

The 2015 Solar Jobs Census

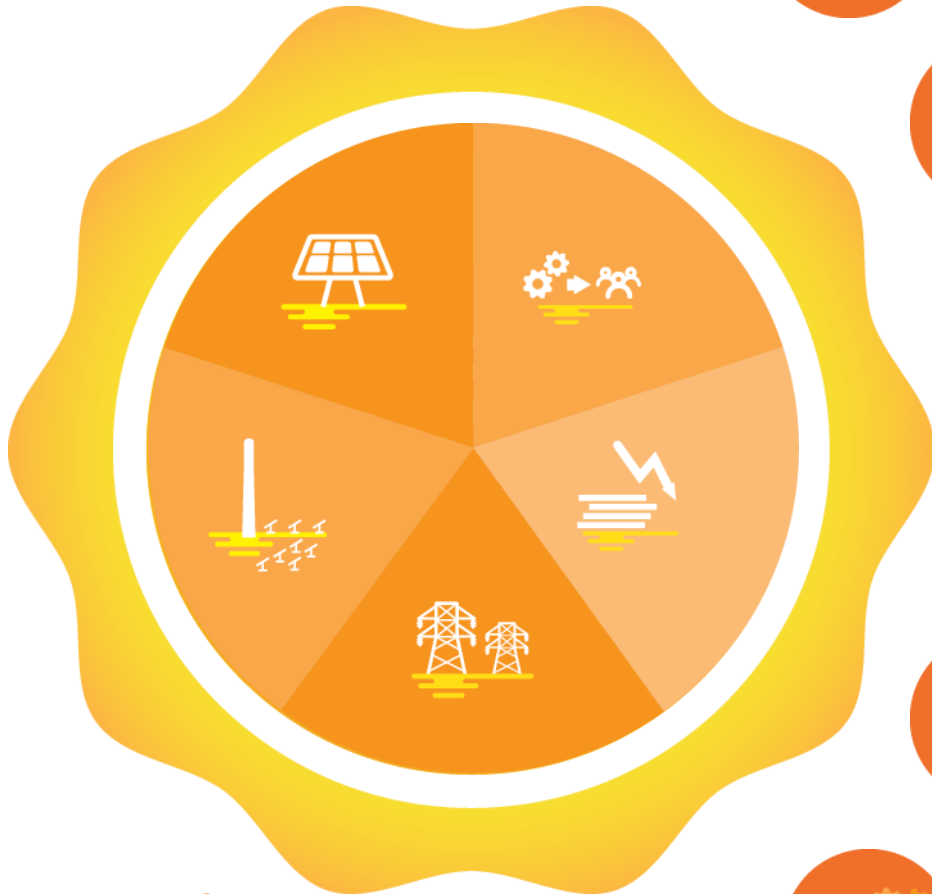
EERE's Solar Program & SunShot Initiative



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

Mike Carr,
Principal Deputy Assistant Secretary, EERE
March 2, 2015



**Maintaining U.S. Leadership
in PV R&D Innovation**



**Empowering Communities to Cut
Red Tape, Streamline Processes**



**Building a Skilled
Solar Workforce**



**Supporting Entrepreneurs
and Innovators**



**Training Veterans for the
Clean Energy Economy**



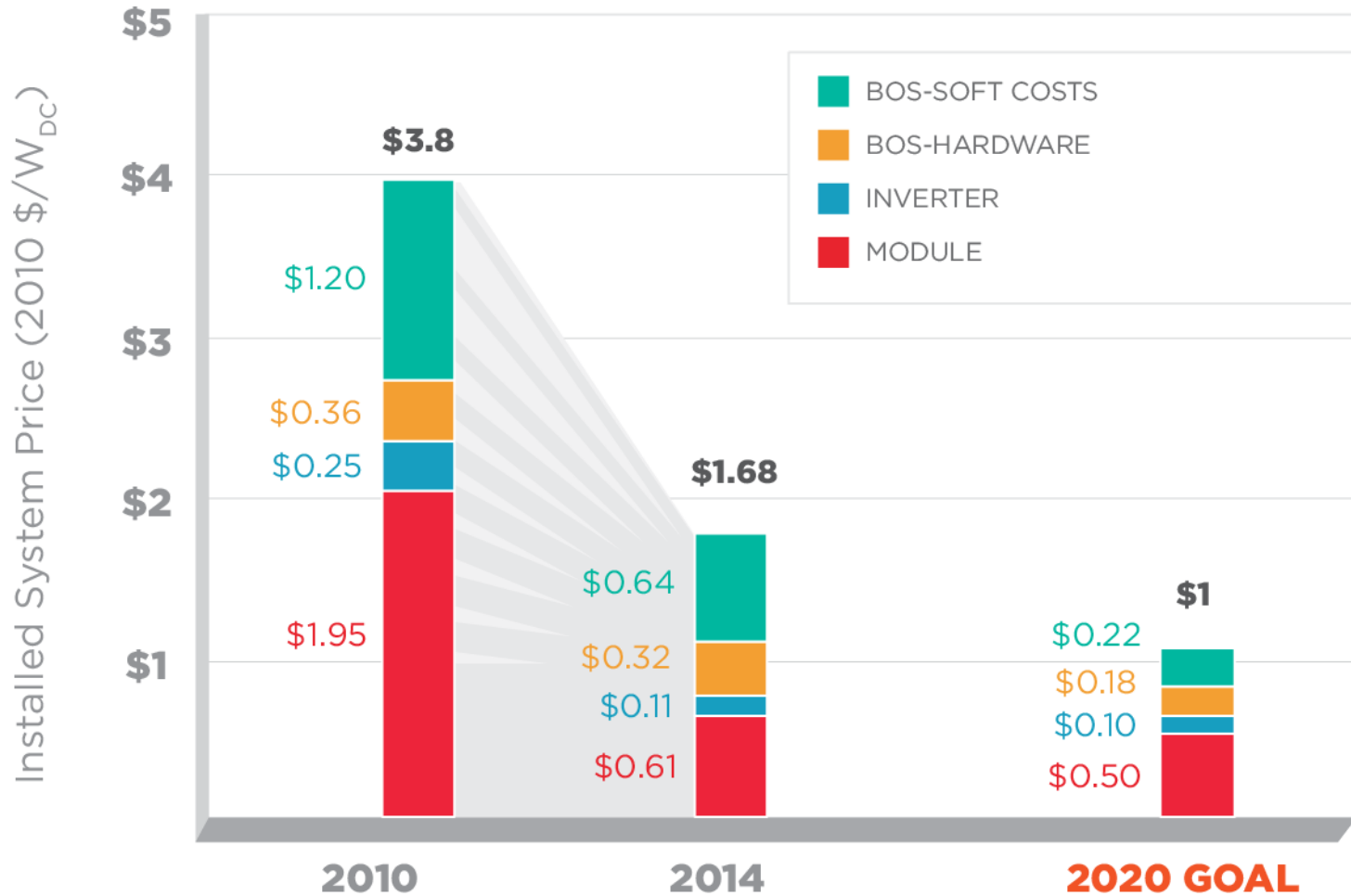
**Supporting
Domestic Manufacturing**



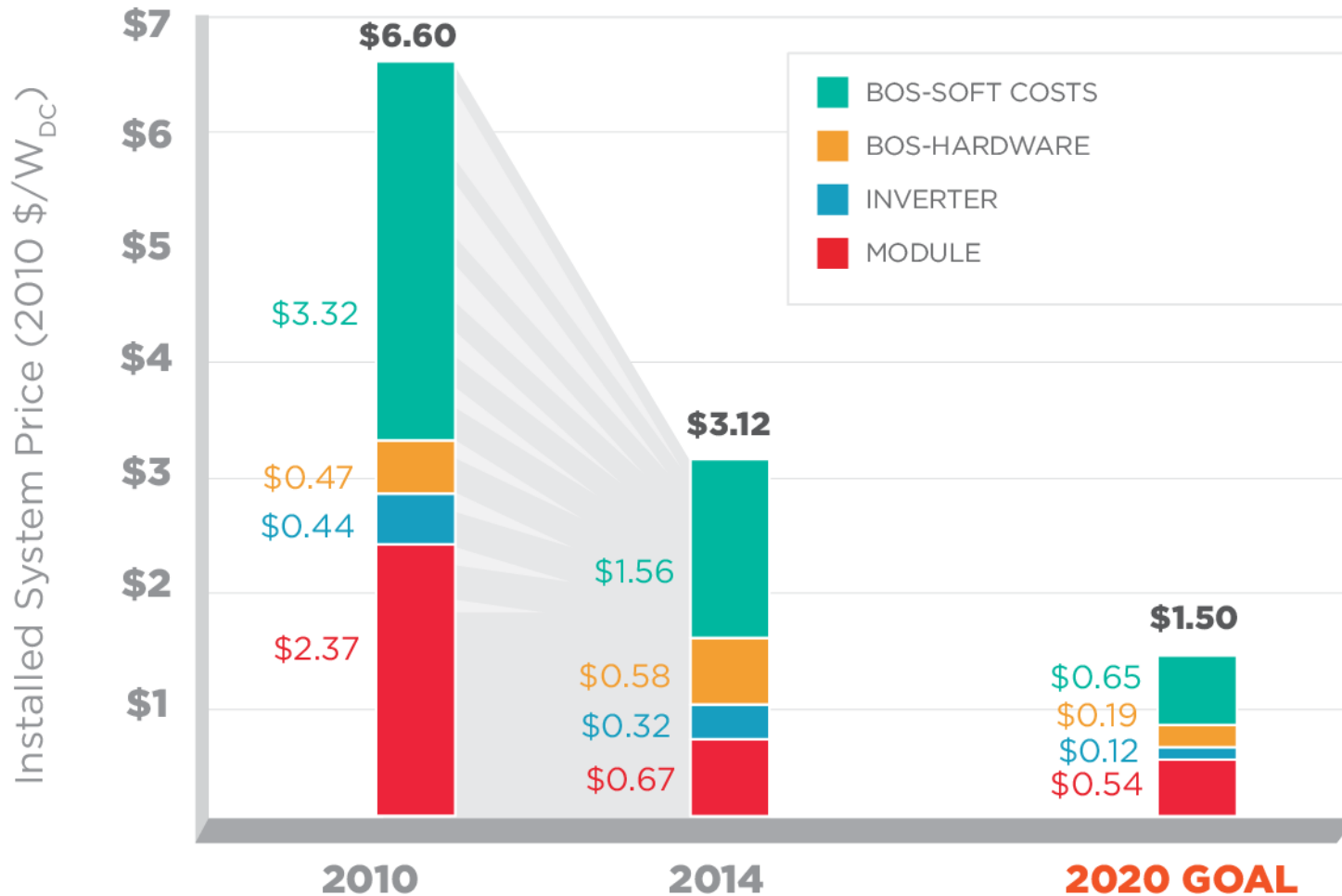
6¢/kWh

70% to the SunShot goal

PV Utility-Scale System Pathway to SunShot



PV Residential-Scale System Pathway to SunShot



Soft Costs Dominating Overall Costs



Financing



Permitting



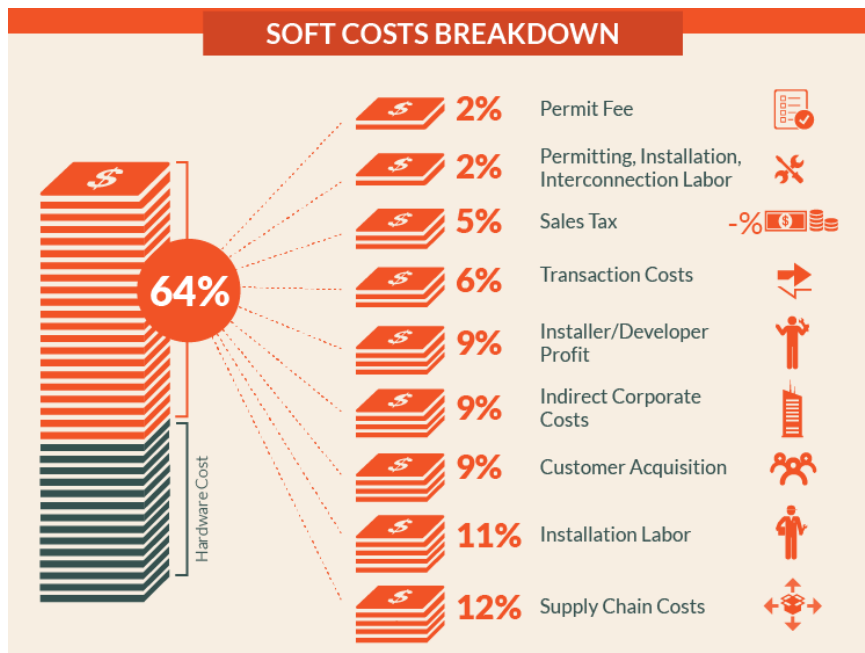
Customer Acquisition



Installation



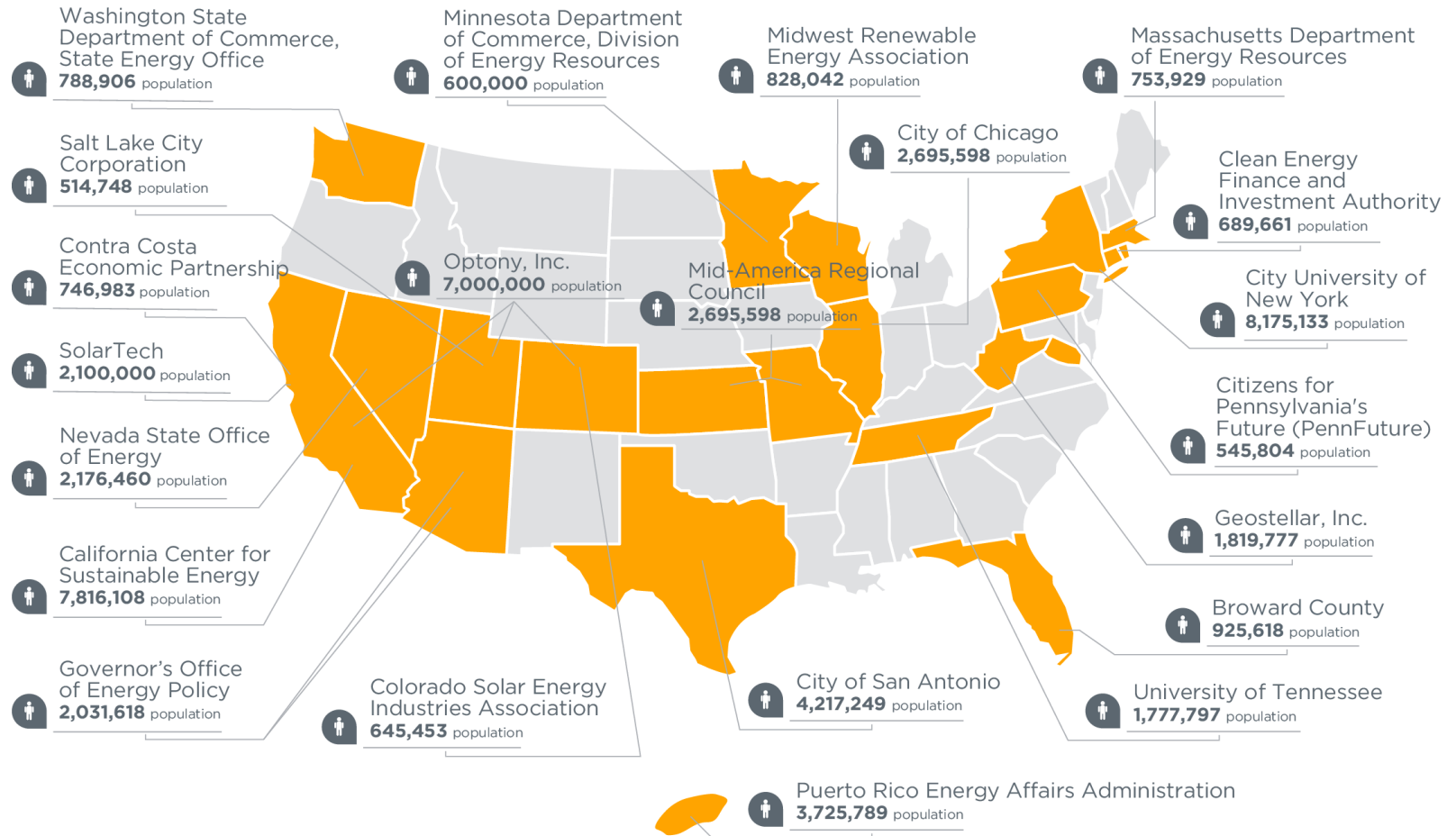
Maintenance



Up to **64%** of the cost of a solar installation

Source: Second Annual Benchmarking...”, Friedman et al., in preparation.

Rooftop Solar Challenge Team Locations



Solar Energy Technologies FY 2016 Priorities

Fiscal Year 2016 Priority Activities

- **Integrated Best-in-Class Concentrating Solar Power Innovations at 1-10 MW Scale (\$40M):** Leveraging component level research developed for sub-systems in prior years, CSP Systems Integration will validate the technologies at the 1-10 MW scale.
- **Solar Power Manufacturing Innovation (\$44.6M):** Increase America's market share for manufacturing value added commensurate with domestic market demand through focused investments in advanced manufacturing R&D such as low CAPEX and high throughput manufacturing technologies.
- **Next Generation PV Innovations Beyond the 2020 DOE SunShot Targets (\$30.6M):** Investigate new concepts for Photovoltaic R&D (PV) cells and module as well as cost reductions that have the potential to disrupt the PV market beyond the DOE SunShot Initiative.
- **Soft Cost Reduction Innovation for Commercial Scale Solar PV (\$16.1M):** Collaborative multi-stakeholder partnership to reduce soft costs for commercial scale PV.
- **Manufacturing/Materials Genome (\$10M):** Supports DOE's Clean Energy Manufacturing Initiative and Administration's Materials Genome Initiative. Massively Parallel Combinatorial Process Development will use high performance computing and high throughput combinatorial synthesis to accelerate the development of materials from the point of discovery to qualification.

(Dollars in Thousands)	FY 2014 Enacted	FY 2015 Enacted	FY 2016 Request	FY 2016 vs. FY 2015
Concentrating Solar Power	48,571	46,400	48,400	+2,000
Photovoltaic R&D	56,641	35,300	62,000	+26,700
System Integration	52,816	43,700	76,500	+32,800
Balance of Systems Soft Cost Reduction	42,558	40,700	67,300	+26,600
Innovations in Manufacturing Competitiveness	44,472	57,800	73,400	+15,600
NREL Site-Wide Facility Support	12,000	9,100	9,100	0
Total, Solar Energy Technologies Office	257,058	233,000	336,700	+103,700

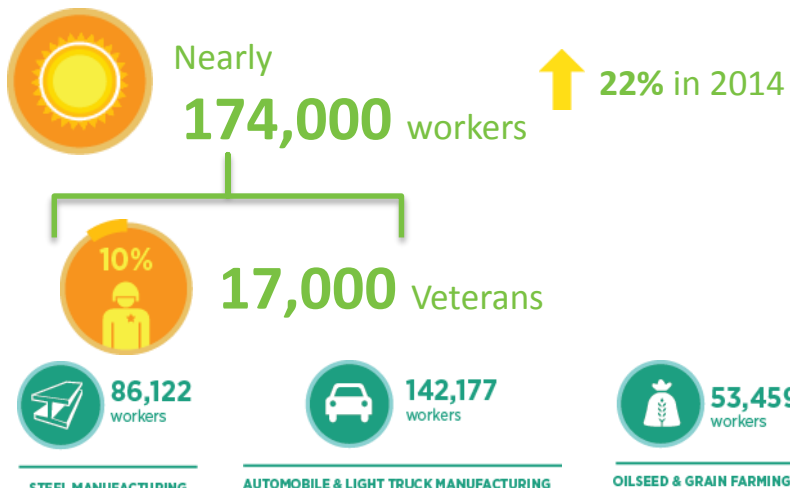
SunShot Initiative

INCREASING CAPACITY, LOWERING COSTS

By end of 2014...



CREATING JOBS, ECONOMIC GROWTH



VETERANS SOLAR TRAINING PILOT PROGRAM



- **3 military bases** -- Camp Pendleton, CA; Fort Carson, CO; Naval Station Norfolk, VA.
- Intensive 4-6 week PV installation training course; guaranteed job interviews with at least 5 solar companies
- First class graduated on Feb. 13

BUILDING A SKILLED SOLAR WORKFORCE



- DOE's **Solar Instructor Training Network** is supporting professional development of solar PV & solar heating and cooling technologies trainers and instructors in **49 states based at more than 400 community colleges**.
- Since 2011, **>30,000** students received solar instruction from SITN campuses, on the way to 50,000 trained PV professionals by 2020.