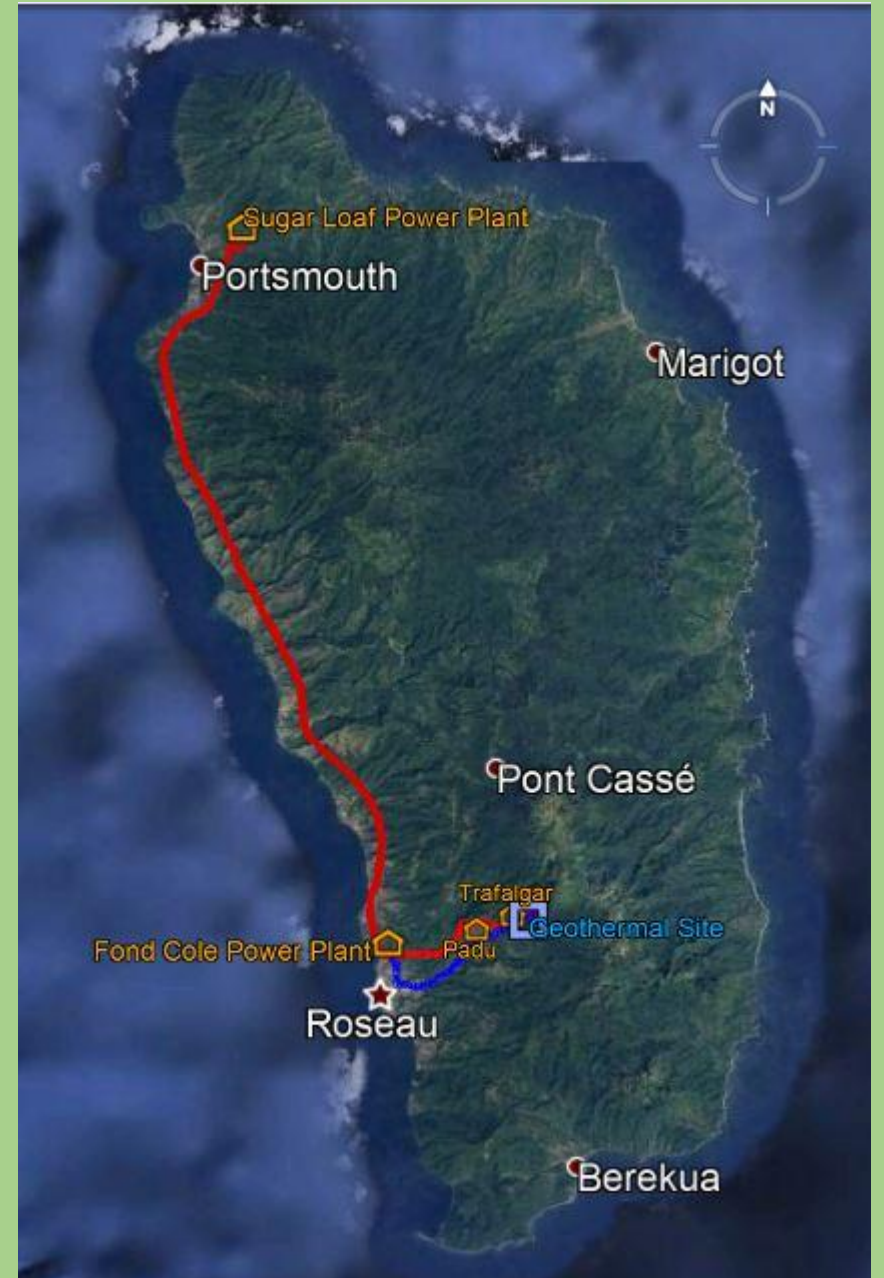


Grid Resilience Critical Considerations for Dominica

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It is our experience that the single biggest challenge to
electricity grid resilience is paying for this resilience

Context



- Electricity generation in Dominica: three hydro and one diesel generating plants in the south of the island, and one diesel plant in the north.
- Transmission/distribution network is 11 kV
- The Government of the Commonwealth of Dominica is developing a 10 MW geothermal plant in the South
- Will require new transmission network of 33 and 69 kV:
 - to connect hydro and geothermal to the primary load centers
 - To optimize power by connecting to the north
- Funded through the World Bank

Design Considerations and Challenges

- Terrain
 - Very steep and mountainous
 - Dense settlements in the limited flat areas
 - Small roadways
- Legal and Regulatory Framework
 - Land acquisition and compensation schemes
 - Public safety at sub-transmission voltages – in normal operations and under fault conditions
- Hazards
 - Wind from hurricanes/tropical storms
 - Land slippage – from above and below
 - Coastal erosion (storms) and corrosion

Strategic Considerations for Resilience

- Overhead and/or underground?
- Hard resilience and/or rapid restoration?
- Setting the design parameters – Resilient to Category 1/2/3/4/5+?
- Level of redundancy and spares
- Environmental and social considerations
- Land acquisition, compensation and resettlement costs
- When do you pay – upfront capex or maintenance
- Cost of Insurance

Getting Projects Funded

- International benchmark costs [\$/km] are useful starting points
- But are inadequate - due to resilience (plus scale and small island mobilization costs): as much as 1.5 times – Resilience Cost Gap (RCG)
- Resilience Cost Gap (RCG) – the differential in costs between what is commercially viable (although debatable) and what is resilient
- Funding mechanisms need to identify and accommodate the Small Island Resilience Cost Gap (RCG)
- Resilience Cost Gap (RCG) should be offset through special financing instruments – grants, tax credits, special concession regime, debt for nature swap, other non-direct cost recovery arrangements

CONCLUDING STATEMENT

- A critical obstacle to collectively overcome in 12 months to drive greater resilience and private sector engagement in the Caribbean is the development of special financing mechanism to address the Resilience Cost Gap (RCG) in electricity sector.
- The Resilience (RCG) is the differential in costs between what is commercially viable (although debatable) and what is resilient.
- Resilience Cost Gap (RCG) should be offset through special financing instruments – grants, tax credits, special regime of concessions, debt for nature swap, other non-direct cost recovery mechanisms.