

Presentation to Ohio Energy Mandates Study Committee

April 16, 2015

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Solar Energy Industries Association (SEIA)**

Introduction

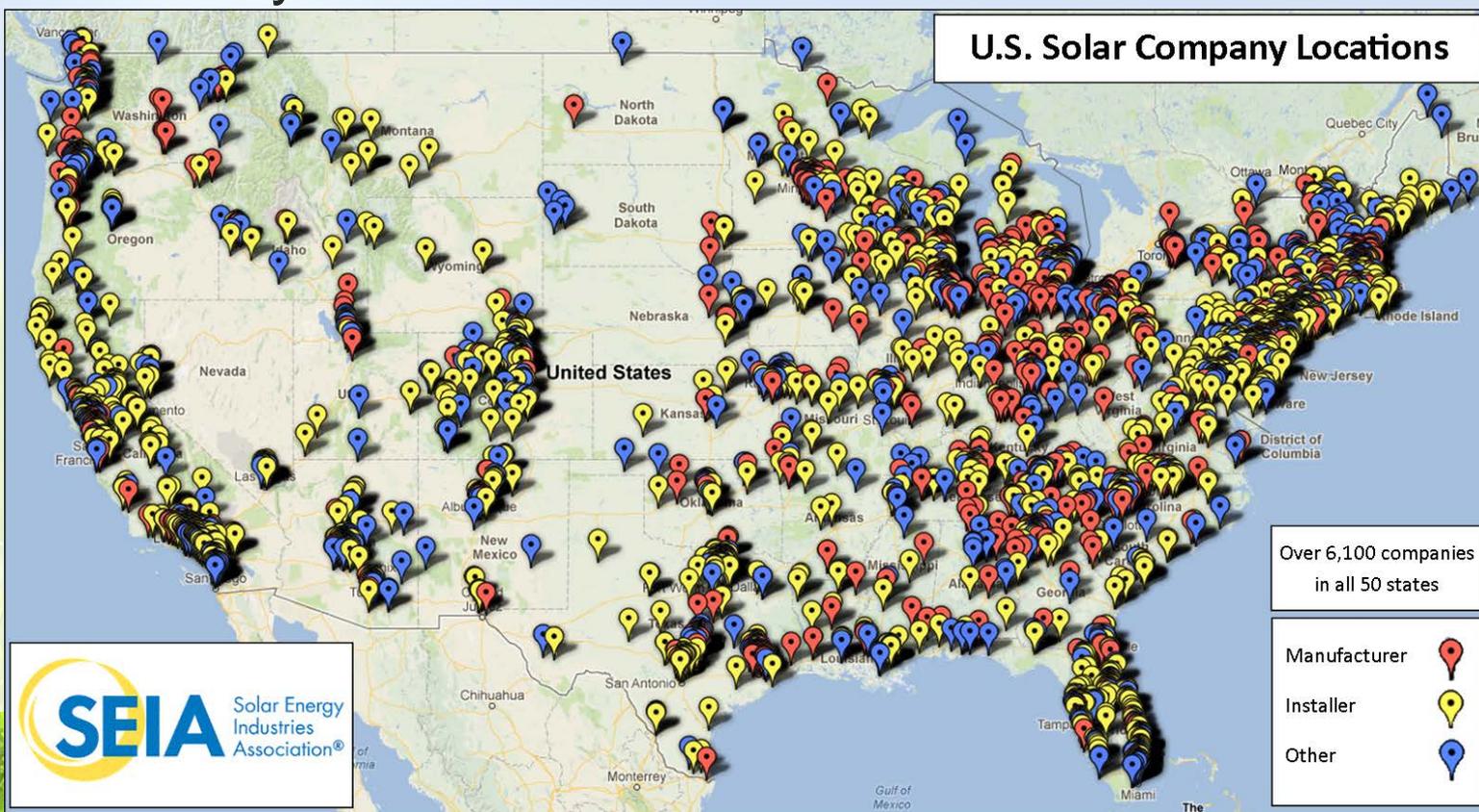
- About SEIA
- Solar industry update
- Public Support for Solar-friendly policies
- Ohio & Midwest Solar Statistics

About SEIA

- **U.S. National Trade Association for Solar Energy**
 - 1,000 member companies from across 50 states
 - Largest companies in the world as well as small installers
 - Represent the full value chain
 - Since 1974
- **Our Mission: Build a strong solar industry to power America**
 - Goal of 10 GW of annual installations by 2016

Solar is an Economic Engine

- Nearly 174,000 American workers in solar – more than double the number in 2009 – at 8,000 companies across the country



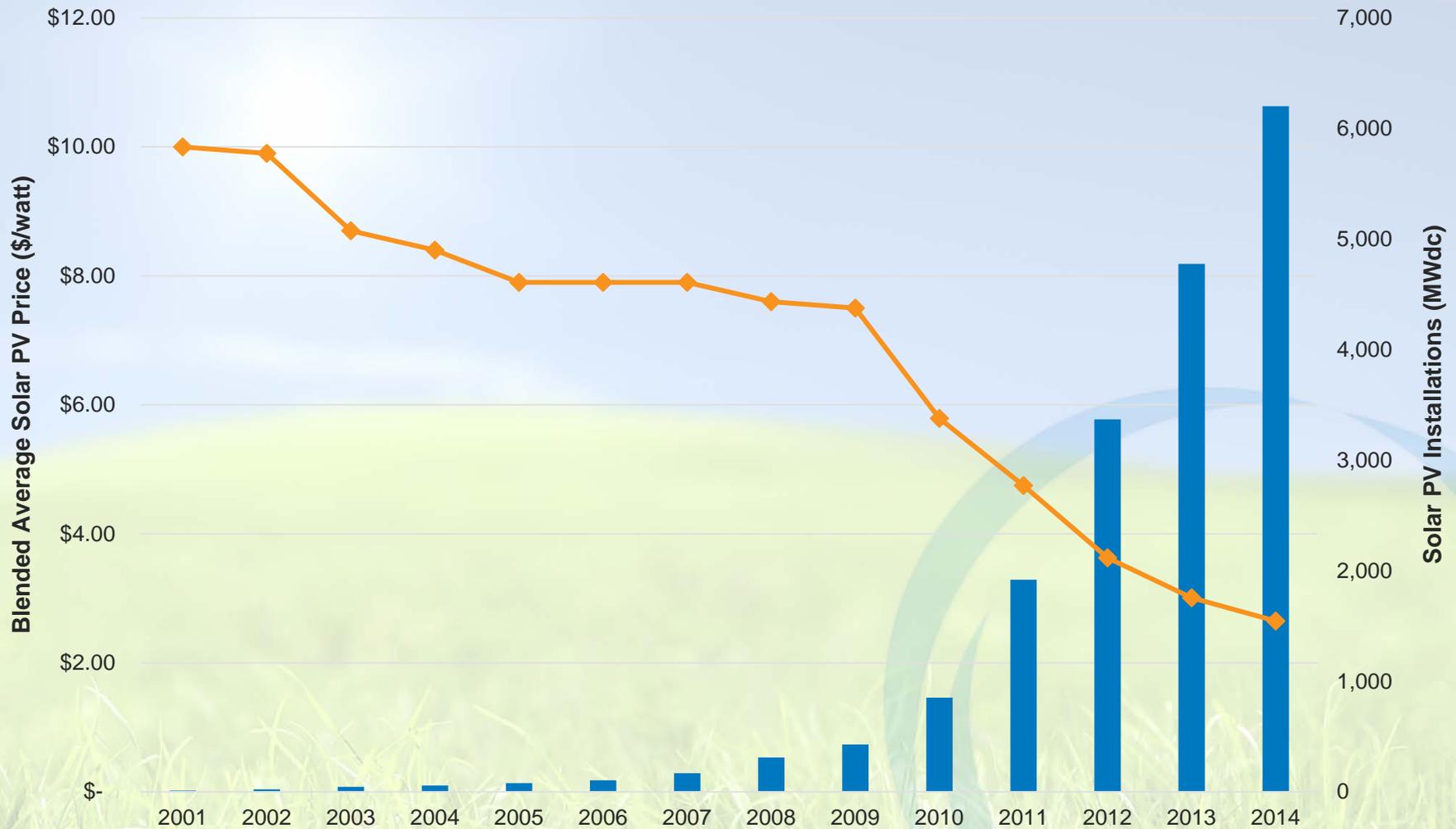
Investment in Solar has increased 10x since 2006

Yearly U.S. Solar Investment

Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
greentechmedia.com/research/ussmi;
NREL, Concentrating Solar Power Projects



Growth in Solar led by Falling Prices



Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
greentechmedia.com/research/ussmi
Lawrence Berkeley National Laboratory, *Tracking the Sun*

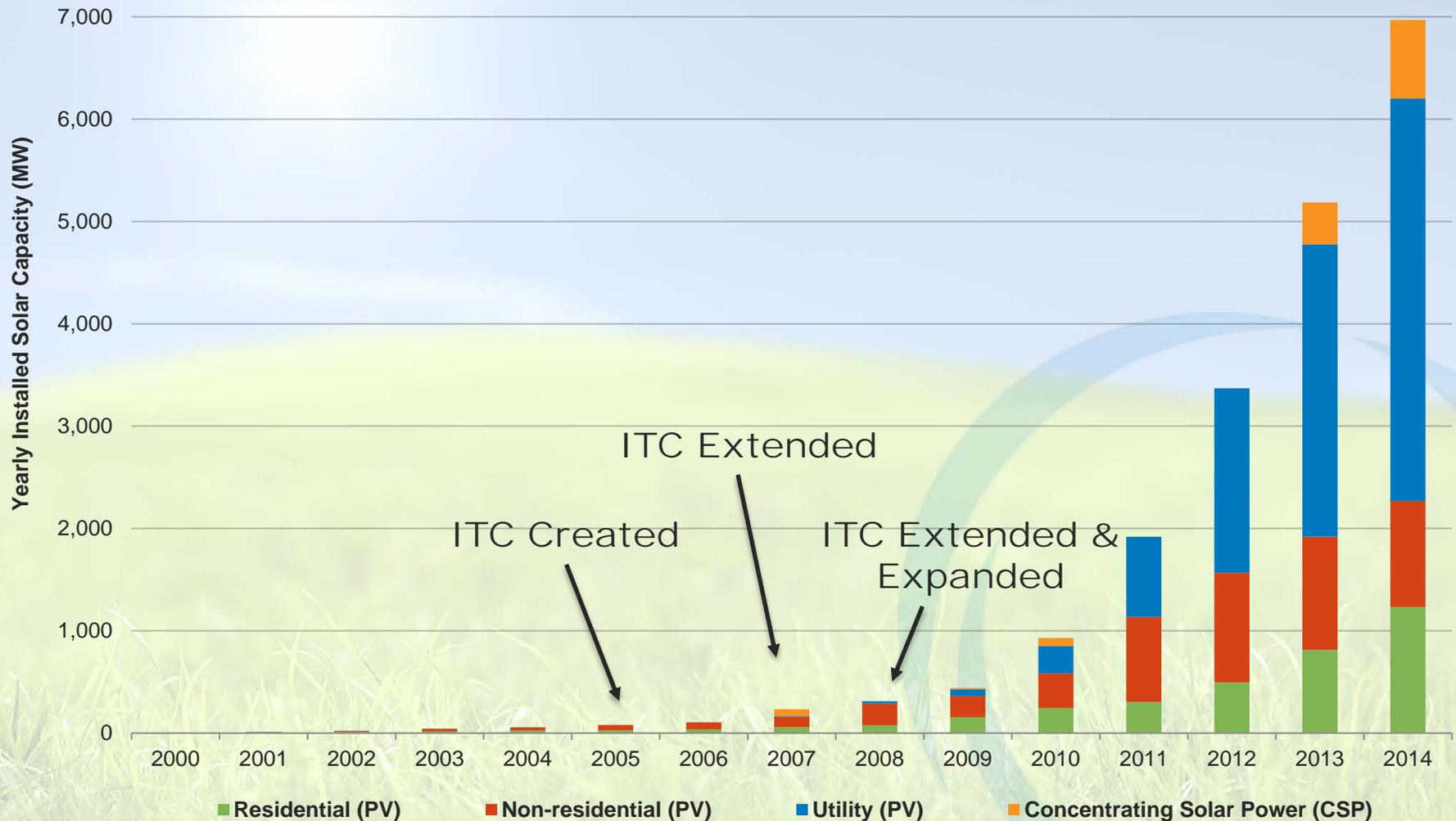
■ Solar PV Installations

◆ Solar PV Prices

Solar in America: Strong and Getting Stronger

Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
greentechmedia.com/research/ussmi

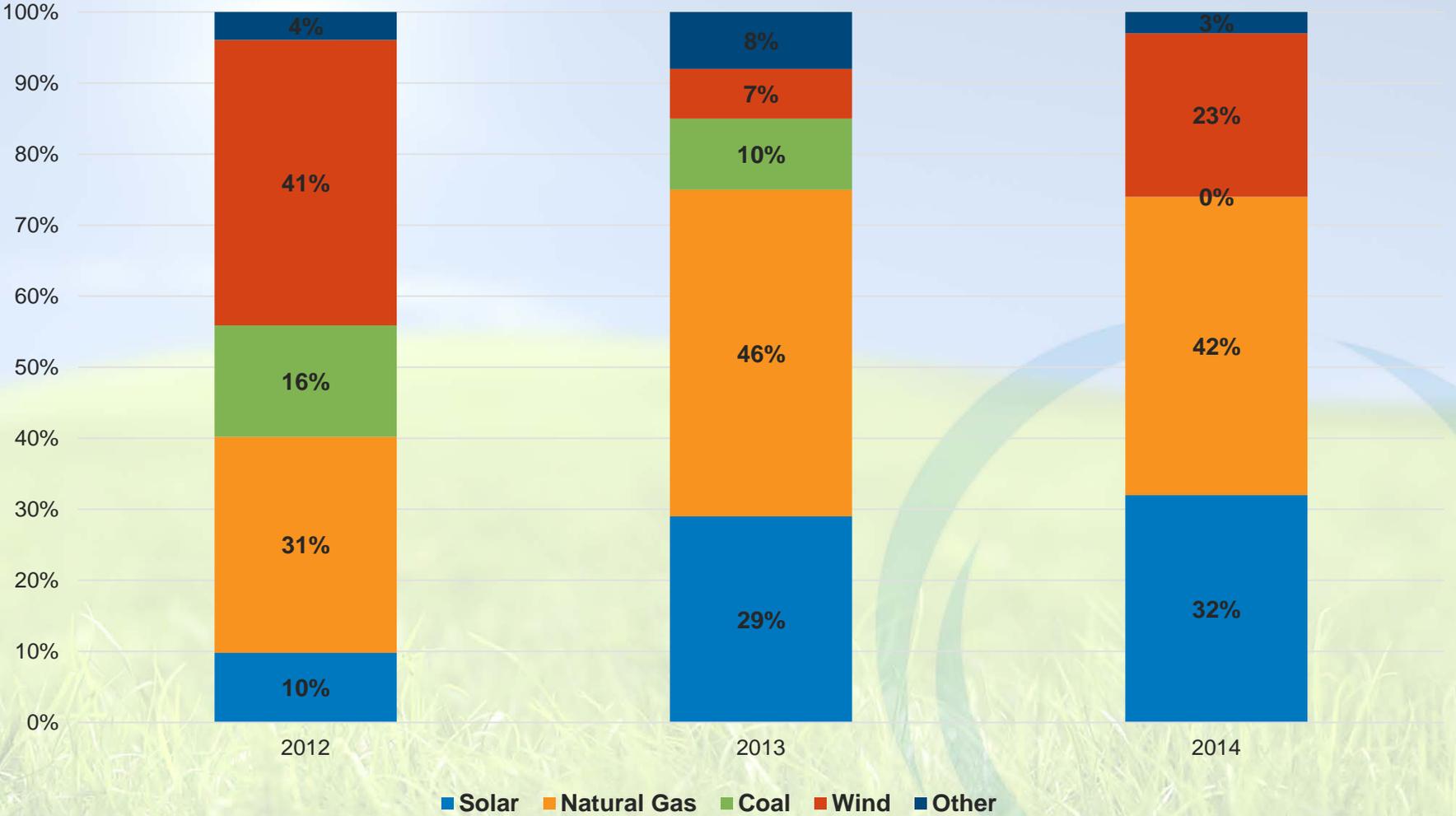
Yearly U.S. Solar Installations



32% of Electric Capacity Installed in 2014 from Solar

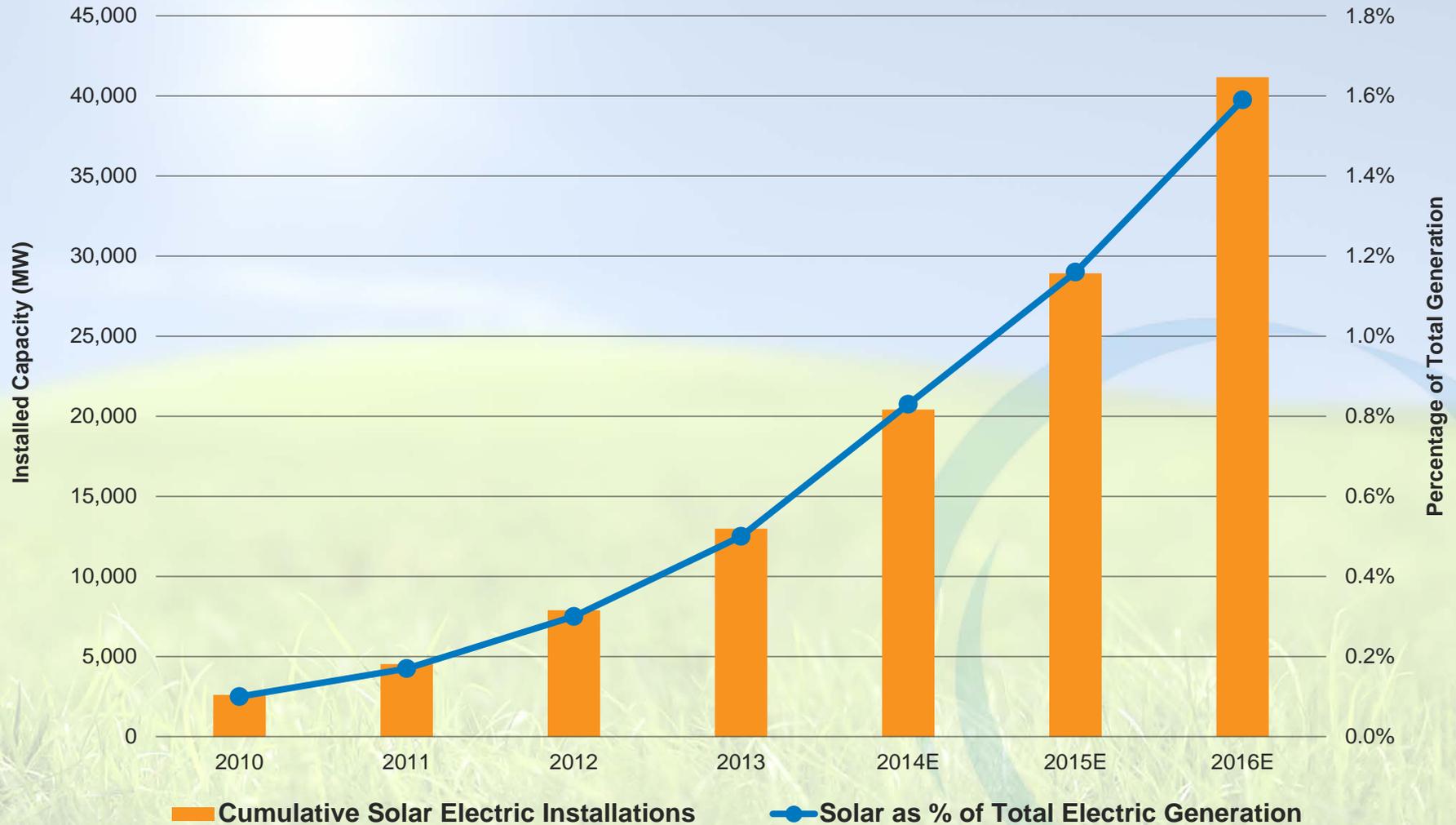
Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
greentechmedia.com/research/ussmi

New U.S. Generating Capacity by Fuel Type



Solar Increasingly Important Part of Generation Mix

Source: SEIA/GTM Research *U.S. Solar Market Insight Q3 2014*
greentechmedia.com/research/ussmi
SEIA estimate from EIA data



Broad Public Support for Solar

- Gallup poll shows 91% of Americans want the U.S. to place more emphasis, or the same emphasis, on solar development.
- Solar was the only energy source to see an increase in support over the last two years.
- Solar received support from 70% of republicans, 83% of independents and 82% of democrats. No other energy source received more support across party lines.

Majority of Americans Want More Emphasis on Solar, Wind and Natural Gas

Do you think that as a country, the United States should put more emphasis, less emphasis or about the same emphasis as it does now on producing domestic energy from each of the following sources -- [RANDOM ORDER]?

	% More emphasis	% Less emphasis	% Same emphasis
Solar power	79	9	12
Wind	70	14	14
Natural gas	55	12	32
Oil	41	30	27
Nuclear power	35	33	28
Coal	28	43	27

U.S. Should Place "More Emphasis" on Each Source of Domestic Energy Production, by Party ID

Do you think that as a country, the United States should put more emphasis, less emphasis or about the same emphasis as it does now on producing domestic energy from each of the following sources -- ?

	Republicans	Independents	Democrats
	%	%	%
Solar power	70	83	82
Wind	63	69	81
Natural gas	66	52	49
Oil	60	38	28
Nuclear power	47	34	24
Coal	40	24	22

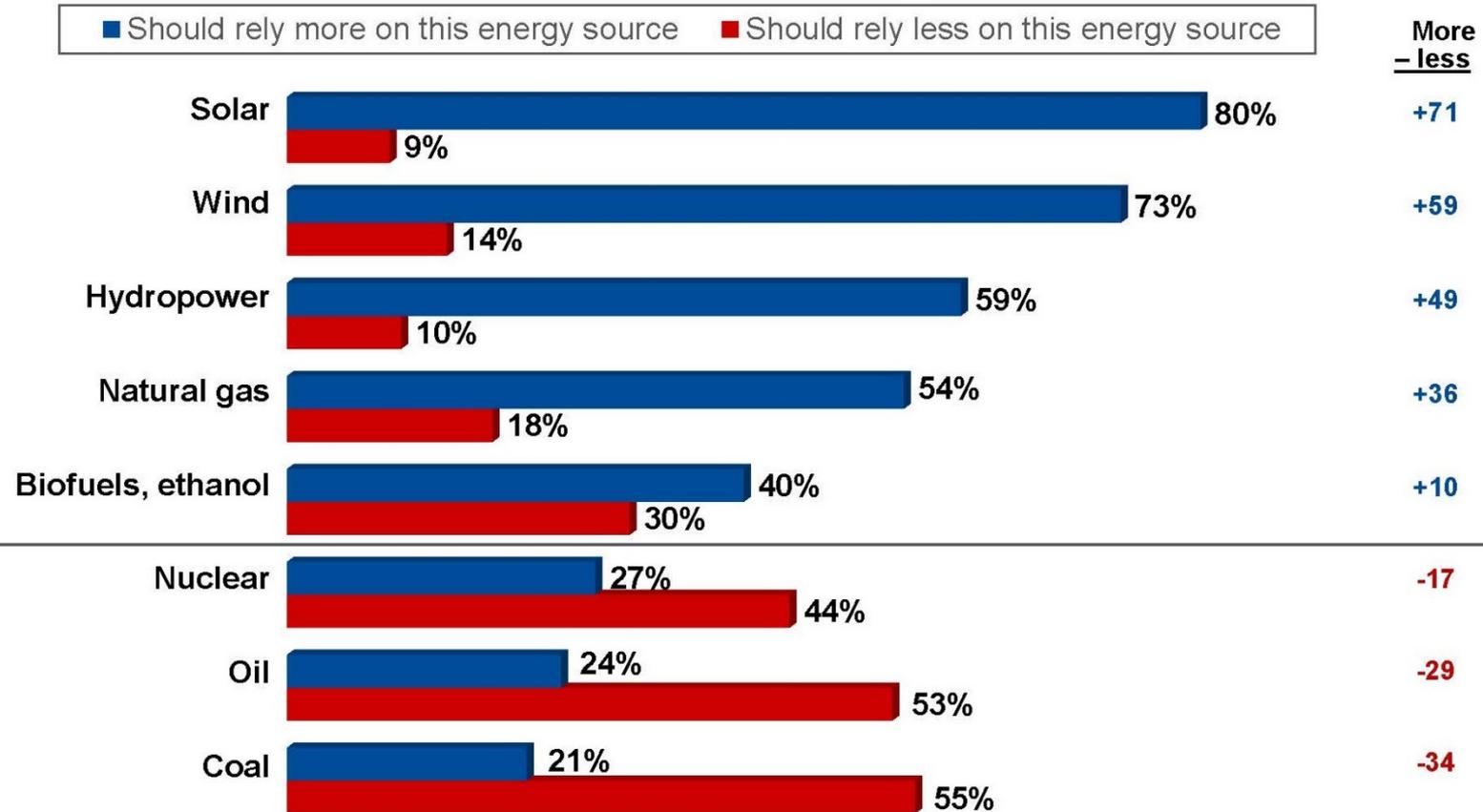
March 5-8, 2015

Access at: <http://tinyurl.com/p4r69ql>

Broad Public Support for Solar

Looking toward the future, voters want the US to rely more on renewable energy and less on oil and coal.

How much should the United States rely on this energy source in the next five years?



SEIA Policy Priorities: Federal & Trade

- **Investment Tax Credit**
 - Preserve and Extend at 30% Beyond 2016
 - Modify to include Commence Construction
- **Preserve MACRS**
- **Project Finance**
 - Increase tax equity pool through PWI authority and CRA
 - Expand MLPs to include renewable energy
- **Lead effort to resolve U.S.-China trade conflict**
- **Solar codes and safety standards**

SEIA State Policy Priorities

- **Renewable Portfolio Standards**
 - Defend and expand state RPS programs
 - advocate for inclusion of Solar Heating & Cooling (SHC)
- **Expand policies to support Distributed Generation (DG)**
 - NEM, rate design and incentives
 - Third party ownership; tax issues;
 - Community Solar
- **Grid Integration**
 - Outreach & education to key policymakers
 - Research and address key issues
- **Industry Leadership**
 - Drive new markets through EPA's Clean Power Plan

Why are Renewable Policies Popular?

- RPS provisions have been adopted by 29 states and NEM provisions by 44 states
- RPS and NEM support in-state economic development (manufacturing, construction & installation)
 - Ohio's 4,300 solar jobs include First Solar manufacturing plant in Perrysburg
 - A coalition of 11 manufacturers and energy service companies—including Honda, Honeywell, Whirlpool, and Ingersoll Rand—argued in a letter to Ohio state senators that the Renewable standards fostered competitiveness by keeping utility costs stable and low.
 - Another coalition of 51 companies and 24 organizations argued in a letter to Gov. Kasich that the standards stimulated in-state investments and created jobs.
- Solar power is a hedge against future energy prices and price volatility
 - Utility-scale solar systems are cost-competitive with coal and natural gas
 - Rooftop systems save ratepayers money on utility bills and make bills more predictable
- NEM is easily understood by customers who want to use their property to produce their own energy
- Local air benefits

Georgia Solar Power Free Market Financing Act of 2015



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Solar Financing

In other states, American homes, businesses, churches, schools and military bases are given the freedom to save money through financing options that reduce the upfront cost of solar installations. But in Georgia, we have outdated electric utility laws that prevent Georgians of modest means from taking advantage of these same financing options which will save them money on their utility bills.

By keeping common sense solar financing out of our state, the government is propping up monopoly utilities at the expense of individual freedom by eliminating competition. Only you know what is best for you. Not the state government of Georgia.

We support the Solar Power Free-Market Financing Act of 2015 ([HB 57](#)), which would clear the way for Georgians to choose solar energy and to choose the financing option that makes that energy investment the most affordable.

Benefits:

Competition: Georgia's electric power market is dominated by monopoly utility laws and has not changed its business model in a century. It is supported by government regulations that encourage a higher than necessary cost of electricity in Georgia. Our economy thrives on energy innovation, competition and choice which all reduce electricity costs. This bill will put Georgians in charge of their energy options and clear the way for innovative solar companies to meet that changing customer demand and lowering the cost of electricity for us all.

Ratepayer savings: Private investment in rooftop solar reduces the need for utilities to build expensive traditional power plants and transmission infrastructure, which can help keep rates low for all Georgians. This bill will clear the way for this cost-saving private investment in our energy infrastructure on your property.

Economic growth: Solar energy keeps energy dollars invested or spent here at home, in our own communities. By putting solar on roofs, solar creates local construction jobs that cannot ever be outsourced. Nationally, solar job growth has significantly outpaced the general economy. This bill will jumpstart the Georgia solar industry, attract investment from national and international companies, and create thousands of new local jobs, which is essential as Georgia still recovers from a record recession.

Smarter Resource Use: Private solar investment reduces the amount of water that regulated utility power plants use for steam and cooling of their massive power plants. Solar improves the farmer's ability to irrigate their fields, as well as Georgia's waterways for fishing and boating, as well as other outdoor quality family time.

"Georgia's very far behind in small solar (power generation), and one reason is because this financing is not available," said Rep. Mike Dudgeon (R-Johns Creek), the bill's sponsor.

"There are no tax credits in this bill, it's all about opening up the free market for these (solar) companies," Dudgeon said.

For more information on HB 57 please visit <http://www.legis.ga.gov/legislation/en-US/Display/20152016/HB/57>

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Georgetown, Texas: 100% Wind & Solar

Mayor: Why My Texas Town Ditched Fossil Fuel

Dale Ross | March 27, 2015



IDEAS Dale Ross is the mayor of Georgetown, Texas.

100% renewable energy made good business sense

Georgetown is a city of 54,000 just north of Austin known for beautiful Victorian-era architecture around our historic courthouse square.

Founded in 1848, we are



Wind Turbines at Sunrise

The City of Georgetown recently announced that our municipal electric utility will move to 100 percent renewable energy sources by 2017. That probably caught some folks by surprise. A town in the middle of a state that recently sported oil derricks on its license plates may not be where you'd expect to see leaders move to clean solar and wind generation.

No, environmental zealots have not taken over our city council, and we're not trying to make a statement about fracking or climate change. Our move to wind and solar is chiefly a business decision based on cost and price stability.

The city's contracts for solar and wind power will provide wholesale electricity at a lower price than our previous contracts. These long-term agreements also provide a fixed cost that will enable the city to avoid the price volatility and regulatory costs we were likely to have seen had we continued to use electricity generated by burning fossil fuels. With energy costs locked in for the long-term, we can maintain competitive, predictable electric rates through 2041.

Ohio Solar

- There are 216 companies in Ohio providing jobs in the solar industry, employing 4,300 people. These companies include:
 - 93 manufacturers, 57 manufacturing facilities, 62 contractor/installers, 14 project developers, 11 distributors, and 36 companies engaged in other solar activities including financing, engineering and legal support.
- Ohio's 102 MW ranks the state 20th in the country in installed solar capacity.
- In 2014, Ohio installed 15 MW of solar electric capacity, ranking it 21st nationally, down from 16th in 2012.
- In 2014, \$36 million was invested on solar installations in Ohio, down from \$72 million in 2013.

Ohio SREC Prices

- Ohio law requires solar generation to reach 0.50% of total electricity generated in 2024.
- Our current estimate that solar generation is about ~0.1% of energy consumed
- Solar installations in both Ohio and adjacent states are eligible to participate in the Ohio SREC market.
- By early 2014, Ohio market was oversupplied, thus prices down. Prices remain low, around \$50.
- The OH SACP is set at \$300 per SREC for 2013, declining at \$50 bi-annually to a minimum of \$50 in 2024. SB 310 froze the SACP for two years.
- Total SREC spending on 102 MW of Ohio capacity ~ \$10M/yr
- Total Ohio energy spending is about \$14.4 billion/yr

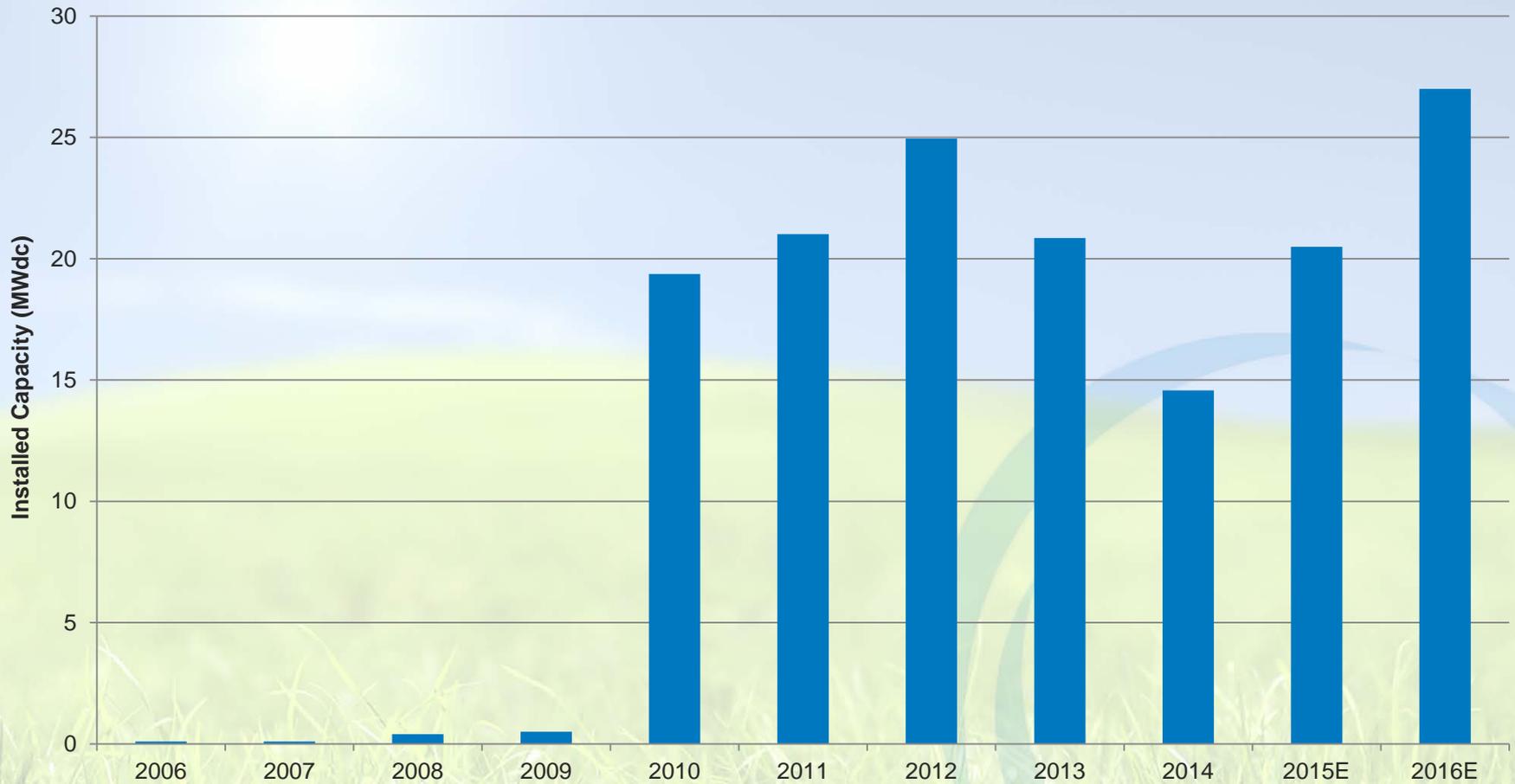
Market prices



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Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
greentechmedia.com/research/ussmi

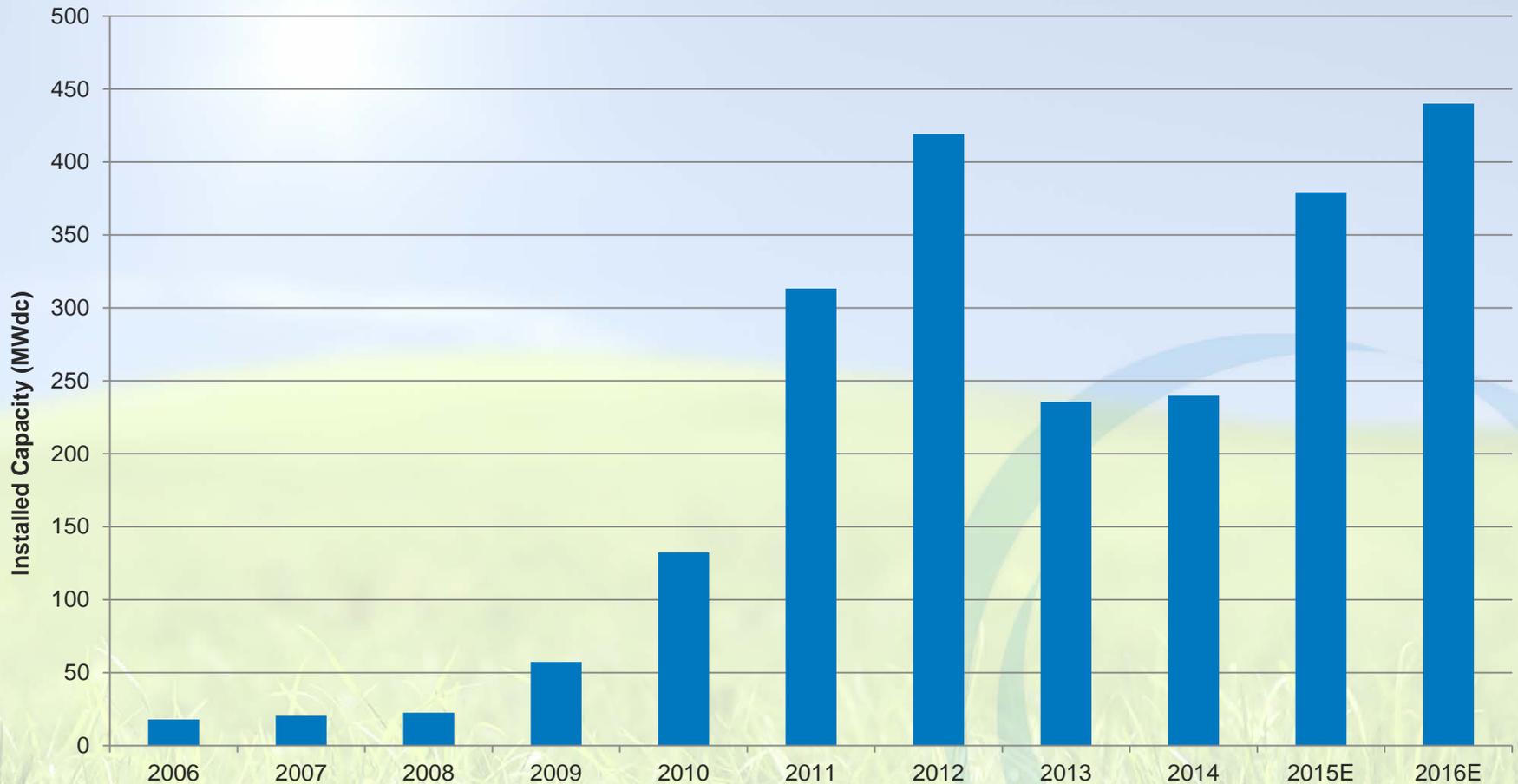
Ohio Annual Solar Installations



New Jersey

Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
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New Jersey Annual Solar Installations



Pennsylvania

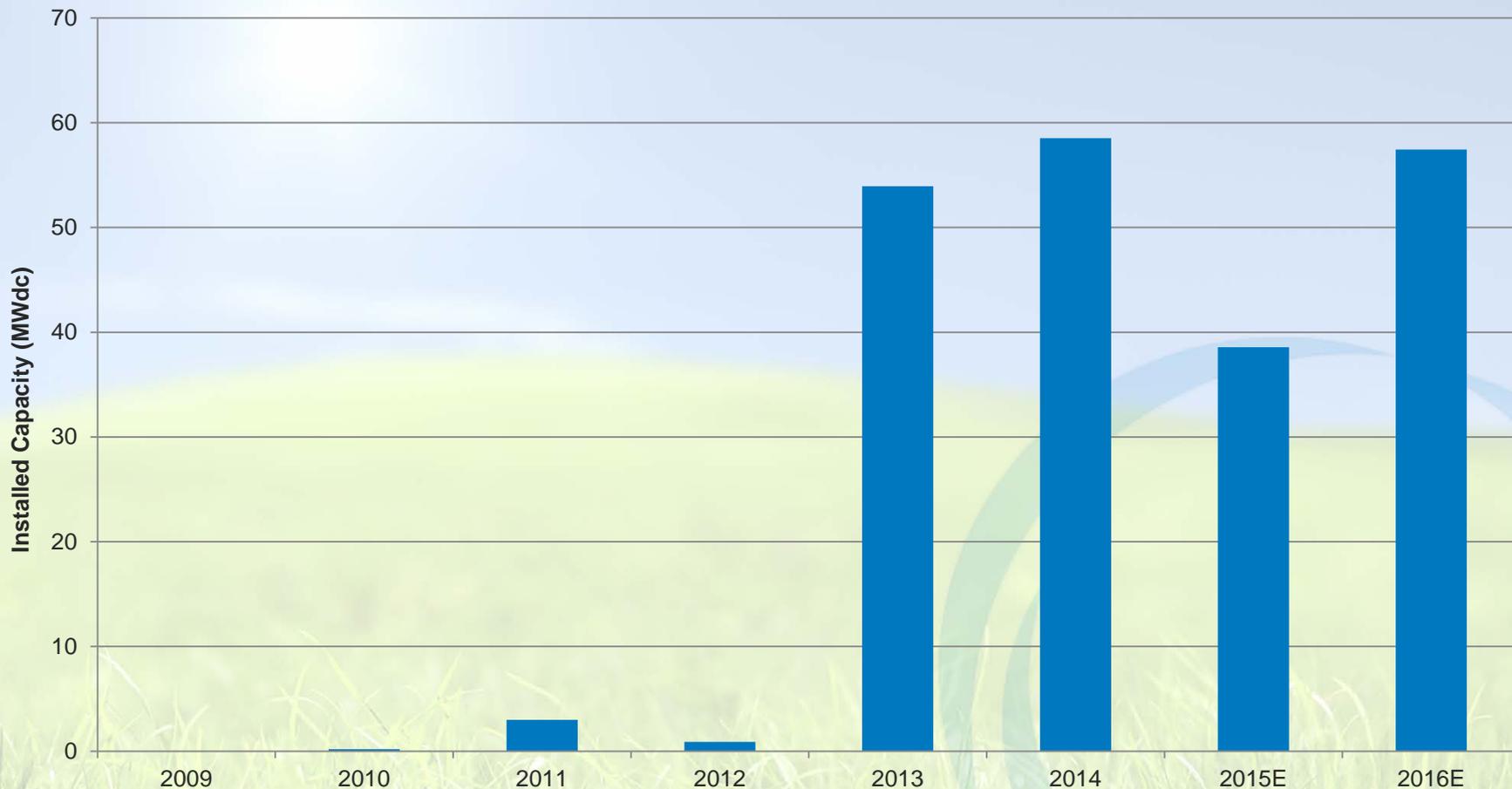
Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
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Pennsylvania Annual Solar Installations



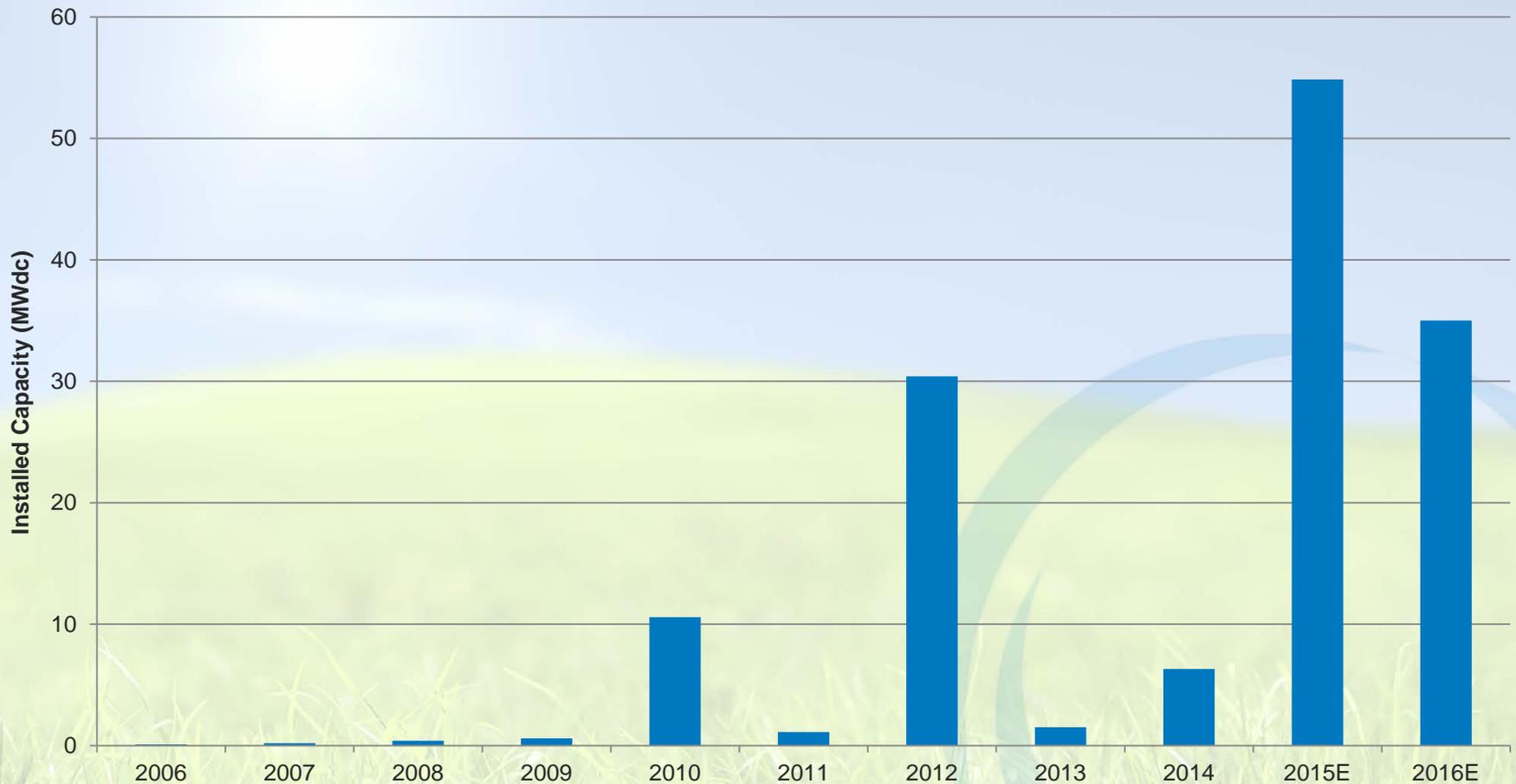
Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
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Indiana Annual Solar Installations



Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
greentechmedia.com/research/ussmi

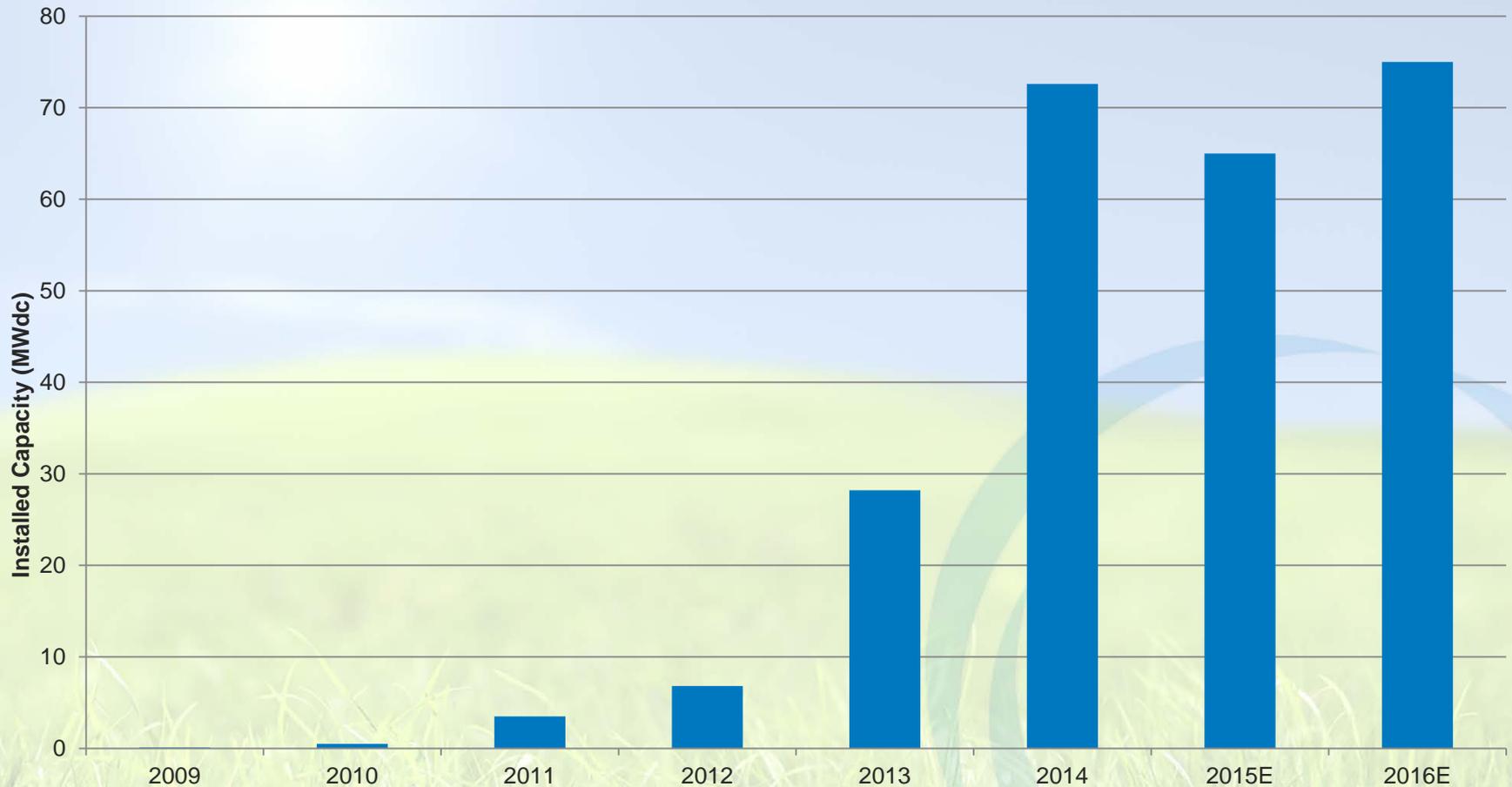
Illinois Annual Solar Installations



Missouri

Source: SEIA/GTM Research *U.S. Solar Market Insight Q4 2014*
greentechmedia.com/research/ussmi

Missouri Annual Solar Installations



Q&A

- Questions?