

Fate of Renewable Energy Under Trump



Dan Whitten
@DanWhitten
@SEIA



Lauren Randall
@TheLRandall
@sunrun



Peter Kelley
@peterkelley
@awea



Matthew Wagner
@DTE_Energy

S&P Global
Market Intelligence

Steph Tsao
@spglobal_tsao
@MichaelCopley



Solar Energy 2017

This year it's about the trade case

September 2017

www.seia.org

The Solar Industry Today



47.1 GW of solar installed through the end of 2016

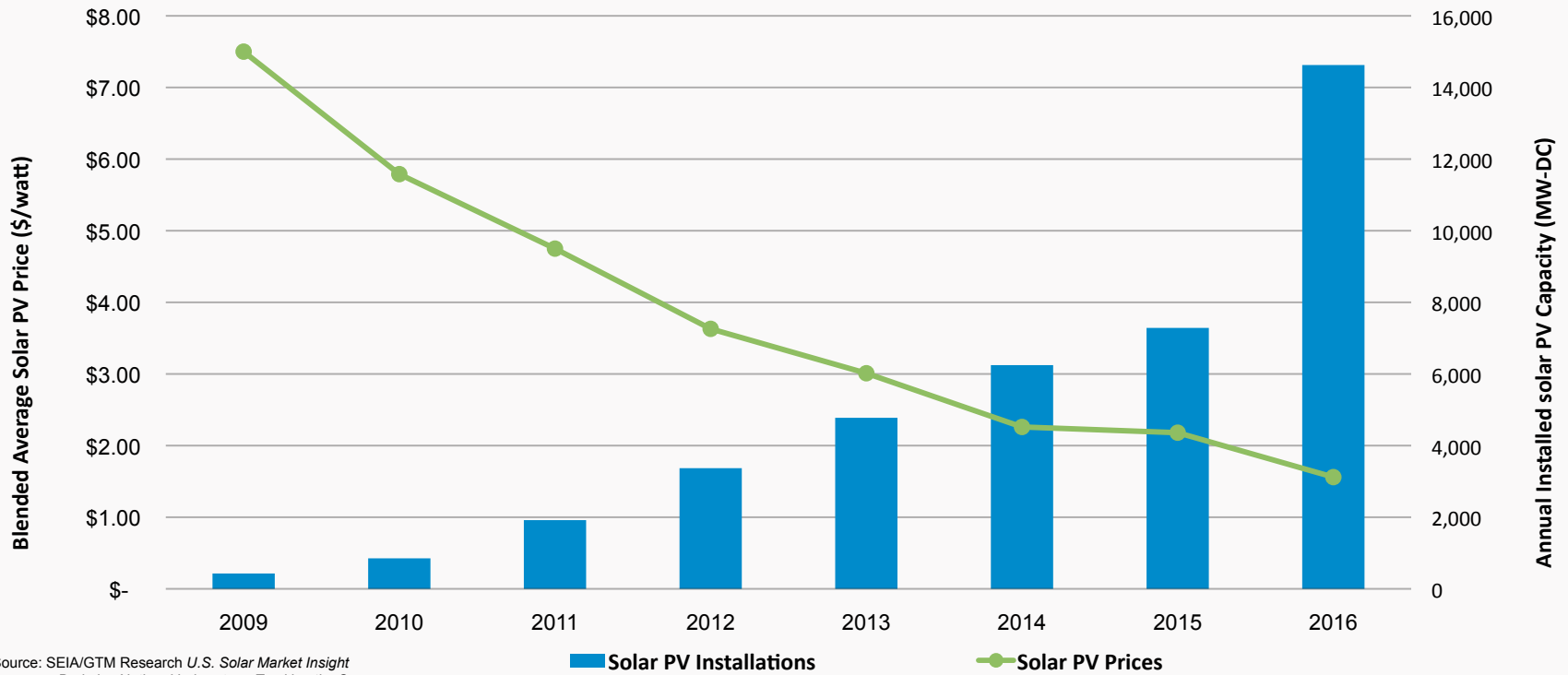
Enough to power **9.1million** American homes

68% 10-year average annual growth rate

Workers employed in the solar industry: **260,000**

1.5 million individual installations nationwide

Growth in Solar Led by Falling Prices

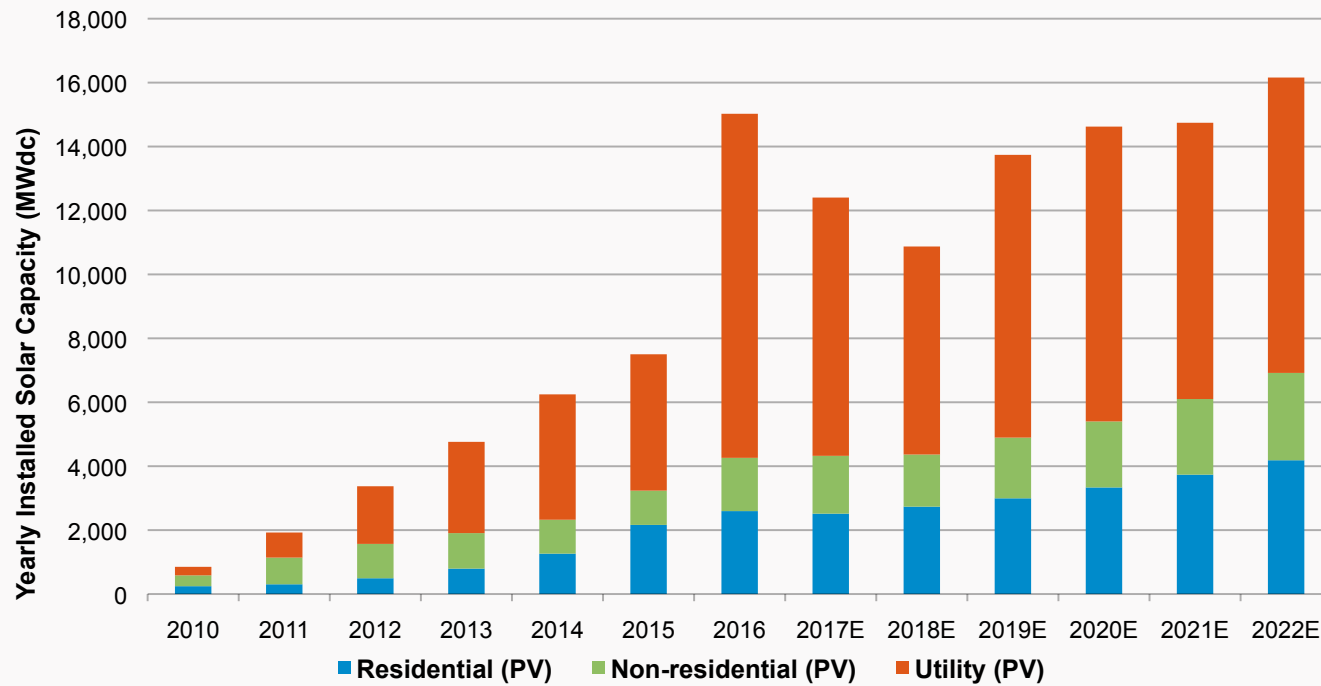


Source: SEIA/GTM Research U.S. Solar Market Insight
Lawrence Berkeley National Laboratory, Tracking the Sun

Total Capacity Triples by 2022



U.S. Solar PV Deployment Forecast





SUNIVA TRADE CASE

October 4, 2017

www.seia.org

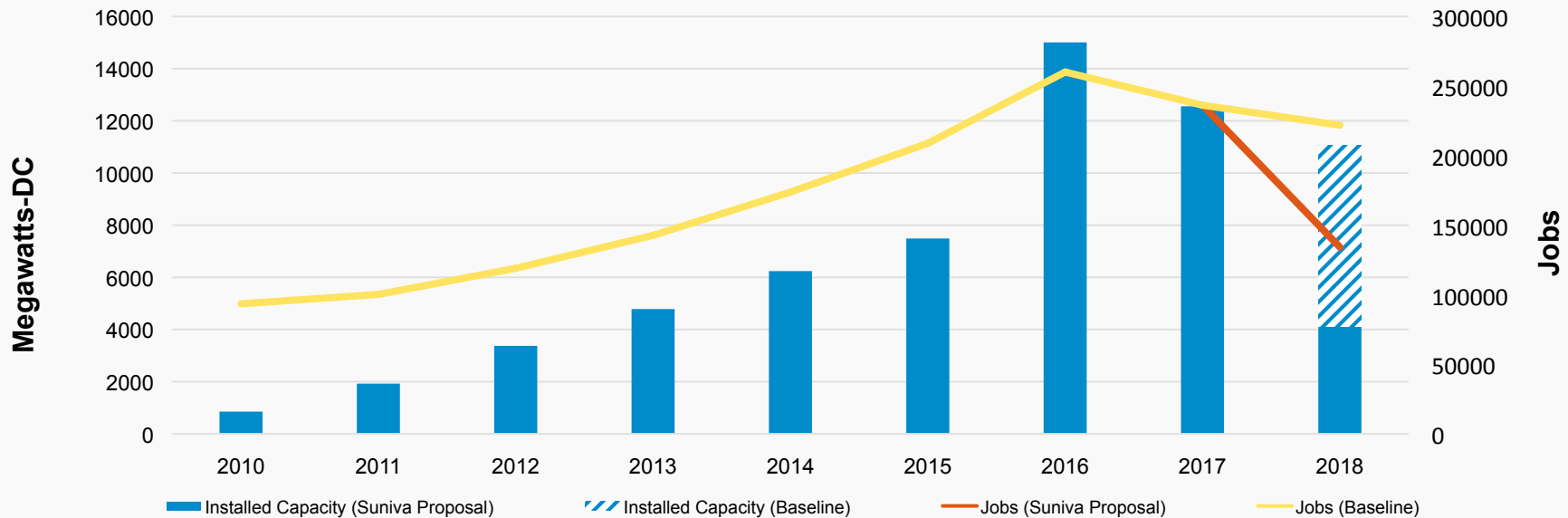
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Potential Impacts of Import Restrictions

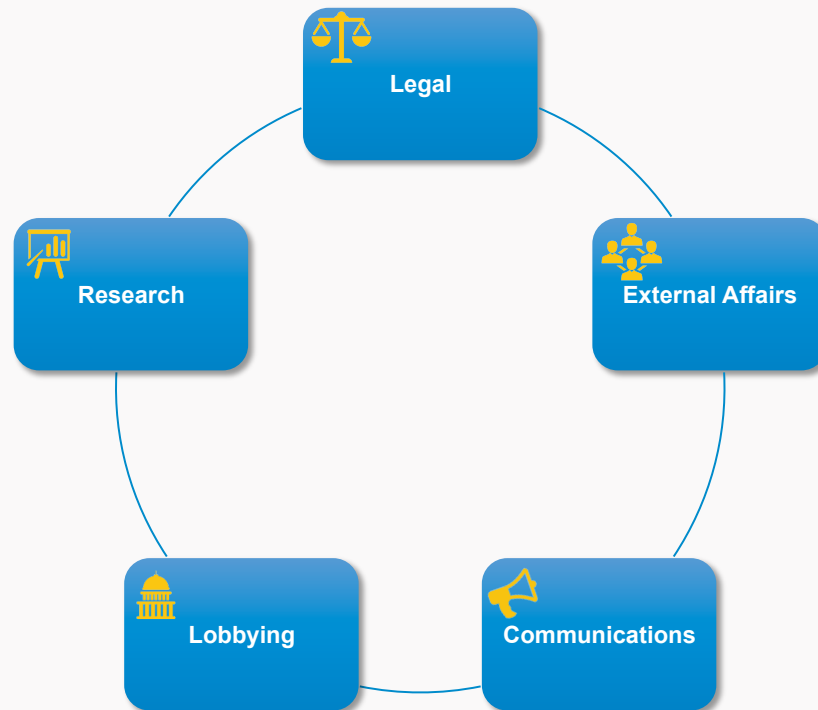


- According to a variety of analysts, the remedies proposed could more than double the price of solar nationwide
- If remedies requested by Suniva are put into effect, U.S. solar industry would lose 88,000 jobs next year

Deployment and Jobs Impacts of Suniva Petition



What SEIA is Doing to Fight This Case



Broad, Bipartisan Support



SEIA and our state affiliates successfully lobbied Congress in support of our position, and as a result, 16 Senators and 53 House members from both parties sent letters to the ITC, urging them to reject Suniva and SolarWorld's petition in favor of U.S. solar jobs

United States Senate
WASHINGTON, DC 20510
August 11, 2017

The Honorable Rhonda K. Schmidtlin
Chairman
U.S. International Trade Commission
500 E Street, NW
Washington, DC 20436

Re: Investigation TA-201-75

Dear Chairman Schmidtlin:

As U.S. Senators representing states that have a growing solar industry, we write to express our deep concern with the pending Section 201 global safeguard case regarding solar cell and module manufacturing in the United States. The petition requests that the President impose high tariffs on imported solar cells and high minimum prices for imported solar modules. As part of the U.S. International Trade Commission's investigations, we respectfully request that you also consider if the proposed trade remedies would negatively affect the American solar industry.

The solar industry is now booming across the nation. According to the Solar Energy Industries Association (SEIA) and the Solar Foundation's 2016 Solar Jobs Census, 5,000 solar companies employed over 260,000 American workers. One out of every 50 new jobs added by our economy in 2016 was a solar job. However, all of the momentum growth in solar investments, installations, and jobs could be in danger if the trade case causes solar prices to spike significantly.

Solar companies in our states believe the requested trade protection would double the price of solar panels. Increasing costs will stop solar growth dead in its tracks, diverting tens of thousands of American workers in the solar industry and jeopardizing billions of dollars in investment in communities across the country. According to SEIA, more than 80,000 American solar jobs could be lost next year if the proposed tariffs are imposed. Moreover, CEA forecasts estimate the tariffs would cut the demand for solar projects in half over the next five years. These tariffs would especially hurt residential rooftop solar projects that are growing rapidly. The U.S. Energy Information Administration estimates that multi-state solar generation nearly doubled from 2014 to 2016.

Again, we respectfully request that the Commission carefully consider the potential negative impact that the high tariffs and minimum prices requested would have on the tens of thousands of solar workers in our states and on the hundreds of companies that employ them.

Sincerely,

Martin Heinrich
MARTIN HEINRICH
United States Senator

Tom Hils
THOM HILLS
United States Senator

David Perdue
DAVID PERDUE
United States Senator

Cory Gardner
CORY GARDNER
United States Senator

Dan Heller
DAN HELLER
United States Senator

Tom Moran
TOM MORAN
United States Senator

Tim Scott
TIM SCOTT
United States Senator

Susan M. Collins
SUSAN M. COLLINS
United States Senator

Edward J. Markey
EDWARD J. MARKEY
United States Senator

MIKE THOMPSON
WASHINGTON, DC 20515
August 11, 2017

Congress of the United States
House of Representatives
Washington, DC 20515

The Honorable Rhonda K. Schmidtlin
Chairman
U.S. International Trade Commission
500 E Street, NW
Washington, DC 20436

Re: Investigation TA-201-75

Dear Chairman Schmidtlin:

We are writing to you to express concern with the pending Section 201 global safeguard case regarding solar cell and module manufacturing in the United States. The petition requests that the President impose a 40 cents per watt tariff on imported solar cells and a 75 cents per watt floor price for imported solar modules. As part of ITC's investigation, we urge you to carefully consider the negative impact the proposed trade remedies would have on the entire American solar industry.

Last year, solar was the single largest source of new electric generating capacity in America. At the end of 2016, 9,000 companies employed over 260,000 American workers with a median wage of \$27/hour. We are concerned that the requested trade protection would sharply increase the price of solar panels which could lead to a negative impact across the whole solar industry. The increased costs could slow or even stop solar growth, jeopardizing billions of dollars in investment in communities across the country. Moreover, it is projected that the new tariffs could lead to a loss of 80,000 American solar jobs next year.

We respectfully request that the Commission carefully and fully consider the negative impact that the high tariffs and minimum prices requested would have on the solar workers in our states and continued growth of the solar industry.

Sincerely,

Mike Thompson
MIKE THOMPSON
Member of Congress

Mark Sanford
MARK SANFORD
Member of Congress

Ted Budd
TED BUDD
Member of Congress

Matthew Cartwright
MATTHEW CARTWRIGHT
Member of Congress

Carlos Curbelo
CARLOS CURBELO
Member of Congress

Daniel M. Donovan
DANIEL M. DONOVAN
Member of Congress

Keith Ellickson
KEITH ELLIKSON
Member of Congress

Colleen Hanabusa
COLLEEN HANABUSA
Member of Congress

George Holden
GEORGE HOLDEN
Member of Congress

Jesse Knight
JESSE KNIGHT
Member of Congress

James McGovern
JAMES MCGOVERN
Member of Congress

Patrick Meehan
PATRICK MEEHAN
Member of Congress

Ed Perlmutter
ED PERLMUTTER
Member of Congress

Jacky Rosen
JACKY ROSEN
Member of Congress

Ed Royce
ED ROYCE
Member of Congress

David G. Reichert
DAVID G. REICHERT
Member of Congress

Jacky Rosen
JACKY ROSEN
Member of Congress

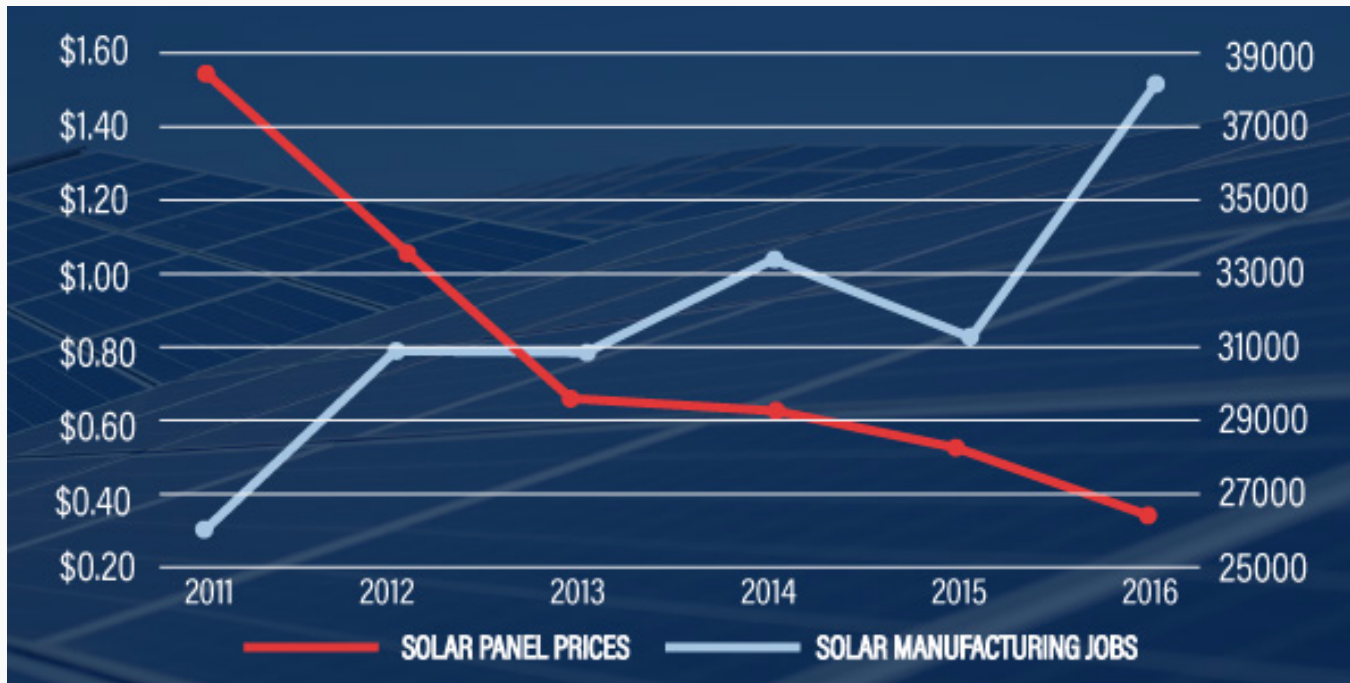
Jacky Rosen
JACKY ROSEN
Member of Congress

Fat Tiberi
FAT TIBERI
Member of Congress

Peter Welch
PETER WELCH
Member of Congress

Kelly Yoder
KELLY YODER
Member of Congress

Low Costs Support U.S. Manufacturing





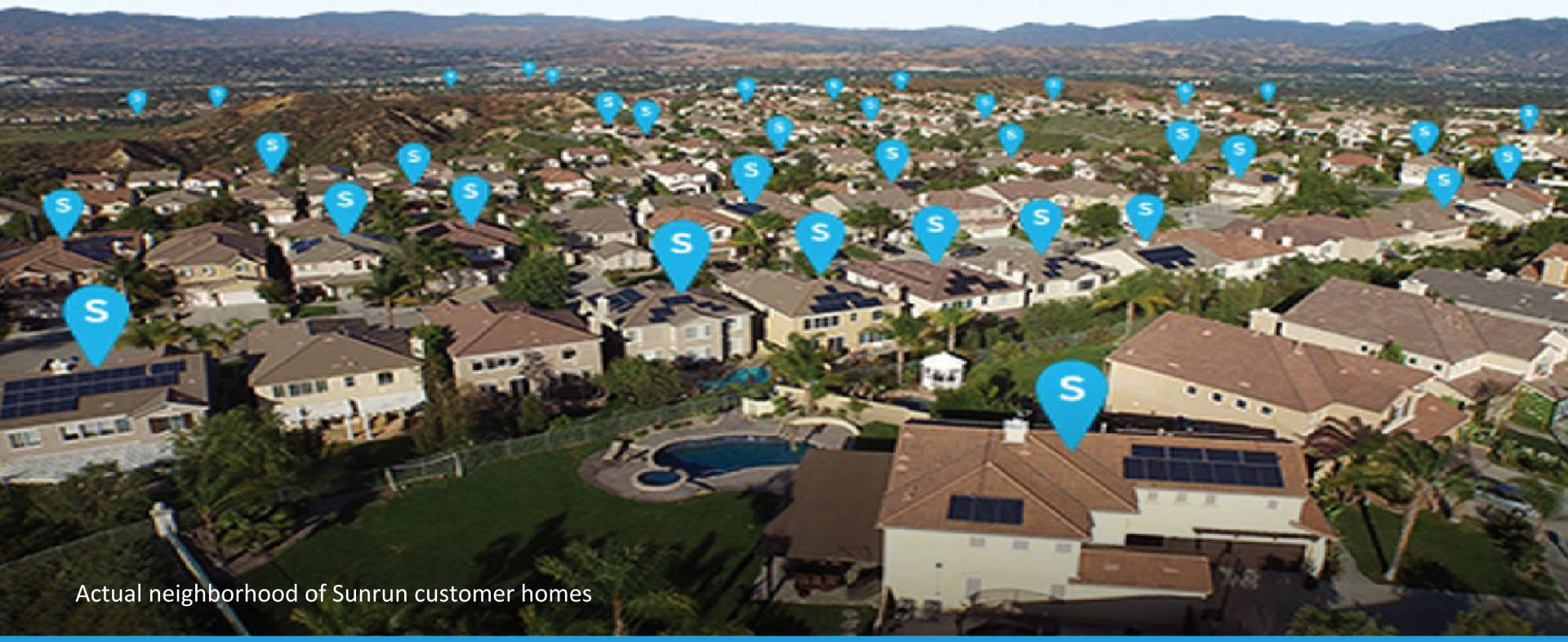
Lauren Randall

Director of Public Policy

Lauren.Randall@sunrun.com

@therandall

Create a planet run by the sun

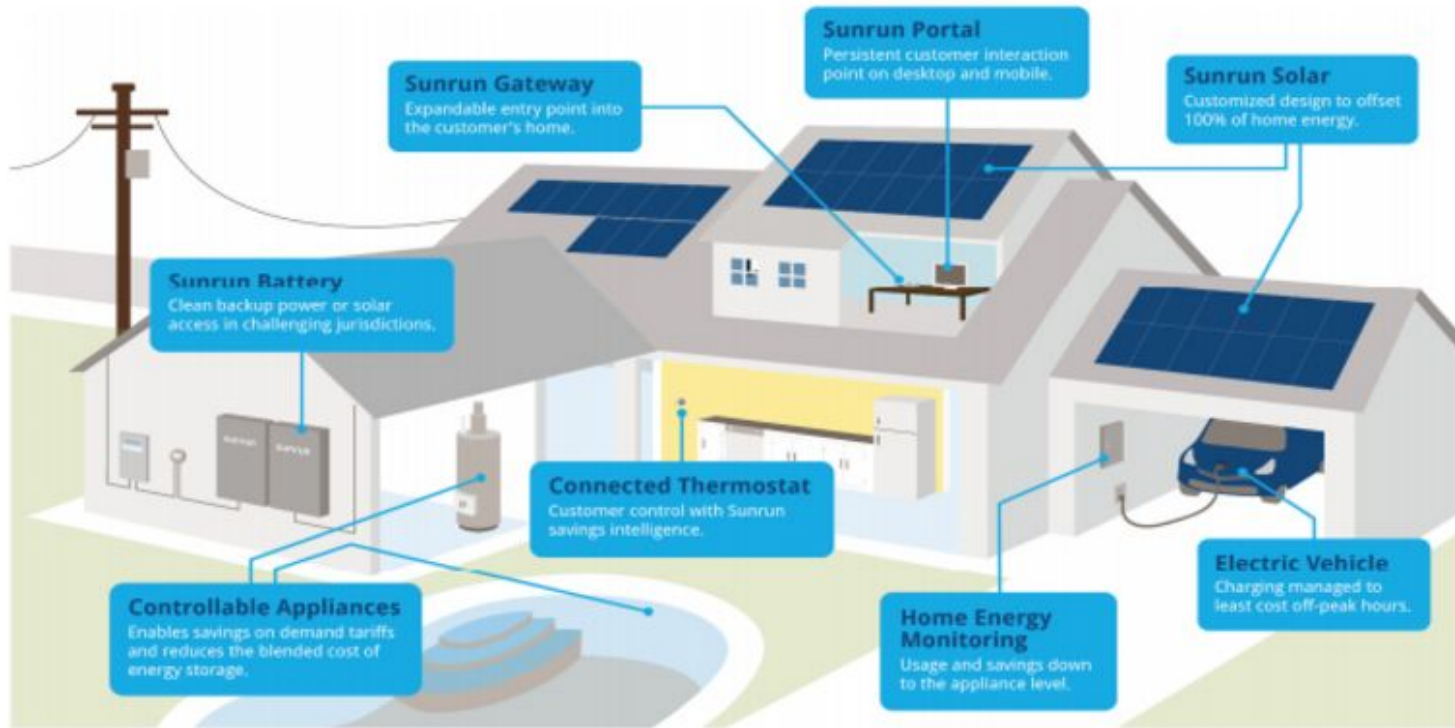


Actual neighborhood of Sunrun customer homes

Past



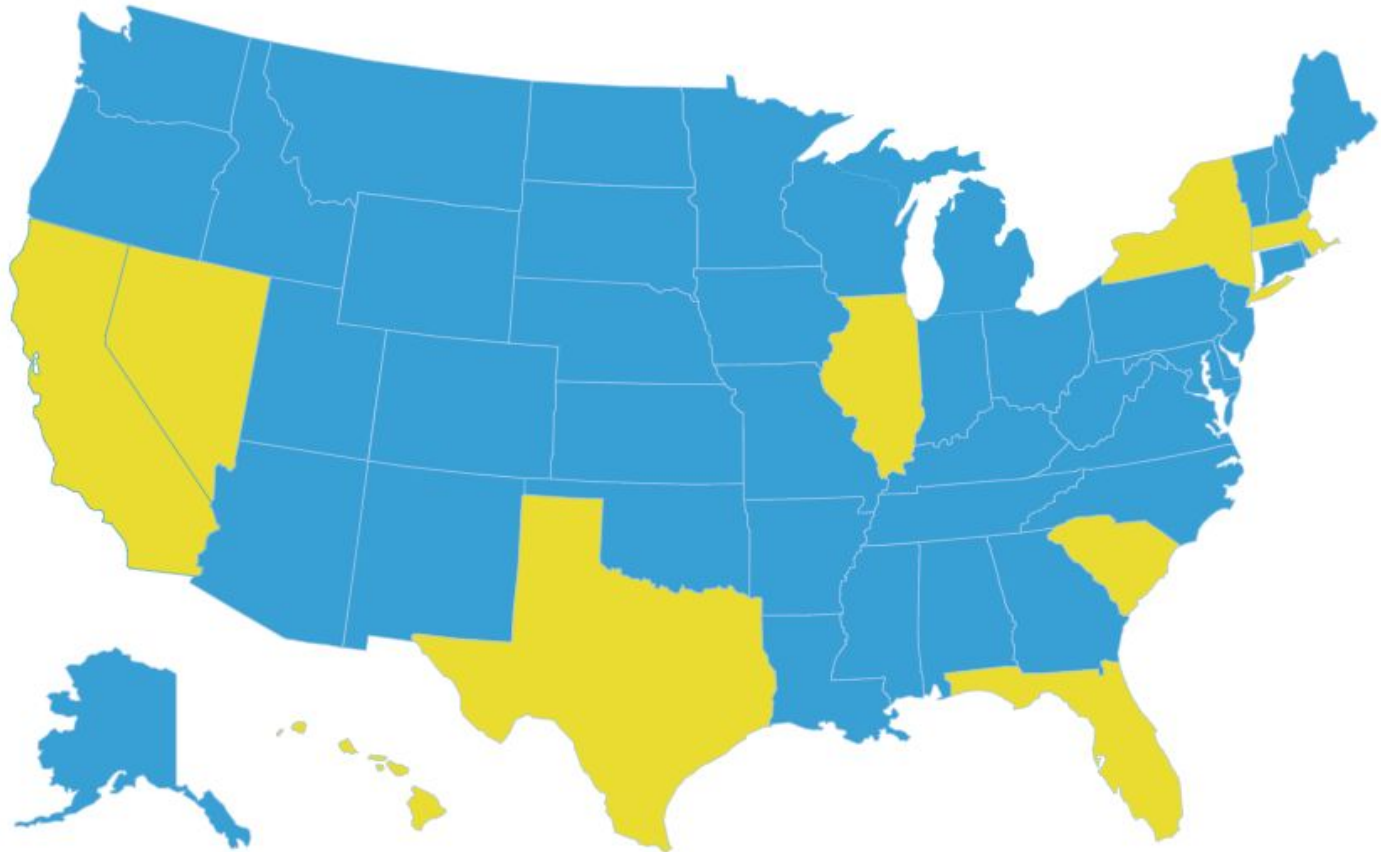
Future



All home energy assets participate to offer:

1. Consumer control – Dispatchable through the Sunrun Portal
2. Local smart response – Management of the ecosystem to reduce consumption or move consumption into off-peak hours
3. Network smart response – Enables 3rd party revenue streams through DR and beyond

State of the States



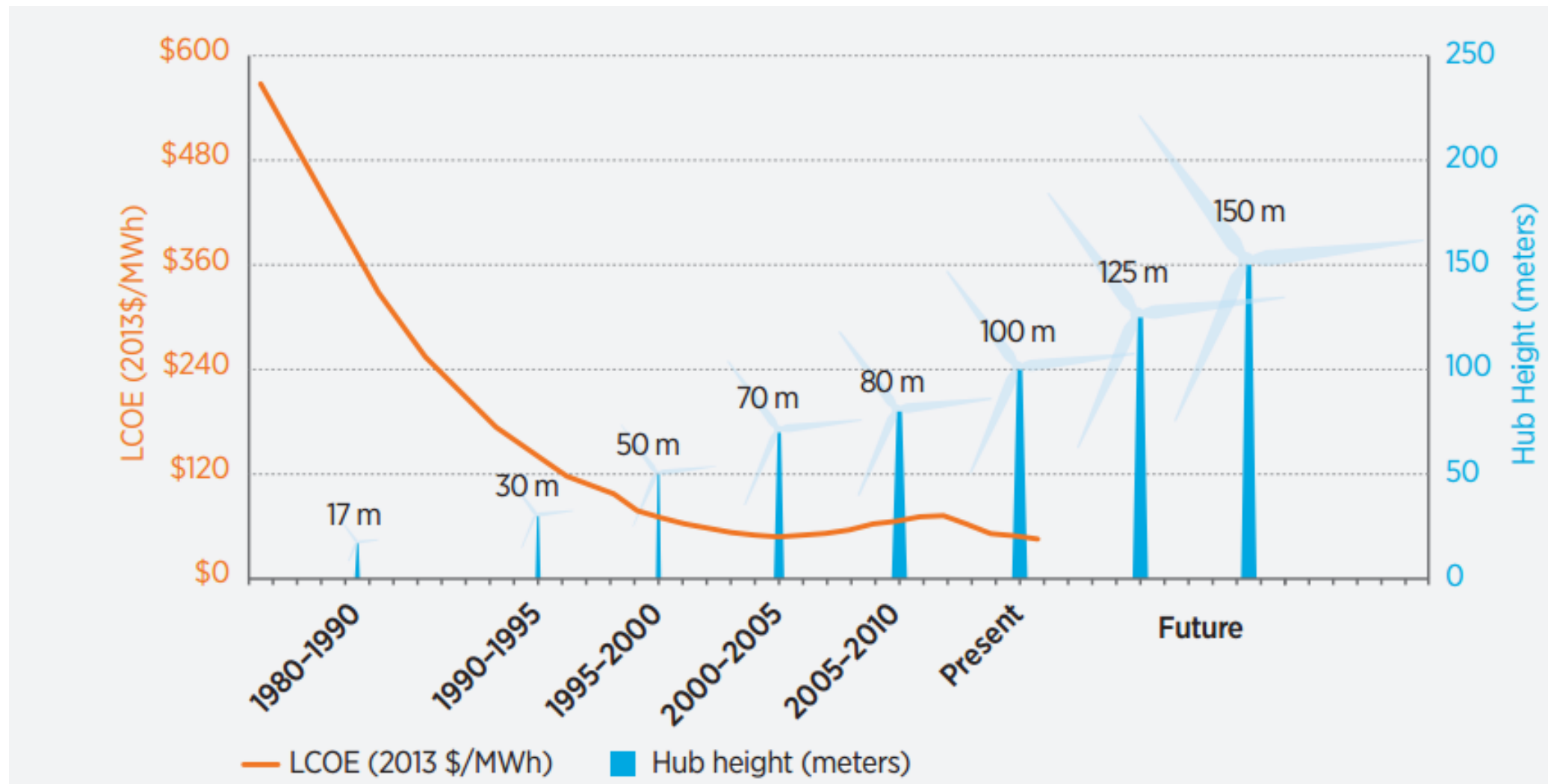
Peter Kelley

VP, Public Affairs, American Wind Energy Association
Society of Environmental Journalists, October 2017



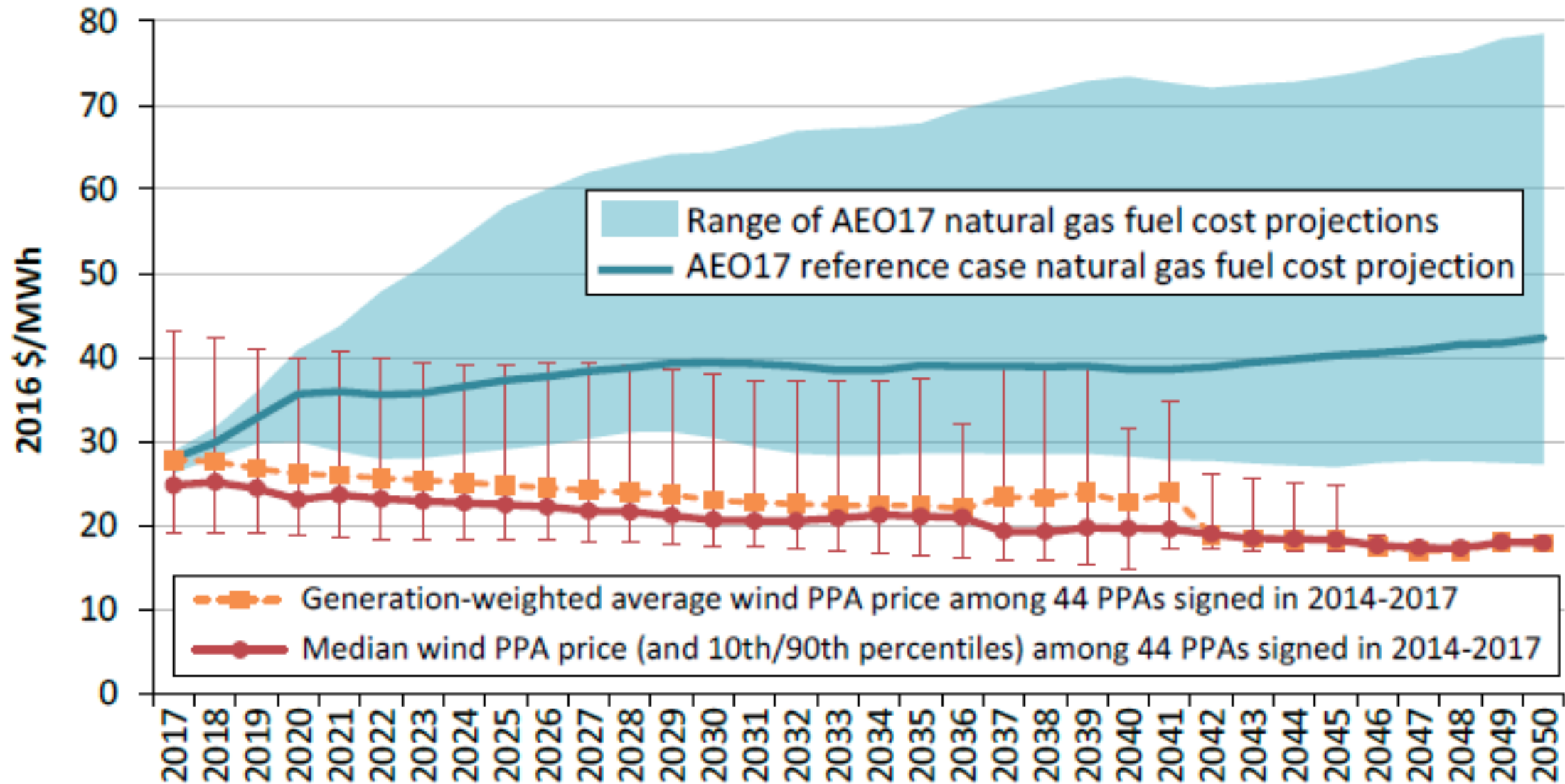


Wind energy is on sale in America: 66% off



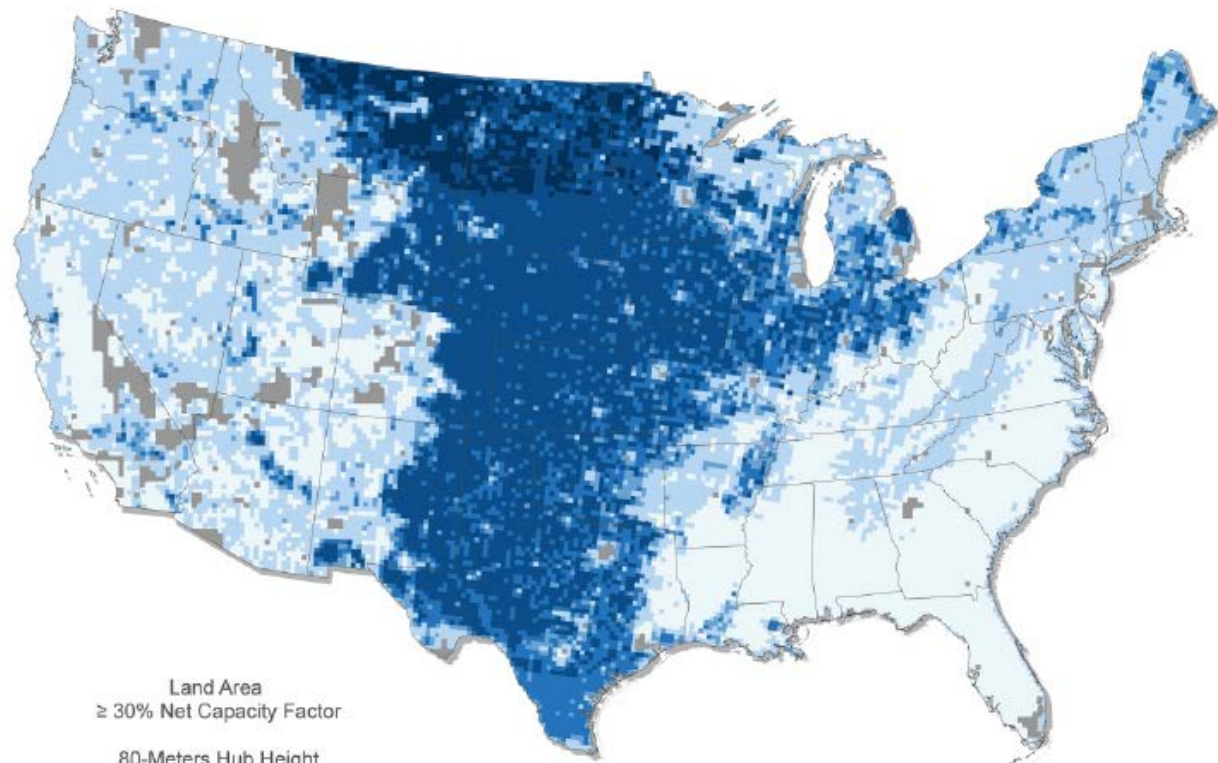


Wind contracts beat natural gas cost projections



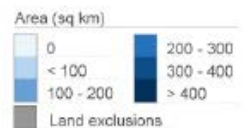


Trend: New turbines reaching higher winds and more areas



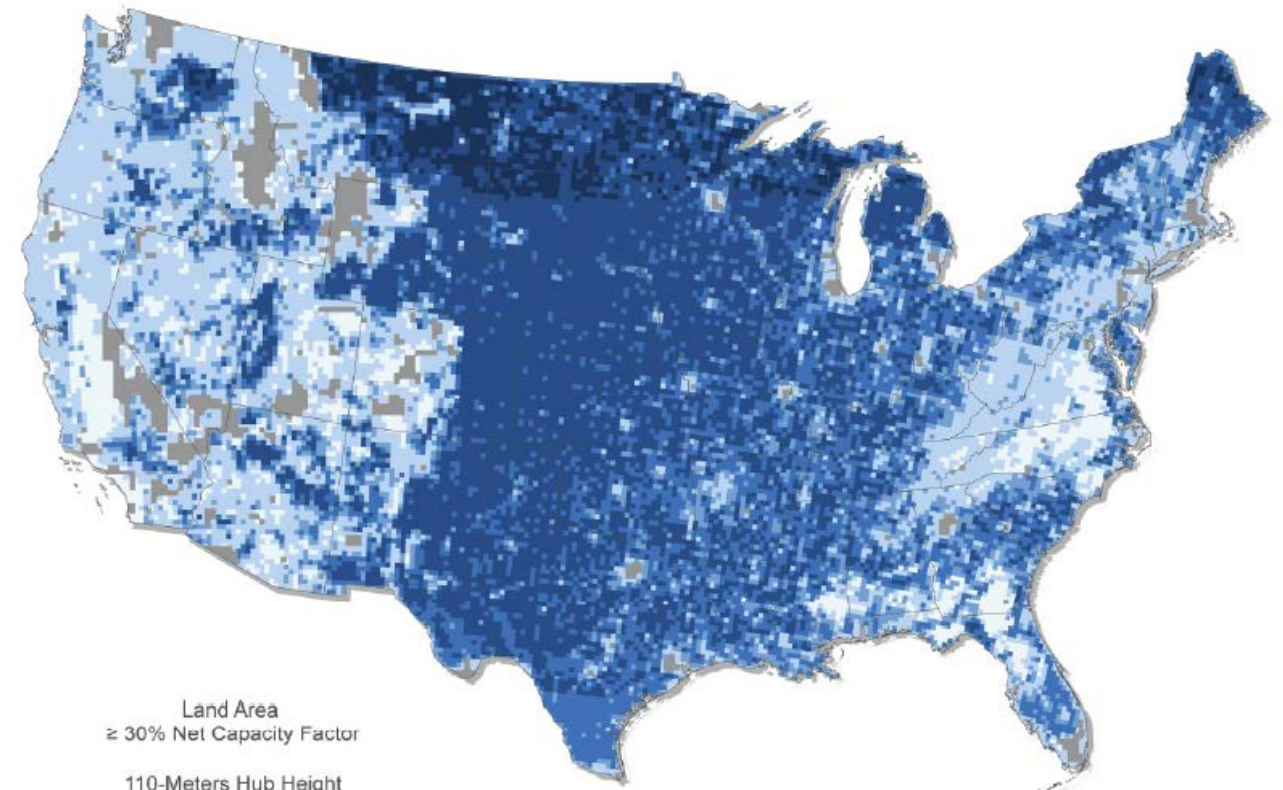
Land Area
≥ 30% Net Capacity Factor

80-Meters Hub Height
Current Turbine Technology



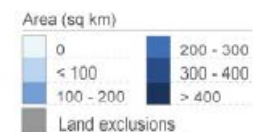
This map illustrates general wind resource potential only and is not suitable as a siting tool. More detailed site and wind speed data, as well as coordination with relevant authorities, are needed to thoroughly evaluate appropriate wind energy development at any given location.
Data sources: AWS Truepower, National Renewable Energy Laboratory

This map was produced by the
National Renewable Energy Laboratory
for the Department of Energy
March 2015

Land Area
≥ 30% Net Capacity Factor

110-Meters Hub Height
Near-Future Turbine Technology



This map illustrates general wind resource potential only and is not suitable as a siting tool. More detailed site and wind speed data, as well as coordination with relevant authorities, are needed to thoroughly evaluate appropriate wind energy development at any given location.
Data sources: AWS Truepower, National Renewable Energy Laboratory

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March 2015



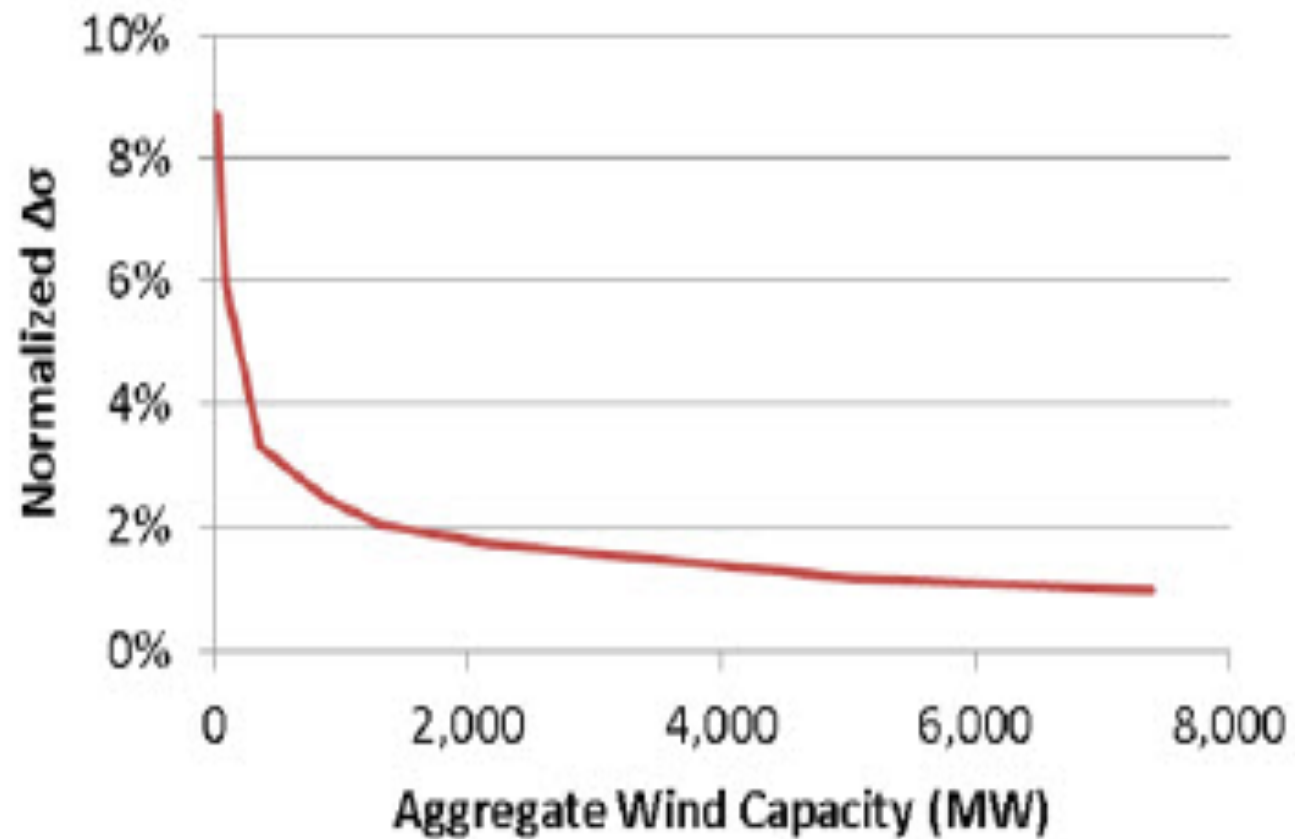
Wind resource at 80-meter turbine height

Wind resource at 110 meters

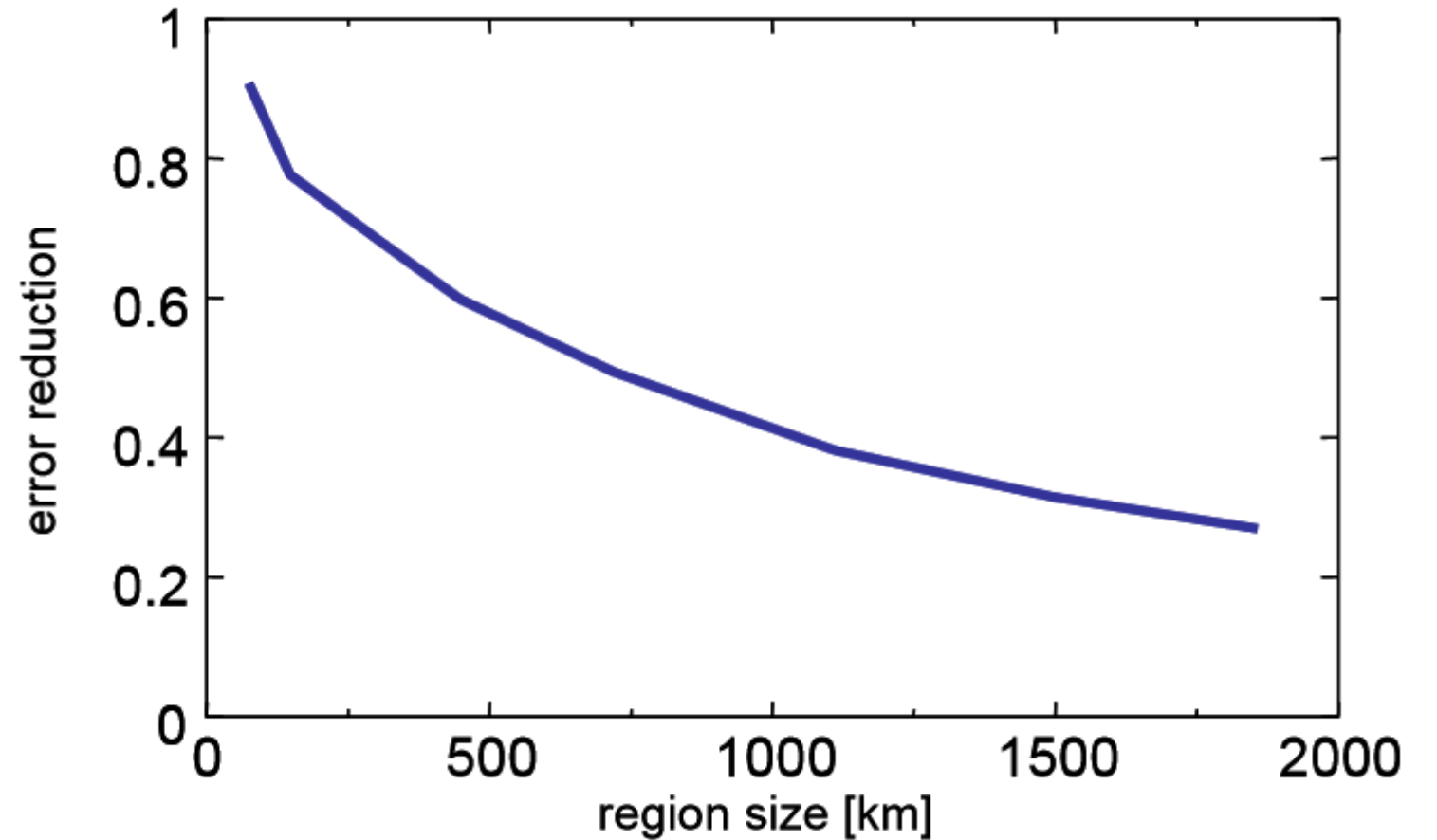


More turbines over larger areas = more predictable output

Wind variability



Wind uncertainty





Grid operators and utilities report breakthroughs in reliability

“Ten years ago, we thought hitting even a 25 percent wind penetration level would be extremely challenging, and any more than that would pose serious threats to reliability...”

“Now we have the ability to reliably manage greater than 50 percent wind penetration. It’s not even our ceiling.”

Bruce Rew

VP of Operations
SPP regional grid operator
February 2017

“I don't think 5 or 10 years ago I'd be comfortable telling you we could not sacrifice reliability when we're going to have 35% of our energy come from wind.

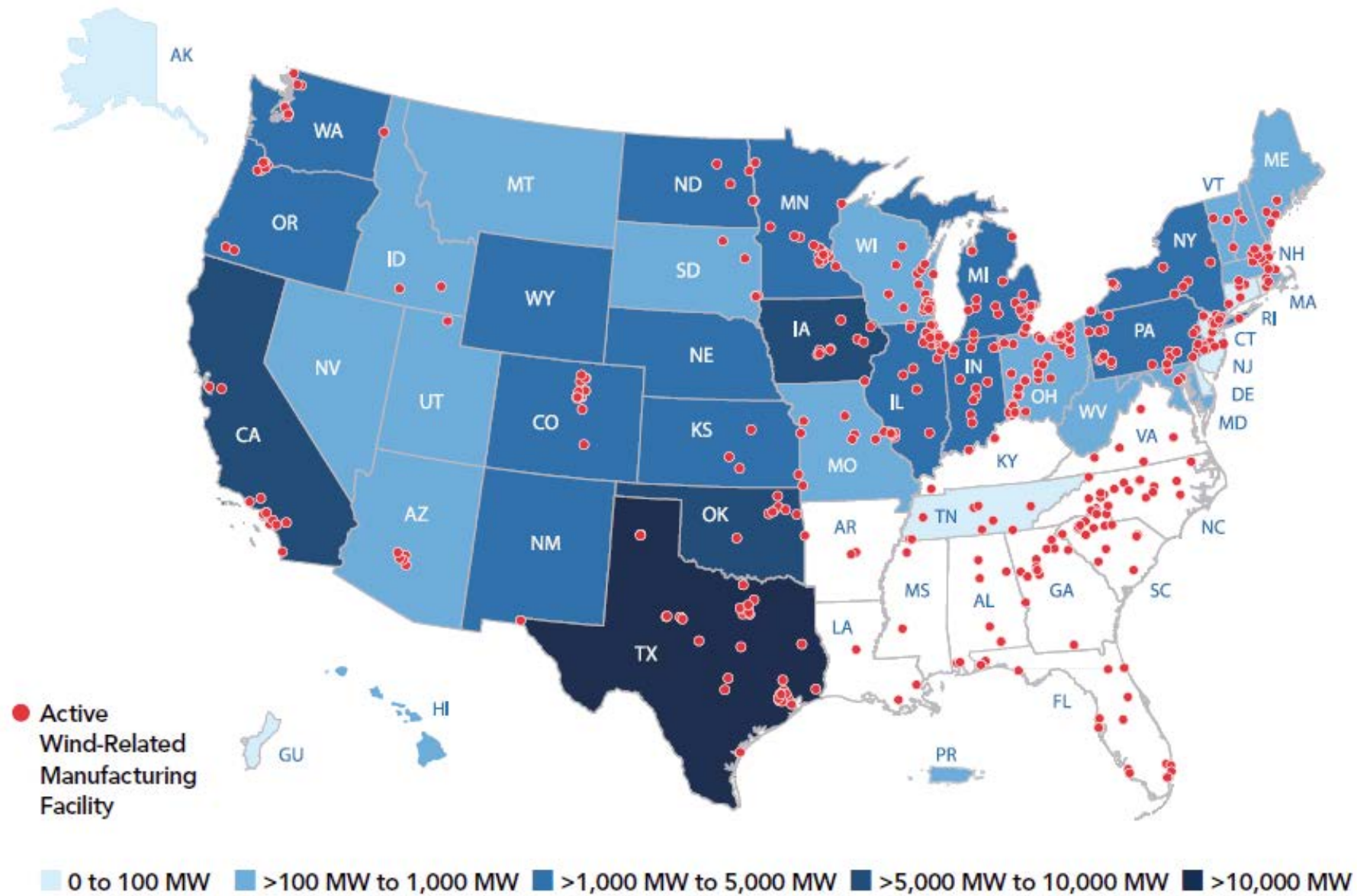
“I'm telling you, I'm very comfortable with that today.”

Ben Fowke

CEO of Xcel
May 2017

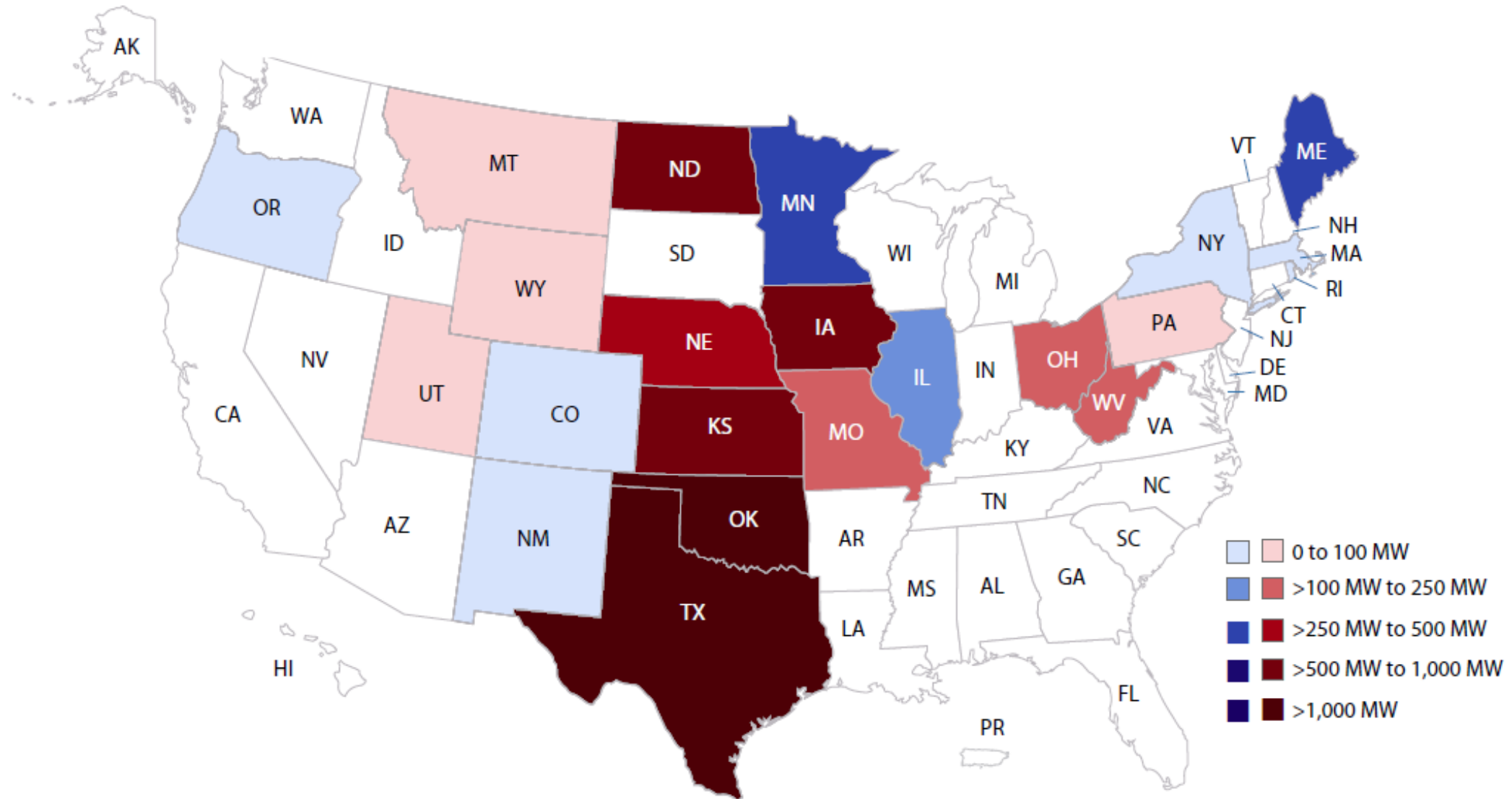


Wind farms and factories benefit all 50 states





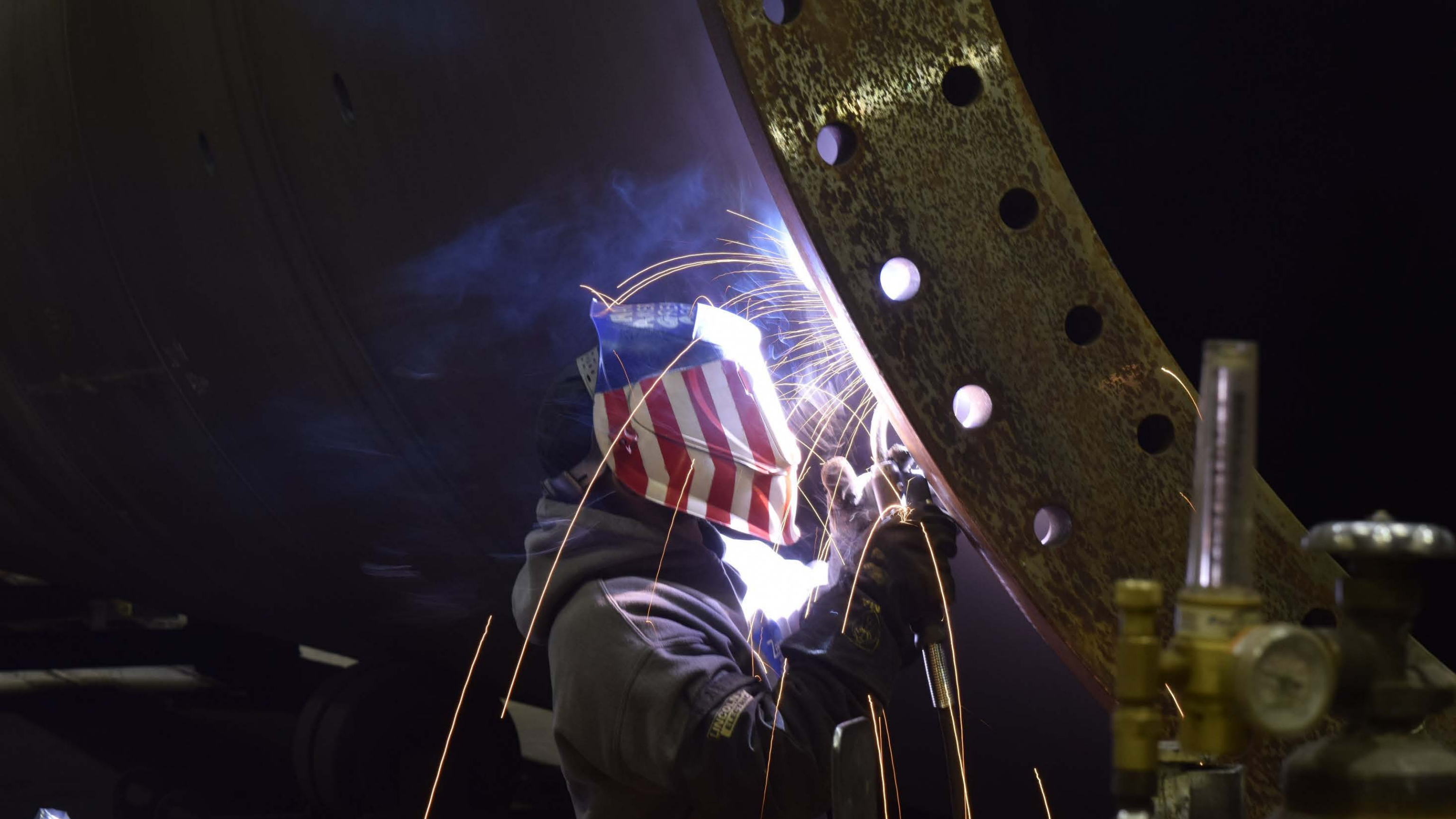
88% of new wind capacity is in states that voted for Trump





Wind will generate \$85 billion in economic activity through 2020 – mostly in rural areas





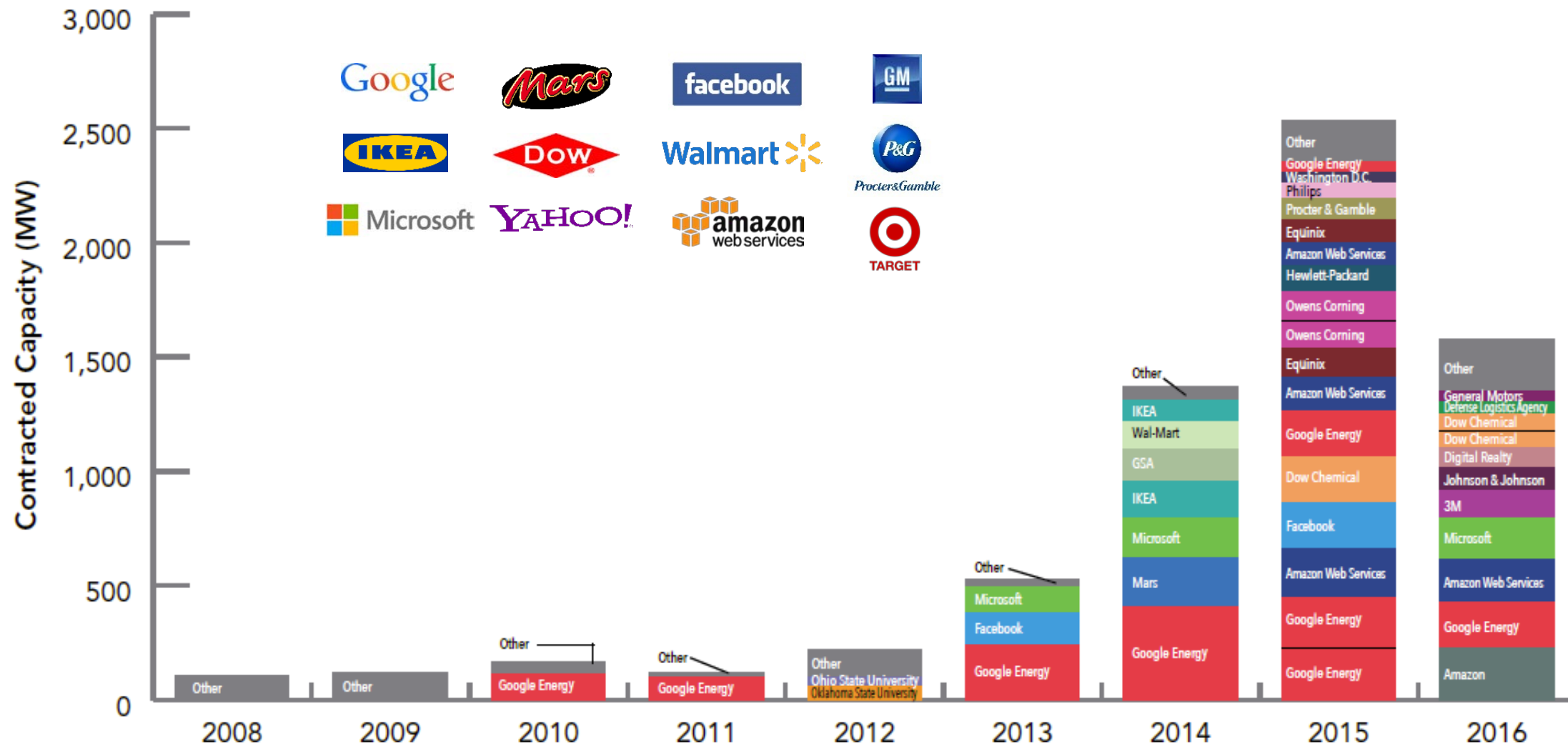




GRASSLEYWORKS.COM

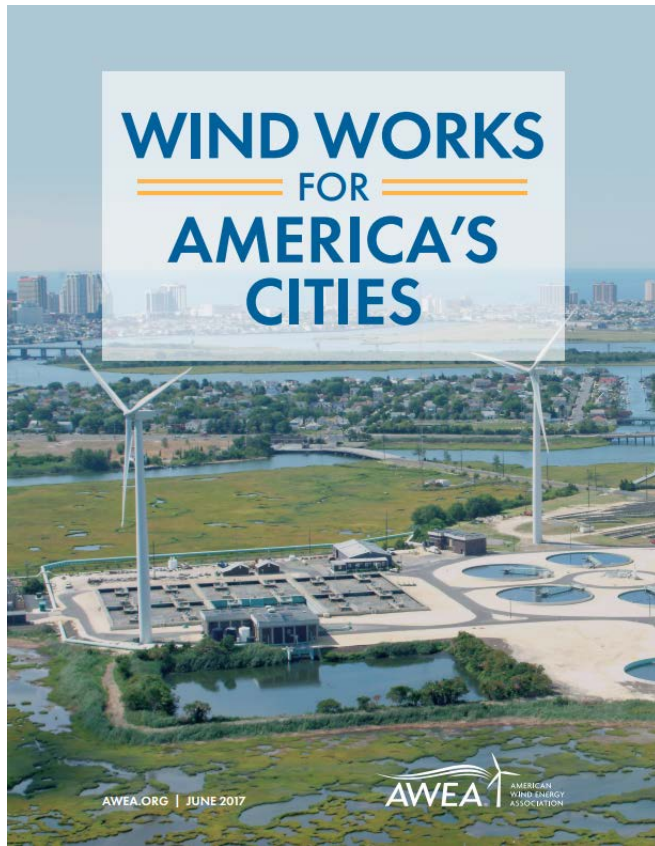


Trend: Major brands cutting costs & pollution with wind

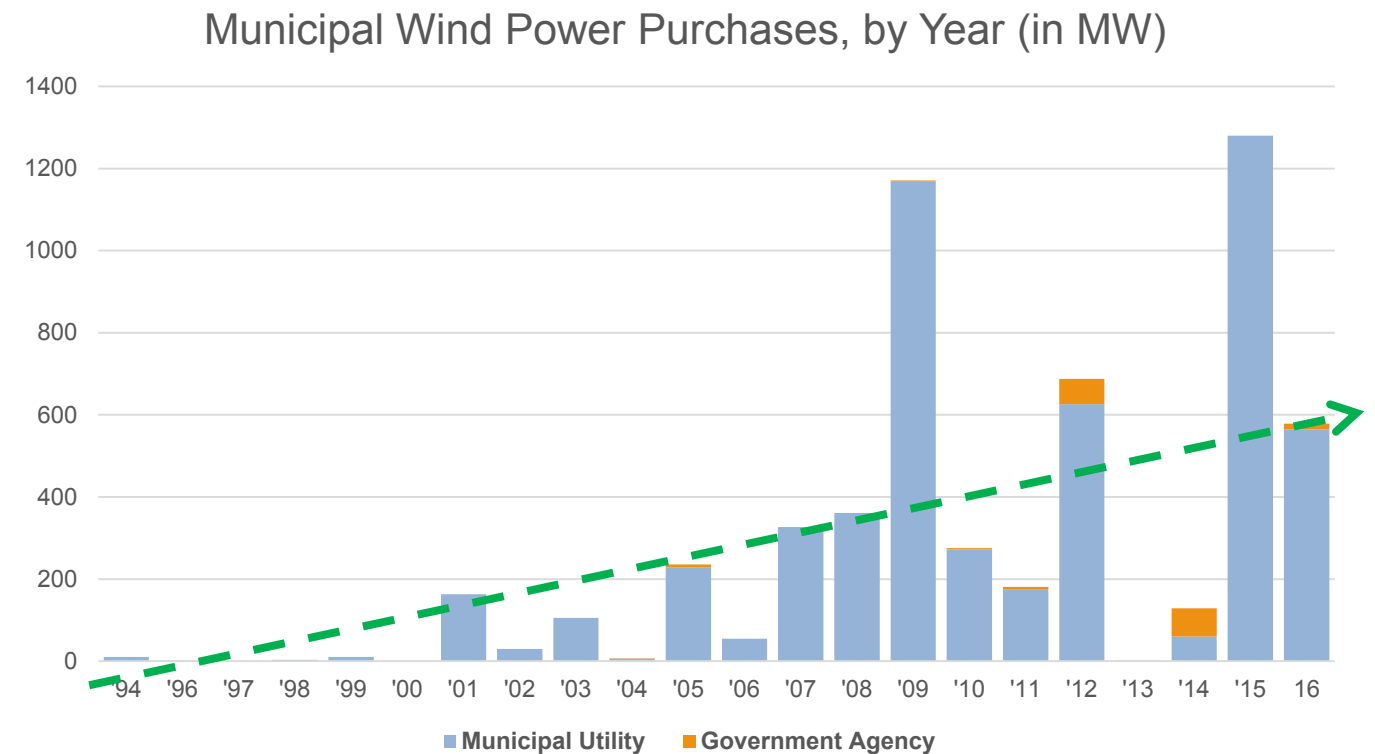


Source: Non-utility purchases by year of announcement, inc. physical and virtual PPAs, direct ownership, and large-scale REC purchases from a single wind farm, AWEA U.S. Wind Industry Annual Market Report Year Ending 2016

Trend: Cities buying more wind energy

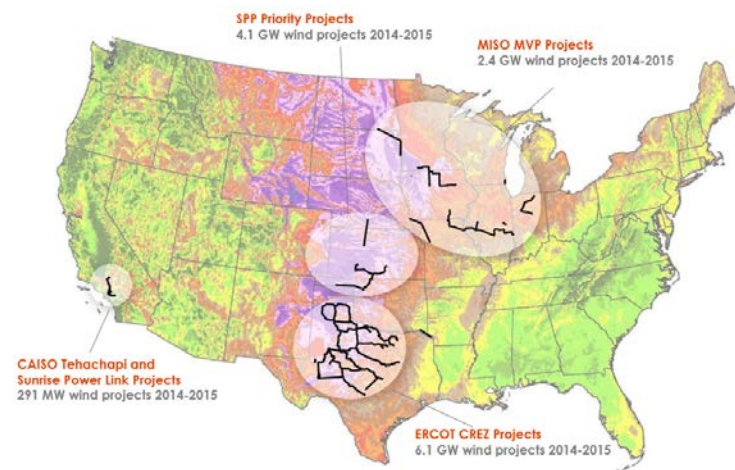


- Over 200 city purchases to date
- Nearly 7 percent of U.S. wind power capacity
- Renewable commitments from Pittsburgh, Chicago, Atlanta, San Diego, Washington, D.C., many others

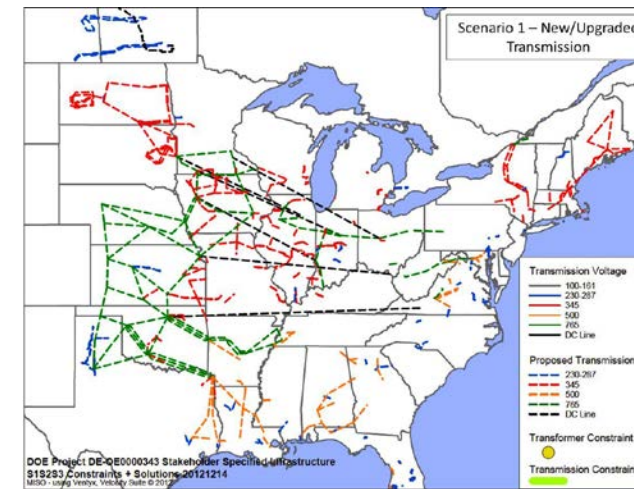




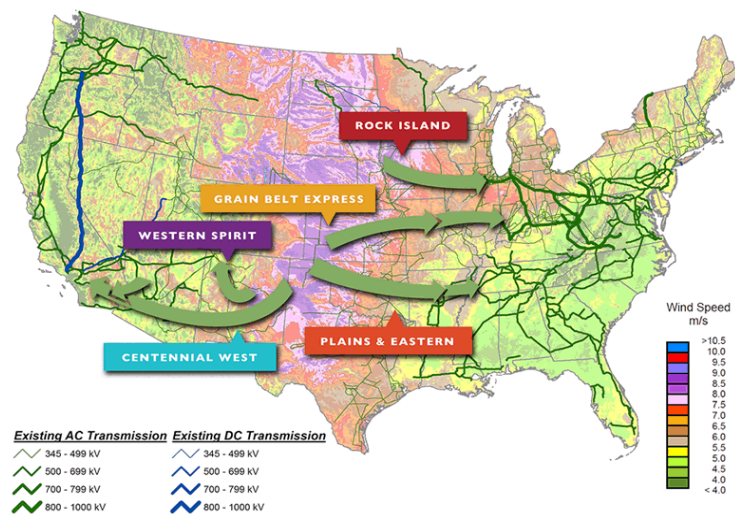
Trend: More transmission getting more low-cost wind to market



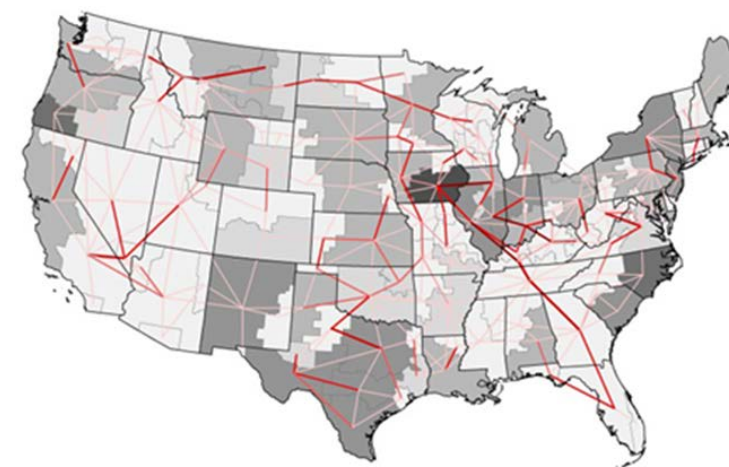
Regional grids: Benefits exceed costs many times over



Eastern Interconnect Planning Collaborative



High-voltage DC lines coming



DOE WindVision 2050 case

U.S. offshore: the next frontier



Questions

Peter Kelley

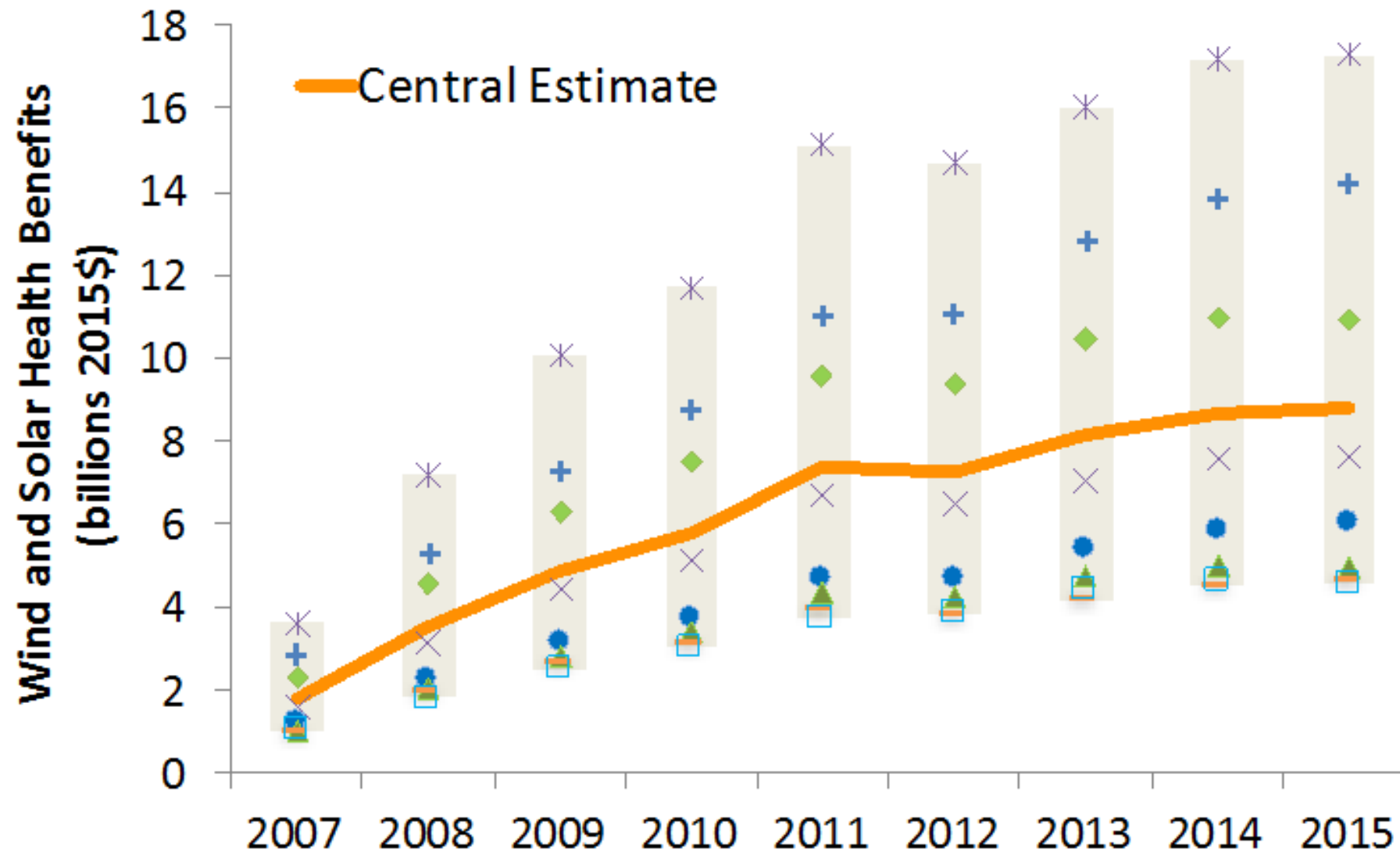
pkelley@aweaa.org

202-270-8831 cell



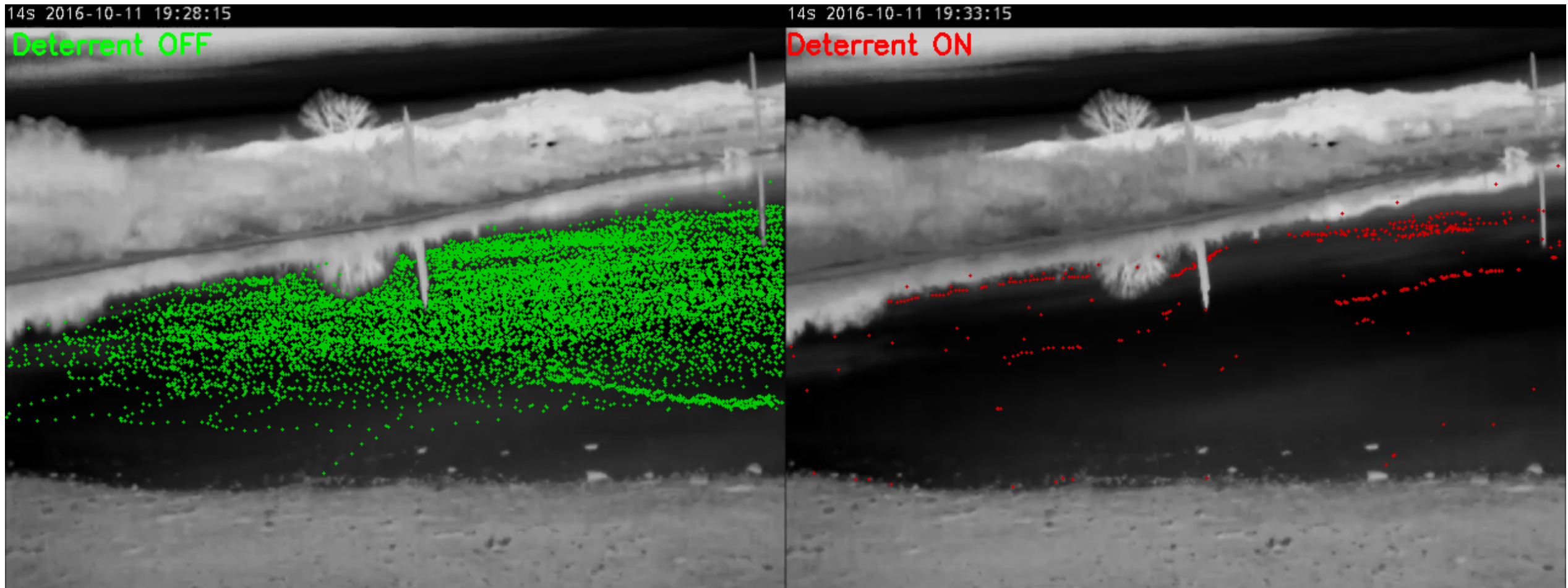


Consumer savings include health costs of pollution





New technologies helping wind and wildlife to coexist

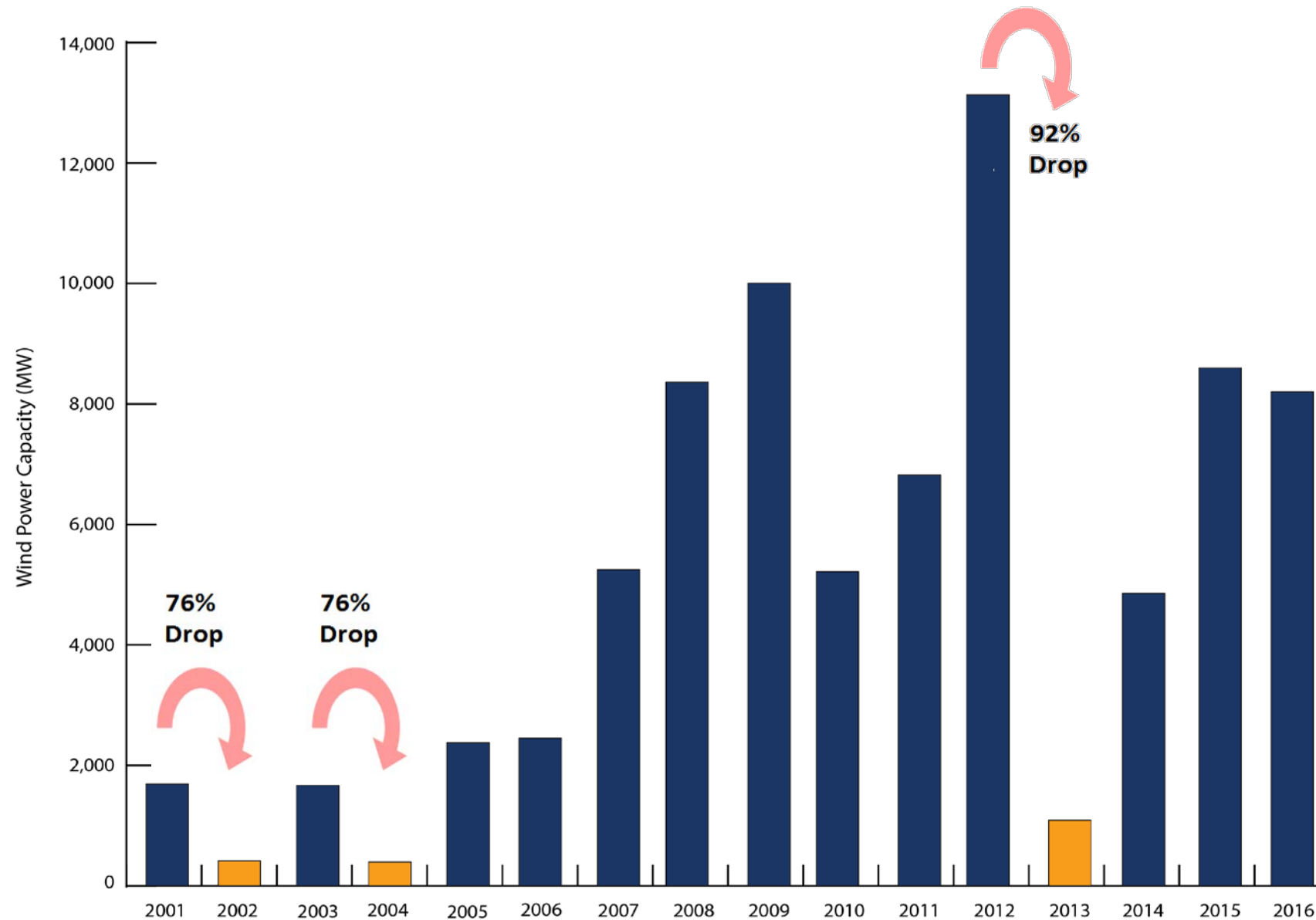


Bats feeding on pond

Five minutes after
acoustic deterrent turned on



Deal to phase down Production Tax Credit ended boom-bust era





DTE Energy[®]

Creating a Lower Carbon Future

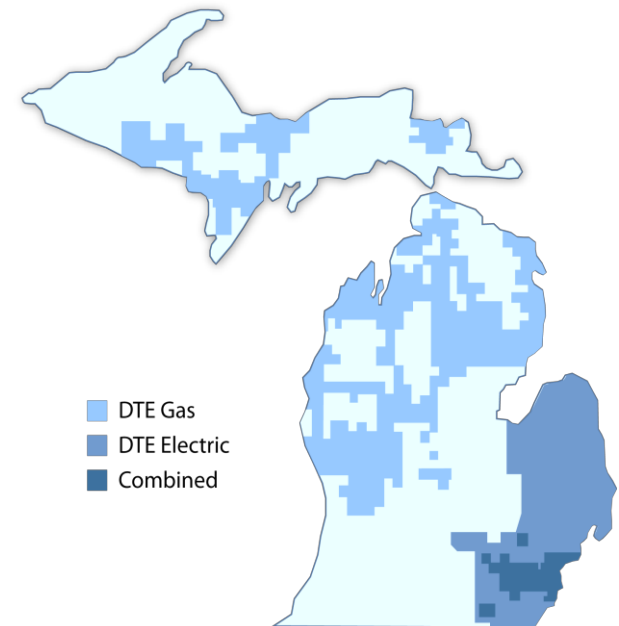
Matt Wagner
Manager – Renewable Energy



Who is DTE Energy?

- [DTE Energy](#) is a Fortune 300 company operating in 550 communities throughout Michigan
- DTE is among the largest utilities in the country – Two business units, DTE Electric, founded in 1903, and DTE Gas, founded in 1849, service more than 3 million customers throughout Michigan
- DTE’s non-utility subsidiaries provide energy-related services to business and industry in 17 states

DTE Electric	2.2 million customers	7,600 sq mile service territory
DTE Gas	1.2 million customers	14,700 sq mile service territory
Non-regulated businesses	Gathering pipelines near gas production areas	Partial ownership of major interstate pipelines



80% Carbon Emissions Reduction Plan

- DTE recently announced a broad sustainability initiative to reduce carbon emissions by more than 80 percent by 2050.
 - 30% by early 2020's
 - 45% by 2030
 - 75% by 2040
 - 80% by 2050
- These carbon emissions reductions will be achieved via a long-term shift by DTE to produce over 75 percent of its power from **renewable energy** and **highly efficient natural gas-fired powered plants**.



DTE's Renewable Energy Portfolio

- DTE is Michigan's largest producer of [renewable energy](#) with a portfolio that now includes 13 wind parks and 31 solar arrays in Michigan.
- 1,000 MW of renewable energy capacity enough to power 400,000 homes
- DTE has driven investments of more than \$2 billion in renewable energy since 2008.
- DTE exceeded the state of Michigan's 10% Renewable Portfolio Standard (RPS) by 2015.
 - Over 900 MW of [Wind](#) (both owned and contracted), 66 MW of [Solar](#) and 23 MW of Biomass and Landfill Gas
- DTE will file a plan to meet Michigan's new 15% RPS in early 2018.
 - 12.5% by 2019 and 15% by 2021



91% Wind



7% Solar



<2% Biomass



<1% Landfill Gas

Carbon Reduction Action Plan

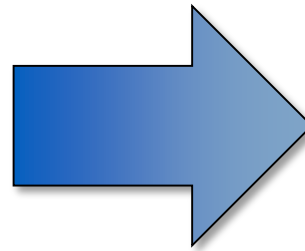
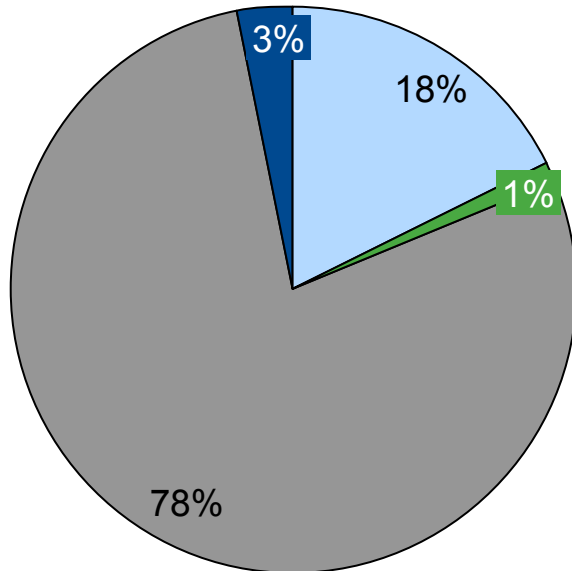


- Add approximately 4,000 MW of renewable energy capacity
- Add 3,500 MW of natural gas-fired energy capacity
- Retire the company's coal-fired plants
- Invest in electric grid and gas infrastructure modernization
- Invest in energy efficiency and energy waste reduction
- Reduce energy and water at DTE's own facilities by 25 percent or more

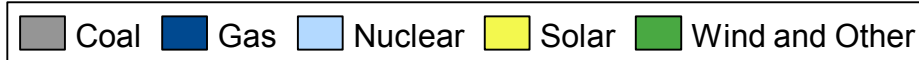
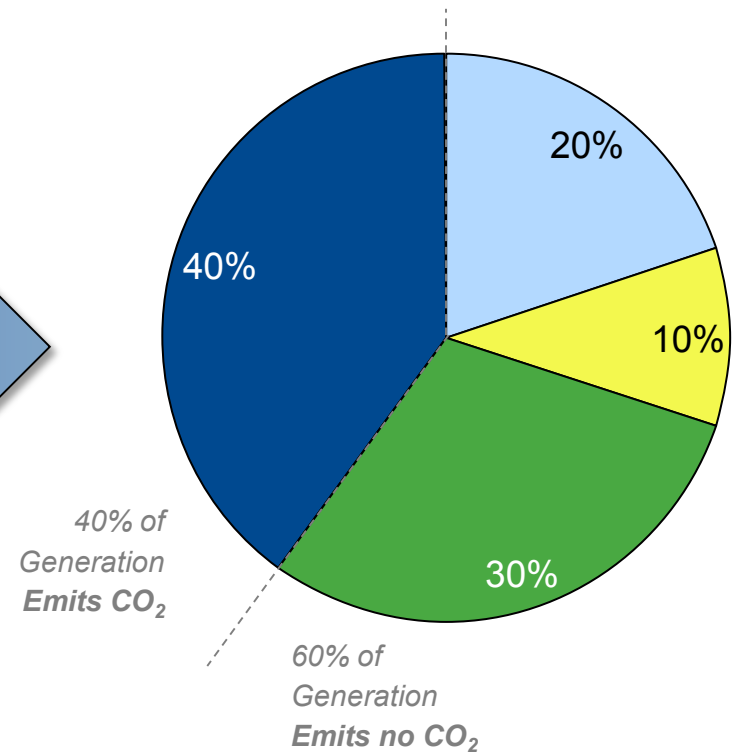
Transforming DTE's generation portfolio

Generation Mix (GWh)

In 2005, DTE Electric emitted 42 Million Tons of CO₂



By 2050, DTE Electric will only emit 8 Million Tons of CO₂





Pinnebog Wind Park

- Commissioned December 2016
- Located in Huron County
- 30 wind turbines, 50 MW

Pine River Wind Park

- Commissioning expected December 2018
- Located in Isabella & Gratiot Counties
- 65 wind turbines, 161 MW
- Will be DTE's largest wind park to date

“Future” Wind Park

- Request for proposals issued
- Commissioning expected 2020
- Located in Michigan's lower peninsula
- Up to 150 MW

DTE's Newest Solar Projects

Lapeer Solar Park – Lapeer, Mich.



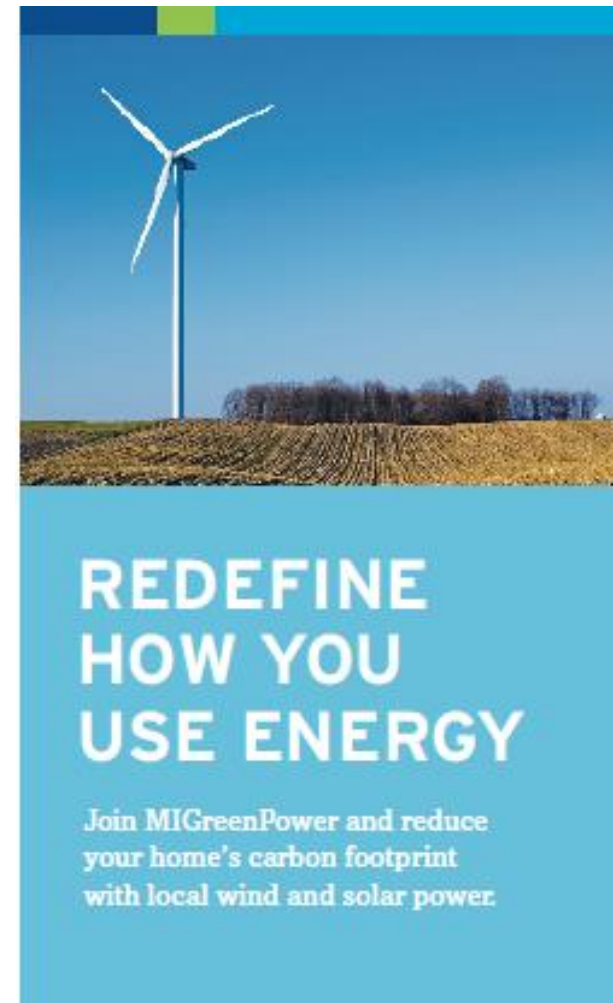
- Largest solar array in Michigan
- 200,000 solar panels
- 48 MW on 250 acres

O'Shea Solar Park – Detroit



- One of the largest urban arrays in the U.S.
- 7,400 solar panels
- 2 MW on 10 acres

- MI GreenPower is a pilot program designed for any customer wishing to go beyond the 10% renewable energy that they already receive from DTE's generation fleet
- The program requires no on-site installation, no upfront investment, no operating and maintenance obligations, and no long term commitment
- The 150,000 MWh pilot program is sourced from the new Pinnebog Wind Park in Huron County and the new Lapeer and Detroit solar arrays
- Program subscribers pay a fixed cost-based subscription fee and receive an energy & capacity credit starting based on energy & capacity value
- dteenergy.com/migreenpower.com





DTE Energy[®]

Thank You,

**Matt Wagner
Manager – Renewable Energy**



Fate of Renewable Energy Under Trump



Dan Whitten
@DanWhitten
@SEIA



Lauren Randall
@TheLRandall
@sunrun



Peter Kelley
@peterkelley
@awea



Matthew Wagner
@DTE_Energy

S&P Global
Market Intelligence

Steph Tsao
@spglobal_tsao
@MichaelCopley