13th Annual

# Caribbean Energy



Economic and Regulatory Environment for Power Development; Project Funding; LNG/Thermal and Renewable Options



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January 24–25, 2013 • Atlantis • Paradise Island, Bahamas

### Benefit from the Insights of 25 Energy and Finance Leaders:

J. Andrew Lindholm, Beowulf Energy LLC J. F. Richard Hew, Caribbean Utilities Company, Ltd.

Renato Pereira, Cheniere Marketing Peter Dailey, International Electric Power LLC

Charles E. Parsons, LS Energia, Inc.

Ron Beardsley, Ministry of Communications, Works and Labour, Montserrat

Lucien Blackmoore, Ministry of Public Works, Energy

and Ports, Dominica

Phillip Paulwell, Ministry of Science, Technology, Energy and Mining, Jamaica

Eduardo Lima, Pacific Rubiales Energy Corp.

Hugo V. Hodge, Jr., Virgin Islands Water & Power Authority Robert Blenker, WRB Enterprises, Inc.

Vera A. Rechsteiner, Andrews Kurth LLP

Richard B. McCorkindale, The Bank of Nova Scotia

Martin Peichl, CIBC FirstCaribbean International Bank Scott Swensen, Conduit Capital Partners LLC Daniel H. Bustos, Excelerate Energy L.L.C. Gauthier van Marcke, Galway Group, LP Roland Fisher, GasFin Development (UK) Ltd. Aileen Barton, GE Power and Water Gabriel Goldschmidt.

**International Finance Corporation** Santiago Garcia, Macquarie Bank Limited Uduak A. Essien, US Export-Import Bank Chandra Shekhar Sinha, The World Bank Rodney P. George and Edmund Phillips, Wärtsilä Caribbean Inc.

### Hear Expert Opinion on Issues Affecting Caribbean Power Development:

- World economic situation Impact on Caribbean energy costs and financing
- **Regulations** Effect of monopoly structures and price controls/subsidies; efforts toward regional synchronization
- Fuel price risk Advantages/disadvantages of various mitigation strategies
- **LNG** Demand, supply availability, price expectations, infrastructure requirements, and inclusion of small islands
- Generation mix Determining the best for each island, including hydrocarbon fuels, wind, solar, hydro, geothermal, and waste-to-energy

### 7 Project Development Case Studies:

- Aguirre GasPort® floating regas terminal Excelerate Energy
- Boca Chica LNG power project LS Energia
- Distributed solar/integrated grid Virgin Islands WAPA
- Dominica's geothermal project Ministry of Public Works, Energy and Ports
- Eastern Caribbean Gas Pipeline Beowulf Energy
- Montserrat's geothermal project Ministry of Communications, Works and Labour
- Phoenix waste-to-energy plant in Haiti International Electric Power

### PLUS:

- Ministry of Science, Technology, Energy, and Mining, Jamaica Promulgation of a new regulatory framework and energy diversity
- Caribbean Utilities Company RFP for renewable energy

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### DAY 1: Thursday, January 24, 2013

7:15 Conference Registration and Networking Breakfast

Hosted by:



8:15 Chair's Welcome and Opening Remarks Rodney P. George, Vice President, Power Plants, Wärtsilä Caribbean, Inc.

### The Economic and Regulatory Environment

#### World Economics — Impact on Caribbean Energy 8:30

- Economic situation in the US and Europe
- · Lack of economic policy consensus
- Impact on Caribbean energy prices

Santiago Garcia, Managing Director, Fixed Income, Currencies and Commodities, Macquarie Bank Limited

#### 9:00 Caribbean Electricity Regulation — Current State and What's Needed

- · Legal framework/regulatory infrastructure Adequate for international investors?
- · Monopoly structure
  - · how it works in a small island state
  - impact on private investment
  - liberalization of the electricity sector in the Caribbean
- · Price controls/subsidies
  - · affect ability to absorb market-priced products
  - who pays?
  - · can they continue?
- Regulatory synchronization Towards an integrated energy market in the Caribbean
  - individual governments need similar regulatory terms
  - importance for inter-island cable and pipeline connections
  - · effect on LNG trade
  - OECS regulatory integration progress
  - · examples of integration European, Gulf states, and US-Mexico
- Renewable regulatory framework in the Caribbean A work in progress

Chandra Shekhar Sinha, Lead Financial Specialist, Sustainable Development Department, Latin America and the Caribbean Region, The World Bank

#### 9:30 Transforming Jamaica's Energy — Efforts to Create a Modern, Efficient, Diversified, and Sustainable **Energy Sector**

- New ventures in renewable energy
- Development and promulgation of a regulatory framework
- · Energy efficiency and conservation programs and policies
- · Fuel source diversification

Honourable Phillip Paulwell, Minister, Ministry of Science, Technology, Energy, and Mining

#### 10:00



### **Networking & Refreshment Break**

Hosted by:



### Fuel Price, Choice, and Risk Management

#### 10:30 **Controlling Fuel Costs in the Current Climate**

Given the continued elevated energy prices (is this the new norm?), what are companies doing, what can they do to help mitigate price spikes?

- Price of crude oil in the Caribbean following Brent
- What is the new long term price?
- Managing fuel price risk How to accomplish your goal
- · Advantages/disadvantages of various strategies of managing fuel price risk

Martin Peichl, Director & Head, Client Solutions Group, CIBC FirstCaribbean International Bank

#### 11:00 LNG — An Alternative Fuel for the Caribbean



PANFI DISCUSSION

- Current expansion of LNG Desire to switch from HFO or diesel to cleaner burning fuels
- Potential demand projections
- Regulations LNG not part of import laws, customs regulation, and taxation
- Pricing expectations
  - · Henry Hub vs. world spot LNG prices
  - · medium and long-term outlook
  - · with high capital costs, will LNG be cheaper in the long-term?
- Availability of long-term supply On what terms (pricing, volume, off-taker credit quality)?
- Sourcing USA, Colombia, and Trinidad
  - impact of Panama Canal expansion on supply available
  - US market
    - permits to export
    - environmental constraints
    - supply security
    - impact of FERC/DOE decisions will they support export to the Caribbean?
  - what Trinidad is doing to meet demand
- Infrastructure
  - · terminal requirements and plans
  - o pipelines to meet city gas and power plant distribution needs
- How can smaller islands be aggregated?

  - · investment in regas terminals and storage
  - · distribution centralized or smaller ships on longer runs
- Progress Excitement, much potential, but little has actually happened

Renato Pereira, Vice President, Origination, **Cheniere Marketing** 

Gauthier van Marcke, Senior Director, Galway Group, LP Roland Fisher, CEO, GasFin Development (UK) Ltd. Eduardo Lima, Senior Vice President, Projects Development,

Pacific Rubiales Energy Corp.

12:45



**Networking Luncheon** 



**MAN Diesel & Turbo** 

### **Gas/LNG Projects in Development**

#### 2:00 **Eastern Caribbean Gas Pipeline**



- · How the proposed Eastern Caribbean Gas Pipeline will integrate the Eastern Caribbean electricity market
- Status of the pipeline project
- Potential cost savings to relevant Eastern Caribbean economies
- Challenges to developing a multi-jurisdictional project

J. Andrew Lindholm, Executive Vice President, Acquisitions & Development, Beowulf Energy LLC

#### 2:30

### **Aguirre GasPort® Floating Regas Terminal in Puerto Rico**



The Aguirre GasPort® Floating Regas Terminal will allow Puerto Rico Electric Power Authority (PREPA) to increase and diversify their energy matrix, providing efficient and reliable access to the international LNG market. Excelerate Energy has been commissioned to not only provide one of its purpose-built FSRUs, but to design, permit, procure, construct, and operate the off shore fixed infrastructure, to be located four miles off shore the Aguirre generation complex.

- · Hear how the location was reviewed and client requirements defined
- · Explore the challenges and opportunities related to environmental conditions and flexibility of a FSRU terminal
- Learn about the progress of the project

Daniel H. Bustos, Vice President, Downstream Development, **Excelerate Energy L.L.C.** 

### 3:00

### **Boca Chica LNG Power Project in the Dominican Republic**



CASE

- · 100MW capacity
- · GE LMS100 LNG-fired gas turbine plant
- Start-up in early 2014
- · Capacity placed in the market
- Project financing by the Inter-American Investment Corp. (IIC)

Charles E. "Chuck" Parsons, Director, Business Development, LS Energia, Inc.

3:30



### **Networking & Refreshment Break**

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### **Determining the Right Generation Mix** for Each Island — Options and Considerations

#### Opportunity Fuels — Making the Best Choice for Your 4:00 **Power Generation**

- Different thermal cycles can be used to generate power for electricity or other industrial uses
- · Which is the best choice?
- What fuels are economically available?
- What trade-offs are made to utilize these fuels?
- · Capacity sizing and CapEx considerations
- Emissions considerations What is required now and in the future?
- Adaptability as global economics change

Aileen Barton, Senior Marketing Manager, B/E Heavy Duty Gas Turbines, GE Power and Water

#### 4:30 **Pros and Cons of Renewable Development in the** Caribbean — Why Don't We Have More Projects Built in the Region?

- No single renewable solution fits all jurisdictions Regional RPS?
  - must tailor expectations to resource reality
  - must tailor expectations to grid reality
  - intermittent vs. firm capacity
  - · reactive power and other regulatory constraints
- Wind
  - an intermittent resource need for back-up firm generation when wind doesn't blow
  - · high quality wind data essential to project development
  - · land is key constraint, as is constructability
  - benefits from 15-20 year financing
  - generally the lowest LCOE
- Solar
  - reaching grid parity
  - · easily transportable, no need for heavy equipment
  - highly coincident with demand
  - storage is key to higher penetration and grid stability
  - footprint is an issue
- Hydro
  - long lead times as much as 4-8 years
  - benefits from longer tenor financing
  - competes with other potential hydrological uses
  - environmental/social concerns not insignificant
  - however it is high value baseload renewable
- Waste-to-Energy
  - not really renewable, but baseload generation
  - has merit for reducing waste, but emissions are a social concern
  - · challenged by cost, scale, and relative scarcity of proven technology
- Geothermal and hydrokinetic
  - · very site specific
- · high risk profile
- · Impact of gas on renewable development
- prospects of low gas prices are influencing short-term interest in renewables
- LNG/CNG plant has a smaller GHG impact than diesel/HFO

- · impact of thermal (gas, LNG, coal) baseload on energy metrics
- o potential vs. reality size counts, who is really delivering gas?

Robert Blenker, Vice President, Renewables and Chief Development Officer, WRB Enterprises, Inc.

- Caribbean Utilities Company, Ltd. Renewable RFP 5:00 CUC issued an RFP for 13MW of renewable energy projects in August 2011. Over 50 proposals were received, evaluated, and ranked. This presentation provides an update on the selection of proposals, vendors, technology, and overall project status.
  - Renewable energy targets for a Caribbean island system
  - · Feed-in tariffs vs. competitive bid process for renewable energy
  - Selection of viable technology suitable to the region
  - Enabling regulatory framework
  - · Structuring a non-firm renewable PPA for an island system

J. F. Richard Hew, President and Chief Executive Officer, Caribbean Utilities Company, Ltd.

5:30

6:30



### **Networking Cocktail Reception**



Hosted by:

Close of Day One

# DAY 2: Friday, January 25, 2013

7:45 Networking Breakfast

Hosted by:



8:15 Chair's Review of Day One Edmund Phillips, Business Development Manager, Wärtsilä Caribbean, Inc.

### **Progress on Renewable Projects**

#### Project Phoenix — Developing a Waste-to-Energy 8:30 **Plant in Haiti**



Learn about the hurdles and successes of developing a utility scale power project in the Caribbean through the example of International Electric Power's waste-to-energy facility, Project Phoenix.

- How to finance a power plant outside the United States
- Examine the political landscape and hurdles in foreign territories
- How to vet and determine the most effective renewable power generation solution for a region
- Discuss the necessary steps for power plant development, financing, construction, and generation from the developer's point of view

Peter Dailey, Chairman and Chief Executive Officer, International Electric Power LLC

#### Distributed Solar/Integrated Grid — Virgin Islands 9:00 **Water & Power Authority**



STUDY

Hear the results/findings of the VI Water & Power Authority's Solar RFP. Learn in detail the process used to select qualified responders, then further review proposals, and select the short list of bidders.

- Reason/purpose for the solar energy RFP
- · Solar RFP requirements
- · How VI WAPA determined the selection and pre-screening process
- · Updates/status

• Background

Hugo V. Hodge, Jr., Executive Director (Chief Executive Officer), Virgin Islands Water & Power Authority

#### **Progress on Geothermal Resource Development** 9:30 in Dominica



CASE

- Dominica's natural features and volcanic origin
- scientific investigations of the Roseau Valley in 2008
- favorable potential for power generation
- Exploratory geothermal well drilling project
  - project objectives
  - · well testing and monitoring results
  - · technical update
- Submarine electric cable interconnection
  - feasibility studies
- Production drilling and power generation
  - ∘ 10–15MW small plant
  - 100MW large-scale plant

Lucien Blackmoore, Permanent Secretary, Ministry of Public Works, Energy and Ports

#### 10:00 **Montserrat's Plans for Geothermal Development**



· Pre-exploration phase virtually completed

• Environment and social impact assessment undertaken • Exploratory drilling of two wells scheduled for Q1 2013

CASE

Ron Beardsley, Director, Infrastructure Department, Ministry of Communications, Works and Labour

10:30



### **Networking & Refreshment Break**

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### **Access to Capital**

### **Debt and Equity Financing — How It Is Changing**



11:00

These presentations provide an overview of the various sources of debt and equity financing for the Caribbean energy sector. Basel III, sovereign risk, and the previous banking crisis are all affecting the way financiers view financing for the energy PANEL DISCUSSION Sector. Where are we now? What can we expect in the future?

- Debt financing suppliers Advantages and limitations
  - · multilaterals: e.g. IFC, IDB, and CAF
  - export credit agencies: e.g. EDC, Eximbank, EKF, and Finnvera

- · development financial institutions: e.g. DEG, FMO
- · debt capital markets
- Capital constraints Banks must reduce leverage
  - bank needs shorter term, 7 years, vs. project needs, 15 years
  - more difficult for borrowers to get long-term financing
- · Commercial banks
  - Basel III liquidity coverage ratio, leverage ratio, and impact on export credits
  - deposits not all are considered equal
  - mini perm financial structures
  - tenor MLA/ECA divergence from commercial banks
- Framing of structured finance, project finance
- Equity requirements Higher debt service coverage ratios
- · Investors interested in scale, not high upfront costs
- Assumptions in the power projects financial model
- · Legal and regulatory environment
  - uncertainties changes of regulations, expropriation, not honoring contracts
  - observance of rule of law attracts investment
- PPA issues
  - off-taker/government support/creditworthiness
  - who's taking the risk? what happens if obligations aren't met?
- · Sovereign risk
  - · recent experience with Caribbean sovereign debt
  - European sovereign debt and its impact on export credits
- How to be effective at presenting and managing an application

Moderator: Vera A. Rechsteiner, Partner, Andrews Kurth LLP

Richard B. McCorkindale, Director, International Corporate & Commercial Banking, The Bank of Nova Scotia

Scott Swensen, Chairman, Conduit Capital Partners LLC

Gabriel Goldschmidt, Senior Manager, Infrastructure for Latin America and the Caribbean, International Finance Corporation

Uduak A. Essien, Senior Project Officer, Structured Finance Division, US Export-Import Bank

1:00 Close of Conference

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A limited number of rooms has been reserved for Platts 13th Annual Caribbean Energy participants at Atlantis at a rate of \$249/night + tax, single or double occupancy. The discounted rate will be honored until Wednesday, January 2, 2013 or until the group block is sold-out, whichever comes first. Reserve by calling 954-809-2100 (direct) or 888-877-7525 (toll-free in the US). Be sure to mention that you are attending *Platts 13th Annual Caribbean Energy* in order to receive the discounted rate.

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### **Substitution & Cancellation:**

Your registration may be **transferred** to a member of your organization up to 24 hours in advance of the conference. **Cancellations** must be received in writing on or before Thursday, January 17, 2013 in order to be refunded, less a \$195 administrative charge. No refunds will be made after this date. In case of conference cancellation, Platts liability is limited to refund of the conference registration fee only. Platts reserves the right to alter this program without prior notice.

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