Edison Electric INSTITUTE

Utility Partners Roundtable

NASEO's National Energy Policy and Program Institute

July 27, 2017

The Edison Electric Institute (EEI) is the association that represents the U.S. investor-owned electric industry. Our members provide electricity for 220 million Americans, operate in all 50 states and the District of Columbia, and directly employ nearly 500,000 workers. Safe, reliable, affordable, and clean electricity powers the economy and enhances the lives of all Americans.

The EEI membership also includes dozens of international electric companies as International Members, and hundreds of industry suppliers and related organizations as Associate Members.

Since 1933, EEI has provided public policy leadership, strategic business intelligence, and essential conferences and forums for the energy industry.

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I. Smarter Energy Infrastructure

DRIVERS

1. Customer Wants & Needs
2. Environmental Goals
3. Growth in Distributed Energy Resources
4. New Technologies

BENEFITS

1. Enhanced Reliability
2. Increased Resiliency
3. Reduced Carbon Emissions
4. Empowered Customers
5. Flexible & Responsive Energy Grid Platform

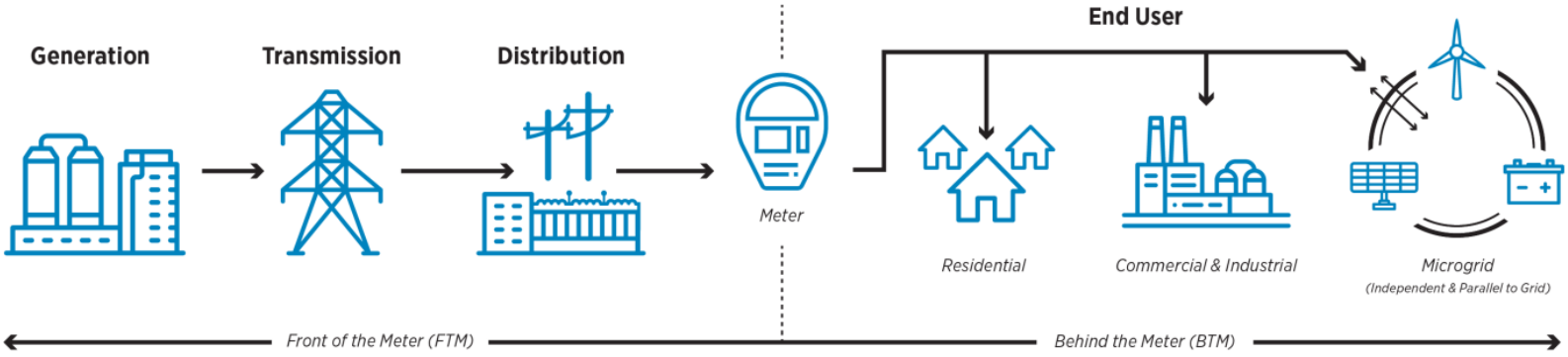
In the last 10 years, electric companies have invested

$881 billion

to build smarter energy infrastructure and transition to even cleaner generating sources.

Energy Storage: Why Now?

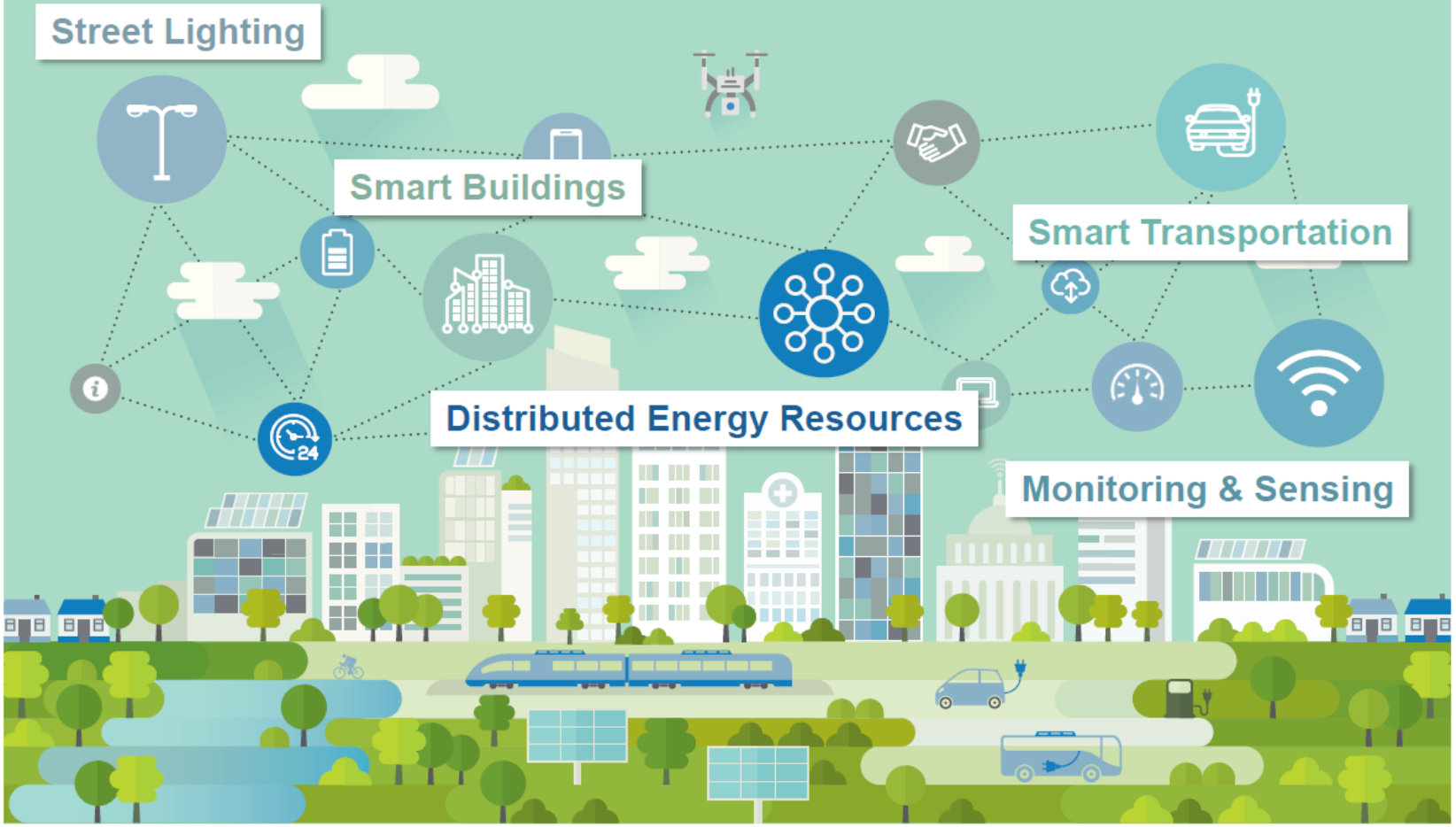
Energy storage can be deployed in all parts of the energy grid, and has applications in all parts of the value chain.



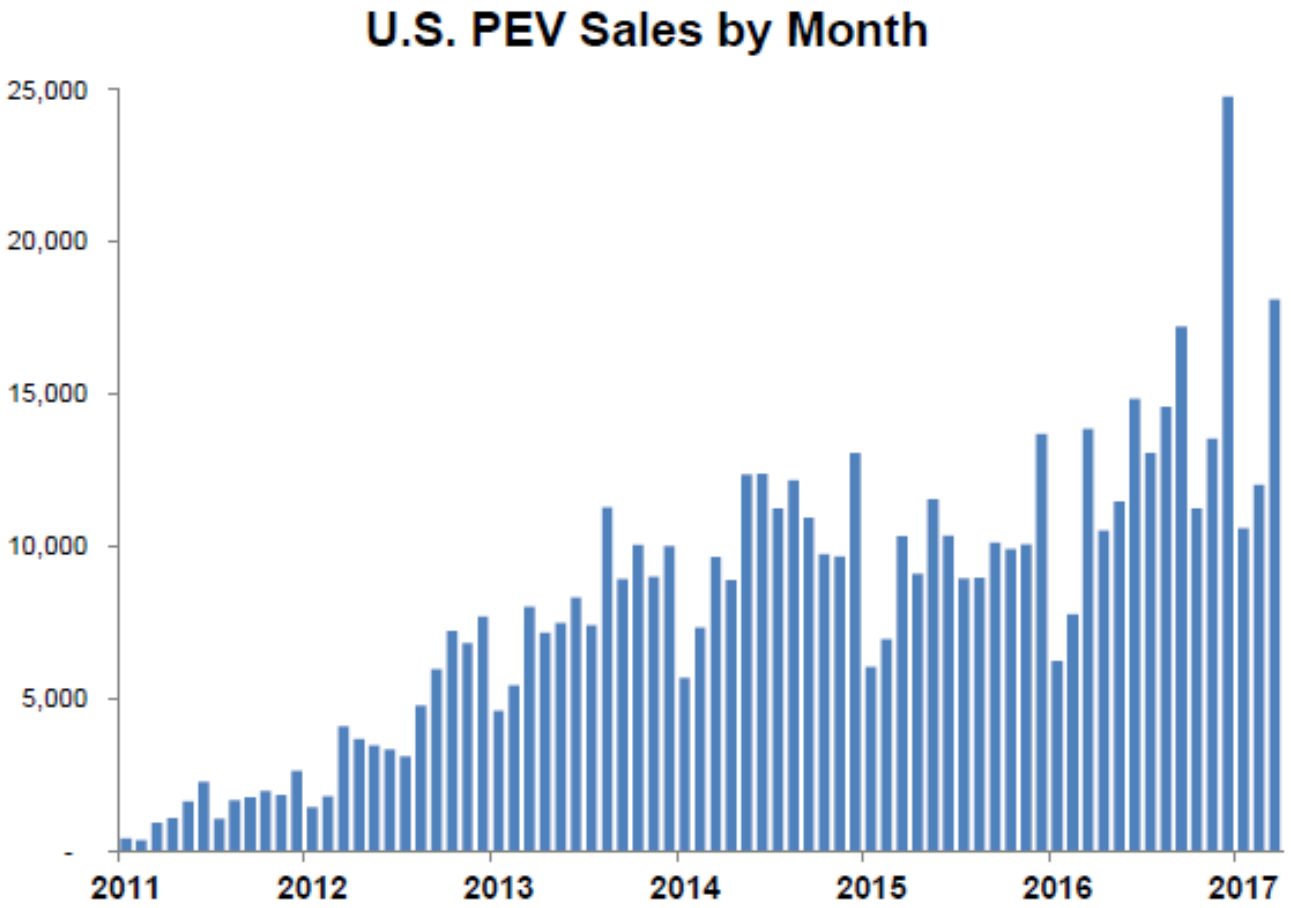
Enhance Electric Company Operations	Provide Grid Support	Optimize Power System	Enhance Customer Experience
▪ Alleviate high energy prices through time shifts ▪ Reduce the need for new generation	▪ Regulate frequency ▪ Reduce spinning, non-spinning, and supplemental reserve requirements ▪ Voltage support ▪ Black start electricity restoration	▪ Defer transmission and distribution upgrades ▪ Relieve electricity congestion	▪ Higher power quality and reliability ▪ Retail electric energy time shift
FERC REGULATED		STATE REGULATED T&D	END USE

Source: Adapted from DOE/EPRI Handbook, EEI (graphic)

The Smart City Revolution



Electric Vehicles: Strong Progress



610,000
sales since Dec. 2010

+37%
2016 sales over 2015

+46%
Q1 2017 over 2016

31
EV models

17
auto brands

SOURCE: Sales data from InsideEVs.com and HybridCars.com

There Is Growing Electrification Momentum

Transit

EV Buses Are in Service in 15+ Cities

Airports

Seattle Sea-Tac Saves $2.8 Million in Fuel per Year

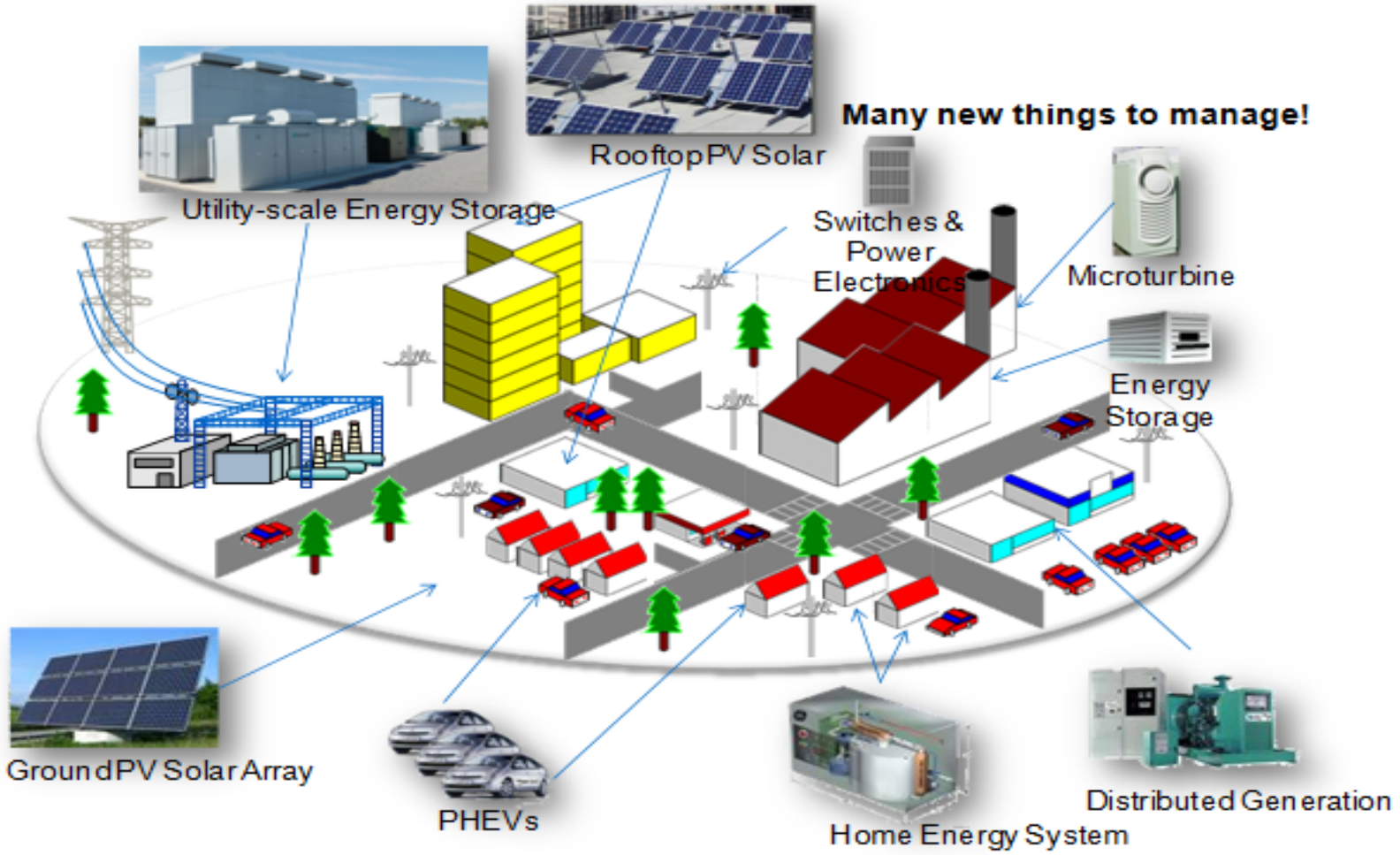
Seaports

Long Beach Terminal Electrification Is Equal to 5,000 Homes

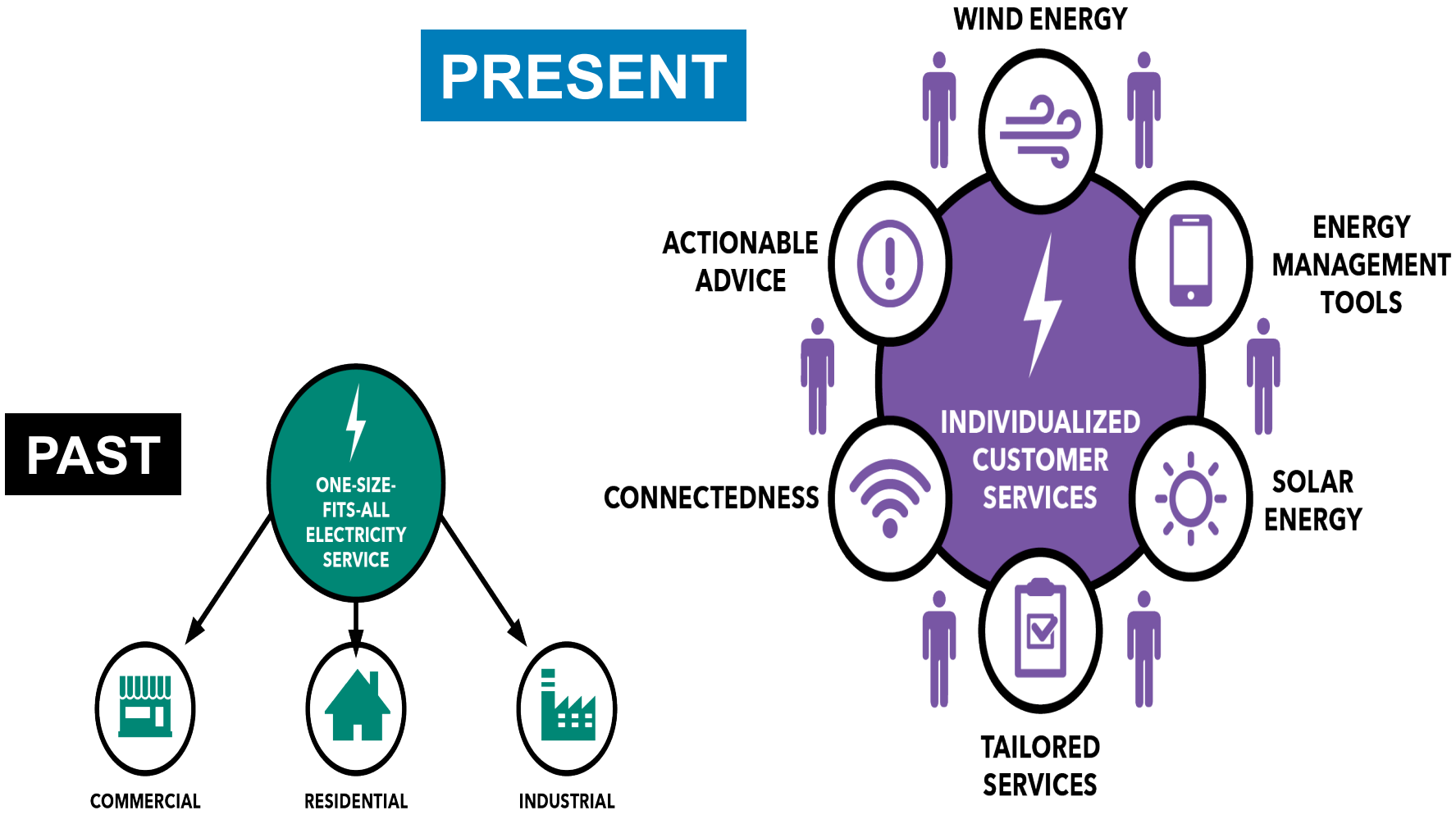
Fleet

In 2016, Electric Companies Plan to Invest More Than $128 Million

Potential Elements of a Microgrid Campus

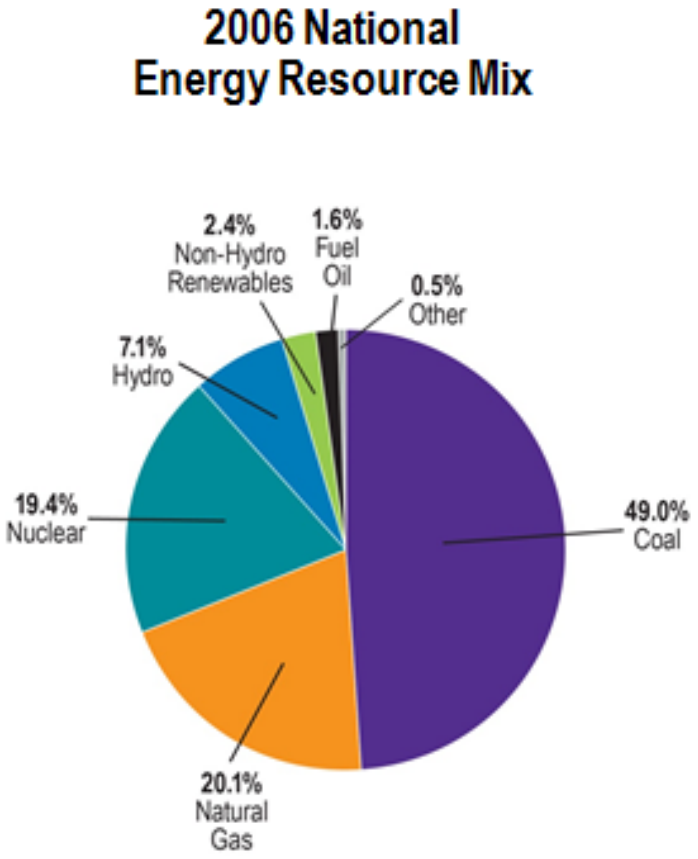


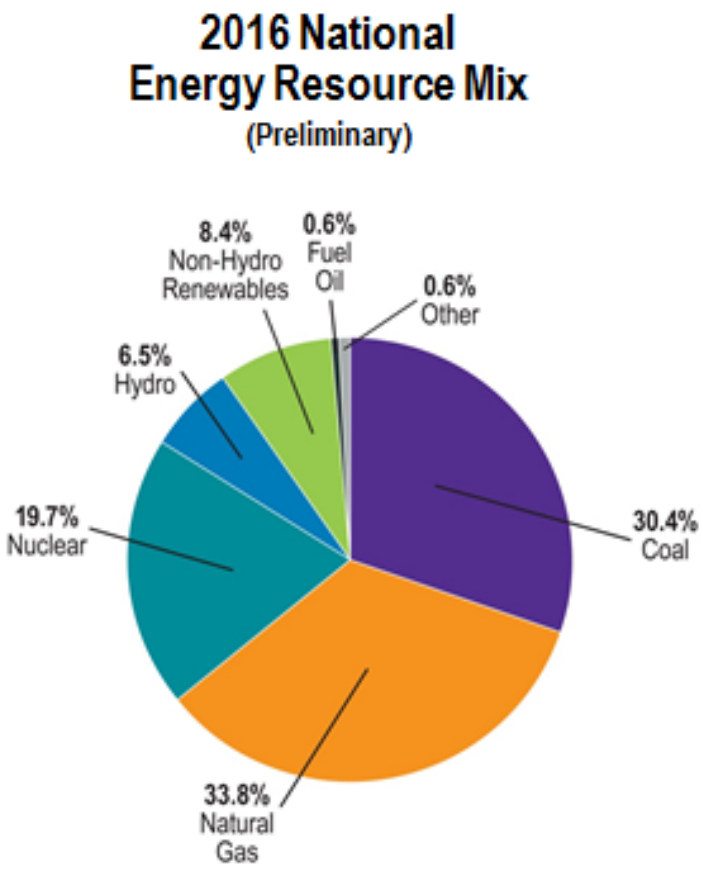
II. Individualized Customer Services



Source: The Edison Foundation Institute for Electric Innovation, *Thought Leaders Speak Out: Key Trends Driving Change in the Electric Power Industry*, December 2015

III. Our National Fuel Mix Is Changing



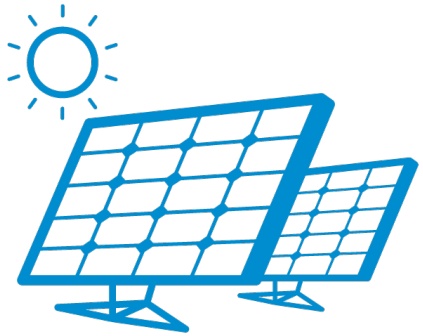


Source: Department of Energy, Energy Information Administration

We Are Adding More Non-Hydro Renewable Resources to the Mix

Our universal solar projects accounted for

72% of all **INSTALLED U.S. SOLAR CAPACITY** in 2016.



OUR SOLAR PV had an average cost of

$1.06

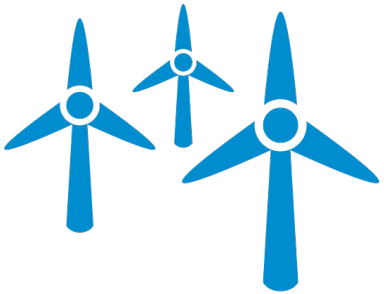
per watt in 2016

COMPARED TO

RESIDENTIAL ROOFTOP SOLAR PV had an average cost of

$2.89

per watt in 2016



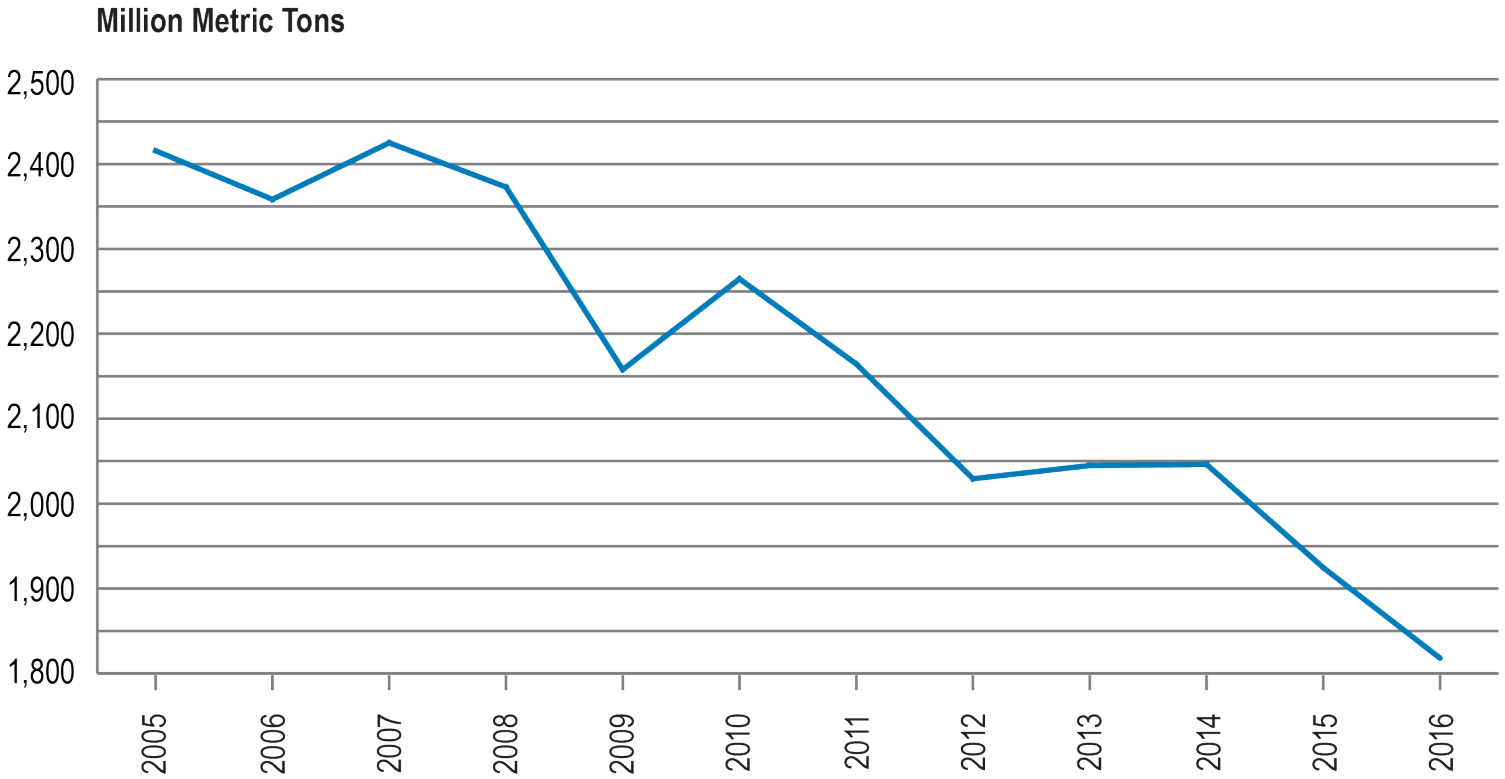
Our wind projects provide almost

100%

of wind energy nationwide.

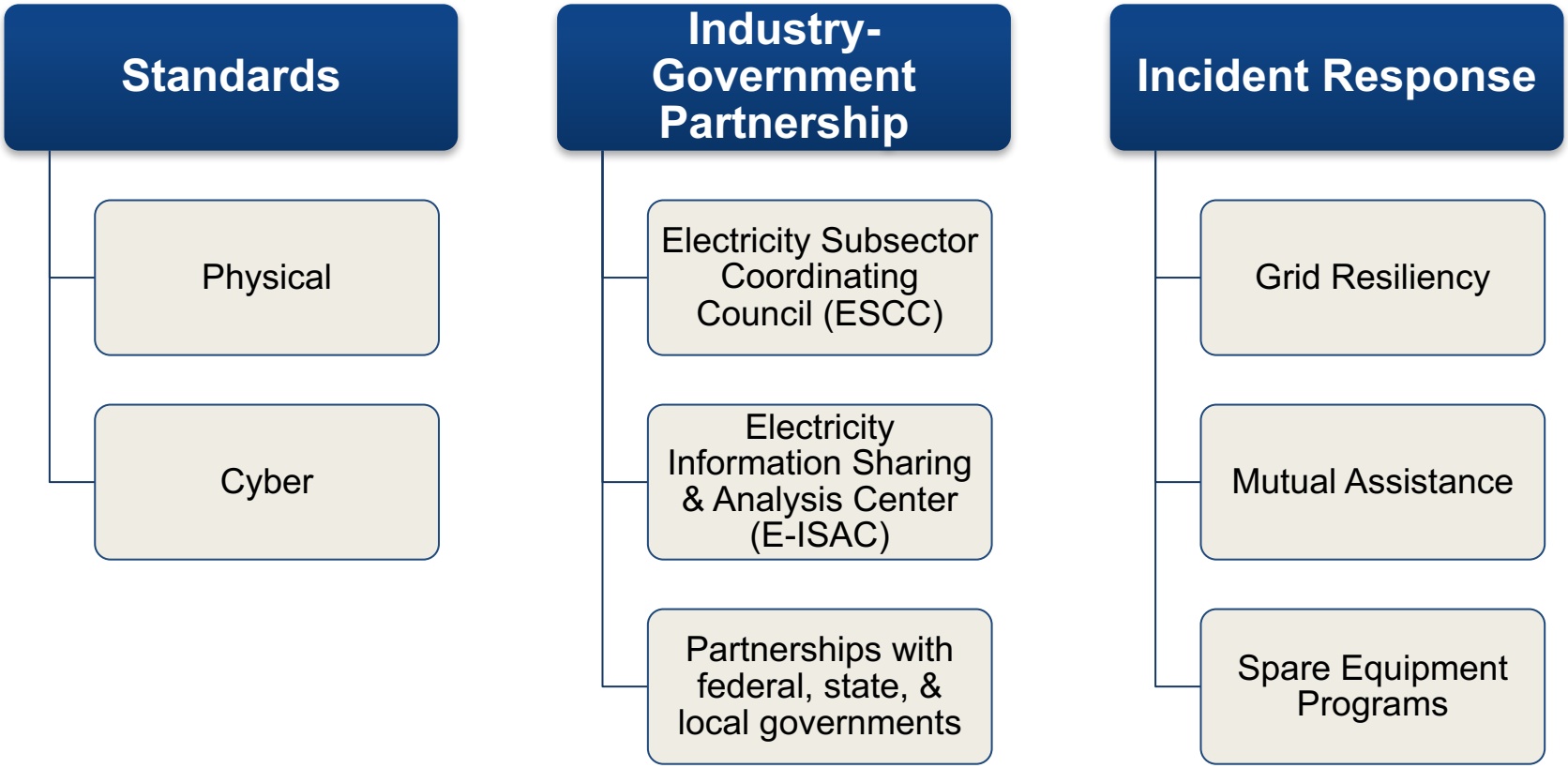
U.S. Power Sector Carbon Dioxide Emissions Declining (2005-2016)

- As of 2016, industry CO_2 emissions were nearly 25 percent below 2005 levels
- Trajectory will continue based on current trends



Source: Developed from U.S. Energy Information Administration, *Monthly Energy Review*, March 2017.

IV. Approach to Grid Security



Talk with us!

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