Governance, Innovation, and Climate Action: Building a Sustainable Future for Islands

Transformation Horizons - Energy Security, Affordability and Transition to A Low Carbon Future

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Caricom Energy Sources: Secure, Affordable, Low-Carbon

CEC
CARIBBEAN ENERGY CHAMBER

Long Term (>10 Years)

Medium Term (5-10 Years)

Short Term (1-5 Years)

Energy Efficiency	All countries	All countries	All countries
Solar PV: Distributed and Utility Scale	All countries: develop and execute projects	All countries: develop and execute projects	All countries: develop and execute projects
Wind Onshore/Offshore	All countries: assess resources and develop and execute onshore projects	All countries: develop and execute onshore and (select) offshore wind projects	All countries: develop and execute on-shore and (select) offshore projects
Geothermal	Assess resources, develop and execute optimal project(s) to meet OECS country electrical power needs	Connect all OECS islands via a submarine cable, if commercially feasible	Assess and develop mega scale projects like aggregating green electrons from geothermal or offshore wind for green hydrogen and ammonia in T&T for export
Hydrogen	Develop and execute niche projects: E.g. Barbados (storage) and T&T (waste heat)	Develop and execute niche projects: E.g. Barbados (storage) and T&T (waste heat)	All countries: develop and execute projects if there is a source of low-cost power (< 3 USc/KWh) and offtake
LNG / Flared Gas		Flared gas from Venezuela or gas from Guyana, Trinidad and Suriname	Flared gas from Venezuela or gas from Guyana, Trinidad and Suriname
Green Ammonia			T&T if there is a source of low-cost power (<3 USc/KWh) from either geothermal or offshore wind
SMR (Nuclear)			Larger electrical demand islands like Jamaica and Trinidad and Tobago could develop and execute projects

Critical Enablers

- Integrated Resource Plans(IRP)
- Co-ordinate projects to capture economies of scale (e.g. OECS Geothermal)
- Knowledge sharing
- Regulatory frameworks (adoption/adaption of Min. Regulatory Framework)
- Grid upgrades
- Credit guarantees
- Innovative financing instruments- E.g. contingent grant
- Low-cost financing

OECS Geothermal Development Horizons

	Scope	Estimated Cost(USD)	Electrical Power(MW)	Feasibility
Option 1 – " Adequate " – Short to Medium Term	Each EC country meeting its full needs from geothermal with exports to Antigua and Anguilla via submarine cable.	**2-3 Billion**	380	Technical -Unknown technical challenges with sub-sea grid to be assessed. Commercial -Power costs excluding T&D expected to be 10-12 USc/KWhr. Export power could be ~ 20-24 USc/KWhr.
Option 2 – " Big But Not Audacious "- Medium to Long Term	Same as Option 1 with all islands having an interconnecting sub-sea grid and power sales to a large market like T&T.	**9-16 Billion**	1000	Technical -Unknown technical challenges with sub-sea grid to be assessed. Commercial- Green hydrogen requires a power cost < 3 USc/KWhr to be competitive at < 4 USD/Kg.
Option 3 – "Blue Sky " – Long to Very Long Term	Same as Option 1 with all islands having an interconnecting sub-sea grid and power sales to Barbados and to a large market like T&T for hydrogen and ammonia production	**36-43 Billion**	5000[1]	Technical -Unknown technical challenges with sub-sea grid to be assessed. Commercial- Green hydrogen requires a power cost < 3 USc/KWhr to be competitive at 4 USD/Kg.

1. A Review of Caribbean Geothermal Energy Resource Potential- West Indian Journal of Engineering – January 2020

Opportunities for Partnering - Energy Infrastructure and Downstream Businesses

- Energy Efficiency
- PV/ Onshore Wind
- Geothermal to Meet in-Country Demand
- Off-shore Wind
- Contingent On Secure, Affordable/Competitive Electrical Power – light manufacturing, de-salination, hotel expansion, data centers.

END