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Organización Latinoamericana de Energía
Latin American Energy Organization
Organisation Latino-américaine d'Énergie
Organização Latino-Americana de Energia

Jamaica Renewable Energy NAMA

**Ministry of Science,
Energy and Technology**



**Ministry of Economic Growth
and Job Creation-Climate
Change Division**

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Jamaica Overview/ Country Context: Selected Indicators – 2015

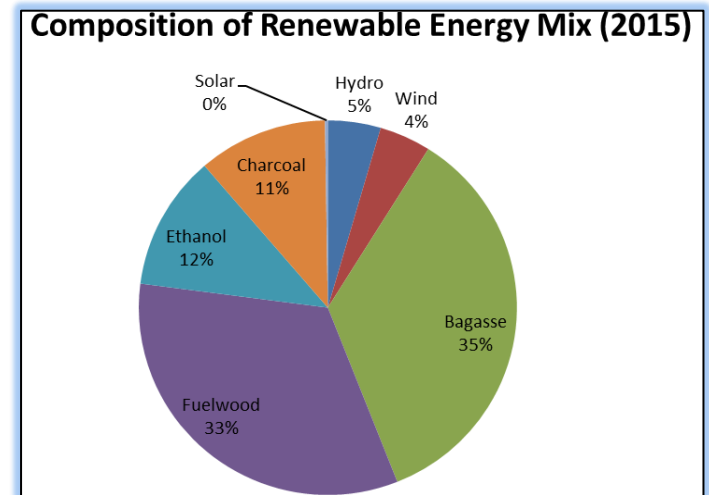
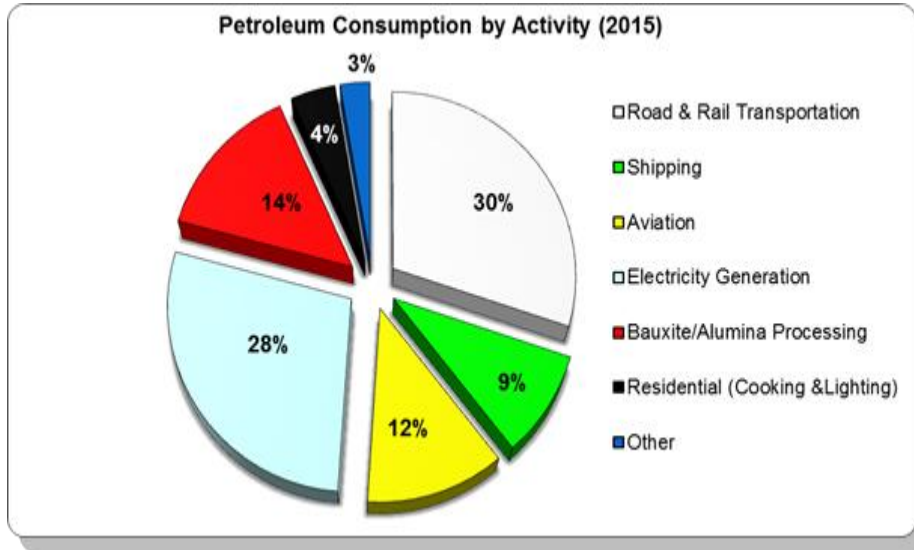
- **Population:** : 2,728,900
- **GDP (nominal):** : US\$13.95 billion
- **GDP per Capita** : US\$5,114.2
- **Inflation :** : 3.7%
- **Trade Balance:** : US\$ -3,733.3 million
- **Energy Consumption per Capita :** 7.5 BOE
- **Oil Imports (Volume):** : 20,446,297 barrels of oil
- **Oil Import bill (Value):** : US\$1.1 billion
- **Electricity Generation:** : 4,208 GWh per annum
- **Total Alternative Energy** : 1,290,000 BOE
- **Unemployment Rate:** : 13.5% (male 9.9%, female 17.8%)

Source:

The Planning Institute of Jamaica (PIOJ), Economic and Social Survey of Jamaica, 2015 and Ministry of Science, Energy & Technology 2015.

BACKGROUND

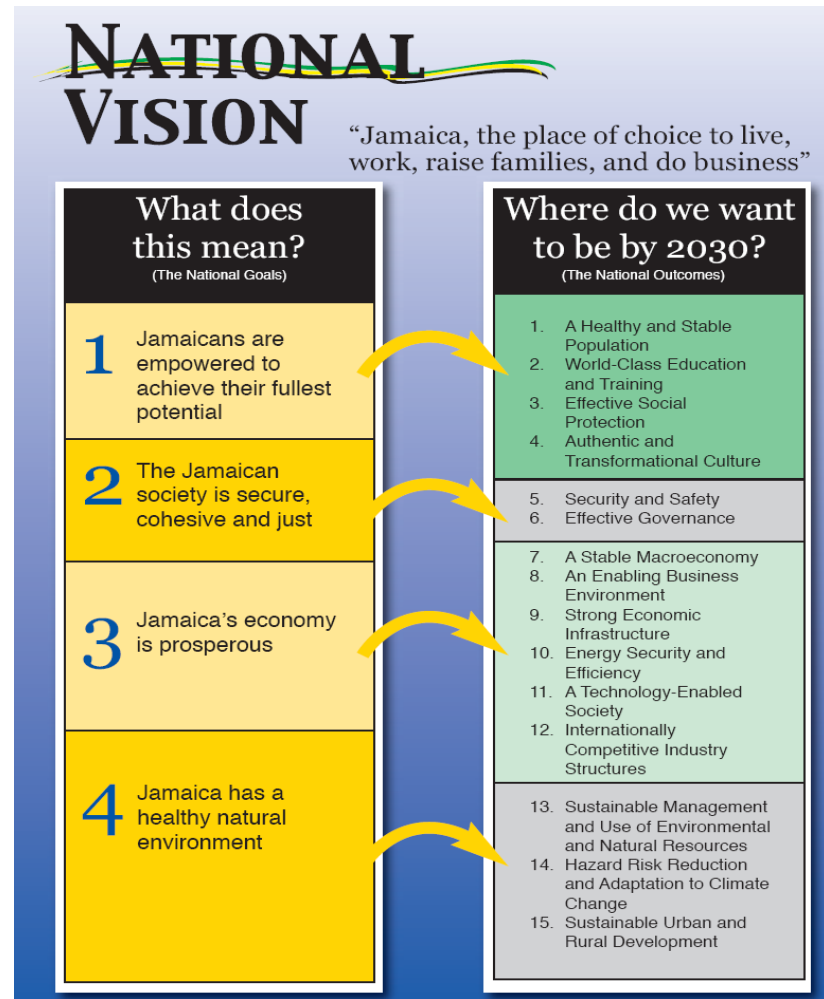
ENERGY CONSUMPTION



- Approximately 95% of its electricity generation is from fossil fuel imports
- This has led to significant economic and environmental costs to the country's GDP, and necessitating a transition to a more sustainable energy system.
- In 2011, approximately 15% of GDP was spent on petroleum imports
- Electricity prices for Jamaican residents are amongst the highest in the world at around 40 US cents per kWh (2011)
- The above mentioned are barriers to the sustainable development.

BACKGROUND

- **Vision 2030-National Development Plan (2009)**
- **National Energy Policy (2009)and sub-policies- RE, EE&C, Biofuels, Waste to Energy Policy.**
- **Climate Change Policy Framework and Action Plan (2015)**
- **National RE Target of 20 % by 2030**



BACKGROUND

WHY A NAMA

THE NATIONAL ENERGY POLICY (NEP) 2009 -2030 TARGETS:

- Renewable Energy Target of 12.5% by 2015 and 20% by 2030 in the energy mix of Jamaica; compared to 5.6% participation in 2008
- GHG emissions of the energy sector should target 4.5 MtCO₂/year in 2015 and 3.5 MtCO₂/year by 2030, from an estimated 5 MtCO₂/year in 2008.
- The NAMA will contribute to the country's vision and to the energy sector policies, by contributing to the consolidation of an enabling environment that will be responsive from the policy/regulatory frameworks, provision of support for strengthening of technical capabilities and contribution to assure a vibrant investment climate in support of renewable energy electricity generating technologies.

CURRENT SECTORAL INITIATIVES

- E10 MANDATE - 10% ethanol blended in gasoline
- Office of Utilities Regulations (OUR) 115 MW RFP for RE generation fulfilled, firstly 78 MW (wind and solar), and then 37 MW (wind)
- Net Billing pilot project - over 200 licences issued.
- Domestic solar water heaters -2000 installed (National Housing Trust).
- Transportation fuels working group – for the development of clean transportation fuel.
- Low Emission Development Strategy (LEDS) collaboration of the USAID.

Overall Objective

- The objective of the NAMA is to promote the incorporation of renewable energy based generation in Jamaica, assisting in the creation of a sustainable enabling environment that is adequate for early stage development of the renewable energy industry in the country, as well as contributing to the realization of the long term contributions associated to the use of renewable energy resources of the country.
- Contribute to GHG mitigation by the establishment of a long term enabling environment that will allow permanence of the scale-up contribution from Renewable Energy Generation Systems in Jamaica, while assisting in the creation of capacities for the development of a renewable Energy Sector in the country.

Specific Objectives

- a) Facilitate efforts towards the implementation of the Jamaica Vision 2030, through the GHG mitigation associated to renewable energy scaling-up; and contributing to the establishment of the monitoring protocols necessary for tracking the renewable energy climate related mitigation contributions.
- b) Contribute to the streamlining and implementation of key regulations supporting the development of the RE sector in the country, inclusive of a framework of relevant incentives appropriate for the context of the country.
- c) Assist the GoJ in implementing financial instruments and financing facilities that could be supportive of the perceived needs to catalyze investment in RE project development, inclusive of risk mitigation schemes that could assist the private sector investment (mainly local) in RE electricity generation projects.
- d) Assist in removing perceived barriers for RE project development related to permitting required by project developers in order to comply with national and local ordinances.
- e) Provide targeted support for the removal of technical barriers and grid infrastructure deployment that is essential for improving the absorptive capacity of the Jamaica grid to speed the uptake of variable power renewable energy generation.

SCOPE

1. Complement the implementation of the Jamaica Vision 2030 and other national/sectoral policies
2. Streamlining and implementation of key regulations / instruments
3. Implementing financial instruments / financing facilities
4. Removing perceived barriers for RE project development
5. Targeted support for the removal of technical barriers and grid infrastructure deployment

Elements of the Proposal

Policy Changes –

- The main policy changes will have to be on the improvements of the policy environment for long term consistency of implementation, discussion and adoption of tariff structures that can contribute to recognition of scaling up and disparity of generation sources. entry barriers as well as permitting are other important issues here.
- **Financial Mechanism** – Financial mechanism has not been designed or discussed yet.
- **Technical Assistance** – Grid carrying capacity technical assistance has been identified as a key area for TA and option design.

Barriers to Mitigation And NAMA Components

Barriers	NAMA Component
Institutions and regulations	Streamlined Regulations in Support of Renewable Energy Scaling-Up
Financial	Innovative Financial Mechanisms
Technical	Capacity Building for Renewable Project Development Action
Awareness and Integration	Stakeholder Alliance Integration (public-public, public-private)

Barriers to mitigation

Several common barriers that impede the progress of energy policies, programmes and projects:

- Renewable Energy Projects not fully pursued due to their initial cost (but long term life cost not considered).
- Lack of human and technical capacity to undertake / implement the tasks.
- Limited technical and management capacity within the GoJ to develop, implement, enforce and monitor initiatives.
- Lack of consumer awareness, which is the case of current financial facilities to improve solar penetration in the island.
- Perception that commercially viable funding is not available to potential investors.
- Low priority placed on some areas by central government where budgetary support is necessary.
- Lack of fiscal space in the national budget to pursue energy initiatives.
- Inadequate legal and regulatory frameworks.
- Affordable, Reliable, Low-Emission Electricity System (Washington, DC: Worldwatch Institute, 2013). <http://www.worldwatch.org/system/files/Jamaica-Sustainable-Energy-Roadmap-112013.pdf>

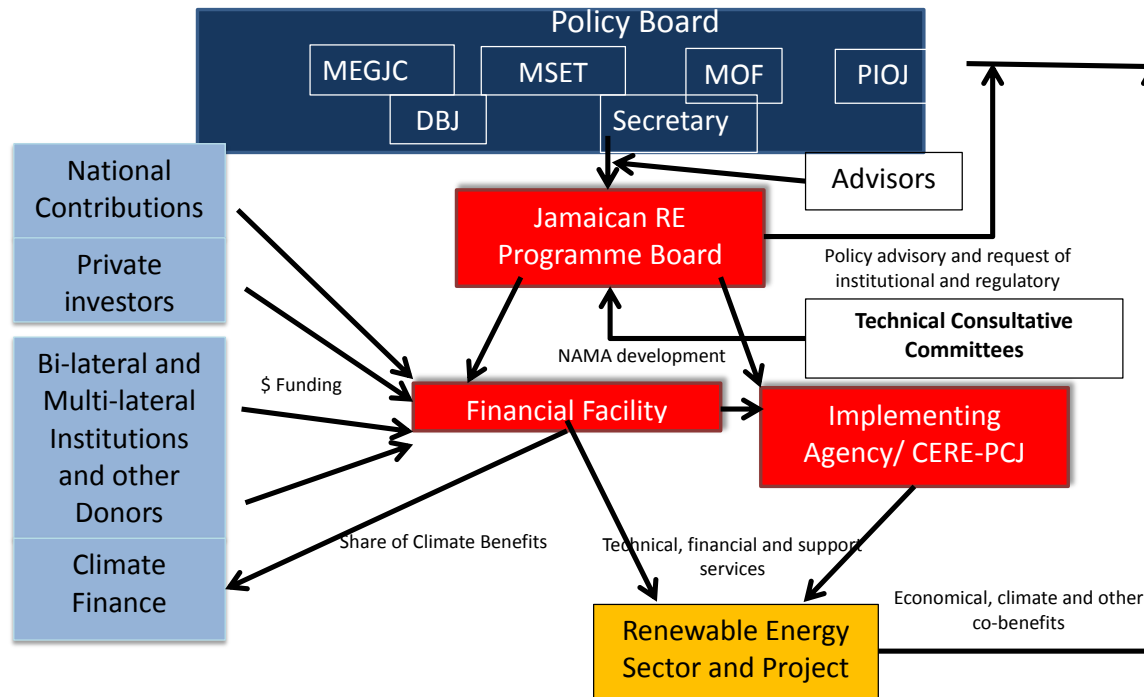
Implementation Arrangements







The NAMA will be implemented through the construction of an alliance of stakeholders in the sector, with important participation from the relevant institutions in the energy sector.

- NAMA to be jointly proposed by Ministry of Science, Energy and Technology (MSET) and Ministry of Economic Growth and Job Creation (MEGJC)

- NAMA implementation to be led jointly by MSET and MEGJC

Proposed Implementation Arrangements



	Direct Beneficiaries	Small capital	Indicative of service, resource or action
	Policy Board		Indicative of hierarchy or/and flow of service, resource or action
	Executing entities		Funding Source
	Advisory Board or stakeholder consultation		

Proposed Implementation Approach

Inception Phase

- Development of policy and regulatory assessments for long term vision of RE
- Capacity building and detailed evaluations of grid capacity for RE interconnection
- TA for NEAP consolidation and process definitions, including stakeholder engagement and monitoring
- Design and fund raising of required financial facilities for RE in Jamaica
- Support for the establishment / strengthening of a RE sector in Jamaica

Readiness Phase

- Implementation of readiness programs for grid connected RE electricity likely based on on-going approaches
- Implementation of utility based protocols for RE interconnections
- Establishment of project portfolio for investment
- Financial facility development

Scaling-up and Transformation Phase

- Widespread implementation of mechanisms and instruments to attain the long term 2030 vision for RE contribution to the energy mix in the country

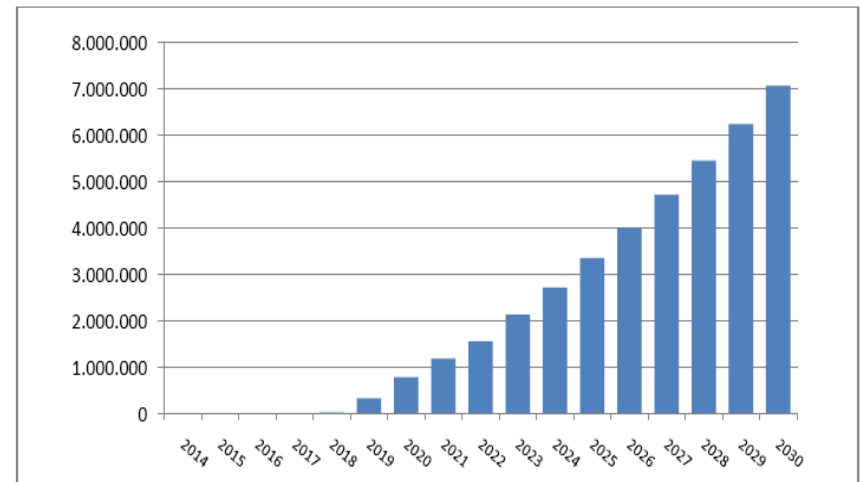
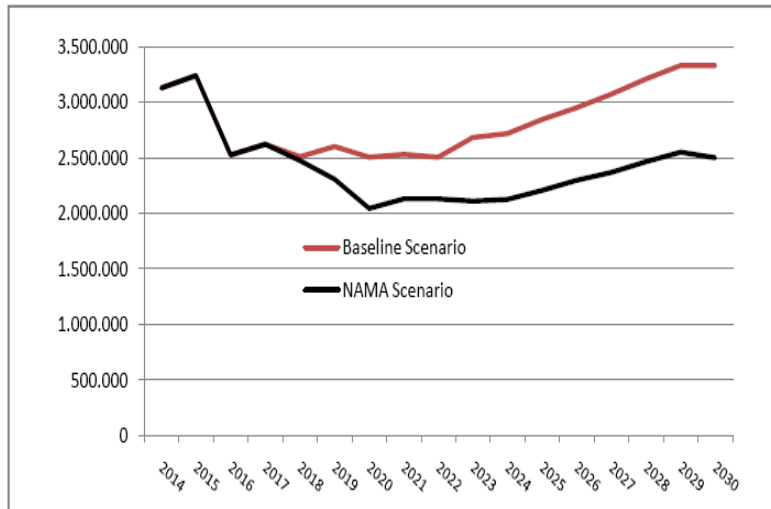
GHG Reduction Scenarios

- Different scenarios considered for target penetration of RE into 2030 (20% of installed capacity, 20% and **30% of electricity generated**)
- Energy sector decisions will likely affect the NAMA baseline in the design phase
- LNG considered as fuel of choice for diversification in the baseline

Climate Benefits of the NAMA

Cumulative reduction of up to 7 million t CO₂ by 2030

- Up to 750 MW of RE additions
- Transformational effect of decoupling energy-economy



Sustainable Development Benefits

Social Benefits:

It is likely that this effect will be noticeable not only for higher education professionals, but also can create a new segment of technical training skills normally associated to different stages of project development.

Institutional Benefits:

Institutional establishment related to the knowhow on improved coordination, overall management of transformational processes, coordination of public-public and public-private ventures, all of which are important to maintain focus on a long term vision for the sustainable Development of the country.

Sustainable Development Benefits

Economic Benefits :

- Generation of a new set of business practices resulting in the local creation of value-added development
- **Job Creation** : May be on the level of up to 1000-2000 depending on the final target RE penetration contributing to the social, economic and gender implications of the path towards scaling-up of renewable energy.
- Contribution to **energy security and diversification**, reducing development costs to renewable energy projects and contributing to a more effective and efficient project development learning process in the country.
- Creating investment opportunities for different target sectors in the country (from private to equity, social pension funds, etc.); as well as innovative development of risk management facilities that could have spill over effects to other important sectors needing investment in the country.

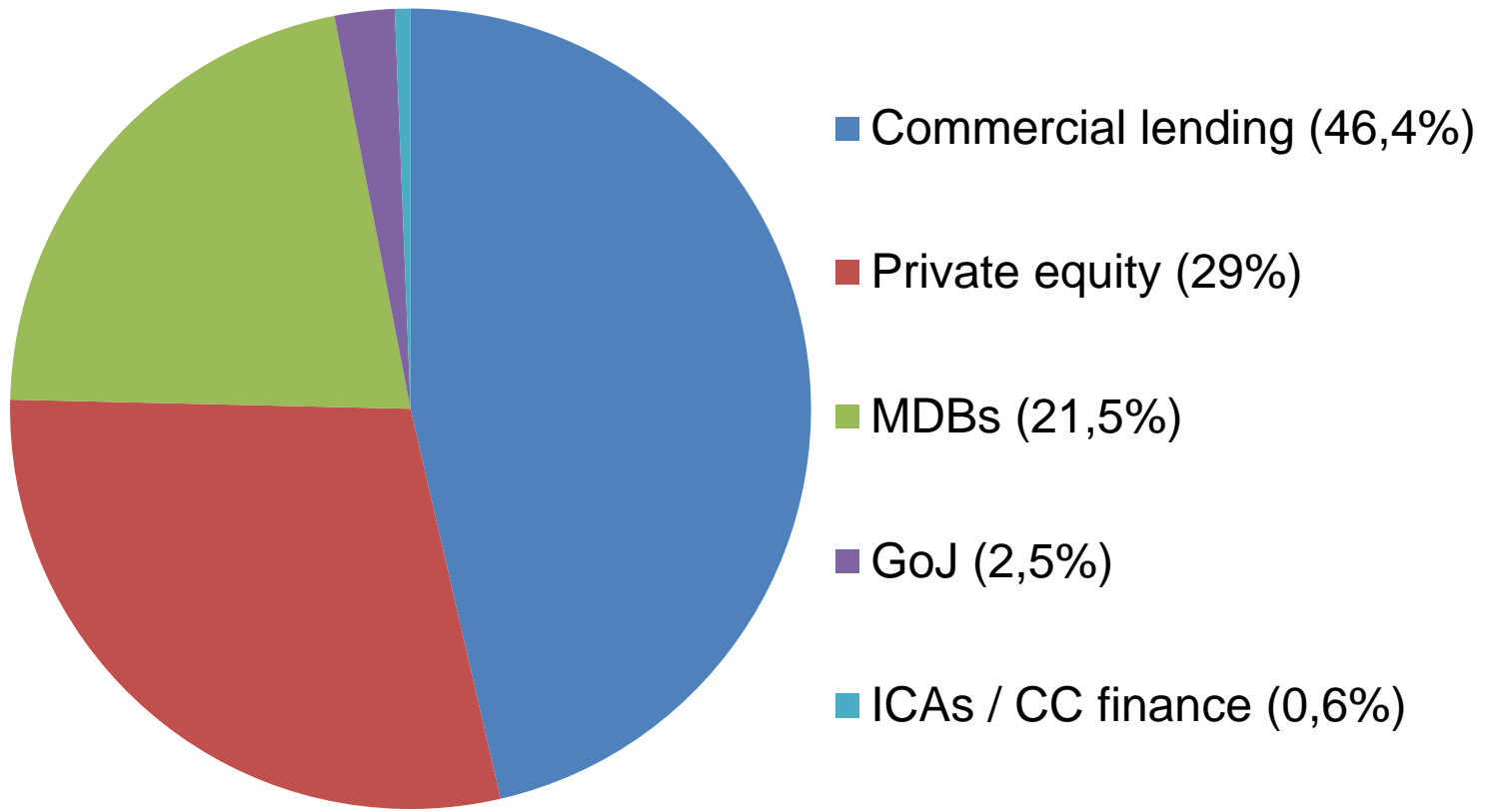
Monitoring, Reporting and Verification (MRV) issues

- MRV Under current development
- MRV at the intersection of climate benefits, co-benefits and support
- Taking into account NAMA actions with respect to INDC as well as other national level reporting structures.
- MRV of only NAMA actions at levels of: emission reductions, cobenefits and financial support (related to support given, capacity building achieved and relevant technology issues such as disparity achieved).
- MRV may consider NAMA actions outside / inside carbon market mechanisms (in order to assure adequate tracking).
- Measurement through different layer of indicator development (absolute as well as relative) for NAMA action and financing.
- Reporting through adequate mitigation accounting.

Implementation Cost of the NAMA (estimated at approx. US\$ 1,785 M)

NAMA FINANCING

Allocations



Transformational Impacts

- Achieve sectoral / national emission reduction targets
- Fits into the context of mitigation activities in the energy sector
- Helps to over-come systemic barriers to the reduction of emissions
- Develops capacities to reduce future GHG emissions
- Serves to strengthen national systems
- Uses innovative approaches for the reduction of emissions
- Replicable with respect to its applicability in other regions, countries and internationally, learning from other SIDS initiatives

OUTCOMES

a)Stakeholder Alliance Integration (public-public, public-private):The outcome of this component relates to a strengthen institutions focusing on relevant regulations, capacity to assess and implement actions to remove barriers of entry type to renewable energies and assure the Vision 2030.

b)Capacity Building for Renewable Project Development Action: The outcome expected from this component looks at enhancing human capacities for projects and sector, delivering technical solutions to the introduction of variable power renewable electricity to the grid and also in the area of MRV required to continuously assessment of progress and identification of actions to keep focus on the long term contribution of RE to Jamaica according to Jamaica Vision 2030.

c)Innovative Financial Mechanisms: The outcome of this component is a well articulated funding strategy and implementation for financial facilitating actions across technologies and project scales favouring investment development for RE projects.

d)Streamlined Regulations in Support of Renewable Energy Scaling-Up. The outcome expected from this component is a set of well articulated regulations with buy-in and coordination of stakeholders in support of diverse aspects of RE project development.

Conclusions of Proposed NAMA

- The implementation of the NAMA requires a multi stakeholder effort involving existing institutions and organizations. It is envisaged that the NAMA requires at least the following governance bodies and arrangements to coordinate the functioning of key stakeholders within the key actions in the NAMA implementation.
- The different arrangements to be undertaken involve at least the following: NAMA related Political/Policy Board (to be focused on Renewable Energy and mitigation) to be integrated by different institutions including high ranking policy/strategy ranks from MSET and MEGJC as NAMA supporters and the Ministry of Finance (MoF), the Planning institute of Jamaica (PIOJ) and the Development Bank of Jamaica supporting financial and planning from the national perspective.
- The Jamaica Renewable Energy NAMA contributes to ***transformational change*** in Jamaica through its rooting in bringing the country on a low-carbon development trajectory with (climate) benefits.
- At the international level, the NAMA is also rooted in the Jamaica Vision 2030 related to contributing effectively in the effort to reduce the global rate of climate change. The NAMA becomes an enabler of significant evolution in terms of scope (e.g. scaling-up the use of renewable energy), favouring a faster change or a significant shift from one state to another (attaining a deviation from business as usual practices).
- In alignment with international observations on transformational impacts of **NAMAs**, the Jamaica case implies development of catalytic effects and leverage as well as coordination to ensure the sustainability of the impacts, local ownership and political will, the use of innovative technologies or approaches, etc.

Thanks for your attention

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