

Electric & Gas Industry Update

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AGA
American Gas
Association

NATURAL GAS

SAFETY

RESILIENCE

INNOVATION



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Today's Natural Gas Story

AGA members have spent more than \$10 billion in safety upgrades

- Historic production and delivery
- 6,000 miles of new pipe (2.5 million existing)
- Added 230,000 customers this year
- CO₂ emissions lowest since 1990s; natural gas customers 4%
- \$1.5 billion invested in energy efficiency (2017)
- Households save \$874 per year
- Businesses saved \$105 billion since 2009



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America's Energy Position

The strongest ever!

- Largest producer of oil, natural gas, refined products, and nuclear generation
- Second largest producer of wind, coal, and solar
- Largest liquid petroleum exporter
- Second largest natural gas exporter
- Energy exports cut trade deficit \$363 billion since 2008
- US exports displacing oil from OPEC and Russia
- Insulating US economy from price spikes
- More than \$200 billion invested in manufacturing



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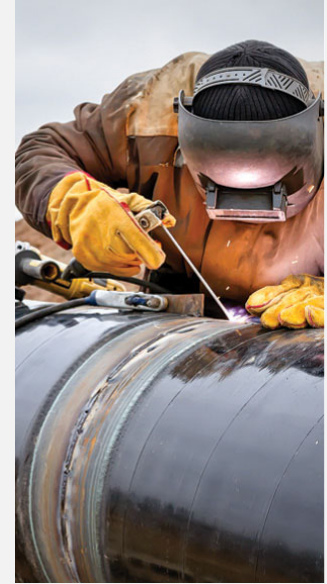
Opportunities & Risks

Opportunities

- Pipeline safety reauthorization
- Permitting reform – infrastructure
- Energy innovation research & development

Risks

- Pipeline siting and permitting constraints
- Climate (fossil fuel bans / Green New Deal)



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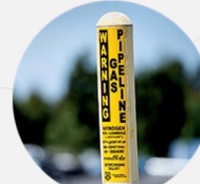
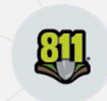
Enhancing Safety



Natural gas utilities spend \$824 every second on enhancing the safety of natural gas distribution and transmission systems



- Commitment to go beyond regulation and implement Safety Management System Standard API 1173 in three years
- Safety Peer Review Program
- Proactive and post-incident leading practices
- Standards and guidelines
- Strong and effective pipeline safety regulation



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Leading by Example: Peer Reviews

- The AGA Peer Review Program is a voluntary safety and operational practices program that allows participating companies to be reviewed by their peers, share leading practices, and identify opportunities to better serve customers and communities
- Each review features a panel of fellow gas utility professionals from North America who provide the company with feedback to help enhance its safety and efficiency



AGA members that serve 83% of the natural gas customers in the US have participated in a peer review



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Since 1990



214%

Modern plastic pipelines have increased by 214%



58%

Cast iron pipelines have declined by 58%



50%

Unprotected steel pipelines have decreased by 50%

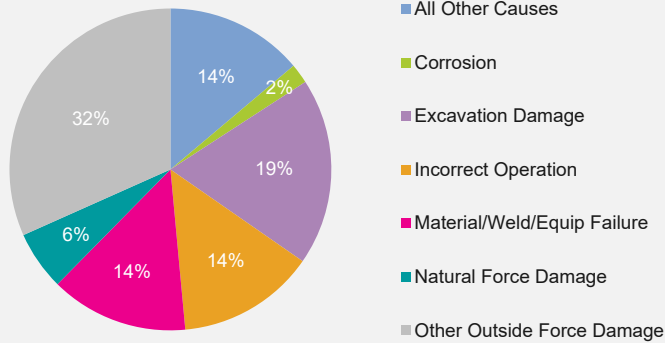


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Safety Statistics

Serious Distribution Incident Cause Breakdown
5 Year Average (2014-2018)



Natural gas pipeline incidents continue to decline in the last 20 years, but significant incidents highlight the need for continued diligence on pipeline safety. Data from 2014-2018 shows excavation damage and other outside forces are leading causes of serious distribution incidents.

Most serious excavation incidents were caused by third-parties (75%) and most other outside force incidents were related to vehicular damage (68%).



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Pipeline Safety Act Reauthorization

- Legislated to be reauthorized every four years (2019)
- Generally directs Department of Transportation to study or promulgate rules
- Sets enforcement and fine limits
- Significant incidents often drive mandates



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Pipeline Safety Act Reauthorization

Congressional hearings

- House: Transportation and Infrastructure Committee
- House: Energy & Commerce Committee
- Senate: Commerce, Science and Transportation Committee

Senator Markey: “Leonel Rondon Pipeline Safety Act”

- Merrimack Valley incident



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Gas Distribution Integrity Management Program (DIMP) Plans

- Risks that could lead to or result from operating distribution line above MAOP
- Operators to submit DIMP plans, ER and O&M manuals to state / PHMSA
- PHMSA to audit states to ensure sufficient review
- Intended to require that states pay more attention to the manuals; may give state additional resources



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Emergency Response Plans

- Focuses on quicker communication with first responders and public officials
- Establish communication as soon as practicable, but not later than 30 minutes after “gas pipeline emergency”
- Develop voluntary opt-in system to allow rapid communication to customers



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Expect

- Focus on Merrimack Valley Incident
 - ✓ Records
 - ✓ Work oversight
 - ✓ Over-pressurization
 - ✓ Emergency response
 - ✓ Increased fines/penalties
 - ✓ Transparency
- PHMSA to increase oversight of states
- Industry to take actions beyond legislation



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Industry Cyber Programs

- ✓ Peer Cyber Review Program
- ✓ Cybersecurity Capability Maturity Model (C2M2)
- ✓ Downstream Natural Gas Information Sharing and Analysis Center (DNG-ISAC)
- ✓ Cyber Metrics Program
- ✓ Participating in cross-sector exercises such as GridEx

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use_z = False
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OR CLASSES -----

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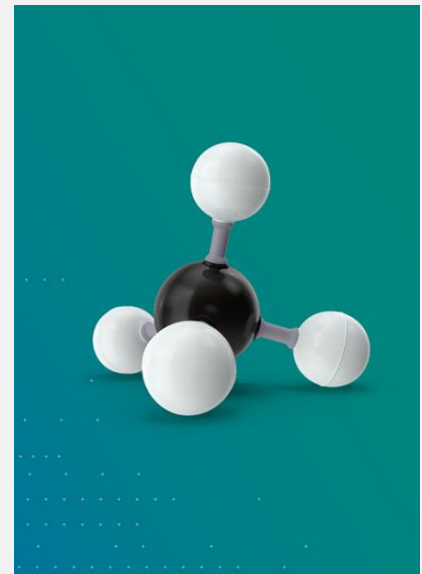


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Reducing the Environmental Impact

- Voluntary methane emissions best practices
- Technology development
- Research
- Natural Gas Sustainability Initiative

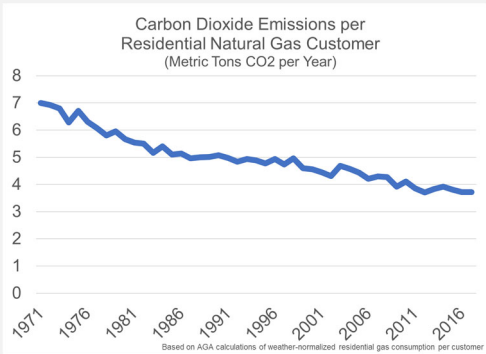


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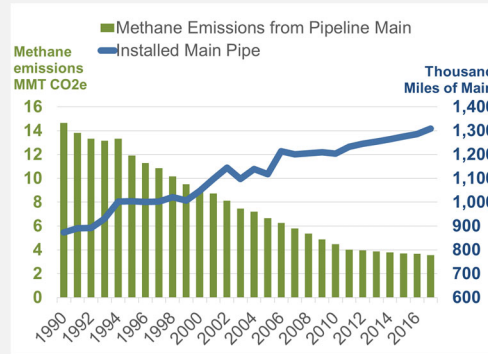
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Natural Gas Utilities and its Customers Have Made Significant Progress Reducing Emissions

Declining Customer CO₂ Emissions



Reductions of Methane



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Advancing and Deploying Energy Efficient Technologies in Homes and Buildings

Space cooling, up to 45%
Space heating, up to 40%

- Gas heat pump



Building efficiency, 10-45%

- IoT based thermostat
- Building envelope



Water heating, up to 55%

- Absorption heat pump

Cooking, minimal change

- Gas stove
- Gas oven



Laundry, 55%

- Gas dryer
- Ozone washing

25 - 40% GHG reduction potential on a customer basis

Source: Enovation Partners, May 2018

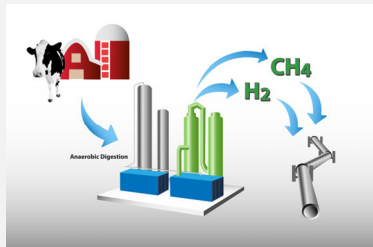


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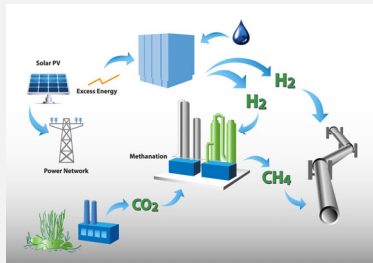
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Providing Decarbonized Natural Gas Solutions for Consumers

Renewable Natural Gas (RNG)



Power to Gas (P2G)

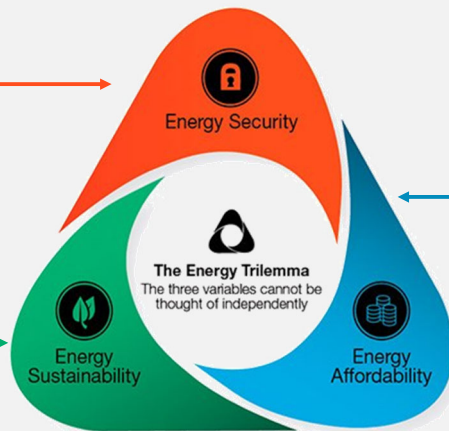


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Natural Gas: Part of the Solution to the “Energy Trilemma”

- Reliable infrastructure
- Able to meet demand
- Management of diverse sources of domestic supply
- Energy efficiencies in demand and supply
- Energy supply from low carbon and renewable sources



- Population can access and afford energy
- Growth can be blocked by poor energy access or high prices

World Energy Council



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The commitment of America's natural gas utilities to safety and resilience means that we are a part of the fabric of our communities today.

Our mission to constantly innovate means that we will play a role in our customer's lives and the prosperity of this nation for many generations to come.



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Thank You



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Electric & Gas Industry Update

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Agenda

- Financial State of the Industry
- ESG / Sustainability and the Natural Gas Sustainability Initiative (NGSI)
- Clean Energy Transformation

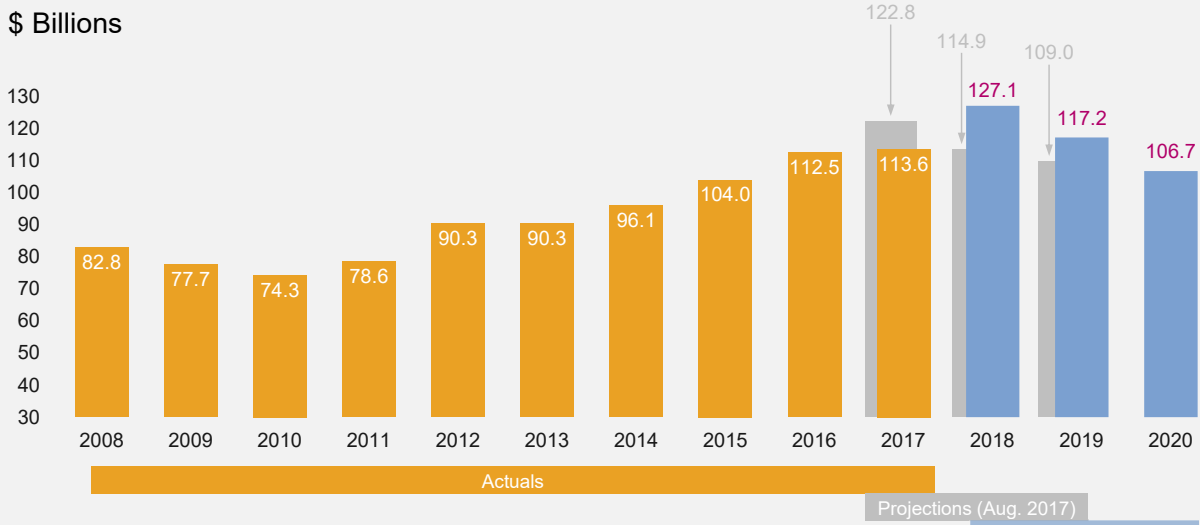


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Finance: Industry Capital Expenditures

\$ Billions



Notes: Total company spending of U.S. Investor-Owned Electric Utilities, consolidated at the parent or appropriate holding company. Projections based on publicly available information and extrapolated for companies reporting fewer than three projected years (0.1% and 5.7% of the industry for 2019 and 2020, respectively). Source: EEI Finance Department, company reports, S&P Global Market Intelligence (October 2018).

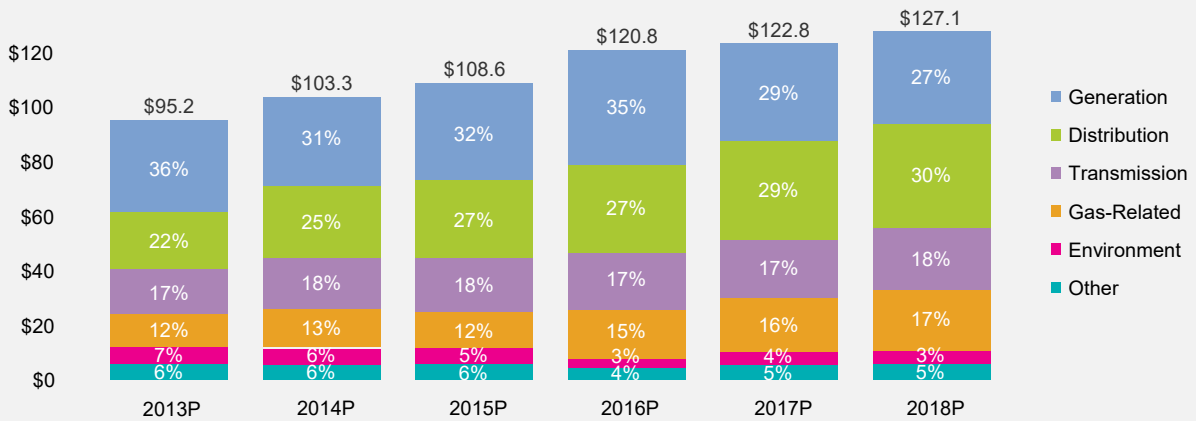


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Finance: Projected Functional CapEx

\$ Billions



Notes: Total company functional spending of U.S. Investor-Owned Electric Utilities may not sum to 100% due to rounding error. Projections based on publicly available information and extrapolated for companies not reporting functional detail (1.3%, 1.3%, 1.3%, 0.7%, 0.9%, 0.8% of the industry for 2013, 2014, 2015, 2016, 2017, 2018 respectively). Source: EEI Finance Department, company reports, S&P Global Market Intelligence (August 2017).



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Financial Highlights

As of December 31, 2018

	EEL Index	DJIA	S&P 500	NASDAQ	
Stock Performance as of 3-31-2019	1-year	18.7%	10.1%	9.5%	9.4%
	3-year	29.5%	57.6%	46.3%	58.7%
	5-year	69.1%	77.9%	67.8%	84.1%
	10-year	239.5%	339.9%	338.1%	404.7%

Dividends

- Yield = 3.4%
- 41 of 42 companies currently paying a dividend
- 39 of 42 companies increased dividend rate in 2018

Credit Ratings

- Strengthening 'BBB+' average
- Outlook 77% stable or positive



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Tax Reform Results

- ✓ Reduces the corporate tax rate
- ✓ Maintains interest deductibility for corporate debt
- ✓ Maintains deductibility for state & local taxes
- ✓ Maintains tax normalization and addresses Excess Deferred Taxes (EDT)
- ✓ Keeps dividend tax rates low and on par with Capital Gains Tax rates



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Level-Setting on Environment, Social and Governance (ESG)

Example ESG topics

Environmental	Social	Governance
<ul style="list-style-type: none"> • GHG & energy use • Air quality • Coal ash • Water stewardship • Energy efficiency • Supply-chain impacts 	<ul style="list-style-type: none"> • Community impacts • Economic contributions • Health & safety • Grid reliability • Lobbying 	<ul style="list-style-type: none"> • Board diversity • Board experience • Independence • Incentives & compensation • Tax strategy

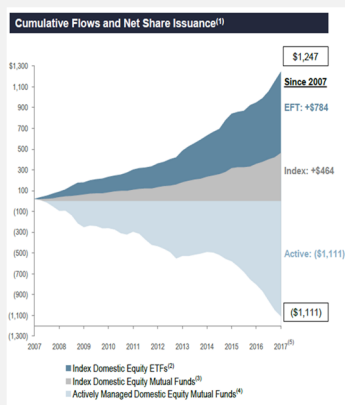
Source: PwC U.S. Power & Utilities team



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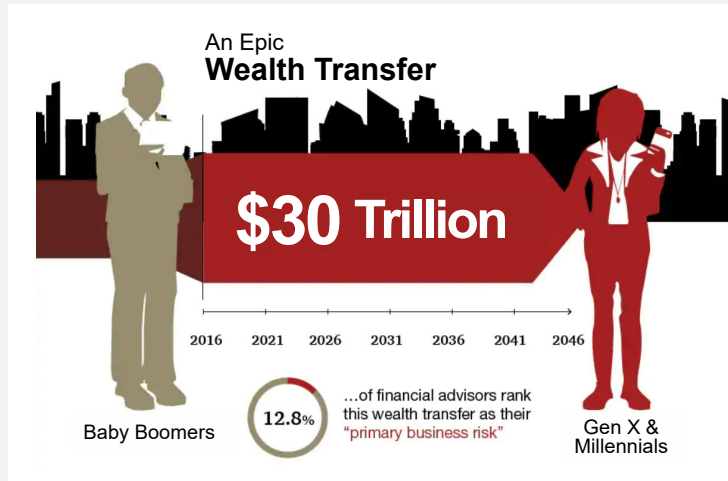
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ESG is Relevant to Our Investors & Customers



Notes: (1) Equity mutual fund flows include net new cash flow and reinvested dividends. Data excludes mutual funds that invest primarily in other mutual funds.
 (2) ETF distribution channel.
 (3) All mutual index funds (excludes ETFs).
 (4) All mutual funds that are not index funds.
 (5) Data only available for 1Q 2017.

Source: Lazard, FactSet, P&I and Simfund.



Source: PwC, <https://www.pwc.com/us/en/industries/financial-services/library/managing-millennial-money.html>



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ESG / Sustainability Template

EEI's ESG / Sustainability Steering Committee identified **five areas of focus** based on discussions with investors to include in the Version 1 Template

Qualitative	
ESG / Sustainability Governance	Management and oversight of ESG / Sustainability
ESG / Sustainability Strategy	Practices, programs, and initiatives designed to support the company's transition to a lower carbon and increasingly sustainable energy future
Quantitative	
Portfolio	An Excel-based data reporting template that is customized for electric companies to include metrics on owned and/or purchased generation data by technology / resource type, as well as other metrics related to capital investments, emissions, and natural and human resources
Emissions	
Resources	

Note: data for these areas should include as much historical, current, and forward-looking information as is appropriate.

Version 2 – LDC Metrics

- EEI and AGA have engaged investors to seek guidance on relevant ESG metrics for LDCs
- A group of AGA pilot companies are currently publishing gas LDC metrics in parallel with the Version 1 template
- These LDC metrics will be fully incorporated into Version 2 to report 2018 data later this year



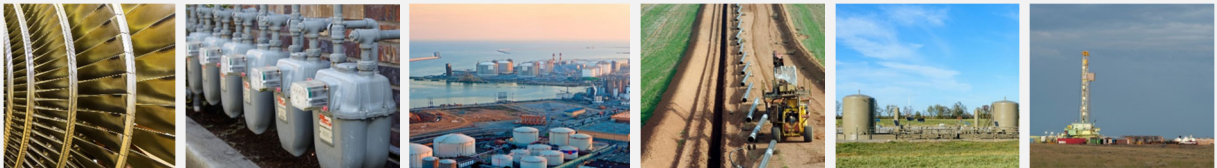
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Natural Gas Sustainability Initiative (NGSI)

An overarching framework to **recognize and advance the innovative, voluntary sustainability programs** from the wellhead to the burner tip

NGSI enables the natural gas industry to **measure, disclose, and recognize** industry-wide progress and innovation on key sustainability metrics

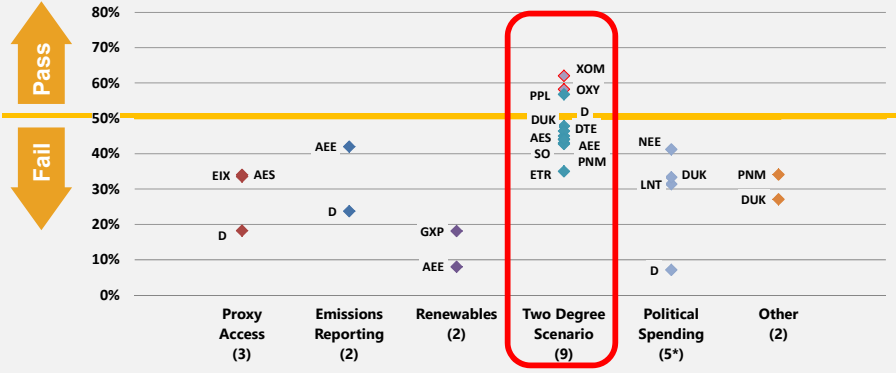


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ESG: Shareholder Activism

Results of Shareholder Proposals in 2017



9 of the 23 (39%) shareholder proposals were related to "Two Degree" reporting. Despite being the first year many were introduced, the Two Degree proposals received significant votes in favor and was accepted by shareholders of one member company.

Notes: *Only four results charted because one proposal was withdrawn prior to shareholder meeting after discussion with company.
 **ExxonMobil and Occidental Petroleum had Two Degree shareholder proposals pass in 2017. XOM and OXY are shown for information only and not included otherwise.
 Source: Member Company Survey, Proxy Monitor, SEC.

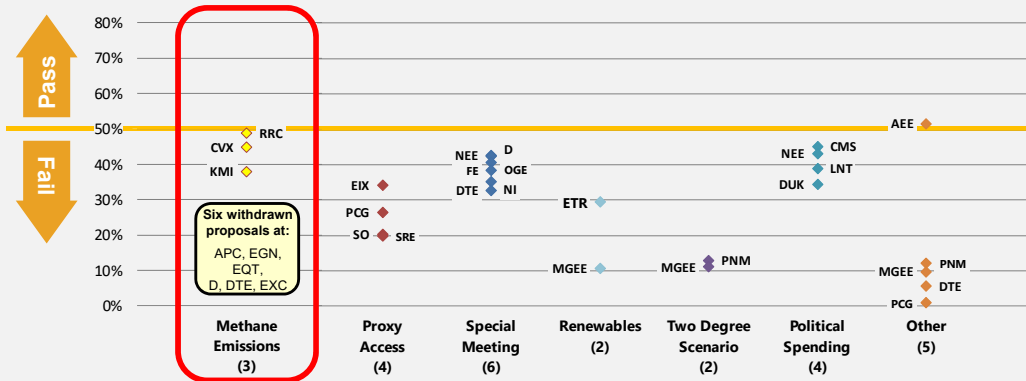


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ESG: Shareholder Activism

Results of Shareholder Proposals in 2018



Proposals related to reporting on methane emissions include energy companies in the oil and gas sector, as well as regulated electric companies in the electric utility sector. The remaining categories in this chart include shareholder proposals at regulated electric companies only.

Note: The passing resolution at Ameren Corporation was related to reporting on coal combustion residuals (CCR) and water impacts.
 Source: EEI and 2018 company SEC filings.

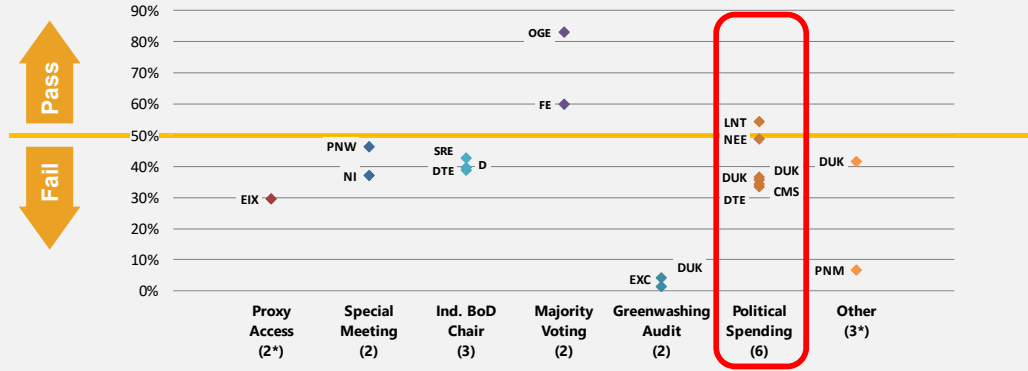


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ESG: Shareholder Activism

Results of Shareholder Proposals in 2019



16 of the 20 (80%) shareholder proposals were related to Social or Governance topics. ESG shareholder activism in the electric utility industry has shifted away from the focus on environmental topics observed in recent years.

Note: *PG&E Corporation had two proposals listed in its 2019 proxy statement related to (1) proxy access and (2) corporation structure reform. Voting results, however, will not be available until after PG&E's annual shareholder meeting, which is currently scheduled for June 21, 2019.
Source: EEI and 2019 company SEC filings.



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Electric Companies Are Leading On Clean Energy

Changing U.S. Energy Mix
>1/3
CARBON-FREE

>1/2
Of the Industry's New Electricity Generation Capacity Each Year Is
WIND AND SOLAR ENERGY

Providing
69%
of the SOLAR ENERGY in the Country

Increasing Investments
\$100 Billion+
PER YEAR IN SMARTER ENERGY INFRASTRUCTURE

Expanding Access to EVs
95,000+
CHARGING STATIONS NATIONWIDE

Using
90%+
OF ALL U.S. ENERGY STORAGE

Cutting Emissions

CO₂ ↓ 28%
BELOW 2005 LEVELS AS OF 2017

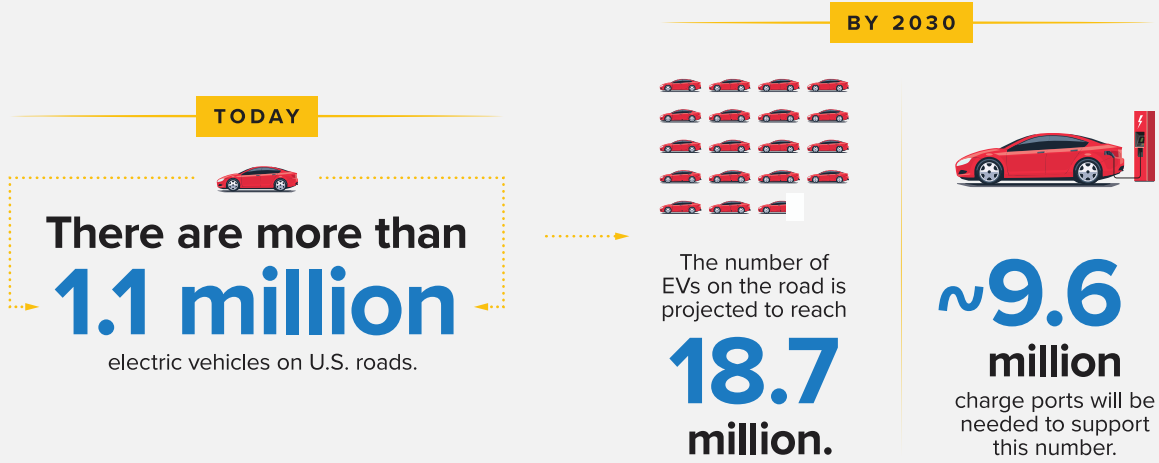
NO_x ↓ 84%
BETWEEN 1990-2017

SO₂ ↓ 92%
BETWEEN 1990-2017



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Clean Energy: Electric Transportation Trends

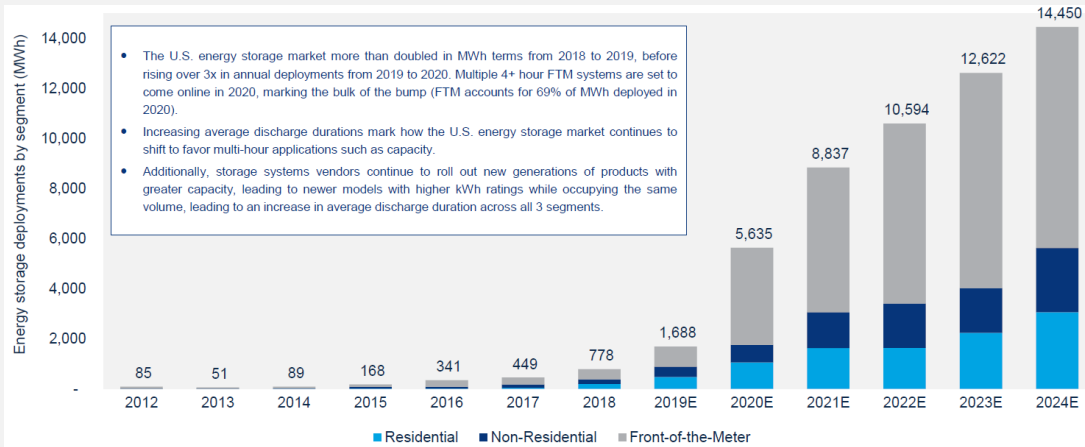


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Clean Energy: Battery Storage Deployment to Grow 14 Times by 2024

The amount of deployed storage is projected to grow more than 14 times over the next few years



Source: Wood Mackenzie/Market Storage Monitor, 2019

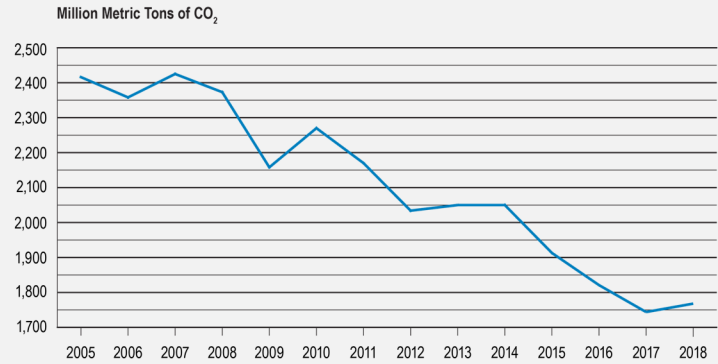


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Clean Energy: US Power Sector Carbon Dioxide Emissions (2005-2018)

- More than one third of US electricity comes from carbon-free sources
- As of 2018, industry CO₂ emissions were 27 percent below 2005 levels
- Reductions are expected to continue based on current trends



Source: Developed from U.S. Energy Information Administration, Monthly Energy Review, March 2019.



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Recap

- Industry financial fundamentals remain strong, including the benefits of TRJA
- EEI member companies are leading on ESG and sustainability
- Electric power industry is driving the clean energy transformation



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