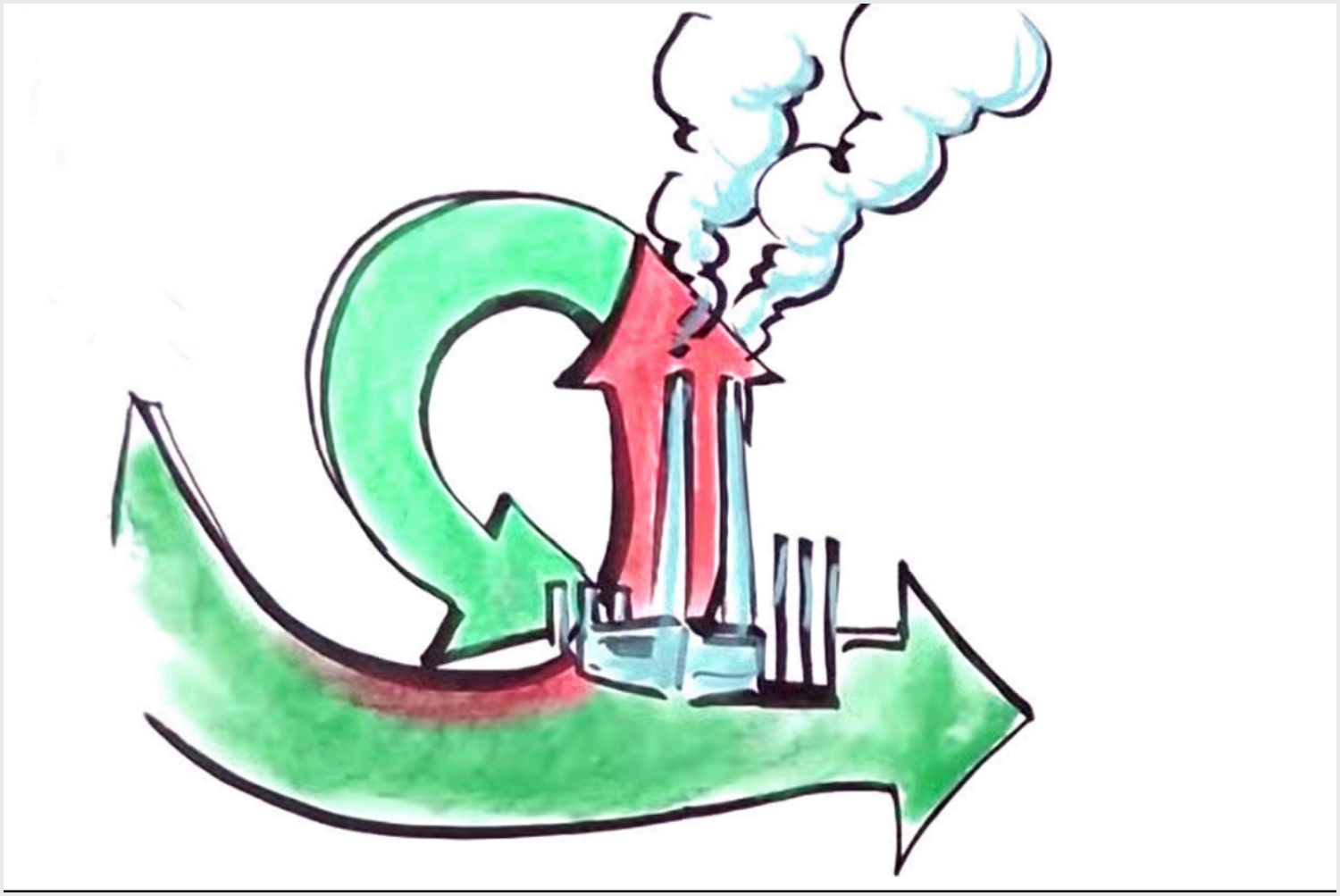
How Industrial Efficiency Increases Competitiveness, Reduces Emissions, & Enhances Reliability

Jennifer Kefer, Alliance for Industrial Efficiency
Elinor Haider, Veolia North America
Bree Raum, American Gas Association
Jessica Lubetsky, Pew Charitable Trusts

What Is Combined Heat and Power



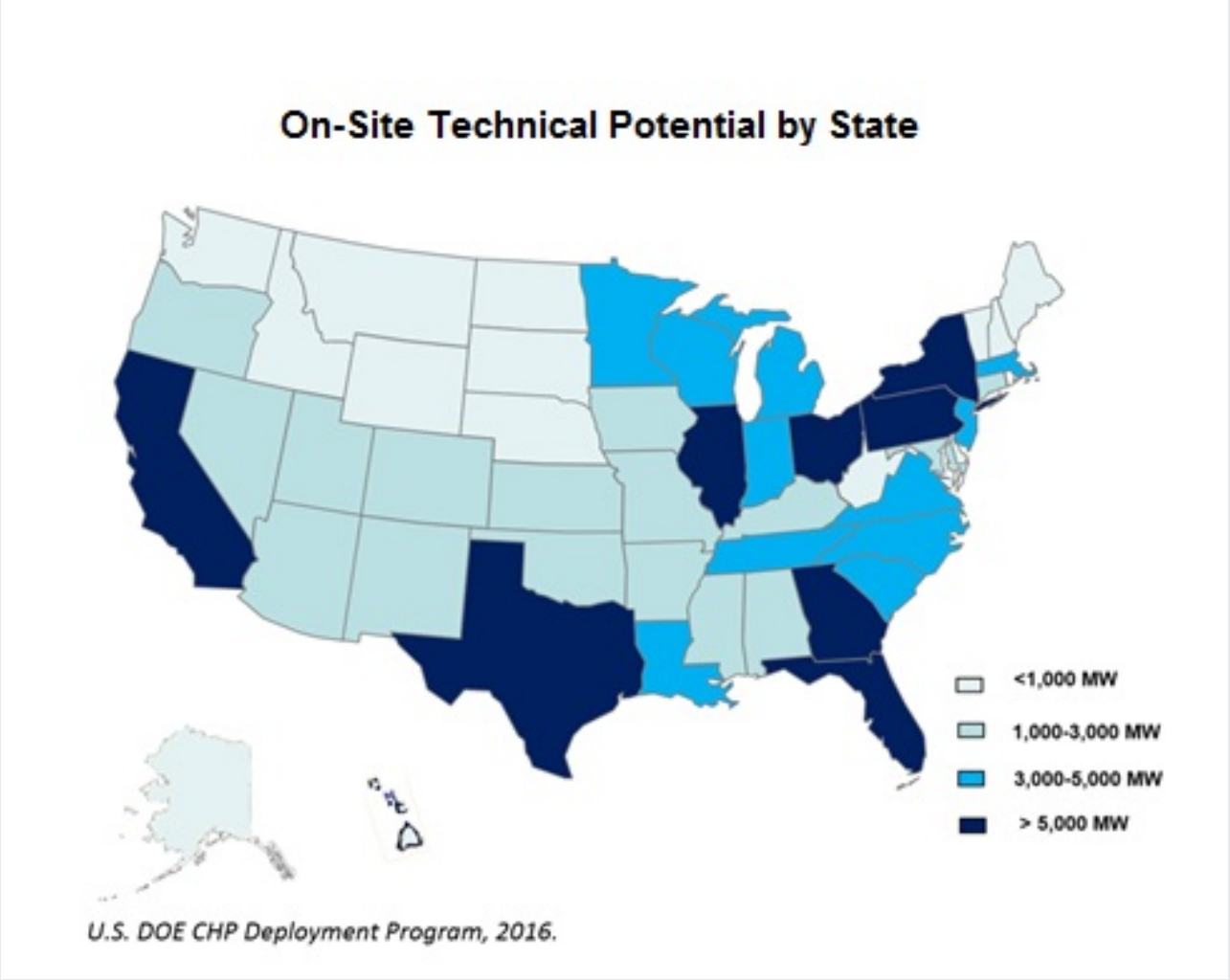
Current CHP Projects

Source: CHP Installation Database, March 2014

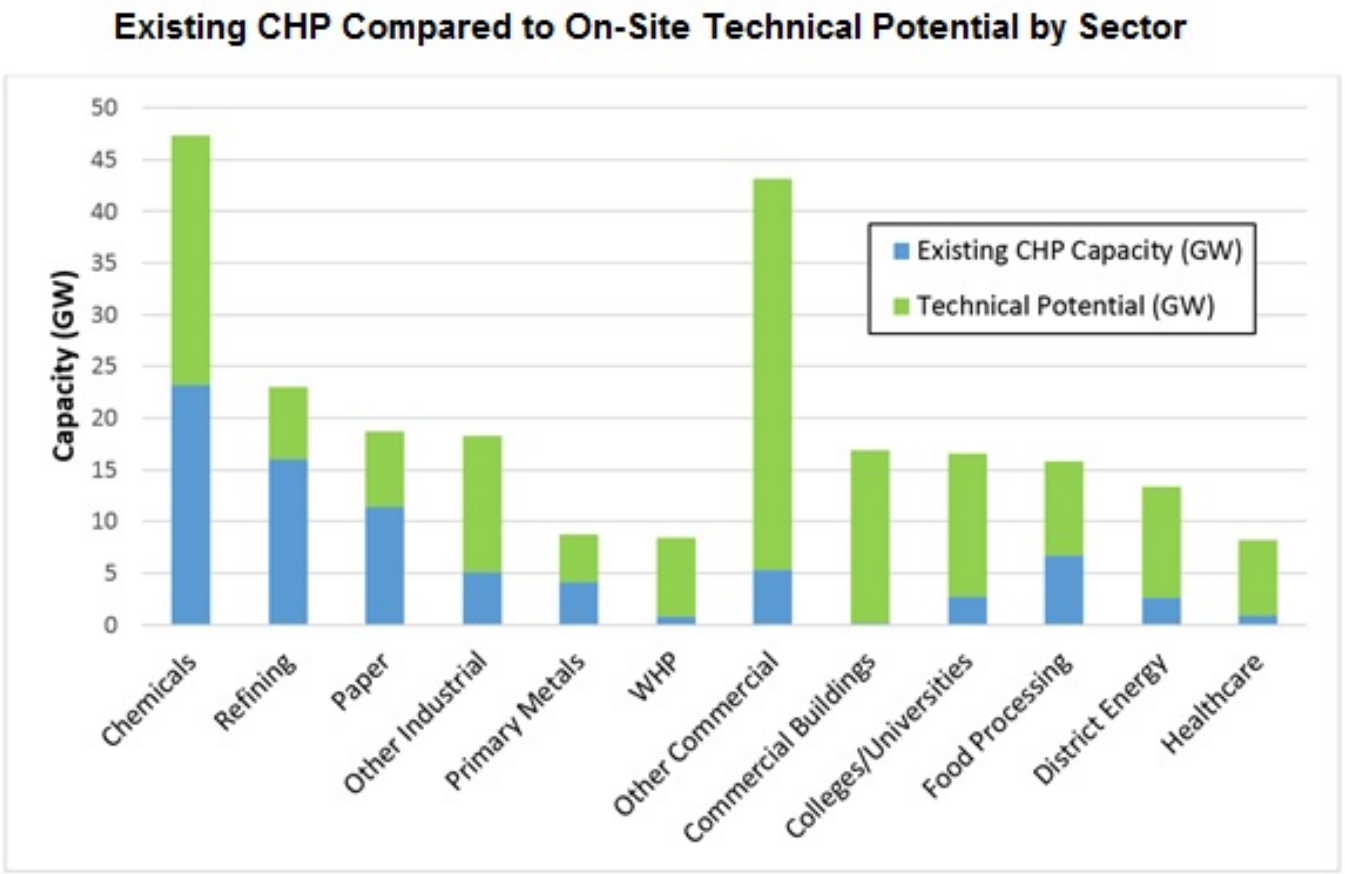
ArcelorMittal (Indiana)

- Energy recovery and reuse 504 boiler project
- $63.2 million total project cost
- $31.6 million DOE grant
- $20 million in energy cost savings
- Payback (with DOE grant): 1.58 years
- Generates 90 MW
- Provides 20% of energy needs

CHP Technical Potential



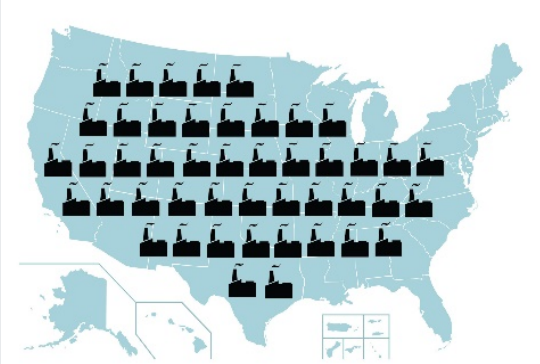
Remaining Potential for CHP



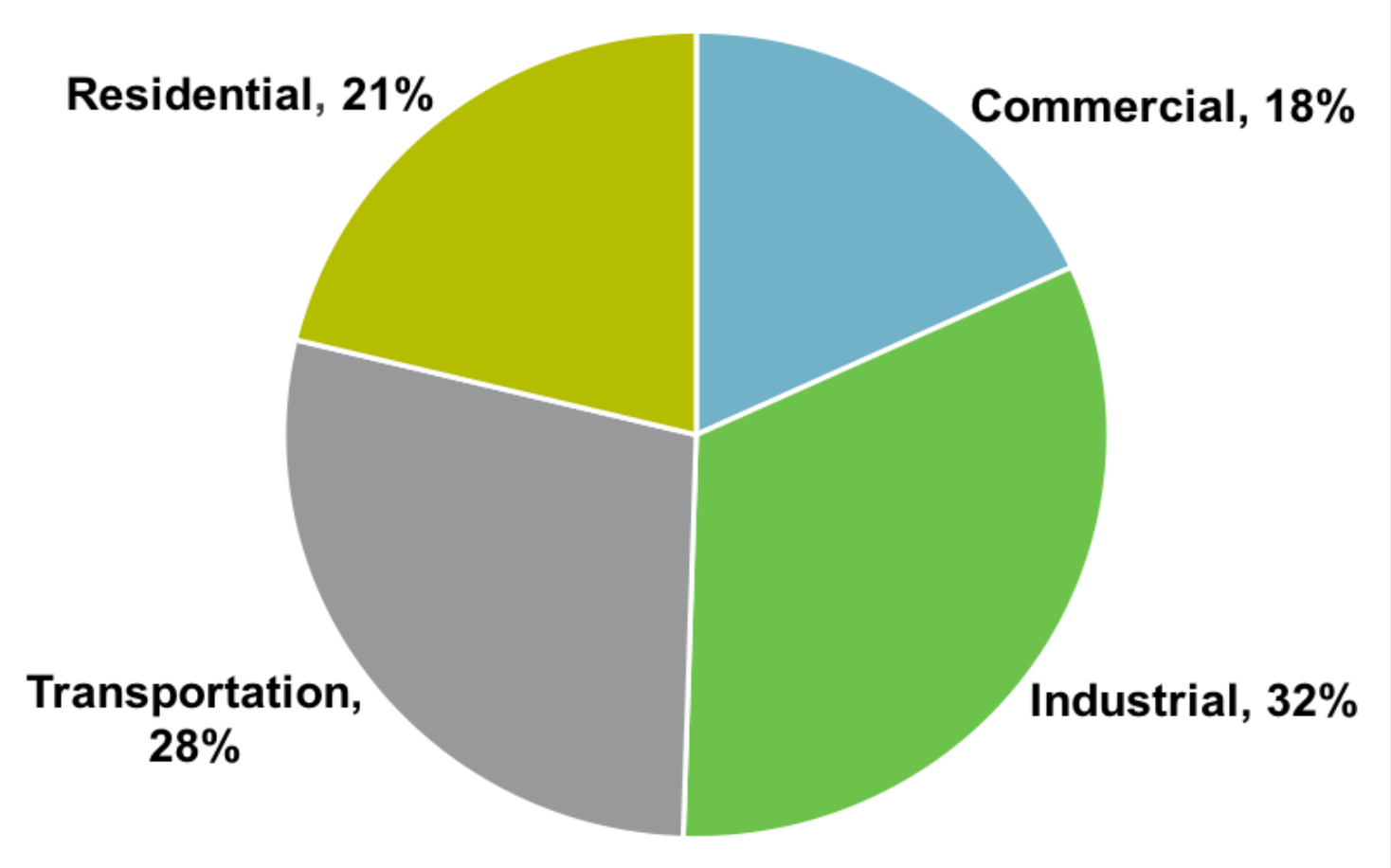
U.S. DOE CHP Deployment Program, 2016.

Findings

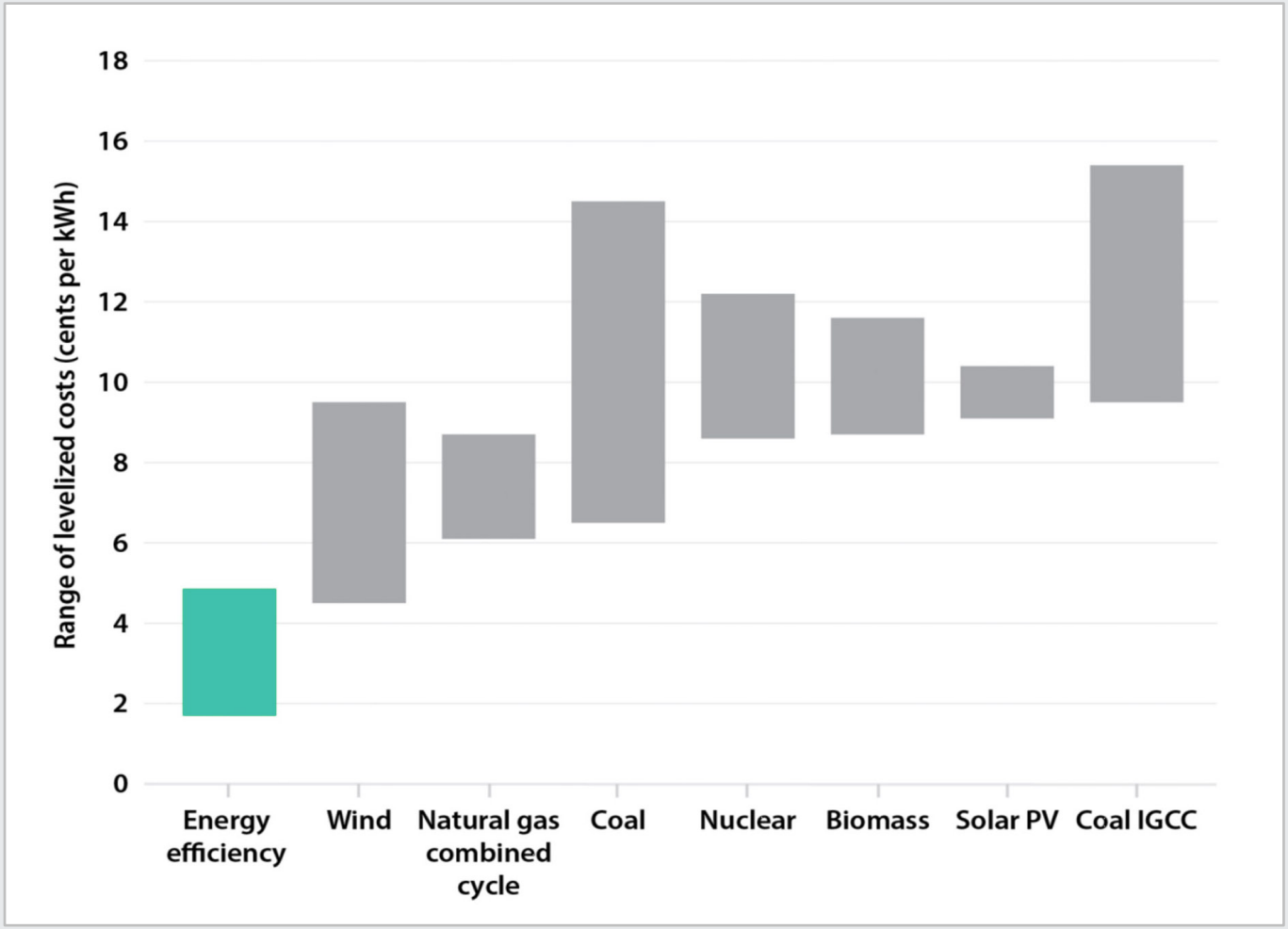
- **Save 396-million megawatt-hours** of electricity in 2030
- **Save businesses $298 billion** in avoided electricity purchases (cumulative cost savings 2016-2030)
- **Reduce annual CO_2 emissions by 174.5-million tons** in 2030
- **Achieve nearly one-third (29 percent)** of the reductions called for under the Clean Power Plan (CPP)



U.S. Energy Use By Sector (2015)

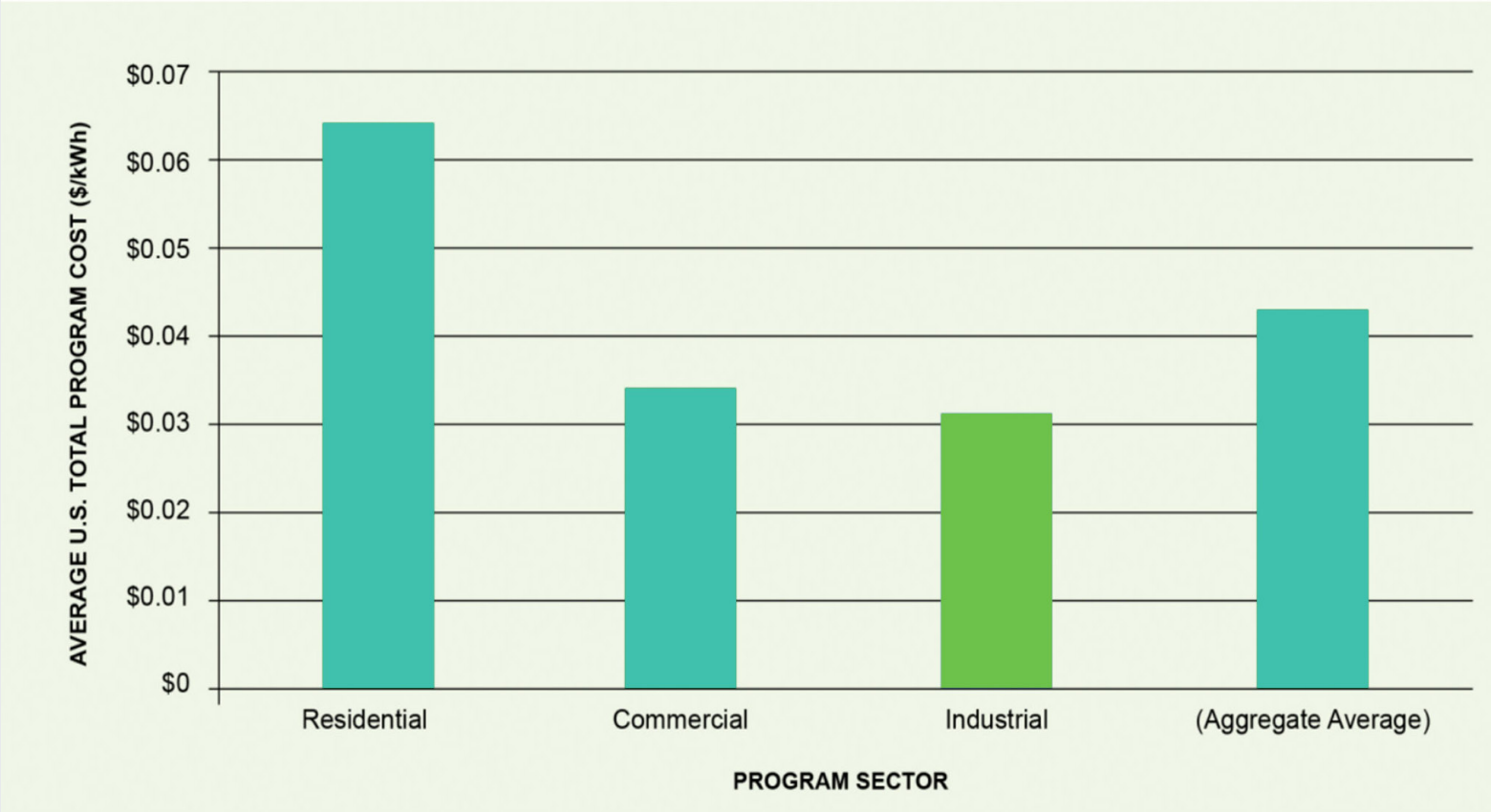


Energy Efficiency Is the Cheapest Energy Resource



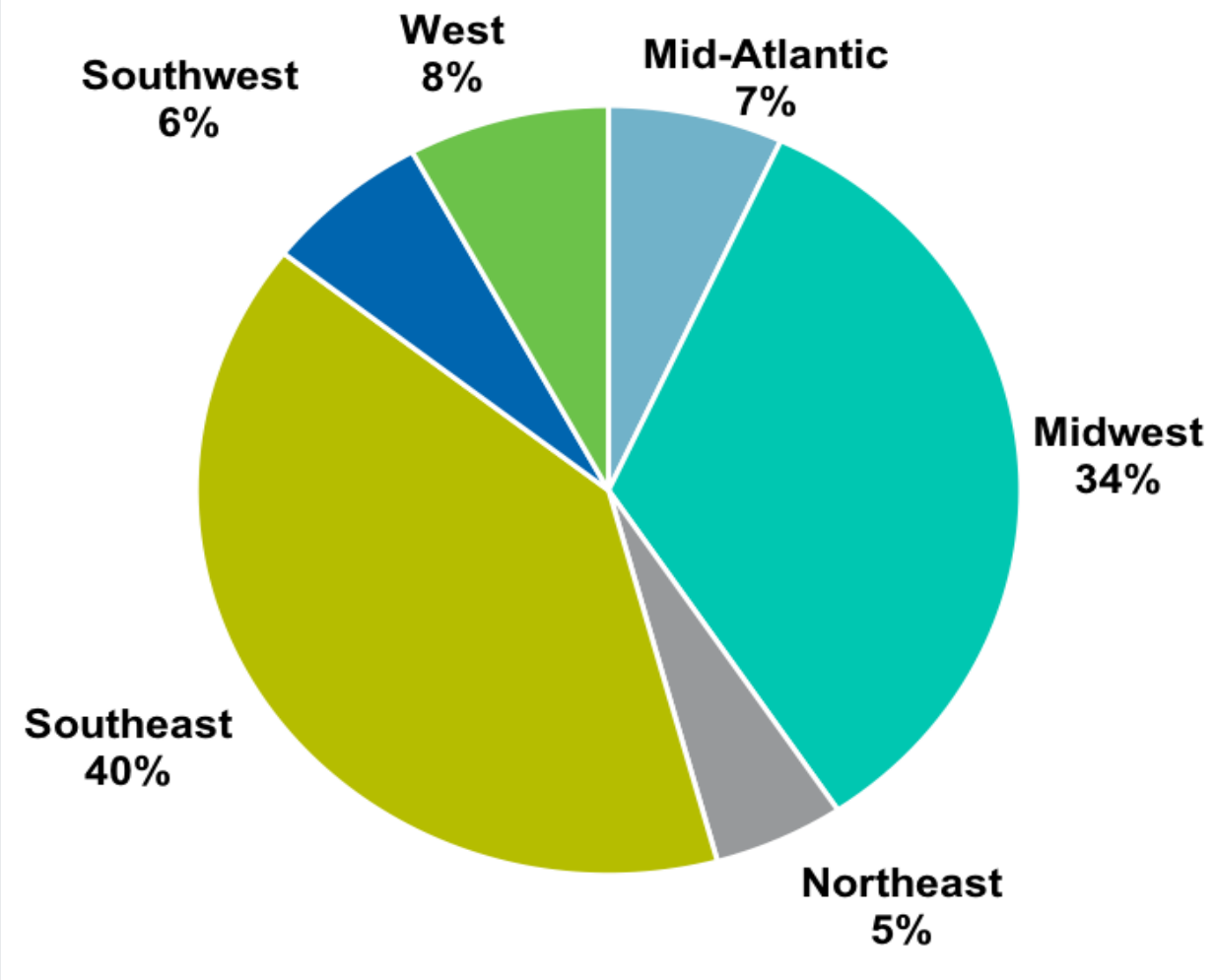
Source: ACEEE, 2014

Industry Has Lowest Cost of Saved Energy

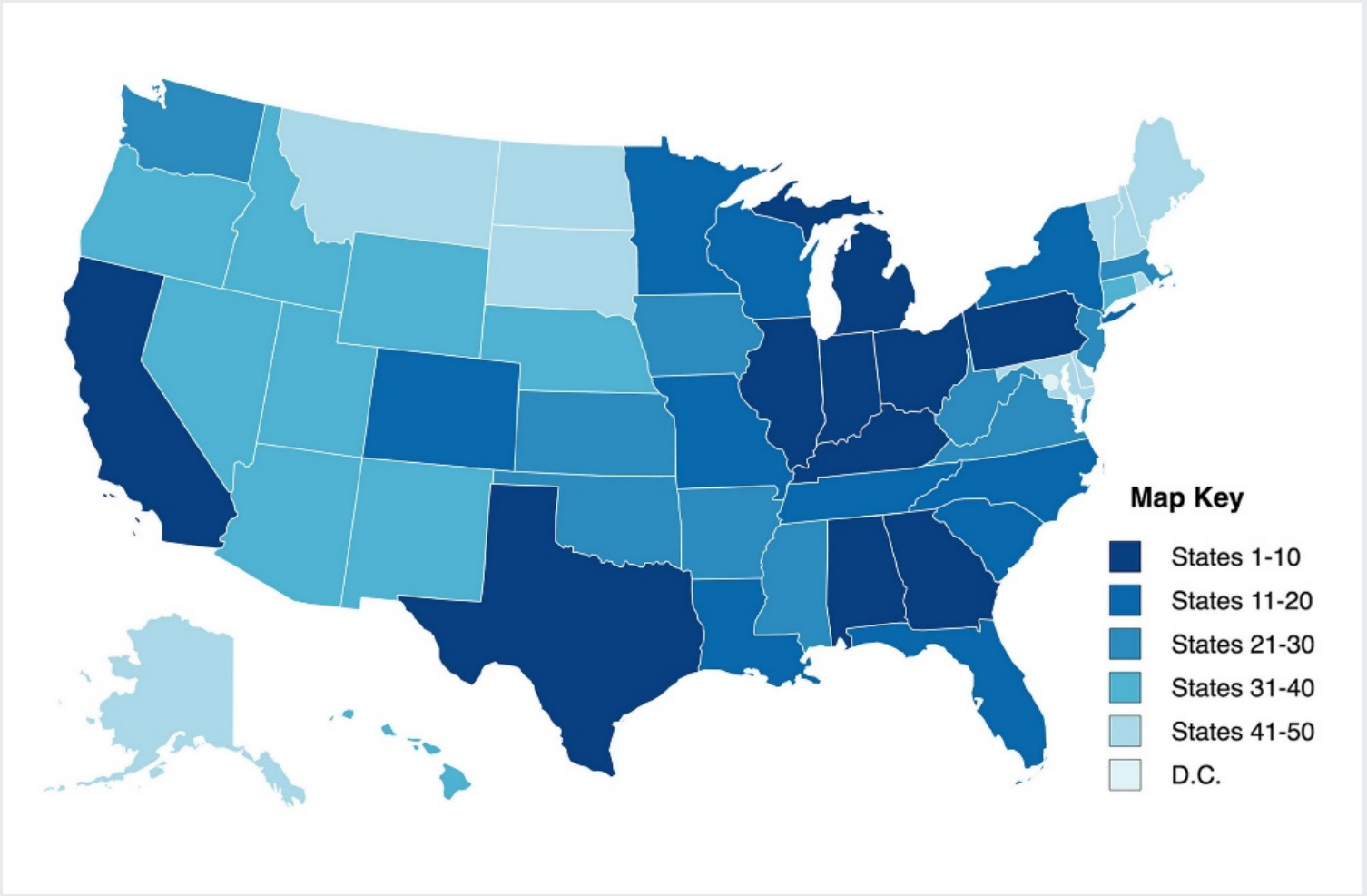


Source: DOE, 2013

The Opportunity: Potential Reduction By Region



State Ranking of Potential Reductions

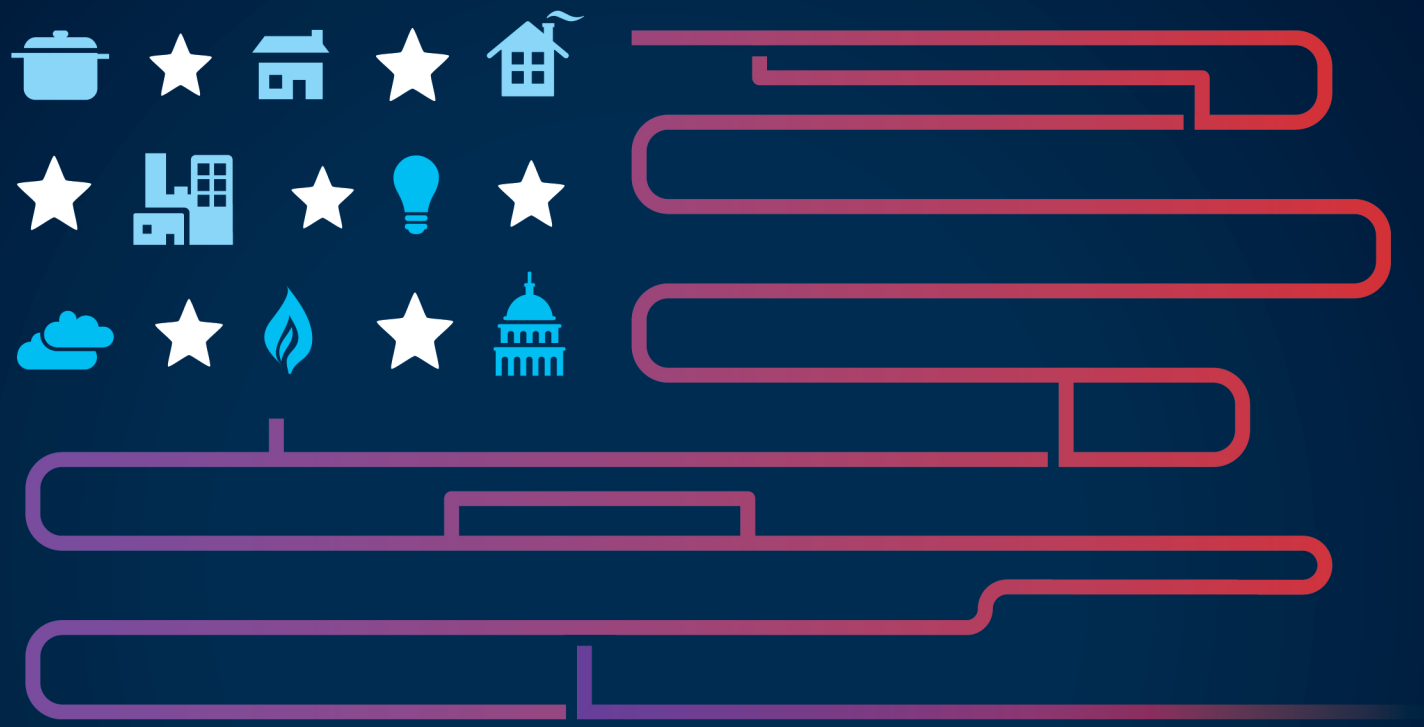


Veolia - Global Leadership

- World's leading environmental services company
  - *No. 1 largest environmental firm*
  - *No. 1 in water partnerships*
  - *220,000 employees*
- Veolia North America
  - *8,000 employees*
  - *Headquartered in Boston*
  - *500 MW+ of CHP owned or operated*
  - *Largest customers are oil & gas, cities*
  - *No.1 district energy portfolio in the US*
  - *No. 1 water services company in the US*


CNC LIVE
BREAKING NEWS
AUG 13 2051
NATIONAL GUARD HAS ARRIVED
AND RESCUE EFFORTS HAVE RESUMED
WATER LEVELS EXPECTED TO PEAK BY 4:00PM TODAY
NATIONAL GUARD


NOR CAL
STRIKE TEAM



October 17, 2016

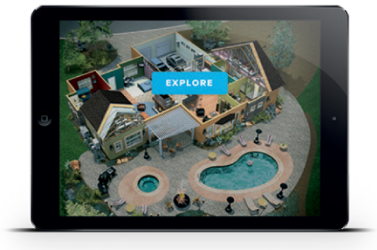
The CHP Opportunity for the Natural Gas Industry

Bree A. Raum| Senior Director, Federal Affairs

AGA American Gas Association

We rely on natural gas

every day



Explore the Interactive Natural Gas Home

www.naturalgashome.org

Cars, Trucks, Vans & SUVs

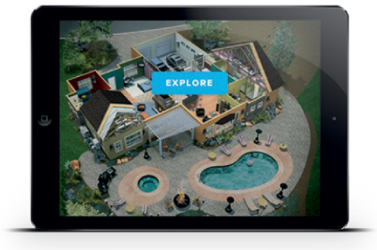
Clothes Dryers

Fireplaces

Lighting

We rely on natural gas

every day



Explore the Interactive Natural Gas Home

www.naturalgashome.org

Water Heaters

Gas Ranges, Ovens, & Cooktops

Furnaces

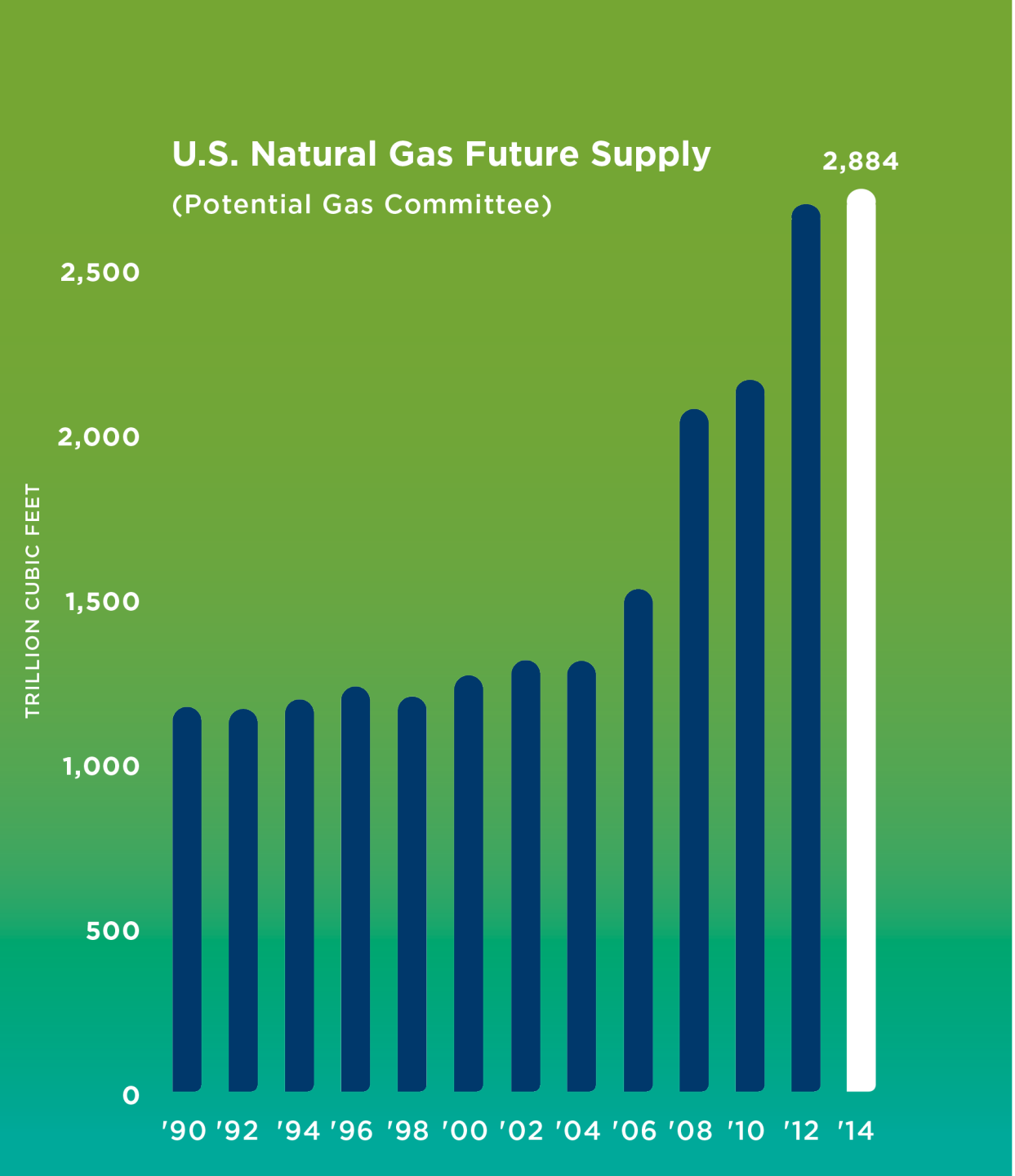
Standby Generators

Outdoor Living Spaces

GAS UTILITY SUPPORT FOR CHP

"AGA members recognize that the pursuit and adoption of natural gas DG/CHP applications could create potential business opportunities for their company and/or the natural gas industry and benefit many consumers."

- AGA Policy Principles on Natural Gas Distributed Generated / Combined Heat and Power

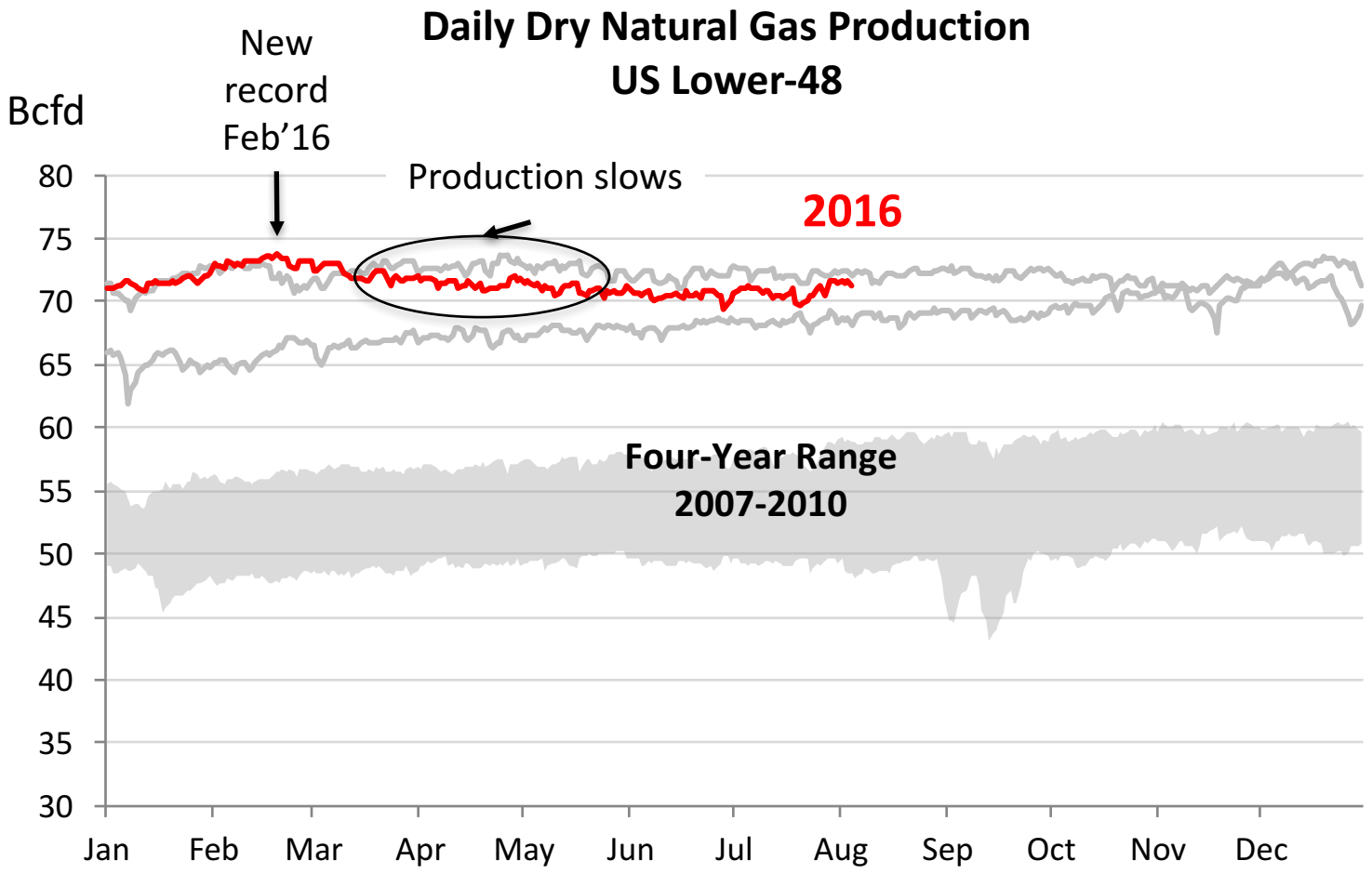


Natural Gas

Stable and affordable supplies well into the future

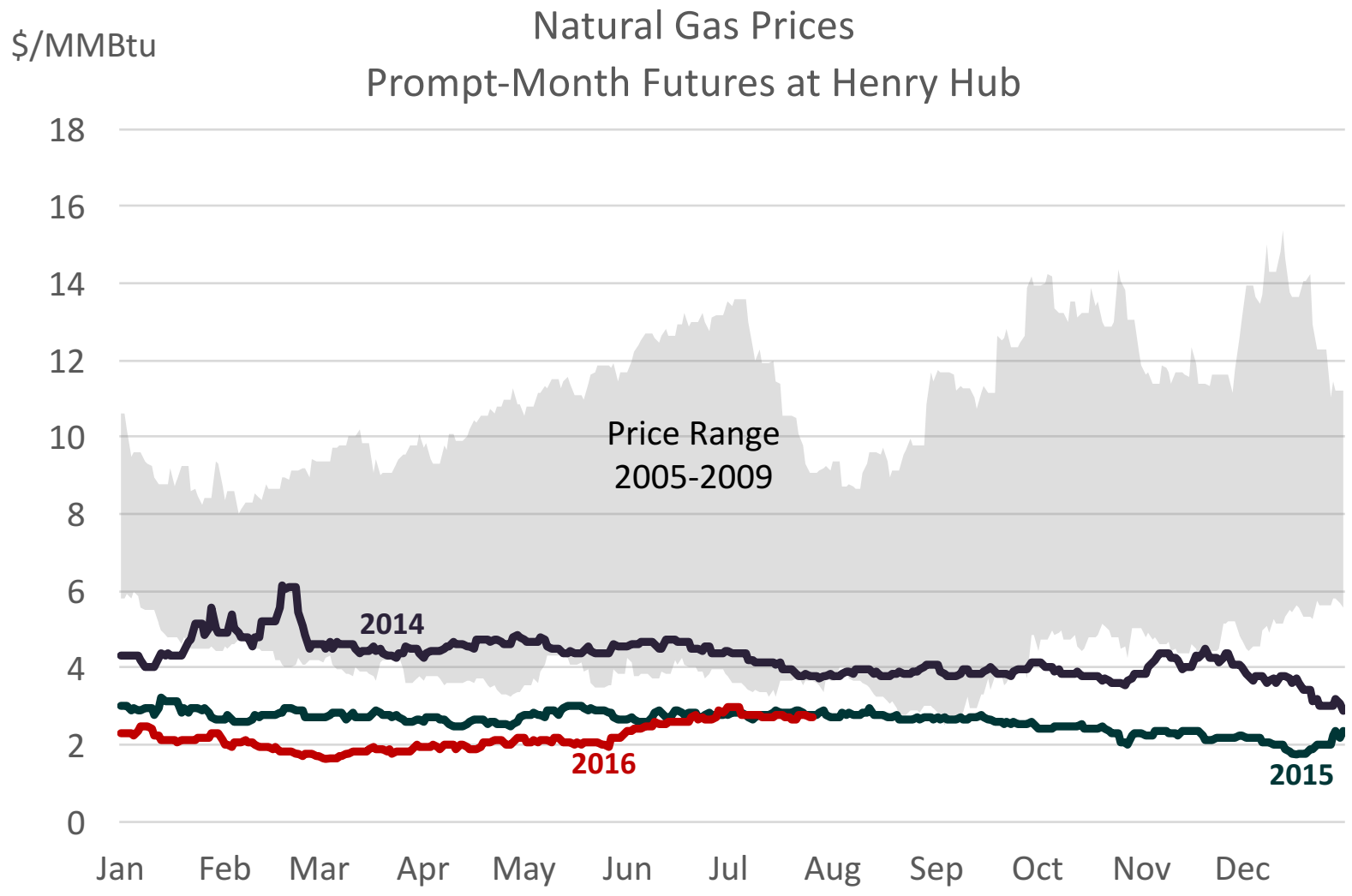
Technological advances, an accessible and abundant domestic resource, and the world's most extensive and reliable delivery infrastructure have created a fundamental shift in the natural gas marketplace.

Recent production growth has slowed



Source: *Bentek Energy LLC.*

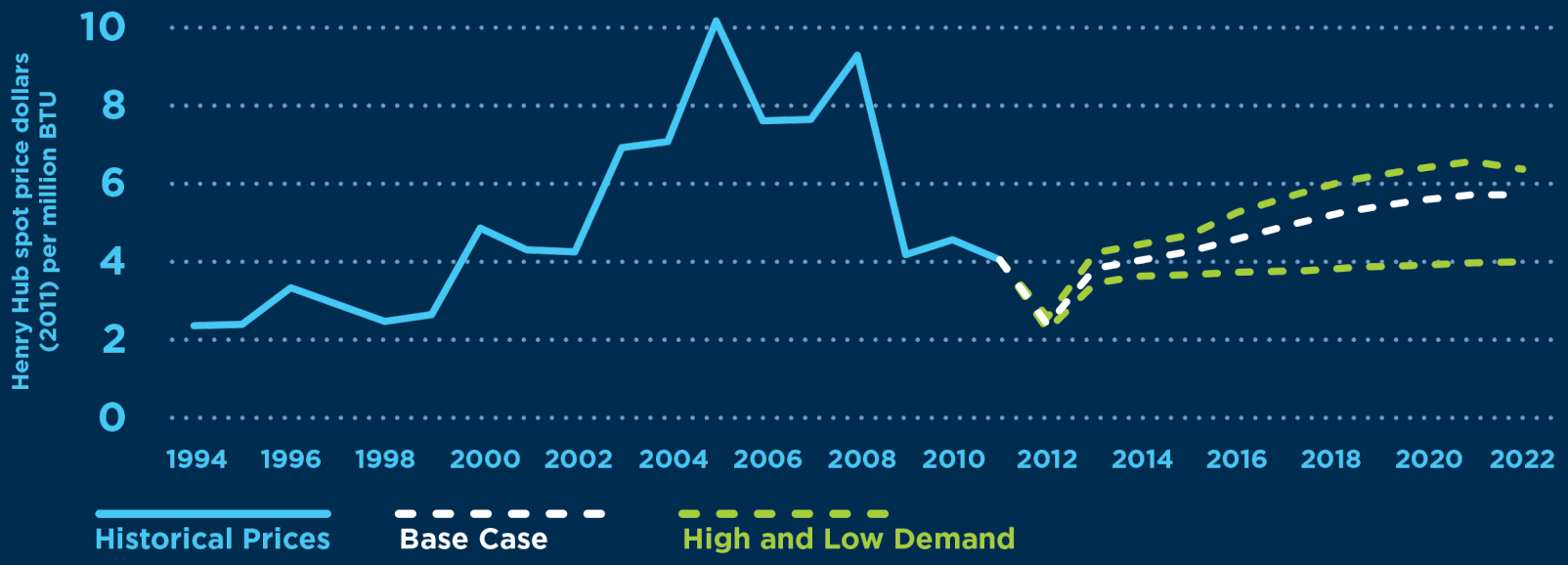
However, we have seen and continue to expect relatively low and stable natural gas prices



Source: Energy Information Administration

Natural Gas **Price Outlook**

Our nation's strong natural gas supply fundamentals and robust and reliable natural gas delivery infrastructure suggest that over the next decade, a range of demand scenarios can be met by a diverse and responsive supply market within an estimated price band of $4.00-$6.50 per MMBtu — a level well below the peak market prices of the preceding decade.

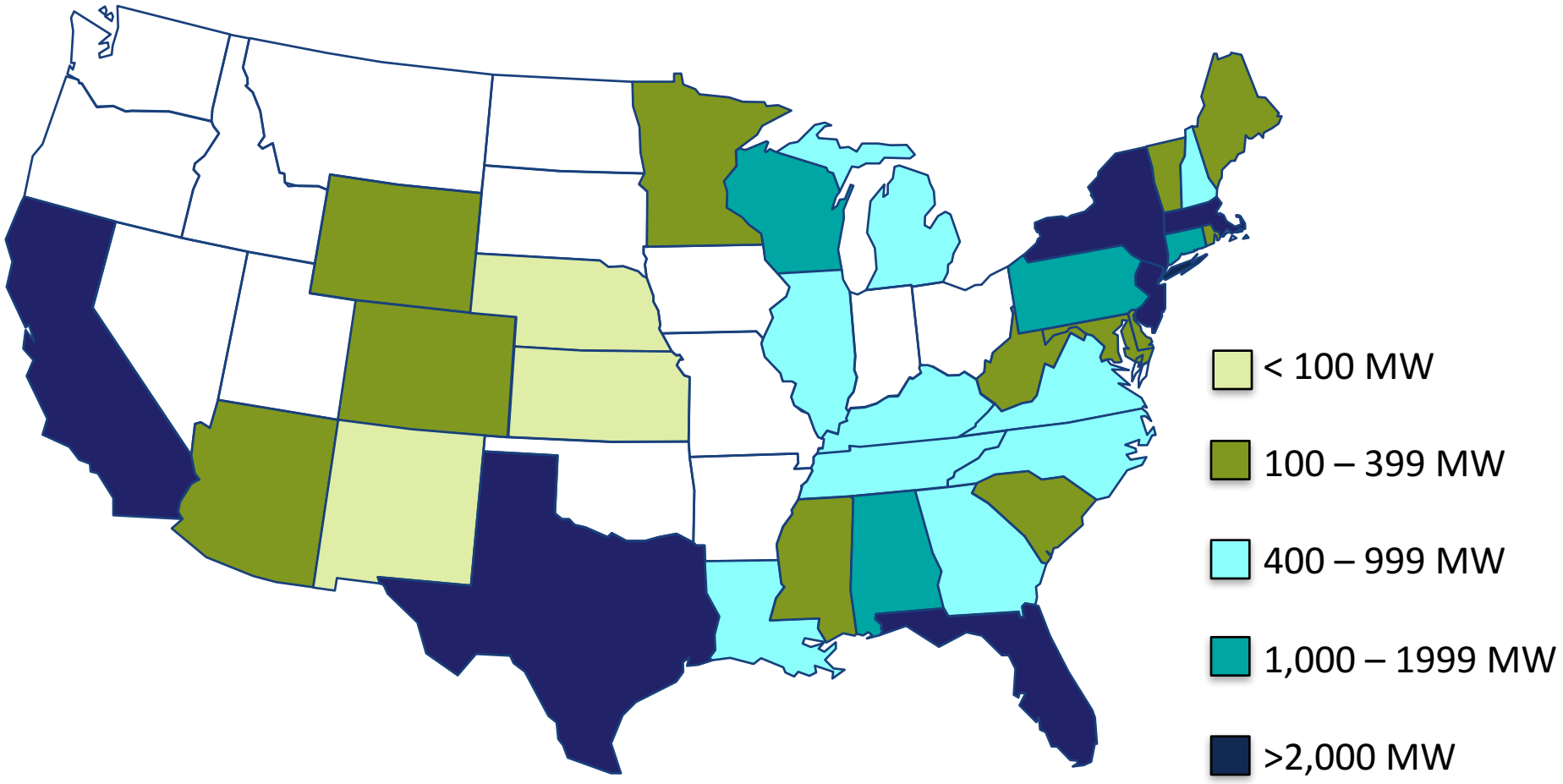


Source: *Rethinking Natural Gas, A Future for Natural Gas in the U.S. Economy,* p.6, American Gas Association, ©2012, Citing
Source: Wood MacKenzie Spring 2012. See paper for outlook limitations.

Why CHP? Why now?

- Natural gas resources: abundant and cost-effective.
- Opportunity to support U.S. manufacturing and industrial base.
- Near-term, affordable reduction in air emissions.
- Deliver efficient energy solutions and provide customers value.
- CHP as growth opportunity for utilities.
- An efficient, low carbon solution to comply with EPA regulations.

Economic Potential of 41.6 GW
(Potential With Less Than 10 Year Payback)



AGA activities

- Develop Value Proposition for LDC's & Stakeholders
- Educate & Communicate
- Expose & Eliminate Obstacles
- Organize the LDC Community
- Engage CHP Stakeholders
- Assist in Policy Development

THE PEW CHARITABLE TRUSTS

Industrial Energy Efficiency

Making America's power more efficient, resilient, and increasing our global competitiveness

Industrial energy efficiency in the U.S.

The Problem

Finance is needed to help energy users cover capital costs.

The available tax credit makes it difficult for projects to qualify.

The Solution

Continue the Investment Tax Credit so as to ensure clean and efficient power generating technologies like combined heat and power (CHP) and waste heat to power (WHP) have **parity** with other clean and efficient technologies in the available energy tax incentives.

Changes would make the tax credit more accessible

Current Law	The POWER Act (S. 1516, H.R. 2657)	WHP 2015 Bill (S.913)	Section 48 Extension (H.R. 5167, H.R. 5172,)
10% ITC for combined heat and power	Expand ITC to 30%, on par with other technologies such as solar		Extend current ITC for combined heat and power
Does not include waste heat to power	Include waste heat to power as qualifying technology for 30% credit	Include waste heat to power as qualifying technology for 10% credit	Does not include waste heat to power
Applies to the first 15MW of projects which are smaller than 50 MW	Apply to first 25MW, eliminate project size cap	Applies to projects which are smaller than 50 MW	Same as current law
Expire Dec. 2016	Expire Dec. 2018	Expire Dec. 2016	Expire Dec. 2021

House bills in the 114th Congress

H.R. 2657, The Power Efficiency and Resiliency (POWER) Act

Congressmen Tom Reed(R-NY) and Earl Blumenauer(D-OR) introduced in June 2015

- ✓ Expands investment tax credit to 30%
- ✓ Adds waste heat to power as a qualifying technology
- ✓ Applies to first 25MW, eliminate project size cap
- ✓ Extends ITC to December 2018

Rep. Mark E. Amodei (R-NV)
Rep. Joyce Beatty (D-OH)
Rep. Dan Benishek (R-MI)
Rep. Mike Bishop (R-MI)
Rep. Earl Blumenauer (D-OR)
Rep. Matt Cartwright (D-PA)
Rep. Kathy Castor (D-FL)
Rep. Chris Collins (R-NY)
Rep. Gerald Connolly (D-VA)
Rep. Joseph Crowley (D-NY)
Rep. Carlos Curbelo (R-FL)
Rep. Rodney Davis (R-IL)
Rep. Charlie Dent (R-PA)
Rep. Robert Dold (R-IL)

Rep. Dan Donovan (R-NY)
Rep. Christopher P. Gibson (R-NY)
Rep. Joseph J. Heck (R-NV)
Rep. Mike Honda (D-CA)
Rep. Ron Kind (D-WI)
Rep. Pete King (R-NY)
Rep. Ann Kirkpatrick (D-AZ)
Rep. Darrin LaHood (R-IL)
Rep. Ted Lieu (D-CA)
Rep. Daniel Lipinski (D-IL)
Rep. Frank LoBiondo (R-NJ)
Rep. Mia Love (R-UT)
Rep. Tom MacArthur (R-NJ)
Rep. Tom Marino (R-PA)

Rep. Betty McCollum (D-MN)
Rep. David McKinley (R-WV)
Rep. Candice Miller (R-MI)
Rep. Tim Murphy (R-PA)
Rep. Richard Neal (D-MA)
Rep. Bill Pascrell (D-NJ)
Rep. Chellie Pingree (D-ME)
Rep. Jared Polis (D-CO)
Rep. Thomas Reed (R-NY)
Rep. Tim Ryan (D-OH)
Rep. Mike Simpson (R-ID)
Rep. Elise Stefanik (R-NY)
Rep. Steve Stivers (R-OH)
Rep. Mike Thompson (D-CA)

Rep. Dina Titus (D-NV)
Rep. Paul Tonko (D-NY)
Rep. Dave Trott (R-MI)
Rep. Peter Welch (D-VT)
Rep. Kevin Yoder (R-KS)
Rep. Don Young (R-AK)

House bills in the 114th Congress

H.R. 5167, Technologies for Energy Security Act

Congressmen Tom Reed(R-NY) May 2016

- ✓ modifies the ITC to extend through 2021
- ✓ phases out the current credit rate (unless credit is currently at 10%)

Rep. Blum, Rod [R-IA-1]
Rep. Blumenauer, Earl [D-OR-3]
Rep. Cardenas, Tony [D-CA-29]
Rep. Cole, Tom [R-OK-4]
Rep. Costello, Ryan A. [R-PA-6]
Rep. Cramer, Kevin [R-ND-At Large]
Rep. Duncan, Jeff [R-SC-3]
Rep. Emmer, Tom [R-MN-6]
Rep. Esty, Elizabeth H. [D-CT-5]
Rep. Gallego, Ruben [D-AZ-7]
Rep. Gibbs, Bob [R-OH-7]
Rep. Gibson, Christopher P. [R-NY-19]
Rep. Guinta, Frank C. [R-NH-1]
Rep. Higgins, Brian [D-NY-26]
Rep. Huffman, Jared [D-CA-2]
Rep. Kind, Ron [D-WI-3]
Rep. Larson, John B. [D-CT-1]
Rep. Loebsack, David [D-IA-2]
Rep. Love, Mia B. [R-UT-4]
Rep. Lowenthal, Alan S. [D-CA-47]
Rep. Meehan, Patrick [R-PA-7]
Rep. Pocan, Mark [D-WI-2]
Rep. Rangel, Charles B. [D-NY-13]
Rep. Reichert, David G. [R-WA-8]
Rep. Renacci, James B. [R-OH-16]
Rep. Smith, Lamar [R-TX-21]
Rep. Stefanik, Elise M. [R-NY-21]
Rep. Stivers, Steve [R-OH-15]
Rep. Thompson, Mike [D-CA-5]
Rep. Tonko, Paul [D-NY-20]
Rep. Walz, Timothy J. [D-MN-1]
Rep. Zinke, Ryan K. [R-MT-At Large]

Technologies need parity

ITC percent deductions by technology as of October 2016

Technology	12/31/16	12/31/17	12/31/18	12/31/19	12/31/20	12/31/21	12/31/22	Future Years
PV, Solar Water Heating, Solar Space Heating/Cooling, Solar Process Heat	30%	30%	30%	30%	26%	22%	10%	10%
Hybrid Solar Lighting, Fuel Cells, Small Wind	30%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Geothermal Heat Pumps, Microtubines, Combine Heat and Power Systems	10%	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Geothermal Electric	10%	10%	10%	10%	10%	10%	10%	10%
Large Wind	30%	24%	18%	12%	N/A	N/A	N/A	N/A

ALLIANCE

FOR INDUSTRIAL EFFICIENCY

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Elinor Haider, Veolia North America
Bree Raum, American Gas Association
Jessica Lubetsky, Pew Charitable Trusts