



Main Tutorial

Thursday, November 6, 2008

Welcome by Summit Chair:

Daniel Sinaiko, Associate, CHADBOURNE & PARKE

Session I:

Solar Industry Basics

8:00-9:00am *Presentation:*

How the Solar Industry Works: Segments, Players, and Types of Deal Structures

- Structure of project relationships in the industry
 - Solar installers/contractors/integrators (small, medium, large)
 - Distributed generation (DG) developers
- Overview of the most common DG deal structures
 - Ownership
 - Solar PPA / Services Agreement
 - Facility Lease

Presenter:

Daniel Sinaiko, Associate, CHADBOURNE & PARKE

9:00-9:45

Presentation:

Solar Technology: What You Need to Know to Evaluate a Project or Deal

- Survey of primary PV suppliers and typical price structures, and sample vendor financing arrangements
- Comparison of efficiencies and total energy yield of various PV systems
- Economic impacts on projects with fixed mounting vs tracking
- Technologies coming over the horizon
- Monitoring system options and relative costs
- O&M Costs, best available data on system performance over time
- Balance-of-Systems and System Integration

Presenter:

Roy Phillips, *Vice President, Commercial Development*, REAL GOODS SOLAR, INC.

9:45-10:00 *Break*

10:00-10:30 *Presentation:*

PV Module Supply and Price Forecast

- Photovoltaic technology manufacturer capacity forecast to 2012 by technology
- Technology supply (TF vs Cz) forecast to 2012 (sales)
- Demand forecast by application, region and country
- Cumulative sales -- since 1974, ~90% of sales have been in the last three years -- can we continue to grow at this rate
- The relationship between incentives and industry growth
 - Will over capacity harm the PV industry or lead to lower prices and sustainable growth?

Presenter:

Paula Mints, *Principal Analyst, PV Services Program, Associate Director Energy Practice*, NAVIGANT CONSULTING

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10:30-11:00 *Presentation*

Integrating Solar with the Smart Grid, Storage and Net Zero Buildings

- Benefits of more complete integration with building energy systems; “the net zero building” of the future
- Economics of power storage with net-metered solar
- Survey of recent technology developments in storage
- The advent of micro-grids and energy portals
- Impact of Smart Grid technologies

Presenter:

TBA

11:00-11:35 *Presentation:*

Exploring Assembly Bill 811 (AB811): Mandate for the Creation of Municipal “Renewable Energy Financing Districts”

- Looking at the history, background of the new law.
- Early adaptors who have begun implementing the law (Palm Desert, Berkeley, Santa Monica, etc)
- Advantages of property tax based financing over more "traditional" financing and incentive programs.
- A roundup of expectations, implications from a new and huge pool of easy (but highly secured) financing becoming available for distributed power generation and energy conservation.

Presenter:

James F. Finlay, *Vice President, Appraisal Manager*, WELLS FARGO RETECHS-LA

11:35-1:00 Group Luncheon

Session II:

Emerging Ownership and Investment Models for Commercial and Residential Solar

1:00-1:40 *Presentation:*

Introduction to PPA and Status and Outlook for the PPA Business Model

- Outlines the key terms of Solar PPAs
- Highlights PPA issues unique to solar transactions
- Discusses risk allocation among participants in solar transactions
- Coordinating PPA terms with other project development risks

Presenter:

Stephen Krebs, *Partner*, BAKER BOTTS LLP

1:40-2:40 *Panel Discussion:*

The Pros and Cons of Commercial PPA (Energy Servicing) vs Leasing and When Each Is Appropriate

- Components of structures of PPAs and Equipment Leases
- Legal and contractual issues in PPA and Leases
 - Purchase options
 - Insurance coverage

- Investor acquisition timing
- Performance and Tax Risk

Panelist:

Alex Kramarchuk, *President*, EYEON ENERGY

Scott Kuhn, *Principal*, ENERGY CAPITAL INVESTMENTS LLC

Preston Roper, *Executive Vice President, Corporate Development & Operations*, TIOGA ENERGY

Gregory Rosen, *Vice President Project Finance*, HELIO MU

2:40-3:00 *Break*

3:00-4:00 *Presentation:*

The New Residential PPA Model

- Differences between selling bulk systems to large home-builders versus individual residents
- Credit Issues
- Differences between residential vs. commercial PPA structures
- Impact of the San Francisco Solar Incentive
- Potential impact of a federally mandated Feed-In Tariff to scale up residential PPA solar

Presenter:

David Arfin, *Vice President Customer Finance*, SOLARCITY, INC

4:00-5:00 *Panel Discussion:*

Role of Debt Financing

- Project Leasing
- PPA Projects
- Enterprise Finance

Panelist:

Jimmy C. Chuang, *Senior Associate*, MMA RENEWABLE VENTURES

Christopher Lord, *Senior Vice President*, HANNON ARMSTRONG CAPITAL LLC

Matthew Meares, *Structured Finance – Energy*, HSH NORDBANK

John Ravis, *Vice President*, TD PROJECT FINANCE

Friday, November 7, 2008

Session III:

The Mechanics of Developing a Profitable Solar Project

8:00-8:45

Presentation:

Utilizing State and Local Incentives and RECs

- Basic requirements/pitfalls of the Solar Investment Tax Credit
- Back-up strategies in case the Tax Credit is not renewed for 2009
- State incentives for solar energy development
- Solar renewable energy credits (RECs)
- California Solar Initiative, the San Francisco Solar Incentive as a possible model for other municipalities

Presenter:

Barnaby Olson, *VP of Development*, HELIOS ENERGY

8:45-9:30

Presentation:

Model Solar Project Pro Formas

The presentation will introduce attendees to how solar power projects work as businesses and produce cash. It will draw on results from sample project *pro formas*, with the goal of illustrating the key economic factors, given a range of financing structures.

Presenter:

Edmond Horsey, *Principal*, ENSELLE, LLC

9:30-9:45

Break

9:45-10:45

Presentation:

Negotiating Project Documents

- How deals are structured
- Regulatory Issues
- Typical DG Project documents
 - For the host
 - For project finance
- What risks are addressed in which type of deal and how they are allocated

- The key contract terms and conditions to be negotiated
- Development and financing challenges, decisions and solutions

Presenter:

Morten Lund, *Partner*, FOLEY & LARDNER LLP

Session IV: Real World Case Studies

10:45-11:15 *Case Study 1:*

enXco has developed a 1MW roof mount project in New Jersey. The project is at substantial completion by November. Mr. Solomon will review unique challenges of working with the specific needs of the host customer, challenges of not disturbing the operations of the building owner, and meeting the end of ITC timeline.

Presenter:

Peter Solomon, *Senior Manager, Distributed Solar*, ENXCO

11:15-11:45 *Case-Study 2:*

Fresno Yosemite International Airport

- Nation's largest airport solar system
- Negotiating the 20-year term PPA
- 2.40MW ground single-axis Tracker System
- The Fresno Airport financing was part of a fund/portfolio which includes 14 other distributed solar energy assets. This provides the Fund investors with risk diversification and economies of scale enabling this project to happen.

Presenter:

Alexander v. Welczeck, *President & CEO*,
SOLAR POWER PARTNERS

11:45-12:15 *Case Study 3:*

Design and Installation of a Large-scale Tracking PV System, Or, If It Was Easy Eveyone Would Do It

This case study will review all the barriers and hurdles found in a large scale PV construction project, from finance to foundations to finish. As the economics in California get harder with the reduced rebate, understanding how to optimize each part of the process becomes more important.

- Project was taken over with less than 6 months before end date, and designs still needed to be undertaken prior to permitting.
- Site constraints made the system take up substantially more than ideal area, and tradeoffs were made between schedule, price, and land area.
- groSolar had no physical presence in the area prior to starting design.

Presenter:
Jeffery D. Wolfe, PE, CEO, GROSOLAR

12:15 *Tutorial Adjourns*