



The State of Nano-Renewable Energy in DC

Kelly Carnes

TechVision21

October 25, 2011

Where Have We Been?

NNI

EERE

2009	1.7B	2009	2.2B
ARRA	.5B	ARRA	16.8B
2010	1.9B	2010	2.2B
2011 (CR)	1.9B	2011 (CR)	1.8B
TOTAL	6.0B	TOTAL	23.0B
2012 Request	2.1B	2012 Request	3.2B

Where Have We Been?

Solar PV

2009	143M
ARRA	47M
2010	126M
2011 (CR)	
FY 2012 Request	337M

- ARPA-E launched with \$400M ARRA funds; \$173M in FY 2011
- SunShot Initiative:
 - \$42M: Extreme BOS
 - \$35M: FACE
 - \$26M: SEGIS
 - \$25M: Next Gen PV II
 - \$14M: Non-hardware BOS
 - \$112M: PV Manufacturing
- \$14.7M: Solar ADEPT
- \$11.2B in PV loan guarantees (2011)

Outlook for 2012

- **Continuing Resolution through November 18**
- **House Appropriations FY 2012 Bill:**
 - **EERE \$1.3B:** \$490M below FY 2011
 - **EERE Solar \$166M:** \$97M below FY 2011
 - No funding for Solar Demonstration Zone
 - Likes disruptive solar energy utilization technologies, fabrication for ultra-low cost solar cells, ultra-high efficiency solar cells, solar cell simulation, thin films
 - **ARPA-E: \$170M**
- **Senate Appropriations FY 2012 Bill:**
 - **EERE \$1.7B:** \$30M below FY 2011
 - **EERE Solar \$290M:** \$27M above FY 2011
 - Wants center for solar energy innovation in the Southwest
 - Funds Solar Demonstration Zone
 - Likes organic PV cells
 - **ARPA-E: \$250M**

Winners and Losers in FY2012 Budget

Winners

- Defense R&D Reasonably Stable including new programs for small businesses such as the Rapid Innovation Fund
- DOE Office of Science: Flat Funded—Approximately \$4.8 B in both houses
- APRA-e: still exists!

Losers

- DOE Applied R&D Programs: 30% cut
- NIST: TIP, Baldrige and AMTech all \$0 in both House and Senate

Unknown

- USDA Renewable Energy Programs: Funding for REAP could increase 30% (Senate), decrease 30% (House)

Staying Alive....

Advanced Manufacturing Partnership

Domestic manufacturing in critical national security industries

- Coordinated funding effort (DOD, DHS, DOE, USDA, DOC)
- \$300M co-invested with industry
- Materials, alternative energy

Material Genome Initiative

- \$100M for FY 2012
- Programs across DOE, NIST, NSF, DOD
- Computational modeling and data exchange

Staying Alive...

Advanced Manufacturing Partnership

National Robotics Initiative (open FOA)

- Joint effort (NSF, NASA, NIH, USDA)
- \$70M
- Technologies for robots to aid humans doing tasks

Innovative Manufacturing Initiative

- \$120M from DOE (**closed**)

Staying Alive...

Department of Energy

PV Manufacturing Initiative Part 2: SUNPATH (\$50M; due 10/28/11)

- Fund pilot plants for PV wafer, module, cells, or substrates at least 15% lower in cost per watt than current market leading technology
- DOE intends to take successful PVMI II projects onto validation at scale in multiple locations (a large dollar endeavor)

SunShot Pre-Commercialization Pathways (PV Technology Incubator) Annual Awards

- Small business bridge funding: concept verification to proof-of-concept prototype
- Start-ups with prototypes work with national labs to scale-up lab processes into pilot manufacturing

PV Module Accelerator FY 2012 (\$50M)

- Development of product-scale PV designs/processes

Accelerating U.S. PV Manufacturing FY 2012 (\$50M)

- Demonstration grants to companies, especially start-ups

Staying Alive...

Department of Energy

Industrial Technologies Program FY 2012

- **Next Generation Materials (\$34M likely) to include...**
 - **Critical Materials Hub FY 2012 (\$20M)**
 - R&D leading to material and technology substitutes to help meet material needs of the clean energy economy
 - Recycling, reuse, and more efficient use of materials
 - R&D on novel approaches to reduce dependencies on critical materials
 - House Appropriations Committee wants Hub to also advance/rebuild a U.S. rare earth materials supply chain including production of rare earth minerals, oxides, metals, alloys, and permanent magnets
- **Next Generation Manufacturing Processes (\$44M likely)**

Where Are We Going: Wild Cards

Continuing Resolution

- Funds Government through November 18
- Real threat that renewable energy programs will be raided to pay for other priorities (disaster aid)

Budget Control Act—Super Committee

- Part 1: \$917B cut over 10 years
- Part 2: Super Committee must find additional \$1.5 trillion in cuts over 10 years by Thanksgiving; then up or down vote
- If Super Committee or vote fails, \$1.2 trillion in automatic across-the-board spending cuts; half defense, half discretionary spending
- Complicated formula looking out 10 years
- Could be 6% annual cut for first 3 years, 7%-9% annual cut in following years

Where Are We Going? *Political Environment*

- Renewable Policies and Programs Under Investigation: Solyndra
- Severe Federal budgetary constraints
 - Super Committee
- Control of Congress split
- 2012 election; campaigns gearing up
- National debate on size/scope/role of government
 - Government as venture capitalist
- Persistent Unemployment, Economic uncertainty
- Country polarized
 - Tea Party and OWS



Thank you!

Kelly H. Carnes

202.966.6610

kcarnes@techvision21.com