



Guarini Center

Frank J. Guarini Center on Environmental,
Energy, and Land Use Law
at NYU School of Law



وزارة الخارجية
والتعاون الدولي
MINISTRY OF FOREIGN AFFAIRS
& INTERNATIONAL COOPERATION

Clean and Resilient Power for Caribbean States

*A Workshop on Opportunities and Obstacles to
Expanding Renewable Energy Microgrids*

October 31, 2017

OVERVIEW

Over the course of this workshop, which is a joint effort of the Guarini Center, Tesla and the United Arab Emirates Ministry of Foreign Affairs and International Cooperation, we will evaluate case studies of potential new renewable energy projects in participating Caribbean nations that can help provide cost-effective, reliable electricity access to remote populations and reduce dependence on diesel generation. The case studies have been modeled

by the countries in collaboration with experts at Tesla.

Participants at the workshop include: government and utility representatives from select Caribbean countries, development bank lenders, experts from NYU Law, Tesla representatives, and NGOs experts. As in previous workshops, there are a limited number of participants, so as to provide a chance for substantive discussion among all participants.

TUESDAY, OCTOBER 31, 2017
POLLACK COLLOQUIUM ROOM, FURMAN HALL, 245 SULLIVAN STREET

REGISTRATION (9:00AM)

OPENING SESSION (9:15AM)

Opening Remarks:

Bryce Rudyk, Climate Program Director & Adjunct Professor, Guarini Center, NYU Law/Senior Legal Advisor, Alliance of Small Island States

Tristan Glenwright, Sr. Manager, Project Development, Utilities and Microgrids, Tesla

Majid Al-Suwaidi, Consul General of UAE in New York

Participant Introductions

KEYNOTE ADDRESS (9:45AM)

THE PROMISE OF RENEWABLE ENERGY SOLUTIONS FOR SMALL ISLAND SUSTAINABILITY

HE Selwin Hart, Ambassador of Barbados to the United States, former Director, UN Secretary General's Climate Change Support Team

COFFEE BREAK 10:15AM

CASE STUDY SESSION 1 (10:30AM)

EVALUATING OPPORTUNITIES FOR DIESEL DISPLACEMENT

While it is clear that renewable microgrid technology costs (including storage) have declined in recent years, questions remain regarding exactly how competitive the technology is compared to diesel generation, especially given the lack of implementation experience in many markets and communities. This session will explore these issues through case studies of potential projects in Suriname and Grenada. Specific questions to be addressed include:

- From a cost perspective, what is the optimal mix of renewable versus fossil generation in the case study site?
- How much land would be required to implement the proposed solution and what barriers, if any, might exist to utilizing the land required?

- Are there operations and maintenance (O&M) difficulties associated with transitioning to a renewable energy system? If so, what plans might be designed to build local capacity to assist with O&M?
- How would payment for energy services most effectively be managed?
- What subsidies are currently provided to isolated communities and how are these subsidies accounted for when evaluating renewable alternatives?

Presenters:

- **Peter Donk**, Department Head of Energy Innovation, NV Energiebedrijven, Suriname
- **Christopher Joseph**, Energy Officer, Ministry of Finance and Energy, Grenada

- **Nick Reale**, Senior Project Development Manager, Utilities and Microgrids, Tesla

- **Danielle Spiegel-Feld**, Executive Director & Adjunct Professor, Guarini Center, NYU Law (moderator)

LUNCH (12:00PM)

PANEL 1: FINANCING MICROGRID PROJECTS (1:00PM)

The rapidly decreasing cost of microgrid components creates significant opportunities for growth. Yet a number of key questions remain regarding how governments can access capital to get projects off the ground and the role that multilateral development institutions can, or should, play in supporting project implementation. This panel will examine these questions. Specific topics to be considered include:

- Opportunities for funding from multilateral development banks, donors and/or climate finance instruments
- Approaches to building local capacity and stakeholder engagement
- Building appropriate regulatory frameworks
- Environmental and social standards and safeguards

Panelists:

- **Dane McQueen**, Senior Advisor, Ministry of Foreign Affairs and International Cooperation, United Arab Emirates
- **Juan-Cruz Monticelli**, Section Head, Department of Sustainable Development, Organization of American States
- **Tessa Williams-Robertson**, Head, Renewable Energy/Energy Efficiency Unit, Caribbean Development Bank
- **Andrew Eil**, Consultant, UNEP & The World Bank (moderator)

COFFEE BREAK (2:00PM)

CASE STUDY SESSION 2 (2:15 PM)

USING RENEWABLE ENERGY MICROGRIDS TO EXPAND ENERGY ACCESS

Traditionally, government efforts to promote rural electricity access have focused on expanding the central grid. Yet, for some remote populations, grid expansion is either geographically impractical or prohibitively expensive. Renewable energy microgrids may offer a solution for these populations that is more cost-effective and resilient. This session will explore these questions, including:

- When deploying microgrid systems for populations that currently have little or no access to electricity, how should authorities

determine the appropriate amount of generation capacity to install?

- In designing tariffs, how do officials balance the need to provide for cost-recovery against remote populations' ability to pay?
- What forms of government support are currently available to assist off-grid rate-payers? How, if at all, have Public-Private Partnerships been engaged in off-grid renewable energy deployment thus far?

Panelists:

- **Ryan Cobb**, Energy Officer, Ministry of Public Services, Energy and Public Utilities, Belize

- **Yderlisa Castillo**, Director, Renewable Energy Division, National Energy Commission, Dominican Republic
- **Oliver Waissbein**, Energy Finance Specialist, United Nations Development Program
- **Yera Ortiz de Urbina**, Senior Liaison Officer, IRENA (moderator)

PANEL 2: MICROGRIDS FOR RESILIENCY IN A STORM-PRONE REGION (3:45 PM)

Recent events have reinforced how vulnerable the Caribbean power sector is to major weather events including hurricanes. Presenters in this session will explore how renewable energy microgrids may assist with storm resiliency and what precautions should be taken in designing the systems. Specific questions considered include:

- What do we know about the relationship between climate change and the frequency or intensity of storms?
- What are the advantages and disadvantages of incorporating renewable energy microgrids into a resiliency strategy?
- What key design principles should be followed to make renewable energy microgrids as resilient as possible, especially in the wake of more intense storms?

- What are the cost implications of building for Category 5 storms?

Panelists:

- **Tristan Glenwright**, Sr. Manager, Project Development, Utilities and Microgrids, Tesla
- **Lewis Milford**, Nonresident Fellow, Brookings Institute; Founder and President, Clean Energy Group
- **Michael Oppenheimer**, Albert G. Milbank Professor of Geosciences and International Affairs, Princeton University
- **Romany Webb**, Climate Law Fellow, Sabin Center for Climate Change Law, Columbia University
- **Peter Simpson Ross**, Energy Law Fellow, Guarini Center, NYU Law (moderator)

WRAP-UP AND CONCLUSIONS (4:45PM)
