Infrastructure Planning
AAPCA 2018 Fall Business Meeting

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The **Edison Electric Institute** (EEI) is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for about 220 million Americans, and operate in all 50 states and the District of Columbia. As a whole, the electric power industry supports more than 7 million jobs in communities across the United States.

In addition to our U.S. members, EEI has more than 60 international electric companies, with operations in more than 90 countries, as International Members, and hundreds of industry suppliers and related organizations as Associate Members.

Organized in 1933, EEI provides public policy leadership, strategic business intelligence, and essential conferences and forums.

For more information, visit our Web site at www.eei.org.
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
Grid Mod: Evolving Energy Grid

TRADITIONAL GRID
One-way power flow from generator to customer

SMART GRID
Two-way power flow with multiple energy stakeholders that can produce and consume electricity
The Mix of Resources Used to Generate Electricity Is Changing Dramatically

2007 National Energy Resource Mix

- 21.6% Natural Gas
- 19.4% Nuclear
- 6.0% Hydro
- 2.5% Non-Hydro Renewables
- 1.6% Fuel Oil
- 0.5% Other

2017 National Energy Resource Mix (preliminary)

- 31.7% Natural Gas
- 20.0% Nuclear
- 7.4% Hydro
- 9.6% Non-Hydro Renewables
- 0.5% Fuel Oil
- 0.5% Other
- 30.1% Coal

Source: Department of Energy, Energy Information Administration.
Electric Companies Use a Diverse Mix Of Resources to Generate Electricity

*Includes generation by agricultural waste, landfill gas recovery, municipal solid waste, wood, geothermal, non-wood waste, and solar.

**Includes generation by tires, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, and miscellaneous technologies.

Sum of components may not add to 100% due to independent rounding.


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>1/3 of U.S. Power Generation Comes From Zero-Emissions Sources (Nuclear and Renewables)

Chart percentages are based on net generation data, 2017 (preliminary).
ELECTRIC COMPANIES ARE
Leading on Clean Energy

Providing
virtually all
GEOTHERMAL, HYDROPOWER, AND WIND ENERGY

Providing
69%
SOLAR ENERGY

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

Expanding Access to EVs
20,000+
CHARGING STATIONS NATIONWIDE

Using Energy Storage
90%+
NATIONWIDE
U.S. Power Sector

- More than 1/3 of U.S. power generation comes from zero-emissions sources
- By the end of 2017, industry CO₂ emissions were 28 percent below 2005 levels
- Trajectory is expected to continue based on current trends

Power Plant Emissions Drop Significantly Since 1990

Graph depicts increases or decreases from the base year.

1990 represents the base year.

Sources: U.S. Department of Energy, Energy Information Administration (EIA), U.S. Environmental Protection Agency (EPA), and U.S. Bureau of Economic Analysis.
One of the most significant obstacles to facilitating energy infrastructure investment continues to be obtaining permits from federal agencies. This applies to permits for the renewal and O&M of existing infrastructure as well.

The current permitting process involves multiple federal and state agencies engaging in uncoordinated and sequential project reviews.

Lack of interagency cooperation, the absence of deadlines, scarce federal resources, and extensive permit and environmental requirements have resulted in lengthy timeframes and costly processes for project proponents.

For example, the average timeframe for permitting and siting an interstate transmission line is on the order of 7 to 10 years.
Energy Infrastructure Efforts

- Electric industry extensively involved in efforts to develop new national policies to enhance energy infrastructure and modernize grid
  - T&D lines, pipelines, renewables and energy storage
  - Operations & maintenance/vegetation management
  - Grid hardening is now a safety and reliability issue—primarily arising from increasing natural disasters (ex. wildfire and hurricane risk)

- EEI pursuing both legislative and regulatory pathways

- Executive Order 13807: Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects
  - Created One Federal Decision
  - Department of Interior Secretarial Order No. 3355 on streamlining NEPA reviews
Energy Infrastructure Priorities

- Federal Siting and Permitting Reform Remains Key Priority
  - Focusing on Regulatory Pathways to:
    - Streamline and expedite the federal environmental review and permitting processes
    - Improve underlying implementing federal regulations for key statutes (e.g., NEPA, ESA, MBTA, BGEPA, CWA, CAA)
    - Create NEPA categorical exclusions for linear energy projects, vegetation management (ex. for wildfire prevention)
    - Enhance cooperation and coordination within government at all levels
      - Intra-agency/Inter-agency/Federal – state