of public and private financial institutions that have lines of support for the evaluation and implementation of energy efficiency projects. Regarding *evaluation of the results of energy efficiency programs* that have been carried out, the thoroughness of the evaluation is based on the amount and quality of information available in each country. As a result, and with some exceptions, the information is still insufficient to draw firm conclusions about whether a national program is on track, or is missing its targets and must be adjusted. As for the *institutional structures* that support energy efficiency activities, in recent years there has been a consolidation of existing institutional actors, while other new players have entered the stage. Regarding the latter, we may cite as examples:

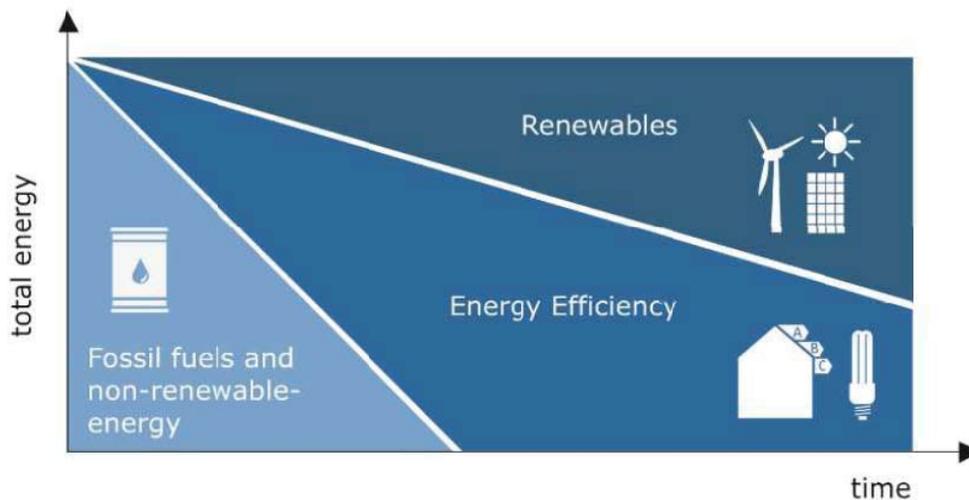
- Bolivia: since 2007, the Deputy Minister of Energy Development has been in charge of energy efficiency, to which we can add the creation in 2013 of the Bolivian Network of Energy Efficiency
- Venezuela: in 2009, the Ministry of Popular Power for Energy and Oil was created, which is responsible for energy efficiency activities
- Chile: in 2010, the Chilean Energy Efficiency Agency was created.
- Cuba: in 2012, the National Office for the Rational Use of Energy (ONURE) was created.
- Colombia: in 2010, the Colombian Council of Energy Efficiency (private sector) was established
- Costa Rica: in 2012, creation of the Ministry of Environment, Energy and Seas (MINAEM)
- Ecuador: in 2012, creation of the National Institute for Energy Efficiency and Renewable Energy (INER)
- Mexico: in 2012, the National Commission for the Efficient Use of Energy (CONUEE) is re-launched.

KPI-1.1.2 (i) **Data, figures and tables:** (with explicit source referencing)

High Energy Demand Projected for 2035



Latin American countries will account for approximately 5% of the world's primary energy demand growth by 2035 of which 2.7% is Brazil alone.



Energy efficiency provides us with the time needed to replace fossil fuels in an ecological, economic and socially responsible manner

KPI-1.1.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>
KPI-1.1.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>
Assessment of / statement on Judgment Criterion JC-1.1 (based on the KPIs main findings)
<p>Energy efficiency enables more energy service demand to be met; yet its role in the energy system is often overlooked. This "virtual supply" from energy efficiency is increasingly competing with oil, gas, electricity and other more traditional components of energy matrix. Energy efficiency investments offer diverse returns that go beyond the financial benefits to governments, industry and individuals. Many of the key strategic objectives of diverse stakeholders around the world can be furthered through energy efficiency. Investments in efficient buildings, transport and, industrial processes can, for example, deliver economic, social and environmental benefits. Beyond a few exceptions like Mexico and Brazil, it could be argued that it was not until about 2005 that the implementation of energy efficiency policies, mechanisms and programs gained momentum in the LAC region. In general, before that date, actions in the direction of countries implementing energy efficiency were limited and taken in response to deficits in energy supply. Some countries went a step further, implementing progressive tariff schemes that sent a signal designed to prevent wasteful use of energy, as well as time-differential rates in order to encourage a better management of demand.</p> <p>LAC region had a lower economic growth rate of 0.5% in 2015, but should pick up again in 2016 at 1.7%. While sound economic policies and a relatively favorable international context in the preceding decade have lifted tens of millions of people out of poverty, the region still suffers from the highest levels of income disparity in the world. The LAC region includes a mix of both net energy importers and exporters, including OPEC members Ecuador and Venezuela. Overall, LAC is an energy-rich region with large oil and gas deposits and great natural endowments of exploitable renewable energy. With economies expanding, energy consumption continues to rise across the region, with energy demand expected to increase and almost double by 2050. Managing energy demand growth in coming years will be crucial.</p> <p>However energy equity as a whole is fairly low in the region. Access to electricity varies, with nearly a quarter of the population in Nicaragua lacking modern electricity services, while some of the more developed countries have electrification rates of nearly 100%. Subsidies play an important role in many countries such as Argentina, Venezuela, Bolivia, Ecuador, and Chile, and government attempts to reduce fuel subsidies have for the most part failed due to large protests. In 2012, countries in the region produced only about 9% of total global GHG emissions. Changing weather patterns and the escalating energy-water-food nexus drive some of the biggest challenges for the LAC energy sector. Droughts, for example, in Brazil, Venezuela, and Colombia, torrential storms and rains, such as seen in Chile and Bolivia, threaten the energy infrastructure of countries in the region more frequently. These changes require the implementation of soft and hard resilience measures to adapt to the new normal. To adapt to changes in hydrological patterns and cycles, the countries in the region may need to increase fossil-fuel power generation as well as focusing on solar and wind energy. Regional integration to optimize the use of energy resources is an opportunity to ensure sustainable development. It remains to be seen if this region can maintain its superior environmental performance as its countries address societal and economic inequality and try to extend the benefits of development to the rest of their populations.</p> <p>The interest for energy efficiency is increasing in the region. In most countries, the activities, projects and programs associated with the promotion and development of energy efficiency have remained in the public domain, under the direction of ministries, national commissions and/or secretariats or energy divisions, having varying degrees of visibility and influence according to country.</p> <p>In 2009 ECLAC produced a first report on the situation of Energy Efficiency in Latin America. Analysis of the 26 countries showed differences, from one country to another, among the regulatory frameworks</p>

associated with energy efficiency. Since then in many of the countries there was a trend toward creating (or strengthening) national energy efficiency programs, and providing them with the legal and regulatory support necessary to further the government's policy decisions in this area. Most of the countries—according to the study—faced major challenges in obtaining resources to promote energy efficiency. Analysis of the *key actors in energy efficiency and their effective roles* shows that public sector activities, projects and programs for promoting and developing energy efficiency are overseen by ministries, national commissions and/or energy management secretariats, which have varying degrees of visibility and influence, depending on the particular country.

Since 2009 there has been an increase in the funds available for energy efficiency activities, in some cases encouraged by the need to meet environmental objectives related to climate change. For example, Bolivia is designing a Bolivian Energy Efficiency Fund, Uruguay has created the Uruguayan Trust for the Development of Energy Efficiency (FUDAEE), and Argentina is establishing a development fund for energy efficiency projects with assistance from the Global Environmental Facility (GEF) and the World Bank. Chile is implementing the National Energy Efficiency Program, which has involved a substantial increase in funding.

In recent years, there has also been a moderate increase in the number of public and private financial institutions that have lines of support for the evaluation and implementation of energy efficiency projects. Regarding *evaluation of the results of energy efficiency programs* that have been carried out, the thoroughness of the evaluation is based on the amount and quality of information available in each country. As a result, and with some exceptions, the information is still insufficient to draw firm conclusions about whether a national program is on track, or is missing its targets and must be adjusted. As for the *institutional structures* that support energy efficiency activities, in recent years there has been a consolidation of existing institutional actors, while other new players have entered the stage. In synthesis, the scope and efficiency of public and private actors involved in the promotion and development of energy efficiency programs in countries in the Region is the result of four main factors: (a) the political support of Governments; (b) continuity in the efforts and of the frameworks associated with energy efficiency; (c) ability to access financing; and (d) capacity to report on “what can be done” in each demand sector in order to develop energy efficiency strategies.

One lesson that does emerge clearly from the region's experience is that the mere existence of energy efficiency legislation in no way guarantees that there will be positive effects on (a rational reduction of) energy demand. This will not occur unless energy efficiency activities, projects and programs that are adapted to national realities are developed and systematically implemented. The State has difficulty monitoring—and, where the law provides, sanctioning—behaviors that do not conform to legal requirements. Economic and cultural barriers in Latin American and Caribbean societies hinder the full enforcement of energy efficiency standards, while a lack of human resources (due to budgetary constraints) means that monitoring and enforcement systems are inefficient.

Mobilizing energy efficiency was an urgent priority when the project was designed. To transition to the sustainable energy system of the future, we need to decouple economic growth from greenhouse gas (GHG) emissions. Energy efficiency is the most important “arrow in the quiver” to achieve this.

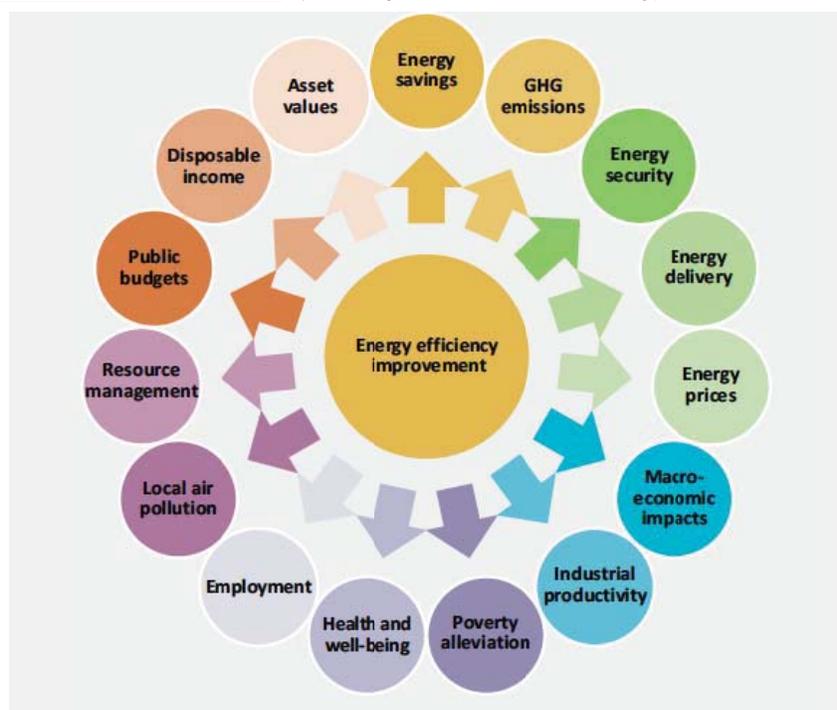
JC-1.2: The project's objectives and accomplishments remained relevant throughout its implementation

List of Key Performance Indicators (KPIs) under JC 1.2 (codes and definition)

KPI-1.2.1	<i>Selection of countries according to needs for improvement in energy efficiency strategies and policies: criteria and response from potential beneficiary countries</i>
KPI-1.2.2	<i>Project's objectives / outcomes against trends in LA countries energy policies end interventions</i>
KPI-1.2.1:	<i>Selection of countries according to needs for improvement in energy efficiency strategies and policies: criteria and response from potential beneficiary countries</i>

<p>Main Findings on KPI-1.2.1:</p> <p>Since the 2009 report, ECLAC has identified energy efficiency as priority area for its intervention. In 2011, thanks to support of GIZ, a new opportunity was offered to MERCOSUR countries, that is to start the collection of data on energy consumption in order to build standard and credible indicators that would allow to monitor the energy efficiency. The mentioned report has already identified energy efficiency as a common issue for all LA countries. However at the start the selection of countries was limited because the novelty of the project demanded some preliminary exercises to assess the beneficiary acceptance and the quality of the methodology. Consequently the first countries approached were the 4 countries of MERCOSUR plus Brazil and Ecuador. Later the success of the project allowed for the extension. In para 1.1.2 the list of interventions for Energy Efficiency on going at the time of project implementation shows that for a large number of countries EE is a priority.</p> <p>Enhanced regional collaboration and coordination has been highlighted as an important factor that will contribute to increased energy efficiency action in the LAC region. A number of LAC countries are engaged in a range of regional and sub-regional initiatives and networks to promote energy efficiency. A remarkable fact is that almost all countries are implementing or in the process of implementing national programs for the short- and medium-term.</p> <p>A major barrier to the development of energy efficiency activities has been the lack of adequate data and statistical information. Similarly, a deficit is evident in the methodologies for evaluating the results of energy efficiency programs and projects. Efforts to overcome these shortcomings in most countries are limited to conducting studies of energy demand by sector and end-use energy and participating in creating the BIEEs. A barrier that recurrently appears in reports on the state of affairs of energy efficiency in the countries of the region is related to the lack of easily available funds and mechanisms to support the delivery of energy efficiency projects. As a result, some countries are accessing finance independently or through international collaboration.</p>
<p>KPI-1.2.1 (i) Data, figures and tables: <i>(with explicit source referencing)</i></p>
<p>KPI-1.2.1 (ii) Key extracts from documents: <i>(with explicit source referencing)</i></p>
<p>KPI-1.2.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p>
<p>KPI- 1.2.2: <i>Project's objectives / outcomes against trends in LA countries energy policies end interventions</i></p>
<p>Main Findings on KPI-1.2.2:</p> <p>In LAC many studies have been carried out to estimate the potential for improving energy efficiency, usually based on the development of different prospective scenarios. These potentials are strongly determined by the technology mix, national circumstances, knowledge of available resources, the estimated evolution of the socio-economic system, the conditions given by the global context, and assumptions about the progress of access equity —to name just a few. The potential for energy efficiency improvements is dynamic, and various estimates highlight the importance of improving energy efficiency in the region⁵.</p> <p>During project implementation a radical swift in energy market become apparent: at the start price for oil was around 130\$ per barrel following a few years trend of increasing prices. This is the strongest motivation that can explain the immediate success of the proposal from ECLAC. From the table below it is evident that the project's objectives and expected results not only remained relevant but actually gained additional priority following the recent Paris declarations on CO2 reduction and climate change fight.</p>

KPI-1.2.2 (i) Data, figures and tables: (with explicit source referencing)



IEA, “Capturing the Multiple Benefits of Energy Efficiency”, December 2014

Country	Key Milestones in Energy Policy and Impacts on Energy Efficiency
Bolivia	Structural change from 2006 and the need to reconcile an increasing domestic demand, maintaining exports, and a reserves horizon of non-renewable sources.
Chile	The impact on Chile’s energy matrix of the decreased imports of natural gas from Argentina, and the need to reduce the impact of energy on the balance of payments due to replacement by LNG.
Colombia	The four main objectives defined in the Plan 2010/30 involve the incorporation of energy efficiency as a strategy embodied in the PROURE 2010/15.
Cuba	The need to reduce energy imports to improve its trade balance, while promoting the use of renewable sources, means a growing interest in efficiency.
Dominican Republic	The search for greater penetration of natural gas and the required replacement of equipment, as well as the incorporation of renewable energy, implies the desirability of an aggressive programme of energy efficiency.
Ecuador	A programme of hydroelectric development and the replacement of LPG by power in cooking, and a massive penetration of power into other energy services, boosts the energy efficiency programme.
Panama	The guidelines of energy policy incorporate new objectives, and broaden the scope and dimensions to consider, giving increasing opportunities to energy efficiency measures.
Paraguay	While there is no clear manifestation in public policies, recent changes in energy policy and the deepening social and economic aspects involve a wider adoption of energy efficiency strategies.
Peru	The guidelines of the State’s Energy Policy, as defined in Plan 2010/40, constitute a new framework that assigns a high priority to energy efficiency strategies to meet the objectives of the plan.
Uruguay	The depletion of conventional local resources (hydropower), difficulties in provision from Argentina, and the need to restructure their energy matrix with a higher weight of new and renewable energies, while its energy intensity should decrease.

(UNEP DTU “Accelerating energy efficiency: initiatives and opportunities _ Latin American and Caribbean”, August 2015).

KPI-1.2.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>
KPI-1.2.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>
Assessment of / statement on Judgment Criterion JC-1.2 (based on the KPIs main findings)
<p>It is widely acknowledged that energy efficiency generates important benefits for emerging economies. Improved energy efficiency provides a variety of benefits of particular importance for emerging economies and developing countries as they seek to exploit their resource base to reduce poverty and support sustainable growth. Some major gains can be quickly recalled:</p> <ul style="list-style-type: none"> - Access: Energy efficiency can help countries to expand access, effectively enabling them to supply power to more people through the existing energy infrastructure. - Development/growth: Energy efficiency has a variety of positive impacts that support economic growth, for example by improving industrial productivity and reducing fuel import bills. - Affordability/poverty alleviation: Energy efficiency can increase the affordability of energy services for poorer families by reducing the per-unit cost of lighting, heating, refrigeration and other services. - Local pollution: Energy efficiency (both supply side and end-use) can help to reduce the need for generation—and lower associated emissions— while supporting economic growth. - Climate change resilience: By reducing the need for energy infrastructure, energy efficiency reduces the amount of energy assets exposed to extreme weather events. <p>Since the 2009 report, ECLAC has identified energy efficiency as priority area for its intervention. In 2011, thanks to support of GIZ, a new opportunity was offered to MERCOSUR countries, that is to start the collection of data on energy consumption in order to build standard and credible indicators that would allow to monitor the energy efficiency. The mentioned report has already identified energy efficiency as a common issue for all LA countries. However at the start the selection of countries was limited because the novelty of the project demanded some preliminary exercises to assess the beneficiary acceptance and the quality of the methodology. Consequently the first countries approached were the 4 countries of MERCOSUR plus Brazil and Ecuador. Later the success of the project allowed for the extension. In para 1.1.2 the list of interventions for Energy Efficiency on going at the time of project implementation shows that for a large number of countries EE is a priority.</p> <p>Enhanced regional collaboration and coordination has been highlighted as an important factor that will contribute to increased energy efficiency action in the LAC region. A number of LAC countries are engaged in a range of regional and sub-regional initiatives and networks to promote energy efficiency. A remarkable fact is that almost all countries are implementing or in the process of implementing national programs for the short- and medium-term.</p> <p>A major barrier to the development of energy efficiency activities has been the lack of adequate data and statistical information. Similarly, a deficit is evident in the methodologies for evaluating the results of energy efficiency programs and projects. Efforts to overcome these shortcomings in most countries are limited to conducting studies of energy demand by sector and end-use energy and participating in creating the BIEEs. A barrier that recurrently appears in reports on the state of affairs of energy efficiency in the countries of the region is related to the lack of easily available funds and mechanisms to support the delivery of energy efficiency projects. As a result, some countries are accessing finance independently or through international collaboration.</p> <p>In LAC many studies have been carried out to estimate the potential for improving energy efficiency, usually based on the development of different prospective scenarios. These potentials are strongly determined by the technology mix, national circumstances, knowledge of available resources, the estimated evolution of the socio-economic system, the conditions given by the global context, and assumptions about the progress of access equity—to name just a few. The potential for energy efficiency</p>

improvements is dynamic, and various estimates highlight the importance of improving energy efficiency in the region⁵.

During project implementation a radical swift in energy market become apparent: at the start price for oil was around 130\$ and rising per barrel following a few years trend of increasing prices. This is the strongest motivation that can explain the immediate success of the proposal from ECLAC. From the table below it is evident that the project's objectives and expected results not only remained relevant but also actually gained additional priority following the recent Paris declarations on CO2 reduction and climate change fight.

JC- 1.3 : The project's objective and accomplishments were and are aligned with ECLAC's mandate and the relevant sub-programs and create positive synergies with other actions

KPI-1.3.1	<i>Evidence of coherence against main ECLAC mandate and policies</i>
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KPI-1.3.2	<i>Degree of Alignment with the overall DA mandate</i>
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KPI-1.3.3	<i>Contribution / consistency with thematic ECLAC sub-programmes</i>
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KPI-1.3.1:	<i>Evidence of coherence against main ECLAC mandate and policies</i>
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Main Findings on KPI-1.3.1 :

The issue of energy efficiency has been present in ECLAC activities since few years. It can be recalled that the report on LA energy efficiency made in 2009, already mentioned in former paragraphs, was prepared for the intergovernmental regional meeting “Energy Efficiency in Latin America and the Caribbean”, which was held on September 2009 with support from the German Federal Ministry for Economic Development (BMZ) and the German Technical Cooperation Agency (GTZ). Moreover, only few months later, in collaboration with the Caribbean Development Bank, convened a meeting “Promoting Energy Efficiency in the Caribbean” on May 2010. The meeting had its genesis in the convening of consultations in 2009 with Latin American and Caribbean countries, members of the Latin American Energy Agency, and resulted in a report calling for greater awareness of energy efficiency among Caribbean countries, so as to provide the impetus of the development of a regional energy efficiency strategy.

In the same time there was a wide awareness (remarked also in the documents presented in the ECLAC international events) of a certain institutional weaknesses in some LAC countries. To support the region institutions face the constraints due to the energy market fluctuations and in the same time to support the actions to reduce the effect of GHGs that they could suffer as consequence of these weaknesses appears to be perfectly fit with the ECLAC mandate as within this one there are to develop actions addressed to a better and more effective participation of LAC countries in the reduction of CO2 gases. This is done through studies/cooperation programs/offer of technical assistance/production of ad hoc documentation/training etc.

To offer a new instrument to gauge the efficacy and impact of different energy efficiency policies fits then well within the institution mandate: it appears in effect in the institutions priorities for 2010/11 and again in the priorities of the following years, where the close relation between energy efficiency and climate change was clearly stressed. The Objective of the Organization was clear: to strengthen the capacity of Latin American and Caribbean national Governments to establish a path to low-carbon economic growth through energy efficiency policies and measures, with particular attention to innovation policies.

ECLAC has been deeply involved in the economic analysis of climate change, considering both the impacts of this phenomenon on the societies and economies of the region and strategies to mitigate it. ECLAC has been working on increasing awareness about climate change and low-carbon and energy-efficient economic growth, and is actively promoting the insertion of innovation policies and technologies both in the design and the implementation of public policies in the region's countries.

Moreover, ECLAC and ECE have been cooperating closely in the framework of the ECE Global Energy

Efficiency 21 project. The basic idea of this cooperation is to transfer the valuable experience of ECE countries on capacity-building, policy reforms and investment project finance to the ECLAC region, through their regional commissions, in order to promote self-financing energy efficiency improvements that raise economic productivity, diminish fuel poverty and reduce air pollution, such as greenhouse gas emissions. The project was based on the collaboration with ECE and aimed to strengthen the ECLAC region's knowledge base of the quantification of low-carbon economic growth. The quantification of potential benefits deriving from low-carbon programs and policy initiatives, such as energy efficiency and innovation, at the national level, as well as the ex-post evaluation of national programs and policies (in terms of energy saved, emissions avoided and other benefits and impacts, and their scope and duration), depend directly on the specific information and analyses available. Thus, the construction of this statistical base is fundamental for the evaluation of the efficacy and efficiency of low-carbon initiatives and policies, promotion strategies and economic instruments.

However a basic difference in this case should be mentioned. ECLAC actions were not requested formally by the Governments but were articulated as an offer to beneficiary countries to participate in a technical assistance program ("supply driven" against the most standard" demand driven" approach typical of the institution). It means – as mentioned in previous point – that the offer was distributed to the potential beneficiaries to find "buyers" clearly interested and engaged in the future actions. Stakeholders of the region will be provided with analytical studies and systematized information and data on the monitoring of energy efficiency policies in the context of the Millennium Development Goals. Priority will be given to the provision of technical assistance services to countries, with particular emphasis on the economic and social impacts of energy sustainability, and regulation of public utility and infrastructure services delivery. Support will be given to discussion forums to disseminate new policy options and the functioning of knowledge networks for sharing good practices and lessons learned.

The main users of this project were supposed to be Government authorities and officials of countries in the region, especially those concerned with management for the energy issues. .

KPI-1.3.1 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-1.3.1 (ii) Key extracts from documents: *(with explicit source referencing)*

ECLAC PRIORITIES IN 2010-2011

- Consolidating advances towards nominal and real macroeconomic stability
- Improving integration into the international economy and participating in global value chains
- Increasing the production potential and innovation
- Promoting a social covenant by strengthening equity and social cohesion
- Refining policies for the sustainable management of natural resources and adapting to climate change
- Strengthening public management
- Improving regional institutions, in particular those that deal with global and transboundary issues

Sustainability agenda: Sustainable development and human settlements

- Generation of information and indicators for assessing sustainable development in the region
- Evaluation of environmental performance: enhancing externalities and modelling policies
- Strengthening environmental institutions and the integration of environmental sustainability criteria in policies relating to the economy, urban management, land use and international trade
- Analysis of economic policy options for adapting to climate change and mitigating its effects
- Follow-up to international and regional sustainable development agreements (Mauritius Strategy, UN Framework Convention on Climate Change, etc.)

Sustainability agenda: Natural resources and infrastructure

- Fostering sustainability of the pattern of resource-based international integration
- Improving the provision of public services and promoting modernization and integration of infrastructure
- Diversifying conventional and renewable energy sources in forming energy matrices and markets (with emphasis on energy efficiency, renewable energies and biofuels)
- Analysis of income from the exploitation of the natural resource endowment and its possible uses
- Boosting the competitiveness of the logistical chain as a central element of transport and infrastructure policies

<p>KPI-1.3.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p> <p>ECLAC started the EE indicators in 2009 with a specific report. The success of the European experience with EE indicators pushed to transfer the methodology in LA. The support from GIZ was essential and will continue for the next three years. <i>(interview with Coviello)</i></p>
<p>KPI-1.3.2: Degree of Alignment with the overall DA mandate</p>
<p>Main Findings on KPI-1.3.2:</p> <p>The Development Account was established in 1997, as a mechanism to fund capacity development projects of the economic and social entities of the United Nations. Projects financed from the Account aim at achieving development impact through building the socioeconomic capacity of developing countries through collaboration at the national, sub-regional, regional and interregional levels. The projects should seek to ensure effective follow-up to the United Nations conferences and summits in the economic and social areas and serve as an operational extension to the normative and analytical work of the implementing entities. Development Account projects are formulated based on “specific government requests” for support from the implementing entities, with project ideas often being put forth in follow-up to previous Development Account efforts and/or assistance provided through the Regular Program for Technical Cooperation or extra-budgetary funding. The Development Account provides a mechanism for promoting the exchange and transfer of skills, knowledge and good practices among target countries within and between different geographic regions, and through cooperation with a wide range of partners in the broader development assistance community. The Account provides a bridge between in-country capacity development actors, on the one hand, and United Nations Secretariat entities, on the other.</p> <p>The objective of the Development Account is to fund capacity development projects in the priority areas of the United Nations Development Agenda that benefit developing countries. The Account encourages close collaboration of entities of the United Nations Secretariat on innovative, cross- sectoral regional or interregional activities, which draw mainly on the technical, human and other resources available in developing countries. The implementing entities are expected to use human and technical capacities to the extent possible to maximize knowledge transfer, utilizing networks of expertise with links at sub-regional, regional and global levels and with a view to promoting capacity-building in developing countries.</p> <p>The project was approved in the 8th tranche under the code 1213AD. Its relation to the strategic framework for the period 2012- 2013 and the Millennium Development Goals is: Economic and social development in Latin American and the Caribbean sub-programme 9 (Natural resources and infrastructure); Millennium Development Goal 7. The project is closely related to a former DA project managed by the same unit “Strengthening National Capacities to Design and Implement Sustainable Energy Policies for the Production and Use of Bio-fuels in LAC”. This previous DA project also focused on institutional strengthening and capacity building of national energy authorities for policy development and use of quantitative statistical tools (LEAP model) for the planning of energy policies.</p> <p>It should be mentioned, however, that in the project document presented to UNDA as well as in the documents related to project accessible at UNDA site, there is no mention of two main features: a) that a project called BIEE to define and build energy efficiency indicators for Latin American countries based on the European experience was already started in 2011, b) that this project was supported with substantial resources by the German cooperation and the French cooperation. This probably would not have changed the funding capacity, the structure or the modalities of the project’s implementation but could have impacted on the definition of expected results and of the main indicators (see below para. 2.2.2).</p>
<p>KPI-1.3.2 (i) Data, figures and tables: <i>(with explicit source referencing)</i></p>

<p>KPI-1.3.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i></p> <p>ECLAC, in an effort to bridge the EE gap, is working on the issue of energy efficiency indicators through the BIEE (Base Indicators for Energy Efficiency in Latin America and the Caribbean) regional program, which is based on the technical and political process and the operational logic of the European Commission ODYSSEE program. The expectation is that a set of specific indicators would be developed that would enable the progress of national energy efficiency programs to be determined, the results analyzed and—in consequence—the corresponding policy decisions to be made.</p> <p>The BIEE program was launched by ECLAC—in coordination with, and supported by, OLADE—in 2011; this was made possible by the contribution of the German Technical Cooperation agency (GTZ) with the technical support of the French Agency for Energy and the Environment (ADEME), within the framework of the IPEEC (International Partnership for Energy Efficiency Cooperation). There are currently 11 countries in the Region involved in the BIEE program, and the plan is to expand to other Latin American and Caribbean countries in 2014.</p> <p>ECLAC, “Energy efficiency in Latin America and the Caribbean: Progress and challenges of the past five years”, 2014.</p>
<p>KPI-1.3.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p>
<p>KPI-1.3.3: <i>Contribution / consistency with thematic ECLAC sub-programmes</i></p>
<p>Main Findings on KPI-1.3.3:</p>
<p>Since its design the project was careful to search for synergies and collaboration with other ECLAC divisions and thematic sub-programmes, especially related to the management of natural resources, environment and climate change: these is effect are within the priorities of the organization in the last years.</p>
<p>KPI-1.3.3 (i) Data, figures and tables: <i>(with explicit source referencing)</i></p>
<p>KPI-1.3.3 (ii) Key extracts from documents: <i>(with explicit source referencing)</i></p> <p>Las condiciones de América Latina y del Caribe, particularmente sus perspectivas de crecimiento y desarrollo, imponen una atención cada vez más grande a la reducción de las pérdidas de energía y mejora de eficiencia energética, en todos los sectores socioeconómicos y para todos los vectores energéticos, con beneficios significativos. En este contexto, promover y acompañar programas gubernamentales, evaluando acciones y estimando sus resultados de forma consistente es absolutamente fundamental.</p> <p>ECLAC: “Indicadores de políticas públicas en materia de eficiencia energética en América Latina y el Caribe”, 2010</p> <p>A partir del año 2011 se consolidó la experiencia que la división ha venido capitalizando en la materia, dándose inicio al Programa BIEE gracias a la contribución de la Agencia de Cooperación Alemana GIZ y el apoyo técnico de la Agencia Francesa para la Energía y el Ambiente (ADEME), en el marco de la IPEEC (International Partnership for Energy Efficiency Cooperation). <i>(Presentation of the National Reports on EE, ECLAC 2013)</i></p>
<p>KPI-1.3.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p>
<p>Assessment of / statement on Judgment Criterion JC-1.3 (based on the KPIs main findings)</p>
<p>The issue of energy efficiency has been present in ECLAC activities since few years. It can be recalled that the report on LA energy efficiency made in 2009, already mentioned in former paragraphs, was prepared for the intergovernmental regional meeting “Energy Efficiency in Latin America and the Caribbean”, which was held on September 2009 with support from the German Federal Ministry for Economic Development (BMZ) and the German Technical Cooperation Agency (GTZ). Moreover, only few months later, in collaboration with the Caribbean Development Bank, convened a meeting “Promoting</p>

Energy Efficiency in the Caribbean” on May 2010. The meeting had its genesis in the convening of consultations in 2009 with Latin American and Caribbean countries, members of the Latin American Energy Agency, and resulted in a report calling for greater awareness of energy efficiency among Caribbean countries, so as to provide the impetus of the development of a regional energy efficiency strategy.

In the same time there was a wide awareness (remarked also in the documents presented in the ECLAC international events) of a certain institutional weaknesses in some LAC countries. To support the region institutions face the constraints due to the energy market fluctuations and in the same time to support the actions to reduce the effect of GHGs that they could suffer as consequence of these weaknesses appears to be perfectly fit with the ECLAC mandate as within this one there are to develop actions addressed to a better and more effective participation of LAC countries in the reduction of CO₂ gases. This is done through studies/cooperation programs/offer of technical assistance/production of ad hoc documentation/training etc. To offer a new instrument to gauge the efficacy and impact of different energy efficiency policies fits then well within the institution mandate: it appears in effect in the institutions priorities for 2010/11 and again in the priorities of the following years, where the close relation between energy efficiency and climate change was clearly stressed. The Objective of the Organization was clear: to strengthen the capacity of Latin American and Caribbean national Governments to establish a path to low-carbon economic growth through energy efficiency policies and measures, with particular attention to innovation policies.

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Preliminary Answer to the Evaluation Question EQ-1 based on the statements on the Judgment Criteria

The relevance of energy efficiency in Latin America has been stresses in many documents as well as in political decisions. ECLAC as provider of technical assistance in economic area for LA countries correctly identified energy efficiency and especially the indicators of EE as an important topic within the policy decisions for the beneficiary countries.

Latin American and Caribbean (LAC) countries face an urgent need to advance economic development and social welfare by enabling progress in priority areas such as health, education and infrastructure. If we add to these needs vulnerabilities in the energy sector, it is difficult to see an obvious path to the enhanced social and economic ambitions of LAC societies without intervention on energy. Energy efficiency measures implemented in a strategic manner offer the opportunity to advance societal objectives by transforming the productivity and resilience of country energy systems. The combination of the struggle to reduce climate change impact and the fluctuating prices of oil made the proposal to work on Energy

Efficiency indicators very relevant in the LA environment. Moreover while Energy Efficiency as such is a very large space where multiple and strikingly different positions and policies can be debated /implemented, it is nonetheless true that every one of them needs to be gauged / measured: so it can be said that the establishment and the production of Energy Efficiency indicators is a real unifying issue. ECLAC is to be then complimented for the effort to convene the LAC governments around this issue and to provide the instruments to implement it.

Responsible for about 9% of global GHG emissions, countries in Latin America face increasing challenges driven by changing weather patterns and concerns related to the energy-water-food nexus, which require the implementation of soft and hard resilience measures to adapt to a potential 'new normal'. Alongside adapting to these risks, countries face the challenge of maintaining their high environmental performance as they address societal and economic inequalities. Sustainable energy is not only an opportunity to transform societies and grow economies, but also a necessity - a prerequisite to meet growing energy demand and reduce the carbon footprint. Balancing the three core dimensions of the energy (Security – Sustainability – Equity) is a strong basis for prosperity and competitiveness of individual countries. Secure energy is critical to fuelling economic growth and social development. Energy must be accessible and affordable at all levels of society, and the impact of energy production and energy use on the environment needs to be minimized in order to combat climate change and maintain environmental quality.

According to IEA's World Energy Outlook 2012, energy efficiency policies currently in effect or planned around the world would take advantage of just a third of all economically viable energy efficiency measures, claiming then that there is still a large space for improvement and for new opportunities. Some analysis prepared by IEA —called the Efficient World Scenario that exploits all cost-effective improvements— says that it would be possible to improve energy intensity by an average CAGR of – 2.8% through 2030, more than double historic rates and even somewhat beyond the SE4ALL objective. About 80 percent of the energy savings that are achievable under this scenario would result from measures taken by energy consumers in end-use sectors, with much of the remaining 20 percent attributable to fuel switching and supply-side efficiency measures.

The combination of fluctuating oil prices and awareness of global climate change created an increase in interest and investment in renewable energy worldwide. Total primary energy needs in LAC are estimated to increase 63% by 2030 with respect to 2006 and by 2030; LAC's demand for oil will be 30% higher than in 2010, its demand for natural gas about 100% higher and its demand for coal about 150% higher. Electricity demand is projected to grow particularly rapidly, in a way that over the next decade generating capacity will need to be increased by about 90 GW -nearly 50% more than current generating capabilities. Electricity demand will primarily be driven by the residential sector, which is expected to use nearly four times as much electricity in 2030 than in 2003, and industry, which is expected to double its electricity use. Transportation needs in the LAC region are also growing rapidly, and the International Energy Agency forecasts that transportation fuel use will expand 70% by 2030 with respect to 2004. Furthermore, a lack of diversification of energy sources, has left LAC particularly vulnerable to fluctuating oil prices, supply constraints, and changing weather patterns that affect large hydropower projects.

Since 2005 interest has increased in promoting energy efficiency throughout the whole LAC region. The significant increase in oil prices that began in 2004 (with a historical peak in 2007), as well as an increased sensitivity to environmental issues —particularly those related to climate change (namely, the belief that climate change is a reality and that one of the most effective ways to contribute to the mitigation of its effects is to apply cost-effective energy efficiency policies)— were key factors that contributed to the increased interest in energy efficiency in the region. This interest was reflected in an increased effort to promote energy efficiency through the implementation of programs, mechanisms or policies. It should be remarked that energy efficiency *policies* require the existence of a well-oiled, coordinated machinery of programs and mechanisms, sustainable over time, that follow standardized patterns of behavior. A policy requires the definition of strategic lines, actions, instruments and measures; further, the feasibility, viability and effectiveness of these lines should have been subjected to careful analysis. These conditions were not always present in the country that started the energy efficiency effort:

this can partially explain why the policies did not produce substantial results and why consequently ECLAC was correct in developing special actions toward energy efficiency. In effect there is substantial opportunity for a much improved energy scenario for LAC, with increased sustainable energy businesses in the region, motivated by climate change pressures combined with the abundance of competitive renewable energy sources. First and foremost, energy efficiency measures across sectors will help to reduce demand before addressing the amount of investment required for additional supply. For example, according to a World Bank study, over the next ten years investing \$16 billion in LAC in energy efficiency measures could save approximately \$53 billion in avoided fossil fuel power plant investments.

In 2009 ECLAC produced a first report on the situation of Energy Efficiency in Latin America. Analysis of the 26 countries showed differences, from one country to another, among the regulatory frameworks associated with energy efficiency. Since then in many of the countries there was a trend toward creating (or strengthening) national energy efficiency programs, and providing them with the legal and regulatory support necessary to further the government's policy decisions in this area. Most of the countries —according to the study— faced major challenges in obtaining resources to promote energy efficiency. Analysis of the *key actors in energy efficiency and their effective roles* shows that public sector activities, projects and programs for promoting and developing energy efficiency are overseen by ministries, national commissions and/or energy management secretariats, which have varying degrees of visibility and influence, depending on the particular country. The wide range of public and private actors involved in the region's energy efficiency programs appears to be the result of four main factors: (a) political support from government; (b) continuity of efforts and institutional structures; (c) access to funding; and (d) capacity for promoting and providing information on energy efficiency measures. With regard to *resources and funding mechanisms for energy efficiency programs*, in the vast majority of countries funds for promoting and developing energy efficiency come from national budgets. This means that, except in countries with active energy efficiency policies, there are serious limitations on the mission.

The interest for energy efficiency is increasing in the region. The ECLAC 2009 study contained a very clear and comprehensive analysis of the main stakeholders, useful to build an effective project strategy and communication campaign. Since 2009 there has been an increase in the funds available for energy efficiency activities, in some cases encouraged by the need to meet environmental objectives related to climate change. One lesson that does emerge clearly from the region's experience is that the mere existence of energy efficiency legislation in no way guarantees that there will be positive effects on (a rational reduction of) energy demand. This will not occur unless energy efficiency activities, projects and programs that are adapted to national realities are developed and systematically implemented. The State has difficulty monitoring —and, where the law provides, sanctioning— behaviors that do not conform to legal requirements. Economic and cultural barriers in Latin American and Caribbean societies hinder the full enforcement of energy efficiency standards, while a lack of human resources (due to budgetary constraints) means that monitoring and enforcement systems are inefficient.

In LAC many studies have been carried out to estimate the potential for improving energy efficiency, usually based on the development of different prospective scenarios. These potentials are strongly determined by the technology mix, national circumstances, knowledge of available resources, the estimated evolution of the socio-economic system, the conditions given by the global context, and assumptions about the progress of access equity —to name just a few. The potential for energy efficiency improvements is dynamic, and various estimates highlight the importance of improving energy efficiency in the region⁵.

During project implementation a radical shift in energy market became apparent: at the start price for oil was around 130\$ per barrel following a few years trend of increasing prices. This is the strongest motivation that can explain the immediate success of the proposal from ECLAC. From the table below it is evident that the project's objectives and expected results not only remained relevant but actually gained additional priority following the recent Paris declarations on CO₂ reduction and climate change fight.

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However a basic difference in this case should be mentioned. ECLAC actions were not requested formally by the Governments but were articulated as an offer to beneficiary countries to participate in a technical assistance program (“supply driven” against the most standard” demand driven” approach typical of the institution). It means —as mentioned in previous point— that the offer was distributed to the potential beneficiaries to find “buyers” clearly interested and engaged in the future actions. Stakeholders of the region will be provided with analytical studies and systematized information and data on the monitoring of energy efficiency policies in the context of the Millennium Development Goals. Priority will be given to the provision of technical assistance services to countries, with particular emphasis on the economic and social impacts of energy sustainability, and regulation of public utility and infrastructure services delivery. Support will be given to discussion forums to disseminate new policy options and the functioning of knowledge networks for sharing good practices and lessons learned. The main users of this project were supposed to be Government authorities and officials of countries in the region, especially those concerned with management for the energy issues.

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Information Matrix EQ 2	
Evaluation Question 2	
To what extent did the project's design properly address the major issues identified in connection with the energy efficiency challenges and innovation policies affecting the region?	
List of Judgment Criteria (JCs) under the EQ 2	
JC- 2.1	The analysis defined the issues and the major problems and constraint conditions with sufficient precision
JC- 2.2	The problem analysis identified realistic cause-effect relationships among actual situations and constraints
JC- 2.3	The governance and management structures of the project were appropriate to the objective, accomplishments and activities
JC- 2.4	The design of the activities and the distribution of related resources were consistent with the objectives and the expected results

JC-2.1: The analysis defined the issues and the major problems and constraint conditions with sufficient precision	
List of Key Performance Indicators (KPIs) under JC 2.1 (codes and definition)	
KPI-2.1.1	<i>Presence of updated concepts on how energy efficiency can affect long term development and its awareness at global / local level</i>
KPI-2.1.2	<i>Presence in the project documents of quantitative / qualitative data sufficient to identify issues and problems with reference to LAC energy behaviors</i>
KPI-2.1.1: <i>Presence of updated concepts on how energy efficiency can affect long term development and its awareness at global / local level</i>	
Main Findings on KPI-2.1.1:	
<p>Energy efficiency enables countries to alleviate the financial burden of oil imports on their balance of trade and also improves energy supply security. As many countries are faced with low economic growth and high unemployment, energy efficiency is seen as the best strategy to improve the competitiveness of industry, by reducing energy cost and stimulating economic growth and job creation through the investments generated. In developing and emerging economies, energy efficiency also enables a reduction in energy investment, and helps to make the best use of existing assets to improve energy access. Improving efficiency in use of electricity has two benefits. Slowing down electricity demand growth, and so reducing the investment needed for expansion of the electricity sector. In these countries, energy efficiency also has many other benefits, such as reducing the impact of oil volatility on the balance of trade and on subsidies, when prices are subsidized which is often the case.</p> <p>ECLAC former studies and the project document recognize the realities and challenges in the LAC region that provide a framework of requirements and opportunities for energy efficiency, such as:</p> <ul style="list-style-type: none"> - Many countries have a vulnerable energy system that is increasing its dependence on imported fossil fuels. - High fuel costs, relative to national income, with price volatility impacts on consumers' energy costs, tariffs and prices. - Old and inefficient energy supply infrastructure. - Poor security of supply. - High levels of technical losses in the power sector. - Low load factor in power consumption. 	

- High rates of growth in demand against restrictions on the availability of funds for investments.
- High costs of production and the distribution of power and/or natural gas.
- Low level of access to modern energy sources.
- Generalized (i.e. not targeting specific actors in need) price subsidies for energy consumption.

Given the additional vulnerabilities of the energy sector, energy efficiency measures offer an opportunity to improve the robustness of the energy system and reduce vulnerabilities and uncertainties affecting development. Experience indicates that the key factors for consideration when implementing efficiency measures relate to technical, regulatory, economic, socio-cultural, inter-agency and environmental approaches. Energy efficiency is linked to the proper allocation of resources in the production, distribution and consumption of energy. In this regard, the diversification and substitution of energy sources should be part of the overall strategy.

Price signals alone are not enough to achieve a rationalization of energy use. Policy measures are necessary in market economies to reinforce the role of energy prices, first to create the appropriate market conditions for energy-efficient equipment and services, second to drive consumer choice towards the most cost-effective solutions. Market failures are often used to justify the implementation of policy measures. Energy-efficiency policies are therefore necessary to address these multiple barriers. The main objective of applying policy measures for/to energy efficiency is to create the necessary conditions to speed up the development and the deployment of efficient equipment and services, through:

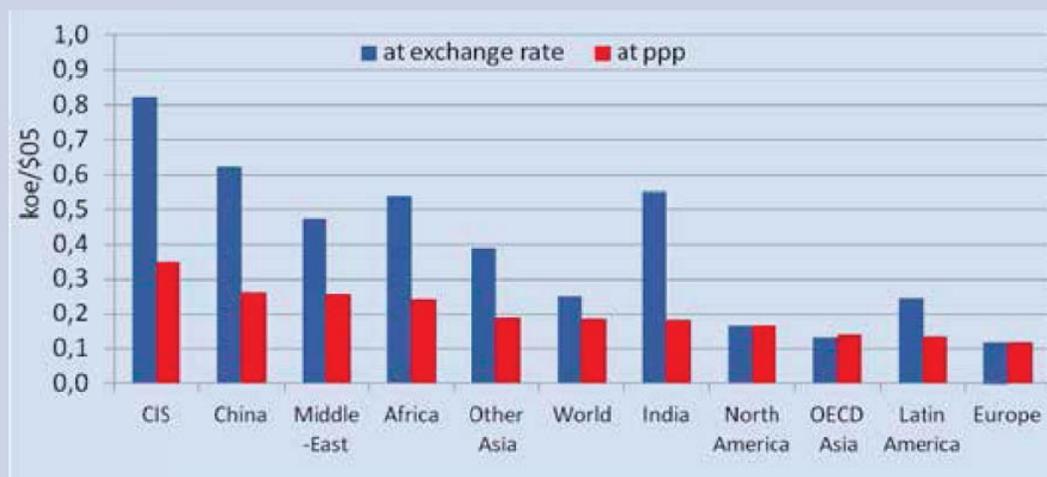
- information and communication, well channeled to final consumers to increase their awareness and show them the range of possible options for technical decisions
- Support for the purchase of energy-efficient equipment and devices through financial incentives (e.g. subsidies, – subsidized loans) with subsidized interest rates or fiscal measures (tax credit, tax reduction, taxation of inefficient equipment)
- deployment of specific financing mechanisms to enable consumers to invest in cost-effective solutions with high investment
- regulation on appliances, equipment and buildings to mandate the display of their energy- efficiency performance through efficiency labels and to impose minimum efficiency standards to remove the least efficient from the market
- regulation imposing obligations on consumers (e.g. audits, reporting, plans, energy savings)
- research and development (R&D) and demonstration programs for energy-efficient technologies to speed up their penetration in the market.

The data below show that the situation of LAC region is better than many other regions. Nevertheless, as explained before, energy efficiency is an important instrument for development and social improvement. But all policies and measures need to be monitored in order to assess the impact and avoid errors: the definition of indicators as instrument is then one more time justified. Most of the countries of the region —see below list— are active in the research for new instruments – institutions / laws / regulations / policies: indicators are exactly the tool that can be fitted for every situation.

KPI-2.1.1 (i) Data, figures and tables: (with explicit source referencing)

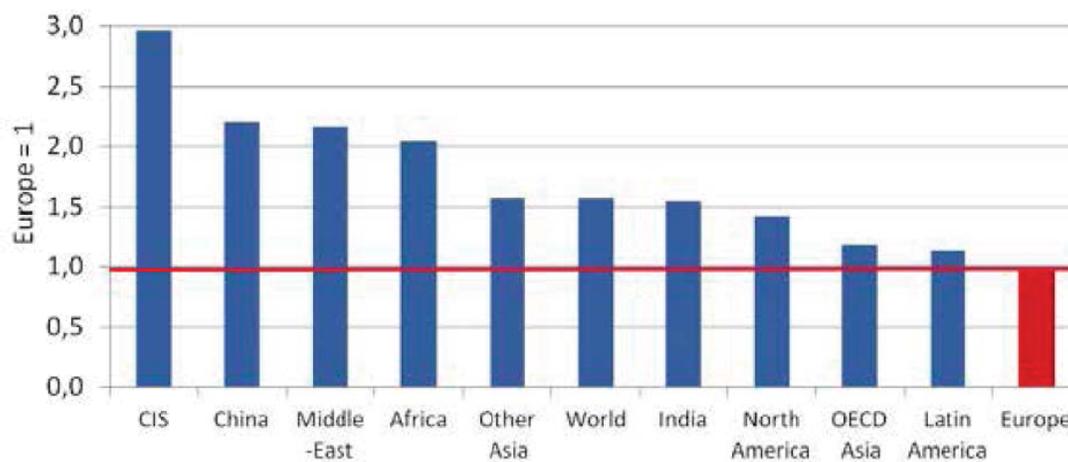
Primary energy intensity: purchasing power parities vs. exchange rates (2011)
Intensité énergétique primaire: parités de pouvoir d'achat vs taux de change (2011)

Source: Enerdata



Primary energy intensity levels by world region (2011)
Intensité énergétique primaire par région du monde

Source: Enerdata



Institutional issues

Country	Situation
Bolivia	There is a lack of institutional coordination among many energy public institutions, but the existence of a network to promote actions and measures in energy efficiency provides a good opportunity for intervention.
Chile	An Energy Agency for Energy Efficiency was created in 2010 and offers an excellent framework for actions.
Colombia	A PROURE programme under UPME Coordination is in place. There is a lack of coordination among public institutions. The Colombian Council of Energy Efficiency (private sector) was established in 2010. The creation of an Energy Efficiency Agency is currently being considered.
Costa Rica	The Ministry of Environment, Energy and Seas (MINAEM) is responsible for the strategy on energy efficiency.
Cuba	The National Office for the Rational Use of Energy (ONURE), created in 2012.
Dominican Republic	There is a programme on energy efficiency under the responsibility of the Energy National Commission.
Ecuador	The National Institute for Energy Efficiency and Renewable Energy (INER) was created in 2012 offering an adequate counterpart for programmes.
El Salvador	The Institutional Committee on Energy Efficiency is responsible for the implementation of actions and measures.
Guatemala	The National Council on Energy Efficiency is in the process of being created by law. It will be in charge of the energy efficiency plan.
Guyana	The Guyana Energy Agency is putting in place specific actions to promote energy efficiency.
Honduras	Responsibilities are distributed among different public organisations, although several energy efficiency programmes are in place.
Nicaragua	The Ministry of Energy and Mines is responsible for the Action Plan on Energy Efficiency.
Panama	The National Energy Secretary is in charge of energy efficiency policy.
Paraguay	The National Committee on Energy Efficiency is responsible for the Energy Efficiency Plan.
Peru	The Ministry of Energy and Mines is responsible for energy efficiency policy.
Uruguay	The National Energy Department is very active in energy efficiency policies and strategies.

Legal regulatory frameworks

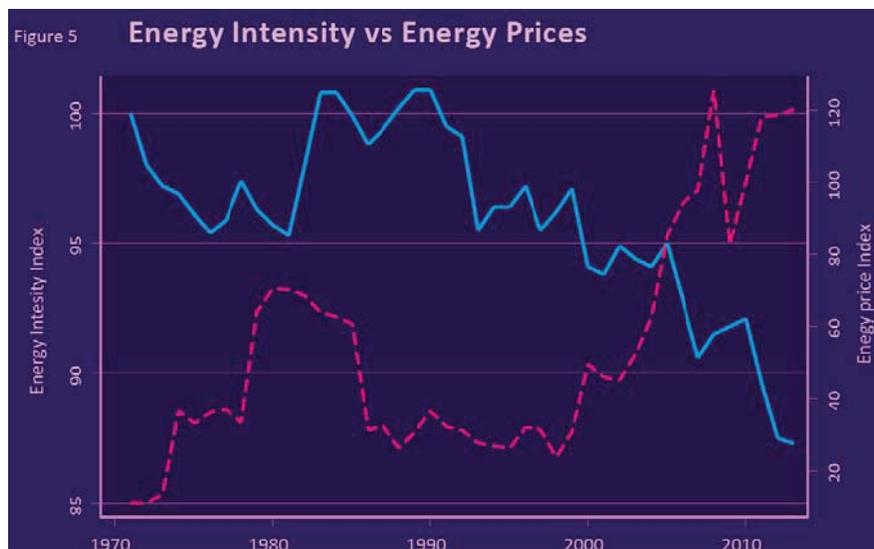
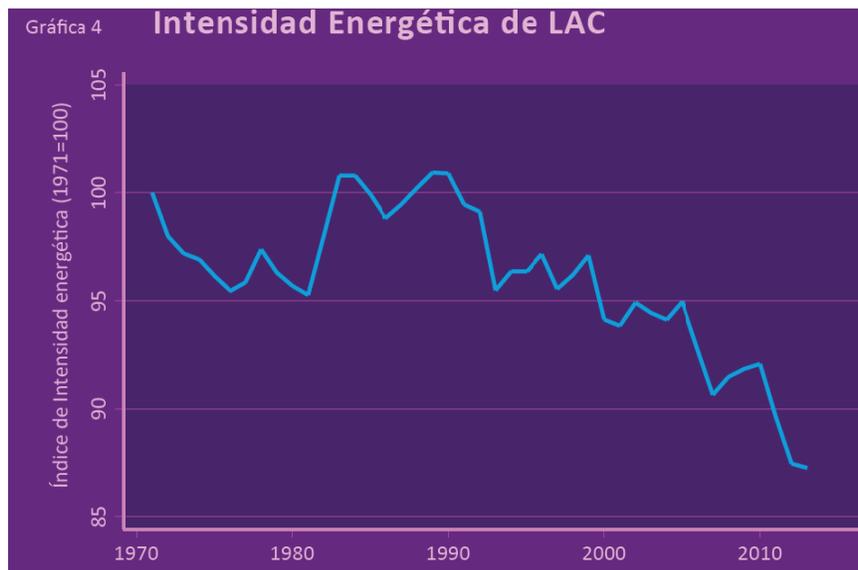
Country	Situation
Bolivia	As an objective of the energy policy, a new law on energy efficiency will be proposed.
Chile	A new law on energy efficiency is under consideration. The law proposes to define the energy efficiency policy as a part of the state policy (long-term objectives and implementation).
Colombia	Law (697) was introduced in 2001 with the objective of promoting energy efficiency and renewable energies. The legal regulation created the PROURE Programme in 2003. In 2014 a new law was approved (1715) to promote energy efficiency and renewable energies.
Costa Rica	Law 7447 on the Rational Use of Energy has been in place since 1994.
Cuba	Foreign Investment Law 118 (2014) includes some references to energy efficiency.
Dominican Republic	A law on energy efficiency is under consideration.
Ecuador	The Ecuador Normalisation Institute has fixed the technical norms for efficiency. ISO 50001 is in place in the country.
El Salvador	A projected law has been drawn up by the National Commission of Energy.
Guatemala	A projected law on energy efficiency is being considered by Congress.
Guyana	No references to law, only to the application of standards for equipment.
Honduras	A proposed law is under consideration by the government.
Nicaragua	A proposed law is under consideration by the government.
Panama	Law 69 (2012) established the general rules for the policy on energy efficiency.
Paraguay	No reference to a law on energy efficiency.
Peru	The Law of Energy Efficiency (2000) was adopted in 2007.
Uruguay	Law 18.597 on energy efficiency has been in force since 2008.

(UNEP DTU "Accelerating energy efficiency: initiatives and opportunities _ Latin American and Caribbean", August 2015).

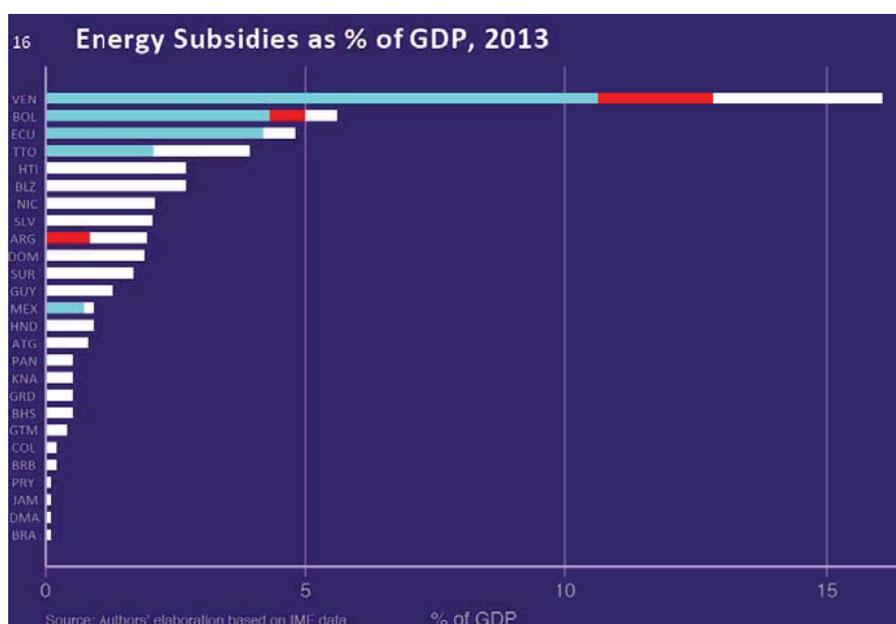
KPI-2.1.1 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>
KPI-2.1.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>
KPI- 2.1.2: <i>Presence in the project documents of quantitative / qualitative data sufficient to identify issues and problems with reference to LAC energy behaviors</i>
Main Findings on KPI-2.1.2:
<p>Project document refers largely to the former studies and reports produced by ECLAC in the last years as major sources of knowledge on the situation of energy efficiency in LAC regions. In effect it showed that energy efficiency policies have received increased attention in the LAC region, reflecting the large untapped potential that exists. Many countries in the LAC region have the opportunity to incorporate energy efficiency further into the public policy agenda (understood as the set of actions, laws, institutions, and economic and regulatory instruments needed to implement programs and plans). Past experience with energy efficiency measures that have been carried out in the region allowed the project to highlight the major issues, and consequently focus on the innovative approach proposed. It should be noted however that the abundance of data and studies of the topic could have allowed a better presentation of the reasons to start the project.</p> <p>Though there have been considerable decade-to-decade variations, the rate of energy intensity has declined over the past 40 years. The amount of energy required per unit of GDP dropped by about 13% since the early seventies, reaching, on average, 230 kg of oil equivalent per unit of GDP (at constant 2005 US\$), above the level registered by countries belonging to the Organization for Economic Co-operation and Development (OECD), but far below other regions in the world, such as Asia, Africa, and the Middle East. Declining energy intensity suggests that the region is doing more with less energy. Put another way, this is essentially an increase in the productivity of energy consumption. Recent empirical evidence identified per capita income, oil prices, and overall economic growth as the key drivers behind this trend. Surprisingly, this reduction in energy intensity (or increase in energy productivity), took place in the absence of any systematic and significant energy-saving programs, suggesting that market signals —energy prices— may have had a substantial role in reducing the region's energy intensity.</p> <p>The recorded downward trend in energy intensity is inversely correlated with the increase in the overall price of energy, particularly in the 2000s. Between 1971 and 2013, 3.4% of LAC's GDP average annual growth rate was fueled by approximately 3.0% average growth rate in primary energy use, and an approximately 5.4% growth rate in electricity consumption. Energy use in Latin America has more than tripled over the past forty years, from 248 million tons of oil equivalent (MTOE) in 1971 to 848 MTOE in 2013, representing more than 8% of the increase in global energy demand over the period. Fossil fuels (coal, oil, and gas), which accounted for 68.9% of all primary energy demand in 1971, continue to represent the most important primary fuels in the energy matrix, increasing to 74.4% in 2013. Hydrocarbons (oil and gas) alone accounted for 69.4% of total energy consumed in 2013. A notable change in consumption pattern is in natural gas consumption, which went from a modest 11% of total energy use to more than 23%, indicating an increased diversification towards low-carbon fuels.</p> <p>The LAC region has the cleanest electricity matrix, with a sharp contrast in the share of renewable sources compared to other regions in the world. Nevertheless, one should be careful when interpreting this statement. Aggregate figures hide great heterogeneity among countries. The LAC region is no exception. LAC's aggregate figure is strongly influenced by the six largest economies. Indeed, the power generation of these countries accounts for more than 80% of the total electricity generation of the region. For instance, if Brazil is excluded from the region, total renewable generation in LAC falls from 52.4% to 38.2%. Although LAC is still the region with the cleanest power matrix even with Brazil removed, it is not as clean as it seems to be.</p> <p>Subsidies for electricity and fuels are still widely present in the region. Although subsidies can be seen as a tool for redistribution, too often energy subsidies are found to be inefficient, regressive, and highly inequitable. For instance, in Venezuela, it is estimated that the wealthiest 25% receives more than 62% of the value of the gasoline subsidy alone. Overall energy subsidies cost Venezuela more than \$36 billion in</p>

2013, equivalent to around 16% of GDP —more than government resources allocated to health (3.9%), education (4.9%), and housing (1.8%) combined. Nevertheless, in addition to the fiscal burden and distributional issues, keeping artificially low energy prices encourages both overuse and inefficiency, which in turn have important environmental impacts and accelerates the depletion of natural resources. Disproportional energy subsidies also reduce and eliminate incentives to develop renewable technologies that can compete against conventional energy sources. Even if it true that subsidies distort the market and especially the capacity of the final consumers to understand the issue of energy and so behave accordingly, it is also evident that only the presence of efficient indicators can sustain the option for a change in policies. One more reason to appreciate the project and its objectives.

KPI-2.1.2 (i) Data, figures and tables: (with explicit source referencing)



Energy Use in LAC (Mtoe)					
ENERGY SOURCE	1971	SHARE-71	2013	SHARE-13	CAGR
Total	248.4	100%	848.7	100%	3.0%
Coal	8.0	3.2%	42.8	5.0%	4.1%
Oil	135.9	54.7%	389.6	45.9%	2.5%
Gas	27.2	10.9%	199.0	23.4%	4.9%
Nuclear	.	.	8.5	1.0%	.
Hydro	7.6	3.1%	62.8	7.4%	5.2%
Biofuel & Waste	69.7	28.1%	136.7	16.1%	1.6%
Other Renewables*	.	.	8.6	1.0%	.



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KPI-2.1.2 (ii) Key extracts from documents: (with explicit source referencing)

KPI-2.1.2 (iii) Information from interviews and questionnaire (with explicit source referencing)

Assessment of/statement on Judgment Criterion JC-2.1 (based on the KPIs main findings)

Energy efficiency enables countries to alleviate the financial burden of oil imports on their balance of trade and also improves energy supply security. As many countries are faced with low economic growth

and high unemployment, energy efficiency is seen as the best strategy to improve the competitiveness of industry, by reducing energy cost and stimulating economic growth and job creation through the investments generated. In developing and emerging economies, energy efficiency also enables a reduction in energy investment, and helps to make the best use of existing assets to improve energy access. Improving efficiency in use of electricity has two benefits. Slowing down electricity demand growth, and so reducing the investment needed for expansion of the electricity sector. In these countries, energy efficiency also has many other benefits, such as reducing the impact of oil volatility on the balance of trade and on subsidies, when prices are subsidized, which is often the case.

ECLAC former studies and the project document recognize the realities and challenges in the LAC region that provide a framework of requirements and opportunities for energy efficiency. Given the additional vulnerabilities of the energy sector, energy efficiency measures offer an opportunity to improve the robustness of the energy system and reduce vulnerabilities and uncertainties affecting development. Experience indicates that the key factors for consideration when implementing efficiency measures relate to technical, regulatory, economic, socio-cultural, inter-agency and environmental approaches. Energy efficiency is linked to the proper allocation of resources in the production, distribution and consumption of energy. In this regard, the diversification and substitution of energy sources should be part of the overall strategy.

Price signals alone are not enough to achieve a rationalization of energy use. Policy measures are necessary in market economies to reinforce the role of energy prices, first to create the appropriate market conditions for energy-efficient equipment and services, second to drive consumer choice towards the most cost-effective solutions. Market failures are often used to justify the implementation of policy measures. Energy-efficiency policies are therefore necessary to address these multiple barriers. The main objective of applying policy measures for / to energy efficiency is to create the necessary conditions to speed up the development and the deployment of efficient equipment and services. The data show that the situation of LAC region is better than many other regions. Nevertheless, as explained before, energy efficiency is an important instrument for development and social improvement. But all policies and measures need to be monitored in order to assess the impact and avoid errors: the definition of indicators as instrument is then one more time justified. Most of the countries of the region are active in the research for new instruments – institutions / laws / regulations / policies: indicators are exactly the tool that can be fitted for every situation.

Project document refers largely to the former studies and reports produced by ECLAC in the last years as major sources of knowledge on the situation of energy efficiency in LAC regions. In effect it showed that energy efficiency policies have received increased attention in the LAC region, reflecting the large untapped potential that exists. Many countries in the LAC region have the opportunity to incorporate energy efficiency further into the public policy agenda (understood as the set of actions, laws, institutions, and economic and regulatory instruments needed to implement programs and plans). Past experience with energy efficiency measures that have been carried out in the region allowed the project to highlight the major issues, and consequently focus on the innovative approach proposed. It should be noted however that the abundance of data and studies of the topic could have allowed a better presentation of the reasons to start the project.

Though there have been considerable decade-to-decade variations, the rate of energy intensity has declined over the past 40 years. The amount of energy required per unit of GDP dropped by about 13% since the early seventies, reaching, on average, 230 kg of oil equivalent per unit of GDP (at constant 2005 US\$). The recorded downward trend in energy intensity is inversely correlated with the increase in the overall price of energy, particularly in the 2000s. Between 1971 and 2013, 3.4% of LAC's GDP average annual growth rate was fueled by approximately 3.0% average growth rate in primary energy use, and an approximately 5.4% growth rate in electricity consumption. Energy use in Latin America has more than tripled over the past forty years, from 248 million tons of oil equivalent (MTOE) in 1971 to 848 MTOE in 2013, representing more than 8% of the increase in global energy demand over the period. Fossil fuels (coal, oil, and gas), which accounted for 68.9% of all primary energy demand in 1971, continue to represent the most important primary fuels in the energy matrix, increasing to 74.4% in 2013.

Hydrocarbons (oil and gas) alone accounted for 69.4% of total energy consumed in 2013. A notable change in consumption pattern is in natural gas consumption, which went from a modest 11% of total energy use to more than 23%, indicating an increased diversification towards low-carbon fuels.

The LAC region has the cleanest electricity matrix, with a sharp contrast in the share of renewable sources compared to other regions in the world. Nevertheless, one should be careful when interpreting this statement. Aggregate figures hide great heterogeneity among countries. The LAC region is no exception. LAC's aggregate figure is strongly influenced by the six largest economies. Indeed, the power generation of these countries accounts for more than 80% of the total electricity generation of the region. For instance, if Brazil is excluded from the region, total renewable generation in LAC falls from 52.4% to 38.2%. Although LAC is still the region with the cleanest power matrix even with Brazil removed, it is not as clean as it seems to be.

Subsidies for electricity and fuels are still widely present in the region. Although subsidies can be seen as a tool for redistribution, too often energy subsidies are found to be inefficient, regressive, and highly inequitable. For instance, in Venezuela, it is estimated that the wealthiest 25% receives more than 62% of the value of the gasoline subsidy alone. Overall energy subsidies cost Venezuela more than \$36 billion in 2013, equivalent to around 16% of GDP – more than government resources allocated to health (3.9%), education (4.9%), and housing (1.8%) combined. Nevertheless, in addition to the fiscal burden and distributional issues, keeping artificially low energy prices encourages both overuse and inefficiency, which in turn have important environmental impacts and accelerates the depletion of natural resources. Disproportional energy subsidies also reduce and eliminate incentives to develop renewable technologies that can compete against conventional energy sources. Even if it true that subsidies distort the market and especially the capacity of the final consumers to understand the issue of energy and so behave accordingly, it is also evident that only the presence of efficient indicators can sustain the option for a change in policies. One more reason to appreciate the project and its objectives.

JC-2.2: The problem analysis identified realistic cause-effect relationships among actual situations and constraints

List of Key Performance Indicators (KPIs) under JC 2.2 (codes and definition)

KPI-2.2.1 *Presence of credible theory of change in project documents relating how energy efficiency could improve LAC development perspectives*

KPI-2.2.2 *Existence of sufficient and credible documentation on how energy efficiency improvements can bring positive consequences in medium /long term development conditions*

KPI-2.2.1: *Presence of credible theory of change in project documents relating how energy efficiency could improve LAC development perspectives*

Main Findings on KPI-2.2.1:

The capacity assessment undertaken in the 2009 ECLAC report identified the need to develop national energy efficiency indicators and their associated statistical base as a key element in the institutional strengthening of LAC government's capacity to implement effective energy efficiency policies. The stakeholder capacity (public, private, academia and non governmental associations) will be strengthened also in terms of assessing and approaching the different needs of both men and women in the energy efficiency and renewable energy policy making and implementation. Despite some success stories, such as the mass campaigns to replace incandescent bulbs with compact fluorescent lamps (CFLs) and the growing interest that governments have shown in promoting energy efficiency in the last ten years, there remains a large untapped potential. Some LAC countries have introduced *policy, regulatory and institutional frameworks*, with a number of countries already having an Energy Efficiency Act or considering its adoption. However, the implementation of energy efficiency activities has generally been limited in the LAC region, often being prioritized as a response to crises or deficits in energy supply. The success or failure of past policy and programs in the LAC region can help to overcome barriers and explore opportunities for increased action on energy efficiency. Quantified short-, medium and long-term targets

can also help to accelerate the uptake of energy efficiency measures. The evaluation of energy efficiency programs has typically not been prioritized in the region and improved data collection will help to draw firmer conclusions about the success of national programs.

The project's theory of change was based on the hypothesis that strengthening the capacity of Latin American and Caribbean national governments through the design and implementation of indicators able to gauge the effectiveness of public policies on energy efficiency will promote their efforts to build a low-carbon economic growth, with particular attention to policies on innovation.

A key means in achieving the objective is the reinforcement of the capacity of policy makers and government technical staff for implementation of national-level energy efficiency and innovation policies. Project activities A2-A3 were aimed at this objective by focusing on training, technical assistance and capacity building of stakeholders in at least four countries. The training and capacity building activities were to be based on the outputs of Activity A1, which includes the publication of policy guidance, best practices, and policy instruments for national energy efficiency and innovation programs, statistical methodology for national energy efficiency indicators, among other capacity building outputs. The construction of the required statistical platform to generate a set of official energy efficiency indicators was also identified as a key means for countries in order to establish their current baseline and monitor their advance in a low carbon growth path. Project Activities A2 and A3 were to be focused on technical assistance to countries in support of this goal.

A third means to achieve the project objective was supposed to be the increased regional cooperation in the development of energy efficiency policies, indicators, and databases; and increased exchange of information on opportunities to capture economic benefits from gains in efficient energy use and technological innovation. These were the focus of project activities A4 and A5.

The institutional framework should define the responsible authority for delivering the outcomes along with the required instruments, resources and capacities. Increased cooperation and coordination between different ministries is required to increase the effectiveness of energy efficiency policies and programs. Appropriate economic and financial management and support is needed to sustain activities which are lacking in many countries that depend on international funds, thus producing a "stop and go" on policies. This situation does not provide sufficient motivation to the private sector to invest in energy efficiency, a key step in enabling durable financial flows for energy efficiency. Utilities could increase their efforts on promoting energy efficiency in the LAC region contributing to reduced losses, improved productivity, and the uptake of new technologies.

The project fits well a reality where different constraints hamper the capacity of the governments and institutions to fully proceed toward better energy efficiency. For example, while there has been increased action and interest to establish standards and labeling programs for equipment and appliances in the LAC region, the region faces a lack of adequate testing laboratories. The transport sector is highlighted as another high priority sector in the region where massive opportunities exist for increased efficiency. Lack of financing for energy efficiency improvement and innovation is an example of the common barriers shared by a number of LAC economies. Energy Service Companies (ESCOs) are not well-developed in the LAC region, and introducing generalized subsidies reduces the benefits of energy efficiency over the long-term while sending the wrong signal to consumers.

KPI-2.2.1 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-2.2.1 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-2.2.1 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

KPI- 2.2.2 : <i>Existence of sufficient and credible documentation on how energy efficiency improvements can bring positive consequences in medium /long term development conditions</i>
Main Findings on KPI-2.2.2:
As stressed in former paragraph 2.1, there are still large unexploited opportunities for energy efficiency in the region. The project document did not present a rich documentation but the existence within ECLAC of the solid studies and researches can be considered sufficient to show the close relation between indicators / energy efficiency and medium/long term impact on overall growth.
KPI-2.2.2 (i) Data, figures and tables: <i>(with explicit source referencing)</i>
KPI-2.2.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>
KPI-2.2.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>
Assessment of / statement on Judgment Criterion JC-2.2 (based on the KPIs main findings)
<p>The capacity assessment undertaken in the 2009 ECLAC report identified the need to develop national energy efficiency indicators and their associated statistical base as a key element in the institutional strengthening of LAC government's capacity to implement effective energy efficiency policies. The stakeholder capacity (public, private, academia and non governmental associations) will be strengthened also in terms of assessing and approaching the different needs of both men and women in the energy efficiency and renewable energy policy making and implementation. Despite some success stories, such as the mass campaigns to replace incandescent bulbs with compact fluorescent lamps (CFLs) and the growing interest that governments have shown in promoting energy efficiency in the last ten years, there remains a large untapped potential. Some LAC countries have introduced <i>policy, regulatory and institutional frameworks</i>, with a number of countries already having an Energy Efficiency Act or considering its adoption. However, the implementation of energy efficiency activities has generally been limited in the LAC region, often being prioritized as a response to crises or deficits in energy supply. The success or failure of past policy and programs in the LAC region can help to overcome barriers and explore opportunities for increased action on energy efficiency. Quantified short-, medium and long-term targets can also help to accelerate the uptake of energy efficiency measures. The evaluation of energy efficiency programs has typically not been prioritized in the region and improved data collection will help to draw firmer conclusions about the success of national programs.</p> <p>The project's theory of change was based on the hypothesis that strengthening the capacity of Latin American and Caribbean national governments through the design and implementation of indicators able to gauge the effectiveness of public policies on energy efficiency will promote their efforts to build a low-carbon economic growth, with particular attention to policies on innovation.</p> <p>A key means in achieving the objective is the reinforcement of the capacity of policy makers and government technical staff for implementation of national-level energy efficiency and innovation policies. Project activities A2-A3 were aimed at this objective by focusing on training, technical assistance and capacity building of stakeholders in at least four countries. The training and capacity building activities were to be based on the outputs of Activity A1, which includes the publication of policy guidance, best practices, and policy instruments for national energy efficiency and innovation programs, statistical methodology for national energy efficiency indicators, among other capacity building outputs. The construction of the required statistical platform to generate a set of official energy efficiency indicators was also identified as a key means for countries in order to establish their current baseline and monitor their advance in a low carbon growth path. Project Activities A2 and A3 were to be focused on technical assistance to countries in support of this goal.</p> <p>A third means to achieve the project objective was supposed to be the increased regional cooperation in the development of energy efficiency policies, indicators, and databases; and increased exchange of</p>

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As stressed in former paragraph 2.1, there are still large unexploited opportunities for energy efficiency in the region. The project document did not present a rich documentation but the existence within ECLAC of the solid studies and researches can be considered sufficient to show the close relation between indicators / energy efficiency and medium/long term impact on overall growth.

JC- 2.3 : The governance and management structures of the project were appropriate to the objective, accomplishments and activities

KPI-2.3.1	<i>Definition of project management structure adequate to tasks and responsibilities</i>
KPI-2.3.2	<i>The participation, roles and responsibilities of national actors has been selected to increase the outcomes and the transfer of know-how</i>

KPI-2.3.1 : *Definition of project management structure adequate to tasks and responsibilities*

Main Findings on KPI-2.3.1 :

The Division of Natural Resources and Infrastructure (DRNI) at ECLAC Headquarters in Santiago was responsible for overall coordination and implementation of project activities in the LAC region. DRNI was charged with the management of the substantive implementation of project activities in close contact with the national authorities responsible for development of energy efficiency policies and statistics, and low carbon policy initiatives in participating countries.

To increase the impact of project’s capacity building and technical assistance activities, ECLAC promoted the participation in a regional network of authorities, policymakers, policy practitioners, and academic, civil society and private sector representatives working in energy efficiency and low carbon policy development.

The identification of Project stakeholders (as “project clients”) was correct and functional to the expected results and foreseen activities, that is:

- Government policy makers, authorities, regulators and technical staff in charge of policy development in Energy Ministries and Sector Ministries (i.e. Environment, Industry, Economy, Infrastructure, Housing etc.).
- Public and private sector agencies and professionals related to energy efficiency activities and

promotion of low carbon technology innovation.

- Public and industry sector agencies and professionals involved in the collection of statistics on energy use and development of energy efficiency indicators and databases
- Technical staff and professionals involved in the development of energy use statistics, and the assessment of policy impacts through the monitoring and evaluation of energy use trends in both government and non-government sectors.
- Research institutes, universities, non-governmental organizations, industrial associations, policy research institutes in energy, technological innovation and environment.

The most decisive component of the project management was indeed the presence of European institutions both as suppliers of advanced experience and as providers of additional resources. The relations between ECLAC and GIZ have a long history and are based on a strategic agreement where the two sides defined priority areas of intervention.

The other partner —ADEME— is an institution within the French Cooperation Agency dedicated to transfer know-how and provide technical assistance in energy issues to developing countries.

KPI-2.3.1 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-2.3.1 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-2.3.1 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

There is a strategic relation between German cooperation and ECLAC and GIZ is the implementing unit. GIZ supports ECLAC since many years with three /two years (recently) cycle programs. It works with different divisions and has a long-term relation with the Energy division. In each programme cycle there is an agreed joint planning but then ECLAC can autonomously use the resources.

BIEE started in 2011 with GIZ support in the joint cooperation program.

GIZ supported the Energy division with 400.000 euros for 2012/13 and with 470.000 euros for 2014/15 but the use / division of the resources within the three major programs supported is decided by ECLAC. The policy dialogues are almost completely funded by GIZ.
(Interview with Jansens)

ECLAC contacted ADEME with the aim to transfer the European EE indicators to LA.

ADEME was keen to collaborate as it is in its mandate to support EE in developing countries. In effect the contribution amounted to 100.000 euro cash plus 100.000 in kind (personnel dedicated to the project).

ADEME was in charge for the preparation of the agenda for the workshops, to prepare the documentation and lead the training during the sessions, to produce the template for data collection, to offer support during the preparation of the national reports, to arrange the establishment of the regional database, to produce a final report of EE in LA.

ECLAC was in charge of the relation with beneficiary countries and organizations and ENERDATA was the technical arm for the analysis and control of the data.
(Interview with Bosseboeuf)

KPI-2.3.2: *The participation, roles and responsibilities of national actors has been selected to increase the outcomes and the transfer of know-how*

Main Findings on KPI-2.3.2:

The European experience in energy efficiency indicators is based on two major programs: ODYSSEE and MURE.

The ODYSSEE database on energy efficiency indicators has been set up to enable the monitoring and evaluation of realized energy efficiency improvements and related energy savings. The database covers the 27 EU countries as well as Norway and Croatia. Energy indicators that relate energy consumption to a physical output (ton of steel), a performance (person-km driven per car) or the number of energy using devices (refrigerators) can show the increase in energy efficiency realized, and the amount of energy saved. By aggregating indicators, Odyssee calculates energy efficiency indices by sector and for the whole economy (so-called ODEX), in order to evaluate overall energy efficiency progress. This work contributes to the growing need for quantitative monitoring and evaluation of the impacts of energy policies and measures, both at the EU and national level. The ODYSSEE database on energy efficiency indicators encompasses various types of indicator, which can be classified into the following seven categories:

- a) Energy/CO₂ intensities: relate the energy used in the economy or a sector to macroeconomic variables (e.g. GDP, value added).
- b) Unit consumption/emissions: relate energy consumption/CO₂ emissions to physical indicators (unit consumption per ton of steel, per car or per dwelling); specific consumption of vehicles, refrigerators, ...
- c) Energy efficiency indices by sector and for the whole economy (ODEX) to evaluate energy efficiency progress.
- d) Energy/CO₂ savings: calculate the amount of energy/CO₂ saved through energy efficiency improvements.
- e) Adjusted indicators to allow the comparison of indicators across countries (adjustments for differences in climate, general price level, fuel mix, industry and economic structure...).
- f) Benchmark/target indicators by sector to show the potential improvement based on countries with the best performance.
- g) Indicators of diffusion to monitor the market penetration of energy-efficient technologies (number of efficient lamps sold) and practices (% of passenger transport by public modes).

These indicators are easier to monitor and can be updated more quickly than energy efficiency indicators that depend on the availability of data on end-use consumption. The focus is on unit consumption indicators (b), from which follow the energy efficiency indices per sector and the ODEX for all end-use (c) and the related energy savings (d). Where relevant adjusted indicators (e) are used instead of unit consumption indicators.

The MURE database provides an overview of the most important energy efficiency policy measures in the EU Member States, Norway, Croatia and the EU as a whole. The database is structured by final energy consumption sectors (household, tertiary, industry, transport) and also includes a general cross-cutting section. At the level of sectors, the focus is on single policy measures in order to allow a specific analysis of each measure. More general programs comprising several measures are mainly described in the cross-cutting section of MURE. The homogeneity of the measure descriptions over sectors and countries is ensured by detailed guidelines. All measures are classified according to specific keywords, thus allowing queries based on criteria as e.g.:

- their status (completed, on-going or planned);
- their year of introduction and completion;
- their type: legislative/normative (e.g. standards for new dwellings), legislative/informative (e.g. obligatory labels for appliances), financial (e.g. subsidies), fiscal (e.g. tax deductions), information/education, cooperative (e.g. voluntary agreements) and taxes (on energy or CO₂- emissions);

- the targeted end-uses and the main actors involved by the policy measures;
- their semi-quantitative impact: low, medium or high impact, based on quantitative evaluations or expert estimates;
- the end-uses involved and the quantitative impact of the policy measure related to a specific end-use (if this information is available).

KPI-2.3.2 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-2.3.2 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-2.3.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

Assessment of/statement on Judgement Criterion JC-2.3 (based on the KPIs main findings)

The Division of Natural Resources and Infrastructure (DRNI) at ECLAC Headquarters in Santiago was responsible for overall coordination and implementation of project activities in the LAC region. DRNI was charged with the management of the substantive implementation of project activities in close contact with the national authorities responsible for development of energy efficiency policies and statistics, and low carbon policy initiatives in participating countries.

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7. Government policy makers, authorities, regulators and technical staff in charge of policy development in Energy Ministries and Sector Ministries (i.e. Environment, Industry, Economy, Infrastructure, Housing etc.).
8. Public and private sector agencies and professionals related to energy efficiency activities and promotion of low carbon technology innovation.
9. Public and industry sector agencies and professionals involved in the collection of statistics on energy use and development of energy efficiency indicators and databases
10. Technical staff and professionals involved in the development of energy use statistics, and the assessment of policy impacts through the monitoring and evaluation of energy use trends in both government and non-government sectors.
11. Research institutes, universities, non-governmental organizations, industrial associations, policy research institutes in energy, technological innovation and environment.

The most decisive component of the project management was indeed the presence of European institutions both as suppliers of advanced experience and as providers of additional resources. The relations between ECLAC and GIZ have a long history and are based on a strategic agreement where the two sides defined priority areas of intervention. The other partner —ADEME— is an institution within the French Cooperation Agency dedicated to transfer know-how and provide technical assistance in energy issues to developing countries.

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devices (refrigerators) can show the increase in energy efficiency realized, and the amount of energy saved. By aggregating indicators, Odyssee calculates energy efficiency indices by sector and for the whole economy (so-called ODEX), in order to evaluate overall energy efficiency progress. This work contributes to the growing need for quantitative monitoring and evaluation of the impacts of energy policies and measures, both at the EU and national level. The ODYSSEE database on energy efficiency indicators encompasses various types of indicator.

The MURE database provides an overview of the most important energy efficiency policy measures in the EU Member States, Norway, Croatia and the EU as a whole. The database is structured by final energy consumption sectors (household, tertiary, industry, transport) and also includes a general cross-cutting section. At the level of sectors, the focus is on single policy measures in order to allow a specific analysis of each measure. More general programs comprising several measures are mainly described in the cross-cutting section of MURE. The homogeneity of the measure descriptions over sectors and countries is ensured by detailed guidelines. All measures are classified according to specific keywords, thus allowing queries based on criteria.

JC-2.4: The design of the activities and the distribution of related resources were consistent with the objectives and the expected results

List of Key Performance Indicators (KPIs) under JC 2.4 (codes and definition)

KPI-2.4.1 | *The original budget was clear and consistent with the activities*

KPI-2.4.2 | *The activities were correctly designed to achieve the expected results*

KPI-2.4.3 | *The budget allowed for the needed flexibility*

KPI-2.4.1 : *The original budget was clear and consistent with the activities*

Main Findings on KPI-2.4.1 :

The original budget was well developed to cover the main activities (see following paragraph 2.4.2).

The only issue could be that it did not take into account the support from other external donors that were already active in the project and that at the end contributed for a substantial amount to project disbursements: in effect —according to the received information— face to the 478.000\$ of the project budget, other sources amounted to 370.000\$, that is 77% addition to project base budget.

For the future it is suggested that better explanation of the budget and the additional resources should be framed as soon as possible.

KPI-2.4.1 (i) Data, figures and tables: (with explicit source referencing)

KPI-2.4.1 (ii) Key extracts from documents: (with explicit source referencing)

KPI-2.4.1 (iii) Information from interviews and questionnaire (with explicit source referencing)

KPI- 2.4.2 : *The activities were correctly designed to achieve the expected results*

Main Findings on KPI-2.4.2 :

The project main activities can be summarized in four main components:

- (a) Develop a database to evaluate the results of energy efficiency and innovation policies in Latin America and the Caribbean, and to evaluate the impact of alternative public policies on income, employment and prices on carbon emissions;
- (b) Estimate the “capturable” potential benefits of energy efficiency and innovation policies according to technical and economic feasibility criteria;
- (c) Prepare and publish a document containing the main findings of the project;
- (d) Develop jointly the databases referred to in activity (a) above.

Energy efficiency is defined as the ratio between useful outputs and associated energy inputs.

Energy intensity (typically measured as energy consumed per dollar of gross domestic product, GDP) has traditionally been used as a proxy for energy efficiency when making international comparisons. Energy intensity is an imperfect proxy for energy efficiency because it is affected not only by changes in the efficiency of underlying processes, but also by other factors such as changes in the volume and sectoral structure of GDP. These concerns can be partially addressed by statistical decomposition methods that allow confounding effects to be stripped out. Complementing national energy intensity indicators with sectoral ones also helps to provide a more nuanced picture of the energy efficiency situation.

Calculation of energy intensity metrics requires suitable measures for GDP and energy consumption. GDP can be expressed either in terms of market exchange rate or purchasing power parity (PPP). Energy consumption can be measured in either primary or final energy terms. While it may make sense to use primary energy for highly aggregated energy intensity measures (relative to GDP) because it captures intensity in both the production and use of energy, it is less meaningful to use it when measuring energy intensity at the sectoral or sub-sectoral level, where final energy consumption is more relevant.

Based on a careful analysis of these issues and of global data constraints, the project would be focused on building primarily energy intensity indicators, using PPP measures for GDP to allow consolidation and comparisons, on using primary energy supply for national indicators and final energy consumption for sectoral indicators. These indicators will be complemented with energy intensity of supply and of the major demand sectors.

KPI-2.4.2 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-2.4.2 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-2.4.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

KPI- 2.4.3 : *The budget allowed for the needed flexibility*

Main Findings on KPI-2.4.3 :

There has been no need for changes in the budget allocation notwithstanding the increased amount of participating countries. This has been due to the additional resources from external donors that allowed the management to respond quickly to the increased demand to participate.

KPI-2.4.3 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-2.4.3 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-2.4.3 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

Assessment of/statement on Judgment Criterion JC-2.4 (based on the KPIs main findings)

The original budget was well developed to cover the main activities.

The only issue could be that it did not take into account the support from other external donors that were already active in the project and that at the end contributed for a substantial amount to project disbursements: in effect —according to the received information— face to the 478.000\$ of the project budget, other sources amounted to 370.000\$, that is 77% addition to project base budget.

For the future it is suggested that better explanation of the budget and the additional resources should be framed as soon as possible.

The project main activities can be summarized in four main components:

- (a) Develop a database to evaluate the results of energy efficiency and innovation policies in Latin America and the Caribbean, and to evaluate the impact of alternative public policies on income, employment and prices on carbon emissions;
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- (d) Develop jointly the databases referred to in activity (a) above.

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Calculation of energy intensity metrics requires suitable measures for GDP and energy consumption. GDP can be expressed either in terms of market exchange rate or purchasing power parity (PPP). Energy consumption can be measured in either primary or final energy terms. While it may make sense to use primary energy for highly aggregated energy intensity measures (relative to GDP) because it captures intensity in both the production and use of energy, it is less meaningful to use it when measuring energy intensity at the sectoral or sub-sectoral level, where final energy consumption is more relevant.

Based on a careful analysis of these issues and of global data constraints, the project would be focused on building primarily energy intensity indicators, using PPP measures for GDP to allow consolidation and comparisons, on using primary energy supply for national indicators and final energy consumption for sectoral indicators. These indicators will be complemented with energy intensity of supply and of the major demand sectors.

There has been no need for changes in the budget allocation notwithstanding the increased amount of participating countries. This has been due to the additional resources from external donors that allowed the management to respond quickly to the increased demand to participate.

Preliminary Answer to the Evaluation Question EQ-2 based on the statements on the Judgment Criteria

Energy indicators are an important tool for analyzing interactions among economic and human activity, energy consumption and carbon dioxide (CO₂) emissions. These indicators show policy makers where energy savings can be made. In addition to providing information on trends in past energy consumption,

energy efficiency indicators can also be used to help model and forecast future energy demand. In effect one of the most important issues to understand from an energy policy perspective is to what extent improvements in energy efficiency have been responsible for the changes in final energy intensity in different countries. To understand the impact of energy efficiency, it is necessary to separate the impact of changes in activity, economic structure and other exogenous factors that influence the demand for energy from changes in energy intensities (which are a proxy for energy efficiency). This is done using a decomposition approach that separates and quantifies the impacts of the individual factors of changes in activity, structure and energy intensities on final energy consumption in each sector and country.

Energy efficiency enables countries to alleviate the financial burden of oil imports on their balance of trade and also improves energy supply security. As many countries are faced with low economic growth and high unemployment, energy efficiency is seen as the best strategy to improve the competitiveness of industry, by reducing energy cost and stimulating economic growth and job creation through the investments generated. In developing and emerging economies, energy efficiency also enables a reduction in energy investment, and helps to make the best use of existing assets to improve energy access. Improving efficiency in use of electricity has two benefits. Slowing down electricity demand growth, and so reducing the investment needed for expansion of the electricity sector. In these countries, energy efficiency also has many other benefits, such as reducing the impact of oil volatility on the balance of trade and on subsidies, when prices are subsidized, which is often the case.

ECLAC former studies and the project document recognize the realities and challenges in the LAC region that provide a framework of requirements and opportunities for energy efficiency. Given the additional vulnerabilities of the energy sector, energy efficiency measures offer an opportunity to improve the robustness of the energy system and reduce vulnerabilities and uncertainties affecting development. Experience indicates that the key factors for consideration when implementing efficiency measures relate to technical, regulatory, economic, socio-cultural, inter-agency and environmental approaches. Energy efficiency is linked to the proper allocation of resources in the production, distribution and consumption of energy. In this regard, the diversification and substitution of energy sources should be part of the overall strategy.

Countries around the world are increasingly aware of the urgent need to transform the way they use energy. Concern over energy security, the social and economic impacts of high energy prices, and growing awareness of climate change have led many countries to put greater emphasis on developing policies and measures that promote energy efficiency. Two things have become increasingly clear:

- Ensuring better use of energy resources will require policies that encompass a wide range of options. There is a growing recognition that improving energy efficiency is often the most economic, proven and readily available means of achieving this goal.
- Establishing and maintaining sound policies requires the availability of good-quality, timely, comparable and detailed data that go well beyond those currently included in energy balances, and which reflect the distinct characteristics of economic activity and resources available in each country.

Global primary energy consumption grew at over 1.9 percent a year from 1990 to 2000, kept down by continual improvements in energy intensity. Had that not changed, energy consumption in 2012 would have been 25 percent higher. The incremental change in energy intensity from 2010 to 2012 alone (when primary energy use rose by 1.8 percent annually) avoided primary energy use of 20 exa-joules (EJ) in 2012. Primary energy intensity fell by more than 1.7 percent a year over the tracking period (figure O.12), far more than the average drop of about 1.3 percent a year from 1990 to 2010 and the 1.2 percent drop in 2000–2010. Still, even this recent improvement falls far short of the annual 2.6 percent needed between 2010 and 2030 to meet the SE4All objective of doubling the historical rate of decline in energy intensity. The recent acceleration was driven primarily by high-income countries, whose compound annual growth rate of primary energy intensity fell even faster from 1.5 percent a year in the base period to 2.6 percent in the tracking period, taking them to the global target rate. Middle- and low-income countries, by contrast, experienced no such acceleration, although the pace remained relatively rapid. The striking exception is the

upper-middle- income countries (UMICs), where the fall in primary energy intensity remained stubbornly low at around 0.5 percent a year. Owing in large part to rapid industrialization in these countries, energy intensity remains well above the global average.

In all the periods analyzed, upper-middle- income countries were by far the largest sources of avoided final energy consumption. High-income countries also contributed a great deal—one- third in the tracking period— demonstrating that large decoupling effects are not restricted to industrializing nations. Lower-middle- income countries saw a growing, but still small share of avoided final energy consumption in the tracking period, but low-income countries did not exert an appreciable influence. Among end-use sectors, industry was the largest contributor to reduced energy intensity between 2000 and 2012, followed closely by transport. Industry's energy efficiency has improved broadly, and many countries have set or strengthened their fuel economy standards. The relatively small contributions from the services and residential sectors point to a large store of potential future energy savings in buildings. Provision of higher-quality energy in the form of electricity and gas contributes to national development, but it has a cost in rising conversion, transmission, and distribution losses. These rising inherent losses are partly offset by the introduction of more efficient technologies and better management to reduce loss rates from energy extraction and delivery. Attention to reducing leaks and better pipeline pressurization, for example, has led to a long-term decline in midstream gas sector losses. The picture is less rosy for electricity generation, because an ever-larger share of primary fossil energy is converted to electricity, and fossil fuels will continue to dominate the generation mix.

For decades, countries have used the data contained in energy balances as a means of tracking energy consumption according to type of energy source and by major sector, and as a way to develop aggregate indicators (such as total energy per capita). Aggregate indicators have the advantage that they are often readily and widely available: thus, they reveal high-level developments in energy consumption in simple terms. However, their usefulness is limited and can generate misleading results when used inappropriately. For example, it would be incorrect to rank energy performance according to a country's total final consumption per gross domestic product (GDP) or per capita given the many factors (e.g. climate, wealth, economic structure) influencing this indicator. As varying underlying factors influence each sector, different explanatory data will be needed depending on the sector analyzed. Such data are not reported in energy balances; thus, in order to develop estimates of overall energy efficiency, detailed data are required for end-use sectors. Development of state-of-the-art indicators is not straightforward and requires financial and human resources to collect detailed data, and analyze the information. Recent efforts by European countries to collect more detailed end-use data through specific shared programs have helped to develop energy efficiency indicators that provide important information for understanding past trends, assessing potential for energy savings and enhancing energy efficiency policies.

Technological progress means that the frontiers of efficiency for all fuels are constantly rising, but the average may not always follow. There has even been a slight decline in the average efficiency of coal-fired power generation, due to rising self-use by power plants and the rapid construction of new coal-fired plants that do not use the best available technology. As coal dominates overall additions to generation capacity, average thermal efficiency of power supply has stagnated since 1990. For transmission and distribution (T&D) losses, on the other hand, the trends are more promising. In 2012, global T&D losses of 1,880 terawatt-hours (TWh) were incurred, equivalent to 8.8 percent of worldwide generation that year. Loss rates have gradually fallen over the past decade, though trends vary widely among countries. Globally, the decline of 0.7 percentage points from 2002 to 2012 saved about 160 TWh a year, equivalent to Poland's electricity generation in 2013.

The main objective of applying policy measures for/to energy efficiency is to create the necessary conditions to speed up the development and the deployment of efficient equipment and services. The data show that the situation of LAC region is better than many other regions. Nevertheless, as explained before, energy efficiency is an important instrument for development and social improvement. But all policies and measures need to be monitored in order to assess the impact and avoid errors: the definition of indicators as instrument is then one more time justified. Most of the countries of the region are active in the research for new instruments –

institutions/laws/regulations/policies: indicators are exactly the tools that can be fitted for every situation.

Project document refers largely to the former studies and reports produced by ECLAC in the last years as major sources of knowledge on the situation of energy efficiency in LAC regions. In effect it showed that energy efficiency policies have received increased attention in the LAC region, reflecting the large untapped potential that exists. Many countries in the LAC region have the opportunity to incorporate energy efficiency further into the public policy agenda (understood as the set of actions, laws, institutions, and economic and regulatory instruments needed to implement programs and plans). Past experience with energy efficiency measures that have been carried out in the region allowed the project to highlight the major issues, and consequently focus on the innovative approach proposed. It should be noted however that the abundance of data and studies of the topic could have allowed a better presentation of the reasons to start the project.

Though there have been considerable decade-to-decade variations, the rate of energy intensity has declined over the past 40 years. The amount of energy required per unit of GDP dropped by about 13% since the early seventies, reaching, on average, 230 kg of oil equivalent per unit of GDP (at constant 2005 US\$). The recorded downward trend in energy intensity is inversely correlated with the increase in the overall price of energy, particularly in the 2000s. Between 1971 and 2013, 3.4% of LAC's GDP average annual growth rate was fueled by approximately 3.0% average growth rate in primary energy use, and an approximately 5.4% growth rate in electricity consumption. Energy use in Latin America has more than tripled over the past forty years, from 248 million tons of oil equivalent (MTOE) in 1971 to 848 MTOE in 2013, representing more than 8% of the increase in global energy demand over the period. Fossil fuels (coal, oil, and gas), which accounted for 68.9% of all primary energy demand in 1971, continue to represent the most important primary fuels in the energy matrix, increasing to 74.4% in 2013. Hydrocarbons (oil and gas) alone accounted for 69.4% of total energy consumed in 2013. A notable change in consumption pattern is in natural gas consumption, which went from a modest 11% of total energy use to more than 23%, indicating an increased diversification towards low-carbon fuels.

The LAC region has the cleanest electricity matrix, with a sharp contrast in the share of renewable sources compared to other regions in the world. Nevertheless, one should be careful when interpreting this statement. Aggregate figures hide great heterogeneity among countries. The LAC region is no exception. LAC's aggregate figure is strongly influenced by the six largest economies. Indeed, the power generation of these countries accounts for more than 80% of the total electricity generation of the region. For instance, if Brazil is excluded from the region, total renewable generation in LAC falls from 52.4% to 38.2%. Although LAC is still the region with the cleanest power matrix even with Brazil removed, it is not as clean as it seems to be. Moreover on the electricity front, unless current trends are reversed, electricity requirements are estimated to increase by more than 91% through 2040, reaching over 2,970 terawatt-hours (TWh). That means that the region will need to add nearly 1,500 TWh to its current production. To put that figure into context, meeting these electricity needs will require the equivalent of planning, building and maintaining eighteen new hydropower stations the size of Paraguay-Brazil's Itaipu (the first and the third largest region-wide and worldwide, respectively). This does not even yet take into account the unprecedented quantum of investment required.

The capacity assessment undertaken in the 2009 ECLAC report identified the need to develop national energy efficiency indicators and their associated statistical base as a key element in the institutional strengthening of LAC government's capacity to implement effective energy efficiency policies. The stakeholder capacity (public, private, academia and non governmental associations) will be strengthened also in terms of assessing and approaching the different needs of both men and women in the energy efficiency and renewable energy policy making and implementation. Despite some success stories, such as the mass campaigns to replace incandescent bulbs with compact fluorescent lamps (CFLs) and the growing interest that governments have shown in promoting energy efficiency in the last ten years, there remains a large untapped potential. Some LAC countries have introduced *policy, regulatory and institutional frameworks*, with a number of countries already having an Energy Efficiency Act or considering its adoption. However, the implementation of energy efficiency activities has generally been limited in the

LAC region, often being prioritized as a response to crises or deficits in energy supply. The success or failure of past policy and programs in the LAC region can help to overcome barriers and explore opportunities for increased action on energy efficiency. Quantified short-, medium and long-term targets can also help to accelerate the uptake of energy efficiency measures. The evaluation of energy efficiency programs has typically not been prioritized in the region and improved data collection will help to draw firmer conclusions about the success of national programs.

The project's theory of change was based on the hypothesis that strengthening the capacity of Latin American and Caribbean national governments through the design and implementation of indicators able to gauge the effectiveness of public policies on energy efficiency will promote their efforts to build a low-carbon economic growth, with particular attention to policies on innovation. A key means in achieving the objective is the reinforcement of the capacity of policy makers and government technical staff for implementation of national-level energy efficiency and innovation policies. The construction of the required statistical platform to generate a set of official energy efficiency indicators was also identified as a key means for countries in order to establish their current baseline and monitor their advance in a low carbon growth path. A third means to achieve the project objective was supposed to be the increased regional cooperation in the development of energy efficiency policies, indicators, and databases; and increased exchange of information on opportunities to capture economic benefits from gains in efficient energy use and technological innovation. The institutional framework should define the responsible authority for delivering the outcomes along with the required instruments, resources and capacities. Increased cooperation and coordination between different ministries is required to increase the effectiveness of energy efficiency policies and programs. Appropriate economic and financial management and support is needed to sustain activities which are lacking in many countries that depend on international funds, thus producing a "stop and go" on policies. This situation does not provide sufficient motivation to the private sector to invest in energy efficiency, a key step in enabling durable financial flows for energy efficiency. Utilities could increase their efforts on promoting energy efficiency in the LAC region contributing to reduced losses, improved productivity, and the uptake of new technologies.

The project fits well a reality where different constraints hamper the capacity of the governments and institutions to fully proceed toward better energy efficiency. For example, while there has been increased action and interest to establish standards and labeling programs for equipment and appliances in the LAC region, the region faces a lack of adequate testing laboratories. The transport sector is highlighted as another high priority sector in the region where massive opportunities exist for increased efficiency. Lack of financing for energy efficiency improvement and innovation is an example of the common barriers shared by a number of LAC economies. Energy Service Companies (ESCOs) are not well-developed in the LAC region, and introducing generalized subsidies reduces the benefits of energy efficiency over the long-term while sending the wrong signal to consumers.

As stressed already, there are still large unexploited opportunities for energy efficiency in the region. The project document did not present a rich documentation but the existence within ECLAC of the solid studies and researches can be considered sufficient to show the close relation between indicators/energy efficiency and medium/long term impact on overall growth.

The Division of Natural Resources and Infrastructure (DRNI) at ECLAC Headquarters in Santiago was responsible for overall coordination and implementation of project activities in the LAC region. DRNI was charged with the management of the substantive implementation of project activities in close contact with the national authorities responsible for development of energy efficiency policies and statistics, and low carbon policy initiatives in participating countries.

To increase the impact of project's capacity building and technical assistance activities, ECLAC promoted the participation in a regional network of authorities, policymakers, policy practitioners, and academic, civil society and private sector representatives working in energy efficiency and low carbon policy development. The identification of Project stakeholders (as "project clients") was correct and functional to the expected results and foreseen activities.

The most decisive component of the project management was indeed the presence of European institutions both

as suppliers of advanced experience and as providers of additional resources. The relations between ECLAC and GIZ have a long history and are based on a strategic agreement where the two sides defined priority areas of intervention. The other partner —ADEME— is an institution within the French Cooperation Agency dedicated to transfer know-how and provide technical assistance in energy issues to developing countries.

The European experience in energy efficiency indicators is based on two major programs: ODYSSEE and MURE. The ODYSSEE database on energy efficiency indicators has been set up to enable the monitoring and evaluation of realized energy efficiency improvements and related energy savings. The database covers the 27 EU countries as well as Norway and Croatia. The ODYSSEE database on energy efficiency indicators encompasses various types of indicator. The MURE database provides an overview of the most important energy efficiency policy measures in the EU Member States, Norway, Croatia and the EU as a whole. The database is structured by final energy consumption sectors (household, tertiary, industry, transport) and also includes a general cross-cutting section.

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Information Matrix EQ 3	
Evaluation Question 3	
To what extent did the project complete the expected activities and achieved the expected outputs as outlined in the project document?	
List of Judgment Criteria (JCs) under the EQ 3	
JC- 3.1	The procedures adopted for the selection of the countries and the final beneficiaries allowed increasing the opportunities of impact
JC- 3.2	The ECLAC management has been able to use efficiently the available resources achieving high expenditure rates.
JC- 3.3	The invested resources allow to produce the planned outputs
JC- 3.4	The project's activities did produce the expected outcomes according to each country plan and specifications
JC-3.1: The procedures adopted for the selection of the countries and the final beneficiaries allowed increasing the opportunities of impact	
List of Key Performance Indicators (KPIs) under JC 3.1 (codes and definition)	
KPI-3.1.1	Type / provenance of the countries / partners the project management selected
KPI-3.1.2	Criteria for the selection of beneficiaries respected the needed transparency to allow for a level participation and increase of efficacy
KPI-3.1.1: Type / provenance of the countries / partners the project management selected	
Main Findings on KPI-3.1.1:	
<p>ECLAC planned the implementation of the project at the start with 6 countries of southern area (Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay). However, after the 2013 Dialogo, the realization of the interest from other countries pushed ECLAC to offer the opportunity to other countries. It was then extended to 8 Central American countries (Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama) and then to the remaining countries (Cuba, Ecuador, Colombia, Peru and Venezuela) for a total of 19 participating countries.</p> <p>The wide success of the project was not foreseen in the basic project document: in effect it is quite surprising that the indicators for project success were very low: for result 1, "At least 3 Latin American and Caribbean government institutions have used the analytical outputs", for result 2 "At least 2 Latin American and Caribbean country undertake studies and actions" with also "at least 1 country that concretely advances in studying and identifying barriers", for result 3 "At least 3 Governmental energy efficiency initiatives at the national level". It is not easy to understand why the aims of the project were set so low: the problem analysis was correct and the activities in reality began before the official project start, so there was already some knowledge of the demand coming from potential beneficiaries.</p> <p>The point is that, if we keep the official quantitative objectives, then the amount of resources appears excessive as well as the activities planned. It remains a question without answer.</p>	
KPI-3.1.1 (i) Data, figures and tables: (with explicit source referencing)	
KPI-3.1.1 (ii) Key extracts from documents: (with explicit source referencing)	
<p>List of countries who benefited from interventions</p> <ol style="list-style-type: none"> 1. República Argentina (Secretaría de Energía, Ministerio de Planificación Federal, Inversión Pública y Servicios), 2. Estado Plurinacional de Bolivia (Viceministerio de Desarrollo Energético, Ministerio de Hidrocarburos y Energía), 	

3. República Federativa de Brasil (Empresa de Pesquisa Energética),
4. República de Chile (División de Eficiencia Energética, Ministerio de Energía),
5. República de Colombia (Unidad de Planeamiento Minero – Energética),
6. República de Costa Rica (Dirección Sectorial de Energía, Ministerio de Ambiente y Energía),
7. República de Cuba (Oficina Nacional para el Control Al Uso Racional de la Energía - ONURE),
8. Dominican Republic (Comisión Nacional de Energía),
9. República de Ecuador (Ministerio Nacional de Sectores Estratégicos and Instituto Nacional de Eficiencia Energética y Energías Renovables - INER),
10. República de El Salvador (Consejo Nacional de Energía),
11. República de Guatemala (Ministerio de Minas y Energía),
12. República de Honduras (Secretaría de Recursos Naturales y Ambiente),
13. Estados Unidos Mexicanos (Comisión Nacional para el Uso Eficiente de la Energía - CONUEE),
14. República de Nicaragua (Ministerio de Energía y Minas),
15. República de Panamá (Secretaría Nacional de Energía),
16. República del Paraguay (Viceministerio de Minas y Energía, Ministerio de Obras Públicas y Comunicaciones),
17. República del Perú (Ministerio de Energía y Minas),
18. República Oriental del Uruguay (Dirección Nacional de Energía - DNE, Ministerio de Industria, Energía y Minería - MIEM),
19. República Bolivariana de Venezuela (Ministerio del Poder Popular para la Energía Eléctrica).

KPI-3.1.1 (iii) Information from interviews and questionnaire (with explicit source referencing)

The lack of data obliged to produce estimations, this was a bit more complicated.

When consultants were involved the work was easier but indeed less transfer of know-how to the institution. The interest from the countries was quite different going from very high to moderate.
(interview with Lapillonne)

KPI- 3.1.2: Criteria for the selection of beneficiaries respected the needed transparency to allow for a level participation and increase of efficacy

Main Findings on KPI-3.1.2:

The beneficiaries of the project were mainly National Offices in charge of the national level energy efficiency policies belonging to the Ministries or Secretaries of Energy from each of the 19 participant countries. Also, other ministries, statistical offices and other national institutions were involved in the process of production and compilation of basic information, namely Ministries of Planning, Ministries of Economic Development, Transport Ministries and Social Ministries.

The selection of the participants from each country was defined by the beneficiary institution: according to the analysis of the participants lists and from the data coming from the questionnaire, it appears that the selection was correctly made to allow for a credible know-how transfer: young officers, technically well prepared, working in the right institutional setting, with the task most adequate to embed the new experiences.

A note of caution should be raised on the validity and significance of the questionnaire answers: beside the very low amount—that in itself does not allow to build solid credibility— there is also a certain concentration of the answers in three countries (Mexico, Venezuela, Ecuador make 40% of the total): three countries that are the major oils producers in the region.

KPI-3.1.2 (i) Data, figures and tables: (with explicit source referencing)

KPI-3.1.2 (ii) Key extracts from documents: (with explicit source referencing)

The participants to BIEE are the following organizations, mainly from energy Ministries:

- Secretaría de Energía, Ministerio de Planificación Federal, Inversión Pública y Servicios, República Argentina;
- Empresa de Pesquisa Energética (EPE), Estado Federativo de Brasil;
- Viceministerio de Desarrollo Energético, Ministerio de Hidrocarburos y Energía, Estado Plurinacional de Bolivia;
- Ministerio de Energía, República de Chile;
- Unidad de Planeamiento Minero - Energética, República de Colombia
- Dirección Sectorial de Energía, Ministerio de Ambiente y Energía, República de Costa Rica
- Oficina Nacional para el Control Al Uso Racional de la Energía (ONURE), República de Cuba;
- Comisión Nacional de Energía, República Dominicana;
- Ministerio Nacional de Sectores Estratégicos and Instituto Nacional de Eficiencia Energética y Energías Renovables (INER), República del Ecuador;
- Consejo Nacional de Energía (CNE), República de El Salvador;
- Ministerio de Energía y Minas, República de Guatemala;
- Secretaría de Energía, República de Honduras;
- Comisión Nacional para el Uso Eficiente de la Energía (CONUEE), Estados Unidos Mexicanos;
- Ministerio de Energía y Minas, República de Nicaragua;
- Secretaría Nacional de Energía, República de Panamá;
- Viceministerio de Minas y Energía, Ministerio de Obras Públicas y Comunicaciones, República del Paraguay;
- Dirección General de Eficiencia Energética, Ministerio de Energía y Minas, República del Perú;
- Dirección Nacional de Energía (DNE), Ministerio de Industria, Energía y Minería (MIEM), República Oriental del Uruguay
- Viceministerio para Nuevas Fuentes y Uso Racional de la Energía Eléctrica, Ministerio del Poder Popular para la Energía Eléctrica, República Bolivariana de Venezuela

KPI-3.1.2 (iii) Information from interviews and questionnaire (with explicit source referencing)

We have a law on EE since 1994 and an official EE policy recently – 2012 – launched. However we did not have the instruments for the monitoring and the control. So we were happy to participate to the project as it answered a real need

(Interview with Molina)

Por favor, indique su rango de edad		
Answer Options	Response Percent	Response Count
Menos de 25	0,0%	0
26-35	28,6%	12
36-45	38,1%	16
46-60	14,3%	6
Más de 61	19,0%	8

Answer Options	Response Percent	Response Count
Grado universitario	38,1%	16
Post- grado	47,6%	20
Doctorado	11,9%	5
Otro (especifique)	2,4%	1

Country of provenance of questionnaire answers

Answer Options	Response Percent	Response Count
México	14,3%	6
Ecuador	11,9%	5
Venezuela	11,9%	5
Brasil	9,5%	4
Paraguay	9,5%	4
Panamá	7,1%	3
Uruguay	7,1%	3
Argentina	4,8%	2
Chile	4,8%	2
Bolivia	2,4%	1
Costa Rica	2,4%	1
El Salvador	2,4%	1
Guatemala	2,4%	1
Honduras	2,4%	1
Nicaragua	2,4%	1
Rep. Dominicana	2,4%	1
Otro (especifique)	2,4%	1
Colombia	0,0%	0
Cuba	0,0%	0
Guyana	0,0%	0
Perú	0,0%	0
Trinidad	0,0%	0

¿Cuál es su actividad principal? (puede marcar más de una opción)

Answer Options	Response Percent	Response Count
Desarrollo / planificación energética (ingeniero)	50,0%	21
Diseñar políticas gubernamentales de apoyo a la eficiencia energética	50,0%	21
Gestionar acciones públicas para eficiencia energética	40,5%	17
Realizar Investigación académica en el área de eficiencia energética	14,3%	6
Otro (especifique)	9,5%	4
Consultorías en eficiencia energética para el sector privado	7,1%	3
Empresario / gerente de negocios	4,8%	2
Abogacía y cabildeo representando una Organización no Gubernamental	0,0%	0
<i>answered question</i>		42

Assessment of / statement on Judgment Criterion JC-3.1 (based on the KPIs main findings)

ECLAC planned the implementation of the project at the start with 6 countries of southern area (Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay). However, after the 2013 Dialogo, the realization of the interest from other countries pushed ECLAC to offer the opportunity to other countries. It was then extended to 8 Central American countries (Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama) and then to the remaining countries (Cuba, Ecuador, Colombia, Peru and Venezuela) for a total of 19 participating countries.

The wide success of the project was not foreseen in the basic project document: in effect it is quite surprising that the indicators for project success were very low: for result 1, “At least 3 Latin American and Caribbean government institutions have used the analytical outputs”, for result 2 “At least 2 Latin American and Caribbean country undertake studies and actions” with also “at least 1 country that concretely advances in studying and identifying barriers”, for result 3 “At least 3 Governmental energy efficiency initiatives at the national level”. It is not easy to understand why the aims of the project were set so low: the problem analysis was correct and the activities in reality began before the official project start, so there was already some knowledge of the demand coming from potential beneficiaries.

The point is that, if we keep the official quantitative objectives, then the amount of resources appears excessive as well as the activities planned. It remains a question without answer.

The beneficiaries of the project were mainly National Offices in charge of the national level energy efficiency policies belonging to the Ministries or Secretaries of Energy from each of the 19 participant countries. Also, other ministries, statistical offices and other national institutions were involved in the process of production and compilation of basic information, namely Ministries of Planning, Ministries of Economic Development, Transport Ministries and Social Ministries.

The selection of the participants from each country was defined by the beneficiary institution: according to the analysis of the participants lists and from the data coming from the questionnaire, it appears that the selection was correctly made to allow for a credible know-how transfer: young officers, technically well prepared, working in the right institutional setting, with the task most adequate to embed the new experiences.

A note of caution should be raised on the validity and significance of the questionnaire answers: beside the very low amount—that in itself does not allow to build solid credibility— there is also a certain concentration of the answers in three countries (Mexico, Venezuela, Ecuador make 40% of the total): three countries that are the major oils producers in the region.

JC-3.2: The ECLAC management has been able to use efficiently the available resources achieving high expenditure rates.

List of Key Performance Indicators (KPIs) under JC 3.2 (codes and definition)

KPI-3.2.1	<i>The time frame of the decision making process has been satisfactory to achieve the commitments and disbursements expected</i>
KPI-3.2.2	<i>The management procedures contributed to the effective implementation of the project</i>
KPI-3.2.3	<i>The governance and management structures of the project contributed to effective national implementation and coordination of partners</i>

KPI-3.2.1: *The time frame of the decision making process has been satisfactory to achieve the commitments and disbursements expected*

Main Findings on KPI-3.2.1 :

The management made since the start a correct decision, that is to invest as soon as possible a substantial amount of resources in the most decisive activities as planned in project's document: four technical workshops (Montevideo, Uruguay, April 2013 / Mexico City, April, 2013 / Panamá City, September 2013) and an European Study Tour officers from 11 Latin American governments (Argentina, Bolivia, Paraguay, Uruguay, Chile, Brazil, Guatemala, Costa Rica, El Salvador, Panamá and Mexico). On the same time the European Consultants prepared the template for the collection for data and started the assistance to the first countries in Mercosur area, which had already received some assistance before the official start of the project. In effect during the first year of implementation the management disbursed 65% of the total amount.

This decision was important for two reasons: a) it allowed to show the opportunity offered by the project to a larger public of potential beneficiary countries, b) it showed that the project had the capacity to deliver, building then the trust in the beneficiaries and consequently their commitment.

The other decisive step was the solid involvement of other donors: beside the right decision to have ADEME/ENERDATA as main technical sponsors —they are the first the technical arm for energy of the French Cooperation and the second the technical institution in charge of ODISEE and MURE programs in Europe— project management was able to exploit the long term relation with GIZ and their former participation in

funding the first phases of the BIEE project to consolidate their presence in the enlarged project activities. The combination of these two donors produced the situation showed in the below table: the additional resources multiply the basic one by 75% (including an amount coming from ECLAC regular budget).

This capacity of the management to convince and involve extra sponsors is surely one of the reasons for the success of the project: in effect, face to the increasing demand of participation from beneficiary countries, the management found the right and fruitful approach with the donors to expand the impact of the project and to gain visibility and status for the organization.

KPI-3.2.1 (i) Data, figures and tables: (with explicit source referencing)

PROJECT'S USE OF RESOURCES AND ADDITIONAL SOURCES						
Object Class	Description	Budget / Allotment	2013	2014	2015	TOTAL
602	General Temporary Assistance	24.000,00	23,040.19	477.85	163.87	23,681.91
604	Consultants and expert groups	142.000,00	98,682.01	23,063.11	16,300.00	138,045.12
608	Travel of Staff	80.000,00	29,103.11	22,354.54	24,859.11	76,316.76
612	Contractual services	10.000,00	6,838.79	3,027.36	0.00	9,866.15
616	Operating expenses	6.000,00	1,218.59	2,997.95	1,498.11	5,714.65
621	Fellowships, grants and contributions	216.000,00	148,679.29	18,065.36	49,255.35	216.000,00
	Total Allotment	478.000,00	307,561.98	69,986.17	92076.44	469,634.49
	EXTRA RESOURCES	cash	in kind			
	ADEME	110.000	110.000			220.000
	GIZ	60.000	60.000			120.000
	From CEPAL regular budget	30.000				30.000
	TOTAL	200.000	170.000			370.000

(Author elaboration from collected information; contribution from GIZ to be confirmed)

KPI-3.2.1 (ii) Key extracts from documents: (with explicit source referencing)

KPI-3.2.1 (iii) Information from interviews and questionnaire (with explicit source referencing)

KPI- 3.2.2: The management procedures contributed to the effective implementation of the project

Main Findings on KPI-3.2.2:

The main issue the management focused since that start was a consequence of the problems analysis: the identified weaknesses in region institutions with energy efficiency policies and monitoring. Consequently to build a credible and focused training package was a first step. However one more decision was essential. According to project document the main objective was to strengthen the capacity of LAC national governments in the design and implementation of public policies on energy efficiency. It included the development of energy efficiency indicators and statistical databases as an additional parallel tool.

But since the start the management concentrated the efforts on the indicators: this was wise and more productive decision. Energy efficiency policies can be developed according to a wide set of tools and regulations, as they depend from the context, the history, the consumers behavior, the constraints from national budget and external accounts, etc.: it could then be difficult to find an approach valid for all beneficiary countries. However the analysis of the present situation together with the need to monitor and assess the results and the impact of the policies is definitely a common problem: the construction of indicators and the analysis of their data can be then considered as the unifying approach to energy efficiency issues able to convene the interest and the commitments of all stakeholders while in the same

time allowing to increase effectiveness, thanks to the use of standard packages for training and assistance. This is in effect how the project developed its activities: that is through the repetition of a set of standard training workshops /meetings where the contents and the modalities have been almost the same, even though partially modified after the first sessions and marginally adapted to the different contexts.

The training materials adapted to the Latin American context were produced by the technical coordinator (the European consulting company ENERDATA) and enriched along the project from the first results. 11 trainings sessions have been organized, with a presentation of the main energy efficiency indicators by sector. The training was designed for experts that had little knowledge on energy efficiency indicators, or to enhance the knowledge of other experts. All the presentations were done with Powerpoint, organized by sector presenting key performance indicators, which can be relevant for the Latin American region, with emphasis on definitions and concepts and illustration through several case studies. The trainings also enabled the teams to strengthen their capacity, analysis and interpretation of indicator trends. In particular, countries' representatives were asked to prepare several presentations based on the results for their countries with the assistance of the technical coordination for reviewing.

KPI-3.2.2 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-3.2.2 (ii) Key extracts from documents: *(with explicit source referencing)*

The project's objective is to strengthen the capacity of Latin American and Caribbean (LAC) national governments in their efforts to establish a path to low-carbon economic growth, through the design and implementation of public policies on energy efficiency, with particular attention to policies on innovation. It also includes the development of indicators and statistical databases to monitor the impact of alternative energy efficiency policies, their potential economic benefits, and the incorporation of technological innovations to improve the efficiency of energy use as countries move forwards towards low carbon economies.

(From project basic document)

KPI-3.2.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

Template was sufficiently clear and to the point even though there is the need for extra support. We should thank again the European experts for their availability and capacity.

(interview with Chang)

The events have been useful and well organized, except for the training language that in most sessions was English. This did not allow a quick reception. The methodology was a bit difficult to grasp and we found the template not user friendly. We needed substantial follow up from the consultant and from the project's management: we must thank again the European experts for their support. Thank to the national consultant (who comes from the National University) we had access to a large amount of experiences in statistical methodology. We had to use a many estimations because of the lack of sufficient direct data.

(interview with Puentes)

KPI-3.2.3: *The governance and management structures of the project contributed to effective national implementation and coordination of partners*

Main Findings on KPI-3.2.3:

The collection of data required for the calculation of indicators began with the creation of an Excel template. This template was adapted from the ODYSSEE data template that all EU member countries fill in to update the ODYSSEE data base, by adding the energy sector, simplifying data on space heating, by adding industrial activities that are specific of some Latin American countries (e.g. in mining for instance) and finally by detailing further the agriculture sector. The data template is organised in 7 main sheets corresponding each to a sector: macro (for general macro-economic and energy balance data), energy, industry, households, services, transport and agriculture.

The template was presented and explained during the workshops. Some participants lamented that the presentation was only in English (the template contained however the Spanish translation of each entry), but in general, according to the questionnaires recorded after each sessions, there was a solid appreciation for the quality of the teaching.

KPI-3.2.3 (i) Data, figures and tables: *(with explicit source referencing)*

ADEME /ENERDATA interventions on the beneficiary countries

	Numbers of updates*	Last update
Argentina	2	09/05/2013
Bolivia	5	17/10/2014
Brazil	4	14/10/2015
Chile	8	24/10/2014
Colombia	1	02/06/2015
Costa Rica	6	28/01/2015
Dominican Rep.	3	03/07/2015
Ecuador	2	26/08/2015
El Salvador	6	11/08/2015
Guatemala	1	09/07/2015
Mexico	8	20/02/2015
Nicaragua	8	14/04/2015
Panama	3	09/09/2014
Paraguay	3	20/12/2013
Peru	2	10/06/2014
Uruguay	6	27/08/2015

KPI-3.2.3 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-3.2.3 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

The presence of European experts with solid knowledge and experience was the crucial tool: we really appreciated their capacity. The template was sufficiently clear even though one needs to be a good expert of the EE to grasp it quickly.

The major issue, besides the fact that some information was not available at all, was the different sources we had to contact. There are not specific agreements for the distribution of info especially when some economic issues are concerned. We needed specific authorization to establish contact and agreements with other institutions. Some data can come only from specific researches that are too expensive to do so we had to use estimations.

(interview with Molina)

We needed an external expert, as our internal resources are quite limited. GIZ offered the financial resources to pay him.

(interview with Molina)

The main problem was to collect the information from separate sources not always easy to reach. However we used the available information from different sources. Another issue was that data on energy consumption for transport and families as the required data were not collected. We were not able to develop specific research, as they are quite expensive.

(interview with Sepulveda)

Assessment of / statement on Judgment Criterion JC-3.2 (based on the KPIs main findings)

The management made since the start a correct decision, that is to invest as soon as possible a substantial amount of resources in the most decisive activities as planned in project's document: four technical workshops (Montevideo, Uruguay, April 2013/Mexico City, April, 2013/Panamá City, September 2013) and an European Study Tour officers from 11 Latin American governments (Argentina, Bolivia, Paraguay, Uruguay, Chile, Brazil, Guatemala, Costa Rica, El Salvador, Panamá and Mexico). On the same time the European Consultants prepared the template for the collection for data and started the assistance to the first countries in Mercosur area, which had already received some assistance before the official start of the project. In effect during the first year of implementation the management disbursed 65% of the total amount.

This decision was important for two reasons: a) it allowed to show the opportunity offered by the project to a larger public of potential beneficiary countries, b) it showed that the project had the capacity to deliver, building then the trust in the beneficiaries and consequently their commitment.

The other decisive step was the solid involvement of other donors: beside the right decision to have ADEME/ENERDATA as main technical sponsors —they are the first the technical arm for energy of the French Cooperation and the second the technical institution in charge of ODISEE and MURE programs in Europe— project management was able to exploit the long term relation with GIZ and their former participation in funding the first phases of the BIEE project to consolidate their presence in the enlarged project activities. The combination of these two donors produced the situation showed in the below table: the additional resources multiply the basic one by 75% (including an amount coming from ECLAC regular budget).

This capacity of the management to convince and involve extra sponsors is surely one of the reasons for the success of the project: in effect, face to the increasing demand of participation from beneficiary countries, the management found the right and fruitful approach with the donors to expand the impact of the project and to gain visibility and status for the organization.

The main issue the management focused since that start was a consequence of the problems analysis: the identified weaknesses in region institutions with energy efficiency policies and monitoring. Consequently to build a credible and focused training package was a first step. However one more decision was essential. According to project document the main objective was to strengthen the capacity of LAC national governments in the design and implementation of public policies on energy efficiency. It included the development of energy efficiency indicators and statistical databases as an additional parallel tool.

But since the start the management concentrated the efforts on the indicators: this was wise and more productive decision. Energy efficiency policies can be developed according to a wide set of tools and regulations, as they depend from the context, the history, the consumers behavior, the constraints from national budget and external accounts, etc.: it could then be difficult to find an approach valid for all beneficiary countries. However the analysis of the present situation together with the need to monitor and assess the results and the impact of the policies is definitely a common problem: the construction of indicators and the analysis of their data can be then considered as the unifying approach to energy efficiency issues able to convene the interest and the commitments of all stakeholders while in the same time allowing to increase effectiveness, thanks to the use of standard packages for training and assistance. This is in effect how the project developed its activities: that is through the repetition of a set of standard training workshops /meetings where the contents and the modalities have been almost the same, even though partially modified after the first sessions and marginally adapted to the different contexts.

The training materials adapted to the Latin American context were produced by the technical coordinator (the European consulting company ENERDATA) and enriched along the project from the first results. 11 trainings sessions have been organized, with a presentation of the main energy efficiency indicators by sector. The training was designed for experts that had little knowledge on energy efficiency indicators, or to enhance the knowledge of other experts. All the presentations were done with Powerpoint, organized

<p>by sector presenting key performance indicators, which can be relevant for the Latin American region, with emphasis on definitions and concepts and illustration through several case studies. The trainings also enabled the teams to strengthen their capacity, analysis and interpretation of indicator trends. In particular, countries' representatives were asked to prepare several presentations based on the results for their countries with the assistance of the technical coordination for reviewing.</p> <p>The collection of data required for the calculation of indicators began with the creation of an Excel template. This template was adapted from the ODYSSEE data template that all EU member countries fill in to update the ODYSSEE data base, by adding the energy sector, simplifying data on space heating, by adding industrial activities that are specific of some Latin American countries (e.g. in mining for instance) and finally by detailing further the agriculture sector. The data template is organised in 7 main sheets corresponding each to a sector: macro (for general macro-economic and energy balance data), energy, industry, households, services, transport and agriculture.</p> <p>The template was presented and explained during the workshops. Some participants lamented that the presentation was only in English (the template contained however the Spanish translation of each entry), but in general, according to the questionnaires recorded after each sessions, there was a solid appreciation for the quality of the teaching.</p>	
<p>JC- 3.3 : The project's activities did produce the expected outcomes according to each country plan and specifications</p>	
KPI 3.3.1	<i>The available resources (size and nature) have been appropriate / sufficient to achieve the objectives</i>
KPI 3.3.2	<i>The expected outputs have been achieved on time in the most efficient way compared to alternatives</i>
KPI 3.3.3	<i>The project management made efforts to be innovative and take advantage of information and communication technology, knowledge management and networking of expertise at the sub regional / regional levels</i>
<p>KPI-3.3.1: <i>The available resources (size and nature) have been appropriate/sufficient to achieve the objectives</i></p>	
<p>Main Findings on KPI-3.3.1 :</p>	
<p>The increase in countries participation did not become a stress for the project resources as the management was able to attract the support of additional resources coming from the already involved donors. As mentioned already in para 3.2.1, the project enjoyed a substantial increase (175%) of the budget that allowed the management not only to positively respond to the additional demands but also to offer direct support to beneficiary countries when they were not in condition to adequately proceed with the national report production.</p>	
<p>KPI-3.3.1 (i) Data, figures and tables: <i>(with explicit source referencing)</i></p>	
<p>KPI-3.3.1 (ii) Key extracts from documents: <i>(with explicit source referencing)</i></p>	
<p>KPI-3.3.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p>	
<p>KPI-3.3.2: <i>The expected outputs have been achieved on time in the most efficient way compared to alternatives</i></p>	
<p>Main Findings on KPI-3.3.2 :</p>	
<p>The main outputs of the project can be easily identified in the national reports and the regional database. The main problems during the production of national report were a) few countries did not have the internal</p>	

capacity in term of human resources to implement the work, b) in a number of countries the availability of data was not immediate as it depended on institutional arrangements between different organizations, c) in almost all countries the data availability, especially regarding information about energy consumption at the - levels, was quite low.

With reference to point a) it should be remarked that, as a condition for joining the project, the countries had to commit a contribution in kind with its man-hours of its officials. However there have been cases where the local resources were so limited that there was not possible to proceed with the needed speed. Therefore for some countries ECLAC offered the support of external local consultants (using direct project resources or the ones offered by the external donors). Moreover, given that the local beneficiary institution had the primary responsibility to proceed with the data collection process and drafting of the national reports, in some case there were delays. This was due not only to the mentioned limitation on available local resources, but also to the difficult inter-institutional relations. In almost all countries the collection of energy efficiency data was a first: it meant that there was no immediate knowledge of where the data were and no established procedure to get the date, even once the availability was assured. In effect few officers claim that the institution in charge of energy efficiency did not have the mandate to collect statistical or economic information from other sources; consequently they needed to arrange specific agreements with any of sources, something that demanded time and commitments. This has been one of the reason for the delay that have been noted in many countries. The third problem was the unavailability of specific data especially on energy consumption at family or enterprise level, as these one were never collected, not even by the official statistical institution. In many cases then, thank to the support of the European consultants, estimations were developed, using the methodology already experienced in Europe for similar cases.

It is relevant to point out that one of the unexpected outcomes of the project has been the increased awareness that the collection of specific data on energy are essential for a correct and efficient management of the energy in the country. It is hoped that this new conscience can be transformed in a new statistical procedure well established and institutionalized. This could be in effect an area where the support of ECLAC could produce good practices coming form past experience and the lessons learnt from other countries. It should be stressed that the institutionalization of specific data collection for energy is a condition for any type of sustainability and should be then followed with extreme care.

KPI-3.3.2 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-3.3.2 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-3.3.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

The collection of the right information was difficult, especially when the consumption patterns are involved. It was easier for the production. There are no institutionalized agreements allowing the Ministry of Energy to access quickly the other institutions that collect information. Moreover for some specific consumption data there is the need of ad hoc researches, something that is for the moment too expensive.

The distribution of information between different institutions is not a common situation. There is the need for some sort of inter-institutional agreement to allow the exchange of information.

The statistical institutions should receive the task to collect the information for the construction of the indicators.
(interview with Chang)

Within our ministry there weren't available human resources so we asked ECLAC a specific support that came in the form of an external consultant fund for almost 2 years. However we were present at project's events with high-level representatives (vice minister and directors).

Besides the lack of human resources, we should note that in our country the data for EE were not collected. No specific organization is in charge for this type of statistics. Moreover for some of the data requested

(i.e. energy consumption at enterprises/families level) there are no official data. So we have to use estimations. (interview with Leiton)

Assessment of / statement on Judgment Criterion JC-3.3 (based on the KPIs main findings)

The increase in countries participation did not become a stress for the project resources as the management was able to attract the support of additional resources coming from the already involved donors. As mentioned already in para 3.2.1, the project enjoyed a substantial increase (175%) of the budget that allowed the management not only to positively respond to the additional demands but also to offer direct support to beneficiary countries when they were not in condition to adequately proceed with the national report production.

The main outputs of the project can be easily identified in the national reports and the regional database. The main problems during the production of national report were a) few countries did not have the internal capacity in term of human resources to implement the work, b) in a number of countries the availability of data was not immediate as it depended on institutional arrangements between different organizations, c) in almost all countries the data availability, especially regarding information about energy consumption at the - levels, was quite low.

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Preliminary Answer to the Evaluation Question EQ-3 based on the statements on the Judgment Criteria

ECLAC planned the implementation of the project at the start with 6 countries of southern area (Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay). However, after the 2013 Dialogo, the realization of the interest from other countries pushed ECLAC to offer the opportunity to other countries. It was then extended to 8 Central American countries (Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama) and then to other countries (Cuba, Ecuador, Colombia, Peru and Venezuela) for a total of 19

participating countries. The wide success of the project was not foreseen in the basic project document: in effect it is quite surprising that the indicators for project success were very low: for result 1, “At least 3 Latin American and Caribbean government institutions have used the analytical outputs”, for result 2 “At least 2 Latin American and Caribbean country undertake studies and actions” with also “at least 1 country that concretely advances in studying and identifying barriers”, for result 3 “At least 3 Governmental energy efficiency initiatives at the national level”. It is not easy to understand why the aims of the project were set so low: the problem analysis was correct and the activities in reality began before the official project start, so there was already some knowledge of the demand coming from potential beneficiaries.

The point is that, if we keep the official quantitative objectives, then the amount of resources appears excessive as well as the activities planned. It remains a question without answer. The beneficiaries of the project were mainly National Offices in charge of the national level energy efficiency policies belonging to the Ministries or Secretaries of Energy from each of the 19 participant countries. Also, other ministries, statistical offices and other national institutions were involved in the process of production and compilation of basic information, namely Ministries of Planning, Ministries of Economic Development, Transport Ministries and Social Ministries. The selection of the participants from each country was defined by the beneficiary institution: according to the analysis of the participants lists and from the data coming from the questionnaire, it appears that the selection was correctly made to allow for a credible know-how transfer: young officers, technically well prepared, working in the right institutional setting, with the task most adequate to embed the new experiences.

A note of caution should be raised on the validity and significance of the questionnaire answers: beside the very low amount—that in itself does not allow to build solid credibility—there is also a certain concentration of the answers in three countries (Mexico, Venezuela, Ecuador make 40% of the total): three countries that are the major oils producers in the region.

The management made since the start a correct decision, that is to invest as soon as possible a substantial amount of resources in the most decisive activities as planned in project’s document: four technical workshops (Montevideo, Uruguay, April 2013 / Mexico City, April, 2013 / Panama City, September 2013) and an European Study Tour officers from 11 Latin American governments (Argentina, Bolivia, Paraguay, Uruguay, Chile, Brazil, Guatemala, Costa Rica, El Salvador, Panamá and Mexico). On the same time the European Consultants prepared the template for the collection for data and started the assistance to the first countries in Mercosur area, which had already received some assistance before the official start of the project. In effect during the first year of implementation the management disbursed 65% of the total amount. This decision was important for two reasons: a) it allowed to show the opportunity offered by the project to a larger public of potential beneficiary countries, b) it showed that the project had the capacity to deliver, building then the trust in the beneficiaries and consequently their commitment.

The other decisive step was the solid involvement of other donors: beside the right decision to have ADEME/ENERDATA as main technical sponsors—they are the first the technical arm for energy of the French Cooperation and the second the technical institution in charge of ODISEE and MURE programs in Europe—project management was able to exploit the long term relation with GIZ and their former participation in funding the first phases of the BIEE project to consolidate their presence in the enlarged project activities. The combination of these two donors produced the situation showed in the below table: the additional resources multiply the basic one by 75% (including an amount coming from ECLAC regular budget). This capacity of the management to convince and involve extra sponsors is surely one of the reasons for the success of the project: in effect, face to the increasing demand of participation from beneficiary countries, the management found the right and fruitful approach with the donors to expand the impact of the project and to gain visibility and status for the organization.

The main issue the management focused since that start was a consequence of the problems analysis: the identified weaknesses in region institutions with energy efficiency policies and monitoring. Consequently to build a credible and focused training package was a first step. However one more decision was essential.

According to project document the main objective was to strengthen the capacity of LAC national governments in the design and implementation of public policies on energy efficiency. It included the development of energy efficiency indicators and statistical databases as an additional parallel tool. But since the start the management concentrated the efforts on the indicators: this was wise and more productive decision. Energy efficiency policies can be developed according to a wide set of tools and regulations, as they depend from the context, the history, the consumers behavior, the constraints from national budget and external accounts, etc.: it could then be difficult to find an approach valid for all beneficiary countries. However the analysis of the present situation together with the need to monitor and assess the results and the impact of the policies is definitely a common problem: the construction of indicators and the analysis of their data can be then considered as the unifying approach to energy efficiency issues able to convene the interest and the commitments of all stakeholders while in the same time allowing to increase effectiveness, thanks to the use of standard packages for training and assistance. This is in effect how the project developed its activities: that is through the repetition of a set of standard training workshops/meetings where the contents and the modalities have been almost the same, even though partially modified after the first sessions and marginally adapted to the different contexts.

The training materials adapted to the Latin American context were produced by the technical coordinator (the European consulting company ENERDATA) and enriched along the project from the first results. 11 trainings sessions have been organized, with a presentation of the main energy efficiency indicators by sector. The training was designed for experts that had little knowledge on energy efficiency indicators, or to enhance the knowledge of other experts. All the presentations were done with Powerpoint, organized by sector presenting key performance indicators, which can be relevant for the Latin American region, with emphasis on definitions and concepts and illustration through several case studies. The trainings also enabled the teams to strengthen their capacity, analysis and interpretation of indicator trends. In particular, countries' representatives were asked to prepare several presentations based on the results for their countries with the assistance of the technical coordination for reviewing.

The collection of data required for the calculation of indicators began with the creation of an Excel template. This template was adapted from the ODYSSEE data template that all EU member countries fill in to update the ODYSSEE data base, by adding the energy sector, simplifying data on space heating, by adding industrial activities that are specific of some Latin American countries (e.g. in mining for instance) and finally by detailing further the agriculture sector. The data template is organised in 7 main sheets corresponding each to a sector: macro (for general macro-economic and energy balance data), energy, industry, households, services, transport and agriculture. The template was presented and explained during the workshops. Some participants lamented that the presentation was only in English (the template contained however the Spanish translation of each entry), but in general, according to the questionnaires recorded after each sessions, there was a solid appreciation for the quality of the teaching.

The increase in countries participation did not become a stress for the project resources, as the management was able to attract the support of additional resources coming from the already involved donors. As mentioned already in para 3.2.1, the project enjoyed a substantial increase (175%) of the budget that allowed the management not only to positively respond to the additional demands but also to offer direct support to beneficiary countries when they were not in condition to adequately proceed with the national report production.

The main outputs of the project can be easily identified in the national reports and the regional database. The main problems during the production of national report were a) few countries did not have the internal capacity in term of human resources to implement the work, b) in a number of countries the availability of data was not immediate as it depended on institutional arrangements between different organizations, c) in almost all countries the data availability, especially regarding information about energy consumption at the - levels, was quite low. With reference to point a) it should be remarked that, as a condition for joining the project, the countries had to commit a contribution in kind with its man-hours of its officials. However there have been cases where the local resources were so limited that there was not possible to proceed with the needed speed. Therefore for some countries ECLAC offered the support of external local

consultants (using direct project resources or the ones offered by the external donors). Moreover, given that the local beneficiary institution had the primary responsibility to proceed with the data collection process and drafting of the national reports, in some case there were delays. This was due not only to the mentioned limitation on available local resources, but also to the difficult inter-institutional relations. In almost all countries the collection of energy efficiency data was a first: it meant that there was no immediate knowledge of where the data were and no established procedure to get the date, even once the availability was assured. In effect few officers claim that the institution in charge of energy efficiency did not have the mandate to collect statistical or economic information from other sources; consequently they needed to arrange specific agreements with any of sources, something that demanded time and commitments. This has been one of the reason for the delay that have been noted in many countries. The third problem was the unavailability of specific data especially on energy consumption at family or enterprise level, as these one were never collected, not even by the official statistical institution. In many cases then, thank to the support of the European consultants, estimations were developed, using the methodology already experienced in Europe for similar cases.

It is relevant to point out that one of the unexpected outcomes of the project has been the increased awareness that the collection of specific data on energy are essential for a correct and efficient management of the energy in the country. It is hoped that this new conscience can be transformed in a new statistical procedure well established and institutionalized. This could be in effect an area where the support of ECLAC could produce good practices coming form past experience and the lessons learnt from other countries. It should be stressed that the institutionalization of specific data collection for energy is a condition for any type of sustainability and should be then followed with extreme care.

Information Matrix EQ 4

Evaluation Question 4

Is there evidence that the project contributed to increase the technical capacities among national staff, government entities and other relevant stakeholders, to deal with energy efficiency issues?

List of Judgment Criteria (JCs) under the EQ 4

JC- 4.1	Increased awareness among policy makers and technical staff of the importance to collect data on energy use / consumption
JC- 4.2	Improved capacity of national staff to collect and analyze data on energy efficiency
JC- 4.3	The impact of ECLAC supported actions have been felt / acknowledged by beneficiaries and there is evidence of their success.

JC-4.1: Increased awareness among policy makers and technical staff of the importance to collect data on energy use/consumption

List of Key Performance Indicators (KPIs) under JC 4.1 (codes and definition)

KPI-4.1.1	<i>Level and quality of the participation of national representatives to project's events</i>
KPI-4.1.2	<i>Level of participation of national staff to the project's activities (by country) in the preparation of country energy efficiency report</i>

KPI-4.1.1: *Level and quality of the participation of national representatives to project's events*

Main Findings on KPI-4.1.1:

The quality of participants to project events responded to the expectations being concentrated —as remarked in para 3.1.2— in officers from the institutions in charge with energy efficiency and with the right qualifications to exploit fully the opportunity to learn new analysis tools.

Nevertheless —according to the comments from the European consultants— the capacity to transform presence in a real know-how transfer depended a lot on each national teams. Brazil sent qualified people eager to learn. It was evident that Paraguay started from scratch so with more difficulties but with good willingness. Other countries showed less real interest: this probably will mean that the consolidation process will not be the same everywhere and ECLAC should follow it with some special care.

The overall presence to the events —as below table shows— was not very large: in effect most of the events had the participation of few persons as they were correctly considered special training. It should be noted however that one third of the presents have been ECLAC personnel, and international donors and organizations: it is hoped that the relative costs have not be a burden for the project resources.

KPI-4.1.1 (i) Data, figures and tables: *(with explicit source referencing)*

Presence to BIEE events

From beneficiary countries	145	68,3%
From ECLAC	20	9,4%
From Intern. donors	26	12,3%
From Intern. organizations	20	9,4%
TOTAL	211	100%

(data from project's files)

KPI-4.1.1 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-4.1.1 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

KPI- 4.1.2: *Level of participation of national staff to the project's activities (by country) in the preparation of country energy efficiency report*

Main Findings on KPI-4.1.2 :

In general the local officers have been the main actors in the production of the national reports: this allowed the consolidation of know-how, thanks also to the continuous assistance from the European Consultants, something that all interviewed officers mentioned as one of the main tools of the project success.

It is true however that in a small number of cases the availability of local resources, even though a specific condition to access the project participation, has not been fully respected and the intervention of ECLAC was needed with the offer to pay local additional consultants.

KPI-4.1.2 (i) Data, figures and tables: *(with explicit source referencing)*

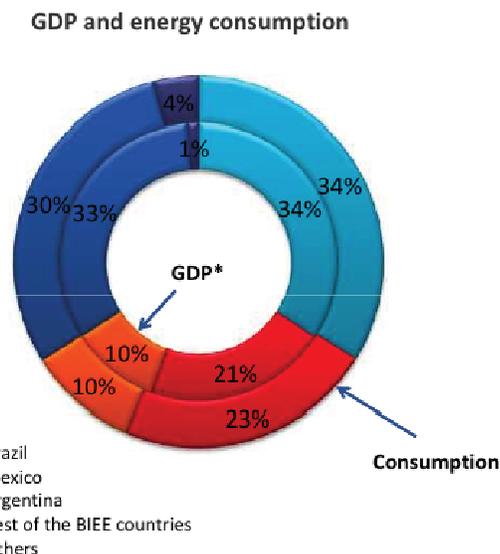
KPI-4.1.2 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-4.1.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

The need for local consultants in a number of countries was a necessity as the local resources were limited: however it can result in lower ownership. In some cases the arrival of new beneficiaries —that appeared to be the main objective of ECLAC— created confusion in the training workshops as the level was not the same. The turn over of the personnel limited the transfer for some countries.

(Interview with Bosseboeuf)

Assessment of / statement on Judgment Criterion JC-4.1 (based on the KPIs main findings)	
<p>From the interviews and the answers to the questionnaire it emerged with strong confirmation that the awareness of the importance to collect large amount of data on energy use/consumption as statistical base to build energy efficiency indicators is widely present in the beneficiaries. Moreover it gave a push in a number of countries to a new definition of inter-institutional relations in order to institutionalize the process.</p> <p>The quality of participants to project events responded to the expectations being concentrated —as remarked in para 3.1.2— in officers from the institutions in charge with energy efficiency and with the right qualifications to exploit fully the opportunity to learn new analysis tools.</p> <p>Nevertheless —according to the comments from the European consultants— the capacity to transform presence in a real know-how transfer depended a lot on each national teams. Brazil sent qualified people eager to learn. It was evident that Paraguay started from scratch so with more difficulties but with good willingness. Other countries showed less real interest: this probably will mean that the consolidation process will not be the same everywhere and ECLAC should follow it with some special care.</p> <p>The overall presence to the events was not very large: in effect most of the events had the participation of few persons as they were correctly considered special training. It should be noted however that one third of the presents have been ECLAC personnel, and international donors and organizations: it is hoped that the relative costs have not be a burden for the project resources.</p> <p>In general the local officers have been the main actors in the production of the national reports: this allowed the consolidation of know-how, thanks also to the continuous assistance from the European Consultants, something that all interviewed officers mentioned as one of the main tools of the project success. It is true however that in a small number of cases the availability of local resources, even though a specific condition to access the project participation, has not been fully respected and the intervention of ECLAC was needed with the offer to pay local additional consultants.</p>	
JC-4.2: Improved capacity of national staff to collect and analyze data on energy efficiency	
List of Key Performance Indicators (KPIs) under JC 3.2 (codes and definition)	
KPI-4.2.1	Production of additional analyses and documents on country energy efficiency situation
KPI-4.2.2	Amount and quality of contacts toward the database on energy efficiency indicators set up by the project
KPI-4.2.1:	Production of additional analyses and documents on country energy efficiency situation
Main Findings on KPI-4.2.1 :	
<p>It appears to be a little early to expect that additional analyses and documents on country energy efficiency situation be produced. In effect only 5 national reports have been officially distributed while the others are still being finalized.</p> <p>It could be more important now to check the consolidation and the institutionalization of the process, as this is the first essential step toward more exploitation of the new available tools.</p>	

KPI-4.2.1 (i) Data, figures and tables: *(with explicit source referencing)*

(Bossebeuf Report 2014)

KPI-4.2.1 (ii) Key extracts from documents: *(with explicit source referencing)***KPI-4.2.1 (iii) Information from interviews and questionnaire** *(with explicit source referencing)*

KPI- 4.2.2: Amount and quality of contacts toward the database on energy efficiency indicators set up by the project

Main Findings on KPI-4.2.2:

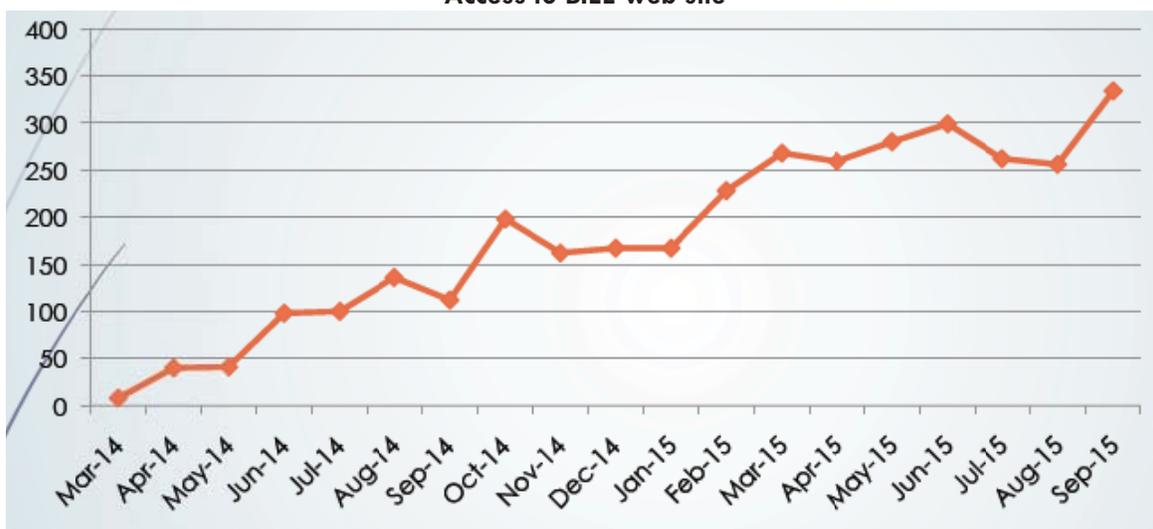
The analysis of the contacts toward the regional database on energy efficiency developed by the project shows a steady increase of hits since the start with a stable amount around 300/monthly after one year from the start. It is true that the overall amount is not large but it should be noted that is a very specialized topic that interests and affects only the officers and policy makers really implicated in the energy management. It is however hopeful that in the future the hits increase and to reach this result ECLAC should be more active. The fact that 73% are new visits could imply that the site has an increased visibility but there is need to wait for at least one more year before any type of conclusions.

However three points can be stressed: a) almost 50% of the hits come from the three countries that are most advanced in energy efficiency management; on one hand this could be the premise for a larger involvement from the other countries but only after the awareness is better consolidated —something that is still an ongoing process; b) the fact that only a bit more that one page is the average shows that the database is not really consulted but simply accessed: this should push the site managers to present it in a way that could push a longer navigation; c) the appeal of the regional database is mostly dependent on its capacity to offer updated figures and data; and this obviously depends on the capacity of each country to update its national database. We are then again to stress the importance to achieve the consolidation and the continuity of the process.

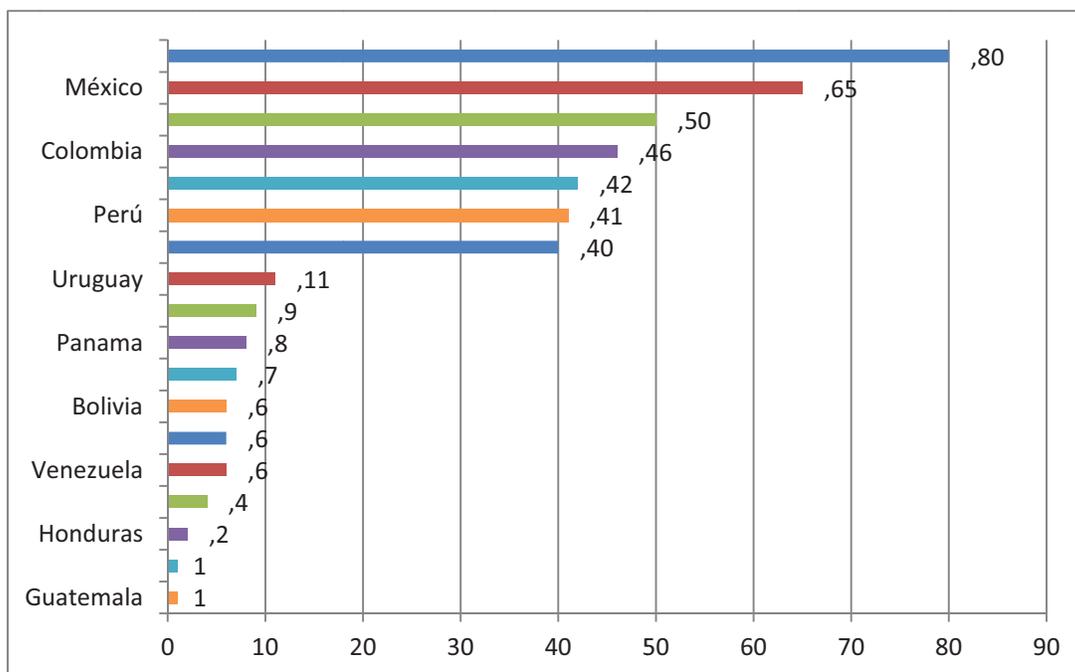
The questionnaire presented however a situation less positive: only 50% of the participants visited the site (when to the ones who never visited you join the ones who did not answer) and for the ones who visited the frequentation was quite skimpy. Again it appears that there is the need to increase the appeal of the site.

KPI-4.2.2 (i) Data, figures and tables: (with explicit source referencing)

Access to BIEE web site



Period	march 2014 - september 2015
Pages seen	4.306
Visits	3.415
% of new visitor	73%
Pages / visit	1.3



(from ECLAC cyber metric analysis of web hits on BIEE regional database)

Uno de los objetivos del proyecto “BIEE - Base de datos de Eficiencia Energética” de la CEPAL es de ofrecer una base de datos on-line para los operadores. ¿Conoce o ha utilizado alguna vez esta base de datos?

Answer Options	Response Percent	Response Count
Si	62,2%	23
No	37,8%	14
<i>answered question</i>		37
<i>skipped question</i>		5

¿Con cuanta frecuencia ha consultado la Base de datos de Eficiencia Energética?

Answer Options	Response Percent	Response Count
Nunca	0,0%	0
Raramente	26,1%	6
Algunas veces	65,2%	15
Frecuentemente	8,7%	2
<i>answered question</i>		23
<i>skipped question</i>		19

KPI-4.2.2 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-4.2.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

I understand they have 300 hits monthly on average. It is not very high; with ODYSSEE which is a well-known project for over 20 years we have more than 17 times more (5000 hits). For that we do a lot of indexation with key words of the various documents so that Google or other research engine can find the data base or other documents. To increase the visits to BIEE, the BIEE web site should be completely redesigned up to the usual standard of such web site with a real effort of indexation.

(interview with Lapillonne)

Assessment of / statement on Judgment Criterion JC-4.2 (based on the KPIs main findings)

The availability of the national reports is the first marker of an improved capacity of national institutions to deal with energy efficiency indicators: 5 reports have been already published and distributed, 7 are almost finalized while for the others the work is still ongoing. It appears to be a little early to expect that additional analyses and documents on country energy efficiency situation be produced. It could be more important now to check the consolidation and the institutionalization of the process, as this is the first essential step toward more exploitation of the new available tools.

The analysis of the contacts toward the regional database on energy efficiency developed by the project shows a steady increase of hits since the start with a stable amount around 300/monthly after one year from the start. It is true that the overall amount is not large but it should be noted that is a very specialized topic that interests and affects only the officers and policy makers really implicated in the energy management. It is however hopeful that in the future the hits increase and to reach this result ECLAC should be more active. The fact that 73% are new visits could imply that the site has an increased visibility but there is need to wait for at least one more year before any type of conclusions.

However three points can be stressed: a) almost 50% of the hits come from the three countries that are most advanced in energy efficiency management; this could be the premise for a larger involvement from the other countries but this will happen only after the awareness is better consolidated —something that is

<p>still an ongoing process; b) the fact that only a bit more than one page is the average shows that the database is not really consulted but simply accessed: this should urge the site managers to present it in a way that could push a longer navigation; c) the appeal of the regional database is mostly dependent on its capacity to offer updated figures and data; and this obviously depends on the capacity of each country to update its national database. We are then again to stress the importance to achieve the consolidation and the continuity of the process.</p> <p>The questionnaire presented however a situation less positive: only 50% of the participants visited the site (when to the ones who never visited you join the ones who did not answer) and for the ones who visited the frequentation was quite skimpy. Again it appears that there is the need to increase the appeal of the site.</p>	
<p>JC- 4.3 The impact of ECLAC supported actions have been felt / acknowledged by beneficiaries and there is evidence of their success.</p>	
KPI 4.3.1	<i>Level of distribution of the reports within the country</i>
KPI 4.3.2	<i>The final beneficiaries are in condition to fully evaluate and appreciate these impacts (by country)</i>
KPI 4.3.2	<i>The project's main beneficiaries are satisfied with the quality and timeliness of the outputs and services (by country)</i>
<p>KPI-4.3.1: <i>Level of distribution of the reports within the country</i></p>	
<p>Main Findings on KPI-4.3.1 :</p> <p>The only source is the answers to the questionnaire. The knowledge of the documents produced by the project is quite spread (even though one could have expected that all participants to project's events knew about them). The appreciation for the contents is quite high as well as the acknowledgement of the potential impact on national policies. It appears however that the distribution of the reports has been not so large, but we should wait for the publication of the others to complete the assessment (up to now only 5 reports have been officially published).</p> <p>The wealth of new information contained in the reports is worth a larger use in term of communication to the general population, something that up o now does not appear to be a generalized option.</p>	
<p>KPI-4.3.1 (ii) Key extracts from documents: <i>(with explicit source referencing)</i></p>	
<p>KPI-4.3.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p>	
<p>KPI-4.3.2: <i>The final beneficiaries are in condition to fully evaluate and appreciate these impacts (by country)</i></p>	
<p>Main Findings on KPI-4.3.2 :</p> <p>The comments from the questionnaire and the interviews confirm another time that the beneficiaries are competent and committed to the issue of energy efficiency. The statements collected during the project's events —when each beneficiary country was requested to do a presentation of the activities and achievements— show the solid acknowledgement of the relevance of the instrument especially in its capacities to fill the voids in former law and regulations and to improve the future structure and management of new energy efficiency policies.</p> <p>It is worth to note that the country presentations requested by project management in occasion of workshops were an useful instrument to push the countries toward the implementation of the activities as they created some sort of competition between the different teams. This could have been also a space to develop some south-south cooperation and exchange, However it should be remarked that each country has different ways of working as well as different levels of commitment and institutional and technical capacities so the cooperation was not immediate: more efforts should be developed in the future to increase this space.</p>	

Project management tries also another modality to push for a collaborative work process: it established at the beginning of the project a social network (BIEENET) based on the UN Social Network System: Unite Connections as a collaborative tool for managing the project and to ensure substantive follow-up and project effectiveness. Although the site served as a centralized repository for all the projects documents, it did not result in an increased collaborative work process. The Information and Communications Technologies Section of ECLAC suggested the choice of using Unite Connections as the tool for development the network. Although the tool offered a rich set of features to enable team collaboration, after initial efforts, the participants showed a substantial preference to continue the use of standard email. In effect it appeared that many implementing partners were not familiar with this type of instrument, besides technological shortcomings and consolidated cultural aspects that become an obstacle to successful collaboration.

KPI-4.3.2 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-4.3.2 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-4.3.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

Acercamiento al INE

Conformación del **grupo de estadísticas energéticas** coordinado por el INE y con participación de los actores del sector (caso URSEA).

Incorporación de módulos y preguntas específicas de energía en las encuestas continuas que lleva el INE: Actividad Económica (se coordinarán cuentas nacionales con estadísticas energéticas).

Identificación de carencias en las estadísticas de sectores construcción y transporte (fundamentalmente problemas de registro). Se definen estos temas como prioritarios para trabajar con el INE y mejorar la información de base.

(Carolina Mena, Unidad de Eficiencia Energética, MIEM, Uruguay)

Los indicadores permitirán al país medir la eficacia de las políticas para el ahorro de energía.

Esta medición es fundamental para plantear y ajustar las políticas que se desarrollarán en el futuro.

Además del sector transporte se tendrán indicadores para los otros sectores: industria, comercio, residencial.

El proyecto BIEE representa además la oportunidad de ordenar en el país las estadísticas energéticas en coordinación interinstitucional.

(Gloria Villa de la Portilla Directora Energía ,Ministerio del Ambiente, Energía y Telecomunicaciones, COSTA RICA).

KPI-4.3.3: *The project's main beneficiaries are satisfied with the quality and timeliness of the outputs and services (by country)*

Main Findings on KPI-4.3.3:

The appreciation for the quality of project's outputs comes from two sources: the questionnaires completed at the end of each event and the answer to the final questionnaire distributed during this evaluation.

The below table show a substantial and continuous positive reception of the project's offer and its contents: on average two thirds of the participants has an excellent opinion of the events. With reference to the contents the judgment is marginally lower: the only point to remark is that in occasion of workshops in country most advanced in the EE issue (i.e. Brazil, Venezuela) or at the "dialogos", there is a larger share

of people less satisfied. It could be interpreted as the request for an adaptation of the contents for a more qualified public, something on which the management could try to think over.

The answers from the evaluation questionnaire confirm the appreciation even though the caution already expressed in term of validity should be taken into account.

KPI-4.3.3 (i) Data, figures and tables: (with explicit source referencing)

EVENT	PARTICIPANTS		OVERALL JUDGMENT (% answers)			CONTENTS (% answers)		
	M	F	EXCEL	GOOD	SUFFIC	EXCEL	GOOD	SUFFIC
CHILE 24 9 13	4	3	57	43		43	57	
CHILE 25 9 13	7	2	78	22		89	11	
FRANCE TRIP	8	4	67	33		42	58	
R.D. 9 9 14	9	3	75	25		75	25	
COLOMBIA 11 6 14	23	6	72	48		72	48	
COLOMBIA 12,13 6 14	12	3	87	13		80	20	
C.RICA 26 2 14	5	3	87	13		75	25	
COLOMBIA 8 5 14	3	1	100			75	25	
VENEZ 28 8 14	11	2	36	64		43	50	7
BRAZIL 26 8 15	11	7	56	44		61	39	
BRAZIL 27 8 15	12	5	50	45	5	60	35	5
BRAZIL 28 8 15	5	2	29	71		43	57	
COLOMBIA 24 3 15	4	1	40	60		60	40	
DIALOGO 12	32	12	59	39	2	50	46	4
DIALOGO 13	17	6	43	57		48	43	9
DIALOGO14	23	12	58	36	6	36	56	6
TOTAL	186	72	66	32	2	58	39	3
	72%	28%						

(elaboration of author on data from ECLAC analysis)

¿Las actividades y eventos del proyecto en los cuales usted ha participado, han respondido a sus expectativas?		
Answer Options	Response Percent	Response Count
Si	86,8%	33
No	13,2%	5

KPI-4.3.3 (ii) Key extracts from documents: (with explicit source referencing)

KPI-4.3.3 (iii) Information from interviews and questionnaire (with explicit source referencing)

We learnt a lot from the project activities and from the production of the report. We think that the internal production of the report has been the most important instrument for the transfer of know-how.
(Interview with Chang)

Assessment of / statement on Judgment Criterion JC-4.3 (based on the KPIs main findings)

The only source is the answers to the questionnaire. The knowledge of the documents produced by the project is quite spread (even though one could have expected that all participants to project's events knew about them). The appreciation for the contents is quite high as well as the acknowledgement of the potential impact on national policies. It appears however that the distribution of the reports has been not so large, but we should wait for the publication of the others to complete the assessment (up to now only 5 reports have been officially published).

The wealth of new information contained in the reports is worth a larger use in term of communication to the general population, something that up o now does not appear to be a generalized option. The comment form the questionnaire and the interviews confirm another time that the beneficiaries are competent and committed to the issue of energy efficiency. The statements collected during the project's events —when each beneficiary country was requested to do a presentation of the activities and

achievements— show the solid acknowledgement of the relevance of the instrument especially in its capacities to fill the voids in former law and regulations and to improve the future structure and management of new energy efficiency policies. It is worth to note that the country presentations requested by project management in occasion of workshops were an useful instrument to push the countries toward the implementation of the activities as they created some sort of competition between the different teams. This could have been also a space to develop some south-south cooperation and exchange, However it should be remarked that each country has different ways of working as well as different levels of commitment and institutional and technical capacities so the cooperation was not immediate: more efforts should be developed in the future to increase this space.

Project management tries also another modality to push for a collaborative work process: it established at the beginning of the project a social network (BIEENET) based on the UN Social Network System: Unite Connections as a collaborative tool for managing the project and to ensure substantive follow-up and project effectiveness. Although the site served as a centralized repository for all the projects documents, it did not result in an increased collaborative work process. The Information and Communications Technologies Section of ECLAC suggested the choice of using Unite Connections as the tool for development the network. Although the tool offered a rich set of features to enable team collaboration, after initial efforts, the participants showed a substantial preference to continue the use of standard email. In effect it appeared that many implementing partners were not familiar with this type of instrument, besides technological shortcomings and consolidated cultural aspects that become an obstacle to successful collaboration.

The appreciation for the quality of project's outputs comes from two sources: the questionnaires completed at the end of each event and the answer to the final questionnaire distributed during this evaluation. The table shows a substantial and continuous positive reception of the project's offer and its contents: on average two thirds of the participants has an excellent opinion of the events. With reference to the contents the judgment is marginally lower: the only point to remark is that in occasion of workshops in country most advanced in the EE issue (i.e. Brazil, Venezuela) or at the "dialogos", there is a larger share of people less satisfied. It could be interpreted as the request for an adaptation of the contents for a more qualified public, something on which the management could try to think over. The answers from the evaluation questionnaire confirm the appreciation even though the caution already expressed in term of validity should be taken into account.

Preliminary Answer to the Evaluation Question EQ-4 based on the statements on the Judgment Criteria

From the interviews and the answers to the questionnaire it emerges with strong confirmation that the awareness of the importance to collect large amount of data on energy use/consumption as statistical base to build energy efficiency indicators is widely present in the beneficiaries. Moreover it gave a push in a number of countries to a new definition of inter-institutional relations in order to institutionalize the process. The quality of participants to project events responded to the expectations being concentrated —as remarked in para 3.1.2— in officers from the institutions in charge with energy efficiency and with the right qualifications to exploit fully the opportunity to learn new analysis tools. Nevertheless —according to the comments from the European consultants— the capacity to transform presence in a real know-how transfer depended a lot on each national teams. Brazil sent qualified people eager to learn. It was evident that Paraguay started from scratch so with more difficulties but with good willingness. Other countries showed less real interest: this probably will mean that the consolidation process will not be the same everywhere and ECLAC should follow it with some special care.

The overall presence to the events was not very large: in effect most of the events had the participation of few persons as they were correctly considered special training. It should be noted however that one third of the presents have been ECLAC personnel, and international donors and organizations: it is hoped that the relative costs have not be a burden for the project resources. In general the local officers have been the main actors in the production of the national reports: this allowed the consolidation of know-how, thanks also to the continuous assistance from the European Consultants, something that all interviewed officers mentioned as one of the main

tools of the project success. It is true however that in a small number of cases the availability of local resources, even though a specific condition to access the project participation, has not been fully respected and the intervention of ECLAC was needed with the offer to pay local additional consultants.

The availability of the national reports is the first marker of an improved capacity of national institutions to deal with energy efficiency indicators: 5 reports have been already published and distributed, 7 are almost finalized while for the others the work is still ongoing. It appears to be a little early to expect that additional analyses and documents on country energy efficiency situation be produced. It could be more important now to check the consolidation and the institutionalization of the process, as this is the first essential step toward more exploitation of the new available tools.

The analysis of the contacts toward the regional database on energy efficiency developed by the project shows a steady increase of hits since the start with a stable amount around 300/monthly after one year from the start. It is true that the overall amount is not large but it should be noted that is a very specialized topic that interests and affects only the officers and policy makers really implicated in the energy management. It is however hopeful that in the future the hits increase and to reach this result ECLAC should be more active. The fact that 73% are new visits could imply that the site has an increased visibility but there is need to wait for at least one more year before any type of conclusions.

However three points can be stressed: a) almost 50% of the hits come from the three countries that are most advanced in energy efficiency management; this could be the premise for a larger involvement from the other countries but this will happen only after the awareness is better consolidated —something that is still an ongoing process; b) the fact that only a bit more that one page is the average shows that the database is not really consulted but simply accessed: this should urge the site managers to present it in a way that could push a longer navigation; c) the appeal of the regional database is mostly dependent on its capacity to offer updated figures and data; and this obviously depends on the capacity of each country to update its national database. We are then again to stress the importance to achieve the consolidation and the continuity of the process.

The questionnaire presented however a situation less positive: only 50% of the participants visited the site (when to the ones who never visited you join the ones who did not answer) and for the ones who visited the frequentation was quite skimpy. Again it appears that there is the need to increase the appeal of the site. The answers to the questionnaire are the main source for verifying if the beneficiaries are satisfied with the quality and timeliness of the outputs and services. The knowledge of the documents produced by the project is quite spread (even though one could have expected that all participants to project's events knew about them). The appreciation for the contents is quite high as well as the acknowledgement of the potential impact on national policies. It appears however that the distribution of the reports has been not so large, but we should wait for the publication of the others to complete the assessment (up to now only 5 reports have been officially published).

The wealth of new information contained in the reports is worth a larger use in term of communication to the general population, something that up o now does not appear to be a generalized option. The comment form the questionnaire and the interviews confirm another time that the beneficiaries are competent and committed to the issue of energy efficiency. The statements collected during the project's events —when each beneficiary country was requested to do a presentation of the activities and achievements— show the solid acknowledgement of the relevance of the instrument especially in its capacities to fill the voids in former law and regulations and to improve the future structure and management of new energy efficiency policies. It is worth to note that the country presentations requested by project management in occasion of workshops were an useful instrument to push the countries toward the implementation of the activities as they created some sort of competition between the different teams. This could have been also a space to develop some south-south cooperation and exchange, However it should be remarked that each country has different ways of working as well as different levels of commitment and institutional and technical capacities so the cooperation was not immediate: more efforts should be developed in the future to increase this space.

Project management tried also another modality to push for a collaborative work process: it established at the beginning of the project a social network (BIEENET) based on the UN Social Network System: Unite Connections as a collaborative tool for managing the project and to ensure substantive follow-up and project effectiveness. Although the site served as a centralized repository for all the projects documents, it did not result in an increased collaborative work process. The Information and Communications Technologies Section of ECLAC suggested the choice of using Unite Connections as the tool for development the network. Although the tool offered a rich set of features to enable team collaboration, after initial efforts, the participants showed a substantial preference to continue the use of standard email. In effect it appeared that many implementing partners were not familiar with this type of instrument, besides technological shortcomings and consolidated cultural aspects that become an obstacle to successful collaboration.

The appreciation for the quality of project's outputs comes from two sources: the questionnaires completed at the end of each event and the answer to the final questionnaire distributed during this evaluation. The table shows a substantial and continuous positive reception of the project's offer and its contents: on average two thirds of the participants has an excellent opinion of the events. With reference to the contents the judgment is marginally lower: the only point to remark is that in occasion of workshops in country most advanced in the EE issue (i.e. Brazil, Venezuela) or at the "dialogos", there is a larger share of people less satisfied. It could be interpreted as the request for an adaptation of the contents for a more qualified public, something on which the management could try to think over. The answers from the evaluation questionnaire confirm the appreciation even though the caution already expressed in term of validity should be taken into account.

Information Matrix EQ 5

Evaluation Question 5

To what extent did the improved technical capacity of national staff, interested government organizations and other operators contribute to the development of energy efficiency policies and activities needed for the future growth path of the country and the region?

List of Judgment Criteria (JCs) under the EQ 5

JC- 5.1	The project promoted the adoption of pilot approaches that tested new ideas to allow the economic actors face the challenges energy efficiency
JC- 5.2	Degree of positive results in terms of energy efficiency indicators following the actions developed thanks to strengthened local capacities and increased awareness.
JC- 5.3	The project was effective in promoting an international framework or code of good conduct for the elaboration of energy efficiency measurements

JC-5.1: The project contributed to improve the capacity of LAC export sectors to adequately identify new opportunities for export trade

List of Key Performance Indicators (KPIs) under JC 5.1 (codes and definition)

KPI-5.1.1	Changes in national energy efficiency policies and strategies (by country)
KPI-5.1.2	New national legislation proposed/approved (by country)
KPI-5.1.1:	Changes in national energy efficiency policies and strategies (by country)

Main Findings on KPI-5.1.1:

The attention for energy efficiency in LAC region only in the last 10 years produced specific programs and policies, most of them thanks to the support and contribution of international donors, especially the World Bank and GIZ. However not all countries have ad hoc laws and regulations.

It is true that recently a new wave of interest —as consequence of the oil high cost— has been consolidated in the establishment of special institutions for EE and in the preparation of new laws. The list

presented below shows that the attention for EE is widely common in all LAC countries and new steps are in the policy makers hands.

However, as many interviewed persons remarked, the technical capacity to elaborate correct and continuous measures of energy efficiency based on the selection of basic data and qualified indicators as instrument to monitor the progress and the impact of the policies was quite minimal.

It is evident that the launch of BIEE project in 2011 was an important step: the time to see real consequences in terms of policies and strategies is probably too short, but the acknowledgement of the presence of the new instrument is well shared and there are then credible opportunities to develop the expected impact.

KPI-5.1.1 (i) Data, figures and tables: *(with explicit source referencing)*

Bolivia

The Bolivian Network for Energy Efficiency is a non-profit public-private enterprise, created in 2013: it also supports the identification of sources of finance and contributes to monitoring capabilities.

Program for Energy Audit on Buildings, the Appliance Labeling Program sets out to label gas and electrical equipment (domestic and imported).

The first stage of the development of the Strategic Plan for Energy Saving and Efficiency (PAEE) has concluded.

Chile

In 2013, the Action Plan for Energy Efficiency was presented, aiming to reach a 12% reduction in the energy demand projected for 2020.

The design of an Energy Efficiency Law to transform energy efficiency into a departmental or provincial policy remains a national government policy.

Implementation of a program to improve street lighting, with the planned replacement of 200,000 fixtures and the backing of the Energy Efficiency Action Plan, setting a goal of energy savings of 20% by 2025.

Colombia

Law 1715, also known as the “Renewable Energies and Efficient Energy Management Law”, was approved in May 2014. Article 10 establishes a Non-Conventional Energy and Efficient Energy Management Fund (FENOGE). Chapter V is devoted to the development and promotion of efficient energy management. Implementation of Law 1715 regulation is on discussion.

In PROURE 2010-2015, ten strategic sub-programmes are proposed, among which we can highlight institutional strengthening (the creation of a National Energy Efficiency Agency will be considered).

Costa Rica

Costa Rica became the first country in Central America to enact a law for energy efficiency back in 1994. Law No. 7447 (Rational Use of Energy Law) was enacted with the objective of consolidating state participation in the promotion of rational energy use.

A pilot program for the introduction of LED lamps is currently underway with the Empresa de Servicios Públicos de Heredia.

Costa Rica’s Chamber of Industry (CICR) in cooperation with GIZ, has created the “Energy Administrator” training program, aimed at enterprises.

A revision of Law 8829 is currently at the public discussion stage, and a revised law is expected to be published in the near future.

Dominican Republic

Since 2012 an outreach Program for Energy Efficiency, under the National Programme for Saving and the Rational Use of Energy.

It created an Institutional Committee for the Rational Use of Energy (CIURE), with a mandate to train private-sector industries.

Implementation of the Energy Efficiency Act to start.

Ecuador

Program for Renewal of Equipment with Inefficient Energy Use (Inefficient Refrigerators Replacement Project Plan, or “Renova Plan”).

The National Program for Efficient Cooking aims to introduce three million induction cookers in the period 2015-2017.

El Salvador

The Energy Efficiency Project of El Salvador was mainly aimed at assisting the government, through the Ministry of Economy and in coordination with the National Energy Board, in the design, evaluation and implementation of a number of energy efficiency measures, including the implementation of pilot projects.

The CNE, with support from the IDB and GIZ, developed and drew up the Draft Law on Energy Efficiency. The formulation and implementation of action plans would be undertaken by an inter-agency committee, which would also create the National Energy Efficiency Plan (PLANE). This Plan will follow up actions in the public and private sectors, which are mandatory energy efficiency measures. The proposal was presented to the Legislative Assembly on March 31, 2014.

Guatemala

The draft bill has been submitted to Congress, entitled: “Draft Energy Efficiency Law”. Its most noteworthy components are the creation of the National Council for Energy Efficiency (CONEE) as the Competent Authority, consisting of public and private actors with the objective of developing an Energy Efficiency Integral Plan for the Rational and Efficient Use of Energy (PIEE) and promoting its implementation; the establishment of a National Energy Efficiency Fund (FODEE) to finance the programs and projects on energy efficiency; a comprehensive plan of programs and projects.

Honduras

The Program for Energy Efficiency in the Industrial and Commercial Sectors (PESIC), started in 2005.

A new law to promote the Rational Use of Energy is to be elaborated, including as its main elements a body in charge of the rational use of energy, a fund to promote energy efficiency, implementation of standards, technical regulations, and equipment labeling, and tax incentives for imports of efficient equipment and technologies.

Nicaragua

Under the program “Development of Energy Efficiency in Nicaragua” (2007-2011), energy audits were conducted in major companies in the industry, trade and services sectors.

Until 2017, the Action Plan for Energy Efficiency (Strengthening the Legal Framework for Energy Efficiency) will be in force. The Plan seeks the establishment of procedures for conformity assessment of the implementation of the Nicaraguan Mandatory Technical Standards Energy Efficiency program. In the short term, a draft bill and associated regulations are expected to be put forward.

Panama

The National Secretariat of Energy (SNE) has implemented energy efficiency programs in the departments and agencies of the Public Administration in the period 2009-2014.

Law 69, enacted in October 2012, establishes the general guidelines of the national policy for the Efficient Use of Energy (UREE) in the country. Executive Decree 398 of June 2013 regulates the Law.

Paraguay

Creation of the National Committee for Energy Efficiency (CNEE) in accordance with Executive Order N° 6377/11, responsible for the preparation and implementation of the National Plan for the Efficient Use of Energy.

Uruguay

The Energy Efficiency Project (2005-2012) was funded by a grant from GEF through the World Bank (UNEP-Energy Efficiency in LA , 2015).

KPI-5.1.1 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-5.1.1 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

To transform the new awareness in policies will not be easy. Just take the case of Ecuador where the food is cooked in electric kitchens because of subsidies and there is no plan to change the conditions, as it will mean changing the behaviour of the population (with new investments etc.)
(interview with Horta)

KPI- 5.1.2: New national legislation proposed / approved (by country)

Main Findings on KPI-5.1.2 :

In three countries beneficiary of the project (R.D., Costa Rica, Bolivia) new laws or adaptations are planned shortly: there is a common agreement that the presence of EE indicators will offer a new strength to the policies and to the real implementation.

KPI-5.1.2 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-5.1.2 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-5.1.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

The parliament in Dominican Republic is working on an EE law that should be ready for the end of 2016. The availability of indicators will be an enormous support to give credibility to the law.
(interview with Gerardo)

We launched in 2015 the VII Plan National for Energy. The indicators produced by the project will help define credible objectives as well as control the implementation. For us the engagements to face the climatic changes signed in Paris are important: so the need for indicators is really important for the next years. We count on extending their use. We are exploring different incentives for the private sector (i.e. no taxes for electric cars, special finance instrument to invest in EE, etc.). The use of indicators will be very helpful.
(interview with Molina)

We can say that now that the Bolivia Plan for EE based for a horizon up to 2035 could be supported by substantial statistical evidence. Private sector and the population are at the moment not fully aware of the issues: only when official regulation will be launched we think that there will be a real feed back. We think that they will respond more when new rules and obligations will be produced as part of the Plan. The Plan will in effect include specific regulations (subsidies / incentives / obligations according to the consumption sector – enterprises/families).
(Interview with Leiton)

Assessment of / statement on Judgment Criterion JC-5.1 (based on the KPIs main findings)	
<p>The attention for energy efficiency in LAC region only in the last 10 years produced specific programs and policies, most of them thanks to the support and contribution of international donors, especially the World Bank and GIZ. However not all countries have ad hoc laws and regulations.</p> <p>It is true that recently a new wave of interest —as consequence of the oil high cost— has been consolidated in the establishment of special institutions for EE and in the preparation of new laws. The list presented below shows that the attention for EE is widely common in all LAC countries and new steps are in the policy makers hands. However, as many interviewed persons remarked, the technical capacity to elaborate correct and continuous measures of energy efficiency based on the selection of basic data and qualified indicators as instrument to monitor the progress and the impact of the policies was quite minimal.</p> <p>It is evident that the launch of BIEE project in 2011 was an important step: the time to see real consequences in terms of policies and strategies is probably too short, but the acknowledgement of the presence of the new instrument is well shared and there are then credible opportunities to develop the expected impact. In three countries beneficiary of the project (R.D., Costa Rica, Bolivia) new laws or adaptations are planned shortly: there is a common agreement that the presence of EE indicators will offer a new strength to the policies and to the real implementation.</p>	
JC-5.2: Degree of positive results in terms of energy efficiency indicators following the actions developed thanks to strengthened local capacities and increased awareness	
List of Key Performance Indicators (KPIs) under JC 3.2 (codes and definition)	
KPI-5.2.1	<i>Evidence that results-based management based on energy efficiency indicators understood and pursued in a coherent fashion in the formulation and implementation of policies (by country)</i>
KPI-5.2.2	<i>Beneficiary country can show improved indicators for different sectors following the project's action (by country)</i>
KPI-5.2.1 : Evidence that results-based management based on energy efficiency indicators understood and pursued in a coherent fashion in the formulation and implementation of policies (by country)	
Main Findings on KPI-5.2.1:	
<p>The awareness of the importance of EE indicators as instrument for credible EE policies and regulations is well consolidated.</p> <p>If and when this new awareness will produce effective result-based energy management policies depends mostly from each national environment: for the moment the variety of institutional set up and the availability of resources appear to simply confirm that the most advanced countries will continue while for the others the need for an additional support should enter into the picture.</p> <p>Three types of information are needed to understand the context and policy options:</p> <ul style="list-style-type: none"> - Information about why the end users use energy the way they do: the driving forces of energy demand - Information about what currently exists and how it performs: the state of energy consumption - Information about policy options and potential impact: the response that policies should enable. <p>Together these form an information cycle that can regularly review and update policies based on their measured performance. Indicators are required to inform each element: driving force, state and response. Policy responses need to address these driving forces, often in subtle ways. For example, in the residential sector, few governments are likely to manage residential energy demand by regulating occupancy density or household size. Growth in energy consumption due to increased household size has been offset by substantial energy efficiency progress.</p>	

KPI-5.2.1 (i) Data, figures and tables: <i>(with explicit source referencing)</i>	
KPI-5.2.1 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>	
KPI-5.2.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>	
KPI- 5.2.2: <i>Beneficiary country can show improved indicators for different sectors following the project's action (by country)</i>	
Main Findings on KPI-5.2.2:	
Too early to have real results.	
KPI-5.2.2 (i) Data, figures and tables: <i>(with explicit source referencing)</i>	
KPI-5.2.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>	
KPI-5.2.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>	
Assessment of / statement on Judgment Criterion JC-5.2 (based on the KPIs main findings)	
<p>It is too early to have effective results in new EE policy management. The awareness of the importance of EE indicators as instrument for credible EE policies and regulations is well consolidated.</p> <p>If and when this new awareness will produce effective result-based energy management policies depends mostly from each national environment: for the moment the variety of institutional set up and the availability of resources appear to simply confirm that the most advanced countries will continue while for the others the need for an additional support should enter into the picture.</p> <p>Three types of information are needed to understand the context and policy options:</p> <ul style="list-style-type: none"> - Information about why the end users use energy the way they do: the driving forces of energy demand - Information about what currently exists and how it performs: the state of energy consumption - Information about policy options and potential impact: the response that policies should enable. <p>Together these form an information cycle that can regularly review and update policies based on their measured performance. Indicators are required to inform each element: driving force, state and response. Policy responses need to address these driving forces, often in subtle ways. For example, in the residential sector, few governments are likely to manage residential energy demand by regulating occupancy density or household size. Growth in energy consumption due to increased household size has been offset by substantial energy efficiency progress</p>	
JC- 5.3 The project was effective in promoting an international framework or code of good conduct for the elaboration of energy efficiency measurements	
KPI 5.3.1	<i>The national institutions have accepted the methodology presented by the project and have promoted its use in the country for other sectors (by country)</i>
KPI 5.3.2	<i>There is evidence of other experiences promoted at national level using the methodology presented by the project</i>
KPI-5.3.1: <i>The national institutions have accepted the methodology presented by the project and have promoted its use in the country</i>	
Main Findings on KPI-5.3.1 :	
The participation of national officers in the preparation of the national reports has been the most effective instrument to allow the transfer of know-how. Nevertheless, as already mentioned, the capacity to embed the new instrument depends on the national context (political willingness, institutions, personnel, resources).	

It should be remarked that the project had to intervene already with special support—that is offering to the local institutions the assistance of specialized external experts—in many countries. This was an arrangement to avoid delays, as the local resources were insufficient for quantity and quality to grant the production of the report. It is true that as consequence in a number of countries the consolidation of the know-how could be more difficult to achieve. Moreover few countries lamented the scarce availability of resources to continue in the collection and analysis of the data.

One more critical constraint is the real political willingness to use indicators: it is well known that politicians refrain from giving specific quantified objectives to strategies and policies as the risk of no achievement could be then imputed to them. The use of quantified indicators for energy could have the same risks: fantastic to have an instrument so performing, but there could be some reluctance to apply it in the real world.

KPI-5.3.1 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-5.3.1 (ii) Key extracts from documents: *(with explicit source referencing)*

In some cases and given the lack of staff, we supported some participating governments by hiring experts and national consultants who, through their technical assistance, helped them to improve the data collection stage and to identify and analyze energy efficiency indicators obtained from the developed database. In some cases, they also participated in the elaboration of the national reports. This was the case of 8 countries: Bolivia (Carmen Crespo), Costa Rica (Daniel García Zúñiga), El Salvador (Adonay Urrutia Cortez), Guatemala (Erick Cabrera), Nicaragua (Elizabeth Membreño Centeno), Panama (Ricardo David Leal), Paraguay (Enrique Buzarquis) and Uruguay (Ines Mendez).
(project draft final report)

KPI-5.3.1 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

KPI-5.3.2: *There is evidence of other experiences promoted at national level using the methodology presented by the project*

Main Findings on KPI-5.3.2:

The recent agreement of climate change signed in Paris includes specific quantitative commitments for all signatory countries.

The need for the instrument to measure and control the progress is then an international obligation for all countries.

As many interviewed persons commented, the BIEE is exactly one essential part of this instrument: there could be the need to adapt some indicators, but the overall methodology is the most functional for the scope.

KPI-5.3.2 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-5.3.2 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-5.3.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

Assessment of / statement on Judgment Criterion JC-5.3 (based on the KPIs main findings)

The participation of national officers in the preparation of the national reports has been the most effective instrument to allow the transfer of know-how. Nevertheless, as already mentioned, the capacity to embed the new instrument depends on the national context (political willingness, institutions, personnel, resources).

It should be remarked that the project had to intervene already with special support—that is offering to the local institutions the assistance of specialized external experts—in many countries. This was an arrangement to avoid delays, as the local resources were insufficient for quantity and quality to grant the

production of the report. It is true that as consequence in a number of countries the consolidation of the know-how could be more difficult to achieve. Moreover few countries lamented the scarce availability of resources to continue in the collection and analysis of the data.

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The recent agreement of climate change signed in Paris includes specific quantitative commitments for all signatory countries. The need for the instrument to measure and control the progress is then an international obligation for all countries. As many interviewed persons commented, the BIEE is exactly one essential part of this instrument: there could be the need to adapt some indicators, but the overall methodology is the most functional for the scope.

Preliminary Answer to the Evaluation Question EQ-5 based on the statements on the Judgment Criteria

It is still difficult to show any change in the indicators as the energy efficiency programs have been implemented only recently in some countries, no baseline analysis exist and the impact cannot yet be seen on the energy efficiency indicators' trends. However the methodology in itself is a major achievement.

The attention for energy efficiency in LAC region produced specific programs and policies only in the last 10 years, most of them thanks to the support and contribution of international donors, especially the World Bank and GIZ. However not all countries have ad hoc laws and regulations. It is true that recently a new wave of interest —as consequence of the oil high cost— has been consolidated with the establishment of special institutions for EE and with the preparation of new laws. The list presented shows that the attention for EE is now widely common in all LAC countries and new future steps are in the hands of policy makers. However, as many interviewed persons remarked, the technical capacity to elaborate correct and continuous measures of energy efficiency based on the selection of basic data and qualified indicators as instrument to monitor the progress and the impact of the policies was and still is quite minimal.

It is evident that the launch of BIEE project in 2011 was an important step: the time to see real consequences in terms of policies and strategies is probably too short, but the acknowledgement of the presence of the new instrument is well shared and there are then credible opportunities to develop the expected impact. In three countries beneficiary of the project (R.D., Costa Rica, Bolivia) new laws or adaptations are planned shortly: there is a common agreement that the presence of EE indicators will offer a new strength to the policies and to the real implementation.

If and when this new awareness will produce effective result-based energy management policies depends mostly from each national environment: for the moment the variety of institutional set up and the availability of resources appear to simply confirm that the most advanced countries will continue while for the others the need for an additional support should enter into the picture.

Three types of information are needed to understand the context and policy options:

- Information about why the end users use energy the way they do: the driving forces of energy demand
- Information about what currently exists and how it performs: the state of energy consumption
- Information about policy options and potential impact: the response that policies should enable.

Together these form an information cycle that can regularly review and update policies based on their measured performance. Indicators are required to inform each element: driving force, state and response. Policy responses need to address these driving forces, often in subtle ways. For example, in the residential sector, few governments are likely to manage residential energy demand by regulating occupancy density or household size. Growth in energy consumption due to increased household size has been offset by substantial energy efficiency progress.

The participation of national officers in the preparation of the national reports has been the most effective instrument to allow the transfer of know-how. Nevertheless, as already mentioned, the capacity to embed the new instrument depends on the national context (political willingness, institutions, personnel, resources). It should be remarked that the project had to intervene already with special support—that is offering to the local institutions the assistance of specialized external experts—in many countries. This was an arrangement to avoid delays, as the local resources were insufficient for quantity and quality to grant the production of the report. It is true that as consequence in a number of countries the consolidation of the know-how could be more difficult to achieve. Moreover few countries lamented the scarce availability of resources to continue in the collection and analysis of the data.

One more critical constraint is the real political willingness to use indicators: it is well known that politicians refrain from giving specific quantified objectives to strategies and policies as the risk of no achievement could be then imputed to them. The use of quantified indicators for energy could have the same risks: fantastic to have an instrument so performing, but there could be some reluctance to apply it in the real world.

The recent agreement of climate change signed in Paris includes specific quantitative commitments for all signatory countries. The need for the instrument to measure and control the progress is then an international obligation for all countries. As many interviewed persons commented, the BIEE is exactly one essential part of this instrument: there could be the need to adapt some indicators, but the overall methodology is the most functional for the scope.

Information Matrix EQ 6

Evaluation Question 6

Is there evidence that the project outcomes contributed in establishing durable, self-sustaining initiatives to further develop national capacities toward improved energy efficiency strategies and investments?

List of Judgment Criteria (JCs) under the EQ 6

JC- 6.1	The project outcomes allowed the beneficiary countries to advance and consolidate in energy efficiency monitoring and assessment
JC- 6.2	The project contributed to point out new opportunities arising from the new obligations coming from international agreements for improved energy efficiency
JC- 6.3	The project demonstrates potential for replication and scale-up of successful practices

JC-6.1: The project outcomes allowed the beneficiary countries to advance and consolidate in energy efficiency monitoring and assessment

List of Key Performance Indicators (KPIs) under JC 6.1 (codes and definition)

KPI-6.1.1	<i>There is evidence that the actions funded by the project contributed to creating / strengthening local organizations, which allow the outcomes to continue after the end of the project (by country)</i>
KPI 6.1.2	<i>The support after the end of the activities has been discussed and formalized in partnership with the involved national institutions (by country)</i>
KPI 6.1.4	<i>There is evidence of integration/improvement of national expertise to ensure national ownership and sustainability of project outcomes</i>

KPI-6.1.1: *There is evidence that the actions funded by the project contributed to creating / strengthening local organizations, which allow the outcomes to continue after the end of the project (by country)*

Main Findings on KPI-6.1.1:

In most countries the activities, projects and programs related to the promotion and development of energy efficiency are initiatives of the public sector, under the direction of ministries, commissions, departments or national organizations. Evaluation of progress made shows that there have been clear improvements in most countries in the last 10 years, albeit to varying degrees. Analysis of the 27 countries demonstrates

the existence of natural differences in the regulatory frameworks for energy efficiency unique to each country, which, in consequence, prevent the establishment of simple “common denominators” for the Region. However, there is evidence of a tendency in most countries to establish national energy efficiency programs (or to strengthen any such program already in existence), backed by the legal and regulatory support necessary to uphold government policy on energy efficiency.

Example: in the case of Brazil, two of the most important current programs are being led by public utilities in the energy sector (PROCEL and CONPET), which nonetheless ensure that their activities remain in line with the policy guidelines emanating from the Ministry of Mines and Energy. In the case of Uruguay, one of its strengths in this area is the fact that the implementation of actions to promote energy efficiency is made in conjunction with the state-owned power company, UTE.

There are few cases of power utilities promoting energy efficiency among their customers. When they do so, they point to reduce peaks in demand to mitigate specific problems of supply. Also, few utilities actually carry out this kind of demand management in a systematic way. The market for ESCOs has seen little growth in the region. The implementation of performance-type contracts, with funding of investment by the ESCO, has not appeared to be a suitable instrument for their development. While in Brazil, and in some cases in Mexico, there are instances in which ESCO mechanisms have been applied, these are not good examples of systematic mass implementation, and they still confront several barriers.

The new approach presented by the project fell well in the ongoing processes, as the demands form beneficiary countries shows. Even though differences between the countries in terms of commitments and interests remain, it is sure that the methodology offered by the project was welcome: the fact that all the countries produced the national report or are finalizing it shows how much the need for the energy indicators was present. However the same differences weight on the capacity to transform the learnt know-how in a standard performance: the weakness of the institutions together with the lack of resources and personnel require an additional support.

Three countries are already using the new know-how: Mexico, Costa Rica and Paraguay. Mexico is partner in OCDE. Within the obligation of this partnership there is the delivery of data on energy consumption and efficiency. In 2013, 2014, 2015 Mexico - thanks to the support of IEA - was able to produce an acceptable set of data, but not exactly complying with the needs. Now thanks to BIEE he will be able to supply the right information. Moreover Mexico will enter IEA that demands the same type of information. Costa Rica and Paraguay are debating a new Energy efficiency law and the experience form energy efficiency indicators will allow to include better qualifies quantitative objectives while on the same time support the monitoring.

KPI-6.1.1 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-6.1.1 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-6.1.1 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

It should be mentioned that in 2014 the National Committee for EE has been established, during the preparation of the national report. Then a medium term plan for energy saving has been prepared: the use of the indicators will surely enrich the plan, as it should be able to define realistic objectives together with the instrument to monitor them. It is well known in the country that there is a surplus in the produced energy so it is quite difficult to sell “EE” to the population and to private sector. Our objective should be more concentrated on the reduction of energy consumption.

(interview with Puentes)

Mexico is partner in OCDE. Within the obligation of this partnership there is the delivery of data on energy consumption and efficiency. In 2013, 2014, 2015 Mexico thanks to the support of IEA was able to produce an acceptable set of data, but not exactly complying with the needs. Now thanks to BIEE we will

<p>be able to supply the right information. Moreover Mexico will enter IEA that demands the same type of information. (Interview with Navarrete)</p>
<p>KPI- 6.1.2: <i>There is evidence that the project has been successful in creating a continuous capacity strengthening process, jointly with country authorities (by country)</i></p>
<p>Main Findings on KPI-6.1.2:</p> <p>The reports from different studies acknowledge that there is a tendency to establish (or strengthen, if already existing) national energy efficiency programs in order to “give the legal and regulatory sustenance to support the political decisions of governments in this matter”.</p> <p>As said before, project outcomes entered with easy in this environment. However at the moment confirmed evidence of a continuous strengthening process is not available for all countries. Again it appears that the local context makes the difference. As one interviews person said :” Local situations are very different: in Costa Rica and Panama the institutions are consolidated, in Nicaragua/R.D. not so much”. The consequence is that the continuation of the process is not at the moment sure in all countries and there will be the need for a specific analysis and probably for an extension of the technical support.</p>
<p>KPI-6.1.2 (i) Data, figures and tables: <i>(with explicit source referencing)</i></p>
<p>KPI-6.1.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i></p> <p>In the energy sector, the countries of the region have made efforts to step up diversification of the energy matrix by increasing the share of renewable sources, but the results are not yet significant. The same has occurred with energy efficiency, an area in which regulatory changes, albeit recent, have not translated into significant savings that alter in any substantial way the pattern of the region’s energy intensity. The international context that the region will be facing in terms of energy over the coming decade will reflect deep exogenous changes, such as: (a) structural change in global demand for energy due to the accelerated pace of economic growth in the Republic of China, India and other emerging economies and the prolongation of this trend over the next two decades; and (b) the advent of a new international regime for combating global climate change. These challenges call for a short-term response in the form of policy recommendations, instruments and tools with emphasis on regional development priorities such as continuing to promote energy security, developing sustainable energy markets, achieving energy efficiency and increasing the use of renewable energies as reliable energy sources. (ECLAC Plan for 2016-17)</p>
<p>KPI-6.1.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p> <p>Situation very different: Costa Rica/Panama institution consolidated, Nicaragua/R.D. not so much (Interview with Carvalho)</p>
<p>KPI- 6.1.3: <i>There is evidence of integration/improvement of national expertise to ensure national ownership and sustainability of project outcomes</i></p>
<p>Main Findings on KPI-6.1.4:</p> <p>All persons interviewed confirmed that the preparation of the national reports has been the main tool to consolidate the know-how received during the workshops. The continuous support received during the report production from the European consultants has also contributed to the process.</p> <p>However, in some cases and given the lack of staff, the project supported some beneficiary countries by hiring experts and national consultants who, through their technical assistance, helped them to improve the data collection stage and to identify and analyze energy efficiency indicators obtained from the developed database. In some cases, they also participated in the elaboration of the national reports. This</p>

was the case of 8 countries: Bolivia, Costa Rica, El Salvador, Guatemala, Nicaragua, Panama, Paraguay and Uruguay. Considering the lack of resources lamented by many countries, it is not sure that the new expertise will be quickly entered in the institution. According to few interviewed persons, while the interest of the energy indicators is high, not always the local institution has the full mandate for it and consequently the allocation of specific resources will become difficult. This means that, even though all interviewed country officers confirmed the interest in continuing the exercise and updating the national database, in effect it could happen that only a few countries will do it.

The risk that the experience remains a one time effort is real (at least for some countries).

KPI-6.1.3 (i) Data, figures and tables: (with explicit source referencing)

KPI-6.1.3 (ii) Key extracts from documents: (with explicit source referencing)

KPI-6.1.3 (iii) Information from interviews and questionnaire (with explicit source referencing)

There is the need for some sort of inter-institutional agreement to allow the exchange of information
The statistical institutions should receive the task to collect the information for the construction of the indicators

(interview with Chang)

Energy efficiency performance indicators project BIEE

Guiding for the analysis

Help defining targets for energy efficiency

Organization of data

Focus on collecting data

Building capacity

Establishing a coordination

Applying energy efficiency indicators for monitoring the performance and the targets for energy efficiency.

Building the portfolio of energy efficiency policies, mechanisms and market instruments.

Cost potential curves defining the energy efficiency market.

(Ricardo Gorini , Ministerio de Minas y Energia, Brazil)

El proyecto de Base de Indicadores de Eficiencia Energética (BIEE) nos ha permitido analizar la situación de la información energética del país, del trabajo realizado hasta el momento podemos concluir:

- 1.- La Base de Indicadores de Eficiencia Energética es una herramienta que desde ya nos ha permitido tomar mejores decisiones en las acciones o estrategias a seguir en los diferentes sectores del país.
- 2.- Este proyecto nos ha permitido confirmar una deficiencia que se debe corregir en corto plazo, se tiene que mejorar en el manejo de la información que tiene una relación directa con el sector energéticos del país, desde los Balances Energéticos hasta los electrodomésticos que se comercializan.
- 3.- Hay muchos planes y proyectos que se están iniciando en estos momentos, los cuales podremos monitorear de manera exitosa con los indicadores de EE.

(Mauricio Ardón, Consejo Nacional de Energía de El Salvador)

Assessment of / statement on Judgment Criterion JC-6.1 (based on the KPIs main findings)

In most countries the activities, projects and programs related to the promotion and development of energy efficiency are initiatives of the public sector, under the direction of ministries, commissions, departments or national organizations. Evaluation of progress made shows that there have been clear improvements in most countries in the last 10 years, albeit to varying degrees. Analysis of the 27 countries demonstrates the existence of natural differences in the regulatory frameworks for energy efficiency unique to each country,

which, in consequence, prevent the establishment of simple “common denominators” for the Region. However, there is evidence of a tendency in most countries to establish national energy efficiency programs (or to strengthen any such program already in existence), backed by the legal and regulatory support necessary to uphold government policy on energy efficiency.

Example: in the case of Brazil, two of the most important current programs are being led by public utilities in the energy sector (PROCEL and CONPET), which nonetheless ensure that their activities remain in line with the policy guidelines emanating from the Ministry of Mines and Energy. In the case of Uruguay, one of its strengths in this area is the fact that the implementation of actions to promote energy efficiency is made in conjunction with the state-owned power company, UTE.

There are few cases of power utilities promoting energy efficiency among their customers. When they do so, they point to reduce peaks in demand to mitigate specific problems of supply. Also, few utilities actually carry out this kind of demand management in a systematic way. The market for ESCOs has seen little growth in the region. The implementation of performance-type contracts, with funding of investment by the ESCO, has not appeared to be a suitable instrument for their development. While in Brazil, and in some cases in Mexico, there are instances in which ESCO mechanisms have been applied, these are not good examples of systematic mass implementation, and they still confront several barriers.

The new approach presented by the project fell well in the ongoing processes, as the demands from beneficiary countries shows. Even though differences between the countries in terms of commitments and interests remain, it is sure that the methodology offered by the project was welcome: the fact that all the countries produced the national report or are finalizing it shows how much the need for the energy indicators was present. However the same differences weight on the capacity to transform the learnt know-how in a standard performance: the weakness of the institutions together with the lack of resources and personnel require an additional support.

Three countries are already using the new know-how: Mexico, Costa Rica and Paraguay. Mexico is partner in OCDE. Within the obligation of this partnership there is the delivery of data on energy consumption and efficiency. In 2013, 2014, 2015 Mexico - thanks to the support of IEA - was able to produce an acceptable set of data, but not exactly complying with the needs. Now thanks to BIEE he will be able to supply the right information. Moreover Mexico will enter IEA that demands the same type of information. Costa Rica and Paraguay are debating a new Energy efficiency law and the experience from energy efficiency indicators will allow to include better qualifies quantitative objectives while on the same time support the monitoring.

The reports from different studies acknowledge that there is a tendency to establish (or strengthen, if already existing) national energy efficiency programs in order to “give the legal and regulatory sustenance to support the political decisions of governments in this matter”. As said before, project outcomes entered with easy in this environment. However at the moment confirmed evidence of a continuous strengthening process is not available for all countries. Again it appears that the local context makes the difference. As one interviews person said :” Local situations are very different: in Costa Rica and Panama the institutions are consolidated, in Nicaragua/R.D. not so much”. The consequence is that the continuation of the process is not at the moment sure in all countries and there will be the need for a specific analysis and probably for an extension of the technical support.

All persons interviewed confirmed that the preparation of the national reports has been the main tool to consolidate the know-how received during the workshops. The continuous support received during the report production from the European consultants has also contributed to the process. However, in some cases and given the lack of staff, the project supported some beneficiary countries by hiring experts and national consultants who, through their technical assistance, helped then to improve the data collection stage and to identify and analyze energy efficiency indicators obtained from the developed database. In some cases, they also participated in the elaboration of the national reports. This was the case of 8 countries: Bolivia, Costa Rica, El Salvador, Guatemala, Nicaragua, Panama, Paraguay and Uruguay.

Considering the lack of resources lamented by many countries, it is not sure that the new expertise will be quickly entered in the institutions. According to few interviewed persons, while the interest of the energy indicators is high, not always the local institution has the full mandate for it and consequently the allocation of specific resources can become difficult. This means that, even though all interviewed country officers confirmed the interest in continuing the exercise and updating the national database, in effect it could happen that only a few countries will do it.

The risk that the experience remains a one time effort is real (at least for some countries). As one interviewed expert said: there is the need to address the institutional problems, as EE issues need to be debated at multiple levels; the collection of the data also needs inter-institutional collaboration as sources of data are multiple and not always keen to collaborate in absence of a formal mandate.

JC-6.2: The project contributed to point out new opportunities arising from the new obligations coming from international agreements for improved energy efficiency

List of Key Performance Indicators (KPIs) under JC 6.2 (codes and definition)

KPI-6.2.1 Energy efficiency indicators are instrument for improved firm management

KPI-6.2.2 Consequences from new obligations coming from international agreements

KPI-6.2.1: Energy efficiency indicators are instrument for improved firm management

Main Findings on KPI-6.2.1:

There is a large literature on the need to involve the enterprises and the private sector in energy efficiency policies. The interest for this approach has been confirmed in some interviews. Experience in the region implemented with the support of UNIDO produced credible results.

However it is evident that private sector investors see energy efficiency as a cost problem. But the use of prices to push for efficiency, something that will immediately raise the attention of the private sector, is not always acceptable, as it becomes a political and social issue with unforeseeable consequences.

On the other hand the private sector appeared well interested in the comparison coming from the regional database as it allows presenting the best practices, once the sectoral analysis is sufficiently developed. Another reason to involve more directly the private sector is that it is the sources of a large amount of data on consumption: a closer collaboration could facilitate the collection of important data (think to transport or to auto-production).

KPI-6.2.1 (i) Data, figures and tables: (with explicit source referencing)

KPI-6.2.1 (ii) Key extracts from documents: (with explicit source referencing)

Overall IEE results at country level - Ecuador

Energy Management Systems component

- 248 plant managers have increased their awareness
- 48 policymakers trained
- 167 system users/industry staff trained
- 20 technicians trained on the EnMS implementation
- 34 enterprises have implemented EnMS and have achieved up to 25% of energy savings resulting in:
 - 24,462 MWh of saved electricity
 - 682,804 GJ de saved fuel
 - 62,006 CO2 saved
- 2 enterprises pursued and received the certification of their EnMS under the ISO 50001

UNIDO: "Energy Efficiency Indicators in Industry: ECUADOR", 2015

<p>KPI-6.2.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p> <p>The use of price as instrument for EE is not always accepted, as it becomes a political issue. Perhaps more attention should be give to transmission / distribution that could offer a good space for savings. <i>(interview with Horta).</i></p> <p>We found that the private sector is very interested in EE especially when it can compare with the results coming from other countries. We think that the regional database in EE is an essential instrument to build benchmarks as first step toward the identification of best practices and transfer of lessons learnt. There is the need to work with the private sector in order to develop the relation that will allow to get the data in an easier way. <i>(interview with Navarrete)</i></p>
<p>KPI- 6.2.2: Consequences from new obligations coming from international agreements</p>
<p>Main Findings on KPI-6.2.2:</p>
<p>Two major international initiatives compound the importance to have energy efficiency indicators: the Paris agreement and the SEE4ALL.</p> <p>The agreement signed recently in Paris within COP21 has been recalled in many interviews as a strong inducement to have the energy efficiency indicators as standard component of the policy mandate for energy institutions.</p> <p>The obligations coming from the signed agreement are based on quantitative and precise results, most of which very close to energy efficiency. It will be important to stress this relation as instrument to push the governments to understand that policies without capacity to monitor and control the results risk to be ineffective.</p> <p>The project implementation started during 2013. During 2014 the Hub Americas of the Global UN Initiative SE4ALL was formed. One of the objectives of this global initiative is to double the global rate of improvement in energy efficiency. Because countries should monitor this goal, the BIEE Program, today, is the only regional and official initiative designed to measure and to monitor the energy efficiency in the countries by national offices in charge of the issue.</p>
<p>KPI-6.2.2 (i) Data, figures and tables: <i>(with explicit source referencing)</i></p>
<p>KPI-6.2.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i></p> <p>We also expect to continue to record the lessons learned and assist other regions in implementing similar projects also over the world, for example, helping the SE4ALL initiative under the World Bank's Global Tracking Framework. <i>(project draft final report)</i></p>
<p>KPI-6.2.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p>
<p>Assessment of / statement on Judgment Criterion JC-6.2 (based on the KPIs main findings)</p>
<p>Two major international initiatives compound the importance to have energy efficiency indicators: the Paris agreement and the UN SEE4ALL. The agreement signed recently in Paris within COP21 has been recalled in many interviews as a strong inducement to have the energy efficiency indicators as standard component of the policy mandate for energy institutions. The project implementation started during 2013. During 2014 the Hub Americas of the Global UN Initiative SE4ALL was formed. One of the objectives of this global initiative is to double the global rate of improvement in energy efficiency. Because countries should monitor this goal, the BIEE Program, today, is the only regional and official initiative designed to measure and to monitor the energy efficiency in the countries by national offices in charge of the issue. The obligations coming from the signed agreement are based on quantitative and precise results, most of which very close to energy efficiency. It will be important to stress this relation as instrument to push the</p>

governments to understand that policies without capacity to monitor and control the results risk to be ineffective: resources allocated for energy monitoring through indicators should now become a common decision. This could be another use of a regional database not on energy indicators but —as MURE does in Europe— for the collection and analysis of the policy decisions in energy management. This is another area where comparisons can promote the diffusion of best practices and probably effective cost reductions when using methodologies and practices already experimented.

There is a large literature on the need to involve the enterprises and the private sector in energy efficiency policies. The interest for this approach has been confirmed in some interviews. Experience in the region implemented with the support of UNIDO produced credible results. However it is evident that private sector investors see energy efficiency as a cost problem. But the use of prices to push for efficiency, something that will immediately raise the attention of the private sector, is not always acceptable, as it becomes a political and social issue with unforeseeable consequences. On the other hand the private sector appeared well interested in the comparison coming from the regional database as it allows presenting the best practices, once the sectoral analysis is sufficiently developed. Another reason to involve more directly the private sector is that it is the sources of a large amount of data on consumption: a closer collaboration could facilitate the collection of important data (think to transport or to auto-production).

JC- 6.3 : The project demonstrates potential for replication and scale-up of successful practices

KPI 6.3.1	<i>The project has been able to create the basis for the consolidation of its results through a consistent and coherent “Exit Strategy”</i>
KPI 6.3.2	<i>There are good practices and procedures taken over / replicated by local institutions</i>
KPI 6.3.3	<i>There is evidence of a sustained interest from national institutions to continue and enlarge the support offered by the project</i>

KPI-6.3.1: *The project has been able to create the basis for the consolidation of its results through a consistent and coherent “Exit Strategy”*

Main Findings on KPI-6.3.1 :

Consolidation needs to be assessed at two levels: at country level and at regional level.

The success of the project has been clear: the main reason —as mentioned already— was probably related to the timing of the proposal: right when the oil price was around 130\$ per barrel with perspective of further increase. Energy efficiency became then an alternative energy source at low cost and without the need of important investments. The proposal offered new ideas for energy efficiency management and the availability of energy indicators to gauge the effectiveness and impact of different energy policies and measures was quickly acknowledged as decisive improvement and consequently the interest in participating to the project increased and produced the results that gave credibility and visibility to the project and ECLAC.

Each participating country made an effort to start the collection of data and then produce the national report. The project with the help of the European consultants consolidated the data at regional level with the publication on the site of the regional report. However few countries demanded an extra support to be able to comply with project commitments as for the collection of data and their treatment needed human resources and technical capacities that they did not have. Even though all consulted country representatives confirmed their interest in continuing with the exercise and updating the national database, on the same time they lamented either the lack of resources or the difficult institutional set up as a major constraint. It is expected then that only the countries with more consolidated experience in energy efficiency management will easily continue, while for the other at the moment there is not a convincing “exit strategy” and they appear to depend on the continuation of support from ECLAC (that they requested in many forms) or other international donors.

At regional level it is ECLAC that is the player. The need for the regional database is well acknowledged by all stakeholders: it should be a central instrument for bench marking of policies at national-sectoral

level/comparisons on results/diffusion of best practices/transmission of lessons learnt on policies and approaches. However the regional database needs to be updated, that is to receive updated information from countries that must be processed and consolidated. For the moment the European consultants did it but now it is time to plan for the future consolidation. ECLAC is engaged to keep it on for a while, but it is doubtful if it can continue for long. It is not in the mandate of the organization, it does not have the resources (the BIEE has been funded totally with external resources, but the donors are worried that no exit strategy has been studied); it does not have the technical capacity in house (technical support was granted by external consultants). The management of regional energy efficiency database should be entrusted to a specific institution following the European example.

The search for an exit strategy should be immediately launched with the participation of all stakeholders.

KPI-6.3.1 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-6.3.1 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-6.3.1 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

The success of the project is a direct consequence of the “timing”: when in 2011 the project started, oil was at 128\$ and all countries were looking for solutions. EE was some sort of new energy source more than a technical answer to reduce the costs.

The political visibility impact for ECLAC has been huge but this should push to find the correct and credible exit strategy.

(interview with Coviello)

GIZ is engaged to continue the support to BIEE for two years more.

There is the need to push the users at national level to be more active: only where the institutions are well established there is some assurance that the work will continue. In other countries there is the risk of one time shot: more attention should be given to local institutionalization; it is not a matter of pure technical assistance but also of policy convictions.

What is need now is an exit strategy both at national and regional level.

The importance of the regional database for diffusion of best practices / lessons learnt through comparison should be an essential instrument for overall improvements: doubts on who will take charge of it.

(interview with Jansens)

There is the need to update the database in order to follow the effects of new policies on consumption However there could be some problems: at national level for lack of resources and turn over, at regional level for lack of a specialized institution.

(Interview with Lapillonne)

As we are “beginners” in the field of EE statistics, we can say that this first approach with the help of the project was welcome and allowed us to start an official package. However, if the internal human resources issue is not resolved, we risk having problems in continuing the effort. For this reason we would really appreciate some sort of follow up from ECLAC.

(interview with Leiton)

The indicators produced are macro indicators: the project allowed us a first step but EE is a very complicated space and there is the need for further specifications in methodology and in the overall approach to reach more detailed issues that should be the basis for focused policies. We are planning the construction of a web platform where all the data will be easily accessible and updated yearly.

(interview with Sepulveda)

Completar la Base de Indicadores con los sectores restantes.

Completar las estadísticas que permitan construir los indicadores faltantes.

Revisar y actualizar las estadísticas BIEE actuales.

Continuar con la construcción de capacidades en la elaboración de herramientas técnicas y la aplicación en el diseño de políticas públicas orientadas a la eficiencia energética.

(Jorge Leiton, Director Planificación Energética, BOLIVIA)

KPI-6.3.2: *There are good practices and procedures taken over / replicated by local institutions*

Main Findings on KPI-6.3.2 :

During project implementation it has been possible to strengthen the horizontal cooperation especially during the events where the sharing of new ideas was debated around the tables with all participants on the same level: this was especially relevant during the policy dialogues where the participants came from different categories and countries (ministries, politicians, members of the parliament, academics, consultants, etc.). These cooperative moments promoted the creation of new skills and positive models through the sharing of their best practices and experiences in order to develop regional partnerships. It has been important to see the most advanced countries keen to offer their experience to the others. It should be remarked that this happened because there was an “institutional space” (that is the project and the “dialogos”) that made it possible and welcome. It is evident then that the consolidation of the “space” is the most decisive condition to have the horizontal cooperation continue and then the exchange of best practices. For the moment it depends on the continuation of the project (??) and the confirmed (??) support from international donors, but —as said in the former paragraph— some sort of institutionalization is needed. Someone raised the option to have OLADE as the main actor but unfortunately the credibility of this institution is quite low to really offer a sustainable solution.

The transport sector could be for the future the main topic where sharing experience can be very fruitful. Energy efficiency in the transport sector has unique characteristics and relevance to the LAC region. The current challenges in the transport sector are well known. In 2011, final energy consumption in the transport sector in Latin America stood at more than 1,500 million barrels of oil equivalent, representing 35% of total energy consumption. In many countries, this sector accounts for the largest share of energy consumption. Energy consumption in the transport sector is clearly growing: between 1990 and 2010 it more than doubled in all LAC countries. Given the importance of transport in the region and given that it is a major source of fossil- fuel consumption and GHG emissions, it becomes urgent for LAC countries to review in detail their energy consumption patterns and improve their transport efficiency. The significant expansion of the vehicle fleet and the growing number of cars per capita are generally not being met with corresponding expansions of the road network. Especially in the large cities in Latin America, congestion carries high economic costs and has a negative impact on the quality of life of its inhabitants, on comfort and commuting times, and also in relation to air pollution.

Countries in the LAC region could address transport efficiency through improved technologies and methods of use. Although technological advances are important in improving transport efficiency, they represent only part of the equation. It is essential to work on changing consumption patterns and ways of promoting more efficient transportation, focusing on a more holistic approach to enhance system efficiency. In this regard, it would be important for the region to achieve better coordination between programmes to encourage efficiency and related objectives, such as reducing emissions (with local and global valuations of benefits), industry development and competitiveness, the security of energy supply, urban development, public transport and road infrastructure. The efficiency of the transport sector will not improve spontaneously, and governments have a critical role in formulating strategies and policies to drive the

change. A major barrier to the promotion of energy efficiency in transport is linked to the fact that the structures that are responsible for energy efficiency put the *focus primarily on the end uses of power, with limited coverage of the transport sector*. No doubt the context of this sector, which is highly diversified in terms of modes and equipment and has various types of users and purposes, makes it even more challenging to promote energy efficiency. While it has been noted that there are difficulties in implementing measures to promote energy efficiency in transport, the region has several programs on which it will be possible to exchange experiences. Although transport services and related infrastructure are crucial for the integration of the region into the global market, effective policies to reduce and manage energy consumption and emissions are mostly lacking in the region. In addition, the infrastructure of various modes of transport, including multi-modal transport, is not adequately developed. Often the decision to opt for a more energy-efficient mode of transport is hampered by significantly longer travel times, high costs, or a lack of quality and safety. This scenario is particularly the case for urban transport, in which the current focus on the mobility of passengers must not obstruct the view of urban commercial movements that are equally important and growing in number.

Another area for exchange of experience could be the subsidies. High oil prices since the second half of the 2000s have increased pressures on countries to provide energy subsidies —despite their fiscal costs and non-transparent effects on efficiency and distribution. Their negative implications for macroeconomic management, fiscal sustainability, and the environment have heightened policymakers' interest in this issue. A recent study by WB suggests that energy subsidies in the region amounted to about 1.8 percent of GDP, on average, in 2011-13, with fuel subsidies representing about 1 percent of GDP, and those for electricity about 0.8 percent of GDP. This measure of subsidies constitutes a lower bound, as it does not include forgone tax revenues or the cost of negative externalities that can increase the share to about 3.8 percent of GDP. There is considerable variation in the size and types of energy subsidies across the LAC region. Subsidies are larger in energy rich countries and in those that rank lower on measures of institutional and policy quality, such as budget transparency, rule of law, competitiveness, or the ease of doing business. In some cases energy subsidies are permanent rules-based policy choices (e.g., to provide below-cost energy to targeted users), but in many others they arise as a discretionary response to events. Fuel subsidies tend to be larger and more entrenched in oil-rich countries, while electricity subsidies are more common in low-income countries and particularly in Central America and in the Caribbean. Energy subsidies were an important driver of fiscal deficits in many LAC countries in 2011-13. Energy subsidies are a drag on countries' long-term growth and competitiveness, both by diverting resources away from other spending priorities and by discouraging efficiency enhancing investment in the energy sector. Subsidies distort market signals, are regressive, contribute to income inequality and, by encouraging energy overconsumption, deteriorate the trade balance. Overconsumption also results in negative externalities, including for the environment. Vested interests that capture most benefits from subsidies further complicate reform. Reform is most difficult when subsidies have existed so long as to be perceived as a *de facto* entitlement. As a result, most countries that have embarked on reform recently have not yet finished their efforts. Electricity subsidy reform has proved particularly challenging; in part because its cost is often less evident. Successful reform of subsidy policy is easier in periods of falling international oil prices as we are seeing now and this opens a good opportunity for energy efficiency to be on the top of the agenda.

KPI-6.3.2 (i) Data, figures and tables: *(with explicit source referencing)***Instruments for EE governance**

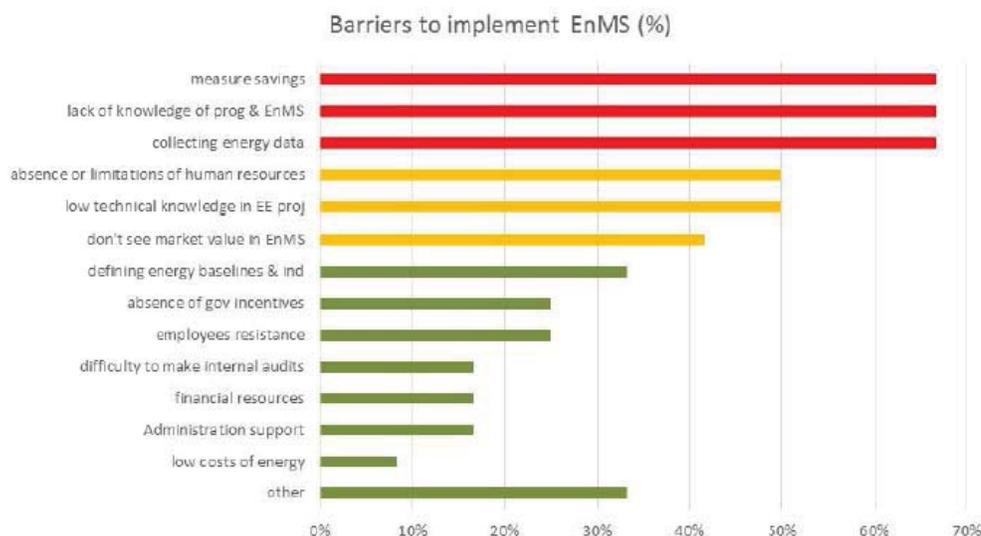
Policy	Example
Pricing mechanisms	<ul style="list-style-type: none"> • Variable tariffs where higher consumption levels invoke higher unit prices.
Regulatory and control mechanisms	<ul style="list-style-type: none"> • Compulsory activities, such as energy audits and energy management. • Minimum energy performance standards (MEPS). • Energy consumption reduction targets. • EE investment obligations on private companies.
Fiscal measures and tax incentives	<ul style="list-style-type: none"> • Grants, subsidies and tax incentives for energy efficiency investments. • Direct procurement of EE goods and services.
Promotional and market transformation mechanisms	<ul style="list-style-type: none"> • Public information campaigns and promotions. • Inclusion of energy efficiency in school curricula. • Appliance labelling and building certification.
Technology development	<ul style="list-style-type: none"> • Development and demonstration of EE technologies.
Commercial development and capacity building	<ul style="list-style-type: none"> • Creation of energy service companies (ESCOs). • Training programmes. • Development of EE industry.
Financial remediation	<ul style="list-style-type: none"> • Revolving funds for EE investments. • Project preparation facilities. • Contingent financing facilities.

Check list for an EE strategy

- Take a long-term, high-level view, but supplement with shorter-term and more programmatic action plans;
- Have a strong analytic foundation;
- Articulate purpose, goals and objectives;
- Incorporate quantitative time-bound targets, both long term and short term;
- Identify internal and external factors affecting success;
- Be comprehensive and cross-sectoral;
- Ensure integration with other policy areas;
- Identify the resources needed to turn strategy into action;
- Prioritise consuming sectors and policy measures;
- Identify actions and assign responsibility;
- Provide for results monitoring, updating and revisions;
- Facilitate stakeholder engagement and build political consensus.

IEA, “Energy efficiency governance handbook”, 2010.

Challenges and lesson learned



UNIDO: "Energy Efficiency Indicators in Industry", 2015

KPI-6.3.2 (ii) Key extracts from documents: (with explicit source referencing)

Measures developed for transport sector:

Programmes for engine inspection and driver training. Brazil: Programme of Training and Information for Drivers (SEST/SENAT), programmes for fuel saving in carriers (CONPET- Mexico: Project Clean Transportation (SEMARNAT).

Programmes to promote efficient vehicle technologies. Examples are vehicle labelling programmes and performance standards. The Latin American experience is still limited, but some countries have adopted vehicle labelling programmes, namely Brazil, Chile and Mexico. In Brazil, labelling reaches 55% of the sales of the automotive industry in the domestic market.

Taxation based on the adoption of efficient technologies. Efficiency can also be promoted by setting a tax structure with discounts based on compliance with performance targets. One of the examples is the Auto Innovate Programme that commenced in Brazil in May 2013.

The lack of national laboratory systems and experts for the evaluation of motor vehicles does not support improvements in transport efficiency.

Ongoing challenges also exist with respect to the importation of second-hand vehicles to LAC countries. According to OLADE, introduction of efficient technologies and the increased use of innovative energy carriers, such as power and biofuels, in transport may induce a significant alteration of the energy matrix and reduce energy consumption by 102 Mtoe per year. This would translate into energy savings of about 26% in relation to the business-as-usual scenario.

(UNEP DTU "Accelerating energy efficiency: initiatives and opportunities _ Latin American and Caribbean", August 2015

KPI-6.3.2 (iii) Information from interviews and questionnaire (with explicit source referencing)

We have been in EE since many years' thanks also to the support from IEA and GIZ. The use of specific EE indicators was part of the activities we were developing. In effect we can consider the Brazil experience

one of the most advanced and so we are ready to transfer our expertise to the other LA countries.
(Interview with Gorini)

Until the issue of subsidies is not dealt with there will be difficulties in get real improvements in EE for many countries. The EE law in Mexico has more stringent engagements as consequence of climate change and Paris Agreement. It should be considered that the resources of public sector have been widely reduced by 20 years of economic liberalization. So now on one side the institutions not always have the resources to comply with their mandate but on the other side the energy sector privatized is more reluctant to share information and can oppose policies. In effect energy efficiency is not a technical problems but a political issue and consequently it needs shared agreements to advance / improve.
(Interview with Ventura)

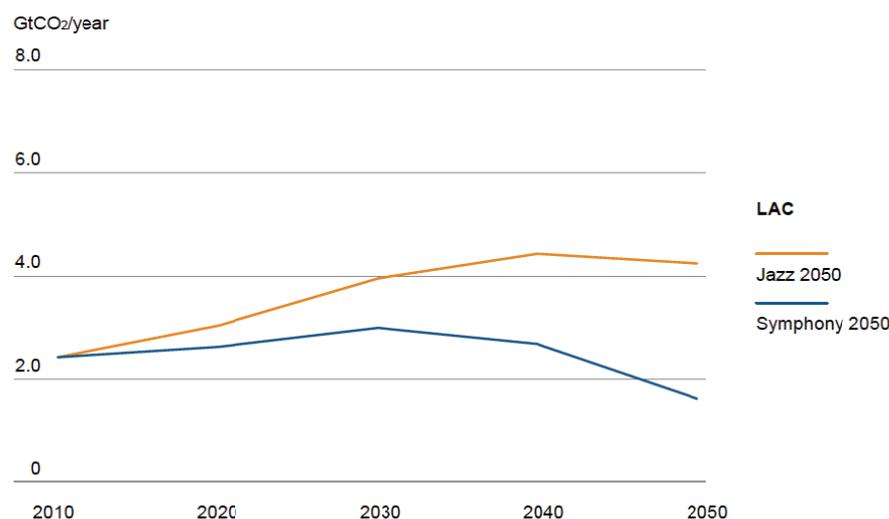
KPI-6.3.3: *There is evidence of a sustained interest from national institutions to continue and enlarge the support offered by the project*

Main Findings on KPI-6.3.3:

Improved energy efficiency is a critical response to the pressing climate change, economic development and energy security challenges facing many countries. The pressure is on. Energy efficiency has to deliver benefits, and quickly. But achieving EE improvements can be difficult. It requires a combination of technology development, market mechanisms and government policies that can influence the actions of millions of energy consumers, from large factories to individual households. Governments, EE stakeholders and the private sector must work together in order to achieve the required scale and timing of energy efficiency improvements needed for sustainable economic development. Much has been written on the role of market forces in delivering energy efficiency, and market-based instruments play a central role in most national energy efficiency policies. However, much less is known about the legal, institutional, and coordination arrangements needed to scale-up energy efficiency. Experience shows that successful EE policy outcomes are more likely if an effective system of EE governance is established. From the legal frameworks and institutions that develop and implement policy, to the stakeholders who participate in implementation in the market place, EE governance is a complex, and yet critical, part of the energy efficiency delivery system. Time and again, actions to improve energy efficiency have failed to deliver their full potential, in part, because of limited attention to EE governance arrangements.

The interest from national institutions depends on the local history and constraints. It is well know that Brazil and Mexico are at the forefront of energy efficiency policy in the region. Innovative efficiency programs are making Mexico a lead country for energy efficiency investment in Latin America. Both countries have consolidated capacities and confirmed their appreciation for the project and their willingness to continue. As said already, the difference in local conditions weights on the capacity to continue the practice. The example of labeling is a typical feature of the situation. Although with different levels of progress, all countries have taken action to implement the energy labeling of electrical and gas equipment. However, a major difficulty in implementing labeling programs has been the lack of adequate testing laboratories.

This type of problems (lack of qualified personnel and of resources) could hamper the continuation of the practice. Another issue that have been pointed out by many interviewed officers is the need to have the template more adapted to local context: it is acceptable as a first step but for the continuation there is the need to have specific templates according to the characteristics and the feature of the local economy and the local consumers behavior. This is important also to increase the appeal of the practice for the local stakeholders and consequently to have more access to the needed resources.

KPI-6.3.3 (i) Data, figures and tables: *(with explicit source referencing)*

(2015 Energy Trilemma Index, Benchmarking the sustainability of national energy systems).

KPI-6.3.3 (ii) Key extracts from documents: *(with explicit source referencing)*

Since 2011 OLADE has been organizing a public–private non-profit initiative called the Latin American and Caribbean Network for Energy Efficiency (LAC-EE Network). Its aim is to contribute to the development of energy efficiency in the region by facilitating the exchange and dissemination of technical, legal and regulatory information between institutions and interested professionals.

Another regional initiative incorporating the issue of energy efficiency is the Energy and Climate Partnership of the Americas (ECPA). The ECPA was established in 2009 at the behest of the United States and is coordinated by the Organisation of American States (OAS). Led by Mexico, this group provides information and tools to promote energy efficiency and energy savings in the region in the following areas:

Regulatory and policy frameworks, Certification of equipment, Optimal practices at the local, state and national levels, Design and implementation of programmes, Creation of knowledge capacities and institutional strengthening, Standards and labeling, Business models for ESCOs, Raising public awareness, Providing information about funding sources for energy efficiency and energy saving, including multilateral development banks, the private sector and others.

There are also activities at the sub-regional level, meaning a group of countries or an area like Central America. Among them are:

- The Caribbean Community (CARICOM) Energy Programme, with a focus on regional policy coordination, strategy development and implementation.
- The Caribbean Sustainable Energy Programme, an EU-funded Initiative to facilitate the adoption of energy policies.
- 4E Programme for Renewable Energy and Energy Efficiency in Central America. A GIZ-funded programme to enhance the capacity-building of stakeholders and institutions in order to encourage the implementation of renewable energy and energy efficiency projects. A good source of information on energy efficiency in the region.
- The Regional Programme in Energy Efficiency for Industrial and Commercial Sectors in Central America (PEER) is implemented by the United Nations Development Programme (UNDP) and funded by the GEF.

(UNEP DTU “Accelerating energy efficiency: initiatives and opportunities _ Latin American and Caribbean”, August 2015).

Prioritising Recommendations for Latin America and the Caribbean

This table prioritises the Energy Efficiency Policy Recommendations for Latin America and the Caribbean. The final column indicates their particular relevance to the Caribbean islands.

Recommendation	Policy type	Sector	Savings	Ease of implementation	Timeline (yrs)	Relevance to the Caribbean
Strongly recommended to provide strong foundation for national energy efficiency strategy						
1. Designate lead institutions for planning, coordinating, implementing, and monitoring energy efficiency policies and programmes	Institutional	All	N/A	Less difficult	1–2	High
2. Establish regular energy efficiency data collection and indicators						
3. Remove inefficient energy subsidies	Economic					
Recommended for immediate adoption by all governments in the region						
4. Stimulate investment in energy efficiency	Economic Information Regulatory	All	Significant	Can be complicated	2–5	Medium
5. Develop information and awareness campaigns and educational programmes	Information					
10. Implement mandatory MEPS and labels for appliances and equipment	Regulatory	Lighting, Appliances & Equipment	Very Large	Monitoring & Enforcement complicated	2–3	High
11. Phase-out least efficient products						
12. Engage in regional collaboration and harmonisation of testing procedures	Regulatory Institutional					
18. Promote energy management and energy efficiency projects	Regulatory	Industry	Large	Less difficult	1–2	Medium
19. Promote high-efficiency industrial equipment and systems	Economic Information Regulatory					
Recommended for consideration by all governments in the region and immediate adoption in most countries						
6. Improve the energy performance of building components and systems	Economic Regulatory	Buildings	Very Large	Monitoring & Enforcement complicated	2–3	High
7. Improve building energy performance	Economic Information Regulatory					
14. Improve transport system planning and efficiency	Economic Information Institutional Regulatory	Transport	Very Large	Very difficult	5–10	Medium
15. Implement mandatory vehicle efficiency standards and labelling	Regulatory					
17. Enhance vehicle operational efficiency	Information					
20. Stimulate the development of energy efficiency services for small and medium-sized enterprises (SMEs)	Economic Information Regulatory	Industry	Large	Can be complicated	2–3	Low
Recommended for consideration and adoption						
8. Implement energy labels, certificates or disclosure of energy consumption	Information Regulatory	Buildings	Large	Less difficult	2–3	Low
9. Aim for net-zero energy consumption in buildings	Economic Regulatory					
13. Promote market transformation policies	Economic Information	Lighting, Appliances & Equipment	Significant	Can be complicated	1–3	High
16. Promote fuel-efficient non-engine components through standards and test procedures	Regulatory					

Note: Numbers in front of each policy recommendations do not reflect a ranking of the policies. N/A: not available

UN – ECLAC: "Regional workshop 'Energy Efficiency Policies for Latin America and the Caribbean', Peru, October 2014.

Evaluación del VII Plan Nacional de Energía

El proceso de evaluación del plan consistirá en determinar la efectividad de las acciones planteadas para alcanzar las metas de resultados y de impacto a fin de mantener, reformular o discontinuar dichas acciones.

Deberán definirse las metas de resultados y de impacto esperadas a partir de las metas de producto que se establecen en el plan. Para esto se realizarán estudios de prospectiva de los efectos de los productos que entregará el Plan. Deberán definirse los indicadores asociados a las metas de resultado e impacto, los mecanismos necesarios para su determinación, así como los recursos y acciones requeridas para implementarlos.

La evaluación incluirá solo aquellas acciones que hayan entregado sus productos, de manera tal que se pueda establecer la efectividad de las políticas cuando estas hayan sido ejecutadas o cuando tengan un grado de avance suficiente como para incidir sobre las metas de resultados o impacto planteadas.

La SEPSE, con el apoyo de las instituciones del subsector energía, realizará las tareas indicadas anteriormente para la evaluación del plan y presentará los resultados en el Comité Técnico Subsectorial de Energía a fin de que sean luego conocidos por el Consejo Sectorial de Energía.

(COSTARICA: VII Plan Nacional energía, 2015)

KPI-6.3.3 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

ECLAC paid for the presence of OLADE in the events but as institution OLADE lost credibility within the region. *(interview with Coviello)*

We have been in EE since many years' thanks also to the support from IEA and GIZ. The use of specific EE indicators was part of the activities we were developing. In effect we can consider the Brazil experience one of the most advanced and so we are ready to transfer our expertise to the other LA countries.

It is sure that there will be an energy deficit in the future if we want to keep our present energy matrix where renewable sources are the largest used. For this result EE is a major instrument and should be developed through adapted regulations and incentives. It will be especially important for private sector enterprises, as they will need to find specific financial resources for these investments. We plan to reduce the electricity consumption of 10% by year 2030.

(Interview with Gorini)

ECLAC should address the institutional problems, as EE issues need to be debated at multiple levels; the collection of the data also needs inter-institutional collaboration.

(Interview with Leiton)

The main issue is the collection of the right information. In our country there are not official mechanisms that allow for an easy distribution of the information. Moreover some of the requested ones were not available. There is probably the need to support some sort of institutional strengthening so that first the needed information are collected routinely, second that the information are shared.

(Interview with Molina)

Our report will be completed in 2016 and will be the first of EE for the country. The new law demands also that CONUE should define quantitative objectives for the EE policy for the medium/long term: the capacity to build and define EE indicators is then essential for this result. The new law foresees that indicators on EE should be public and updated annually. The BIEE will be instrumental to build the right indicators. We plan to build an automated system for the collection of data from the different sources that will build the indicators. The national statistical system should also be updated in order to collect the needed information.

(Interview with Navarrete)

Beside the need to allow an adaptation to each country context and constraint, it will be important to work with the statistical institutions as many data should be collected along its standard activities: this will allow

having the data at reasonable costs. Moreover there should be some sort of allowance for the specific need of each country: in our case mine industry is very important and within the industry the energy consumption is a relevant cost. We need to study some specific package to approach this industry.
(Interview with Sepulveda)

Assessment of / statement on Judgment Criterion JC-6.3 (based on the KPIs main findings)

Consolidation needs to be assessed at two levels: at country level and at regional level.
The success of the project has been clear: the main reason —as mentioned already— was probably related to the timing of the proposal: right when the oil price was around 130\$ per barrel with perspective of further increase. Energy efficiency became then an alternative energy source at low cost and without the need of important investments. The proposal offered new ideas for energy efficiency management and the availability of energy indicators to gauge the effectiveness and impact of different energy policies and measures was quickly acknowledged as decisive improvement and consequently the interest in participating to the project increased and produced the results that gave credibility and visibility to the project and ECLAC.

Each participating country made an effort to start the collection of data and then produce the national report. The project with the help of the European consultants consolidated the data at regional level with the publication on the site of the regional report. However few countries demanded an extra support to be able to comply with project commitments as for the collection of data and their treatment needed human resources and technical capacities that they did not have. Even though all consulted country representatives confirmed their interest in continuing with the exercise and updating the national database, on the same time they lamented either the lack of resources or the difficult institutional set up as a major constraint. It is expected then that only the countries with more consolidated experience in energy efficiency management will easily continue, while for the other at the moment there is not a convincing “exit strategy” and they appear to depend on the continuation of support from ECLAC (that they requested in many forms) or other international donors.

At regional level it is ECLAC that is the player. The need for the regional database is well acknowledged by all stakeholders: it should be a central instrument for bench marking of policies at national-sectoral level/comparisons on results/diffusion of best practices/transmission of lessons learnt on policies and approaches. However the regional database needs to be updated, that is to receive updated information from countries that must be processed and consolidated. For the moment the European consultants did it but now it is time to plan for the future consolidation. ECLAC is engaged to keep it on for a while, but it is doubtful if it can continue for long. It is not in the mandate of the organization, it does not have the resources (the BIEE has been funded totally with external resources, but the donors are worried that no exit strategy has been studied); it does not have the technical capacity in house (technical support was granted by external consultants). The management of regional energy efficiency database should be entrusted to a specific institution following the European example.

The search for an exit strategy should be immediately launched with the participation of all stakeholders. During project implementation it has been possible to strengthen the horizontal cooperation especially during the events where the sharing of new ideas was debated around the tables with all participants on the same level: this was especially relevant during the policy dialogues where the participants came from different categories and countries (ministries, politicians, members of the parliament, academics, consultants, etc.). These cooperative moments promoted the creation of new skills and positive models through the sharing of their best practices and experiences in order to develop regional partnerships. It has been important to see the most advanced countries keen to offer their experience to the others. It should be remarked that this happened because there was an “institutional space” (that is the project and the “dialogos”) that made it possible and welcome. It is evident then that the consolidation of the “space” is the most decisive condition to have the horizontal cooperation continue and then the exchange of best practices. For the moment it depends on the continuation of the project (??) and the confirmed (??) support from international donors, but —as said in the former paragraph— some sort of institutionalization is

needed. Someone raised the option to have OLADE as the main actor but unfortunately the credibility of this institution is quite low to really offer a sustainable solution.

The transport sector could be for the future the main topic where sharing experience can be very fruitful. Energy efficiency in the transport sector has unique characteristics and relevance to the LAC region. The current challenges in the transport sector are well known. In 2011, final energy consumption in the transport sector in Latin America stood at more than 1,500 million barrels of oil equivalent, representing 35% of total energy consumption. In many countries, this sector accounts for the largest share of energy consumption. Energy consumption in the transport sector is clearly growing: between 1990 and 2010 it more than doubled in all LAC countries. Given the importance of transport in the region and given that it is a major source of fossil-fuel consumption and GHG emissions, it becomes urgent for LAC countries to review in detail their energy consumption patterns and improve their transport efficiency. The significant expansion of the vehicle fleet and the growing number of cars per capita are generally not being met with corresponding expansions of the road network. Especially in the large cities in Latin America, congestion carries high economic costs and has a negative impact on the quality of life of its inhabitants, on comfort and commuting times, and also in relation to air pollution.

Countries in the LAC region could address transport efficiency through improved technologies and methods of use. Although technological advances are important in improving transport efficiency, they represent only part of the equation. It is essential to work on changing consumption patterns and ways of promoting more efficient transportation, focusing on a more holistic approach to enhance system efficiency. In this regard, it would be important for the region to achieve better coordination between programmes to encourage efficiency and related objectives, such as reducing emissions (with local and global valuations of benefits), industry development and competitiveness, the security of energy supply, urban development, public transport and road infrastructure. The efficiency of the transport sector will not improve spontaneously, and governments have a critical role in formulating strategies and policies to drive the change. A major barrier to the promotion of energy efficiency in transport is linked to the fact that the structures that are responsible for energy efficiency put the *focus primarily on the end uses of power, with limited coverage of the transport sector*. No doubt the context of this sector, which is highly diversified in terms of modes and equipment and has various types of users and purposes, makes it even more challenging to promote energy efficiency. While it has been noted that there are difficulties in implementing measures to promote energy efficiency in transport, the region has several programs on which it will be possible to exchange experiences. Although transport services and related infrastructure are crucial for the integration of the region into the global market, effective policies to reduce and manage energy consumption and emissions are mostly lacking in the region. In addition, the infrastructure of various modes of transport, including multi-modal transport, is not adequately developed. Often the decision to opt for a more energy-efficient mode of transport is hampered by significantly longer travel times, high costs, or a lack of quality and safety. This scenario is particularly the case for urban transport, in which the current focus on the mobility of passengers must not obstruct the view of urban commercial movements that are equally important and growing in number.

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to be larger and more entrenched in oil-rich countries, while electricity subsidies are more common in low-income countries and particularly in Central America and in the Caribbean. Energy subsidies were an important driver of fiscal deficits in many LAC countries in 2011–13. Energy subsidies are a drag on countries' long-term growth and competitiveness, both by diverting resources away from other spending priorities and by discouraging efficiency enhancing investment in the energy sector. Subsidies distort market signals, are regressive, contribute to income inequality and, by encouraging energy overconsumption, deteriorate the trade balance. Overconsumption also results in negative externalities, including for the environment. Vested interests that capture most benefits from subsidies further complicate reform. Reform is most difficult when subsidies have existed so long as to be perceived as a *de facto* entitlement. As a result, most countries that have embarked on reform recently have not yet finished their efforts. Electricity subsidy reform has proved particularly challenging; in part because its cost is often less evident. Successful reform of subsidy policy is easier in periods of falling international oil prices as we are seeing now and this opens a good opportunity for energy efficiency to be on the top of the agenda.

Improved energy efficiency is a critical response to the pressing climate change, economic development and energy security challenges facing many countries. The pressure is on. Energy efficiency has to deliver benefits, and quickly. But achieving EE improvements can be difficult. It requires a combination of technology development, market mechanisms and government policies that can influence the actions of millions of energy consumers, from large factories to individual households. Governments, EE stakeholders and the private sector must work together in order to achieve the required scale and timing of energy efficiency improvements needed for sustainable economic development. Much has been written on the role of market forces in delivering energy efficiency, and market-based instruments play a central role in most national energy efficiency policies. However, much less is known about the legal, institutional, and coordination arrangements needed to scale-up energy efficiency. Experience shows that successful EE policy outcomes are more likely if an effective system of EE governance is established. From the legal frameworks and institutions that develop and implement policy, to the stakeholders who participate in implementation in the market place, EE governance is a complex, and yet critical, part of the energy efficiency delivery system. Time and again, actions to improve energy efficiency have failed to deliver their full potential, in part, because of limited attention to EE governance arrangements.

The interest from national institutions depends on the local history and constraints. It is well known that Brazil and Mexico are at the forefront of energy efficiency policy in the region. Innovative efficiency programs are making Mexico a lead country for energy efficiency investment in Latin America. Both countries have consolidated capacities and confirmed their appreciation for the project and their willingness to continue. As said already, the difference in local conditions weights on the capacity to continue the practice. The example of labeling is a typical feature of the situation. Although with different levels of progress, all countries have taken action to implement the energy labeling of electrical and gas equipment. However, a major difficulty in implementing labeling programs has been the lack of adequate testing laboratories. This type of problems (lack of qualified personnel and of resources) could hamper the continuation of the practice. Another issue that have been pointed out by many interviewed officers is the need to have the template more adapted to local context: it is acceptable as a first step but for the continuation there is the need to have specific templates according to the characteristics and the feature of the local economy and the local consumers behavior. This is important also to increase the appeal of the practice for the local stakeholders and consequently to have more access to the needed resources.

Preliminary Answer to the Evaluation Question EQ-6 based on the statements on the Judgment Criteria

The large success of the project in term of participation and of appreciation of the contents and know-how becomes a complication for the consolidation of the practice. In effect different countries with diversified situations appear to need customized approaches, while the added value of the methodology is the capacity to consolidate the measure and then offer comparisons and analysis of the best practices. Moreover the collection of data on energy efficiency following the methodology has not been "institutionalized" in the beneficiary countries except Brazil, Mexico and Chile: it means that the difficult

process to contact the sources of information (that delayed in many cases the production of the national reports) will remain a problem. There is in effect the need of a specialized and customized assistance to define in each country the place, the tasks and the procedures in an “institutionalized” form for the continuation of the practice. Otherwise there are risks that the sustainability will be low or that every time the same problems will appear, and without the support of an external donor the exercise will be extremely difficult. The lack of updates coming from the national reports will weaken the quality and appeal of the regional database and consequently hamper the long-term usefulness of the tool.

Overall, while access to energy, the share of renewables in the electricity generation mix, and the rate of energy-efficiency improvements all see positive developments, it is clear that progress is still slow, and can only be sped up by creating robust and stable policy frameworks that give certainty to investors. The inclusion of energy in the United Nation’s Sustainable Development Goals is supposed to catalyze the investments towards the three main objectives of energy policies —on energy access, energy efficiency, and renewable energy. A framework for global monitoring and reporting can provide transparency to the commitment process and contribute to the sharing of best practices. It will also help show the need for policy and institutional reforms, as well as resource commitments to achieve results. It will also increase awareness of the wide range of actions underway, and the opportunities for synergies, partnerships, and coordination. Within SEE4ALL initiative, measurement of progress is being carried out at two levels:

- Global Tracking Framework – At the global level, analyses will be assembled and consolidated to assess the reach of energy access, the share of renewables, and the rate of improvement of energy efficiency to assess whether the world is on track to achieve the objectives of Sustainable Energy for All. To this end, the initiative has developed a Global Tracking Framework to provide a status report on progress towards achievement of the three objectives. This framework will be updated biennially to assess ongoing progress.
- Accountability Framework – At the level of individual commitments, commitment-makers are responsible for establishing milestones to keep track of their progress. Commitment reporting and aggregation will also reflect progress on the initiative’s three objectives, but from the “bottom up.” Such monitoring and reporting will also inform progress on High-Impact Opportunities, to assess whether sufficient progress is being made relative to their potential contribution. Tracking progress at both levels should prompt ongoing dialogue and debate about the pace and scale of change. Measuring progress will enable participants and other stakeholders to revisit, refine, and steer Action Agenda priorities to address changing needs at the national and global levels, thereby helping to ensure that the initiative remains relevant and effective until 2030 and beyond.

In most countries the activities, projects and programs related to the promotion and development of energy efficiency are initiatives of the public sector, under the direction of ministries, commissions, departments or national organizations. Evaluation of progress made shows that there have been clear improvements in most countries in the last 10 years, albeit to varying degrees. Analysis of the 27 countries demonstrates the existence of natural differences in the regulatory frameworks for energy efficiency unique to each country, which, in consequence, prevent the establishment of simple “common denominators” for the Region. However, there is evidence of a tendency in most countries to establish national energy efficiency programs (or to strengthen any such program already in existence), backed by the legal and regulatory support necessary to uphold government policy on energy efficiency. There are few cases of power utilities promoting energy efficiency among their customers. When they do so, they point to reduce peaks in demand to mitigate specific problems of supply. Also, few utilities actually carry out this kind of demand management in a systematic way. The market for ESCOs has seen little growth in the region. The implementation of performance-type contracts, with funding of investment by the ESCO, has not appeared to be a suitable instrument for their development. While in Brazil, and in some cases in Mexico, there are instances in which ESCO mechanisms have been applied, these are not good examples of systematic mass implementation, and they still confront several barriers.

The new approach presented by the project fell well in the ongoing processes, as the demands from beneficiary countries shows. Even though differences between the countries in terms of commitments and interests remain, it is sure that the methodology offered by the project was welcome: the fact that all the

countries produced the national report or are finalizing it shows how much the need for the energy indicators was present. However the same differences weight on the capacity to transform the learnt know-how in a standard performance: the weakness of the institutions together with the lack of resources and personnel require an additional support.

Three countries are already using the new know-how: Mexico, Costa Rica and Paraguay. Mexico is partner in OCDE. Within the obligation of this partnership there is the delivery of data on energy consumption and efficiency. In 2013, 2014, 2015 Mexico —thanks to the support of IEA— was able to produce an acceptable set of data, but not exactly complying with the needs. Now thanks to BIEE he will be able to supply the right information. Moreover Mexico will enter IEA that demands the same type of information. Costa Rica and Paraguay are debating a new Energy efficiency law and the experience form energy efficiency indicators will allow to include better qualifies quantitative objectives while on the same time support the monitoring.

The reports from different studies acknowledge that there is a tendency to establish (or strengthen, if already existing) national energy efficiency programs in order to “give the legal and regulatory sustenance to support the political decisions of governments in this matter”. As said before, project outcomes entered with easy in this environment. However at the moment confirmed evidence of a continuous strengthening process is not available for all countries. Again it appears that the local context makes the difference. As one interviews person said: “Local situations are very different: in Costa Rica and Panama the institutions are consolidated, in Nicaragua/R.D. not so much”. The consequence is that the continuation of the process is not at the moment sure in all countries and there will be the need for a specific analysis and probably for an extension of the technical support.

All persons interviewed confirmed that the preparation of the national reports has been the main tool to consolidate the know-how received during the workshops. The continuous support received during the report production from the European consultants has also contributed to the process. However, in some cases and given the lack of staff, the project supported some beneficiary countries by hiring experts and national consultants who, through their technical assistance, helped then to improve the data collection stage and to identify and analyze energy efficiency indicators obtained from the developed database. In some cases, they also participated in the elaboration of the national reports. This was the case of 8 countries: Bolivia, Costa Rica, El Salvador, Guatemala, Nicaragua, Panama, Paraguay and Uruguay. Considering the lack of resources lamented by many countries, it is not sure that the new expertise will be quickly entered in the institutions. According to few interviewed persons, while the interest of the energy indicators is high, not always the local institution has the full mandate for it and consequently the allocation of specific resources can become difficult. This means that, even though all interviewed country officers confirmed the interest in continuing the exercise and updating the national dabase, in effect it could happen that only a few countries will do it.

The risk that the experience remains a one time effort is real (at least for some countries). As one interviewed expert said: there is the need to address the institutional problems, as EE issues need to be debated at multiple levels; the collection of the data also needs inter-institutional collaboration as sources of data are multiple and not always keen to collaborate in absence of a formal mandate.

Two major international initiatives compound the importance to have energy efficiency indicators: the Paris agreement and the UN SEE4ALL. The agreement signed recently in Paris within COP21 has been recalled in many interviews as a strong inducement to have the energy efficiency indicators as standard component of the policy mandate for energy institutions. The project implementation started during 2013. During 2014 the Hub Americas of the Global UN Initiative SE4ALL was formed. Because countries should monitor this goal, the BIEE Program, today, is the only regional and official initiative designed to measure and to monitor the energy efficiency in the countries by national offices in charge of the issue. The obligations coming from the signed agreement are based on quantitative and precise results, most of which very close to energy efficiency. It will be important to stress this relation as instrument to push the governments to understand that policies without capacity to monitor and control the results risk to be ineffective: resources

allocated for energy monitoring through indicators should now become a common decision. This could be another use of a regional database not on energy indicators but —as MURE does in Europe— for the collection and analysis of the policy decisions in energy management. This is another area where comparisons can promote the diffusion of best practices and probably effective cost reductions when using methodologies and practices already experimented.

There is a large literature on the need to involve the enterprises and the private sector in energy efficiency policies. The interest for this approach has been confirmed in some interviews. Experience in the region implemented with the support of UNIDO produced credible results. However it is evident that private sector investors see energy efficiency as a cost problem. But the use of prices to push for efficiency, something that will immediately raise the attention of the private sector, is not always acceptable, as it becomes a political and social issue with unforeseeable consequences. On the other hand the private sector appeared well interested in the comparison coming from the regional database as it allows presenting the best practices, once the sectoral analysis is sufficiently developed. Another reason to involve more directly the private sector is that it is the sources of a large amount of data on consumption: a closer collaboration could facilitate the collection of important data (think to transport or to auto-production). Consolidation needs to be assessed at two levels: at country level and at regional level.

The success of the project has been clear: the main reason —as mentioned already— was probably related to the timing of the proposal: right when the oil price was around 130\$ per barrel with perspective of further increase. Energy efficiency became then an alternative energy source at low cost and without the need of important investments. The proposal offered new ideas for energy efficiency management and the availability of energy indicators to gauge the effectiveness and impact of different energy policies and measures was quickly acknowledged as decisive improvement and consequently the interest in participating to the project increased and produced the results that gave credibility and visibility to the project and ECLAC.

Each participating country made an effort to start the collection of data and then produce the national report. The project with the help of the European consultants consolidated the data at regional level with the publication on the site of the regional report. However few countries demanded an extra support to be able to comply with project commitments as for the collection of data and their treatment needed human resources and technical capacities that they did not have. Even though all consulted country representatives confirmed their interest in continuing with the exercise and updating the national database, on the same time they lamented either the lack of resources or the difficult institutional set up as a major constraint. It is expected then that only the countries with more consolidated experience in energy efficiency management will easily continue, while for the other at the moment there is not a convincing “exit strategy” and they appear to depend on the continuation of support from ECLAC (that they requested in many forms) or other international donors.

At regional level it is ECLAC that is the player. The need for the regional database is well acknowledged by all stakeholders: it should be a central instrument for benchmarking of policies at national-sectoral level / comparisons on results / diffusion of best practices / transmission of lessons learnt on policies and approaches. However the regional database needs to be updated, that is to receive updated information from countries that must be processed and consolidated. For the moment the European consultants did it but now it is time to plan for the future consolidation. ECLAC is engaged to keep it on for a while, but it is doubtful if it can continue for long. It is not in the mandate of the organization, it does not have the resources (the BIEE has been funded totally with external resources, but the donors are worried that no exit strategy has been studied); it does not have the technical capacity in house (technical support was granted by external consultants). The management of regional energy efficiency database should be entrusted to a specific institution following the European example.

The search for an exit strategy should be immediately launched with the participation of all stakeholders. During project implementation it has been possible to strengthen the horizontal cooperation especially during the events where the sharing of new ideas was debated around the tables with all participants on

the same level: this was especially relevant during the policy dialogues where the participants came from different categories and countries (ministries, politicians, members of the parliament, academics, consultants, etc.). These cooperative moments promoted the creation of new skills and positive models through the sharing of their best practices and experiences in order to develop regional partnerships. It has been important to see the most advanced countries keen to offer their experience to the others. It should be remarked that this happened because there was an “institutional space” (that is the project and the “dialogos”) that made it possible and welcome. It is evident then that the consolidation of the “space” is the most decisive condition to have the horizontal cooperation continue and then the exchange of best practices. For the moment it depends on the continuation of the project (??) and the confirmed (??) support from international donors, but —as said in the former paragraph— some sort of institutionalization is needed. Someone raised the option to have OLADE as the main actor but unfortunately the credibility of this institution is quite low to really offer a sustainable solution.

The transport sector could be for the future the main topic where sharing experience can be very fruitful. Energy efficiency in the transport sector has unique characteristics and relevance to the LAC region. The current challenges in the transport sector are well known. In 2011, final energy consumption in the transport sector in Latin America stood at more than 1,500 million barrels of oil equivalent, representing 35% of total energy consumption. In many countries, this sector accounts for the largest share of energy consumption. Energy consumption in the transport sector is clearly growing: between 1990 and 2010 it more than doubled in all LAC countries. Given the importance of transport in the region and given that it is a major source of fossil-fuel consumption and GHG emissions, it becomes urgent for LAC countries to review in detail their energy consumption patterns and improve their transport efficiency. The significant expansion of the vehicle fleet and the growing number of cars per capita are generally not being met with corresponding expansions of the road network. Especially in the large cities in Latin America, congestion carries high economic costs and has a negative impact on the quality of life of its inhabitants, on comfort and commuting times, and also in relation to air pollution.

Countries in the LAC region could address transport efficiency through improved technologies and methods of use. Although technological advances are important in improving transport efficiency, they represent only part of the equation. It is essential to work on changing consumption patterns and ways of promoting more efficient transportation, focusing on a more holistic approach to enhance system efficiency. In this regard, it would be important for the region to achieve better coordination between programmes to encourage efficiency and related objectives, such as reducing emissions (with local and global valuations of benefits), industry development and competitiveness, the security of energy supply, urban development, public transport and road infrastructure. The efficiency of the transport sector will not improve spontaneously, and governments have a critical role in formulating strategies and policies to drive the change. A major barrier to the promotion of energy efficiency in transport is linked to the fact that the structures that are responsible for energy efficiency put the *focus primarily on the end uses of power, with limited coverage of the transport sector*. No doubt the context of this sector, which is highly diversified in terms of modes and equipment and has various types of users and purposes, makes it even more challenging to promote energy efficiency. While it has been noted that there are difficulties in implementing measures to promote energy efficiency in transport, the region has several programs on which it will be possible to exchange experiences. Although transport services and related infrastructure are crucial for the integration of the region into the global market, effective policies to reduce and manage energy consumption and emissions are mostly lacking in the region. In addition, the infrastructure of various modes of transport, including multi-modal transport, is not adequately developed. Often the decision to opt for a more energy-efficient mode of transport is hampered by significantly longer travel times, high costs, or a lack of quality and safety. This scenario is particularly the case for urban transport, in which the current focus on the mobility of passengers must not obstruct the view of urban commercial movements that are equally important and growing in number.

Another area for exchange of experience could be the subsidies. High oil prices since the second half of the 2000s have increased pressures on countries to provide energy subsidies —despite their fiscal costs and non-transparent effects on efficiency and distribution. Their negative implications for macroeconomic

management, fiscal sustainability, and the environment have heightened policymakers' interest in this issue. A recent study by WB suggests that energy subsidies in the region amounted to about 1.8 percent of GDP, on average, in 2011-13, with fuel subsidies representing about 1 percent of GDP, and those for electricity about 0.8 percent of GDP. This measure of subsidies constitutes a lower bound, as it does not include forgone tax revenues or the cost of negative externalities that can increase the share to about 3.8 percent of GDP. There is considerable variation in the size and types of energy subsidies across the LAC region. Subsidies are larger in energy rich countries and in those that rank lower on measures of institutional and policy quality, such as budget transparency, rule of law, competitiveness, or the ease of doing business. In some cases energy subsidies are permanent rules-based policy choices (e.g., to provide below-cost energy to targeted users), but in many others they arise as a discretionary response to events. Fuel subsidies tend to be larger and more entrenched in oil-rich countries, while electricity subsidies are more common in low-income countries and particularly in Central America and in the Caribbean. Energy subsidies were an important driver of fiscal deficits in many LAC countries in 2011-13. Energy subsidies are a drag on countries' long-term growth and competitiveness, both by diverting resources away from other spending priorities and by discouraging efficiency enhancing investment in the energy sector. Subsidies distort market signals, are regressive, contribute to income inequality and, by encouraging energy overconsumption, deteriorate the trade balance. Overconsumption also results in negative externalities, including for the environment. Vested interests that capture most benefits from subsidies further complicate reform. Reform is most difficult when subsidies have existed so long as to be perceived as a *de facto* entitlement. As a result, most countries that have embarked on reform recently have not yet finished their efforts. Electricity subsidy reform has proved particularly challenging; in part because its cost is often less evident. Successful reform of subsidy policy is easier in periods of falling international oil prices as we are seeing now and this opens a good opportunity for energy efficiency to be on the top of the agenda.

Improved energy efficiency is a critical response to the pressing climate change, economic development and energy security challenges facing many countries. The pressure is on. Energy efficiency has to deliver benefits, and quickly. But achieving EE improvements can be difficult. It requires a combination of technology development, market mechanisms and government policies that can influence the actions of millions of energy consumers, from large factories to individual households. Governments, EE stakeholders and the private sector must work together in order to achieve the required scale and timing of energy efficiency improvements needed for sustainable economic development. Much has been written on the role of market forces in delivering energy efficiency, and market-based instruments play a central role in most national energy efficiency policies. However, much less is known about the legal, institutional, and coordination arrangements needed to scale-up energy efficiency. Experience shows that successful EE policy outcomes are more likely if an effective system of EE governance is established. From the legal frameworks and institutions that develop and implement policy, to the stakeholders who participate in implementation in the market place, EE governance is a complex, and yet critical, part of the energy efficiency delivery system. Time and again, actions to improve energy efficiency have failed to deliver their full potential, in part, because of limited attention to EE governance arrangements.

The interest from national institutions depends on the local history and constraints. It is well known that Brazil and Mexico are at the forefront of energy efficiency policy in the region. Innovative efficiency programs are making Mexico a lead country for energy efficiency investment in Latin America. Both countries have consolidated capacities and confirmed their appreciation for the project and their willingness to continue. As said already, the difference in local conditions weights on the capacity to continue the practice. The example of labeling is a typical feature of the situation. Although with different levels of progress, all countries have taken action to implement the energy labeling of electrical and gas equipment. However, a major difficulty in implementing labeling programs has been the lack of adequate testing laboratories. This type of problems (lack of qualified personnel and of resources) could hamper the continuation of the practice. Another issue that have been pointed out by many interviewed officers is the need to have the template more adapted to local context: it is acceptable as a first step but for the continuation there is the need to have specific templates according to the characteristics and the feature of the local economy and the local consumers behavior. This is important also to increase the appeal of the practice for the local stakeholders and consequently to have more access to the needed resources.

Information Matrix EQ 7	
Evaluation Question 7	
To what extent did the project's activities and outcomes contribute to create synergies with other ECLAC development interventions and with other UN and not-UN institutions and to strengthen ECLAC image in the beneficiary countries as provider of "capacity building"?	
List of Judgement Criteria (JCs) under the EQ 7	
JC- 7.1	The project operated to research an adequate level of coordination with other ECLAC and UN interventions
JC 7.2	In the project strategy and operations there is evidence of the ECLAC value added for its support to the Latin America national public and private institutions
JC- 7.3	The project's visibility has been ensured thanks to a wide variety of actions and supports
JC-7.1: The project operated to research an adequate level of coordination with other ECLAC and UN interventions	
List of Key Performance Indicators (KPIs) under JC 7.1 (codes and definition)	
KPI-7.1.1	<i>Degree of coordination and complementarities between the different components of the project</i>
KPI 7.1.2	<i>Evidence of coordination and/ore collaboration with other UN institutions initiatives</i>
KPI 7.1.3	<i>Evidence that the project has been able to avoid duplications of efforts in dealing with the energy efficiency indicators and databases</i>
KPI-7.1.1: Degree of coordination and complementarities between the different components of the project	
Main Findings on KPI-7.1.1:	
<p>The project's objective of strengthening institutional capacities in member countries, and its capacity building focus on low-carbon policy development and energy efficient economic growth, is in total agreement with the priorities outlined in the ECLAC/DRNI Strategic Framework for the period 2012-2013 (Sub programme #9 , Natural Resources and Infrastructure). At the same time, project's objectives are in support of actions foreseen in the framework of the Internationally Agreed Development Goals (IADGs), the Millennium Development Goal 7 (MDGs), and major UN Conventions, such as the UNFCCC and the Rio+20 Summits.</p> <p>The collaboration with other ECLAC divisions was set since project's document and continued with fruitful results all along the implementation.</p>	
KPI-7.1.1 (i) Data, figures and tables: (with explicit source referencing)	
KPI-7.1.1 (ii) Key extracts from documents: (with explicit source referencing)	
<p>Priority will be given to the provision of technical assistance services to countries, at their request, in the spheres of regulation and management of mineral resources, energy and water resources, with particular emphasis on the economic and social impacts of climate change, environmental and energy sustainability, and regulation of public utility and infrastructure services delivery. Support will be given to discussion forums to disseminate new policy options and the functioning of knowledge networks for sharing good practices and lessons learned. The sub-program will also include training activities for decision makers, public officials and experts in the above-mentioned areas.</p> <p><i>(ECLAC: Program 2014-2015; sub program Natural resources)</i></p> <p>In the energy sector, the countries of the region have made efforts to step up diversification of the energy matrix by increasing the share of renewable sources, but the results are not yet significant. The same has occurred with energy efficiency, an area in which regulatory changes have not translated into significant savings that alter in any substantial way the pattern of the region's energy intensity. The international context that the</p>	

region will be facing in terms of energy over the coming decade will reflect deep exogenous changes, such as: (i) structural change in global demand for energy due to the rapid pace of economic growth in the Republic of China, India and other emerging economies and the prolongation of this trend over the next two decades; and (ii) the advent of a new international regime for combating global climate change. This challenge calls for a short-term response in the form of policy recommendations, instruments and tools with emphasis on regional development priorities.

(ECLAC: Program 2016-2017; sub program Natural resources)

KPI-7.1.1 (iii) Information from interviews and questionnaire (with explicit source referencing)

KPI-7.1.2 : Evidence of coordination and/or collaboration with other UN institutions initiatives

Main Findings on KPI-7.1.2 :

The launch of the SEE4ALL initiative coincided with the project's start. The complementarities in approach, contents, procedures are so important that from the initiative management a close relation with BIEE was required. The coordination will continue in the future with solid advantaged form both sides. In effect looking closer to the SEE4ALL initiative it is evident that there are many points in common and that a common work is not only possible but also advisable.

Within the framework of 2012 "International Year of Sustainable Energy for All," the initiative "Sustainable Energy for All- SEE4ALL" was launched to bring strategic focus to individual actions, scale up existing best practices and successful initiatives, foster partnerships, and provide all stakeholders with clear indicators of progress toward the initiative's objectives. The goal is to create a system that leads to better information for better results and better tracking of resources. Reliable statistics for energy access, renewable energy, and energy efficiency are needed to establish a starting point for the Sustainable Energy for All initiative and sustain political commitment until 2030. While credible global energy databases exist, they need to be adapted to track progress towards the three objectives. The Accountability Framework complements the Global Tracking Framework by measuring progress on the voluntary public-private commitments made to advance the initiative's three objectives. Together the Accountability and Tracking Frameworks will ensure that the initiative is well defined and can successfully track both commitments to action and overall progress on the three objectives.

The SEE4ALL initiative includes the production of energy indicators, through the development of a methodology, and the creation of analytical tools, along with a proposed process for tracking progress on an annual basis. For energy efficiency, the main concern is to strengthen countries' capacity to produce disaggregated data on sectoral and subsectoral energy consumption that are fully integrated with measures of the output of those same sectors. In the case of renewable energy, the main priority will be to improve the ability to gauge the sustainability of various forms of renewable energy, particularly traditional biomass. All of these statistical improvements are required to support the conception and execution of policies that produce tangible results. Developing the capacity of countries to develop and respond to improved indicators is in itself a significant task. Sustaining momentum for the achievement of the SE4ALL objectives will require a means of charting global progress over the years leading to 2030. The World Bank/Energy Sector Management Assistance Program (ESMAP) and the International Energy Agency (IEA), in collaboration with 13 other agencies, have coordinated construction of the necessary framework.

The ECLAC plan for the for 2015-2016 for the Division Natural Resources is very clear on the collaboration with other UN organizations as well as with other regional institutions. Under the sub-program, the Division will continue to consult and work in close collaboration with UN specialized agencies, programmes and funds which participate in the Commission on Sustainable Development and other organizations concerned with the areas of mining, energy and water resources, including: OLADE, OLAMI, PARLATINO, UNASUR, MERCOSUR, IIRSA, the OAS Committee on Ports, the International Association of Maritime Economists (IAME), the Central American Commission on Maritime Transport (COCATRAM), and bilateral and multilateral organizations such as the World Bank, IDB, ADC and the

Fund for the Plata Watershed (Fonplata), the Water Regulators' Association of the Americas (ADERASA), CARICOM and the Mesoamérica Project (formerly known as the Puebla-Panamá Plan).

Given the success of the project (19 countries are now participating and, presumably, in the near future other countries will join), ECLAC approached the well known donors such as GIZ and the French Cooperation (ADEME) to continue with the support. During 2014 the Hub Americas of the Global UN Initiative SE4ALL was formed. One of the objectives of this global initiative is to double the global rate of improvement in energy efficiency. Because countries should monitor this goal, the BIEE Program, today, is presented as the only regional and official initiative designed to measure and to monitor the energy efficiency in the countries by national offices in charge of the issue. Given the success achieved and depending on the access to new funding, the project is expected to continue to record the lessons learned and assist the SE4ALL initiative under the World Bank's Global Tracking Framework.

By using the UN Social Network System: Unite Connections, the project implemented the Social Network known as BIEENET. Up to now all the participants of the organized meetings, the focal points, consultants and other relevant people belong to this virtual social network. This platform has been useful as repository, organized chronologically, of all the teaching materials presented during the capacity building workshops and all the presentations made by the countries during all the activities.

KPI-7.1.2 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-7.1.2 (ii) Key extracts from documents: *(with explicit source referencing)*

The Global Tracking Framework described provides an initial system for regular global reporting based on indicators that are both technically rigorous and feasible to compute from current global energy databases, and that offer scope for progressive improvement over time. Although the identification of suitable indicators required for the framework posed significant methodological challenges, those challenges were no more complex than those faced when attempting to measure other aspects of development —such as poverty, human health, or access to clean water and sanitation— where global progress has long been tracked. In all these aspects of development, a sustained effort of building analytical capability and data capacity has been required across most countries. To make it possible to track progress, SE4ALL has compiled a global data platform from the full range of available household surveys and national energy balances.

(SE4ALL: "GLOBAL TRACKING FRAMEWORK", 2014)

Si bien, inicialmente, se trató de una iniciativa orientada a apoyar a los países del Mercosur y sus asociados, fruto de los logros alcanzados, a la fecha, se encuentran participando de la iniciativa 17 países de América Latina: Argentina, Bolivia, Brasil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, México, Nicaragua, Panamá, Paraguay, Perú, República Dominicana y Uruguay, participan también funcionarios del Sistema de Integración Centroamericana (SICA) y la Organización Latinoamericana de Energía (OLADE). La coordinación operativa del Programa está a cargo de la ECLAC y la gestión técnica se realiza conjuntamente con la ADEME y los consultores internacionales especializados de ENERDATA quienes fueron responsables técnicos de la realización del Programa ODYSSEE antes citado.

(Presentation of the National Reports, ECLAC, 2013)

KPI-7.1.2 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

KPI-7.1.3 : *Evidence that the project has been able to avoid duplications of efforts in dealing with the energy efficiency indicators and databases*

Main Findings on KPI-7.1.3:

It is true that energy efficiency is a shared objective for many interventions (see below the case for Ecuador where UNIDO has been working on energy efficiency indicators for private sector at enterprises level).

Moreover in the region OLADA since many years collects and publishes data on energy production and distribution.

The special quality of the project is its aim to offer a national and sectoral analysis: this is unique and the approach allows the consolidation and comparisons of the results from different countries, another specific feature of the project.

According to the experts, the data collected by BIEE are different from the ones collected by OLADE in the SIEE database: BIEE focuses on energy consumption at economic unit level (families, enterprises) and builds the national view while SIEE focuses on energy production matrix and distribution at national and international level.

The compatibility of the data coming from the two databases has not been assessed until now and could be an important issue for the future.

KPI-7.1.3 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-7.1.3 (ii) Key extracts from documents: *(with explicit source referencing)*

Overall IEE results at country level - Ecuador

Energy Management Systems component

- 248 plant managers have increased their awareness
- 48 policymakers trained
- 167 system users/industry staff trained
- 20 technicians trained on the EnMS implementation
- 34 enterprises have implemented EnMS and have achieved up to 25% of energy savings resulting in:
 - 24,462 MWh of saved electricity
 - 682,804 GJ de saved fuel
 - 62,006 CO2 saved
- 2 enterprises pursued and received the certification of their EnMS under the ISO 50001

UNIDO: *"Energy Efficiency Indicators in Industry: ECUADOR", 2015*

The purpose of this study is to lay the foundations for the definition of practical and policy relevant indicators of eco-efficiency and sustainability of urban freight transport. Sustainability is about the relationship between the environmental burden imposed by human activity and the constraint imposed by capacity of the environment to support that burden. In this view, eco-efficiency indicators would focus on the process of the transformation of environmental inputs into the means of fulfilling human needs. Eco-efficiency measures are essentially ratios, relating outputs to inputs. A separate but related set of indicators — sustainability indicators — would monitor the aggregate environmental burden that results from the attempt to satisfy these needs at the current level using existing transformative processes. In contrast to eco-efficiency indicators, sustainability measures are absolute measures.

(ECLAC/ ESCAP: "Indicators of eco-efficiency and sustainability for urban freight transport", Development Account project on Eco-Efficient and Sustainable Urban Infrastructure Development in Asia and Latin America, no date).

KPI-7.1.3 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

There is no duplication with SIEE but complementarities as BIEE focuses on energy consumption at economic unit level (families, enterprises). However the compatibility of data should be assessed as for the moment it has not been done. EE in the past produced policies but there was no way to monitor results: now it will be easier and so policies need to be more specific with clear means and modalities.

(Interview with Carvalho)

Assessment of / statement on Judgment Criterion JC-7.1 (based on the KPIs main findings)

The project's objective of strengthening institutional capacities in member countries, and its capacity building focus on low-carbon policy development and energy efficient economic growth, is in total agreement with the priorities outlined in the ECLAC/DRNI Strategic Framework for the period 2012-2013 (Sub programme #9 , Natural Resources and Infrastructure). At the same time, project's objectives are in support of actions foreseen in the framework of the Internationally Agreed Development Goals (IADGs), the Millennium Development Goal 7 (MDGs), and major UN Conventions, such as the UNFCCC and the Rio+20 Summits. The collaboration with other ECLAC divisions was set since project's document and continued with fruitful results all along the implementation.

The "SE4ALL Global tracking framework" sets 2010 as the starting point against which the progress of the initiative will be measured. The framework provides an initial system for regular global reporting, based on indicators. For energy access, household survey evidence is used to determine the percentage of the population with an electricity connection and the percentage with access to non-solid fuels. As a proxy for energy efficiency, the framework takes the compound annual growth rate of energy intensity of gross domestic product (GDP) measured in purchasing power parity (PPP) terms, complemented by supporting analysis of underlying factors as well as sectoral disaggregation. For renewable energy, the indicator is the share of total final energy consumption deriving from all renewable sources (bioenergy, aerothermal, geothermal, hydro, ocean, solar, wind).

The launch of the SEE4ALL initiative coincided with the project's start. The complementarities in approach, contents, procedures are so important that from the initiative management a close relation with BIEE was required. The coordination will continue in the future with solid advantaged form both sides. In effect looking closer to the SEE4ALL initiative it is evident that there are many points in common and that a common work is not only possible but also advisable.

Within the framework of 2012 "International Year of Sustainable Energy for All," the initiative "Sustainable Energy for All- SEE4ALL" was launched to bring strategic focus to individual actions, scale up existing best practices and successful initiatives, foster partnerships, and provide all stakeholders with clear indicators of progress toward the initiative's objectives. The goal is to create a system that leads to better information for better results and better tracking of resources. Reliable statistics for energy access, renewable energy, and energy efficiency are needed to establish a starting point for the Sustainable Energy for All initiative and sustain political commitment until 2030. While credible global energy databases exist, they need to be adapted to track progress towards the three objectives. The Accountability Framework complements the Global Tracking Framework by measuring progress on the voluntary public-private commitments made to advance the initiative's three objectives. Together the Accountability and Tracking Frameworks will ensure that the initiative is well defined and can successfully track both commitments to action and overall progress on the three objectives.

The SEE4ALL initiative includes the production of energy indicators, through the development of a methodology, and the creation of analytical tools, along with a proposed process for tracking progress on an annual basis. For energy efficiency, the main concern is to strengthen countries' capacity to produce disaggregated data on sectoral and subsectoral energy consumption that are fully integrated with measures of the output of those same sectors. In the case of renewable energy, the main priority will be to improve the ability to gauge the sustainability of various forms of renewable energy, particularly traditional biomass. All of these statistical improvements are required to support the conception and execution of policies that produce tangible results. Developing the capacity of countries to develop and respond to improved indicators is in itself a significant task. Sustaining momentum for the achievement of the SE4ALL objectives will require a means of charting global progress over the years leading to 2030. The World Bank/Energy Sector Management Assistance Program (ESMAP) and the International Energy Agency (IEA), in collaboration with 13 other agencies, have coordinated construction of the necessary framework.

The ECLAC plan for the for 2015-2016 for the Division Natural Resources is very clear on the collaboration with other UN organizations as well as with other regional institutions. Under the sub-program, the Division will continue to consult and work in close collaboration with UN specialized agencies, programmes and funds which participate in the Commission on Sustainable Development and other organizations concerned with the areas of mining, energy and water resources, including: OLADE, OLAMI, PARLATINO, UNASUR, MERCOSUR, IIRSA, the OAS Committee on Ports, the International Association of Maritime Economists (IAME), the Central American Commission on Maritime Transport (COCATRAM), and bilateral and multilateral organizations such as the World Bank, IDB, ADC and the Fund for the Plata Watershed (Fonplata), the Water Regulators' Association of the Americas (ADERASA), CARICOM and the Mesoamérica Project (formerly known as the Puebla-Panama Plan).

Given the success of the project (19 countries are now participating and, presumably, in the near future other countries will join), ECLAC approached the well known donors such as GIZ and the French Cooperation (ADEME) to continue with the support. During 2014 the Hub Americas of the Global UN Initiative SE4ALL was formed. One of the objectives of this global initiative is to double the global rate of improvement in energy efficiency. Because countries should monitor this goal, the BIEE Program, today, is presented as the only regional and official initiative designed to measure and to monitor the energy efficiency in the countries by national offices in charge of the issue. Given the success achieved and depending on the access to new funding, the project is expected to continue to record the lessons learned and assist the SE4ALL initiative under the World Bank's Global Tracking Framework.

By using the UN Social Network System: Unite Connections, the project implemented the Social Network known as BIEENET. Up to now all the participants of the organized meetings, the focal points, consultants and other relevant people belong to this virtual social network. This platform has been useful as repository, organized chronologically, of all the teaching materials presented during the capacity building workshops and all the presentations made by the countries during all the activities.

It is true that energy efficiency is a shared objective for many interventions (see below the case for Ecuador where UNIDO has been working on energy efficiency indicators for private sector at enterprises level). Moreover in the region OLADE since many years collects and publishes data on energy production and distribution. The special quality of the project is its aim to offer a national and sectoral analysis: this is unique and the approach allows the consolidation and comparisons of the results form different countries, another specific feature of the project. According to the experts, the data collected by BIEE are different from the ones collected by OLADE in the SIEE database: BIEE focuses on energy consumption at economic unit level (families, enterprises) and builds the national view while SIEE focuses of energy production matrix and distribution at national and international level. The compatibility of the data coming from the two databases has not been assessed until now and could be an important issue for the future.

JC- 7.2 : In the project strategy and operations there is evidence of the ECLAC value added for its support to the Latin America national public and private institutions

KPI 7.2.1

There is evidence that through the project ECLAC continued to play a leading role in supporting Latin America public institutions.

KPI 7.2.2

The project activities and outputs contributed to the reinforcement of ECLAC recognition as credible provider of support.

KPI-7.2.1: *There is evidence that through the project ECLAC continued to play a leading role in supporting Latin America public institutions.*

Main Findings on KPI-7.3.1:

As shown in the letters of thanks received, all countries participating in the project benefited from the methodology introduced. All the participating countries have used the project's outputs to coordinate and implement activities related with their own country energy efficiency development agendas. All of them acknowledge that ECLAC was able to provide an essential support to achieve public aims.

KPI-7.2.1 (i) Data, figures and tables: <i>(with explicit source referencing)</i>
KPI-7.2.1 (ii) Key extracts from documents: <i>(with explicit source referencing)</i> <p>In order to contribute to improving the quality of statistics and the development of a specific set of performance indicators to quantify adequately the results of national energy efficiency programmes, ECLAC (supported by OLADE and the European Union) is conducting the regional programme BIEE (Database of Energy Efficiency Indicators for Latin America and the Caribbean),¹² following the technical-political process and operating logic of the ODYSSEE programme of the European Commission. Currently seventeen countries¹³ in the LAC region adhere to the BIEE programme, and the idea is that in the future all countries can join. ECLAC launched the BIEE Programme in 2011; it has the support of the German Agency for International Cooperation - GIZ and the technical support of the French Agency for Energy and the Environment (ADEME), in the context of the International Partnership for Energy Efficiency Cooperation (IPEEC). (UNEP - Accelerating energy efficiency: initiatives and opportunities - Latin American and Caribbean, August 2015)</p>
KPI-7.2.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>
KPI-7.2.2: <i>The project activities and outputs contributed to the reinforcement of ECLAC recognition as credible provider of support.</i>
Main Findings on KPI-7.2.2 :
<p>The project has been able to build a solid image with the beneficiary countries and with the donors. In addition to the organized workshops, the BIEE Program and its results were presented in numerous events. Moreover a dedicated session to the Program was organized in the Regional Policy Dialogues on Energy Efficiency, another major activity that our division organizes every year.</p> <p>Recently the project management has been invited by SEE4ALL Global Tracking to be the main coordinators for the collection and analysis of energy efficiency indicators within the initiative.</p>
KPI-7.2.2 (i) Data, figures and tables: <i>(with explicit source referencing)</i>
KPI-7.2.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i> Participation and dedicated sessions of the BIEE Program in other events: <ol style="list-style-type: none"> 20. Encuentro Nacional para el establecimiento de la Nueva Política Nacional de Eficiencia Energética del Estado Plurinacional del Bolivia, La Paz, April 23 -24, 2013, 21. Reunión de Seguimiento del Sistemas de Información Económica Energética, OLADE, Quito, May 2, 2013, 22. Energy efficiency policies: a worldwide panorama, organized in Paris by the World Energy Council (WEC), the Conseil Français de l'Énergie (CFE) and the Agence de l'environnement et de la maîtrise de l'énergie (ADEME), May 27-28, 2013 (during the European Study Tour), 23. 4to. Diálogo Político Regional sobre Eficiencia Energética, Ciudad de México, November 21 – 22, 2013, 24. Lanzamiento de la Década de la Energía Sostenible para Todos en las Américas (SE4ALL AMERICAS), Santiago, República de Chile, October 15 – 17, 2014, 25. V Diálogo Político Regional sobre Eficiencia Energética, Lima, República del Perú, October 27–28, 2014, 26. Sustainable Energy Training for Latin America, Santiago, Chile, November 10 – 14, 2014, 27. VI Diálogo Político Regional sobre Eficiencia Energética, Oranjestad, Aruba, October 29 – 30, 2015, 28. ADEME's COP21 Side Event: French contribution to energy efficiency policy evaluation for climate change strategies, December 7, 2015. <p>All this events were an excellent opportunity to strengthen technical links with world-class experts and institutions that are working on energy efficiency monitoring. They also proved to be a unique opportunity to exchange experiences among the participating public officials, leverage useful conversations and strengthen professional relations among them. <i>(project draft final report)</i></p>

KPI-7.2.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>	
Assessment of / statement on Judgment Criterion JC-7.2 (based on the KPIs main findings)	
As shown in the letters of thanks received, all countries participating in the project benefited from the methodology introduced. All the participating countries have used the project's outputs to coordinate and implement activities related with their own country energy efficiency development agendas. All of them acknowledge that ECLAC was able to provide an essential support to achieve public aims.	
The project has been able to build a solid image with the beneficiary countries and with the donors. In addition to the organized workshops, the BIEE Program and its results were presented in numerous events. Moreover a dedicated session to the Program was organized in the Regional Policy Dialogues on Energy Efficiency, another major activity that our division organizes every year.	
Recently the project management has been invited by SEE4ALL Global Tracking to be the main coordinators for the collection and analysis of energy efficiency indicators within the initiative.	
JC- 7.3 : The project's visibility has been ensured thanks to a wide variety of actions and supports	
KPI 7.3.1	<i>The website of ECLAC operated to grant the project adequate visibility</i>
KPI 7.3.2	<i>Specific IT tools have been developed to provide beneficiaries with appropriate support</i>
KPI 7.3.3	<i>Project's activities and outcomes have been reported sufficiently in the local media</i>
KPI-7.3.1 : <i>The website of ECLAC operated to grant the project adequate visibility</i>	
Main Findings on KPI-7.3.1 :	
The project established a special site for the project as depository of the main documents and achievements. Moreover, using the UN Social Network System: Unite Connections, it implemented the Social Network we known as BIEENET, where all the participants have been invited. This platform has been useful as repository, organized chronologically, of all the teaching materials presented during the capacity building workshops and all the presentations made by the countries during all the activities.	
KPI-7.3.1 (i) Data, figures and tables: <i>(with explicit source referencing)</i>	
KPI-7.3.1 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>	
KPI-7.3.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>	
KPI-7.3.2: <i>Specific IT tools have been developed to provide beneficiaries with appropriate support</i>	
Main Findings on KPI-7.4.2 :	
See former paragraph.	
KPI-7.3.2 (i) Data, figures and tables: <i>(with explicit source referencing)</i>	
KPI-7.3.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>	
KPI-7.3.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>	
KPI-7.3.3: <i>Project's activities and outcomes have been reported sufficiently in the local media</i>	
Main Findings on KPI-7.3.5:	
Most of the workshops and meetings have been reported in local media. See the dropbox for the documentation.	

KPI-7.3.3 (i) Data, figures and tables: *(with explicit source referencing)*

KPI-7.3.3 (ii) Key extracts from documents: *(with explicit source referencing)*

KPI-7.3.3 (iii) Information from interviews and questionnaire *(with explicit source referencing)*

Assessment of / statement on Judgment Criterion JC-7.3 (based on the KPIs main findings)

The management used the standard tools to increase the visibility with satisfactory results. The project established a special site for the project as depository of the main documents and achievements. Moreover, using the UN Social Network System: Unite Connections, it implemented the Social Network we known as BIEENET, where all the participants have been invited. This platform has been useful as repository, organized chronologically, of all the teaching materials presented during the capacity building workshops and all the presentations made by the countries during all the activities. Most of the workshops and meeting have been reported in local media.

Preliminary Answer to the Evaluation Question EQ-7 based on the statements on the Judgment Criteria

The novelty of the project approach and methodology in the LAC region assured a solid visibility to ECLAC as provider of focused and effective technical assistance. The coordination with other interventions within ECLAC and with other UN organizations has been able to create large synergies culminated in the request to be the manic coordinator for the collection and analysis of energy efficiency indicators within the SEE4ALL initiative.

The project's objective of strengthening institutional capacities in member countries, and its capacity building focus on low-carbon policy development and energy efficient economic growth, is in total agreement with the priorities outlined in the ECLAC/DRNI Strategic Framework for the period 2012-2013 (Sub program #9, Natural Resources and Infrastructure). At the same time, project's objectives are in support of actions foreseen in the framework of the Internationally Agreed Development Goals (IADGs), the Millennium Development Goal 7 (MDGs), and major UN Conventions, such as the UNFCCC and the Rio+20 Summits. The collaboration with other ECLAC divisions was set since project's document and continued with fruitful results all along the implementation.

The "SE4ALL Global tracking framework" sets 2010 as the starting point against which the progress of the initiative will be measured. The framework provides an initial system for regular global reporting, based on indicators. For energy access, household survey evidence is used to determine the percentage of the population with an electricity connection and the percentage with access to non-solid fuels. As a proxy for energy efficiency, the framework takes the compound annual growth rate of energy intensity of gross domestic product (GDP) measured in purchasing power parity (PPP) terms, complemented by supporting analysis of underlying factors as well as sectoral disaggregation. For renewable energy, the indicator is the share of total final energy consumption deriving from all renewable sources (bio-energy, aero-thermal, geothermal, hydro, ocean, solar, wind). The launch of the SEE4ALL initiative coincided with the project's start. The complementarities in approach, contents, procedures are so important that from the initiative management a close relation with BIEE was required. The coordination will continue in the future with solid advantaged form both sides. In effect looking closer to the SEE4ALL initiative it is evident that there are many points in common and that a common work is not only possible but also advisable.

Within the framework of 2012 "International Year of Sustainable Energy for All," the initiative "Sustainable Energy for All- SEE4ALL" was launched to bring strategic focus to individual actions, scale up existing best practices and successful initiatives, foster partnerships, and provide all stakeholders with clear indicators of progress toward the initiative's objectives. The goal is to create a system that leads to better information for better results and better tracking of resources. Reliable statistics for energy access, renewable energy,

and energy efficiency are needed to establish a starting point for the Sustainable Energy for All initiative and sustain political commitment until 2030. While credible global energy databases exist, they need to be adapted to track progress towards the three objectives. The Accountability Framework complements the Global Tracking Framework by measuring progress on the voluntary public-private commitments made to advance the initiative's three objectives. Together the Accountability and Tracking Frameworks will ensure that the initiative is well defined and can successfully track both commitments to action and overall progress on the three objectives.

The SEE4ALL initiative includes the production of energy indicators, through the development of a methodology, and the creation of analytical tools, along with a proposed process for tracking progress on an annual basis. For energy efficiency, the main concern is to strengthen countries' capacity to produce disaggregated data on sectoral and sub-sectoral energy consumption that are fully integrated with measures of the output of those same sectors. In the case of renewable energy, the main priority will be to improve the ability to gauge the sustainability of various forms of renewable energy, particularly traditional biomass. All of these statistical improvements are required to support the conception and execution of policies that produce tangible results. Developing the capacity of countries to develop and respond to improved indicators is in itself a significant task. Sustaining momentum for the achievement of the SE4ALL objectives will require a means of charting global progress over the years leading to 2030. The World Bank/Energy Sector Management Assistance Program (ESMAP) and the International Energy Agency (IEA), in collaboration with 13 other agencies, have coordinated construction of the necessary framework.

The ECLAC plan for the for 2015-2016 for the Division Natural Resources is very clear on the collaboration with other UN organizations as well as with other regional institutions. Under the sub-program, the Division will continue to consult and work in close collaboration with UN specialized agencies, programmes and funds which participate in the Commission on Sustainable Development and other organizations concerned with the areas of mining, energy and water resources, including: OLADE, OLAMI, PARLATINO, UNASUR, MERCOSUR, IIRSA, the OAS Committee on Ports, the International Association of Maritime Economists (IAME), the Central American Commission on Maritime Transport (COCATRAM), and bilateral and multilateral organizations such as the World Bank, IDB, ADC and the Fund for the Plata Watershed (Fonplata), the Water Regulators' Association of the Americas (ADERASA), CARICOM and the Mesoamérica Project (formerly known as the Puebla-Panamá Plan).

Given the success of the project (19 countries are now participating and, presumably, in the near future other countries will join), ECLAC approached the well known donors such as GIZ and the French Cooperation (ADEME) to continue with the support. During 2014 the Hub Americas of the Global UN Initiative SE4ALL was formed. One of the objectives of this global initiative is to double the global rate of improvement in energy efficiency. Because countries should monitor this goal, the BIEE Program, today, is presented as the only regional and official initiative designed to measure and to monitor the energy efficiency in the countries by national offices in charge of the issue. Given the success achieved and depending on the access to new funding, the project is expected to continue to record the lessons learned and assist the SE4ALL initiative under the World Bank's Global Tracking Framework.

By using the UN Social Network System: Unite Connections, the project implemented the Social Network known as BIEENET. Up to now all the participants of the organized meetings, the focal points, consultants and other relevant people belong to this virtual social network. This platform has been useful as repository, organized chronologically, of all the teaching materials presented during the capacity building workshops and all the presentations made by the countries during all the activities.

It is true that energy efficiency is a shared objective for many interventions (see below the case for Ecuador where UNIDO has been working on energy efficiency indicators for private sector at enterprises level). Moreover in the region OLADE since many years collects and publishes data on energy production and distribution. The special quality of the project is its aim to offer a national and sectoral analysis: this is unique and the approach allows the consolidation and comparisons of the results form different countries,

another specific feature of the project. According to the experts, the data collected by BIEE are different from the ones collected by OLADE in the SIEE database: BIEE focuses on energy consumption at economic unit level (families, enterprises) and builds the national view while SIEE focuses of energy production matrix and distribution at national and international level. The compatibility of the data coming from the two databases has not been assessed until now and could be an important issue for the future.

As shown in the letters of thanks received, all countries participating in the project benefited from the methodology introduced. All the participating countries have used the project's outputs to coordinate and implement activities related with their own country energy efficiency development agendas. All of them acknowledge that ECLAC was able to provide an essential support to achieve public aims.

The project has been able to build a solid image with the beneficiary countries and with the donors. In addition to the organized workshops, the BIEE Program and its results were presented in numerous events. Moreover a dedicated session to the Program was organized in the Regional Policy Dialogues on Energy Efficiency, another major activity that our division organizes every year. Recently the project management has been invited by SEE4ALL Global Tracking to be the main coordinators for the collection and analysis of energy efficiency indicators within the initiative.

The management used the standard tools to increase the visibility with satisfactory results. The project established a special site for the project as depository of the main documents and achievements. Moreover, using the UN Social Network System: Unite Connections, it implemented the Social Network we known as BIEENET, where all the participants have been invited. This platform has been useful as repository, organized chronologically, of all the teaching materials presented during the capacity building workshops and all the presentations made by the countries during all the activities. Most of the workshops and meeting have been reported in local media.

Information Matrix EQ 8

Evaluation Question 8

To what extent did project's activities and outcomes respect and promoted human rights and gender concerns?

List of Judgment Criteria (JCs) under the EQ 8

JC- 8.1	The project design and implementation respected and promoted human rights.
JC- 8.2	The project approach and its activities respected and promoted gender concerns.

JC-8.1: The project design and implementation respected and promoted human rights.

List of Key Performance Indicators (KPIs) under JC 8.1 (codes and definition)

KPI-8.1.1	<i>Extent to which ECLAC project's activities and outputs treated all beneficiaries as equals</i>
KPI 8.1.2	<i>Evidence that ECLAC project interventions safeguarded and promoted the rights of minorities</i>

KPI-8.1.1: *Extent to which ECLAC project's activities and outputs treated all beneficiaries as equals*

Main Findings on KPI-8.1.1:

From the 4 countries planned in project document the project extended its offer up to 19 countries: the willingness to increase the public of beneficiaries has been a constant effort of the project management.

On the contrary one can ask why the project document was so limited in its objectives and results. It is worth mentioning that for result 2 "*Strengthened capacity of policy makers and technical staff to design, implement and evaluate energy efficiency policies and measures, which promote in particular the dissemination of innovative technologies that contribute low-carbon economic growth*", the indicators identified were: "*At least 2 Latin American and Caribbean country undertake studies and actions to identify knowledge as well as*

<p><i>technical barriers to the design, implementation and evaluation of EE national policies and measures. The target-goal for this indicator is that at least 1 country that concretely advances in studying and identifying barriers to the promotion of innovative initiatives and technologies that contribute low-carbon economic growth”.</i></p> <p>To achieve a result in one country would really mean an unsatisfactory use of the resources or an incorrect definition of the problems: as this is not the case —the project design was sufficiently documented and the problem analysis correct— the doubt remains: how is it possible that the project was so low in ambitions when at the same time it was well acknowledged that the proposal was innovative and appealing for all the continent countries?</p> <p>For the moment the demand does not have a credible response.</p>
<p>KPI-8.1.1 (i) Data, figures and tables: <i>(with explicit source referencing)</i></p>
<p>KPI-8.1.1 (ii) Key extracts from documents: <i>(with explicit source referencing)</i></p>
<p>KPI-8.1.1 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p>
<p>KPI- 8.1.2: Evidence that ECLAC project interventions safeguarded and promoted the rights of minorities</p>
<p>Main Findings on KPI-8.1.2:</p> <p>Energy efficiency is supplying more customers with the same electricity production capacity, thus providing electricity access for more people with the same energy matrix: something that goes in the direction to offer the service to the marginal population where sometime the connection costs are too high.</p> <p>The recently launched SEE4ALL program goes in the same direction: energy efficiency is a way to increase the service.</p>
<p>KPI-8.1.2 (i) Data, figures and tables: <i>(with explicit source referencing)</i></p>
<p>KPI-8.1.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i></p>
<p>KPI-8.1.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i></p>
<p>Assessment of / statement on Judgement Criterion JC-8.1 (based on the KPIs main findings)</p> <p>From the 4 countries planned in project document the project extended its offer up to 19 countries: the willingness to increase the public of beneficiaries has been a constant effort of the project management.</p> <p>On the contrary one can ask why the project document was so limited in its objectives and results. It is worth mentioning that for result 2 “<i>Strengthened capacity of policy makers and technical staff to design, implement and evaluate energy efficiency policies and measures, which promote in particular the dissemination of innovative technologies that contribute low-carbon economic growth</i>”, the indicators identified were: “<i>At least 2 Latin American and Caribbean country undertake studies and actions to identify knowledge as well as technical barriers to the design, implementation and evaluation of EE national policies and measures. The target-goal for this indicator is that at least 1 country that concretely advances in studying and identifying barriers to the promotion of innovative initiatives and technologies that contribute low-carbon economic growth</i>”. To achieve a result in one country would really mean an unsatisfactory use of the resources or an</p>

incorrect definition of the problems: as this is not the case —the project design was sufficiently documented and the problem analysis correct— the doubt remains: how is it possible that the project was so low in ambitions when at the same time it was well acknowledged that the proposal was innovative and appealing for all the continent countries? For the moment the demand does not have a credible response. Energy efficiency is supplying more customers with the same electricity production capacity, thus providing electricity access for more people with the same energy matrix: something that goes in the direction to offer the service to the marginal population where sometime the connection costs are too high. The recently launched SEE4ALL program goes in the same direction: energy efficiency is a way to increase the service. Moreover the need for control has been developed by the launch of the “Global Tracking” program, that in many points is common with BIEE.

JC-8.2: The project approach and its activities respected and promoted gender concerns.

List of Key Performance Indicators (KPIs) under JC 8.2 (codes and definition)

KPI-8.2.1 | *Project's design incorporated gender concerns*

KPI 8.2.2 | *Evidence that project's outcomes served to promote women's empowerment*

KPI-8.2.1 : *Project's design incorporated gender concerns*

Main Findings on KPI-8.2.1:

Although no gender-specific impact have been associated with energy efficiency policies in ECLAC's experience, it is expected that strengthening the institutional capacity of governments in this policy area is also likely to have positive spill-over effects in other related policies such as improved access to energy services and quality fuels by low income and rural groups, which have been shown to directly benefit women's work through healthier cooking and household environmental quality.

In terms of participation, the below tables show that the women participation was well below 50%, something that has been confirmed by the answers to the questionnaire.

It is true that the topic is dominated by the presence of man at national level as well as at ECLAC level: but it does not appear that the management made special efforts to increase the women participation.

KPI-8.2.1 (i) Data, figures and tables: (with explicit source referencing)

EVENT	PARTICIPANTS	
	M	F
CHILE 24 9 13	4	3
CHILE 25 9 13	7	2
FRANCE TRIP	8	4
R.D. 9 9 14	9	3
COLOMBIA 11 6 14	23	6
COLOMBIA 12,13 6 14	12	3
C.RICA 26 2 14	5	3
COLOMBIA 8 5 14	3	1
VENEZ 28 8 14	11	2
BRAZIL 26 8 15	11	7
BRAZIL 27 8 15	12	5
BRAZIL 28 8 15	5	2
COLOMBIA 24 3 15	4	1
DIALOGO 12	32	12
DIALOGO 13	17	6
DIALOGO14	23	12
TOTAL	186	72
	72%	28%

(Elaboration of author on ECLAC data)

Answers to questionnaire		
Answer Options	Response Percent	Response Count
Masculino	81,0%	34
Femenino	19,0%	8
Participation to events (consolidated list)		
Total participants	211	
Women	46	
% women	21,8	
KPI-8.2.1 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>		
KPI- 8.2.2: <i>Evidence that project's outcomes served to promote women's empowerment</i>		
Main Findings on KPI-8.2.2:		
Considering that marginal population with limited access to energy is quite limited in the continent, better service for all through enlarged access to electricity could mean that a limited amount of women will get more opportunities. However for the general population the between energy efficiency and women empowerment is probably related more to the education than to		
KPI-8.2.2 (i) Data, figures and tables: <i>(with explicit source referencing)</i>		
KPI-8.2.2 (ii) Key extracts from documents: <i>(with explicit source referencing)</i>		
KPI-8.2.2 (iii) Information from interviews and questionnaire <i>(with explicit source referencing)</i>		
Assessment of / statement on Judgment Criterion JC-8.2 (based on the KPIs main findings)		
<p>Although no gender-specific impact have been associated with energy efficiency policies in ECLAC's experience, it is expected that strengthening the institutional capacity of governments in this policy area is also likely to have positive spill-over effects in other related policies such as improved access to energy services and quality fuels by low income and rural groups, which have been shown to directly benefit women's work through healthier cooking and household environmental quality.</p> <p>In terms of participation, the below tables show that the women participation was well below 50%, something that has been confirmed by the answers to the questionnaire. It is true that the topic is dominated by the presence of man at national level as well as at ECLAC level: but it does not appear that the management made special efforts to increase the women participation.</p>		
Preliminary Answer to the Evaluation Question EQ-8 based on the statements on the Judgment Criteria		
From the 4 countries planned in project document the project extended its offer up to 19 countries: the willingness to increase the public of beneficiaries has been a constant effort of the project management.		
On the contrary one can ask why the project document was so limited in its objectives and results. It is worth mentioning that for result 2 "Strengthened capacity of policy makers and technical staff to design, implement and evaluate energy efficiency policies and measures, which promote in particular the dissemination		

of innovative technologies that contribute low-carbon economic growth”, the indicators identified were: “At least 2 Latin American and Caribbean country undertake studies and actions to identify knowledge as well as technical barriers to the design, implementation and evaluation of EE national policies and measures. The target-goal for this indicator is that at least 1 country that concretely advances in studying and identifying barriers to the promotion of innovative initiatives and technologies that contribute low-carbon economic growth”. To achieve a result in one country would really mean an unsatisfactory use of the resources or an incorrect definition of the problems: as this is not the case —the project design was sufficiently documented and the problem analysis correct— the doubt remains: how is it possible that the project was so low in ambitions when at the same time it was well acknowledged that the proposal was innovative and appealing for all the continent countries? For the moment the demand does not have a credible response.

Energy efficiency is supplying more customers with the same electricity production capacity, thus providing electricity access for more people with the same energy matrix: something that goes in the direction to offer the service to the marginal population where sometime the connection costs are too high. The recently launched SEE4ALL program goes in the same direction: energy efficiency is a way to increase the service. Moreover the need for control has been developed by the launch of the “Global Tracking” program that in many points is common with BIEE.

Although no gender-specific impact have been associated with energy efficiency policies in ECLAC’s experience, it is expected that strengthening the institutional capacity of governments in this policy area is also likely to have positive spill-over effects in other related policies such as improved access to energy services and quality fuels by low income and rural groups, which have been shown to directly benefit women’s work through healthier cooking and household environmental quality. In terms of participation, the collected data show that the women participation was well below 50%, something that has been confirmed by the answers to the questionnaire. It is true that the topic is dominated by the presence of man at national level as well as at ECLAC level: but it does not appear that the management made special efforts to increase the women participation.

ANNEX 3

EVALUATOR'S REVISION MATRIX

COMMENTS PPOD

GENERAL COMMENTS		
PARAGRAPH NUMBER	COMMENTS PPOD	EVALUATOR'S RESPONSE
Section 3 mission activities	Please include a brief section grouping all the main limitations of the evaluation clearly highlighting them with a sub-title	Done
	In various sections of the report, you have included sections entitled "some preliminary comments". Given that this is the final report for the evaluation we recommend changing the names of these sections and including them as findings.	Done
	Please correct the paragraph numbering making sure it continues the same numbering sequence regardless of changing sections	In my version it was correct and continuous. As I work on a Mac, sometimes when you open the same file in a PC the formatting can change, especially when sent by internet (Example 1: I have difficulties to use THIS very file in my laptop: it closes down every time I push Enter and then I have to start everything again) (Example 2: The draft report file you sent me back with "correct and continuous counting" – as you said - had the same problem: once I opened it the numbering jumped and I had to re-do it completely!!!!)
	All graphs included in the report have to be provided in an editable format, not as images to facilitate the formal editing and diagramming process of the final report.	Some graphs are inserted as image as there was no other way to get them I will mark the sources and you can probably get them in the another format
Figure, Tables and Graphs titles	Please, add before of each figure / table / graph a title. Make sure all tables and graphs are numbered for ease of reference and a list of graphs and tables is included in the index.	Done
Figures, Tables and Graphs Format	All figures, tables and graphs must be included in the document with editable format. This is a request of our Editorial Unit and it is not optional. So, we appreciate if you could change to "editable format" all the figures /tables / graph that you added in the report as picture. When you add a figure / table / graph, please take in consideration that this will be in line with the text and in the correct place, because some of these were not put in concordance with the paragraph information. Please always make reference in the narrative parts of the document to the tables and graphs included in the different sections. Please review that all the information is in English language	See above Some graphs and tables are originally in Spanish and it is impossible to translate them Please note that most information and documentation collected – as it is easy to understand – have been in Spanish. All interviews and the questionnaire were in Spanish. The evaluator translated all the interviews and other sources but is not responsible to mention valid ones in Spanish, as it is not in its tasks to translate everything

GENERAL COMMENTS		
PARAGRAPH NUMBER	COMMENTS PPOD	EVALUATOR'S RESPONSE
	<p>In general, we have found that the evaluation report has too much emphasis in the substantive part of the project, while including very little analysis on the use of RBM, project management, coordination mechanisms, etc. There is not enough information on the results of the project (expected and unexpected). For example the coordination and collaboration section is incomplete, there is no information on: what were the coordination arrangements? With what other Divisions in ECLAC did they collaborate? Were clear roles established for the management of the project?</p> <p>The report also lacks a real valuation of whether the project was efficient or not, sustainable or not or what measures were taken by project managers to achieve efficiency or sustainability (Apart from the substantive part)</p>	<p>I do not agree: there is a complete analysis of results compared with the plan and commented, including a large analysis of "unexpected results"</p> <p>For the coordination with other divisions, it is based from the information coming from the available sources (reports, interviews): I avoid create unconfirmed assumptions by myself</p> <p>I do not agree: there are solid and supported comments on efficiency and on sustainability. If it a matter of "presentation", well this is another issue. Each expert has his own modalities of expression and writing</p>
	<p>The report, especially the section on findings needs to be better structured to facilitate understanding. The text is sometimes too long and presenting a mixture of different themes under one heading without clearly highlighting what the findings are. Please make sure to highlight the main findings by including them as sub-titles and making sure that all evaluation questions are effectively addressed and answered throughout the report. Furthermore, there is need to provide more evidence to justify each finding, showing the sources of information (too little reference to questionnaires and interviews) and how the information/findings presented were triangulated.</p>	<p>See above</p> <p>The main findings are well listed and grouped according to the management / results issue</p> <p>The reference to the sources is made in every major finding (please see all the full annex with the information matrix and the evaluation questions)</p>
	<p>There are no general recommendations (project management, RBM, etc.) only thematic/substantive recommendations and recommendations need to be clearly linked to the findings and propose possible lines of action for their implementation.</p>	<p>I do not agree</p> <p>There are recommendations divided according to the main contents, concepts and actors</p>
	<p>Please make sure to include a section on lesson learned at the end of the report as requested in the terms of reference.</p>	<p>Done</p>
	<p>Please make sure to include the annexes in the final report.</p>	<p>Done</p>
SPECIFIC COMMENTS		
PARAGRAPH NUMBER	COMMENTS PPOD	EVALUATOR'S RESPONSE
1-4	<p>Please revise the tense of the verbs in this section, which should be in the past tense as the evaluation has already been conducted in line with what had been requested in the TORs.</p>	<p>Done</p>

SPECIFIC COMMENTS		
PARAGRAPH NUMBER	COMMENTS PPOD	EVALUATOR'S RESPONSE
7	Please do not include the transcripts from the interviews as an annex to respect the anonymity of the interviewees. Just include a list of people interviewed and documents reviewed.	I reported the contents of the interviews to show the points discussed as they are an important source of information For what I know, the anonymity of a source is the best argument to say that it does not offer valid information!!!!
8, bullet point 2	Please clarify what you mean by “straight amount of answers”	Done
15	The terminal report was already sent to you on April 1 st . Please revise the text and the table accordingly.	I received and used the final report What I did not receive – as my sentence says – is a separate report for 2015, as for the former years, 2013 and 2014. So I had to calculate the use of resources for 2015 as difference with the total. I think that good project management demands ONE report per implementation year PLUS a global final report
Table - Paragraph 15, Page 11	Please, change “From CEPAL regular budget” to “From ECLAC's regular budget”	Done
16 and 17	Please review the information hereby presented against the final information for the project (in terms of activities and results) included in the terminal report and update if necessary.	Done
17	In the second column of the table, please make sure to use the exact wording of the indicators of achievement as stated in the project document. The current wording, besides not being the same as the one originally included in the design of the project is quite confusing and can lead to a misinterpretation on the quality of the indicators set and the overall logical framework of the project.	The wording comes directly from project's final report
17, first bullet point after the table	In the report, it is stated that: “But, in the same time it should be noted that the project was able to focus on a specific issue, that is the establishment of EE indicators, leaving all the other contents present in the basic project document aside. This allowed the project that started as “supply driven” (that is offering the opportunity to receive focused technical assistance), to become substantially a “demand driven” one, thanks to the capacity of the management to identify the real demand, generating the interest of other countries to participate in the project and at the same time, being able to negotiate the needed additional resources from other donors to answer to this increased demand.” Various questions arise regarding this paragraph that we would appreciate including in the analysis:	What I stressed – and it is present in different points of the report - is that the project management has been able to concentrate the efforts and the activities on a specific instrument – the construction of Energy Efficiency indicators – in order to contribute to the achievements of the enlarged results stated in project's design. In effect these ones were quite wide and could have included “ <i>implementation of energy efficiency and innovation policies</i> ” and “ <i>design, implement and evaluate energy efficiency policies and measures</i> ”. The report stresses the capacity of the management to converge the main efforts and resources on a single major issue – to get a confirmation of this statement please see how the project is announced and known in all the annexed literature and presentations, that is “Base datos sobre Eficiencia Energetica, BIEE”, moreover see the address of the project web site.

SPECIFIC COMMENTS		
PARAGRAPH NUMBER	COMMENTS PPOD	EVALUATOR'S RESPONSE
	<ul style="list-style-type: none"> - Based on what evidence was the conclusion that the decision to focus on one specific issue was the right one reached? The link between focusing on this one issue and generating the interest of other countries does not seem that clear to us. - Furthermore, if the statement is correct, why wasn't this considered since the design of the project? - What happened with the other issues and expected results with which the project managers had compromised themselves with at the stage of design and approval of the project? Was the change in focus explicitly documented and justified in the project documentation? Was this decision discussed and agreed upon with DA project managers? 	<p>This decision is the consequence of the correct assessment – present implicitly in project's design - that the best tool to achieve the other stated results present in the original design is to provide a specific technical instrument not already available in most of LA countries; this has been also instrumental to increase the interest and the participation of the LA countries, that in project's design was limited.</p> <p>In effect the beneficiary countries – in the letters they sent to the management to thank for the project and to appreciate the support they received – focus on the novelty of the transfer of know-how the project has been able to develop and on their improved awareness thanks to increased capacity to understand EE policies consequences through the measures offered by EE indicators (again the core business of the project).</p> <p>The theory of change implicitly present in project design – as the report remarks – was correct in identifying technical and know-how weaknesses. The management – that already was involved in similar actions – immediately grasped the importance of the instrument and correctly decided to invest on it. And the final results confirm that their decision has been the good one.</p> <p>In effect the increased awareness of the importance of EE indicators and the capacity to use them in the reality – as the production of EE national reports confirms - is the base for the increased capacity to deal with energy efficiency policies, that were within the expected results of the project. So at the end, the project has been able to reach the expected results through a pattern present already in project's design but not with the same relevance.</p>
38-42	<p>Was this rationale and design (based on the four main areas and the simplified logical framework of the project) strong enough? Were objectives, EAs and activities designed in a coherent manner (that is, did completing the activities really provided high probabilities of achieving the EAs established and did the achievement of these EAs really contribute to the objective of the project?)</p> <p>Not clear enough how these four components would lead to the EAs, further explanations on how they contribute to the attainment of the established EAs would strengthen this finding.</p>	<p>See above for general comments</p> <p>The project design is correctly assessed in its main components and moreover in its implications for the activities (see above)</p> <p>It is well confirmed – as the report stresses – that the major expected results have been achieved so the activities selected by the management have been the most efficient and effective.</p> <p>If we use RBM – as your very comments suggest - it is clear that the project has been a success as it has achieved the expected results.</p>

SPECIFIC COMMENTS		
PARAGRAPH NUMBER	COMMENTS PPOD	EVALUATOR'S RESPONSE
	<p>Were external factors sufficiently analysed in the design of the project? What about the stakeholder analysis, was it strong enough?</p> <p>A more profound analysis of the project's design is still needed.</p>	<p>Exactly because the project management has been able to assess the internal and external factors – including the stakeholders capacity and needs - more accurately during project's implementation, that some decisions produced better accomplishments</p>
64	<p>On this paragraph, the evaluator mentions that: "This capacity of the management to convince and involve extra sponsors is surely one of the reasons for the success of the project: in effect, face to the increasing demand of participation from beneficiary countries, the management found the right and fruitful approach with the donors to expand the impact of the project and to gain visibility and status for the organization.</p> <p>However, in other sections of the report it also states that there were other projects, with specific mention to GIZ under implementation, which were not mentioned in the original project document. This seems a little bit contradictory. Where there other projects in this thematic area already being implemented or negotiated by the time this DA project was designed and therefore additional funds secured or where the project managers actually able to mobilize further funding after the DA project was approved to cover more countries? Please clarify.</p>	<p>Probably your comment mix different issues:</p> <ul style="list-style-type: none"> - during the evaluation it came out that ECLAC was already implementing a similar project with the support of GIZ in Mercosur countries; this fact is not present in the project document presented to DA and the report duly mention this as a worrisome fact. - however the fact that some activities were already on going allowed the management to speed up the actions (as the large investments in first implementation year shows) and this was a good decision as it increased the attractiveness of the project - the enlarged participation demand - against to the limited amount of beneficiary countries stated as objective in project design – was met by the management with the capability to convince the extra-donors – already engaged in the topic - to increase the resources allocated for the project. This allowed the project to increase the beneficiary countries, to support the weakest with specific technical assistance, to offer continuous assistance on demand during national reports preparation and so to directly respond to the direct extra beneficiary countries demand of support, something that is in effect the core objective of DA projects (in DA mandate they specify they would fund "demand driven" interventions) - another issue is the large amount of interventions in EE ongoing in the region, most of them thanks to the support of external donors: this configures a risky situation not only for the potential duplications and waste of resources but mainly for the dependence of the attention to EE from external resources, while energy efficiency MUST be embedded in the national priorities and resources allocation, as the project's design correctly states and its actions vigorously promoted with success. In effect the project operated to increase this awareness and has been successful. <p>All these points are duly mentioned in lessons learnt and recommendations.</p>

SPECIFIC COMMENTS		
PARAGRAPH NUMBER	COMMENTS PPOD	EVALUATOR'S RESPONSE
65	<p>In paragraph 65, the following statement is included: "But since the start the management concentrated the efforts on the indicators: this was wiser and more productive decision." What is the evidence for such asseveration?</p> <p>What happened with the other expected accomplishments/results (areas of work) with which the project manager agreed to as part of the project design, such as impact at policy level? Where they accomplished as well? Was the change in focus agreed to with DESA (project manager of the DA) or have strong justifications been provided?</p>	See above
60	In paragraph 60 there is a table on participation to events. However, there is no reference to the table on the text preceding or following the table, nor does the text have any relation with the table. We recommend moving the table to paragraph 71 and moving the table on this paragraph which makes reference to how participants rated the events to paragraph 61.	Paragraph number does not correspond to a table....
67 (new paragraph 86)	In this paragraph it is stated that it is not ECLAC's mandate to maintain the BIEE database. However, ECLAC has within its mandates to: Gather, organize, interpret and disseminate information and data relating to the economic and social development of the region; (see on-line: http://www.cepal.org/en/mandato-y-mision and Secretary-General's bulletin, 7 February 2000, ST/SGB/2000/5 on "Organization of the secretariat of the Economic Commission for Latin America and the Caribbean"). As a matter of fact, one of ECLAC's main outputs are exactly its on-line databases and statistics. We would therefore appreciate correcting the text.	<p>Well, this is a good new!!!!!!</p> <p>But the ECLAC officers in charge of the project lamented that they would need specific decisions and resources to do it. The same project design said that at the end ECLAC would have to find a way to keep the database going and would support it only for few months</p> <p>The external donors by the way complained that they did not see a clear "exit strategy".....</p> <p>If ECLAC will continue managing the regional database will be a big achievement....</p>
69 (new paragraph 88)	In paragraph 69, the following statement is included: Experience in the region implemented with the support of UNIDO produced credible results (see the Ecuador case). Could you please provide information on the reference to the Ecuador case, for which no information is included in the rest of the report?	See annex
Table - Paragraph 73, Page 28	Add a row with headers for each column. Please change "From CEPAL" to "From ECLAC". Also review the percentages, because the result of sum of these is not 100%.	Done

SPECIFIC COMMENTS		
PARAGRAPH NUMBER	COMMENTS PPOD	EVALUATOR'S RESPONSE
86 (new paragraph 105)	<p>Could you please explain what is meant by “free comments” in the following sentence: <i>“The project activities contributed effectively to reinforce the leading role of ECLAC as institution able to offer credible services and assistance to LAC organizations and institutions of different levels: the interviews with the national representatives confirmed the appreciation for ECLAC support and in the questionnaire free comments, there are common requests to have this type of intervention repeated as ECLAC is considered a sound sources of information and support”.</i></p>	<p>It is typical to have “free comments” as a special area for general comments at the end of questionnaire.</p> <p>The sources of the “free comments” mentioned in the report are available in both the “quality questionnaires” done by the management at the end of each event and in the “online questionnaire” implemented during the evaluation.</p>