

State-Federal RPS Collaborative Webinar

Solar Industry Trends

Hosted by
Warren Leon, Executive Director, CESA

Friday, September 5, 2014

Housekeeping



All participants are in “Listen-Only” mode. Select “Use Mic & Speakers” to avoid toll charges and use your computer’s VOIP capabilities. Or select “Use Telephone” and enter your PIN onto your phone key pad.

Submit your questions at any time by typing in the Question Box and hitting Send.

This webinar is being recorded.

You will find a recording of this webinar, as well as all previous CESA webcasts, archived on the CESA website at

www.cesa.org/webinars

About CESA

Clean Energy States Alliance (CESA) is a national nonprofit organization working to implement smart clean energy policies, programs, technology innovation, and financing tools, primarily at the state level. At its core, CESA is a national network of public agencies that are individually and collectively working to advance clean energy.

State-Federal RPS Collaborative

- With funding from the Energy Foundation and the US Department of Energy, CESA facilitates the **Collaborative**.
- Includes **state RPS administrators, federal agency representatives**, and other stakeholders.
- Advances dialogue and learning about RPS programs by **examining the challenges and potential solutions** for successful implementation of state RPS programs, including **identification of best practices**.
- To sign up for the Collaborative listserve to get the **monthly newsletter** and announcements of **upcoming events**, see: www.cesa.org/projects/state-federal-rps-collaborative

Today's Guest Speakers

Larry Sherwood, Vice President and COO, Interstate Renewable Energy Council (IREC)

Rob Sargent, Energy Program Director, Environment America





U.S. Solar Market Trends

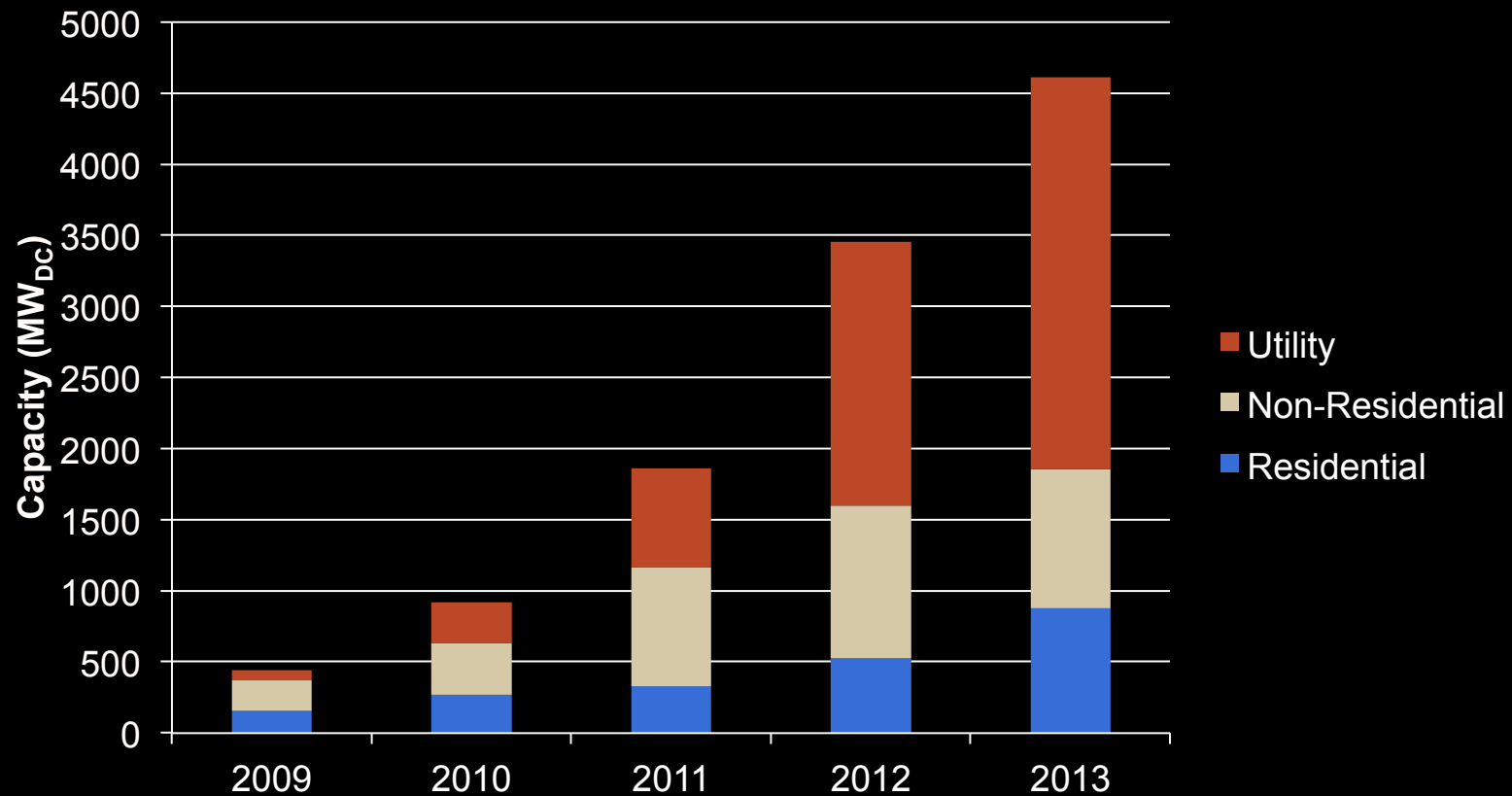
Larry Sherwood
Interstate Renewable Energy
Council

CESA Webinar
September 5, 2014

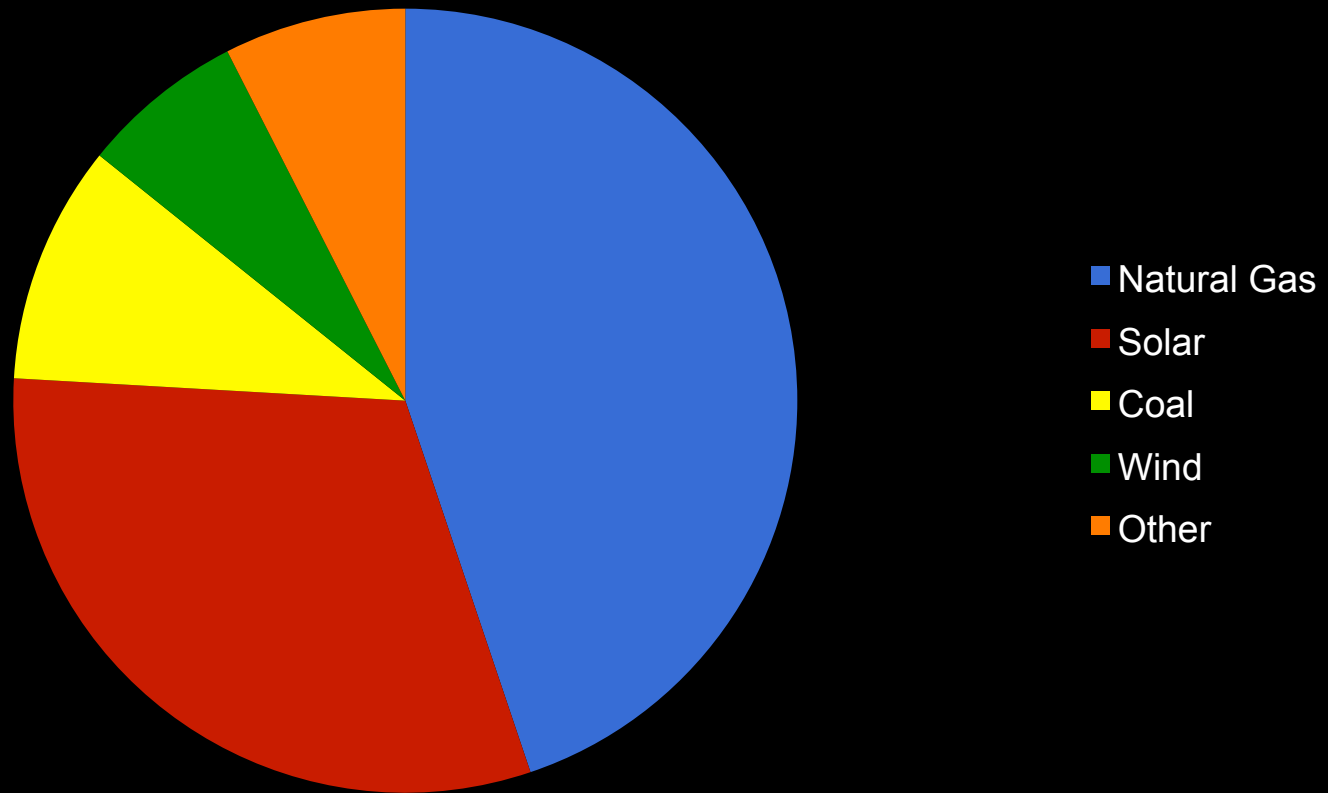


Interstate Renewable Energy Council

Capacity of Annual U.S. Grid-Tied PV Installations



2013 New U.S. Electricity Generation



Federal Policy

- Federal Investment Tax Credit
- Guaranteed Loans
- SunShot Initiative
- Federal purchases

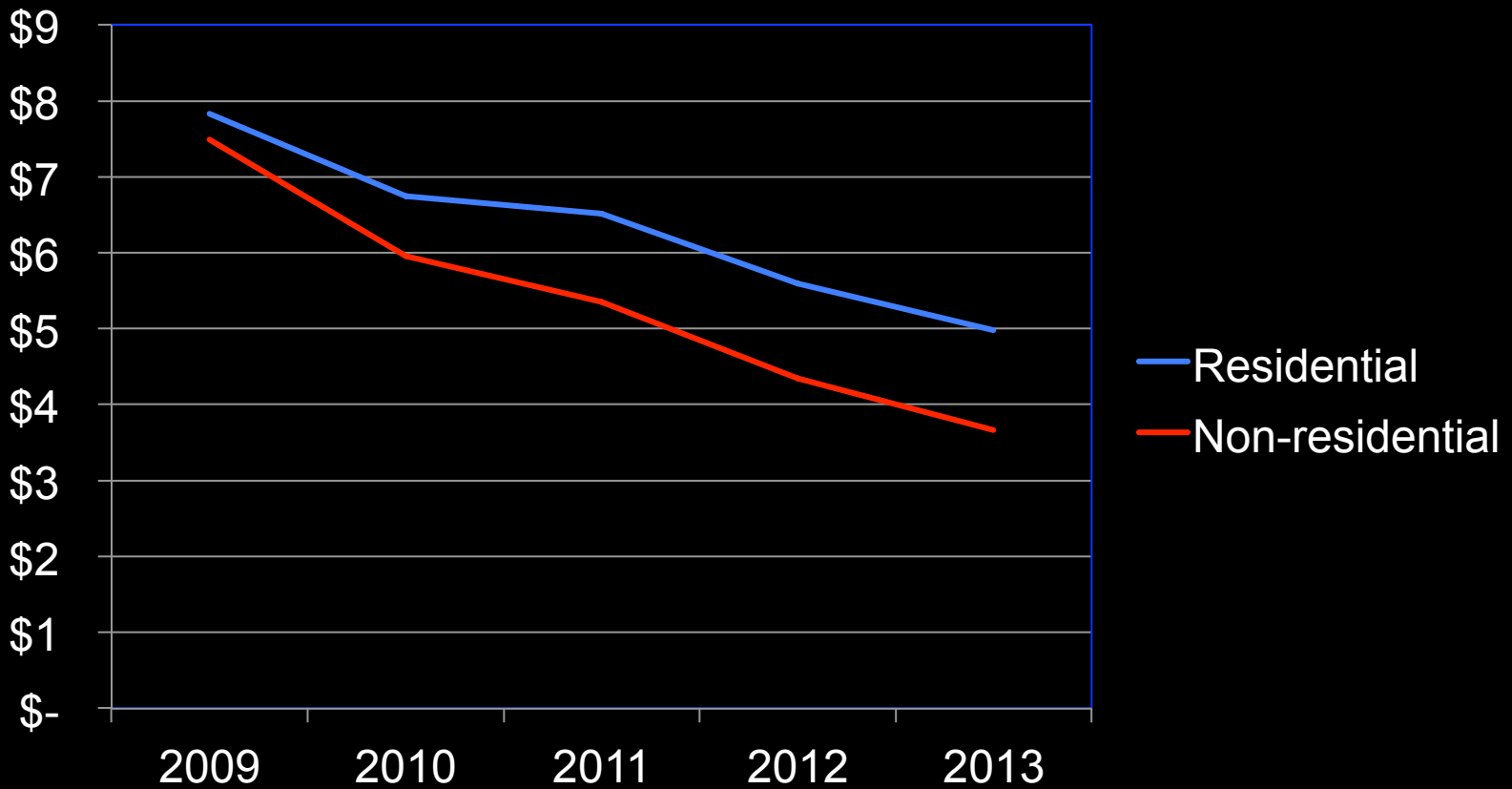
State and Utility Policy

- Net Metering
- Renewable Portfolio Requirements
- State and Utility Rebates

Market Factors

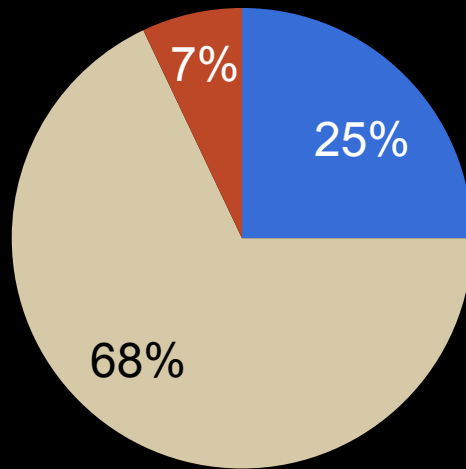
- Lower Installed Cost
- Third-Party Ownership
- Financing
- Quality

U.S. Distributed PV Cost Trends

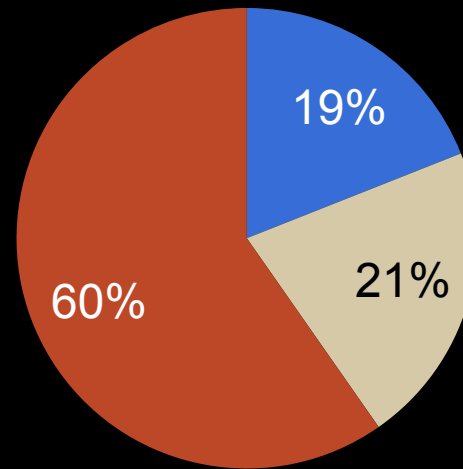


Times have Changed

2008

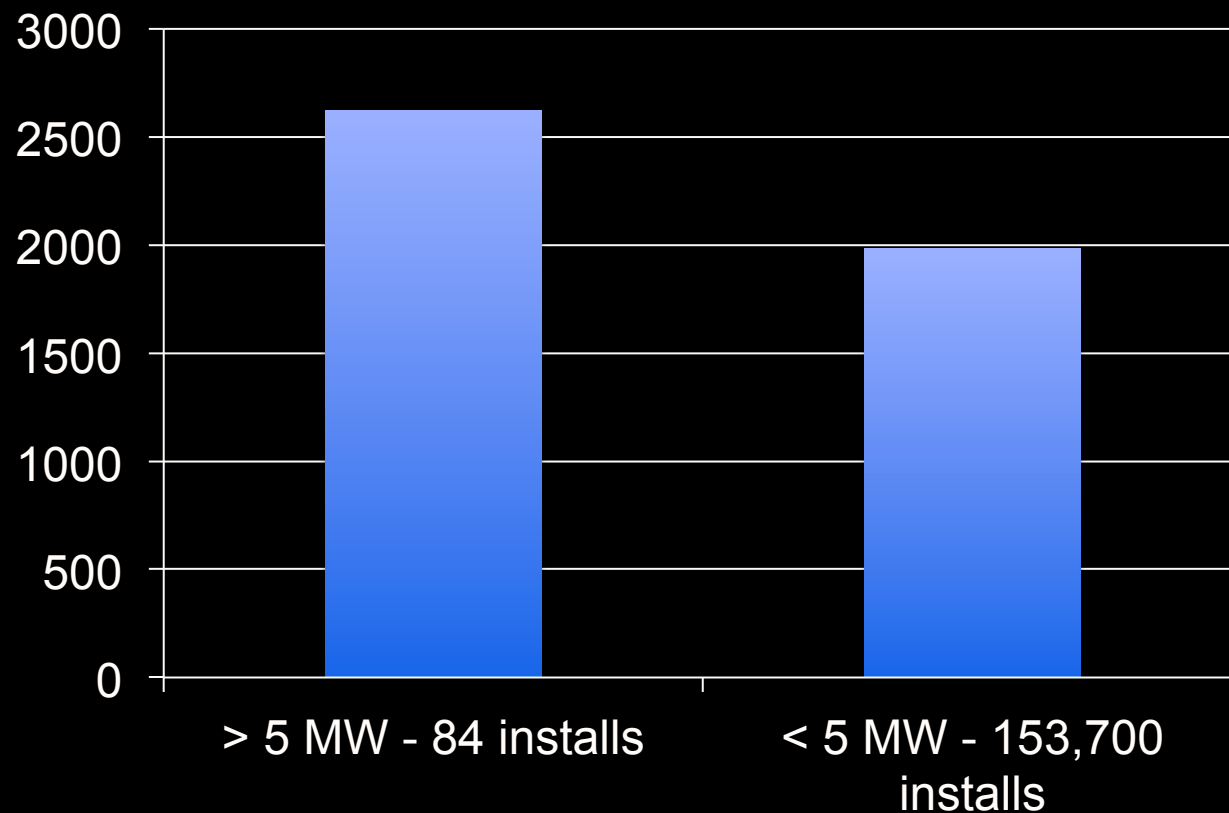


2013

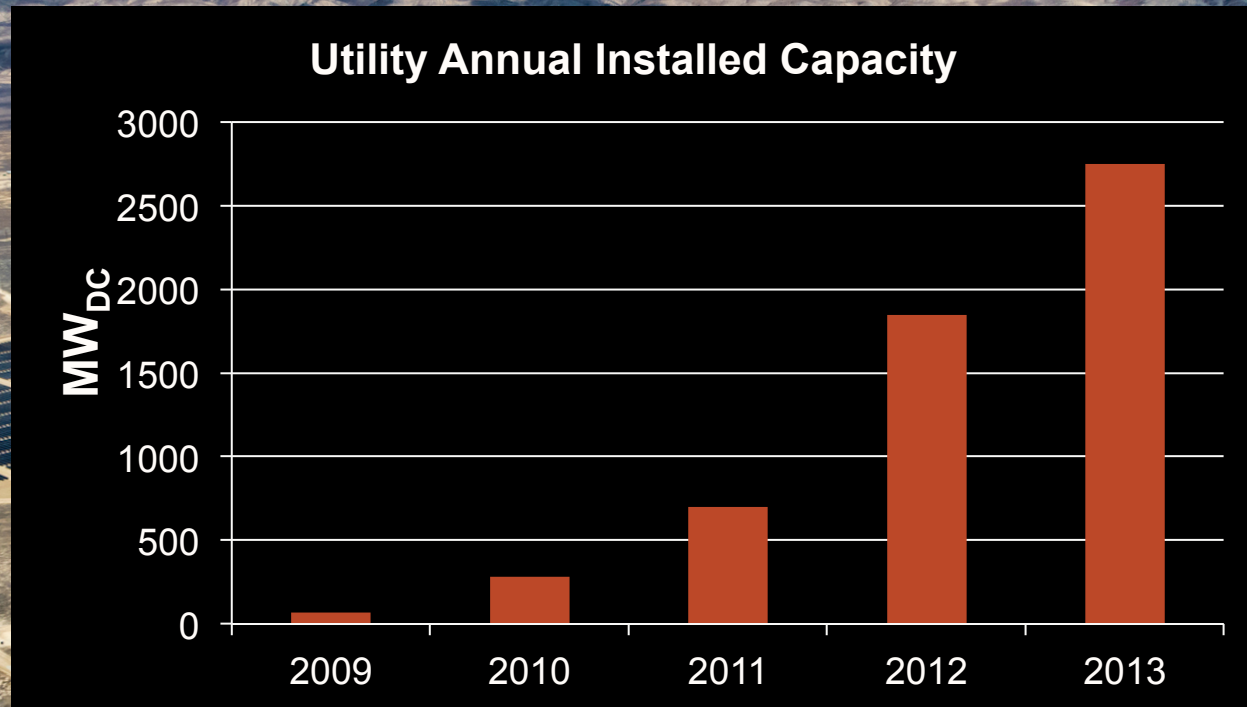


- Residential
- Non-Residential
- Utility

Large systems are more than half of the capacity installed in 2013

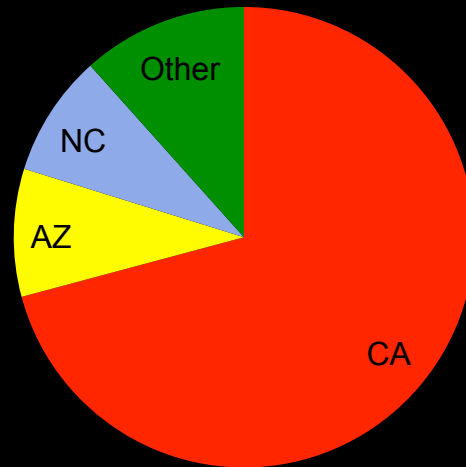


Utility Sector



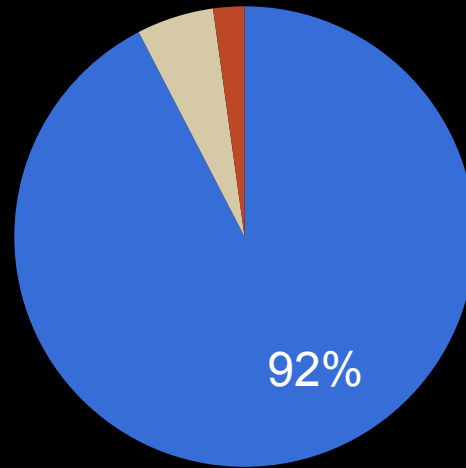
Utility Sector

By State



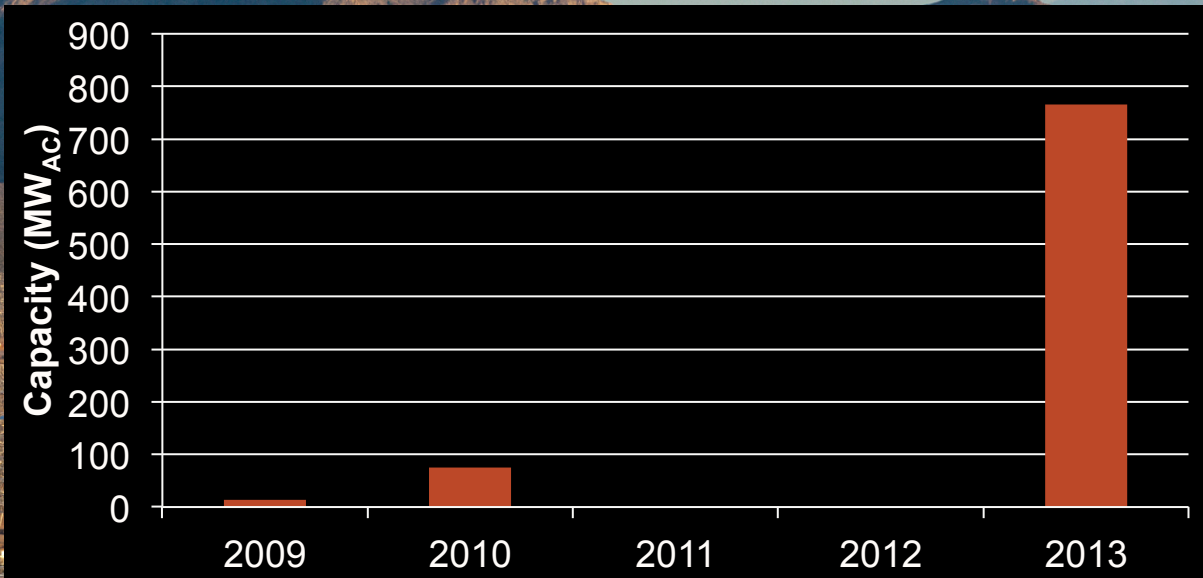
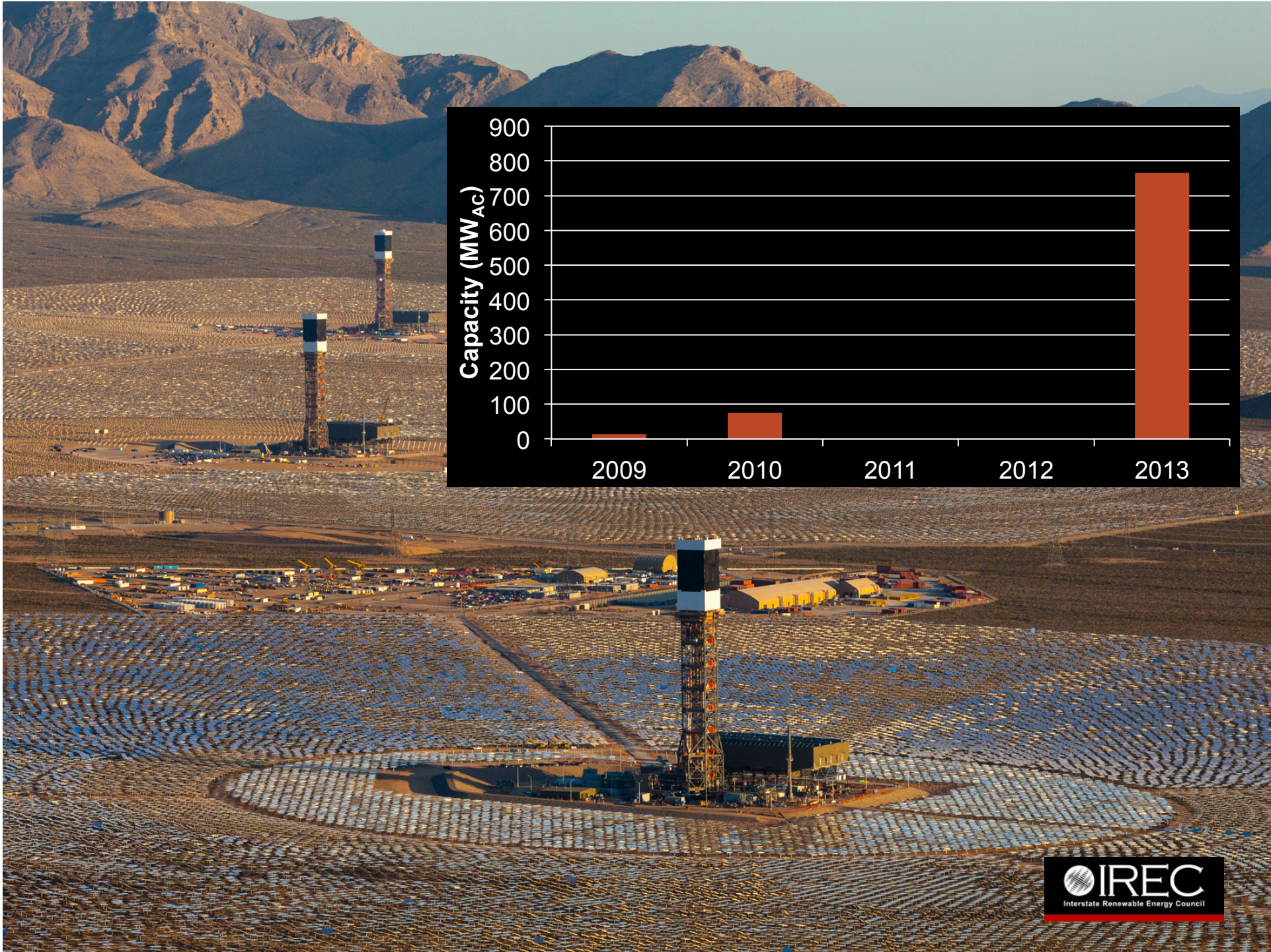
Utility Sector

Utility- Generation Type

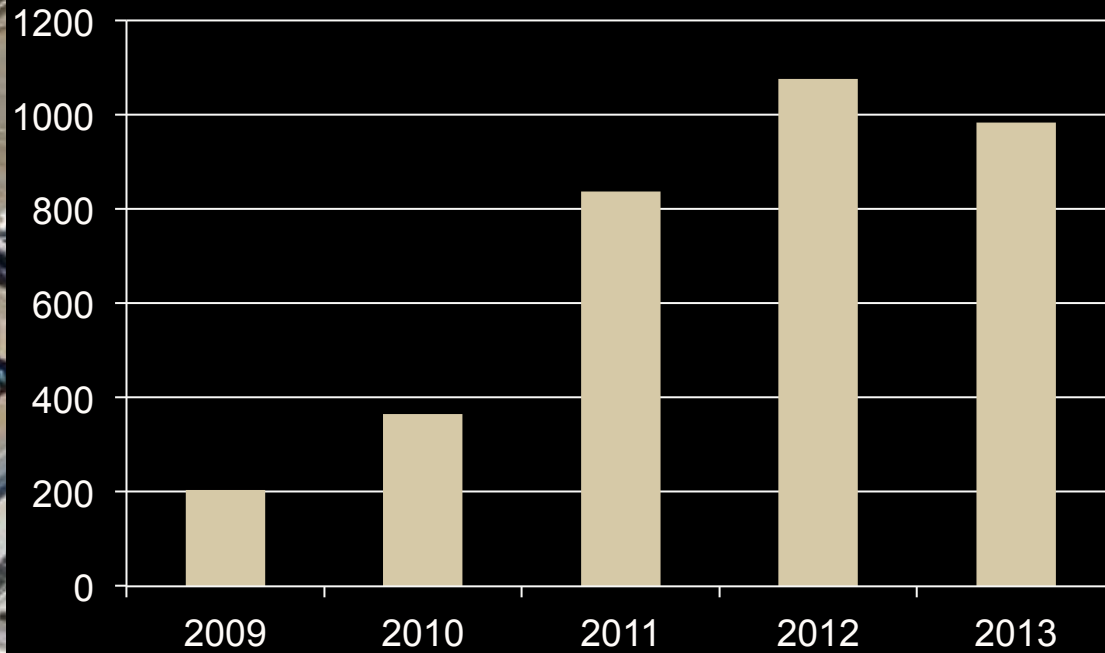


- Utility PPA
- Utility-owned
- Feed-in Tariff



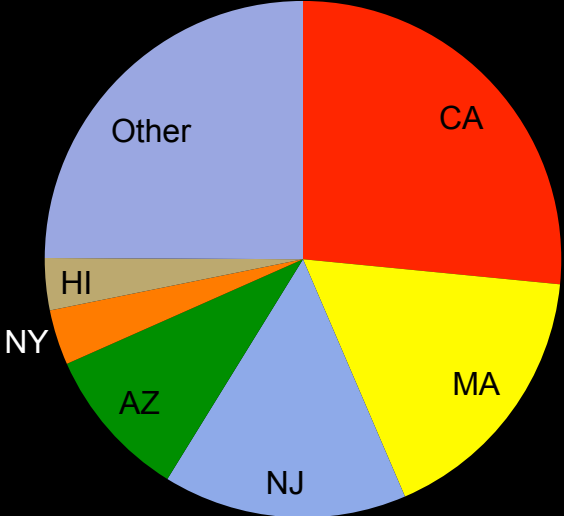


Non-residential



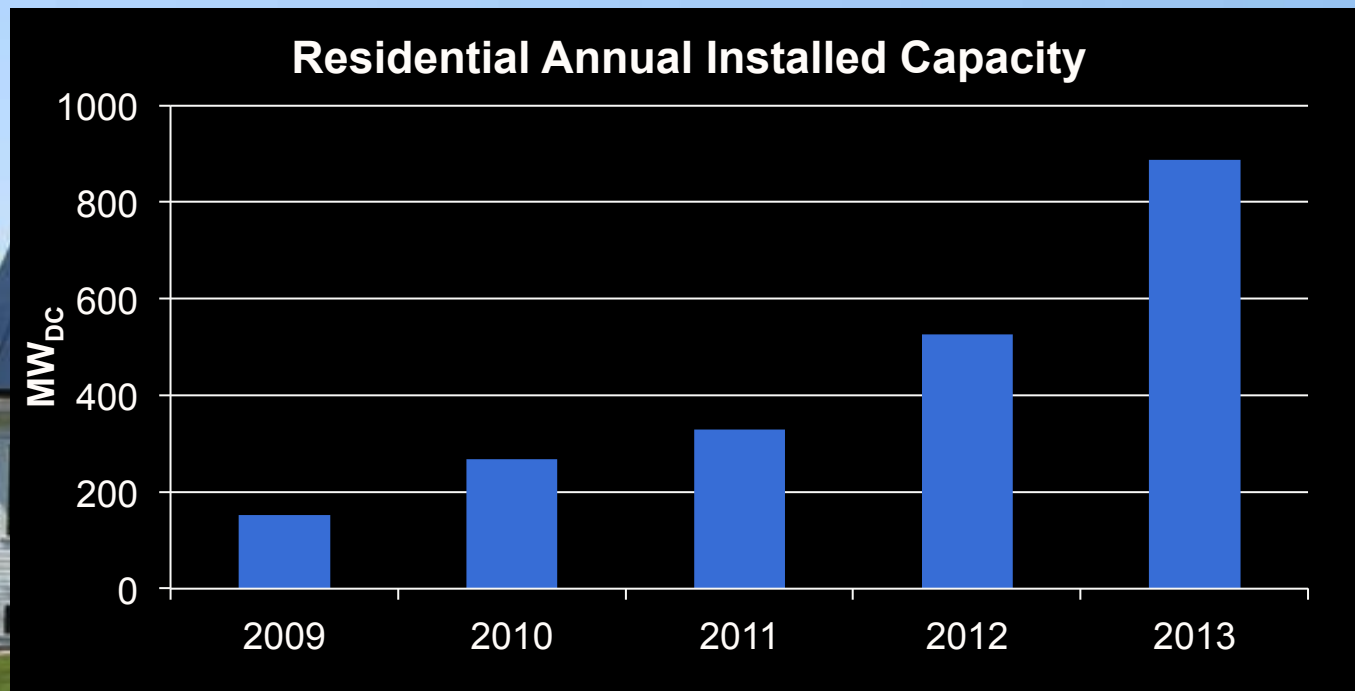
Non-Residential Sector

By State

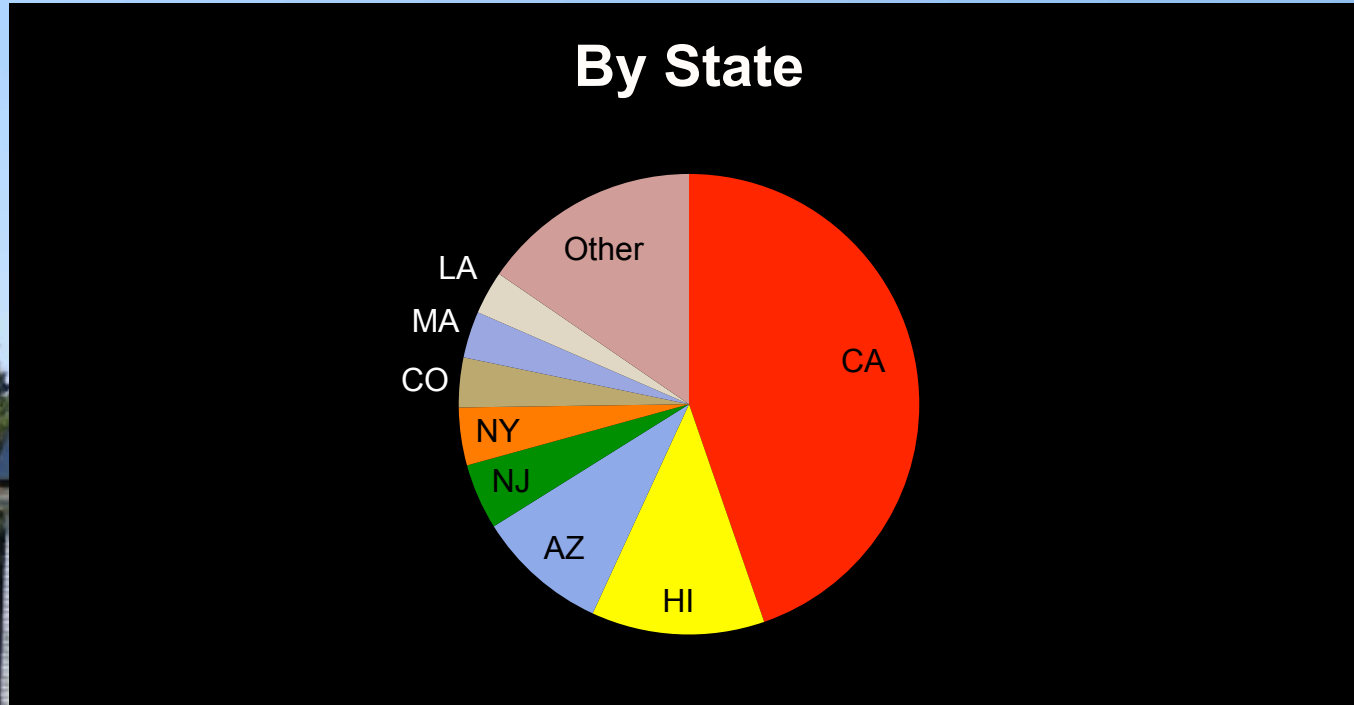


Non-Residential Sector

Residential Sector

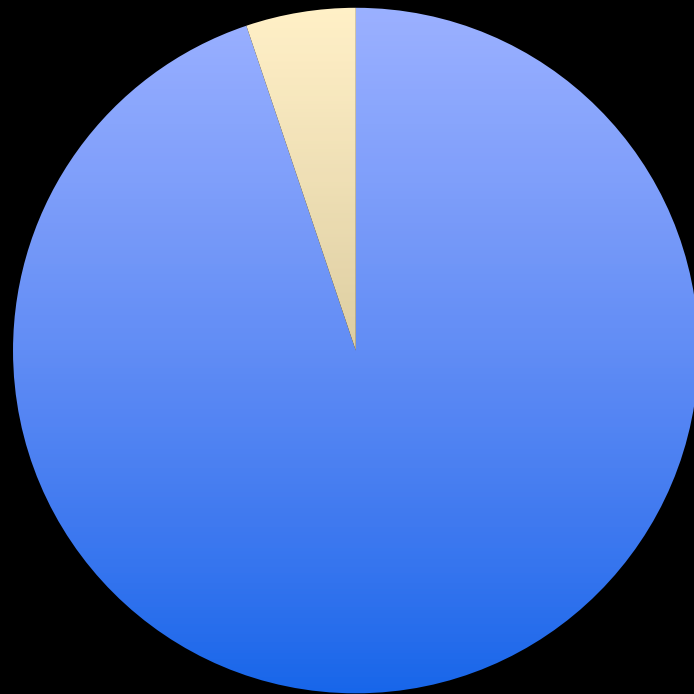


Residential Sector



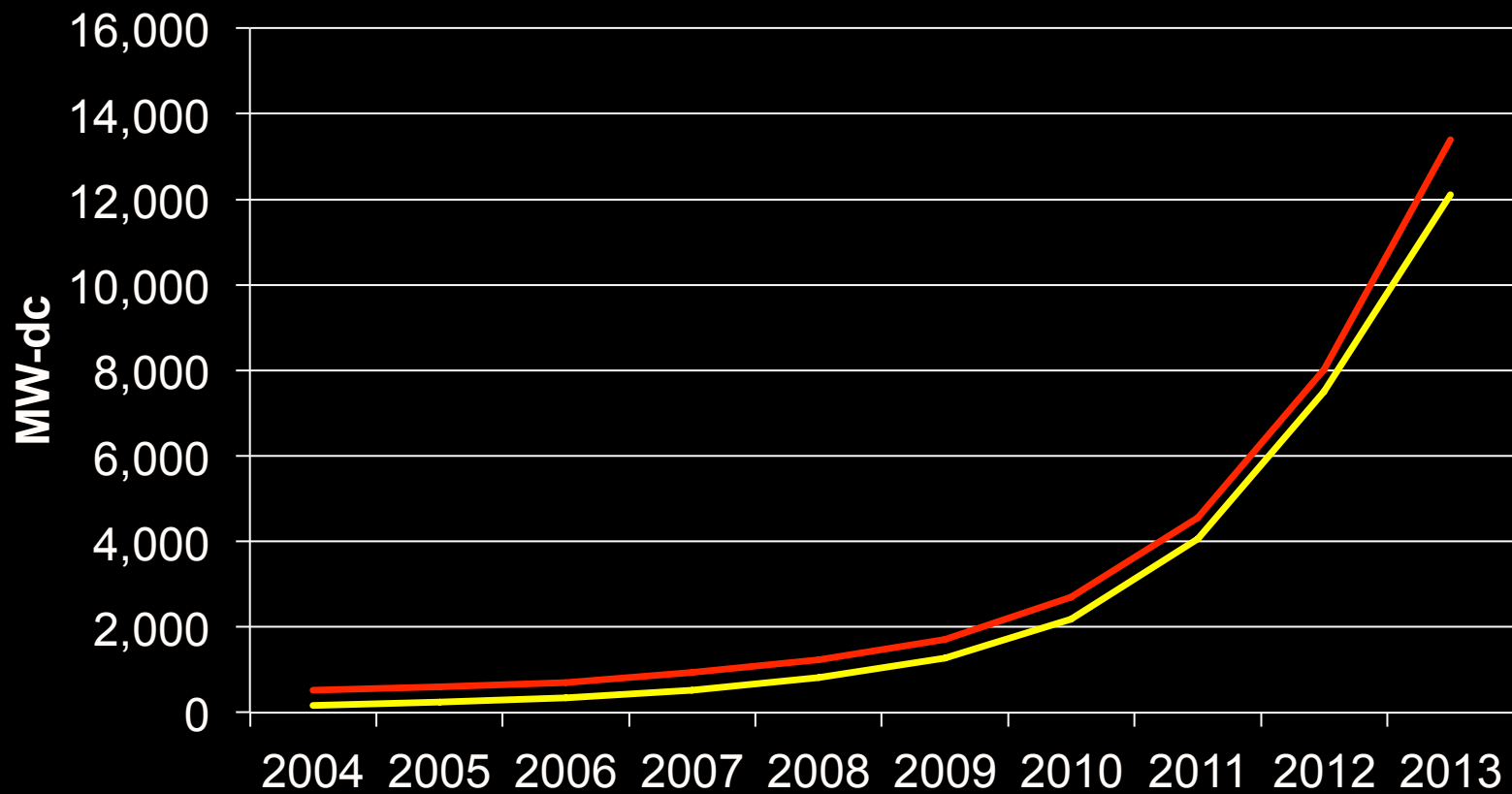


Distributed – Generation Status



- Net Metered
- Non-exporting

Cumulative U.S. Grid-tied Solar Electric Installations





Interstate Renewable Energy Council, Inc.



U.S. Solar
MARKET TRENDS
2013

JULY 2014 *Larry Sherwood*

irecusa.org/publications



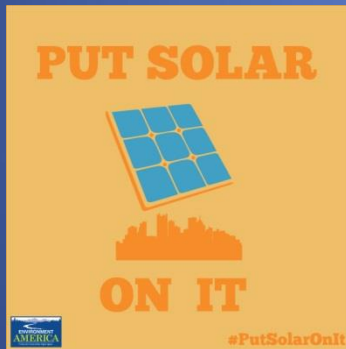
Interstate Renewable Energy Council

Thank you

Larry Sherwood

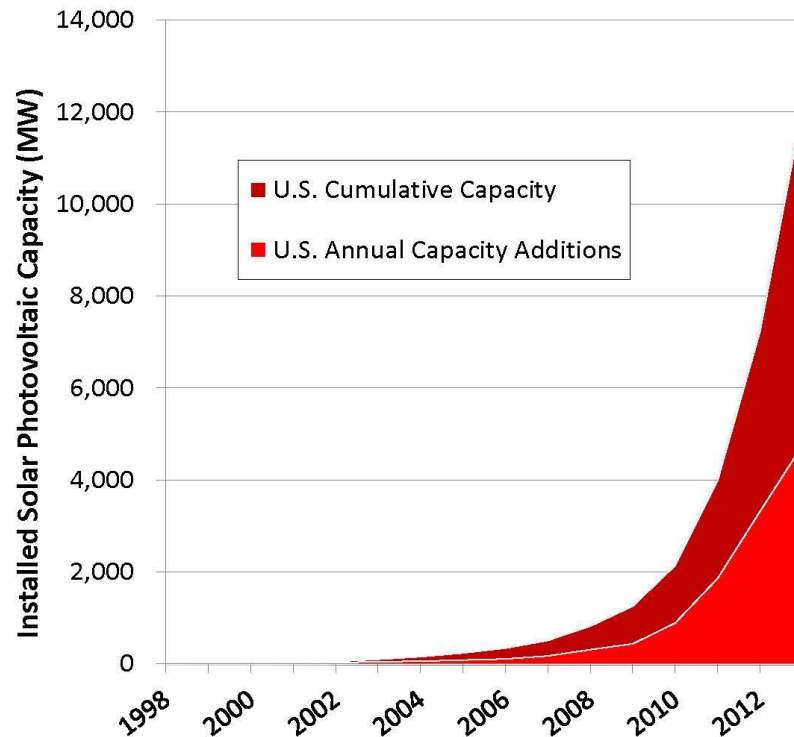
Larry@irecusa.org

Lighting the Way: Lessons from Leading Solar States



Rob Sargent, Energy Program Director, Environment America
Solar Trends Webinar
Clean Energy States' Alliance (CESA)
September 5th, 2014

Solar is on the rise- 120-fold increase in 10 years



Why is Solar Becoming A “Go-To” Energy Option?

Unlimited resource with no fuel costs

Also,

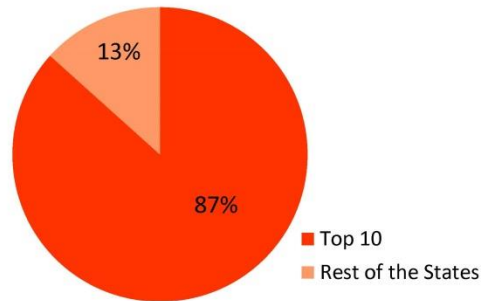
- **Quick to deploy** – easier siting and ability to locate on existing structures
- **Lower bills for customers**
- **Can save all ratepayers money** – by reducing cost of peak power and T&D and hedge against fuel prices increases
- **Economic benefits** - including local jobs and more energy \$ in local economy.
- **Much less pollution**

Top Ten States – Per Capita Installed Solar Capacity Through 2013

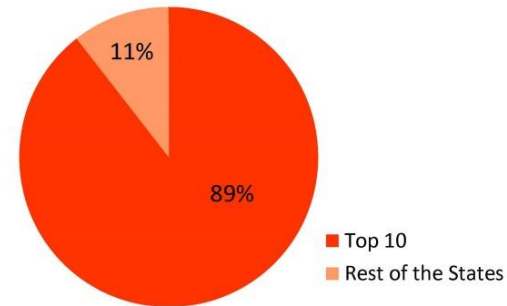
State	Cumulative Solar Electric Capacity per Capita		Solar Electric Capacity Installed During 2013 per Capita		Cumulative Solar Electricity Capacity		Total Solar Electricity Capacity Installed During 2013	
	(Watts/person)	Rank	(Watts/person)	Rank	(MW)	Rank	(MW)	Rank
Arizona	275	1	109	1	1,821	2	724	2
Hawaii	243	2	107	2	341	7	150	6
Nevada	161	3	17	9	450	5	47	12
California	148	4	72	3	5,661	1	2,760	1
New Jersey	136	5	27	6	1,211	3	240	5
New Mexico	113	6	22	7	236	10	46	13
Delaware	82	7	14	10	53	21	9	23
Massachusetts	66	8	37	4	442	6	244	4
Colorado	63	9	12	11	331	8	61	10
North Carolina	57	10	33	5	557	4	328	3

Top Ten States: 87% of the Solar – Only 26% of Population & 20% of Electricity Sales

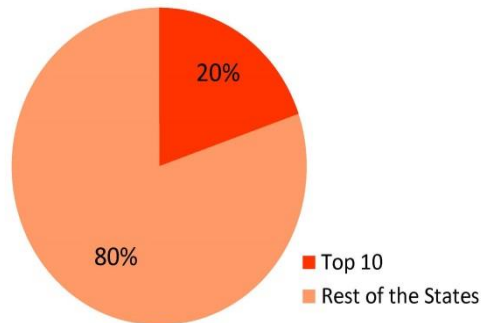
Solar Electricity Capacity



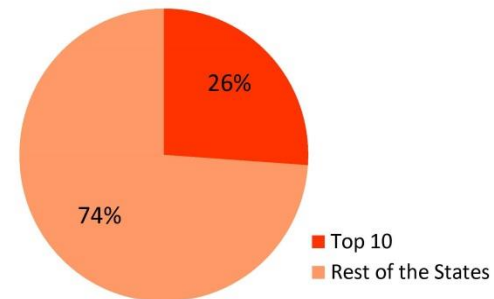
Solar Electricity Capacity
Installed in 2013



Electricity Sales

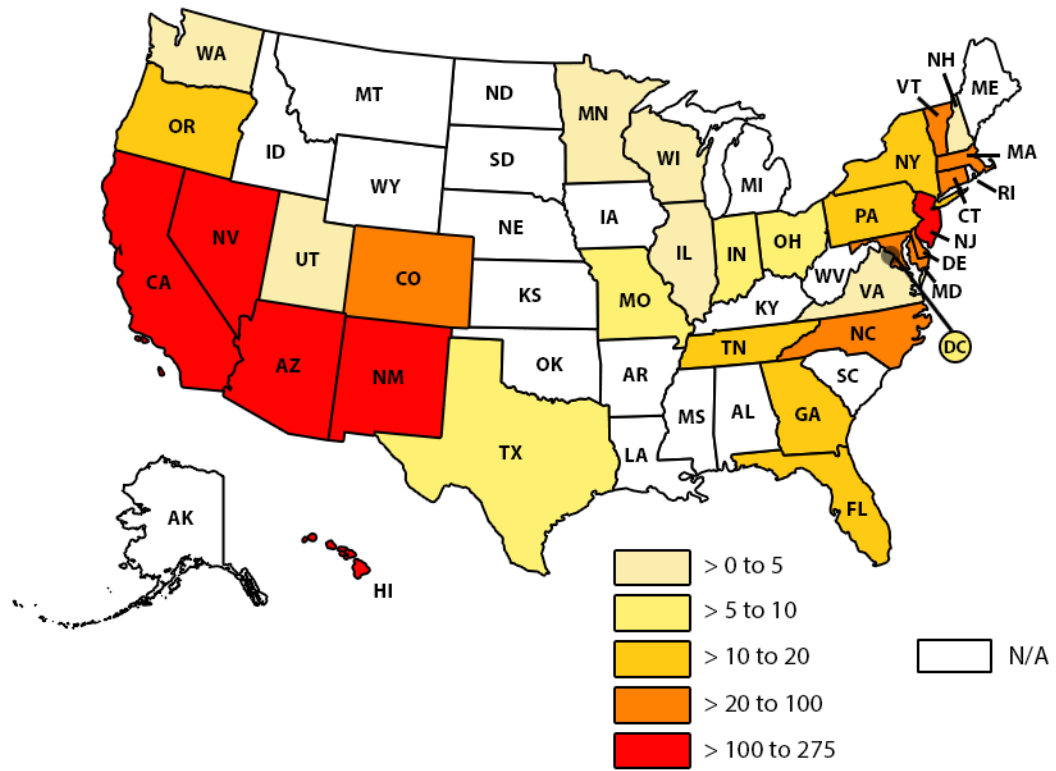


Population



Leading Solar States- Spread Through Most of the Nation

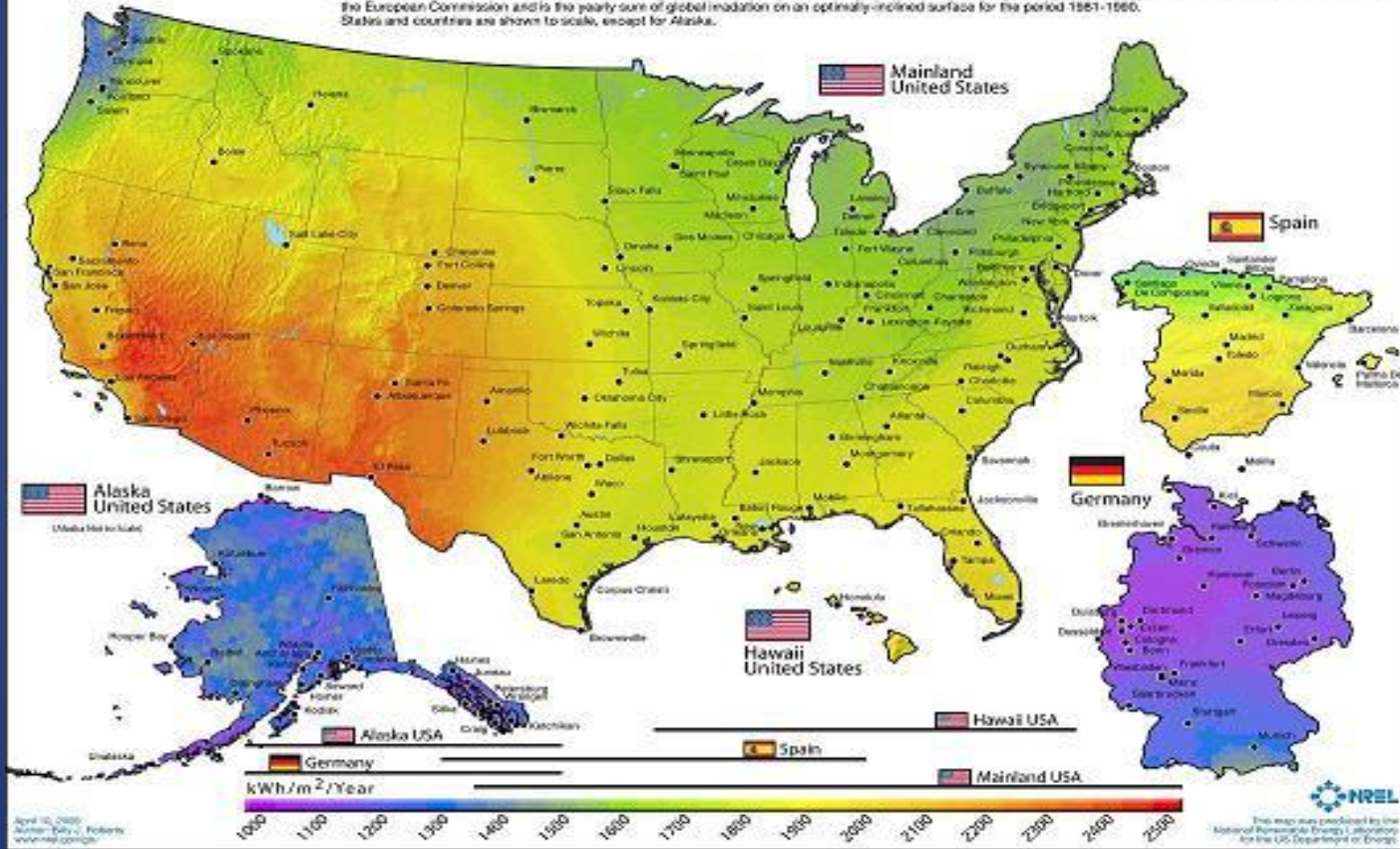
**Cumulative Solar Electricity Capacity per Capita in 2013
(Watts/person)**



Solar's just for those sunny western states. Think again.

Photovoltaic Solar Resource: United States - Spain - Germany

Annual average solar resource data are for a solar collector oriented toward the south at a tilt = local latitude. The data for Hawaii and the 48 contiguous states are derived from a model developed at SUNY/Albany using geostationary weather satellite data for the period 1998-2005. The data for Alaska are derived from a 40-km satellite and surface cloud cover database for the period 1985-1991 (NREL, 2003). The data for Germany and Spain were derived from the Joint Research Centre of the European Commission and is the yearly sum of global irradiation on an optimally-inclined surface for the period 1961-1990. States and countries are shown to scale, except for Alaska.



What do the leading solar states have in common?

Key policies to promote solar energy


Among the Top 10 states:

- 9 have strong *net metering policies*. In nearly all of the leading states, consumers are compensated at the full retail rate for the excess electricity they supply to the grid.
- 9 have strong statewide *interconnection policies*. Good interconnection policies reduce the time and hassle required for individuals and companies to connect solar energy systems to the grid.
- All have *renewable electricity standards* that set minimum requirements for the share of a utility's electricity that must come from renewable sources, and 8 of them have *solar carve-outs* that set specific targets for solar or other forms of clean, distributed electricity.
- 9 allow for *creative financing options* such as third-party power purchase agreements, and 8 allow property assessed clean energy (PACE) financing.

Questions?


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www.environmentamerica.org



Lighting the Way

**The Top Ten States that Helped Drive
America's Solar Energy Boom in 2013**



Thank you for attending our webinar

Warren Leon

RPS Project Director, CESA Executive Director

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Visit our website to learn more about the State-Federal RPS Collaborative and to sign up for our e-newsletter:

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