

Economic Commission for Latin America and the Caribbean

ECLAC SUBREGIONAL HEADQUARTERS FOR THE CARIBBEAN



Report of the expert group meeting on the enhancement of resilience to disasters and climate change in the Caribbean through the modernization of the energy sector



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Economic Commission for Latin America and the Caribbean
Subregional Headquarters for the Caribbean

Expert group meeting on the enhancement
of resilience to disasters and climate change
in the Caribbean through the modernization
of the energy sector
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**REPORT OF THE EXPERT GROUP MEETING ON THE
ENHANCEMENT OF RESILIENCE TO DISASTERS AND CLIMATE
CHANGE IN THE CARIBBEAN THROUGH THE MODERNIZATION OF
THE ENERGY SECTOR**

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A. ATTENDANCE AND ORGANIZATION OF WORK

1. Place and date

1. The Economic Commission for Latin American and the Caribbean (ECLAC) convened an expert group meeting to review a study of the enhancement of resilience to disasters and climate change in the Caribbean through the modernization of the energy sector. The meeting took place at its offices, in Port of Spain, Trinidad and Tobago, on 26 November 2018.

2. Attendance

2. There were thirteen persons in attendance including representatives from the following organizations: The Association of Caribbean States (ACS), Caribbean Disaster Emergency Management Agency (CDEMA), Officer of Disaster Preparedness and Management (ODPM), Tobago Emergency Management Agency (TEMA), Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (CCRIF SPC), ECONOLER, ECLAC headquarters, ECLAC subregional headquarters in Mexico and three consultants.

3. Meeting agenda

1. On-site/ Online registration
2. Security briefing for on-site participants
3. Agenda item 1: Opening of meeting
4. Agenda item 2: Adoption of the agenda
3. Agenda item 3: Presentation of report “The enhancement of resilience to disasters and climate change in the Caribbean through the modernization of the energy sector”
4. Agenda item 4: Discussion
5. Agenda item 5: Conclusions and recommendations
6. Closing of the meeting.

B. REPORTING THE PROCEEDINGS

1. Opening of the meeting

3. The Economic Affairs Officer of the Sustainable Development and Disaster Unit of the ECLAC subregional headquarters for the Caribbean welcomed all participants both online and those physically present at the ECLAC office. He explained the purpose of the meeting was to engage discussion on the study “The role of modern grid in enhancing renewable energy penetration and resilience to disasters in the Caribbean”. The paper aims to analyse the readiness of the Caribbean region to incorporate energy management into Disaster and Risk Management (DRM) strategies.

2. Presentation of the report “The enhancement of resilience to disasters and climate change in the Caribbean through the modernization of the energy sector”

4. In introducing this presentation, the Coordinator of the Sustainable Development and Disaster Unit noted that the purpose of the paper was to examine the role of energy systems in enhancing the resilience of Caribbean small island developing States (SIDS) to disasters and related effects of climate change. He also emphasized that renewable energy had the potential to play a particularly significant role in building energy resilience, since it could be more widely dispersed relative to traditional centralized fossil energy systems. Also, renewable energy has been shown to be more readily available immediately after disasters, if the power distribution systems remain intact during the disaster event. In this regard, he shared a brief account of the efforts made by ECLAC in undertaking disaster assessments, and noted that since 2015, when the ECLAC subregional headquarters for the Caribbean assumed the portfolio of disaster assessments, 11 Damage and Loss Assessments (DaLAs) were conducted in Latin America and the Caribbean, with 8 of these being done in the Caribbean. Five of these DaLAs were conducted in countries that were impacted by the 2017 hurricane season. He also noted, while conducting these assessments, that the power sector was the most affected sector in the Caribbean context. Additionally, he observed that although, there have been studies examining the energy sector in the Caribbean inclusive of renewable energy, this study provided some perspectives on the role of energy in bolstering the resilience of Caribbean countries to the impacts of disasters. He invited the Economic Affairs Officer, Sustainable Development and Disaster Unit, ECLAC to present the summary of findings.

5. The Economic Affairs Officer, Sustainable Development and Disaster Unit, acknowledged the authors of the paper; Leda Peralta of the ECLAC subregional headquarters in Mexico and Adrian Flores, Consultant. He gave an overview of the paper, citing the Caribbean’s high dependence on imported fossil energy; its high exposure to socioeconomic vulnerabilities; and the opportunities offered by renewable energy to modernize the subregion’s energy sector, and by extension enhance the resilience of these economies to disasters.

6. In the specific example of electricity, he also noted the need for modern and flexible grids which must be supported by regulations and guidelines. The Economic Affairs Officer observed that generally, the Caribbean had old grids that were in need of upgrading, but that such modernization was constrained by a series of challenges and technical, regulatory and financial barriers that hindered the transition to modernized grid systems, such as durability and efficiency of existing grids and interconnection rules. He nevertheless elaborated 10 important components for transitioning the energy systems to a resilient energy sector. These were the following:

- a. Risk assessment
- b. Removal of barriers
- c. Assessment of governance frameworks
- d. Enhancing data and information collection
- e. Capacity building
- f. Modernization of the energy sector
- g. Enhancement of demand-side energy efficiency
- h. Grid modernization
- i. Deployment of renewable energy, and
- j. Monitoring and verification

7. In concluding his presentation, the Economic Affairs Officer noted that it was prudent to acknowledge a territorial approach was the most practical in applying this resiliency building strategy, as

several countries were often affected by the same disaster due to the close proximity of the countries in the region.

3. Discussion

8. The Economic Affairs Officer then invited the authors of the study, as well as other participating experts to share their views on the study.

9. The representative from ECLAC Mexico advised the meeting that in spite of the numerous renewable energy technologies being implemented in the region, many barriers still persisted. She also acknowledged that the study highlighted the blurred lines between climate change and disaster risk management. She called for efforts to be made to better link the two areas in terms of policy, and strategy, noting that enhancing the energy sector was one way to achieve this linkage. In this regard, she noted the value of better cross institutional coordination as an approach to strengthening this linkage. She further cited a report from the Inter-American Development Bank (IDB) that noted poor efficiency and management issues in the region's energy sector, and the need to modernize the public sector institutional process as a prerequisite for energy sector technology upgrading.

10. The representative from the ACS asked whether there was any scope within countries' Nationally Determined Contributions (NDCs) or national climate action plans to advance improvement of grids. He endorsed the connection between disaster risk reduction and climate change.

11. In response the representative from ECLAC Mexico informed the meeting of the study updates inclusive of climate change and renewable energy information. However, she explained that the paper did not advance a case for insurance and financing. Nonetheless, she noted there were very few examples of public sector insurance in the Caribbean and lamented the overall lack of data in relation to this issue in the Caribbean.

12. The representative from the CCRIF SPC inquired about the role of financial institutions and the provision of parametric insurance to the energy sector. She noted the limited instances that allowed access to insurance, a matter easily addressed through much needed legislation. She further questioned whether the study explored the impacts of disasters on renewable energy sources. She also expressed interest in knowing whether rights-of-way were included in this study, as well as the status of such legislation.

13. The Economic Affairs Officer, Sustainable Development and Disaster Unit, ECLAC, mentioned that past ECLAC studies done in collaboration with CCRIF SPC addressed the limited state of insurance, inclusive of public properties. CCRIF SPC endorsed the need for parametric insurance in the region. At the same time, the Coordinator of the Sustainable Development and Disaster Unit in responding to the question of rights-of-way also noted the importance of ownership with respect to utilities. He pointed out that in the case of the Bahamas, the utility was privately owned facilitating quicker reconnection time compared to Anguilla where the power company was public. From his perspective, it seemed that the type of ownership of the utility could have some bearing on the access to rights-of-way by utilities in order to restore power after a disaster.

14. The representative from ECLAC Mexico also said that where there was some data on the impact on renewable energy the need for building codes was also evident. With respect to the question of rights-of-way, the representative from ECLAC Mexico indicated that this question was not addressed in the study.

15. On the broader issue of disaster risk management (DRM) and the role of energy systems in building resilience, one of the consultants highlighted the importance of securing a quick repair to power

transmission and distribution lines as being a critical aspect of the DRM and rebuilding processes. He shared Puerto Rico's experience after the 2017 hurricane disaster as an example, noting that the main hindrance to regaining power on a national level was the destruction of power transmission and distribution lines. Considering the importance of maintaining these lines properly working over time, he also conveyed the idea that the maintenance process of these lines should be calculated into the budgets and financial planning of the sector. He offered the following suggestions to ensure maintenance was properly funded: (i) Ensuring sufficient capacity was built into the company to ensure resilience, (ii) Burying power lines was applicable in some cases - for example, Sint Maarten benefited from buried lines, while in Anguilla this was not the case and (iii) Securing rights-of-way for restoring power before a disaster event – he noted the case of Hurricane Matthew in the Bahamas where utilities faced difficulty in securing rights-of-way which delayed the process.

16. He went on to note that the study did not specifically examine viable ways of including decentralized power systems as an alternative model for building energy resilience in SIDS. He however provided possibly examples such as roof top solar connections to the grid and using the grid as a battery. He informed the meeting that from a utility perspective, there was a need for investment in battery farms as a means of electrical storage. Some thought was also required to ascertain how grids should be adapted to decentralised systems. Additionally, he also noted that in the case of transportation vehicles, specifically e-vehicles batteries, these could be recycled and utilized as a storage solution. He also noted that, as previously mentioned, since Sint Maarten buried its power cable lines after 1998, it contributed to a faster restoration of power, compared to the other affected islands. Finally, he pointed out that the region was significantly dependent on desalination plants, a high energy demand process (The Caribbean Desalination Association (CaribDA) reports that installed capacity in the region is 782,000 m3d and sixty-eight new desalination plants have been commissioned since 2007). Nonetheless, there were possibilities to harmonize this process utilizing renewable energy for the desalination. He suggested floating solar devices as an option for implementation in the energy sector.

17. The Executive Director of CDEMA raised the critical issue of governance. In assessing possible reasons for the prevailing bottlenecks in the modernization of the grid systems in the Caribbean, he considered governance issues to be paramount. He urged the gathering that the region's way forward was to move away from the silo approach towards an integrative system. He noted though that the study did not refer to climate change as a cross-cutting issue, neither did it examine the four pillars in the Comprehensive Disaster Management Strategy. In his contribution he offered the following recommendations for consideration in the study:

- To promote key sectors, zoning in on risk at both the national and individual levels;
- A monitoring and evaluation strategy;
- The identification and articulation of the barriers to modernization of the energy sector;
- Considering much of the energy distribution sector was already privatized in the region begged the question of how insurance should be handled. He suggested efforts be placed on costing insurance in the private sector and on determining how these could be reduced;
- The promotion of a greater renewable energy portion in the energy mix. However, he cautioned that the switch to renewable energy sources would not reduce the vulnerability of the energy sector to disasters. Nevertheless, strategies could be devised to build in resilience;
- More evidence was needed to strengthen the governance issue at the national level to promote a better understanding of how best to foster the involvement of national stakeholders in DRR and how to respond meaningfully to the impacts of climate change at the national level.

18. The ECONOLER representative agreed with previous contributors that governance was a critical issue within the energy sector. The ACS representative noted the importance of connecting the private

sector to tourism for example, which typically was the one of the first sectors to adapt and utilise energy efficiency and renewable energy initiatives. In this regard, he enquired of ways and means that the tourism sector could participate in the process of governance.

19. The representative from ECLAC subregional headquarters in Mexico agreed that regional integration, a multisectoral approach, governance and public/private partnership strategies were all needed to advance the energy transition in the region. The Coordinator of Sustainable Development and Disaster ECLAC stated that ECLAC did two studies about mainstreaming DRR on national policy instruments for ten Caribbean countries.

20. In terms of a broader context to the discussions, the ACS representative compared mitigation versus adaptation and noted that in the current multilateral agenda there was a push towards adaptive mitigation, as a middle ground between the two. He believed there should be national commitments made to ensure energy production became more productive.

21. The Executive Director of CDEMA weighed in on this aspect of the discussion stating that SIDS were under threat and adaptation was the preferred response. He believed that SIDS held the moral authority to push for the global 1.5°C target. He felt however that the landscape must accommodate sustainable adaptation financing. He expressed the view that focusing on the costs and budgets at the national level was essential, even as attention continued to be given to other sources of financing. He reiterated that governance and macroeconomic financing stood at the heart of the issue. He also showed the ACS representative's view that mitigation could be used as a pipeline for soliciting external financing.

22. The IDB representative commented on the state of the energy sector in the Caribbean as being under resourced and still following the silo approach in its operations. She opined that these factors would hinder the region transitioning to a modernized system. She agreed with previous contributions that encouraged a cross institutional approach to engage the private sectors and regulators. She referred to an IDB report done for CARICOM that recorded a 20-billion-dollar estimation to energize the Caribbean for the next 20 years.

23. Another consultant noted that the report did not address sectoral energy demand, for example in the case of the tourism sector, which had a high energy consumption and therefore a high demand on the grid. He suggested that a sectoral approach to energy was best especially for sectors such as tourism and health. It is also important to take into account private agents. This was critical to ensure key sectors regain power in a timely fashion.

24. The representative from the ACS emphasized the importance of implementing the sectoral approach especially considering the region's geography. He believed this perspective would add value to addressing risk among SIDS, and within the Caribbean context. The Relief Officer, Office of Disaster Preparedness and Management, also endorsed the need to facilitate an efficient governance structure in the energy sector. He then raised the case of the Trinidad and Tobago Electricity Commission (T&TEC), which was the only company with the legal right to transmit and distribute power in the country and noted that it was critical to ascertain the most effective place to initiate the change, and to also assess the cost involved.

25. In responding to these comments, the ECLAC Mexico representative reiterated that the objective of the study was to gauge the readiness of the region to incorporate energy management into the DRM strategy. The results re-emphasized the importance of planning and project design including technical assistance in this region.

26. The Economic Affairs Officer, Sustainable Development and Disaster Unit, emphasized need to strategize in addressing the challenges of the sector as identified, including the setting of priorities.

27. The Social Affairs Officer, Statistics and Social Development Unit, ECLAC, highlighted the importance of private sector involvement from an investment opportunity perspective, which could examine green growth and North-South cooperation

28. The representative from ECLAC Mexico, indicated that it was the intention of the authors of the paper to raise the awareness among stakeholders of the vulnerabilities facing the region in the energy sector. They also believed it was the duty of all energy stakeholders to examine an appropriate approach to the fiscal challenges facing the region. Acknowledging that previous work in the area had been undertaken, she felt that this study added to the body of knowledge, and that the time had come for the region to take concrete steps towards modernizing their grids.

4. Conclusions and recommendations

29. The discussions on the topics addressed in the paper highlighted challenges associated with the energy sector in the Caribbean and other knowledge gaps to be addressed by further research. Among the perceived barriers to achieve convergence of energy, disaster risk management (DRM) and climate change policies and overcome the identified challenges, participants highlighted:

- Issues of governance in the energy sector as one of the main bottlenecks in terms of the modernization of the grid systems in the Caribbean.
- Solutions cannot be achieved by the public sector alone, it is important to engage the private sector and guarantee the cooperation among countries in the region.
- Finding sustainable and reliable financing sources for modernizing the energy sector is essential. Attracting and utilizing funds allocated for climate change adaptation and mitigation is a potential option.
- Energy planning and project design in the region needs to consider disaster risk management and addressing vulnerabilities in the existing model, such as the low insurance.
- Understanding sectoral energy demand as well as the potential for alternative sources and modalities of energy production and distribution is essential for developing a coherent and evidence-based energy strategy in the region.

5. Closing of the meeting

28. The Chair, the Economic Affairs Officer, Sustainable Development and Disaster Unit, ECLAC, thanked all delegates for their interventions and for participating in the WebEx. The Coordinator of the Sustainable Development and Disaster Unit, ECLAC endorsed his comments and the meeting was adjourned at approximately 4.00 p.m.

Annex I**List of participants**

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