Combatting Climate Change & Energy Poverty in the Philippines

Alexander Ochs

Director of Climate and Energy

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Current Situation: Key Problems

- **Climate change vulnerability**: extremely high
- **Energy poverty**: 17% of 16 mio. ppl nationwide w/out electricity access; Mindanao (40%), Visayas (23%)
- High dependence on **fossil fuel imports:** imported coal and oil for power generation and transportation
- Unsustainble use of **fuelwood**
- **Economically, socially & environmentally unsustainable**

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Current Situation: Encouragements

- **Renewable leader**: 27% of power generation, geothermal, hydro
  - But: solar and wind<0.1%, geothermal growth has stagnated
- Enormous **unused potentials** for energy efficiency and ALL mainstream renewables
- National Renewable Energy Program, Feed-in-Tariffs as important starting points; **political commitment**

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Future Challenges & Opportunities

- **Identify technical solutions**: Harvest enormous potential for RE, EE & smart grid solutions
- Use **socio-economic benefits** to their fullest; communicate alternating electricity scenarios to generate widespread support
- Attract necessary **investments;** reform financial sector
- Create efficient & effective **policies**

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Sustainable Energy Roadmaps

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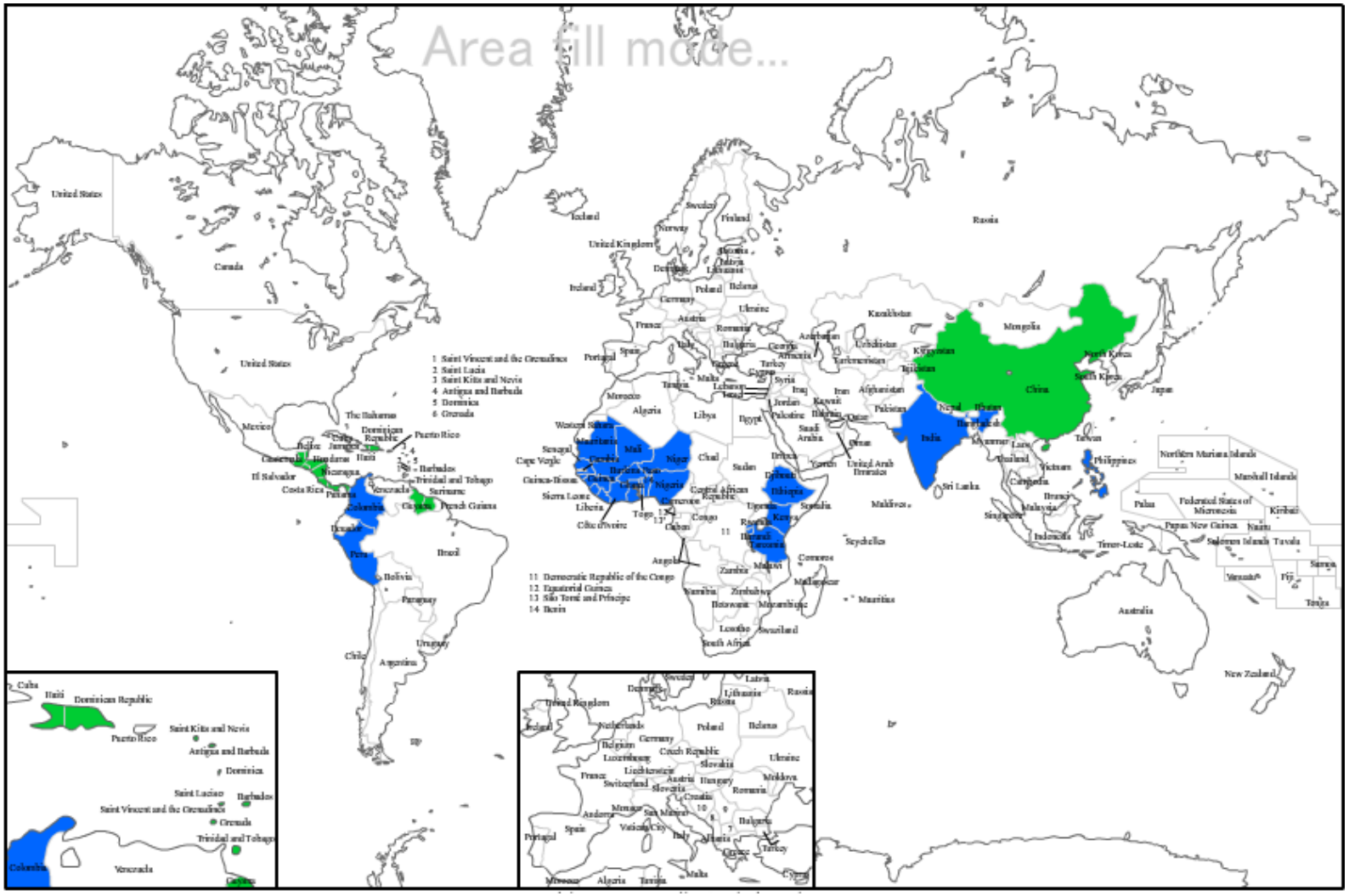
Our Work



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Key Insights (1)

- Strategy of change: Local knowledge & ownership; sandwich strategy
- Technological solutions: It's all in the mix; need for integrated short- and long-term energy planning
- Socio-economic: Need for paradigm change: BAU is the luxury path!
- Need for capacity building in financial & political sectors; human & institutional

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Key Insights (2)

- Political feasibility and regulatory fit: one size does not fit all!
- Available tool box of tested policies, measures &administrative reform
- MRV-T: measured, reported, verified – transparent
- Stakeholder inclusion; mainstreaming
- Need for implementation

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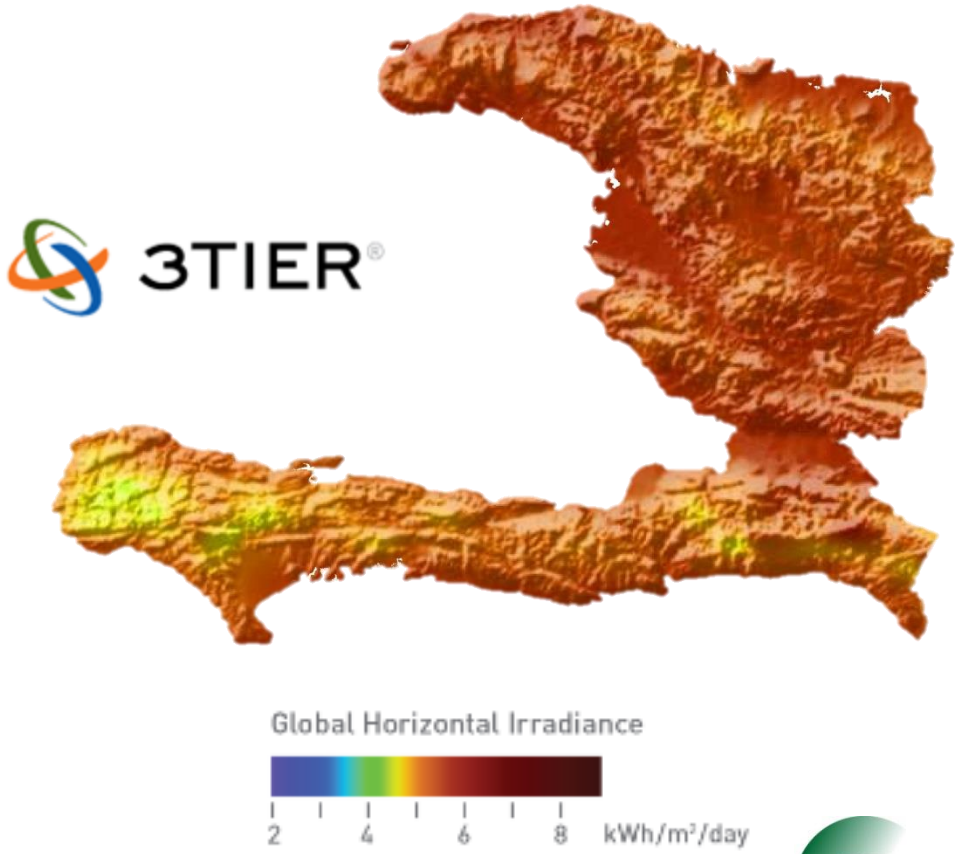
Renewable Resource Assessments: Solar Potential in Haiti



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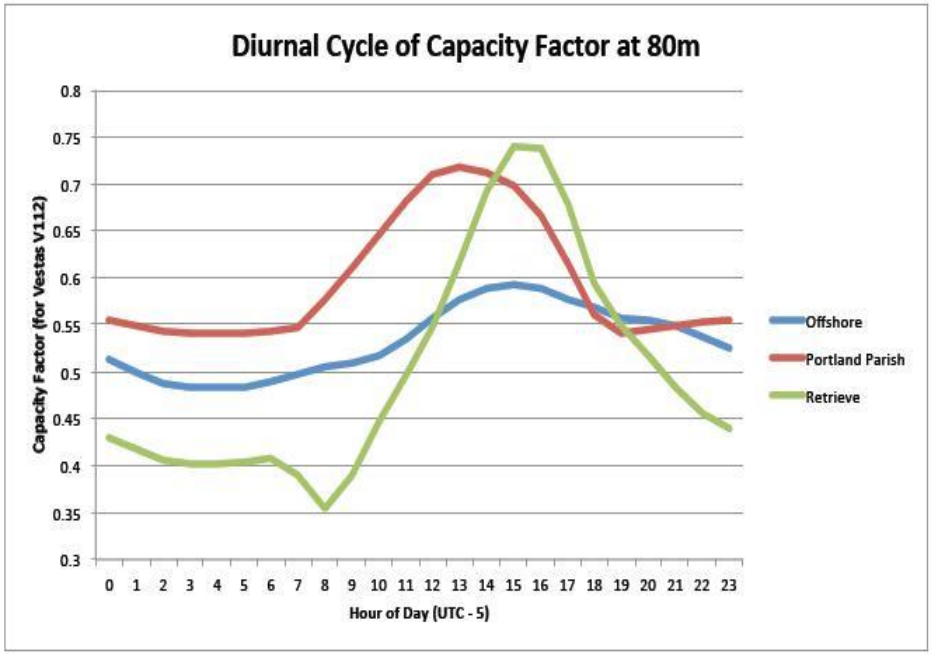
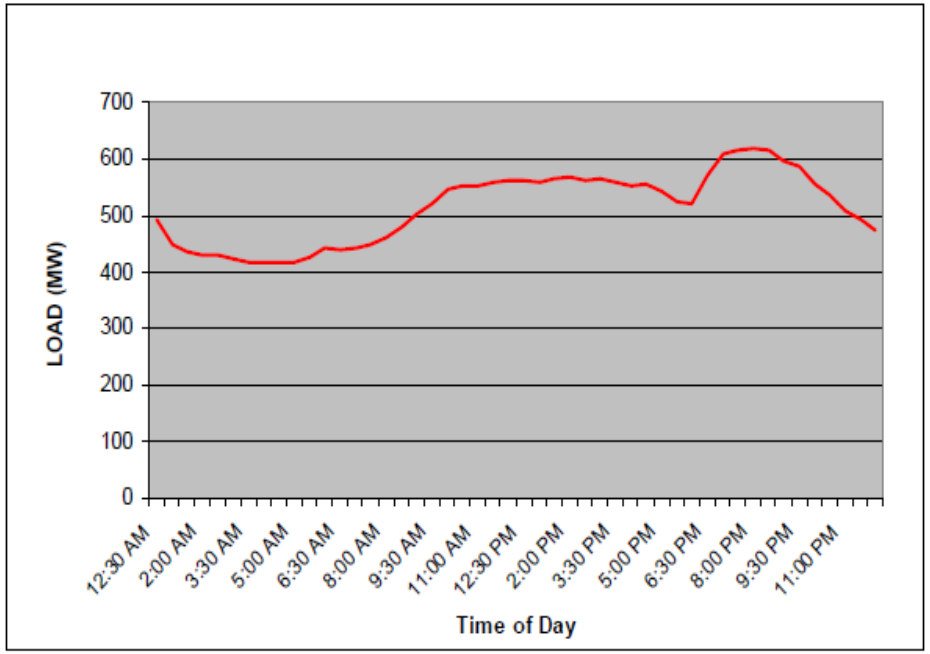
Sustainable Energy Roadmaps: Technical Analysis





Diurnal Wind Speed Variability and Load Profile in Jamaica

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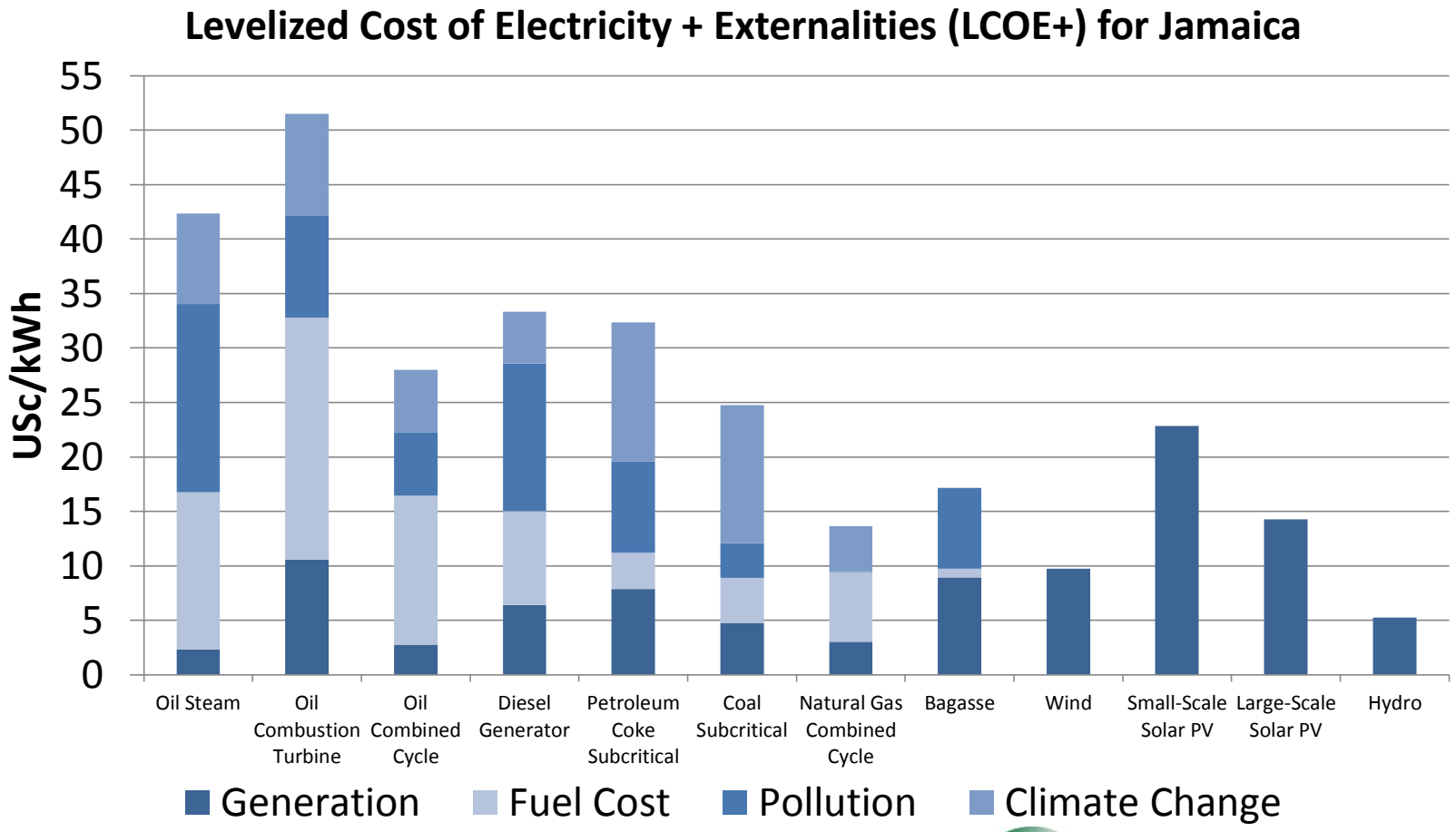
Sustainable Energy Roadmaps: Socioeconomic Analysis



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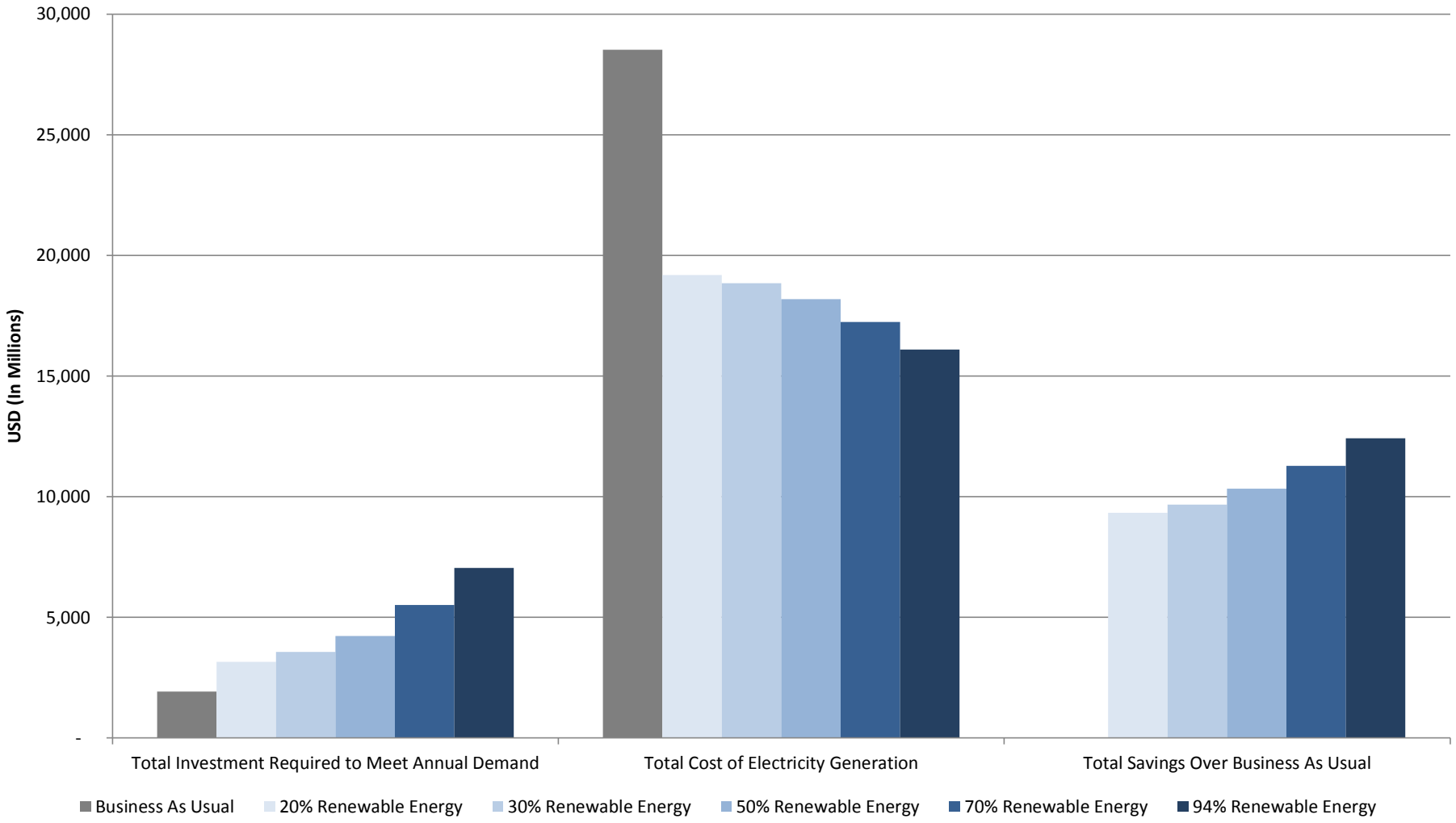
Scenario Analysis for Jamaica



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Sustainable Energy Roadmaps: Financial Analysis (1)

- High installment vs. low life-cycle costs
- Finding the right project sponsors at the right scale; underperforming domestic banking sector
- Many projects are not finished on-time or on-budget
- The necessary regulatory systems or financial mechanisms (e.g. FiT) needed to encourage financing

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Sustainable Energy Roadmaps: Financial Analysis (2)

- Bureaucratic hurdles; e.g. permitting process
- Indebtedness/creditworthiness of the country key; ways to overcome
- A lack of institutional capacity to apply for international finance

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Sustainable Energy Roadmaps: Policy Analysis

Barriers	
Systemic Vision	Energy sector and industry vision
Policy and Regulatory	Misplaced incentives, policy/regulatory uncertainty
Cost	High LCOE, unaccounted costs, market and currency fluctuations
Finance	Cost of capital, unavailability of financing, unmanageability for banks, upfront costs
Political	Politicization of key issues, short-term priorities
Entrenched Interest	Monopoly/vertical integration, anti-RE lobby
Infrastructure	Unsuitability of infrastructure, high cost of development, intermittency/storage
Innovation	Patent protection, lack of R&D
Public Acceptance	NIMBY, cost of RE to consumers
Knowledge	Knowledge gap, capacity building, deficient and uncoordinated dissemination of information
Trade	Tariffs, trade disputes

Enablers	
National renewable energy targets	**Vision**
Regulatory policies (Feed-in tariff, RPS, etc.)	**Concrete Policies**
Fiscal incentives (tax incentives, subsidies, grants)	
Public financing (public investment, loans, grants)	
Energy market regulations	
Trade agreements	
Streamlining processes (planning, permitting)	**Gov. & Admin.**

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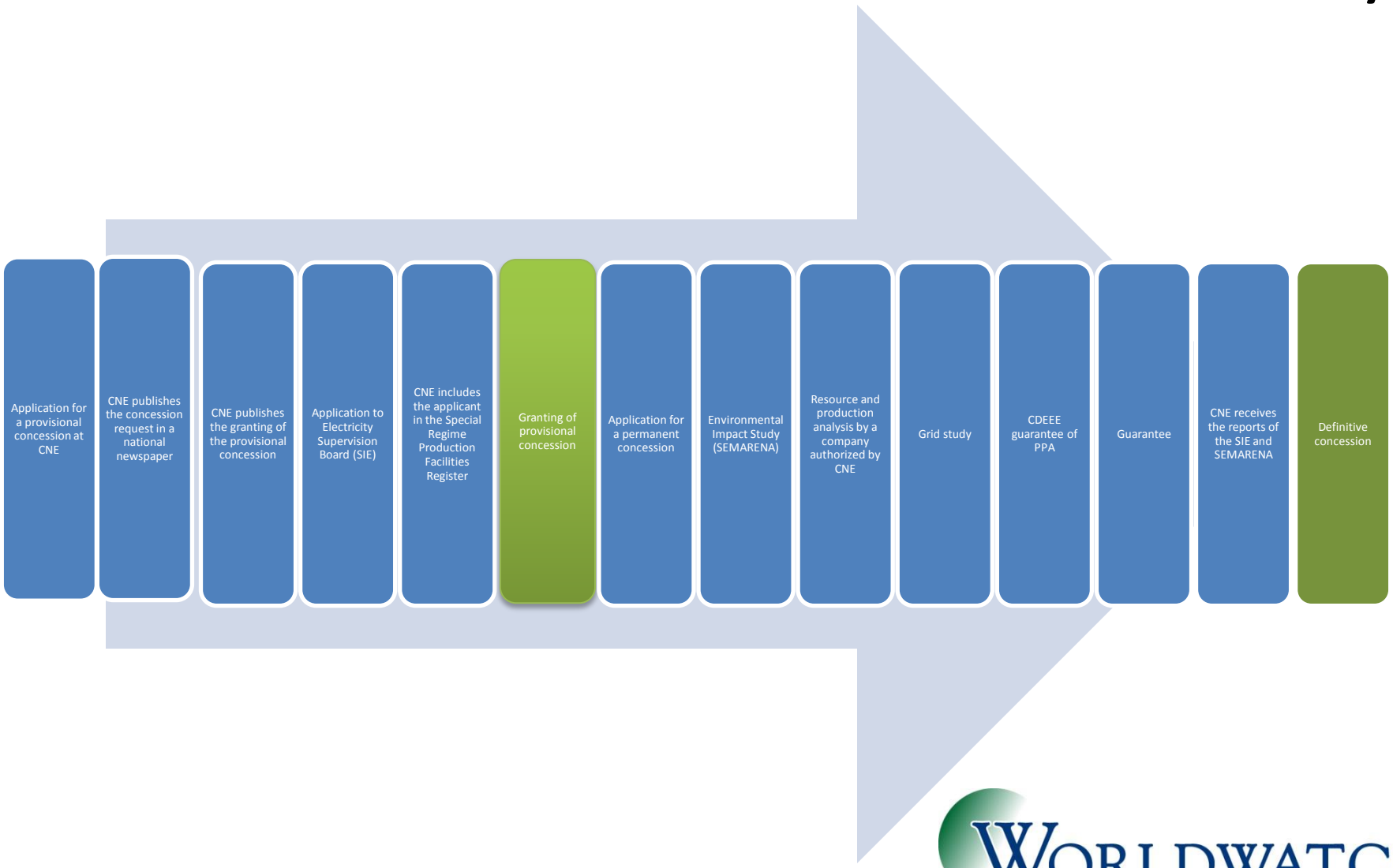
Governance & Administrative Efficiency



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Next Steps

- Identifying appropriate islands and communities
- Finding the right partners
  - Government, local organizations, businesses
- Finding the right funding organizations

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Thank You!

aochs@worldwatch.org

Alexander Ochs and Shakuntala Makhijani,
Sustainable Energy Roadmaps: Guiding the Global Shift to Domestic Renewables
Worldwatch Report #187: March 2012

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