



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Solar Energy Technologies Program

PV Manufacturing Initiative: Updates since concept paper FOA release

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- PV Manufacturing Initiative goals and concept paper requirements
 - Concept paper assessment: key criteria
 - Standardized responses: categories of deficiencies
 - FOA clarifications and release for full applications
 - Updated timeline
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- Disclaimer: The language in the full application FOA takes precedence over any information provided in this presentation

- A FOA for a multi-year effort of up to \$125M has been designed, in which consortium, user facility, and hybrid approaches are being solicited
- The FOA includes both University-Focused and Industry-Focused topics

- **To ensure a strong and coordinated domestic PV industry, and to accelerate:**
 - the creation of a robust U.S. PV manufacturing base, including differentiated technologies and a strong infrastructure and supply chain
 - the development of a highly trained PV manufacturing workforce
 - the commercialization of cutting edge technologies
- **To support public-private partnerships and coordinated approaches in order to:**
 - leverage limited R&D budgets (industry & Federal), and to offer pooled risks & benefits for partners
 - ensure responsiveness to industry needs and market conditions
 - accelerate development and commercialization of PV manufacturing and process technologies through close partnerships between companies, universities, and other non-Federal stakeholders
 - establish self-sustaining organizations to coordinate shared resources, facilities, and/or R&D within the domestic industry
- **To translate domestic PV innovation into domestic manufacturing and jobs**
 - viable strategies and mechanisms for commercializing successful R&D outcomes

Concept Papers requirements were designed to validate the initial premise behind the PVMI and enable feedback to applicants

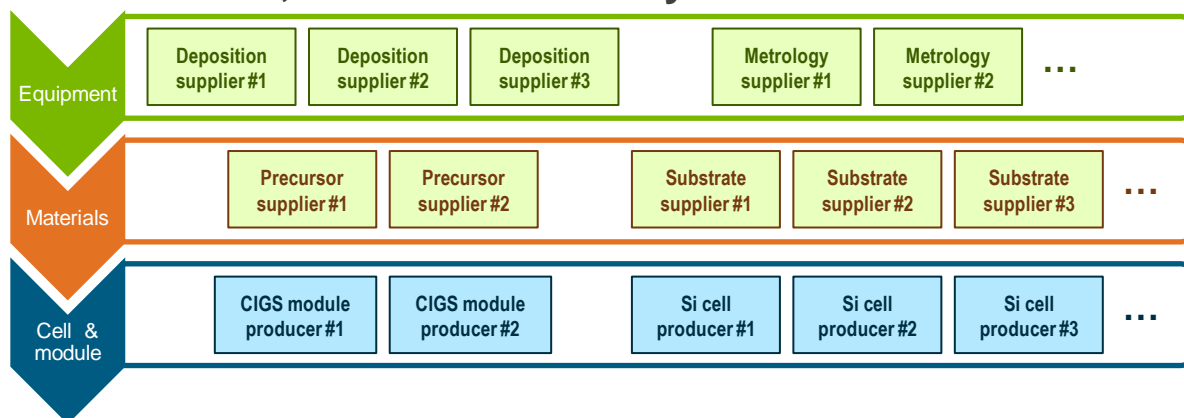
- Final input on feasibility of approaches and go / no-go decision on full FOA
 - Technical objectives and business model to achieve manufacturing impact and self sufficiency.
- Feedback to applicants
 - Encouraging / discouraging full application
 - Suggested areas for improvement
- Was due June 7, 2010, at 11:59 PM Eastern Time
 - Maximum 10 pages in length
 - Required for full application

Concept Paper Requirements

- **Organizational Objectives**
 - Strategic technical objectives, the specific strategy and operational framework for meeting these objectives, and how meeting these objectives will address deficiencies in U.S. PV manufacturing.
 - Technically detailed at the sub-module, sub-cell materials, and/or process level
 - Linked to the structure and dynamics of the U.S. PV industry
 - Include quantifying activities and objectives in each specific area
 - The parts of the supply chain expected to be the main participants in the proposed organization, and how they will commercialize / implement the technologies or advancements developed through the organization
 - State any assumptions about future industry dynamics or structure
- **Capabilities and Resources**
 - Members that have committed or otherwise stated strong interest in sponsoring the proposed organization
 - Categorization of the level of interest
 - General capabilities, expertise, and/or resources of each member
 - Initial P/L estimate for the organization with expected funding sources and expenses
 - Sources of funding broken out by type – including member or user fees, DOE funding, funding from state organizations, and other sources
 - Expenses broken down between capital and operations
 - Any in-kind resources described and quantified

Key criteria identified for meeting FOA objectives and intent

- Every concept paper was evaluated against FOA objectives by team of DOE staff
 - Not ranked or compared against each other – not a merit review or down-selection
 - DOE has concluded that it is worth going forward and seeking full applications
- 4 key criteria applied in assessing concept papers:
 - **Mechanisms and intent to increase size and breadth of organization over time**
 - For both topics, implies optimizing involvement of industry members for breadth of impact
 - For university topic, implies an open and competitive solicitation process
 - **Highly collaborative, horizontal industry involvement**



- **Lead organization does not have conflict of interest in making awards**
- **Realistic financial plan for achieving self-sufficiency, with minimal back-loading of industry cost-sharing**

Concept paper responses: Standardized feedback by degree of deficiency

Fundamental Deficiencies – any resulting application would not meet the minimum requirements of the FOA

- Fails to meaningfully discuss the basic concepts requested in the FOA
- Limited producer-supplier partnerships only
- No demonstrated financial viability
- No existing capabilities or facilities
- Only a single university participant
- Only a single industry adviser / partner to the university consortium
- Extremely narrow technology focus – possibly product-specific
- Very early-stage research

Significant Deficiencies – would detract from the competitiveness of any submitted application

- Lack of horizontally integrated industry participation / has limited number of industry partners
- Lacks mechanism for open industry membership
- Lacks open solicitation for university R&D
- Managing entity has conflict of interest
- Insufficient breakdown of finances / very large funding request
- Unconvincing evidence for sufficient user base for facility
- Non-Federal cost share is unbalanced

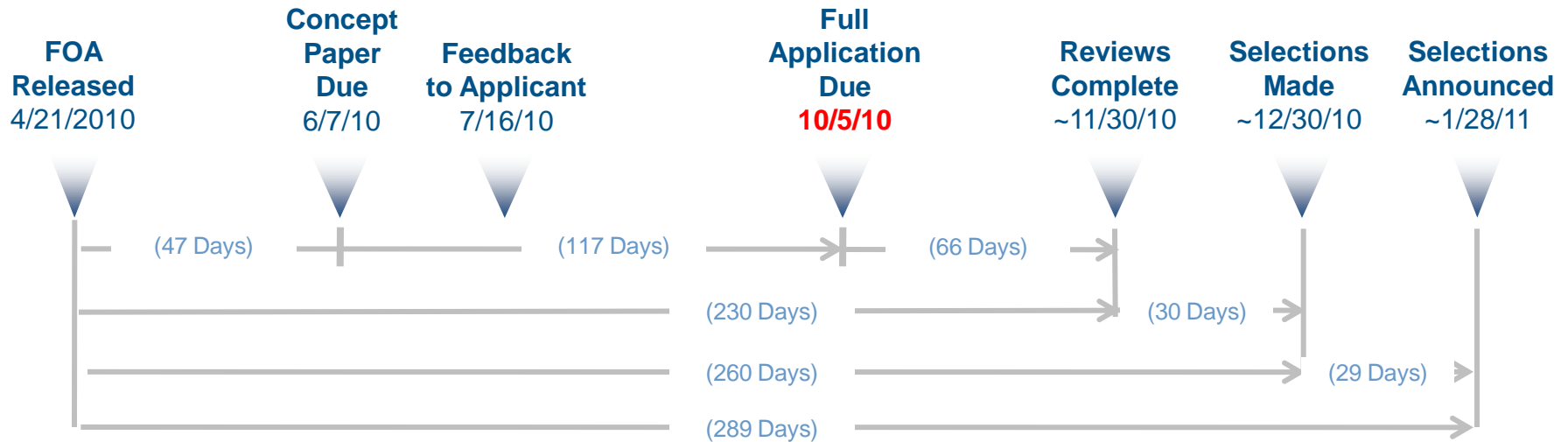
Moderate Deficiencies – additional opportunities for improvement for any submitted application

- Poor definition of technical goals
- Insufficient link demonstrating relevance of early-stage or foundational work to manufacturing
- Commercialization / tech transfer mechanisms insufficiently described
- Lack of detail in equipment needs
- Lack of clarity on industry input mechanisms
- Lack of clarity on industry cost-sharing
- Lack of clarity on R&D project solicitation and selection
- Too much of R&D is focused on support of proprietary work at individual companies
- Concept incorporates activities beyond the technology scope of the PVMI
- Unclear relationship of proposed functions to existing organization
- Lack of expertise in PV
- Insufficient breadth in technologies addressed
- Insufficient breadth in market segments addressed

FOA modified slightly to enhance clarity & increase confidence in achieving PVMI goals

- No fundamental changes in PVMI structure, intent, or evaluation criteria
- **Full application deadline:**
 - Extended to 60 days from FOA re-release
- **Open and broad participation requirements:**
 - Require mechanisms for openly and fairly expanding industry membership
 - University-focused: require open and competitive solicitation of university R&D projects, to be managed by proposed organization
 - to dynamically and sustainably fund the best industry-relevant university R&D, not static centers of excellence
 - Industry-focused: seek large memberships and/or user bases that are vertically and horizontally integrated across value chain
 - to demonstrate feasibility of, and industry buy-in to, shared coordinated approaches for broad industry impact, beyond small partnerships of a producer and their suppliers
- **Financial requirements (industry-focused):**
 - Target 40% year-by-year minimum cost-share (50% averaged over 5 years)
 - to reduce risk associated with proposals calling for significant front-loading of Federal funds
 - Require break-down of revenue/funding and expenses by technology focus area – financial statement template to be provided
- **Manufacturing development facility vs. consortium activities:**
 - Clarified evaluation criteria to better define how they apply to facilities vs. consortia

Anticipated timeline



Concept Paper – due 43 days after FOA issue date

Full Application – due 67 days after full application FOA released

Selections likely announced by the end of January 2011

- PV Manufacturing Initiative goals and structure remain the same
- Four key criteria emerged during analysis of concept papers
 - Mechanisms and intent to increase size and breadth of organization over time
 - Highly collaborative, horizontal industry involvement
 - Lead organization does not have conflict of interest in making awards
 - Realistic financial plan for achieving self-sufficiency, with minimal back-loading of industry cost-sharing
- Applicants provided with feedback from a standardized list
 - Fundamental, significant, and moderate deficiencies were noted
 - Fundamental deficiencies indicate that applications based on that concept are not likely to be compliant / responsive without a wholesale redesign
- FOA clarified on basis of concept papers
 - Emphasis on broad and open participation
 - Additional requirements on cost-share and statement of finances by technology area
- Full application due Oct. 5th, with selection announced Jan. 2011