



Edison Electric Institute

*Power by Association<sup>SM</sup>*

# Energy Reliability in a Changing Landscape

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**FUPWG**

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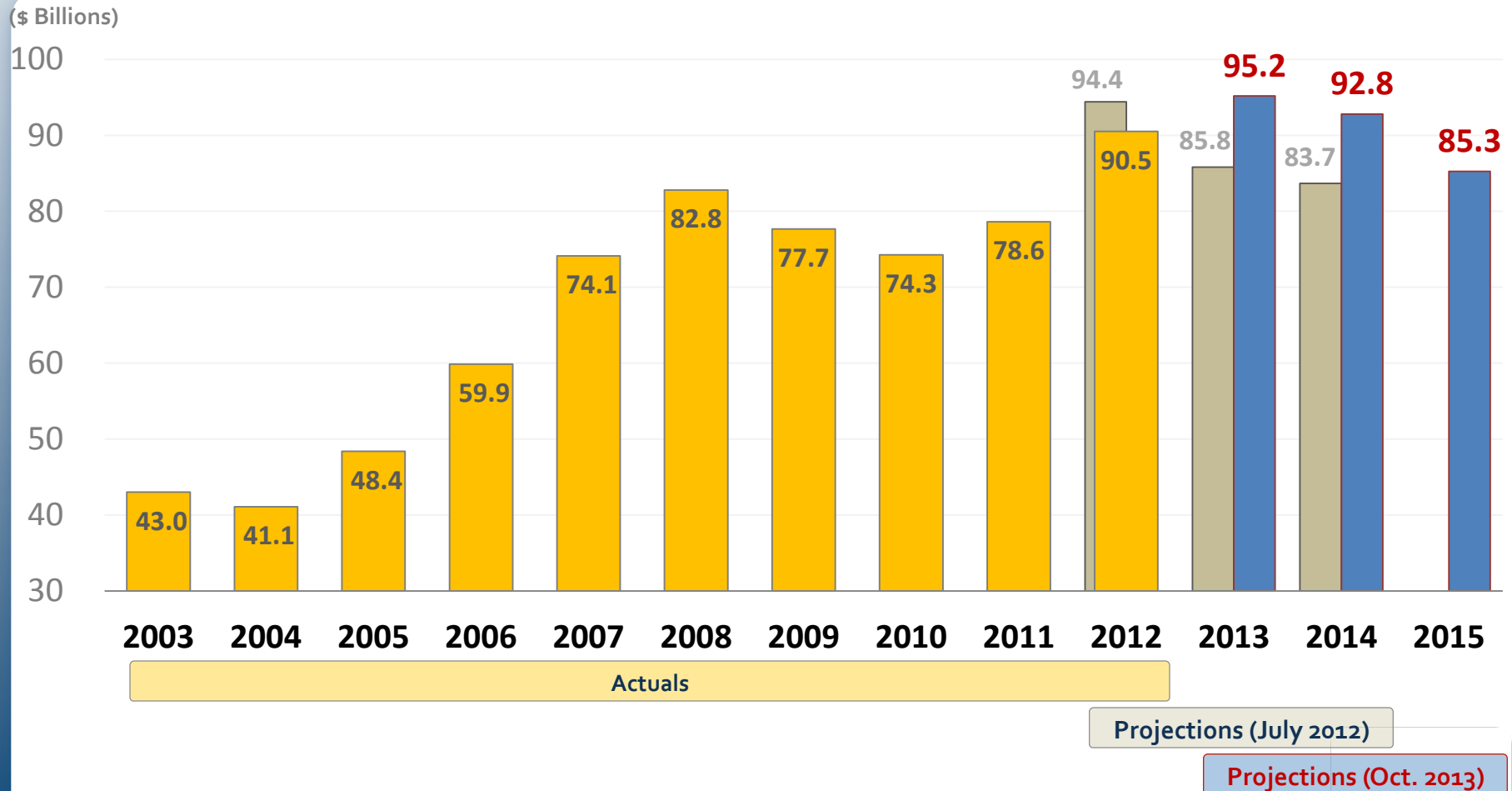


# Industry Infrastructure Investments

# Needed Infrastructure Investments to Address:

- Reliability
- Environmental and other policy requirements
- Leading the *transformation* to make the grid more *flexible* and more *resilient* to meet the growing demands of our digital society

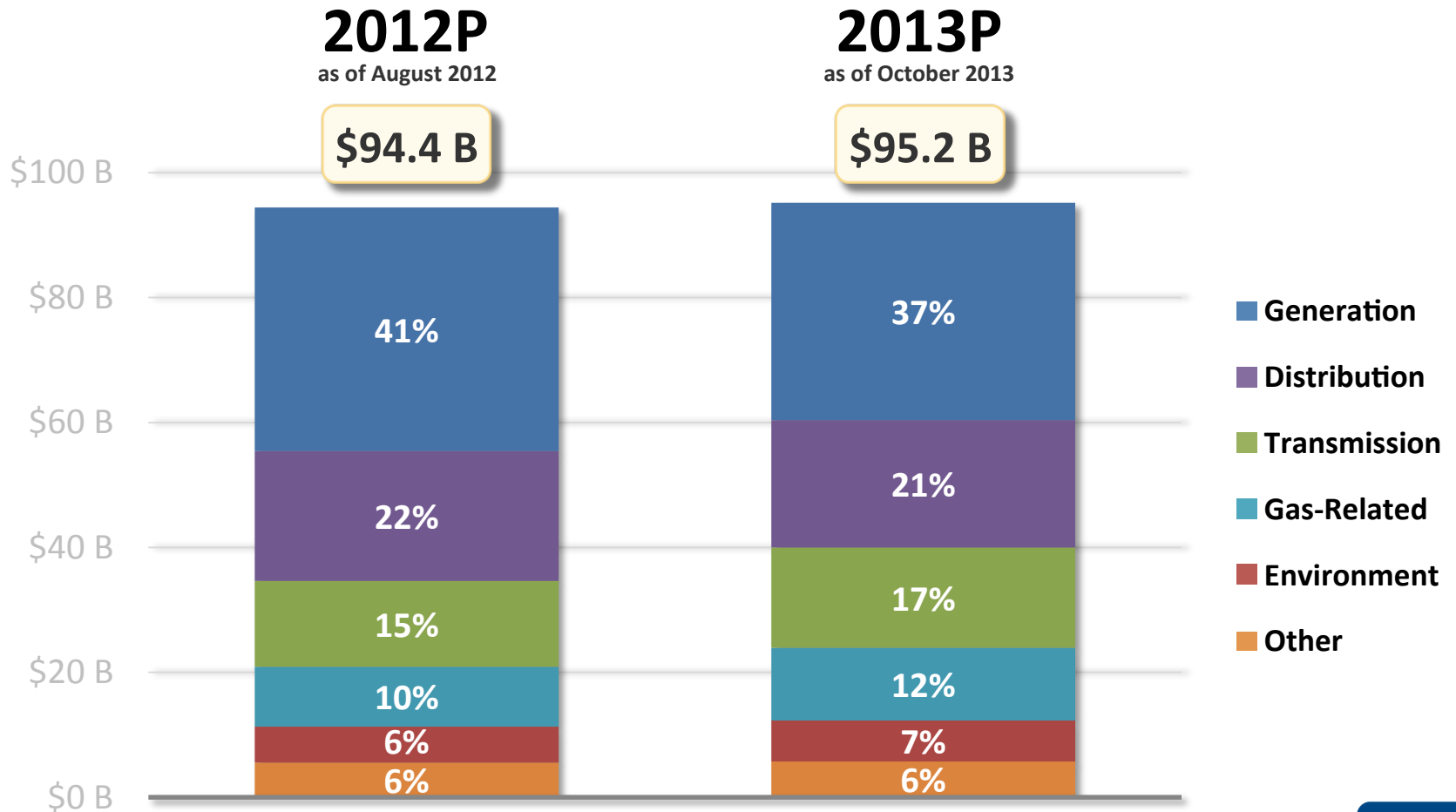
# Industry Capital Expenditures



Notes: Total company spending of U.S. Shareholder-Owned Electric Utilities

Projections based on publicly available information and extrapolated for companies reporting fewer than three projected years (6% in 2014 and 2015).

# Projected Functional CapEx



Notes: Total company functional spending of U.S. Shareholder-Owned Electric Utilities  
Projections based on publicly available information and extrapolated for companies not reporting functional detail (1.6%).





# Electric Distribution System is in Transition

# The Electric Distribution System Is In Transition

- **Customers have new distributed energy resource (DER) options, including distributed generation (DG)**
- **The structure and operation of distribution systems will change as “smart” infrastructures are built out and new DER technologies are deployed**
  - **Ultimately, power will flow in 2 directions across distribution systems**
  - **Supporting a safe and reliable grid infrastructure is critical to the deployment of new technologies**





# Other Factors Contributing To The Transition

- The Department of Defense, the largest energy user in the U.S., is actively seeking to implement renewables and energy security policies
- Higher retail electric rates
- Declining cost of PV
- Evolution of “smart” infrastructure technologies (power electronics, storage, sensing and measurement, controls), high speed communications)
  - ARRA funding for AMI deployment, smart grid demos
- Storm outages

# New Regulatory Policy and Rate Design Are Needed

- **To ensure reliability:**
  - Enhance electric infrastructure
- **To ensure safety:**
  - Update interconnection standards & procedures
- **To ensure fairness:**
  - Adopt new approaches to designing rates for distributed generation so all users of the grid contribute to grid infrastructure

# Rate Designs for Distributed Generation

- > What's the **Problem**?
- > How Much Should Utilities Be **Compensated** for Providing Service to Customers with Distributed Generation?
- > How Much Should Utilities **Pay** for Electricity from Distributed Energy Sources?

# The Value Question: How Much is DG Electricity **Worth** to the Utility?

## From the Utility's Perspective

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It is worth the **avoided cost of electricity** produced or purchased from the least expensive alternative source

## From the DG Provider's Perspective

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It provides the following **additional benefits**:

- **Clean energy**
- **Savings from deferred generation/transmission capacity**
- **Green jobs**
- **Energy security**

# Cost Impacts of Net Metering

## Do They Accord with Ratemaking Principles?

- > Prices to customers should be based upon the **actual cost** to provide you electricity
- > Any **subsidies** (*additional costs borne by some classes of customers to benefit others*) should be **transparent** and **justified**
- > “Societal benefits” (e.g., job creation, CO<sub>2</sub> emissions reductions, energy independence) should be **paid for by “society,” not electricity customers**
- > Net metering creates a **hidden subsidy** benefiting distributed generation owners at the expense of other electricity customers that is being defended on the basis of the “societal benefits” that it provides

# What is the Best Rate Approach for DG?

## Straight Fixed/Variable Pricing (SFV)

- > **Fixed costs of service** (transmission, distribution, metering, customer support, taxes, interest expense) should be recovered in **fixed monthly charges** (customer charges and/or demand charges).
  - > Much of these fixed costs are currently recovered in **volumetric (per kWh) charges**
- > A **straight fixed/variable (SFW)** rate design recovers fixed costs through fixed charges, and variable costs (fuel, purchased power) through per kWh charges
- > Distributed generation customers on an SFV rate will continue to **fully compensate** the utility for fixed costs of service, even if they are **no longer taking electricity from the utility**

# DG Wrap

- The U.S. electric grid delivers a valuable product essential to all Americans.
- The electric power industry is leading the transformation to make the grid more flexible and more resilient to meet the growing demands of our digital society.
- Everyone who uses the grid should help pay to maintain it and keep it operating reliably.
- It is vital for our nation to have a diverse supply of safe and reliable electricity, and electric rates should be fair and affordable for all customers.



# Utilities and Fed/DoD Collaboration on Energy Security



# Energy Security Collaboration

- **Dialogue:** There is a need to have substantial, on-going conversations to educate one another and address common goals
- **Alignment:** There is an alignment of energy security (ES) goals between the military and its serving utilities – *Are we missing opportunities?*
- **Majority** of ES solutions will require comprehensive, integrated approaches.
- **No** other industry has the experience and expertise to help the Feds/military with integrated resource planning (e.g., loading orders, energy efficiency, microgrids, etc.)

# Energy Security: It's Our Job

- Utilities should be the first place you go!
  - Long history of working with our major federal customers
  - Understand what's happening on our side of the meter
    - Our infrastructure developments
    - Policy and systems requirements (e.g., studies, interconnect policies, etc)
    - Programs
  - Use our expertise to ID the core of the issue/problem?
    - What's causing it?
      - What's really happening with outages? And where?
    - Vulnerabilities that need to be addressed?
    - What side of the meter is it on?
  - What's the goal and the ways and means to accomplish energy security?

# Tap Into Utility Resources

- > Energy Security is at a high level at utilities
- > We do energy security every day
  - > It's our job to find the most effective solutions
- > We have the tools and objective expertise to work with you on addressing problems and developing solutions. E.g.:
  - > Expertise on loading orders
  - > UESCs
  - > Special tariffs
  - > Privatization
- > Successful precedents
  - > Tinker, Warner-Robins
  - > Numerous privatization initiatives
  - > Undergrounding, asset hardening, etc.



Thanks

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