

Improving Utility Reliability and Resilience

Making New Jersey
energy
strong



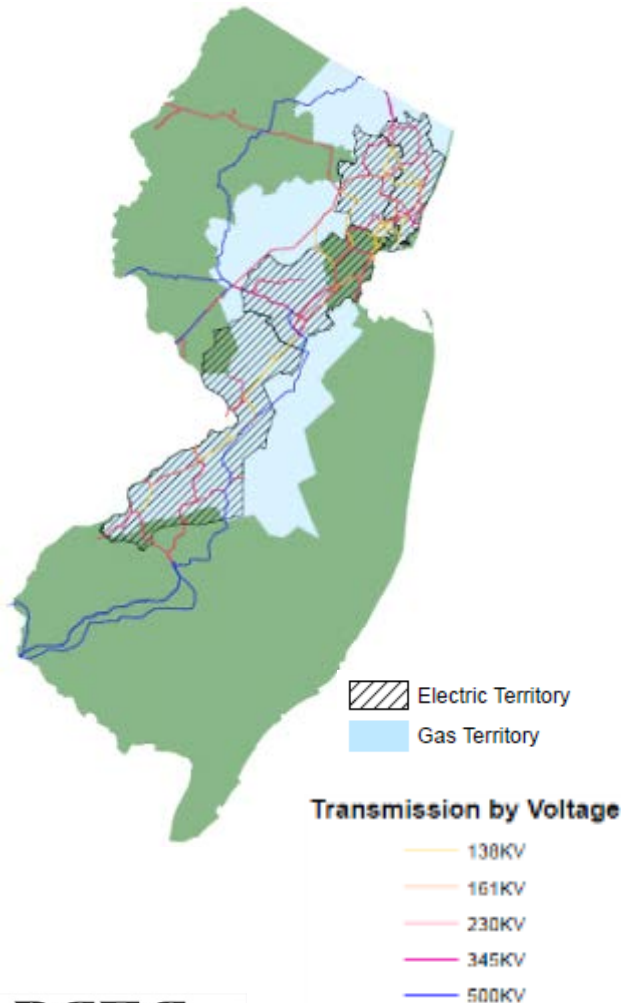
Ralph LaRossa

President and COO, PSE&G

DOE Electrical Advisory Committee Meeting

March 13, 2014

PSE&G at a Glance



	Electric	Gas
Customers Growth (2008 – 2012)	2.2 Million 0.6%	1.8 Million 0.6%
Electric Sales and Gas Sold and Transported	41,641 GWh	3,397 M Therms
Projected Annual Load Growth (2013 – 2015)	0.7%*	0.2%*
Historical Annual Peak Load Growth Transmission (2008 – 2012)	0.4%**	
Projected Annual Load Growth Transmission (2013 – 2015)	1.4%	
Sales Mix		
Residential	33%	60%
Commercial	57%	36%
Industrial	10%	4%

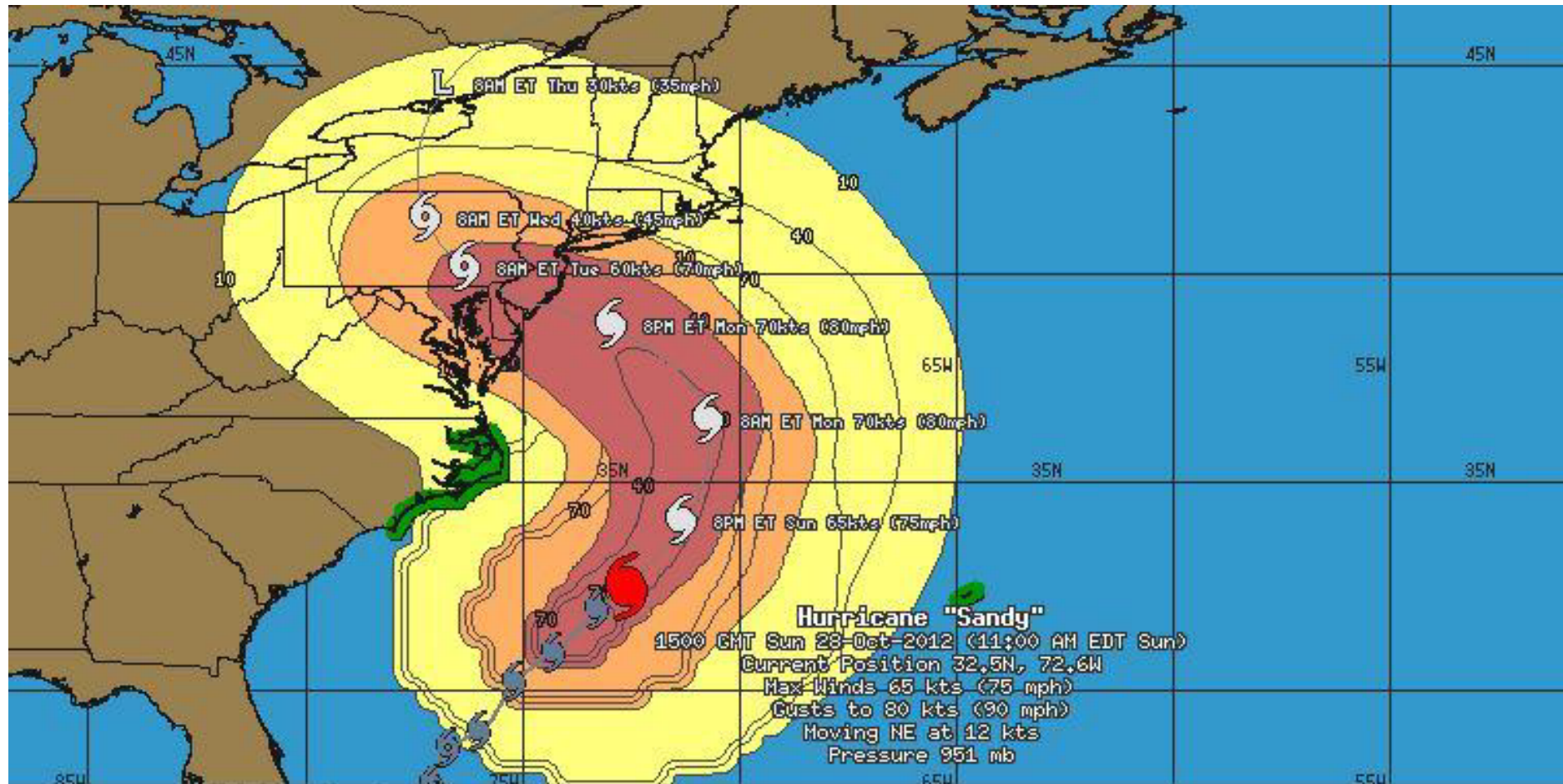
PSE&G Reputation for Reliability



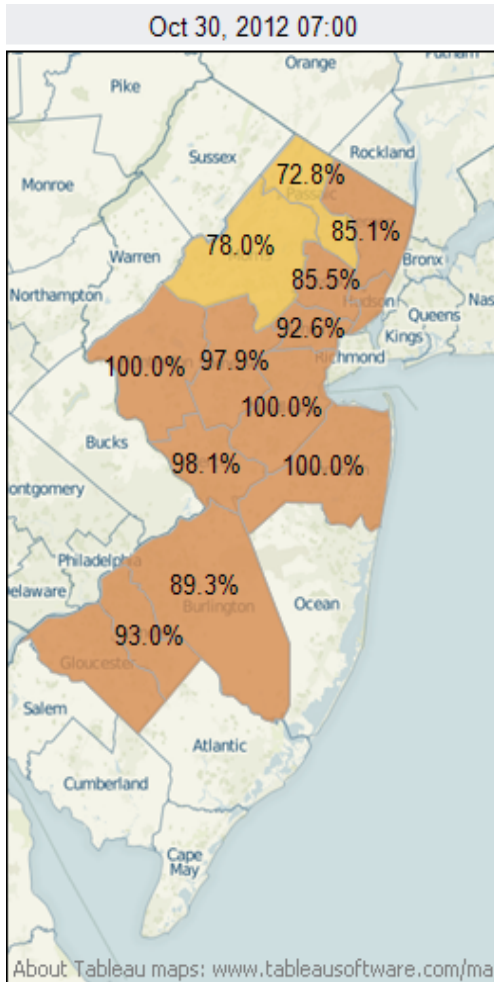
2011-2012 Extreme Weather Events and Customer Outages

Date	Event	Region	Regional Outages	PSE&G Outages
August 2011	Tropical Storm Irene	Mid-Atlantic	3,200,000	872,000
October 2011	Early Snow	New England	3,000,000	637,000
November 2011	Windstorm	California	400,000	
July 2012	Wildfires	California, Colorado	2,000,000	
July 2012	Derecho	Mid-Atlantic	4,200,000	
October 2012	Superstorm Sandy	Northeast, Mid-Atlantic	8,100,000	2,000,000

The Perfect Storm



Sandy Impacts and Response



- Customers and Equipment
 - 1.98 million Customers impacted
 - 90% lost power during the event
 - 14 Switching Stations affected – 33%
 - 7 took storm damage, 6 Out, 1 Bus Section Failure
 - 51 transmission lines affected – 33%
 - 96 PSE&G Substations affected – 39%
 - 20 took storm damage, 76 Out
- Planning immediately was focused on prioritizing transmission lines to be reenergized to restore switching and substations with the largest customer counts
- Work began immediately after storm surge receded at the stations and once wind gusts dropped below 40 mph in the divisions
- Current estimate of the cost associated with the restoration is between \$250 - \$300 million

% Customers Out - Sandy

0.0%

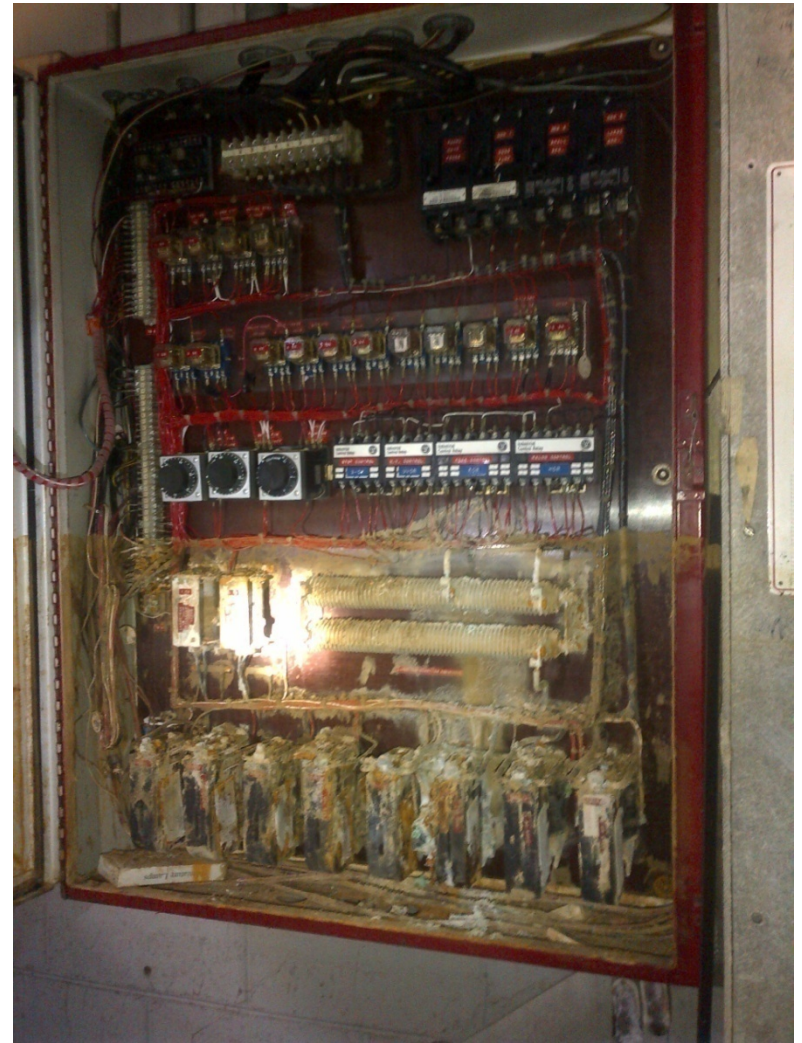
100.0%

We make things work for you.

Area Impacted by Storm Surge



Damage to Inside Plant – Sewaren



Outside Plant Damage



Tree Locations	48,000
Poles	2,400
Circuits	2,900
Services	8,300
Lock Outs	2,900



Gas Distribution Impacts

- 41,547 premises had inspections performed by PSE&G employees
- Approximately 9,500 gas meters were replaced due to storm damage
 - Additional 5,500 electric meters were replaced in areas impacted by storm surge
- Gas Infrastructure issues
 - Approximately 80,000 feet of gas main and service experienced water infiltration (All back in service)
 - 6 “pounds to utilization pressure” district regulators were impacted by storm surge

Gas – Hoboken Response



18th Street Field Command Center to support Hoboken



Meters removed from Hoboken

Strengthening our System for the Future

- PSE&G filed its **Energy Strong** Program with the NJBPU on February 20, 2013.
- Proposal - \$3.9 billion in investments over the next 10 years to maximize our ability to respond to and recover from future severe weather events through system hardening and resiliency measures.
- Proposal addresses both electric and natural gas system improvements
- BPU held both public and evidentiary hearings; a decision is expected in April

Make it Stronger

“Hardening” - Physically changing the infrastructure to make it less susceptible to damage from extreme wind, flooding, or flying debris. Hardening improves the durability and stability of energy infrastructure, making it better able to withstand the impacts of hurricanes and weather events without sustaining major damage.

Electric Facilities

- Station flood mitigation - \$1.7 billion to protect switching and substations
- Improve outside plant design and construction standards - \$135 million
- Strengthen pole infrastructure - \$105 million
- Relocate/rebuild backyard poles - \$100 million
- Undergrounding - \$76 million

Gas Facilities

- Replace 750 miles old cast iron gas mains - \$1 billion
- Protect M&R stations - \$140 million

Make it Smarter

“Resiliency” - Ability of an energy facility to recover quickly from damage to any of its components or to any of the external systems on which it depends. Resiliency measures do not prevent damage; but rather they enable energy systems to continue operating despite damage and/or promote a rapid return to normal operations when damages/outages do occur.

- Deploy smart grid advanced technologies - \$451 million
 - Enhanced storm management system
 - Mobile apps for damage assessment
 - Advanced mapping to merge SCADA with storm damage information
- Reconfiguration strategies - \$200 million
 - Smart switches and fuses
 - Self healing loop schemes
 - Contingency reconfiguration strategies
 - Add additional redundancy



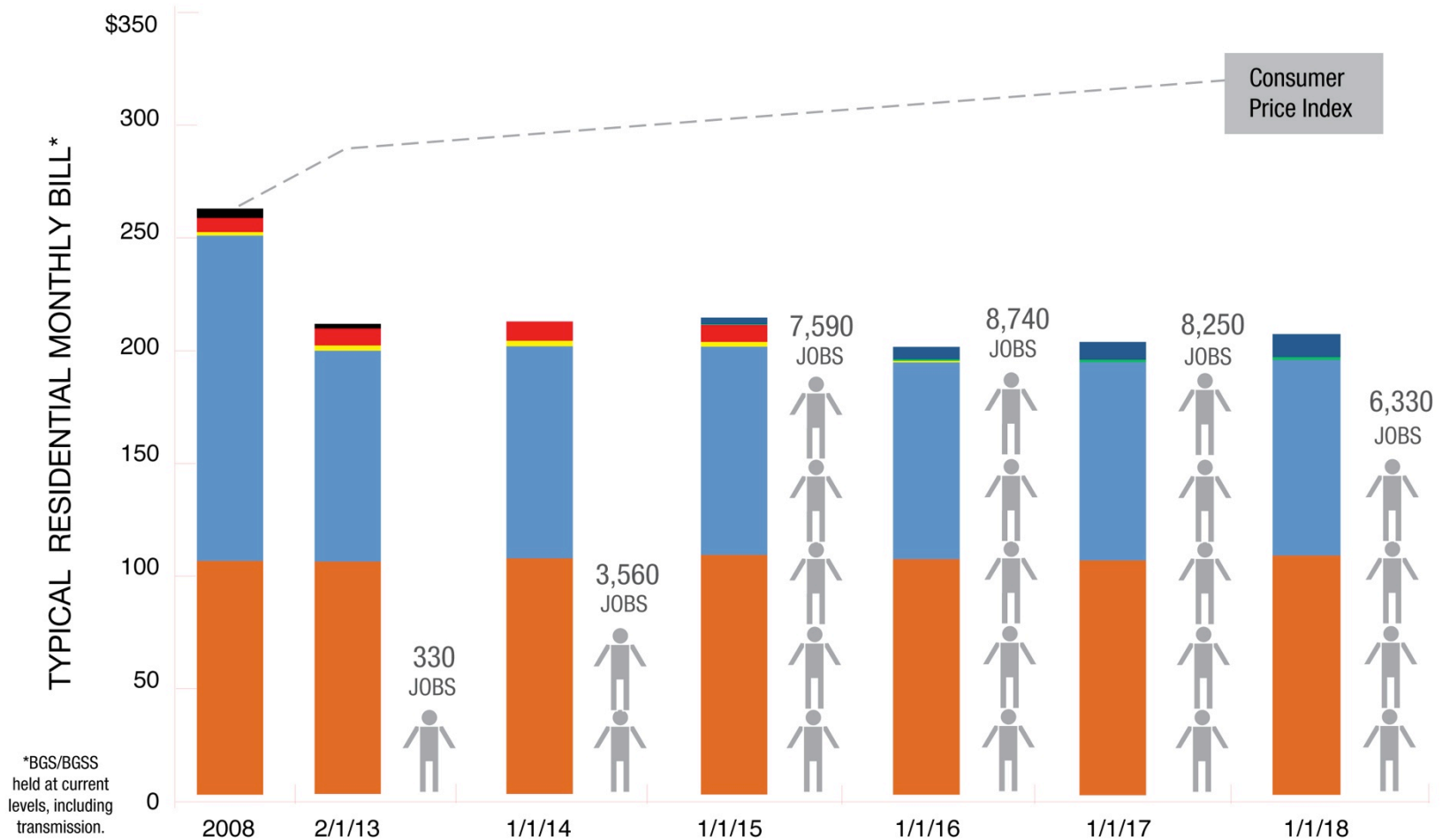
The Time is Right

- These investments can be made in the next 10 years while keeping residential or business customer bills essentially flat
 - Restructuring and tax charges expiring in 2014 and 2016 will cover the cost of electric infrastructure investment.
 - Low natural gas prices and available labor make this the right time.
 - The costs of these investments will be spread out over the 40- to 60-year life of the assets.
- Economic benefits
 - If approved, Energy Strong will create 5,800 jobs.
 - Energy Strong helps support New Jersey's economy.

Making New Jersey **energy strong**

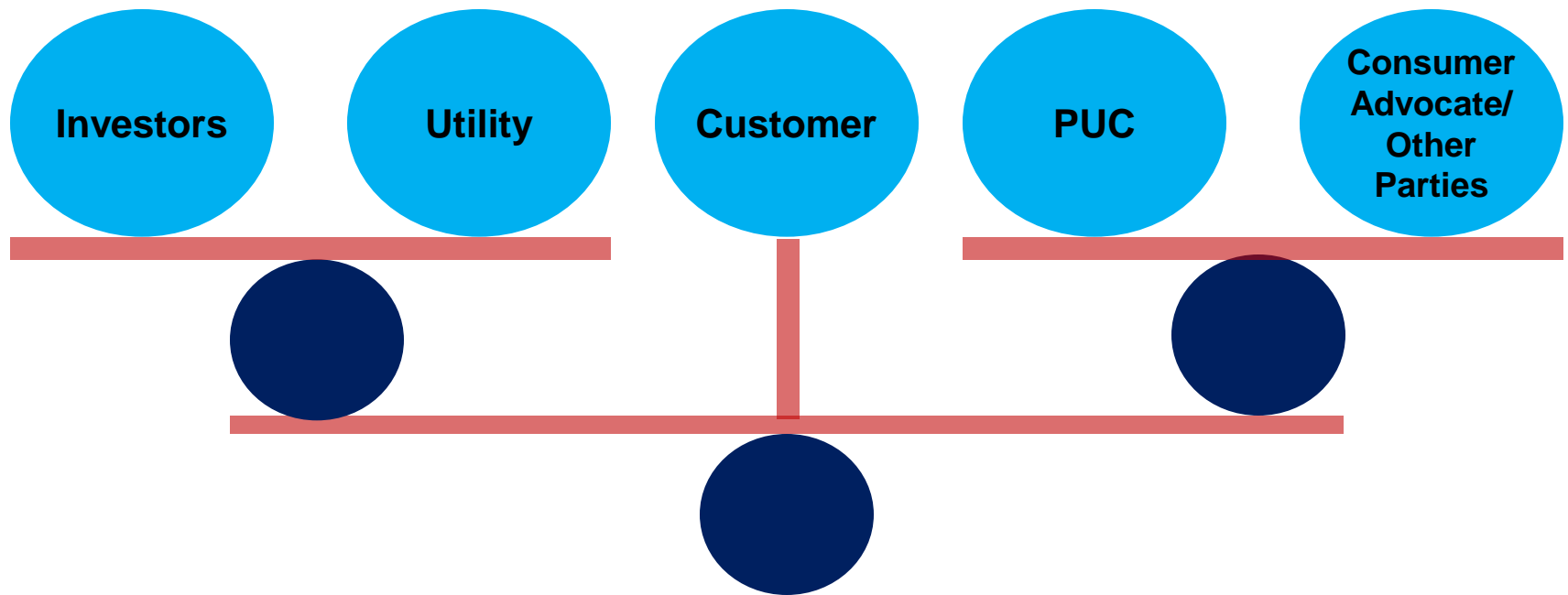


environmentally responsible, forward-looking investments that enhance our energy infrastructure, create **economic activity** and **jobs**, while keeping **utility rates lower** than the rate of inflation



■ EnergyStrong proposal
 ■ Solar4AllExt and Solar Loan 3 proposal
 ■ Transitional Energy Facility Assessment Unit Tax
 ■ Securitization
 ■ Non-Utility Generation
 ■ Customer Bill - Gas
 ■ Customer Bill - Electric
 - - CPI

Forward Progress: Balancing the Interests of all Parties



- Customers tolerance for outages is diminishing as they become more and more dependent on utility services
- Investors desire mechanisms with more timely cost recovery
- Utilities want clear guidance for investment and investment recovery to assure certainty of recovery