The Florida Senate

COMMITTEE MEETING EXPANDED AGENDA

COMMUNICATIONS, ENERGY, AND PUBLIC UTILITIES
Senator Grimsley, Chair
Senator Hukill, Vice Chair

MEETING DATE: Tuesday, February 9, 2016
TIME: 4:00—6:00 p.m.
PLACE: 301 Senate Office Building

MEMBERS: Senator Grimsley, Chair; Senator Hukill, Vice Chair; Senators Abruzzo, Bradley, Dean, Evers, Garcia, Gibson, Hutson, and Sachs

TAB	BILL NO. and INTRODUCER	BILL DESCRIPTION and SENATE COMMITTEE ACTIONS	COMMITTEE ACTION
	Presentations on Solar Technologies by:		
	Heather O'Neill, Senior Vice President, Strategic Partnerships, Advanced Energy Economy		Presented
	Colin Meehan, Director, Regulatory and Public Affairs, First Solar		Presented
	William Lyon, Senior Vice President, SunConnect		Presented
	Other Related Meeting Documents		

ADVANCED ENERGY IN FLORIDA

Heather O'Neill
Senior Vice President, Strategic Partnerships
Advanced Energy Economy

Advanced Energy Economy

Building a prosperous world that runs on secure, clean, and affordable energy …

by transforming government policy to enable the rapid growth of advanced energy companies

AEE Members


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we are the energy


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[e] enphase
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DOOSAN
EDF renewable energy
ENERGYSAVVY
ENERPARC
FIRSTFUEL
genZe by Mahindra
GoodCents
HANNON ARMSTRONG
HARVEST
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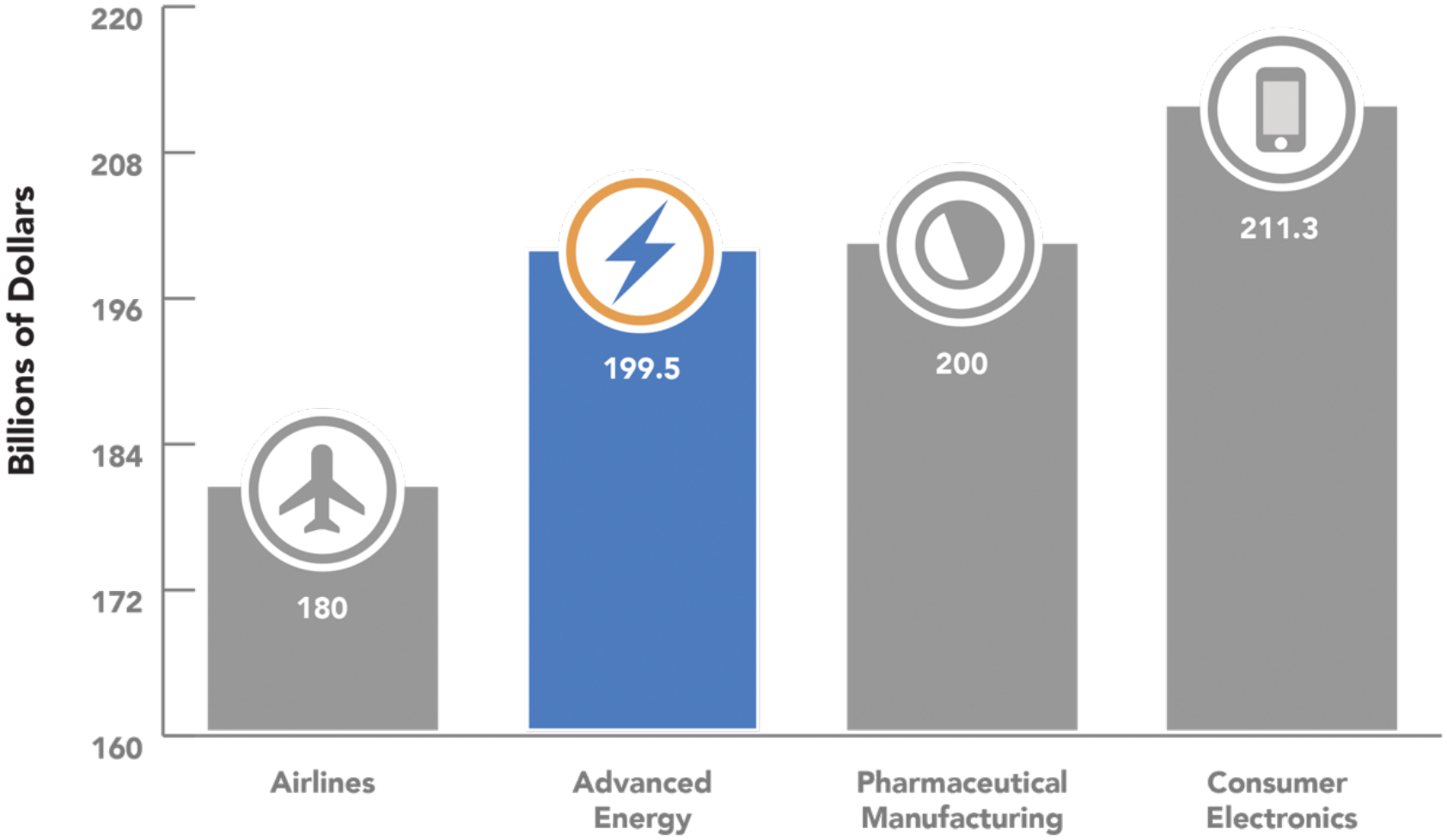
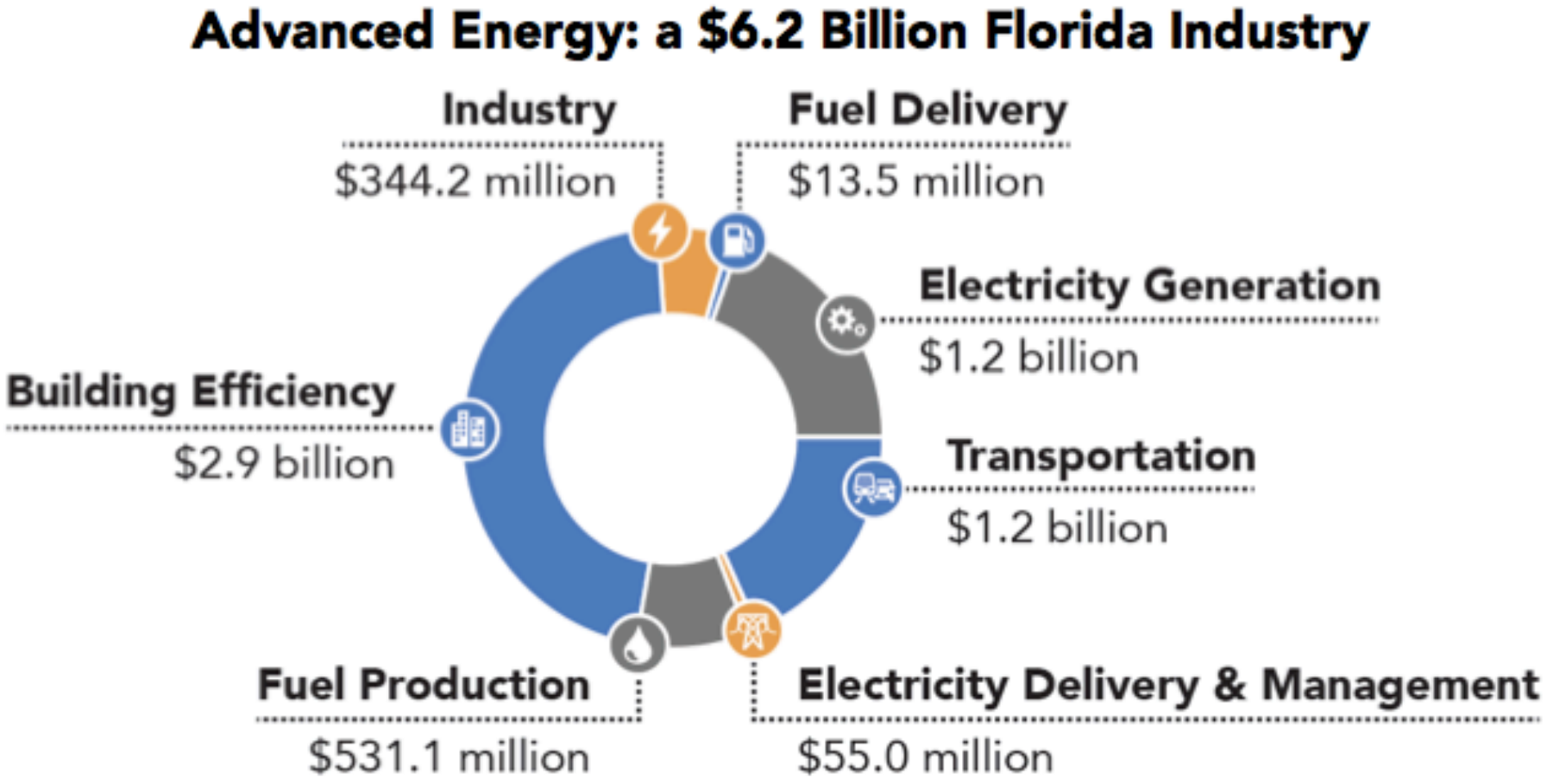
Invenergy
Itron
lime
MINTZ LEVIN
NATEL ENERGY
NAVIGANT
nest
nextility
next step living
ONEROOF ENERGY
OwnEnergy
Pattern
PHILIPS
Regatta Solutions
RENOVATEAMERICA
Retroficiency
res
SERVATO
SIEMENS
Silver Spring NETWORKS
SIMPLE energy
Sivapower
SMARTWATT Energy
SMART WIRES
SolarCity
SOUTHERN CURRENT
spruce
stem
SULLIVAN & WORCESTER
SunConnect
SUNGEVITY
SUNVERGE
Teltech
TESLA
WaterSmart

Advanced Energy: a Major U.S. Industry



2014 Revenue (U.S.). src: First Research, Navigant Research, Consumer Electronics Assn.

Florida Advanced Energy – A $6.2 Billion Industry TODAY!



Why Florida? – The Market Opportunity

- 2nd for retail electricity sales in residential sector
- 3rd most populous state
- 4th largest economy in the U.S.
- 5th largest projected population growth rate between 2010-2014
- Annual household electricity expenditure = 40% higher than U.S average ($1,900)

THANK YOU

Heather O'Neill
Senior Vice President, Strategic Partnerships
honeill@aee.net

For questions about AEE's engagement in Florida, please contact:

Trish Fields
Vice President, State Partnerships & Strategic Engagement,
tfields@aee.net

Heather O'Neill

Senior Vice President, Strategic Partnerships

Heather O'Neill is responsible for deepening and broadening AEE's relationships with funders, foundations, and building partnerships with allied organizations that advance industry growth. Heather oversees both funding partnerships with foundations and mission-aligned individuals as well as organizational partnerships, including AEE’s work with its state partner coalition and AEE engagement in states where AEE does not have a partner organization. In total, AEE is currently engaged, either directly or with its state partners, in 26 states, including Florida.

Before joining AEE, Heather was a program officer at the Robertson Foundation, leading the foundation's energy and environment efforts. Previously, she was Director, Public Affairs in the pharmaceutical industry.

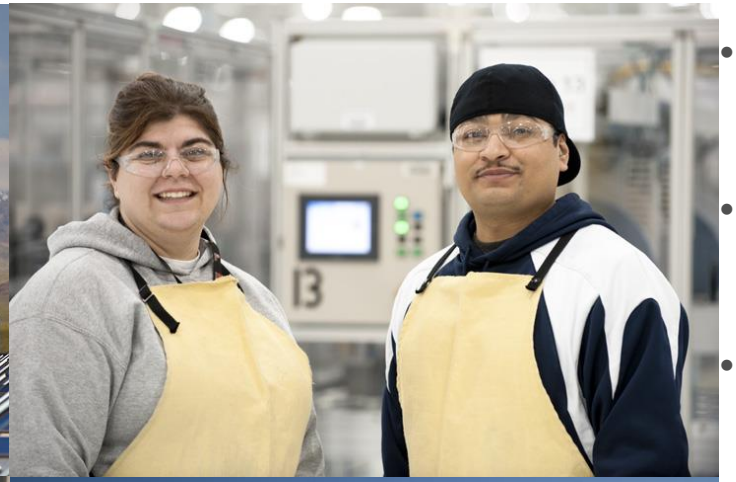
Heather graduated from Harvard College with a B.A. in Government and returned to Harvard's Kennedy School of Government to receive a Master in Public Policy. Heather is a native Floridian, and now lives in California with her husband and two children.

First Solar

First Solar - **Cost-Competitive Utility Scale Solar**

Colin Meehan – Dir. Regulatory and Public Affairs

First Solar – Utility Scale PV At Work



- Advanced PV Module Manufacturing
- Grid Integration & Plant Control Systems
- Engineering & Plant Optimization
- Project Finance
- Operations & Maintenance
- Procurement & Construction
- Balance of System Technologies

Utility Scale PV Technology & Capabilities

Critical for Managing Grid Reliability & Stability

Regulates power factor and plant voltage/VAR controls
Reactive Power Capability

Curtails active power when necessary
Active Power Regulation

Limits the ramp rate from variations in irradiance
Ramp Rate Control

Prevents faults and other disturbances
Ride Through Capability

Monitors, tracks, and reacts to changes in grid frequency
Frequency Droop Control

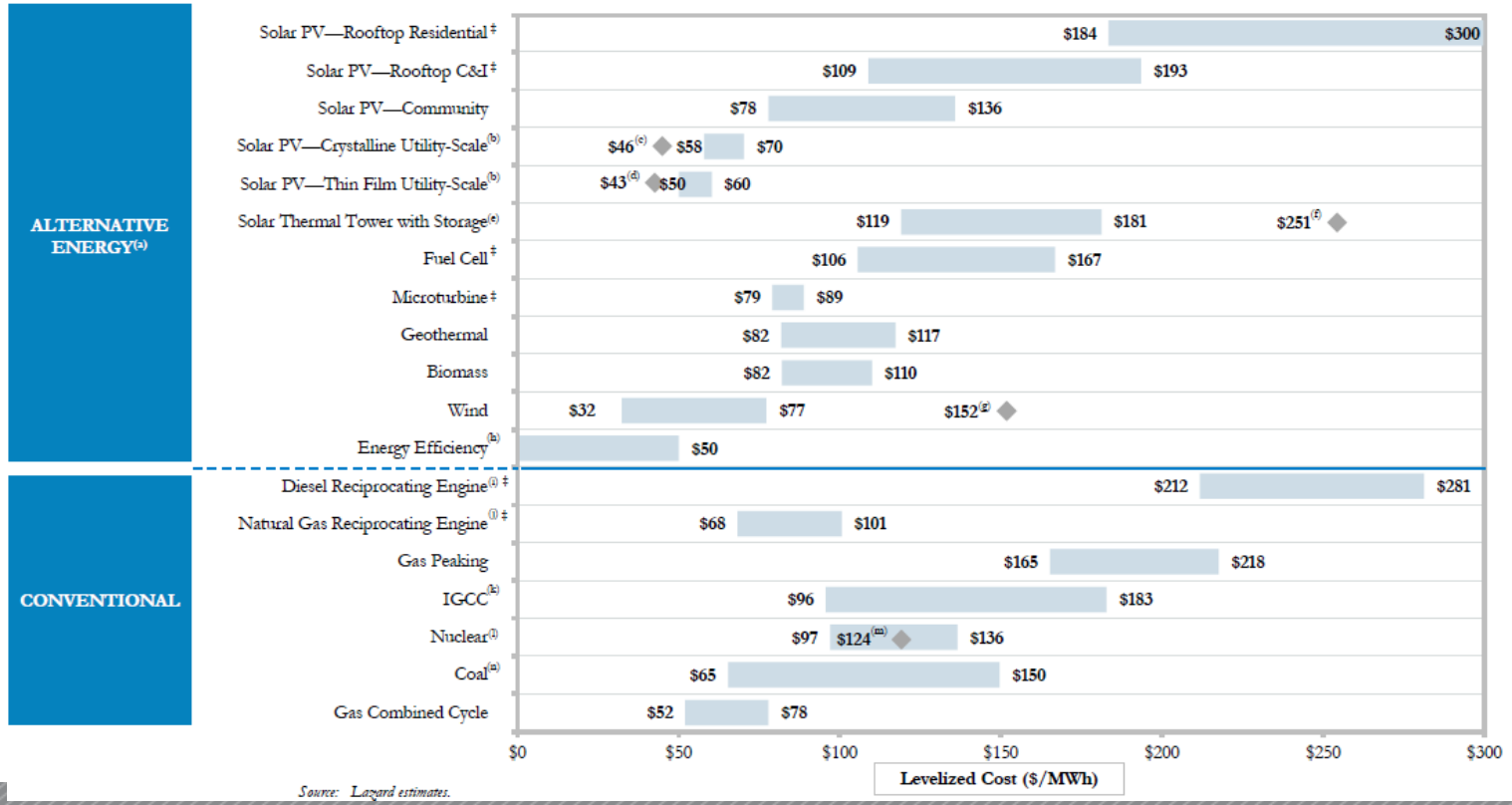
Utility Scale PV Projects – Cost Competitive, Flexible, and Reliable

- Sarnia PV Power Plant
  - 80 MW
- Blue Wing Solar
  - 14 MW
- Copper Mountain 1
  - 48 MW
- Mount St. Mary's Solar Farm
  - 17.4 MW

Utility Scale Solar is the Most Cost-Competitive Peaking Renewable Resources

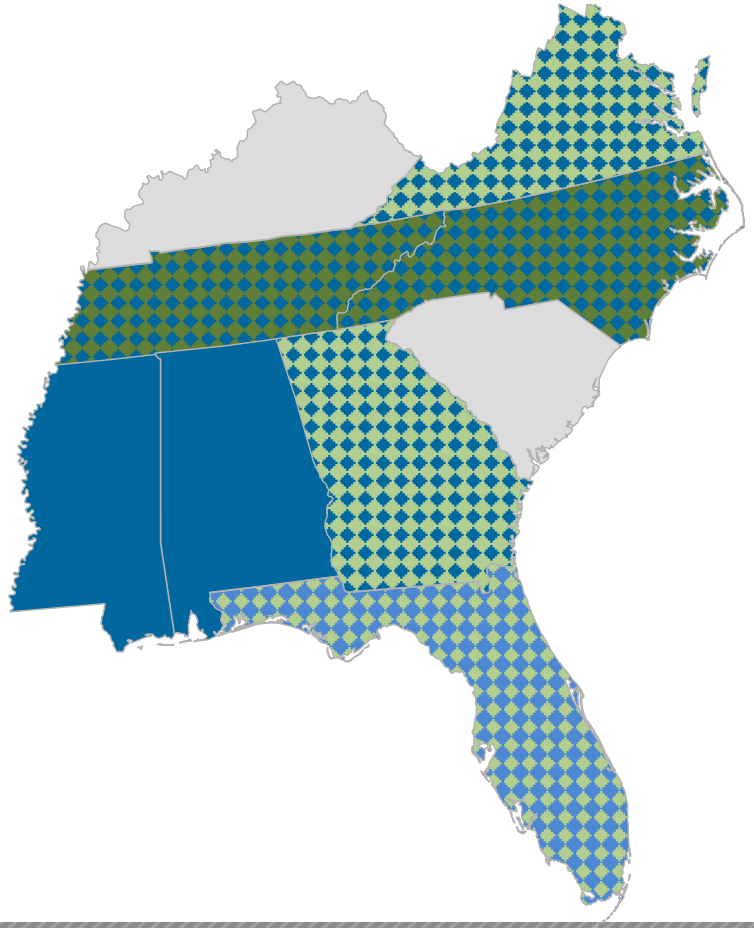
Unsubsidized Levelized Cost of Energy Comparison

Certain Alternative Energy generation technologies are cost-competitive with conventional generation technologies under some scenarios; such observation does not take into account potential social and environmental externalities (e.g., social costs of distributed generation, environmental consequences of certain conventional generation technologies, etc.) or reliability-related considerations (e.g., transmission and back-up generation costs associated with certain Alternative Energy technologies)



Source: Lazard estimates.

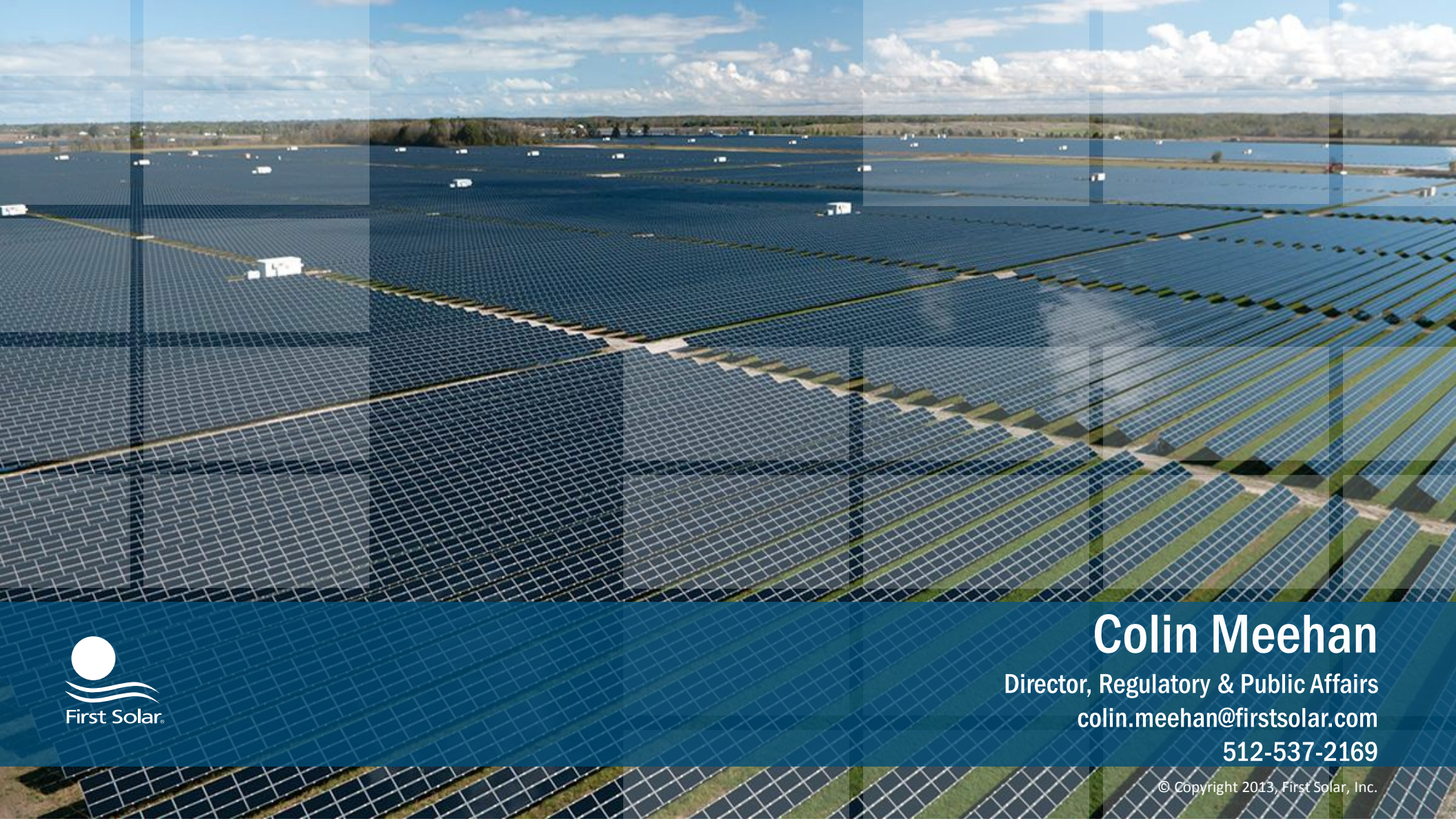
Key Regional Enable Utility Scale PV Growth



- Utility scale PV procurement
- Considering utility scale PV procurement
- Tax abatements, credits, or exemptions
- Considering tax abatements, credits, or exemptions

Utility Scale PV Flourishes with Sunshine, Business Certainty, and Low Regulations

- The Sunshine State has a built in advantage with a tremendous solar resource
- Supporting procurement of cost-competitive utility scale PV creates a stable business environment to grow projects and jobs
- Maintaining a low tax environment for major projects will help Florida compete against other states in the region



First Solar

Colin Meehan

Director, Regulatory & Public Affairs

colin.meehan@firstsolar.com

512-537-2169

First Solar

Colin Meehan

Director of Regulatory and Public Affairs

Colin Meehan is Director of Regulatory and Public Affairs at First Solar, with responsibility over Texas and the eastern U.S. Most recently, Mr. Meehan led Comverge, Inc.'s demand response regulatory and market strategy in Texas and California. Mr. Meehan currently serves on the Technical Advisory Committee for the Electric Reliability Council of Texas. Prior experience includes serving as Environmental Defense Fund's Policy Manager for U.S. Climate and Energy; Wholesale Settlement Analyst for the Lower Colorado River Authority focusing on ERCOT nodal market implementation; and as a wholesale power markets analyst for ICF International where he developed analyses for utility investment decisions in renewable energy and environmental controls using IPM model.

Mr. Meehan earned a Bachelor of Arts degree in Math and Economics from the University of Rochester and a Master of Science degree in Energy and Earth Resources from the University of Texas at Austin.

Rooftop Solar

February 9, 2016

SunConnect®

Introduction

- Bill Lyon, Senior Vice President of SunConnect
  - Former Vice President of Energy Management for Macy's
- SunConnect– Overview of business
  - Solar Developer with headquarters in Naples, Florida
  - SunConnect specializes in uniquely tailored solar energy solutions for large-scale commercial, industrial, and retail organizations
  - 6 full-time employees working directly for headquarters; plus sales and support in Atlanta and Pittsburgh
  - Solar Projects would generate Florida jobs in the following fields:
    - Engineers – Civil, Mechanical, Electrical, Structural
    - Finance Organizations and analysts
    - Roofing Distributors and Labor Force
    - Electrical Distributors and Labor Force
    - Carpenters/Laborers
    - Sales and Administration

SunConnect®

Rooftop Solar 101

- **Technology**
  - PV technology has existed for over 40 years.
  - Standard Photovoltaic Panels
  - Continuous improvement in efficiency and cost
  - Standard, fixed tilt, rooftop racking
- **Project Types**
  - **Behind the Meter**
    - **Standard / Net Metering –** The customer uses energy produced by the system. Any unused energy is sold back into the grid at the net metering rate.
    - **Virtual Net Metering (VNM)** – A building or landowner agrees to be a site host for a system and receives rent. The system is owned by a 3rd Party. The 3rd Party sells Virtual Net Metering Credits that come from the utility to customers for a fixed period of time at a fixed rate.
    - **In Front of the Meter**
      - Not typical for rooftop projects
      - Energy produced by the system is sold directly back to the utility.
      - Rooftop Virtual Net Metering is an exception

SunConnect®

Macy's

- 21 projects, totaling approximately 11MW across four states
- New Jersey, Massachusetts, Connecticut, New York
- Project Type: Behind the meter, with standard net metering
- Financial Structure: PPA, 3rd Party Ownership
- Macy's buys the energy from the owner at a fixed price/kWh; no capital outlay

SunConnect®

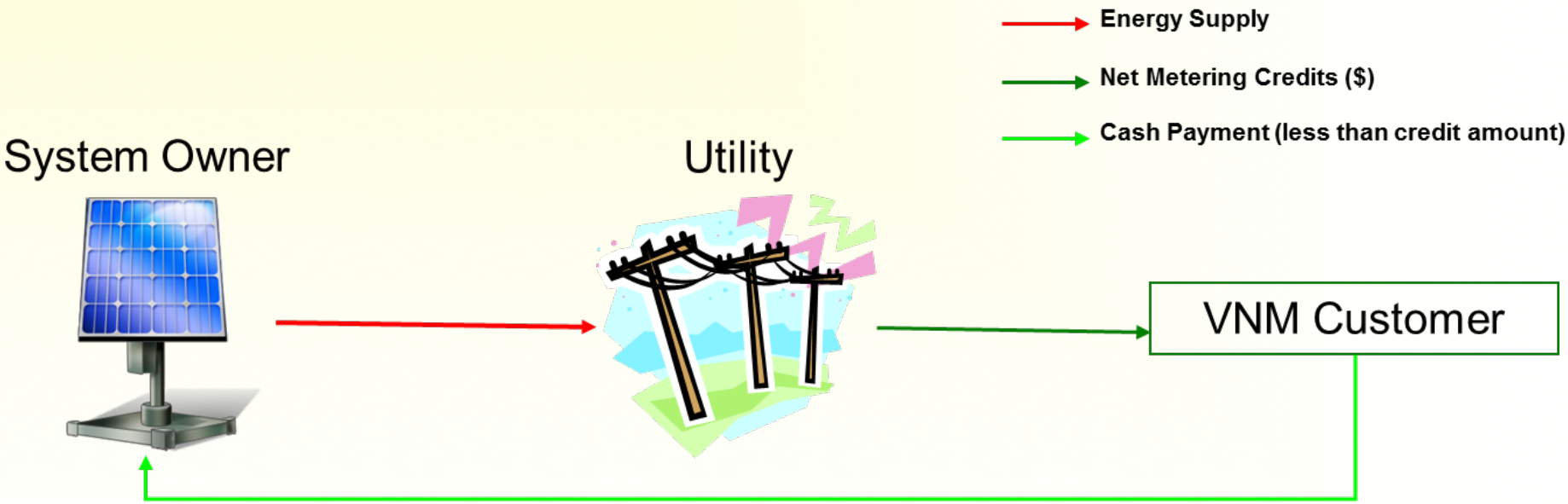
Massachusetts – Virtual Net Metering

- Rooftop virtual net metering, ground systems 2-5MW, and Community Shared Solar
- 30 different projects to serve the State of Massachusetts; all in varying stages of development
- Projects located across the state
- Financial Structure: Virtual Net Metering, 3rd Party Ownership
- Savings to State's energy bill: 12-15%

SunConnect®

Virtual Net Metering

- **The ability to sell power back to the grid**
  - Net Metering Rates – Do these rates reflect the true value of solar?
  - Virtual Net Metering – Do the regulations allow 3rd Party System Owners to establish Virtual Net Metering Agreements with offsite offtaker(s). Facilitates Community Solar: makes solar accessible to the low income sector, renters, and those unable to build a system on their property (majority of people).



SunConnect®

Economic Factors of a Rooftop Solar Project

- **Financial Models used in solar development**
  - Direct Ownership – Customer consumes power generated from a system located on their rooftop/property. Few owners can or will use this model.
  - Third Party Ownership
    - *Operating Lease* - Customer enters into a lease agreement with a 3rd party (financial institution). Customer consumes the power generated from the system, and owns applicable SRECs. Lessor retains ownership.
    - *Power Purchase Agreement (PPA)* - Customer agrees to purchase power generated by the system for a fixed period from a 3rd party owner. No cash outlay is needed from customer. Currently, this is the most popular structure for our large rooftop projects.

- **Other drivers**
  - Interconnection cost and process
  - Net metering rules and value
  - Permitting process
  - Tax Treatment

SunConnect®

Attractive Solar Policy for Rooftop Developers

We look for the following policies when deciding to invest in new states.

- Third Party Ownership
- Enforced Renewable Portfolio Standard (RPS)
- Net Metering and Virtual Net Metering
- Solar/Renewable Energy Program
  - Market based incentives – SRECs/RECs
  - Long-term, performance based programs that encourage growth
    - SREC Market
    - Declining block incentives

SunConnect®

Where is Solar Working for SunConnect?

Policy	Florida	Massachusetts	New Jersey	Connecticut	New York
3rd Party Ownership		X	X	X	X
RPS		X	X	X	X
Virtual Net Metering		X		X	X
Net Metering	X	X	X	X	X
Solar Program		X	X	X	X

SunConnect®

William Lyon
Senior Vice President
SunConnect

Prior to joining SunConnect, Mr. Lyon had over 30 years with Macy's, holding positions of increasing responsibility as a Senior Executive in the areas of Engineering, Planning & Design, Construction, Project Management, Property Development, Facilities, Energy Management, and Sustainability. In his role at Macy's as Vice President of Store Development and Facilities, he has developed, constructed, and maintained many department stores. In the last 17 years as Vice President of Energy Management, Mr. Lyon has reduced Macy's energy consumption by over 40%. Over the last 8 years, Mr. Lyon has developed over 70 renewable energy projects, comprised of solar and fuel cells, in Arizona, California, Connecticut, Massachusetts, New Jersey, and New York.

Because of his tenure at Macy's, Mr. Lyon brings a unique client perspective to our team. He understands the client's perspective, which makes him a very unique and valuable member of SunConnect. Mr. Lyon currently leads the development function at SunConnect, which includes land acquisition, construction, financing, as well as the regulatory aspects of projects.

THE FLORIDA SENATE

Tallahassee, Florida 32399-1100

COMMITTEES:
Finance and Tax, *Vice Chair*
Appropriations Subcommittee on Health and Human Services
Communications, Energy, and Public Utilities
Community Affairs
Fiscal Policy
Regulated Industries

JOINT COMMITTEE:
Joint Legislative Auditing Committee, *Alternating Chair*

SENATOR JOSEPH ABRUZZO
Minority Whip
25th District

February 10th, 2016

The Honorable Denise Grimsley
306 Senate Office Building
404 S. Monroe Street
Tallahassee, FL 32399

Dear Chairwoman Grimsley:

Please accept this letter as a formal request to excuse myself from the Communications, Energy, and Public Utilities committee meeting held yesterday, February 9th, 2016. Unfortunately, due to a legislative matter and bill hearing in the Judiciary committee, I was unable to attend.

If I can provide any additional information for my excusal, please don't hesitate to contact me. Thank you in advance for your consideration.

Sincerely,

Joseph Abruzzo

CC: Diana Caldwell, *Staff Director*

REPLY TO:
❒ 12300 Forest Hill Boulevard, Suite 200, Wellington, Florida 33414-5785 (561) 791-4774 FAX: (888) 284-6495
❒ 110 Dr. Martin Luther King, Jr. Boulevard, Belle Glade, Florida 33430-3900 (561) 829-1410
❒ 222 Senate Office Building, 404 South Monroe Street, Tallahassee, Florida 32399-1100 (850) 487-5025

Senate's Website: *www.flsenate.gov*

Please reply to:

☐ **District Office:**

1490 West 68 Street
Suite # 201
Hialeah, FL. 33014
Phone# (305) 364-3100

The Florida Senate

State Senator René García
38th District

February 9, 2016

The Honorable Denise Grimsley
Chair, Committee on Communications, Energy and Public Utilities
337 Knott Building
404 S. Monroe Street
Tallahassee, FL 32399-1100

Dear Senator Grimsley:

Please excuse my absence from the Committee on Communications, Energy and Public Utilities on February 9, as I had an urgent matter to attend to during the time the committee was scheduled.

Sincerely,

State Senator René García
District 38
RG:AD

CC: Diana Caldwell, Kim Bonn

CourtSmart Tag Report

Room: SB 301 **Case No.:** **Type:**
Caption: Senate Communications, Energy, and Public Utilities Committee **Judge:**

Started: 2/9/2016 4:03:04 PM
Ends: 2/9/2016 4:29:54 PM Length: 00:26:51

4:03:05 PM	Meeting called to order
4:03:08 PM	Roll call
4:03:21 PM	Quorum present
4:03:52 PM	Heather O'Neill, Senior VP, Strategic Partnerships, Advanced Energy Economy
4:09:29 PM	William Lyon, Senior VP, SunConnect
4:17:42 PM	Colin Meehan, Director, Regulatory and Public Affairs, First Solar
4:23:44 PM	Senator Evers with question
4:24:20 PM	Senator Evers with question for William Lyons
4:24:24 PM	William Lyons with response
4:24:54 PM	Senator Evers with follow-up
4:25:09 PM	William Lyon with response
4:26:13 PM	Senator Evers with comments
4:29:49 PM	Meeting adjourned