

Photovoltaic (PV) Technology Roadmap – An Exploratory Workshop

*Hosted by the U.S. Department
of Energy (DOE) and SEMI PV
Group*

*July 12, 2009 – 1:30-6:00PM
San Francisco, Calif.*

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Who We Are

- The U.S. Department of Energy's overarching mission is to advance the national, economic, and energy security of the United States. The mission of the DOE's Solar Energy Technologies Program is to enable high penetration of solar energy technologies and achieve U.S. grid parity.
- PV Group is a SEMI special interest group dedicated to serving the PV manufacturing supply chain. Members of the PV Group provide the essential equipment, materials and services necessary to produce clean, renewable energy from photovoltaic technologies. The PV Group is committed to lowering costs for PV energy and for expanding the growth and profitability of SEMI members serving this essential industry.



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Framework

- The DOE and SEMI PV Group are inviting you today to explore the need for a collaborative PV industry platform and to explore some fundamental questions:
 - Is there a need for a PV Technology Roadmap?
 - Are there existing models available from which we can apply, in whole or part?
 - Have other regions already made significant progress and what learnings can we take away for the US?



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Workshop Objectives

- Start the dialogue with industry stakeholders
- Determine top challenges in major manufacturing areas
- Determine level of attendees' interest to actively contribute
- Prioritize/rank issues
- Report results
- Determine next steps



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Suggested Ground Rules

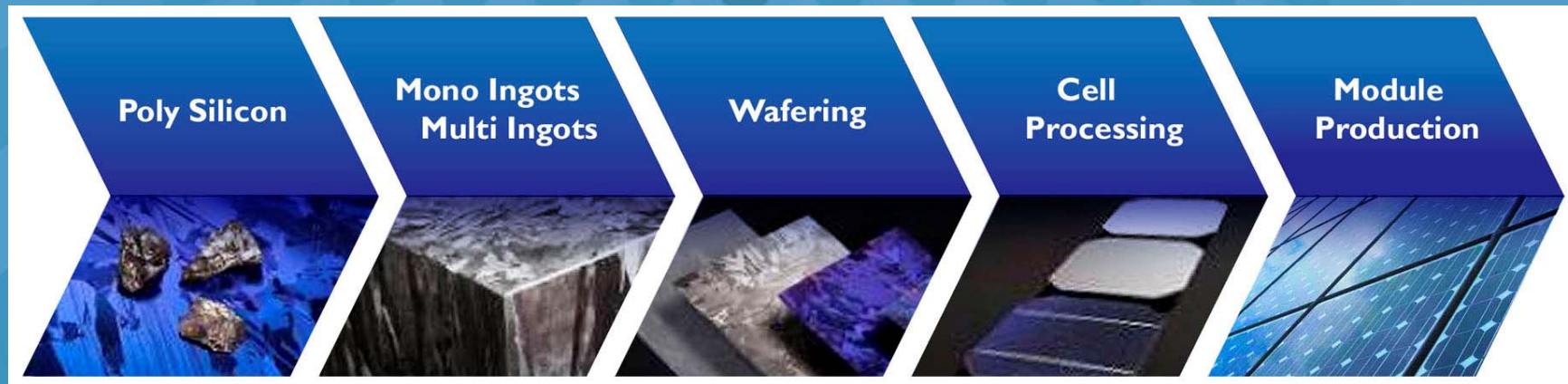
- Agree on drivers for the need for a Roadmap
 - Economics – cost of ownership to meet grid parity goals
 - Key challenges that cut across technology boundaries and that would benefit from a collective approach
- Let's be “technology agnostic” – crystalline silicon, thin film and maybe others will all be in play
- Consider challenges in the context of life cycle and supply chain management (reduce cost, increase process efficiencies, develop sustainable practices, etc.)



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The PV Manufacturing Supply Chain – Our Focus... For Now



One determination we need to make is what the scope of a Technology Roadmap would be and how far “downstream” we should go



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Workshop Structure (1)

- Perspectives from Europe, Japan and U.S. on roadmapping will help us set the stage for the breakout sessions
 - Europe
 - Japan
 - US
 - ITRS



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Workshop Structure (2)

- 4 breakout sessions, 2 facilitators each
- Collectively answer the following questions
 - What are the key challenges in your segment?
 - Which ones would benefit from an industry consensus and collaborative approach?
 - Is a Roadmap the right tool to pursue solutions
- Present findings in breakout session report-out



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Breakout Session Operation

- Goal: To produce
 - A ranked list of top key technical challenges to the PV industry and
 - A list of areas of potential collaboration that could be topics for working groups on a detailed technical roadmap to guide PV industry/supplier coordination and future technology advances
- **20 Minutes** -- Identify technical challenges that may prevent the PV industry from growing as a source of renewable energy in the US power supply. Please don't consider policy and finance, except where technical needs are a barrier. Do not feel limited by the topic area, but try to address it at some level during your discussion.
- **5 Minutes** – Vote on the Top Ten challenges
- **20 Minutes** – Identify potential areas of collaboration for companies that would help solve problems of mutual interest. Do not feel limited by the topic area, but try to address it at some level during your discussion.
- **Last question** (take a vote): Is a Roadmap the right tool to pursue solutions?



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Breakout Session Report Out

- What are the Top Ten key technical challenges that your Session identified as barriers to the PV industry?
- Potential areas for collaboration:
- Is a Roadmap the right tool to pursue solutions?



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