

The SunShot Initiative

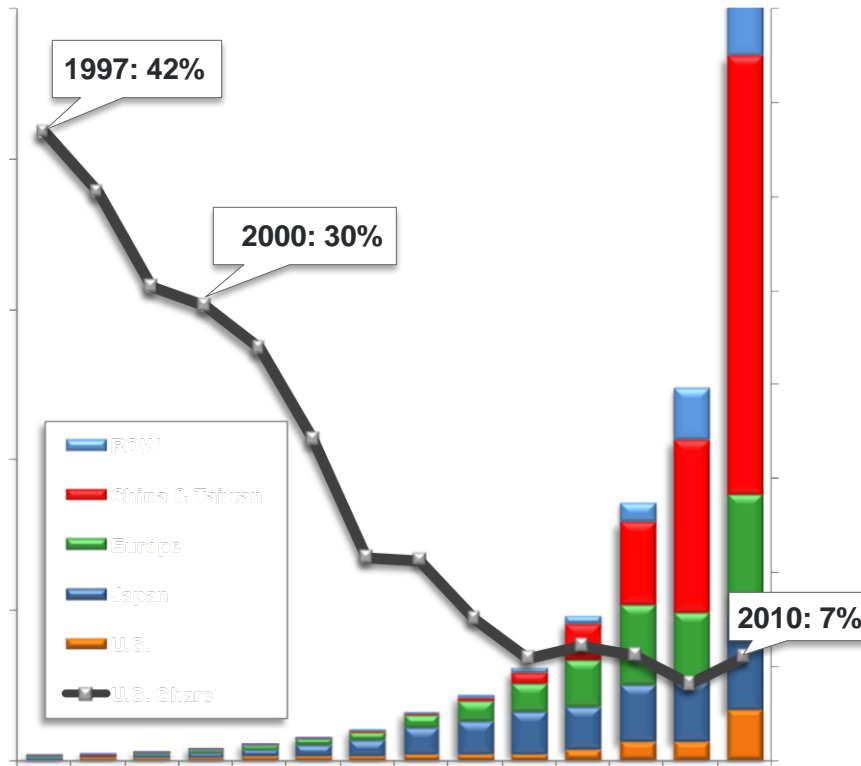


- ❑ DOE's Solar Energy Technologies Program launched the SunShot Initiative to make solar energy technologies cost-competitive with other forms of energy by reducing the cost of solar energy by 75% before 2020.
- ❑ By reducing the cost of utility scale installations by 75% to roughly \$1 a watt – which would correspond to roughly 6 cents per kilowatt-hour – solar energy systems could be broadly deployed across the U.S.
- ❑ Beyond the technical goal of achieving \$1 a watt, the objectives of the SunShot Initiative are ***to boost the U.S. economic competitiveness and manufacturing of solar technologies within the U.S.***



Current Domestic Mfg.

Global & U.S. Annual PV Shipments by Region



- U.S. PV Shipments had steadily lost world market share overtime, however increased volume.
- In 2010 U.S. increased shipments from 410 MW to 1,067 MW (160% Increase) in the process increasing world market share from 5% in 2009 to 7% in 2010.
- China's market share has increased from 6% in 2005 to 61% in 2010.

US. Annual Cell/Module Shipments by Company

Manufacturer	2007	2008	2009	2010
First Solar	110	145	140	229
Uni-Solar	48	112	78	120
Evergreen	16	66	103	158
SolarWorld	22	10	0	254
Suniva	0	0	0	129
Solyndra	0	0	30	58
BP Solar	28	35	23	0
Cali Solar	0	0	0	40
Schott Solar	10	11	11	0
Other US	8	9	25	79
Total	242	388	410	1,067

- Top 3 U.S. PV manufacturers increased output in 2010.
- The loss of BP Solar, Schott Solar (and Evergreen, who will not produce in U.S. after 2010) has been made up for by new companies, Suniva and Cali Solar, as well as increased output from other U.S. companies.
- Estimated cell production in 2011: 1.7GW

Notes & Sources:

Global & Annual PV Shipments by Region: Navigant Consulting (4/2011).
2009 Module Shipment: Navigant Consulting (4/2010). 2011 Production: Photon International (3/11)

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- ❑ The U.S. is a leader in the research and development of solar technologies (e.g., in the last ten years, DOE has invested more than one billion dollars in solar energy research)
- ❑ Despite this leadership and investment in solar research and development, the U.S. does not have a significant role in the manufacturing of PV products and systems (less than 10% of global output)
- ❑ Perceived advantages to foreign manufacturing -- easier access to capital, incentives on land, taxes, and utilities, permitting issues, and lower labor cost

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- U.S. manufacturers need access to superior and more innovative technologies than foreign manufacturers in order to become competitive
- The work under the SunShot Initiative is focused on developing superior, more innovative technologies
- Issue remains on how to facilitate the use of the technologies developed under the SunShot Initiative by U.S. manufacturers

Current Mfg Requirements



- ❑ U.S. Preference Provision (35 USC § 204) for Bayh-Dole entities (domestic small business and non-profits):
 - ❑ Applies only to exclusive licenses to use or sell a subject invention in the U.S.
 - ❑ The exclusive licensee of the Bayh-Dole entity must agree that any products embodying or produced through the use of any subject invention will be ***manufactured substantially in the U.S.***

- ❑ U.S. Competitiveness Provision (DOE policy) for non-Bayh-Dole entities (large businesses and foreign entities):
 - ❑ In exchange for a patent waiver, the petitioner must agree to the U.S. Competitiveness Provision (or an alternate net benefit statement)
 - ❑ Standard U.S. Competitiveness Provision requires that any products (regardless of source) embodying or produced through the use of any subject invention will be ***manufactured substantially in the U.S.***

SunShot Mfg Requirements



- ❑ Through the patent waiver process and a declaration of exceptional circumstances, **all** SunShot research, development, and demonstration awards and contracts regardless of the type of recipient or contractor will have a modified U.S. preference provision

- ❑ SunShot's modified U.S. preference provision:

The Recipient agrees that (1) at least 51 percent of the fair market value of each individual product embodying an elected Subject Invention or produced through the use of an elected Subject Invention shall be manufactured in the United States or (2) at least 51 percent of all products embodying an elected Subject Invention or produced through the use of an elected Subject Invention shall be wholly manufactured in the United States.

SunShot Mfg Requirements



- If the Recipient or a licensee of the Recipient fails to comply with the manufacturing requirement then:
 - all rights to all Subject Inventions revert back to DOE, including all pending U.S. and foreign patent applications and all U.S. and foreign patents that cover any Subject Invention, without compensation;
 - the Recipient is required to assign to DOE all licenses that grant any rights to any Subject Inventions to an unaffiliated third party that is in compliance with the domestic manufacturing requirement
 - all other licenses are immediately terminated without compensation from DOE; and
 - no minimum rights for the Recipient, i.e., the Recipient does not have a license or any other right to use the subject invention

SunShot Mfg Requirements



- Recipient may request a waiver or modification of the modified U.S. Preference Provision

- Such waivers or modifications will be granted only when (1) Recipient demonstrates, with quantifiable data, that manufacturing in the United States is not commercially feasible and (2) a waiver or modification would best serve the interests of the United States and the general public.

- Solar Program intends to request annual reporting to confirm compliance with the modified U.S. preference provision

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Questions????