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in the Caribbean  
Port-of-Spain, Trinidad and Tobago  
13-14 May 2010

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## **REPORT OF THE MEETING ON PROMOTING ENERGY EFFICIENCY IN THE CARIBBEAN**

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## **BACKGROUND**

The Economic Commission for Latin America and the Caribbean (ECLAC) Subregional Headquarters for the Caribbean and the Natural Resources and Energy Unit of ECLAC Headquarters in Santiago in collaboration with the Caribbean Development Bank (CDB) and the German Technical Agency (GTZ) convened a meeting of technical experts working in the field of energy and energy efficiency. The main objective of the meeting was to raise awareness of energy efficiency with a view to mainstreaming initiatives into the regional energy efficiency road map that is being spearheaded by the Caribbean Community (CARICOM) Secretariat.

The meeting took the form of presentations by relevant experts followed by discussions. Each discussion segment resulted in recommendations that would inform development of the energy roadmap.

The meeting was held at the ECLAC Subregional Headquarters for the Caribbean, Port of Spain, Trinidad and Tobago, on 13-14 May 2010.

A programme and list of participants are annexed to this report.

### **Agenda item 1: Opening**

The Director of the ECLAC Subregional Headquarters for the Caribbean welcomed participants and expressed gratitude to CDB and GTZ for their support in co-sponsoring the event. He highlighted the issue of climate change as a significant challenge confronting humanity and that despite efforts at controlling Greenhouse Gas (GHG) emissions through mitigation and adaptation, the value of energy conservation remained unappreciated. In addition, the efficient use of energy presented positive economic implications in a region where there are prevailing macroeconomic challenges and countries expend approximately 30% of their GDP on the importation of energy resources for power generation, transportation and the operation of services and industries. In light of those climate change and macroeconomic challenges, the efficient use of energy represented an important low-hanging fruit which the Caribbean should embrace. The Director finally urged participants to make full use of the opportunity to seriously consider the application of energy efficiency strategies as a basis for enhancing the lives and livelihoods of the peoples of the Caribbean region and to strive together to improve energy use in the region.

The representative of Trinidad and Tobago mentioned several initiatives that the Government had embarked upon in the response to climate change. She stated that the Ministry of Planning, Housing and the Environment spearheaded the draft climate change policy and recently concluded the national public consultation of that policy in April 2010, moving closer to its implementation. She further stated that the climate change policy outlined the strategies which had been identified as the idiosyncrasy of Trinidad and Tobago's environmental and social economic realities and would be used as an instrument through which the vision 2020 goal of Investing in Sound Infrastructure and the Environment would be achieved. She mentioned that the Ministry was confident in the role that developmental agencies, such as ECLAC, played in engaging in research on topics such as "The Economics of Climate Change in the Caribbean", which allowed the Caribbean, as a region, to negotiate better on an international level and facilitate focused economic development.

Another representative of Trinidad and Tobago stated that the meeting on promoting energy efficiency was not only to raise awareness but to also discuss the best techniques to achieve that. He focused on local energy efficiency initiatives of Trinidad and Tobago, both current and planned, and the benefits of energy efficient programmes to the economy, one of them being the reduction in capital

investment in energy supply infrastructure. He referred to the work of the Ministry of Energy and Energy Industries in establishing a committee to formulate a renewable energy policy green paper and promote renewable energy development and usage. He focused on regional initiatives such as the Caribbean Renewable Energy Development Programme (CREDP) and the CARICOM draft energy policy and also made reference to the renewable energy initiatives undertaken globally. Of importance to the Ministry was the Leadership in Energy and Environmental Design green building certification that would be based on improvements in construction to enable Trinidad and Tobago to meet internationally recognized standards for building. He reiterated the need to introduce policies relevant to energy efficiency, to educate and raise public awareness of energy efficiency especially in the youth and to take advantage of available technology choices to achieve objectives.

## **Agenda items 2: Energy efficiency policies**

### *“Situation and Perspectives of energy efficiency in Latin America and the Caribbean”*

The presentation provided an overview of the obstacles the region faced in the implementation of energy-efficient investment, including: (a) political changes that led to a general uncertainty of the regulatory context hindering the feasibility of long-term energy efficiency-related investments, (b) most countries were either energy exporters or controlled utilities market, thereby removing the incentive to reduce consumption through energy efficiency investment, and (c) the clean energy mix consumed by some economies in the region made environmental concerns less demanding. Despite those barriers, positive prospects for future improvements in energy efficiency across the region were expressed. These recommendations needed the support and proactive participation of various actors, mainly the energy companies and national governments, and political “dialogue” was necessary among countries of the region to exchange knowledge/experience and so advance together on a sustainable energy efficiency path. Those needs represented the underlying rationale for the “energy efficiency policy dialogue”, the next energy efficiency initiative in the region of ECLAC. That initiative would aim to contribute to the strengthening of horizontal and international cooperation in energy efficiency in Latin America and the Caribbean through the establishment of a political dialogue on the energy efficiency policy forum and an “ad-hoc” regional fund for energy efficiency.

The second presentation entitled “Towards the Evaluation of Energy Efficiency Programs in the Caribbean and Latin America” shared results of a recent study on energy efficiency indicators conducted by ECLAC, Santiago. The study determined that the Latin American and Caribbean region was not an intensive consumer of energy, however, when compared to other regions, Latin America and the Caribbean had not shown improvements in standards of energy utilization or in the promotion of energy efficiency which was a cause for concern.

A number of key points emerged:

- (a) Users of the evaluation methods must be knowledgeable of its application to avoid any misuse and generation of unreliable results
- (b) Parameters adopted in the evaluation methodology should be used for setting action targets
- (c) Indicators of savings associated with technological changes were easier to define than indicators related to changes associated with behaviour, training and information dissemination
- (d) Where possible, the implementation of the evaluation of energy efficiency programmes should be conducted by a third party
- (e) Qualitative data was better than no data, aiming for quantitative data, however, would generate more results

- (f) Ex-ante and ex-post assessments of energy efficiency programmes were of equal importance
- (g) Estimates of actual and potential energy savings required the establishment of “with” and “without” measures as well as a baseline. As a result, the next steps from ECLAC will be to implement a system for energy use data gathering and processing to help establish a regular evaluation of energy efficiency indicators in Latin America and the Caribbean and develop an inventory of country energy efficiency programme case studies and associated indicators.

## **Discussion**

The representative of Guyana expressed concern regarding the standard of GDP used (factor or current value) to analyze energy efficiency in the study especially considering that comparability was important for the region. The meeting was informed that the current value GDP was used in the study and affirmed that it was ideal to use the same GDP value for all studies.

The representative of Antigua and Barbuda described his country’s experience with the “rebound effect” when introducing fluorescent light bulbs and enquired about the availability of financing or a loan to assist with this initiative. The Caribbean CREDP/GTZ representative explained that GTZ currently had no funding available for such initiatives and emphasized the need for Antigua and Barbuda to set up a self-financing approach. He explained that although the initial cost, dollar per power generated, was expensive, it could be balanced through special import duties that offered discounts for energy efficiency technologies. Additionally incentives and fines could also constitute an overall strategy that could be incorporated into a policy and that any policy needed to be supported by legislation. He explained that Phase II of the GTZ energy efficiency programme aimed to provide policy advice and services but it was not in a position to help import or donate light bulbs or offer any credit. The representative of the CARICOM Secretariat shared his view that his organization was responsible for mobilizing resources for its member States and the overall development of a broad strategy. He noted the importance of determining common ground so the region could move forward.

The representative of Montserrat explained that as a British Overseas Territory, Montserrat had not benefited from previous GTZ and the Global Environment Facility energy initiatives. She expressed Montserrat’s interest in accessing such support and benefiting from the meeting and, if eligible, wondered how the country could access/benefit from it. The representative of ECLAC, Santiago, reassured her that there were no obstacles to Montserrat being part of other initiatives and added that ECLAC had previously supported Montserrat with policy advice for its geothermal exploration. ECLAC hoped to engage and encourage donor institutions to provide further support to the member States in this area. CARICOM noted the challenge that Montserrat faced especially from funding agencies such as the GTZ, being a German organization and such an arrangement translated into Germany providing assistance to the United Kingdom, however, that was an issue that needed to be addressed especially in Montserrat’s interest. The delegate of Montserrat endorsed that as a member of both CARICOM and the Organisation of Eastern Caribbean States, a special arrangement was necessary. ECLAC confirmed that as a member of ECLAC and the CDB, Montserrat would not be excluded from further developments and projects.

The representative of Saint Vincent and the Grenadines then informed the meeting that his country was currently improving energy efficiency in public buildings through a project funded by the European Union. He noted that the Caribbean energy efficiency issues were much different from those of Latin America and proposed that a discussion on the participation of Caribbean islands in the ECLAC programme in energy efficiency was required. The ECLAC representative acknowledged that the Caribbean needed to be given more prominence.

The representative of Trinidad and Tobago suggested the examples highlighted in the second presentation did not clearly identify energy intensity statistics related to the Caribbean scenario. In

response, it was expressed that there were limitations regarding energy intensity as an indicator of energy efficiency in the region. However, it should not be discredited as a good marker to evaluate energy efficiency. Since the quality and level of analysis of the methodology was still being refined, it provided an opportunity for important input and contribution from the Caribbean islands to tailor the methodology for the region. The representative of the Cayman Islands added that there was a noticeable gap in energy consumption between Latin America and Caribbean islands primarily due to the Caribbean's heavy dependence on diesel, with the exception of Trinidad and Tobago.

Barbados stated that it was currently exploring an Inter-American Development Bank (IDB) project on energy efficiency policy development which established a smart energy fund. It was noted that Barbados' challenge lay in gauging the impact of those projects and expressed an interest in the ECLAC evaluation methodology and assistance with its implementation. In addition, due to the peculiar energy requirements, 110V and 50 Hz, in Barbados identifying appropriate equipment in the open market proved difficult. The main issue was identified as the lack of testing equipment and standardization facilities in the region, and he enquired as to whether there was scope for assistance in these areas within the ECLAC structure.

Grenada emphasized the need to find a way to engage the financial institutions in funding energy efficiency projects. It was suggested that energy efficiency could be presented to them as the third source of energy. The critical role of political will in energy efficiency initiatives was also identified as necessary.

Aruba informed the meeting that it had installed 10 windmills which provide 22% of their electricity and proposed that this could serve as a good example for other Caribbean islands. It was mentioned that the leaders in the region must consider utilizing their natural resources, for example wind and sun which were in abundant supply. Additionally waste was another good source of energy that should not be ignored. It was expressed that the region could unite under energy efficiency development and, in so doing, learn from each other. It was further noted that educating the region's youth about the effects of greenhouse gases and also engaging the media would move the region forward. Currently the key message conveyed by the media was that energy efficiency was worldwide and not peculiar to the Caribbean. To rectify this message political will and support was necessary.

ECLAC indicated that embracing energy efficiency in the Caribbean and moving forward must therefore be done on a case-by-case basis.

### **Agenda 3: Energy-efficient technologies – a sectoral approach: Energy and water**

This session highlighted various mechanisms and opportunities available for promoting energy efficient technologies and measures in the energy, tourism and water sectors, which were shared in the following three presentations:

- The energy sector: energy efficient technologies - a review towards the future
- Energy efficiency in the tourism sector
- Promoting energy efficiency in the water sector

In reviewing energy efficient technologies, the representative of the University of Havana gave a historical overview of the energy sector and an outline of its future possibilities. He also defined key terminology, such as efficiency, technology and technological change. He noted that energy efficiency policies were rare and that traditional energy efficiency programmes have components of assessment, measurement, evaluation and implementation. While advanced programmes might combine economic instruments, regulatory instruments and voluntary agreements.



He further elaborated that a second advanced energy efficiency programme policy option included the information dissemination, strategic planning, research and development and control measures. The representative of the University of Havana noted that energy supply would consist of an energy mix but the consistency of a future energy system is still uncertain. He concluded that energy and water policies were important for sustainability policies in the Caribbean subregion.

The representative of the Sir Arthur Lewis Institute for Social and Economic Studies (SALISES) delivered a presentation on energy efficiency in the tourism sector. She noted that although tourism is an important source of income for the Caribbean, it had a number of environmental impacts, including resource use, pollution and waste outputs. She noted that energy efficiency was an economic benefit of sustainable tourism in accommodation, highlighted various energy efficient mitigation measures for travel and informed participants of the Agenda 21 action plans. In concluding, she stated that within the accommodation sector, private homes and hotels were the primary contributors to energy use. The greatest energy saving potential existed by targeting domestic tourists and increasing their awareness of energy consumption issues.

In a presentation entitled, *“Promoting Energy Efficiency in the Water Sector”*, the representative of the University of the West Indies outlined the benefits and barriers of energy efficiency, technical and managerial approaches to higher efficiency, opportunities in water supply and at the end use. She defined energy efficiency in the water sector as “providing the same supply of water with less energy use or providing more water with the same energy use. She stated that the term “watergy” was coined by the Alliance to Save Energy and referred to a system to obtain significant water, energy and monetary saving in municipal water supply and wastewater treatment.

Some benefits of energy efficiency included reductions in energy costs, additional delivery of water without any new capacity and a reduction in greenhouse gas emissions. While some barriers included lack of management and technical expertise, lack of awareness, subsidies and financing efficiency. The most promising areas in water supply included improving pumping systems, managing leaks, automation and regular monitoring. She lamented that low water rates encouraged water wastage and inefficiency, and called for higher rates that would cause the reverse effect. In her conclusion, she examined the cost savings of operating desalination plants with solar energy.

## **Discussion**

The representative of Jamaica sought clarification on the concept of “stored energy” alluded to by the representative of the University of Havana. He cited sugar-cane and biomass as examples of stored energy. He noted the natural advantages of sugarcane both as a food crop and a sustainable biofuel crop. He explored the benefits of biomass as a renewable energy source and advanced it as a viable alternative for the Caribbean that would reduce the reliance on fossil fuels. He also cited hydropower, which was an energy resource resulting from water stored in a reservoir, as a further example of stored energy.

With regard to the presentation on energy efficiency in the tourism sector, questions were raised about achievements realized from the implementation of the measures. presenter noted that the proposed measures had been implemented in other regions apart from the Caribbean. She noted that efforts were underway to implement those measures in Barbados, and drew attention to the need for monitoring the implementation of those measures as a means assessing the effectiveness or non-effectiveness of the strategy.

Several participants commented on the implementation of energy efficient measures in the region. In relating their experiences in some hotels in the region, they observed that while some strides had been made towards the installation of some cost-effective investments, there were still many hotels that

operated “business as usual” and for which there was still a high level of non-compliance with even basic standards, such as the replacement of incandescent bulbs with fluorescent bulbs.

The representative of CARICOM acknowledged the initiatives that had been undertaken in the region through the Caribbean Alliance for Sustainable Tourism, including its promotion of the Green Globe Certification Programme. Additionally, the representative of Saint Lucia cited the Caribbean Hotel Energy Efficiency Action Program as one of the other initiatives in the region. The participants also acknowledged that while the introduction of energy efficient measures for the tourism sector was critical, guest satisfaction continued to be the priority in the tourism sector. As such, the introduction of energy efficient measures would be done cautiously so as not to compromise the service and comfort of the guests.

They recognized some of the factors that served as deterrents to hoteliers in the implementation of those energy efficient measures. Those included the size of the hotel and the lack of incentives for change. They, however, recognized the value of contribution of public and private sector groupings, advocacy and public awareness towards achieving those outcomes.

The representative of Saint Lucia sought inputs on the projections for 2050 and the scope for research on energy efficiency in the Caribbean. In response, the representative of the University of Havana stated that in the short to medium term, the capacity existed in the Caribbean, however, there would be challenges with the implementation that would warrant the need for education, and in the long term, there was a need for an awareness of what problems existed and what were energy efficient systems.

He further stated that the underlying problem in the region that would affect the viability of making such projections across the region stemmed from the differences in the islands. He recommended the conduct of some comprehensive research as a pre-requisite for the development of an integrated policy suited for the region, as a whole.

The representative of the CREDP referred to the regional approach alluded to by the representative of the University of Havana and pointed to the World Bank-commissioned study on energy efficiency in the Caribbean region.

The issue of carbon tax stimulated much discussion. There were some dissenting views on the effectiveness of such a tax in the region. Notwithstanding, participants agreed on some key steps that should accompany the introduction of such a tariff which included some incentives. The representative of CREDP highlighted some creative ways in which the initiatives had been used in lieu of the tax. One such example was the use of carbon certificates or purchasing credits, the money from which were used to support/ finance clean development projects. He also identified the initiative being undertaken through the Atlantic Rally for Cruisers Regatta.

It was recommended that there was some consensus on the need for labeling or standards in the region and, to that end, an appeal was made to CARICOM to spearhead such an initiative

With respect to the presentation on the water sector, the representative of Saint Vincent and the Grenadines shared his country’s recent success stories with respect to use of desalination plants. In particular, he spoke of a project commissioned by the Caribbean Community Climate Change Centre which enabled the development of a wind-powered desalination plant in Bequia. He also recounted the long history of hydro-energy generation in his country that dated as far back as 1951 and noted that hydro energy constituted 20% of the electricity produced locally.

The representative of Barbados noted the limited focus on the efficiency of water usage in the tourism sector and, on that basis, sought inputs from the presenter on the extent to which regional utility companies had embraced the new technologies or explored the use of conservation-oriented approaches to water usage. In response, the presenter noted that the commitment from the utility companies focused more on limiting the financial losses that arose from unaccounted for water and, as such, the strategy was to identify such users and bring them into the billing system. In that respect, she stated that the gap continued to exist between increasing energy efficiency and reducing water usage.

The representative of CARICOM enlightened the meeting on the energy efficiency programme that had been introduced in Jamaica and identified the challenges with staffing/ capacity that had deterred the move towards automation.

On the issue of the high energy usage for desalination plants, the representative of CARICOM suggested the use of desalination units powered by the waste heat from diesel generators as a viable alternative for the region. The representative of Trinidad and Tobago identified with the value of such technologies for desalination and cited the current use of waste heat to power the desalination plant in Point Lisas. He also alluded to research being undertaken to develop future diesel plants. On the issue of the preponderance of leakages, the representative of Trinidad and Tobago stated that the problem was not unique to the region and noted that the cost effectiveness of repairing underground mains rather than replacing them accounted for the recurring problems with leaks. The presenter endorsed those comments and offered some information on the causes of the leaks as well as ways of mitigating against leakages.

In response to the question posed by the representative of Trinidad and Tobago on the use of waste water, the representative of the University of the West Indies noted that wastewater was currently used primarily for irrigation purposes. She also pointed to the use of “grey water” in the tourism sector by some large hotels on golf courses and for landscape irrigation.

The representative of Antigua and Barbuda noted that, given the scarcity of freshwater on the island, the two main sources of water were from reverse osmosis (constituted 70% of water) and underground springs. Water management practices on the island, therefore, included:

- (a) The use of rain water for drinking purposes
- (b) The implementation of a metering system for all residents under which consumers were billed on the basis of consumption by usage
- (c) Use of reverse osmosis systems for water purification/treatment powered by solar/hydro energy. Hotels invested in waste treatment plants for which the recycled water was used for irrigation purposes

On the issue of performance contracts, the representative of Jamaica welcomed that strategy and underscored its value for the Caribbean. He indicated that those practices exist in developed countries and offered a great opportunity for the Caribbean region. In that respect, he suggested the implementation of a pilot project in one island in the region.

The representative of Aruba enlightened the meeting on the desalination and electricity-generating plant which produced the country’s water and electricity supply. He reiterated value of water metering systems and offered to share with participants the results of studies conducted on maintenance and piping in Aruba. He recommended the option of privatizing the water and electricity systems as a means of increasing the efficiency of the company’s operations.

One important recommendation emanating from the session was the consensus on implementation of a metering system as a mechanism that would force consumers to monitor water usage and practice better conservation.

#### **Agenda item 4: Energy-efficient technologies – a sectoral approach: Housing, industry and transport**

Presentations on the housing, industrial and transport sectors were made under the theme “*Energy Efficient Technologies – A Sectoral Approach*”. The presentation on the housing sector addressed three broad areas: the case for energy savings in buildings, supporting strategies and policies, and conclusions. The presentation noted that energy efficiency held great prospects for economic savings in developing countries in the areas of: space cooling (25%), water heating (17%), lighting (13%), wet appliances (13%), cold appliances (11%), and other areas (10%). It was also stated that decreasing energy use (via behavior modification and reduced energy waste) was cheaper than increasing energy supply and that as much as 50% reduction in existing buildings was possible at that time compared to current usage with 90% in new buildings. Supporting strategies and policies for promoting energy efficiency in buildings included performance based incentives, taxes on inefficient materials, government leadership, mandatory standards, and communication and public education. The main conclusions from the presentation were that achieving energy efficiency in buildings was possible at relatively low costs, the cost of reducing energy use was lower than the cost of increasing energy supplies, and that with respect to climate change, the building sector held the greatest potential for reducing CO<sub>2</sub> generation.

In the presentation on the industrial sector, it was noted that in Jamaica, a high energy importer, energy efficiency for the industrial sector was paramount, since industry, particularly mining, consumed approximately 40% of Jamaica’s energy supply. Focus of the national energy policy was aggressive conservation, modernization of energy infrastructure, exploitation of renewable energy resources, improvement of energy security, strengthening of institutional framework, and private sector involvement. Jamaica had also been focusing on adoption of energy efficient technologies in the areas of lighting, space cooling, and water management with strong concentration on renewable energy, especially wind energy. Other strategies included enhancing the regulatory and legislative framework, transportation management to reduce fuel costs, and provision of financing to private sector to promote energy efficiency retro-fitting. In appreciation of their symbiosis, links were being forged between the transport and energy sectors and their respective policies. It was stressed that the way forward was to strengthen regulatory framework, promote public education and strengthen finance mechanisms for application of energy efficiency technologies.

The presentation on the transport sector explored the historical antecedents of the modern transport sector. It noted the difficulty of establishing efficiency measures in transportation given the myriad modes and variables to be considered, such as distance, time, speed of movement, interconnecting logistics, modes of transportation, type of cargo, geographic terrain, and cultural aspects. It was stated that the transport sector accounted for 22% of global energy use and 27% of CO<sub>2</sub> emissions with transportation being mainly for passenger and freight movements. Cost efficiency and time efficiency were the two broad parameters of measuring efficiency in the transport sector. Energy efficiency was compromised by the externality of green house gas emissions as well as congestion. Broad-based energy efficiency strategies for transportation included policy issues such as patterns of development and land-use, availability of public transportation, public policy with respect to congestion and parking. Overall, two broad policy areas for increasing transport energy efficiency were the improvement of vehicle efficiency, namely, fuel efficiency, freight handling efficiency and vehicle operational efficiency; and improvement of transportation system efficiency, namely mass transit, reduction of road congestion and land use and urban planning.

## Discussion

The representative of CDB enquired about the existence of public awareness programmes on energy efficiency in Jamaica. It was stated that such programmes existed but there was a move to reduce the competition among agencies in promoting those initiatives and to impact awareness in a more standardized, streamlined manner. The representative of ECLAC noted that the E10 programme was efficiently introduced in order to obtain maximum support from the users.

The representative of Grenada noted that standby loads were increasing due to an increase in electronics. With the movement towards flat screen TVs and other improved technologies, no consideration was given to the power consumption of these units. As such, it was advised that surge protectors be used to connect such electronic equipment.

The representative of the Turks and Caicos pointed out that using smart metering and smart grids, combined with time of use tariffs, could be an option. It would facilitate pre-paid billing and monitor energy use which would be suitable for implementing an energy conservation strategy. ECLAC indicated that their offices were using smart metering.

The representative of Trinidad and Tobago noted the incentive programmes and legislative measures in Jamaica and enquired as to their effectiveness. The representative of Jamaica mentioned the wind farm which was financed through the Clean Development Mechanism and found that the high cost of connecting to the grid negated the revenue generated by the project. The wind farm was expanding and was the largest in the Caribbean. An evaluation of the incentives provided to companies to operate wind farms had not been done, but indications were that incentives seemed to be working. It was also noted that in its Vision 2030, there was a plan for Trinidad and Tobago to supply Jamaica with Liquefied Natural Gas to reduce the energy requirement and negotiations in this regard were continuing.

The representative of Montserrat enquired whether or not the National Development Plan of Jamaica had been evaluated and, if so, what indicators were used. The respondent was unsure of the existence of indicators, but information was available online for the energy sector. The Planning Institute of Jamaica was managing Vision 2030 via working groups which input into the data, using the macroeconomic T21 model.

The representative of Saint Vincent and the Grenadines noted that the country was dependent on oil (17% of GDP), and 96% of energy was imported. He enquired as to an acceptable standard for the subregion in terms of available energy from non-fossil sources. He informed the meeting that an 8MW wind farm was being developed, but it was difficult to attract interest. He stated that a detailed education and awareness programme was being developed for the public sector and this might be extended nationally. The representative of Jamaica indicated that the country's wind farm project was subsidized, but noted that it was difficult initially because the upfront costs were high.

The representative of Guyana urged caution when using or adopting standards and recommendations from developed countries. The representative of Barbados enquired if the Jamaica Development Bank was facilitating financing, and how had that worked. The response was that the Bank passed funds through commercial banks, which increased cost. The model was being revisited for more effectiveness.

### **Agenda item 5: Energy-efficient technologies – a sectoral approach: Gender, sustainable development and regional strategy**

Under the agenda item, the first presentation focused on youth, gender and energy efficiency. It was stated that discussions on gender and energy were new. In defining the concept of gender, the presenter

stated that it was crucial to differentiate between gender and sex in that sex was biologically determined while gender was socially constructed. Access to rights, resources and opportunities were determined by gender roles. The presentation mentioned that in the Caribbean, female-headed households represented a significant component of users of energy. According to the Greenberg Quinlan Rosner Study (2009), women were considered to be a primary target market for the promotion of energy efficiency, whereby youth was mainly responsible for the increase in energy use due to the upsurge in electronic games and computer usage. Another study done at Yale University also concluded that people related more readily to energy efficiency than climate change. As such, a number of recommendations were made that included targeting women and youth in the promotion of energy efficiency, disaggregating data on energy by sex, skewing the focus away from climate change to energy efficiency, and promoting a gendered analysis of the energy industry.

Discussions on the presentation focused on mainstreaming gender into all aspects of development and it should be more targeted in the area of energy. It was noted that that climate change was not addressed in the gender policy, because people did not have an appreciation of the fact that decision-making on those issues were closely related to gender roles.

It was also noted that youth had a major influence on energy efficiency, but the link between gender and energy efficiency was not as well recognized as it should be and policymakers needed to identify the gender link in national policies on energy.

In response to the query on the classifications of gender and whether or not population censuses focused more on gender than on sex, it was stated that census data was disaggregated mainly by sex, however, gender roles did come into play in the more qualitative data. In many societies, there were more than just two classifications of gender due to the fact that roles between men and women were quite diverse across cultures. There have been expanded classifications of gender as debates evolved to include transgender and transsexual

It was stated that the Caribbean had made some progress in gender balance in the energy sector. It was also evident that representation of females in many forums have increased over the years. The role of men in energy consumption revealed that there was a variation in how men viewed energy consumption as opposed to how women approached energy consumption, in that women seemed to be more conscious of the costs of energy than men. This was so even though 70% of the world's poor were women whose access to energy consumption may also be limited. However, in the transport sector, data showed that women seemed to consume more energy than men.

The meeting also noted the links between energy efficiency and climate change. Participants agreed that climate change and energy efficiency were equally important, however, it was noted that people related to energy efficiency on a more personal and real level because it affected their finances. Climate change, on the other hand, was generally seen as a global problem with long-term effects that could not be readily determined nor experienced on a day-to-day basis. As such, the argument purported that if people were encouraged to focus on energy efficiency, climate change would be dealt with in turn.

### **Presentation: Energy efficiency as a tool for energy sustainability in the Caribbean**

The presentation focused on the added value that the Organization of American States (OAS) brought to the Caribbean Energy Efficiency Strategy. Some of the key challenges of energy efficiency in the Caribbean stemmed from a lack of information; a lack of funding; national barriers and a lack of technical know-how/capacity. As such, there was a need for coordination, communication and transparency; as well as a clear overview of tasks and responsibilities among institutions. The Caribbean Energy Efficiency Strategy had, as its main goal, to sustain regional macroeconomic growth and improve on socio-environmental well-being. Other objectives of the strategy included addressing the awareness gap and

market barriers. The presentation addressed some OAS synergies in the Caribbean, for example, the Sustainable Energy Policy and Capacity Assistance.

The discussion on the presentation focused on the valuable assistance given to Saint Vincent and the Grenadines by OAS in formulation of the country's national energy plan and participants were encouraged to submit proposals on how OAS can work with them in the region. OAS also stated that seven countries were involved in the Sustainable Energy Programme but at different development stages. At the beginning of the programme, OAS did an assessment of countries in terms of their documentation to identify the gaps and they then assisted in finalizing documents. The OAS representative stated that assistance to the British Virgin Islands had been restricted since OAS was only allowed to assist territories under their purview. The OAS was looking to collaborate with countries that fell outside of their scope by exchanging information and looking at integration aspects for the future.

### **Presentation: The CARICOM regional strategy for energy efficiency**

The presentation focused on the CARICOM energy efficiency strategy. It was noted that the issue of energy in the region had been a theme in discussions since 1973 and it was suggested that the meeting should strategize on how to make the CARICOM Strategy for Energy Efficiency Improvement move forward in the region. There were a lot of studies and discussions on the energy efficiency strategy in the region, but action was needed.

It was stated that sustainable energy opportunities met two critical objectives in the region, namely energy security (adequate supply in a timely manner) and climate change mitigation (environmental). It was reported that the electricity sector in the region was crucial and appropriate for policy intervention. In CARICOM, it was characterized by monopoly electricity companies (vertically integrated utility). Thus, governments needed to take action and reform the sector to allow for a more free market for other companies to come in (partial unbundling). This would create an environment which would involve competition among enterprises with similar capacities. It was also mentioned that consumers should also be allowed in the process as final customers.

Challenges in the region were identified in the areas of policy, finance, capacity, awareness, among others, and, as such, it was expedient that CARICOM had embarked on a number of initiatives, such as the CARICOM Energy Programme and engagement with multi-lateral and development partners.

The meeting was also informed about the potential role of the Energy Programme and the CARICOM Sustainable Energy Roadmap and Strategy (C- SERMSCS) in overseeing and facilitating the coordination of all projects on energy in the region. It would also ensure that resources available were optimized in a most productive way. A roadmap for the CARICOM energy efficiency programme was proposed and this was scheduled to start that year with funding from IDB. The roadmap would be the first phase of the Regional Energy Efficiency Strategy.

The presentation highlighted that there was a need in the region for sustainable energy centers that would embark on research, capacity building, finance, and business development. The time was also right for the development of a green region as six countries had potential to be green territories: Belize, Dominica, Guyana, Montserrat, Saint Kitts and Nevis and Suriname.

CARICOM mentioned that its Energy Department had a resource mobilization unit that looked at the needs of the region based on mandates from member States and then negotiated with funding partners. The Energy Department was currently staffed with five people but some services were outsourced. However, if the department got involved in policy implementation, expansion would be necessary.

The energy centre was just one of the many ideas that CARICOM had been discussing. It was mentioned that if the region was serious about implementation, there had to be a mechanism to assist in implementing those policies. The model of a centre would, therefore, be a good way to have an institutional structure that would be responsible for implementation and resource mobilization, while the coordinating role would be carried out by CARICOM. The Government of Trinidad and Tobago had proposed to host the center. There would be a first coordinating meeting on 21 June 2010 to talk with all the partners and find opportunities for their input and interventions. All partners would be invited to participate inclusive of the United Nations Development Programme, IDB, ECLAC, the World Bank, CDB and all CARICOM institutions.

The representative of Saint Vincent and the Grenadines stated that the Caribbean could not afford to discontinue work on energy efficiency. There were many welcomed and useful initiatives and the region needed to ensure that efforts were not duplicated. The region also needed to pay attention to the objectives of those initiatives to see how they could be adapted. CARICOM indicated that the region must focus on a targeted approach and a framework for all countries, so that even if they pursued their own initiatives, these would be done in a coordinated approach.

In response to the query from the British Virgin Islands on the time frame for launching the roadmap, CARICOM indicated that the work that was done to develop a road map and launch a large scale resource assessment would take some time, but would not compromise the setting of a target date for the mapping strategy.

The representative of CDB was of the opinion that CARICOM's suggestion of playing the coordination role would be a good idea. Initiatives needed to be documented and gaps should be identified, then a mechanism developed. However, CARICOM indicated that its mandate was to facilitate coordination rather than to coordinate.

### **Agenda item 6: Wrap up and closure**

It was noted that energy had been on the development agenda since 1973. The meeting provided:

- A forum for sharing knowledge, ideas and experiences where technological applications that were being adopted in one country might be relevant to other countries
- The opportunity for countries to critique applications that are being implemented at the country level
- A synopsis of the importance of improving energy efficiency at the sectoral level and noted the relationships in addressing energy efficiency across sectors
- Awareness of the role of youth and gender in improving the use of energy
- Information on the promotion of energy efficiency measures as they were regarded as the "low hanging fruit" that might be easily plucked with short-term effects
- Awareness of the need to embark on energy efficient technologies in parallel with renewable energy initiatives
- Information that the higher the investment and the longer the payback time, the more savings would be realized
- The situation that the price of oil was high and might well continue to rise, emphasizing the importance of promoting energy efficiency



**The way forward**

Several conclusions were reached and recommendations made, as follows:

- Public education and outreach were important, not only to consumers but also to policymakers
- Approaches to energy efficiency should be multisectoral as it was a cross-cutting concept
- It was important to form partnerships in developing an energy efficiency strategy. However, participation of the private sector was stressed as well as the facilitation of south-south cooperation
- The energy efficiency strategy needed to be incorporated into climate change policies, plans and strategies
- CARICOM could lead the process of improving energy efficiency at the policy level through development of a strategy, which may be achieved through the C-SERMS initiative with CARICOM as the facilitator of coordinating activities.

Annex I**PROGRAMME****Thursday 13 May 2010****0830 hrs****Registration of participants****0900 hrs - 1000 hrs****Opening**

- Welcome and opening remarks  
*Mr. Neil Pierre, Director  
ECLAC Subregional Headquarters for the Caribbean*
- Remarks  
*Ms. Veronica Belgrave, Permanent Secretary  
Ministry of Planning, Housing and the Environment  
Government of Trinidad and Tobago*
- Feature address  
*Mr. Vernon De Silva, Director, Energy Research and  
Planning Division, Ministry of Energy and Energy  
Industries, Government of Trinidad and Tobago*
- Security Briefing  
*Mr. Juda Francis, Security and Building Management  
Assistant  
ECLAC Subregional Headquarters for the Caribbean*

**1000 hrs - 1030hrs*****Coffee break*****1030 hrs - 1200 hrs**

- **Session 1: Energy efficiency policies**

*Chair: Mr. Joseph Williams, Energy Specialist, CARICOM  
Secretariat, Guyana*

This session will seek to create an awareness of the need for operating in a more energy-efficient manner. It would focus on the importance of energy efficiency as well as the current status of energy efficiency in the Caribbean. It is expected that the discussion would provide a forum for exchange of ideas and formulate initial plans for promotion of an energy-efficient agenda in the region.

- Situation and perspectives of energy efficiency in Latin America and the Caribbean  
*Dr. Claudio Carpio, ECLAC Senior Specialist (30 minutes)*

- How to measure the performance of energy efficiency instruments and actions?

*Prof. Luiz Augusto Horta, Universidad de Itajubá, Brazil  
(30 minutes)*

- *Discussion (30 minutes)*

**1200 hrs -1400 hrs**

***Lunch***

**1400 hrs - 1500 hrs**

- **Session 2: Energy efficient technologies – a sectoral approach**

*Chair: Mr. Mahender Sharma Director, Guyana Energy Agency, Guyana*

This session will highlight the various mechanisms and opportunities that are available for promoting energy efficient technologies and measures in the energy, tourism and water sectors. It is expected that the presentations and discussion would provide tremendous stimulus for embarking on a more energy-efficient paradigm.

- The energy sector  
*Dr. Juan Llanes, Lecturer  
University of Havana, Cuba (30 minutes)*
- The tourism sector  
*Dr. Sandra Sookram, Fellow  
Sir Arthur Lewis Institute for Social and Economic Studies (SALISES), University of the West Indies, St. Augustine, Trinidad and Tobago (30 minutes)*

**1500 hrs – 1515 hrs**

***Coffee break***

**1515 hrs - 1645 hrs**

- The water sector  
*Dr. Sharon Hutchinson, Lecturer  
Department of Agricultural Economics, University of the West Indies,  
St. Augustine, Trinidad and Tobago (30 mins)*
- *Discussion (60 mins)*

**1645 hrs - 1700 hrs**

- **Closure**

## Friday 14 May 2010

**0900 hrs - 1000 hrs**

- **Session 3: Energy efficient technologies – a sectoral approach**

*Chair: Mr. Manlio F. Coviello, Chief, Energy & Natural Resources Unit ECLAC, Santiago*

This session will highlight the various mechanisms and opportunities that are available for promoting energy efficient technologies and measures in the housing, industrial and agriculture sectors. It is expected that the presentations and discussion would provide tremendous stimulus for embarking on a more energy-efficient economy.

- The housing sector  
*Mr. Amrish Lachman  
Applied Intellect, Paramaribo, Suriname (30 minutes)*
- The industrial sector  
*Mr. Conroy Watson, Senior Director, Energy Monitoring Ministry of Energy, Jamaica (30 minutes)*

**1000 hrs – 1030 hrs**

**Coffee break**

**1030 hrs – 1200 noon**

- The transport sector  
*Mr. John Auguste, Senior Energy Officer  
Energy Division, Ministry of Finance, Grenada (30 mins)*
- Discussion (60 minutes)

**1200 hrs - 1400 hrs**

**Lunch**

**1400 hrs - 1500 hrs**

- **Session 4: Energy efficient technologies – a sectoral approach**

*Chair: Mr. Vernon De Silva, Director, Energy Research and Planning Division, Ministry of Energy and Energy Industries, Trinidad and Tobago*

This session will focus on the role of the youth and the importance of gender in the energy efficient paradigm. Energy efficiency as a tool for sustainability will also be discussed. All of the presentations would filter in to implementation of the CARICOM Regional Strategy for Energy Efficiency. It is expected that the presentations and discussion would provide tremendous stimulus for implementation of this strategy.

- Youth, gender and energy efficiency  
*Ms. Karen Bart-Alexander, Gender Affairs Officer  
ECLAC Subregional Headquarters for the Caribbean (30 mins)*
- Energy efficiency as a tool for energy sustainability in the Caribbean  
*Mr. Kevin de Cuba, Energy and Environmental Specialist,  
Organization of American States (OAS) (30 mins)*

**1500 hrs – 1515 hrs**

***Coffee break***

**1515 hrs – 1645 hrs**

- The CARICOM regional strategy for energy efficiency  
*Mr. Joseph Williams, Programme Manager- Energy  
CARICOM Secretariat, Guyana (30 mins)*
- *Discussion (60 mins)*

**1645 hrs - 1715 hrs**

- **Wrap up and closure**

**1730 hrs – 1930 hrs**

- **Reception** (*Conference Room – ECLAC*)

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