Promote Marine Renewable Energy and Shipping Decarbonization in CCB (D1390)

Description:

The objective of this Technical Cooperation (TC) is to assist Caribbean countries assess a strategy to develop the potential for marine renewable energy (MRE) and identify alternative low carbon pathways to decarbonize maritime transportation and port energy services.

The proposed activities include the development of strategies and analytical frameworks complemented by capacity building and knowledge sharing to inform dialogues among relevant stakeholders in various levels of engagement in the Caribbean. Special consideration will be given to dimensions such as energy security, climate change mitigation and resilience, private sector participation, digitalization and innovation, gender equality and social inclusion, opportunities for regional economic integration, and verification mechanisms to monitor the decarbonization process.

Caribbean countries face several common energy and shipping challenges. Most of the targeted countries rely heavily on imported liquid fossil fuels for power generation and transport, thus impacting their macroeconomic balances and increasing exposure to oil price volatility. The Caribbean geographic location and market size contribute to higher costs of alternative energy and technology solutions such as off-shore wind and green ports on a country-by-country basis. Large distances between countries severely constrain options for transporting electricity between islands, thus power systems are characterized by larger installed capacities and poorer load factors than interconnected systems, resulting in high energy costs. Moreover, global technology suppliers and project developers tend to focus on larger, developed markets making knowledge and technology acquisition processes difficult.

Integration of the fragmented island energy markets has been identified as key for obtaining a better bargaining position of the region vis-à-vis technology suppliers and fuel traders. RE project scales can be increased by developing a regional portfolio and procure and finance under an umbrella approach. Upscaling may be particularly relevant in a global context in which demand greatly outmatches supply of RE technology. Furthermore, regional integration would assist Caribbean countries harmonize technical standards on low carbon technologies , optimize intra-regional logistics (including maritime transportation and supply of equipment and services), and exploit energy trading and improve energy security.

Shipping and port services are of key importance to Caribbean countries for logistics and trade. Direct and indirect value added and economic integration from maritime transportation places the sector among the most important in terms of GDP. Nevertheless, shipping is one of the most air and water polluting industries . The International Maritime Organization (IMO) has mandated a 50% GHG reduction for all vessels by 2050 . To reach these goals, Caribbean countries must implement comprehensive net-zero emission programs over the next decade that consider the implementation of energy efficiency measures in fleets, and green ports and corridors initiatives defining trading routes between major port hubs where zero-emission solutions are supported. Green ports and corridors create the enabling conditions for decarbonization, for they would allow policy makers to create an ecosystem with targeted regulatory measures, financial incentives, and safety regulations.

Private sector involvement is affected by ineffective development frameworks. Demand side challenges preventing the uptake of low carbon technologies include outdated policy frameworks lacking provisions to ensure price transparency and fair infrastructure access to third parties; outdated incentives for power and transport suppliers to increase efficiency and reduce costs; and weak financial position of utilities and public entities for ongoing investment in generation and green infrastructure. The build-up of experience with decarbonization technologies is low, talented professionals seek business elsewhere and local RE ecosystem hardly develops. On the other hand, there is awareness among policy makers and the public that energy and transport services in the Caribbean need to increase resilience to the impacts of extreme natural events, including frequent hurricanes and flooding - which are exacerbated by climate change.

Caribbean countries have set ambitious NDC targets to reduce environmental impacts from power generation and transportation . Decarbonizing the energy sector and increasing renewable energy (RE) capacity are part of the region priorities to reduce Greenhouse Gas emissions (GHGs) and oil dependence. All together the region has set a target of 47% RE contribution to total electricity generation by 2027, thus requiring 4 GW of added capacity and approx. USD$ 9 billion in investments . Given the land constraints for deploying large scale energy infrastructure, strong consideration is given to harness MRE potential to increase RE capacity. One promising technology is offshore wind power following a regional approach to increase economy of scale. Off-shore wind is a well-established commercial technology with a good track record on competitive levelized cost of energy achieved in Europe and Asia.

This TC will support Caribbean energy and maritime transportation public entities and industry stakeholders by providing research, capacity building, knowledge, and dissemination on decarbonization areas key to their regional development agendas. The direct beneficiaries are regional energy and shipping entities, ministries, electric utilities, regulators, ports, and shipping stakeholders.

Submitted by:
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Status:
Under Evaluation

Category:
Research and Dissemination

Tags:
decarbonization energy efficiency offshore wind renewable energy

Team Leader Name
Roberto Aiello

Has the proposal been discussed and authorized by the responsible sector or country department/division, as applicable?
Yes

Team Leader Responsible Department
INE

Are there specific countries that will directly benefit from your proposal?
Yes

Mark the specific countries that will be directly benefited from your proposal?
Bahamas

Barbados

Guyana

Jamaica

Suriname

Trinidad y Tobago

Where applicable, describe how the proposal aligns with the respective country strategy (for each country selected)
The TC is aligned with IDB Country Strategy with Jamaica 2016-2021 as it supports increasing the security of supply and diversification of the energy matrix. Likewise, it is aligned with the IDB Country Strategy of the Bahamas (2018-2022), as it supports the priority area of supporting resilient infrastructure for growth. It is also aligned with the Ordinary Capital Strategic Development Program for Integration (GN-2819-14) by strengthening the beneficiaries' capacities to engage in regional initiatives and deepening knowledge of global and regional integration in the CCB region. Finally, the TC is aligned with the Operational Guidelines of the Infrastructure Fund (INF) (GN-2404-7) since it will focus, among other things, on improving the capacity and dialogue of the IDB's CCB beneficiary countries within the sector.

Does the proposal align to one or more sector frameworks?
Yes, the proposal aligns with at least one sector framework

Identify and describe how the proposal aligns to the sector framework(s)
This TC is consistent with the Energy Sector Framework (GN-2830-8) by incorporating discussion and assessments on access to energy, sustainability, and energy security.

Select the regional challenges and cross-cutting issues to which the proposal aligns to
Climate Change and Environmental Sustainability

Justify the alignment to each selection above
The TC is aligned with the IDB's Updated Institutional Strategy 2020-2023 (AB-3190-2) through the cross-cutting issues of Climate Change and Environmental Sustainability, as it will develop technical assessments focused on sustainable energy policies and regulations as well as promote resilient infrastructure aligned with climate change adaptation goals.

What is the estimated funding that you need in order to implement this proposal?
250000.00

Select the expected outputs of this proposal
Upstream strategies, action plans, etc.)

Knowledge Products

Please provide a brief description of the output(s) selected above (The number of units planned, and the estimated cost). If you selected others, please specify.
The outputs are described below:
Component I: Marine Renewable Energy (MRE) (US$115,000). This component will finance a strategy to assess and promote the development of MRE, including technical, resource potential, financing, policy, institutional, regulatory, environmental, and social dimensions. The scope includes a roadmap with key building blocks for deploying MRE technologies considering both public and private sector focusing on offshore wind as an anchor technology to develop low carbon power capacity and analysis of alternative scenarios considering economic, energy integration (individual and/or regional approaches), environmental impacts, and recommend case studies with priority actions identified and recommendations. This

component will be implemented in coordination with the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE), and other relevant development partners such as the Caribbean Development Bank (CDB), and the Caribbean Climate Smart Accelerator (CCSA).

Component II: Decarbonization of Shipping and Port Energy Services (US$115,000). This component will finance a strategy to assess and promote the transition to low-carbon shipping and associated port energy services, including technical, financing, policy, institutional, regulatory, environmental, and social dimensions. The strategy will take into consideration existing studies as a baseline. The scope includes the development of a roadmap with building blocks considering key industry actors from both the public and private sector, including agents, ports, lines, and non-vessel operating common carriers and conduct a gap analysis towards green and resilient port infrastructure. This component will be implemented in coordination with the Caribbean Shipping Association (CSA), and other relevant development partners such as CCREEE and CCSA

Component III: Capacity Building and Knowledge Dissemination (USD$20,000). This component will finance knowledge exchange, technical notes, study tours and events, and consultancy services to provide training and capacity building to relevant government and regional entities in areas such as: (a) dissemination campaigns, (b) improving governance, environmental, legal and regulatory functions; and (c) information technology applications to monitor MRE and maritime transportation supply chain.

Outcomes: If the outputs are delivered successfully, what is the change expected (in capacity, knowledge, behavior, etc.)

Development of Feasibility Studies strategies for potential marine renewable energy and identify alternative low carbon pathways to decarbonize maritime transportation and port energy services in the Caribbean.

(1) **Attachments**

Offshore Wind Energy.jpg

0 Comments