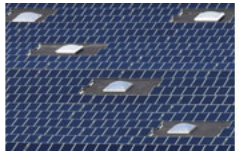
Brown to Green Conference

December 10-11, 2008 – Santa Fe, NM






First Solar

Contents

- Introduction
- Technology
- PV Power Plants
- Siting Strategy

First Solar Mission

To create **enduring value** by enabling a world powered by **clean, affordable solar electricity**

A2

First Solar Overview

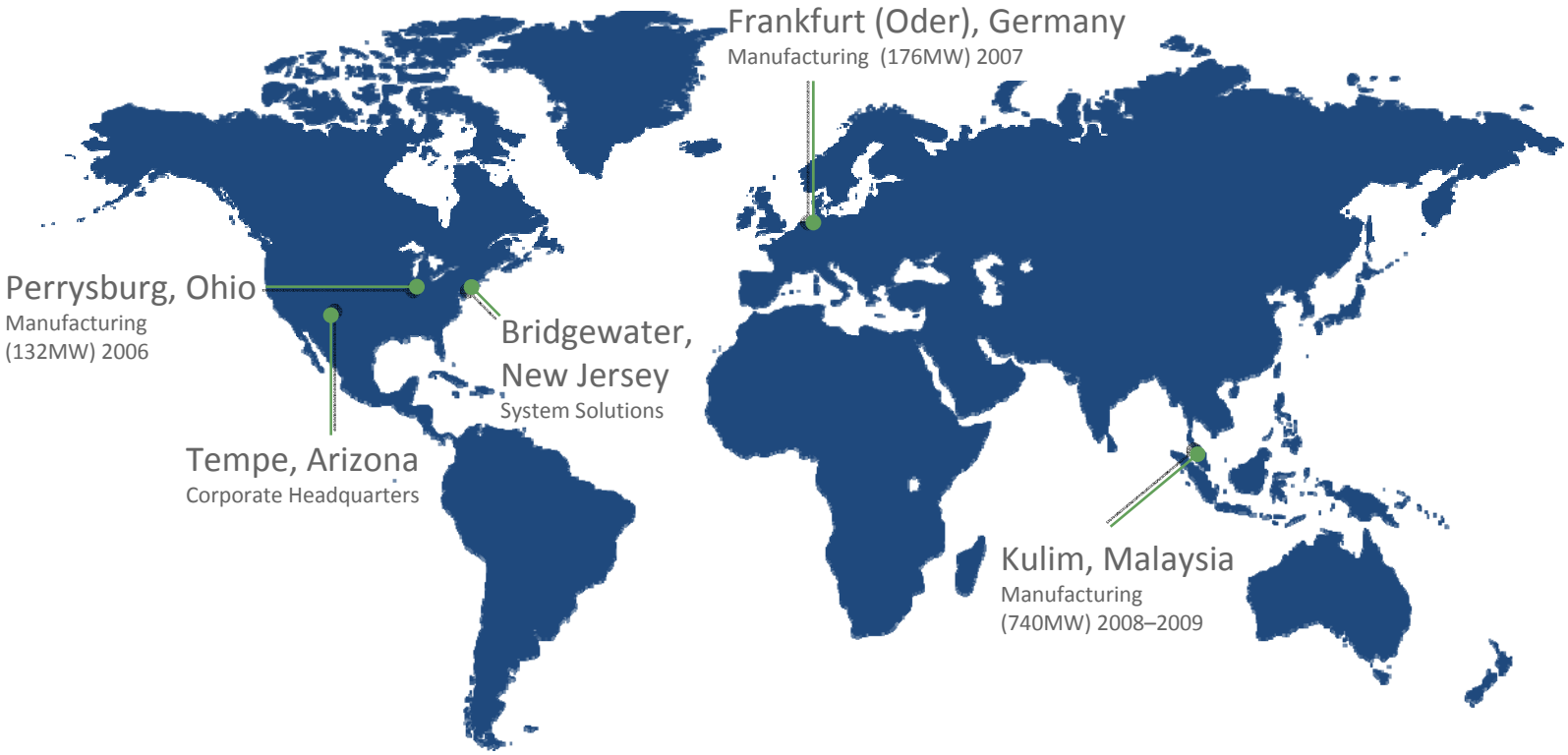
- World's largest thin film solar module manufacturer, 5th largest for all solar module technologies
- A market leader in utility scale commercial and industrial PV systems
- Reaching >1 Giga Watt (GW) of annual manufacturing capacity by end of 2009
- NASDAQ (FSLR) Market Capitalization of ~$10B
- World's lowest cost solar module manufacturer
  - $1.23/W (Full Year 2007)
  - $1.14/W (Third Quarter 2008)
  - About half the manufacturing cost of crystalline silicon

Slide 4

A2 newer slide on power, more up to date

Author, 12/4/2008

First Solar's Presence



Environmental Responsibility

First Solar's Environmental Plan

1
Convert mining byproducts and waste to clean, renewable energy

2
Produce, use and renew solar modules in a perpetual, environmentally safe life cycle

3
Reduce toxic emissions by substituting solar energy for fossil fuels

Environmental Responsibility

Collection & Recycling Program

Module Collection

- Anyone in possession of a First Solar module can participate in the program and request that Modules be taken back at any time
- Modules are labeled with web site and telephone contact information
- First Solar manages the logistics of taking back Modules and provides the packaging and transportation of Modules to the recycling center

Module Recycling

- Modules undergo treatment through schemes that comply with local regulations regarding health, safety, and waste management
- First Solar finances the cost of the program by pre-funding the expected costs with an international insurance company
- Results of the program are audited for continuous improvement



Technology

Superior Technology

Breakthrough Thin Film Process Technology

Glass In → 2.5 Hours → Module Out

- 99% reduction in high-cost semiconductor material
- Fully integrated, continuous process vs. batch processing
- Large (2'x4') substrate vs. 6" wafers
- No shortages of semiconductor material

Conventional Crystalline Silicon Batch Technology

Polysilicon | Ingot | Wafer | Solar Cell | Solar Modules

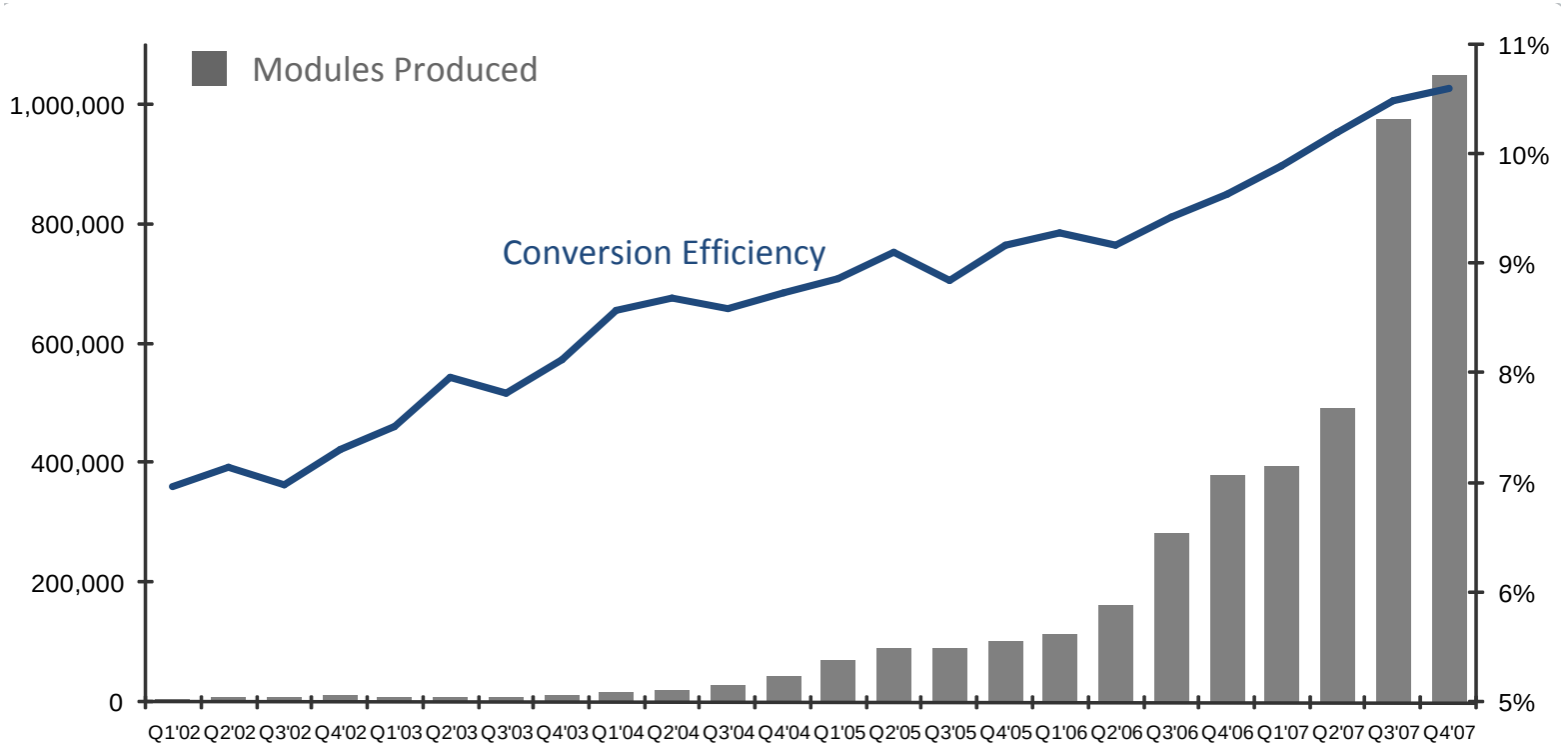
Proven Technology

First Solar's Validated Performance

- Over 3.4 GW / $6 billion currently contracted through 2012 with leading developers of large scale PV projects
- Extensive module testing and validation before commercial production
- Durable and recyclable frameless glass-glass laminate
- Certified for reliability and safety according to IEC 61646 and SK II @ 1000V
  - Manufacturing certified to ISO9001: 2000 and ISO 9001 quality and ISO14001: 2004 environmental standards
- 25 year module power output warranty
- Pre-financed collection & recycling program
- Minimal O&M expenses – no moving parts, fuel or water requirements

Record of Improvement

Proven Record of Increasing Module Conversion Efficiencies





Siting Strategy

Market Strategy

Target Applications

- Large Ground Mounted Systems
  - Typically Multi-MW

10 MW El Dorado, NV
Constructed for Sempra Generation

- Commercial Roof Mounted Systems
  - Typically 30kW to 2MW

1.4 MW Gescher, Germany
Project Developer: Colexon

US Project Development Focus

Ground Based PV Power Plant

- Driven steel guardrail posts
  - Steel guardrail posts driven 5' – 8' depth, 10 foot spacing
  - No concrete and no soil disturbance

- Support structure
  - Tilt bracket
  - Horizontal strut (3-1/4" unistrut)
  - Vertical module rails (2"x1" steel channel)
  - Aluminum mounting clips (qty. 4 per module)
  - Corrosion resistant hardware

A1

Ground Based PV Power Plant

Design Overview

- Fixed support system
  - 30 degree tilt angle with due south orientation is typical
    - Optimize for maximum annual kwh, or
    - Can optimize for targeted seasonal and/or Time of Delivery production
- Land usage is approximately 6.5-7.0 acres per MW AC (~5 acres per MW DC)
- 1 MW AC power blocks containing:
  - Approximately 16,000 modules
  - DC cabling and combiner boxes (1000 volt system)
  - PCS (power conversion station)
    - Inverter (enclosed in shelter)
    - Step-up transformer
- AC distribution system (33kV – 115 kV typical)

Slide 15

A1 ....Utility Scale PV.....

Author, 12/4/2008

FSE Distributed Central Solar Plant Concept (Central PV)

Central Solar CSP

125-300 MW

- High cost platform
- High water usage in desert locations
- Dry cooling reduces peak performance, lowers value
- Very large site
- Remote locations
- Requires high voltage transmission expansions
- Long development cycle

First Solar "Central PV"

Typically 25 – 50 MW

- The low cost solar platform
- Clear cost reduction path
- No water usage
- Modular and flexible
- Smaller sites required
- Leveraging existing transmission network
- Fast development cycles
- "Utility scale"

Dist. Gen. DPV

3 Kw – 2 MW

- Very high cost platform
  - Silicon modules expensive
  - No scale advantage
  - High soft costs
  - High cost to monitor/control
  - High cost to maintain
- Modular
- Urban solution

Representative Projects

El Dorado Energy

- 10 MW AC ground based PV power plant located in Boulder City, NV
- Co-located with existing combined cycle natural gas plant
- Started construction in July 2008; expected completion in December 2008

Representative Projects

- Under construction
  - 38 MW Installed

40 MW Brandis, Germany | Project Developer: juwi



Thank You

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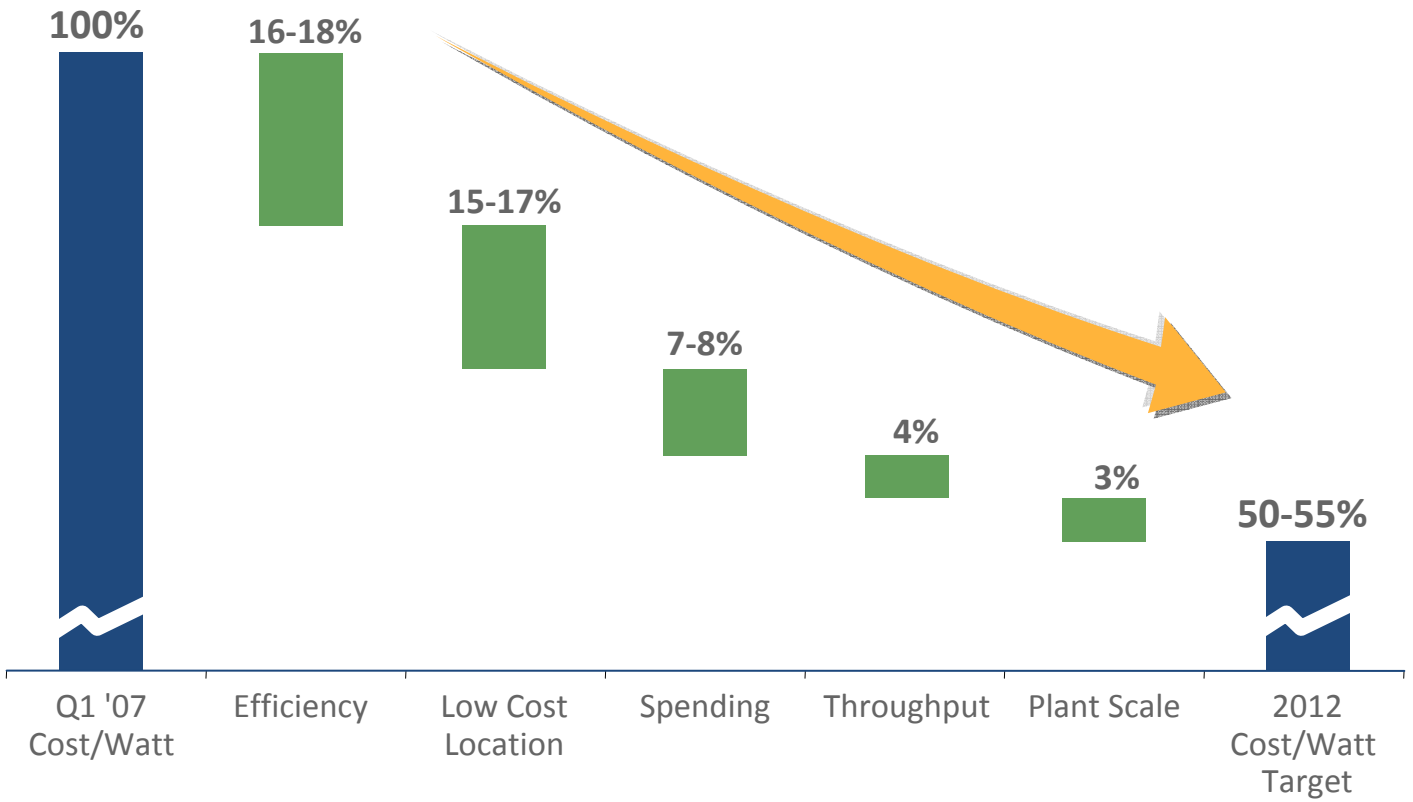
Appendix – Support Slides

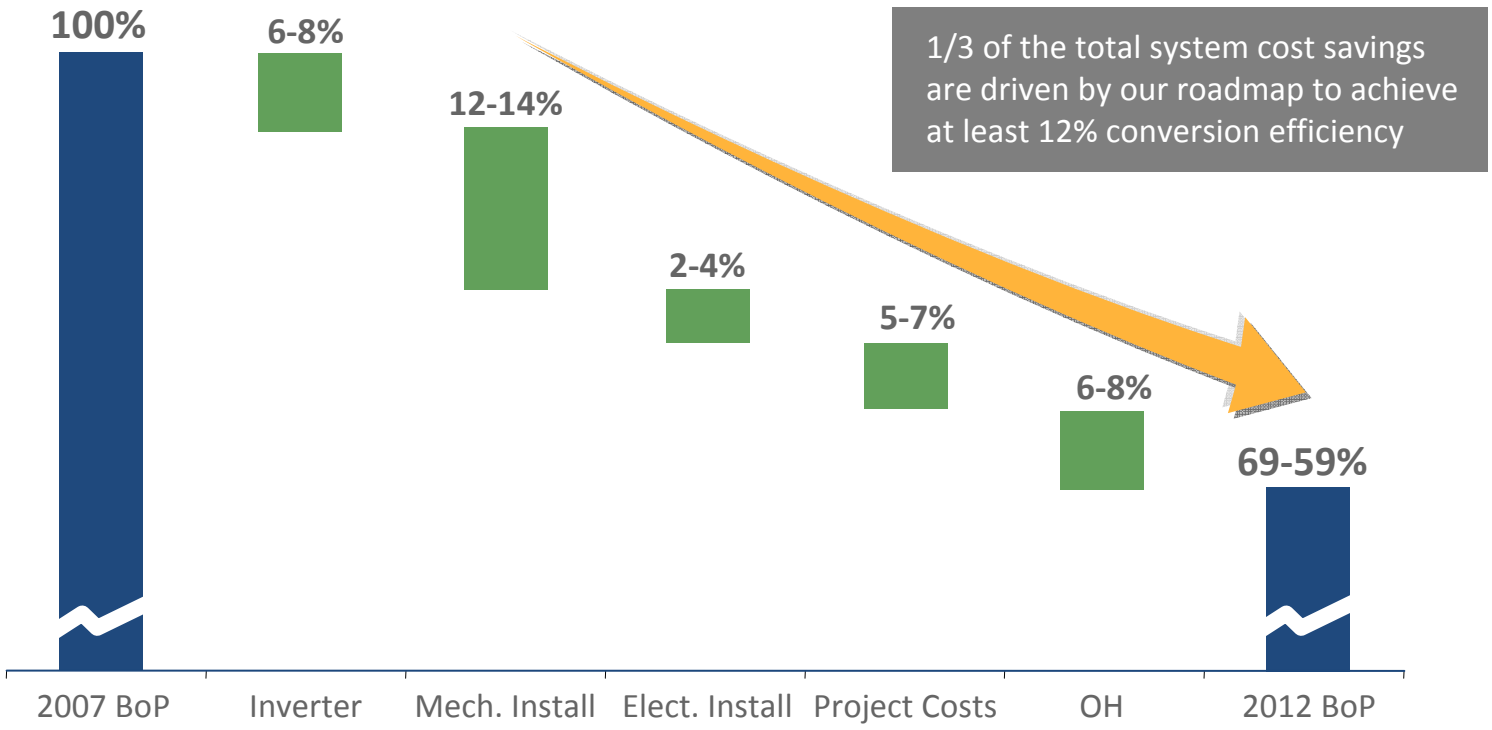
Roadmap to Grid Parity

Module MFG Cost Reduction Roadmap



Roadmap to Grid Parity

System Cost Reduction Roadmap to $1.00/Watt



Representative Projects

System Solutions

Site:	Blythe, California
System Size:	26 MW
Completed:	2009 (anticipated)

Site:	Pennsauken, NJ
System Size:	1.08MW
Completed:	2008

Site:	Fontana, CA
System Size:	2.444 MW
Completed:	2008 (anticipated)

Representative Projects

Module Supply

Site:	Rote Jahne, Germany
System Size:	6MW
Project Developer:	Juwi Holding AG

Site:	Ramstein, Germany
System Size:	2 MW
Project Developer:	COLEXON Energy AG

Site:	Bullas, Spain
System Size:	5 MW
Project Developer:	Gehrlicher Solar AG