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Before And After The Storm

A compilation of recent studies, programs, and policies related to storm hardening and resiliency



UPDATE

March 2014



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Institute

Before and After the Storm - Update

A compilation of recent studies, programs, and policies related to storm hardening and resiliency

Prepared by:

Edison Electric Institute

March 2014

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701 Pennsylvania Avenue, N.W.

Washington, D.C. 20004-2696

Phone: 202-508-5000

Web site: www.eei.org

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INTRODUCTION AND PURPOSE

The United States has experienced a number of large storms within the last ten years ranging from ice and snow, hurricanes, storm surges and strong winds. After each storm, there is an increased focus on investor-owned utility response to widespread customer outages and the infrastructure's ability to withstand devastating weather events. Inevitably, state officials and public utility commissions call for investigations into utility practice and standards, often requiring testimony, appearances before the commission, filings and written reports.

Edison Electric Institute (“EEI”) has been asked by its members to update its January 2013 report to incorporate newly released studies on recommendations and best practices with regard to hardening the distribution infrastructure and creating a more resilient system, especially since the impact of Superstorm Sandy in the Fall of 2012. As part of EEI's review, we have also looked at available cost recovery mechanisms and a representative cross-section of state regulatory and legislative actions initiated to address storm resiliency. The updated report also describes the efforts of the industry to enhance and formalize the mutual assistance program, which is a voluntary partnership of electric utilities from across the country, to respond to events that require a national, industry-wide response such as experienced in Superstorm Sandy.

The purpose of this compilation is to provide members with a centralized source of recent studies, reports, and other information regarding options for system hardening and resiliency measures in response to storm related outages of electric distribution facilities. The compilation provides a menu of infrastructure hardening and resiliency options, the relative cost impact of such measures, information on the various cost recovery mechanisms utilized, and a representative overview of various state programs addressing system hardening, resiliency and cost recovery. The compilation is aimed to serve as a reference tool to assist members in addressing state commissions and legislatures as they investigate possible regulatory reforms with respect to how electric utilities combat and respond to storm related outages.

The report does not attempt to make any recommendations regarding the viability or effectiveness of the reported measures and regulatory frameworks. There is no one solution to hardening the infrastructure or creating a more resilient system. Rather, utilities and their regulators must look at the full menu of options and decide the most cost-effective measures to strengthening the grid and responding to storm damages and outages. This report will hopefully serve as a starting point to that conversation.

CHAPTER 1: SYSTEM HARDENING AND RESILIENCY MEASURES

The recent increase in storm activity and extreme weather events has highlighted the need for reinforcing and upgrading the electric distribution infrastructure. EEI has focused its review on potential solutions for combating and mitigating storm damage and outages – system hardening and resiliency measures. **System hardening**, for purposes of this report, is defined as physical changes to the utility’s infrastructure to make it less susceptible to storm damage, such as high winds, flooding, or flying debris. Hardening improves the durability and stability of transmission and distribution infrastructure allowing the system to withstand the impacts of severe weather events with minimal damage. **Resiliency** refers to the ability of utilities to recover quickly from damage to any of its facilities’ components or to any of the external systems on which they depend. Resiliency measures do not prevent damage; rather they enable electric facilities to continue operating despite damage and/or promote a rapid return to normal operations when damages and outages do occur.¹

1.1 Hardening Measures

1.1.1 Undergrounding

The undergrounding of transmission and distribution lines has been one of the most often cited measures for mitigating storm damage in recent years as evidenced by the number of reports published over the past seven to eight years. With images of trees and ice bringing down power lines on a 24 hour news cycle after each storm, the common reaction among consumers and regulators is to eliminate poles and bury distribution lines underground shielding them from the effects of extreme weather. Coupled with the aesthetic benefits of having a major portion of the distribution system out of sight, undergrounding has been a major focus of attention after major weather events. However, the costs associated with converting overhead systems underground have made widespread use of such measures cost prohibitive. Of the studies EEI reviewed, there was not a single study that recommended a complete conversion of overhead distribution infrastructure to underground facilities. In fact, none of the studies could identify a single state requiring complete conversion of its distribution system as the costs, estimated to be in the billions of dollars, were not economically feasible and would severely impact customer rates. And although undergrounding distribution and transmission can reduce the frequency of outages, the studies often showed that restoration times actually increased due to the complicated nature of the systems and the inability of restoration crews to visually pinpoint the cause of the disruption. Images of flooded substations and damaged underground facilities after Superstorm Sandy also highlighted the vulnerabilities of undergrounding. However, despite multiple studies citing the prohibitive cost of widespread undergrounding, lawmakers and regulators continue to examine undergrounding opportunities and are closely examining the metrics and data used for developing cost estimates.

The common conclusion among the reviewed studies was that undergrounding could be a viable solution to hardening the infrastructure through targeted or selective undergrounding rather than a total conversion. This

¹ *Hardening and Resiliency: U.S. Energy Industry Response to Recent Hurricane Seasons* (August 2010) prepared by Infrastructure Security and Energy Restoration, Office of Electricity Delivery and Energy Reliability, U.S. Department of Energy, p. v.

might include placing the worst performing feeders, or feeder portions, underground or placing substation feeders that affected numerous customers underground. Targeted undergrounding was also recommended for those feeders supplying areas that were vital to the community such as police and fire departments, gas stations, hospitals, pharmacies and stores. Coupling such installations with other major excavation projects (such as roadwork, fiber optic cable installation and other construction) could also reduce the costs and disruptive impacts of undergrounding. Reiterating that converting overhead systems to underground systems are anywhere from five to ten times as costly as overhead equipment (estimated to cost between \$80,000 and \$3 million per mile), the studies recommend targeting the areas where undergrounding would provide the most benefit. The majority of the studies emphasized that undergrounding was not impervious to weather events and that environmental factors must be taken into account when considering underground systems. In coastal areas prone to storm surge, as demonstrated by Superstorm Sandy, underground systems are much more susceptible to damage from flooding and even risk further damage during clean-up efforts. Therefore, it is recommended that any utility or state looking into the possibilities of undergrounding take into account relative costs, environmental factors and actual causes of outages to ensure that undergrounding provides the most cost effective benefit to its electric consumers.

Reports Referencing Undergrounding:

Moreland Commission on Utility Storm Preparation and Response - Final Report (June 22, 2013) delivered to New York Governor Andrew Cuomo.

<http://www.governor.ny.gov/assets/documents/MACfinalreportjune22.pdf>

Post Sandy Enhancement Plan (June 20, 2013) prepared by Consolidated Edison Co. of New York and Orange and Rockland Utilities. http://www.coned.com/publicissues/PDF/post_sandy_enhancement_plan.pdf

Florida Power & Light Company 2013 – 2015 Electric Infrastructure Hardening Plan (May 1, 2013) filed with the Florida Public Service Commission in Docket No. 130132-EI.

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<http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=00000000001026889>

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Weathering the Storm: Report of the Grid Resiliency Task Force (September 24, 2012) delivered to the Office of Maryland Governor Martin O'Malley pursuant to Executive Order 01.01.2012.15.

<http://www.governor.maryland.gov/documents/GridResiliencyTaskForceReport.pdf>

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Potomac Electric Power Company Comprehensive Reliability Plan for District of Columbia including Distribution System Overview, Reliability Initiatives and Response to Public Service Commission of the

District of Columbia Order No. 15568 (September 2010).

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http://www.dcpssc.org/pdf_files/hottopics/Study_Feasibility_Reliability_Undergrounding_Electric_Distribution_Lines.pdf

The Power to Change The Face of America: Converting Overhead Utilities to Underground (2009) prepared by Underground 2020. <http://www.governor.maryland.gov/documents/eOverheadToUnderground.pdf>

Cost-Benefit Analysis of the Deployment of Utility Infrastructure Upgrades and Storm Hardening Programs (March 4, 2009) prepared by Quanta Technology for the Public Utility Commission of Texas.

http://www.puc.texas.gov/industry/electric/reports/infra/Utility_Infrastructure_Upgrades_rpt.pdf

Report to the Legislature on Enhancing the Reliability of Florida's Distribution and Transmission Grids During Extreme Weather (July 2008) submitted by the Florida Public Service Commission to the Governor and Legislature. <http://www.floridapsc.com/utilities/electricgas/eiproject/docs/AddendumSHLegislature.pdf>

Oklahoma Corporation Commission's Inquiry into Undergrounding Electric Facilities in the State of Oklahoma (June 30, 2008) prepared and submitted by Oklahoma Corporation Commission Public Utility Division Staff. <http://www.occeweb.com/pu/PUD%20Reports%20Page/Underground%20Report.pdf>

Undergrounding Assessment Phase 3 Final Report: Ex Ante Cost and Benefit Modeling (May 5, 2008)

prepared by Quanta Technology for Florida Public Utilities. <http://www.quanta-technology.com/sites/default/files/doc-files/PURCPhase3FinalReport.pdf>

Undergrounding Assessment Phase 2 Final Report: Undergrounding Case Studies (August 6, 2007) prepared

by Quanta Technology for Florida Electric Utilities. <http://www.quanta-technology.com/sites/default/files/doc-files/QuantaPhase2FinalReport.pdf>

Report to the Legislature on Enhancing the Reliability of Florida's Distribution and Transmission Grids During Extreme Weather (July 2007) prepared by the Florida Public Service Commission and submitted to the Governor and Legislature to fulfill the requirements of Chapter 2006-230, Sections 19(2) and (3), at 2615, Laws of Florida, enacted by the 2006 Florida Legislature (Senate Bill 888).

<http://www.floridapsc.com/publications/pdf/electricgas/stormhardening2007.pdf>

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Electric Utilities. <http://www.quanta-technology.com/sites/default/files/doc-files/QuantaPhase1FinalReport.pdf>

Evaluation of Underground Electric Transmission Lines in Virginia (November 2006) report of the Joint Legislative Audit and Review Commission to the Governor and The General Assembly of Virginia.

<http://jlarc.virginia.gov/reports/Rpt343.pdf>

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http://www.psc.state.fl.us/publications/pdf/electricgas/Underground_Wiring.pdf

A Review of Electric Utility Undergrounding Policies and Practices (March 8, 2005) prepared by Navigant Consulting, Inc. for the Long Island Power Authority.

http://www.lipower.org/pdfs/company/papers/underground_030805.pdf

Placement of Utility Distribution Lines Underground, (January 2005) report of the State Corporation Commission to the Governor and The General Assembly of Virginia.

http://www.scc.virginia.gov/comm/reports/report_hjr153.pdf

The Feasibility of Placing Electric Distribution Facilities Underground (November 2003) report of the Public Staff to the North Carolina Natural Disaster Preparedness Task Force.

<http://www.ncuc.commerce.state.nc.us/reports/undergroundreport.pdf>

1.1.2. *Vegetation Management*

Vegetation management is most likely already incorporated into the operations and maintenance activities and budgets of most utilities. However, the various studies reviewed by EEI have explained that the emphasis being placed solely on maintaining specific clearances may not be as effective for every situation. The majority of the reports have had two overarching recommendations: (1) find the true cause of outages and employ necessary vegetation management and (2) coordinate with property owners and local officials to plant and replace downed vegetation that is most conducive to system reliability. Employing targeted vegetation trimming and removal versus strict vegetation clearance cycles was echoed in several of the reports. The prior practice seemed to focus unnecessarily on ensuring specific branch clearances from power lines instead of “danger” trees and branches. As a majority of outages cited were caused by trees or heavy branches falling on lines and bringing down poles rather than tree branches brushing up against power lines, maintaining clearances alone did not address all possible measures to improve reliability. Local officials can assist in mitigation of “danger” tree effects by establishing and enforcing ordinances that require the removal of dead or dying trees from private property near power lines. A second emerging theme in the studies that were reviewed was the usefulness of a concerted effort to plant vegetation near distribution systems that would pose the least reliability issues. In the past, property owners, businesses and local municipalities planted vegetation with little consideration as to the impacts on surrounding utility systems. Again, it is suggested that local officials assist by requiring trees to be labeled as appropriate for planting under power lines or requiring informational brochures at the point of sale. The studies recommended looking at vegetation with shorter heights and longer lifecycles but were careful to reiterate that utilities must staff trained arborists and work closely with customers to ensure a workable outcome for all parties. In fact, the studies showed that direct communication and coordination with regard to vegetation management resulted in higher customer satisfaction rates when it came to utility relationships.

Recognizing that vegetation management represented the highest recurring maintenance cost, the studies were careful to point out that deferral of vegetation management tended to be more costly in the long run. Although specific vegetation costs were not a focal point of the studies, there was a general consensus that vegetation management was one of the more cost effective hardening mechanisms, especially when compared to the relative high costs of undergrounding.

Reports Referencing Vegetation Management:

Massachusetts Electric Grid Modernization Stakeholder Working Group Process: Report to the Department of Public Utilities by the Steering Committee (July 2, 2013) MA DPU 12-76.

<http://magrid.raabassociates.org/Articles/MA%20Grid%20Mod%20Working%20Group%20Report%2007-02-2013.pdf>

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<http://www.governor.maryland.gov/documents/GridResiliencyTaskForceReport.pdf>

State Vegetation Management Task Force Final Report (August 28, 2012) issued to the Connecticut Department of Energy & Environmental Protection.

http://www.ct.gov/dep/lib/dep/forestry/vmtf/final_report/svmtf_final_report.pdf

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<http://www.ferc.gov/legal/staff-reports/05-31-2012-ne-outage-report.pdf>

Best Practices in Vegetation Management for Enhancing Electric Service in Texas (November 11, 2011) submitted by Texas Engineering Experiment Station to the Public Utility Commission of Texas.

http://www.puc.texas.gov/industry/projects/electric/38257/Russell_Report.pdf

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<http://www.puc.nh.gov/2008IceStorm/Final%20Reports/PUC%20IceStorm%20After%20Action%20Report%2012-03-09.pdf>

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http://www.puc.texas.gov/industry/electric/reports/infra/Utility_Infrastructure_Upgrades_rpt.pdf

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Reliability Based Vegetation Management Through Intelligent System Monitoring (September 2007) prepared by Power Systems Engineering Research Center.

https://www.google.com/url?q=http://www.pserc.wisc.edu/documents/publications/reports/2007_reports/russell_2007_pserc_report_vegetation_management_report_t-27.pdf&sa=U&ei=Q4-3UPXvA4WUiQf2uIG4BQ&ved=0CAcQFjAA&client=internal-uds-cse&usg=AFQjCNGuPbjs4cFbOdcoGaWm9yIjEDiQxQ

Report to the Legislature on Enhancing the Reliability of Florida's Distribution and Transmission Grids During Extreme Weather (July 2007) prepared by the Florida Public Service Commission and submitted to the Governor and Legislature to fulfill the requirements of Chapter 2006-230, Sections 19(2) and (3), at 2615, Laws of Florida, enacted by the 2006 Florida Legislature (Senate Bill 888).

<http://www.floridapsc.com/publications/pdf/electricgas/stormhardening2007.pdf>

Report on the Workshop for Best Practices in Vegetation Management (April 17, 2007) sponsored by the Florida Electric Utilities.

<http://www.floridapsc.com/utilities/electricgas/EIProject/docs/VegetationManagementWorkshopReport.pdf>

The Neglected Option for Avoiding Electric System Storm Damage & Restoration Costs – Managing Tree Exposure (2005) prepared by Siegfried Guggenmoos of Ecological Solutions, Inc.

<http://www.ecosync.com/Avoided%20Storm%20Costs.pdf>

Utility Vegetation Management Final Report (March 2004) prepared by CN Utility Consulting, LLC for the Federal Energy Regulatory Commission to support the federal investigation of the August 14, 2003 Northeast Blackout. <http://www.ferc.gov/industries/electric/indus-act/reliability/blackout/uvm-final-report.pdf>

1.1.3. Higher Design and Construction Standards

As with undergrounding and vegetation management, the key to finding the right design and construction standards should be based on the local conditions of the facilities. The studies reviewed provide a myriad of hardening measures for pole designs to withstand high winds as well as suggestions for how to mitigate widespread outages due to tear-down situations from vegetation. Other reports, especially those in coastal areas, emphasized the importance of elevating substations and other vulnerable facilities that are susceptible to flooding. Submersible equipment, isolation switches, waterproof sealants, moats and flood walls are also recommended in recent studies especially given the damage from floodwaters experienced in New York and New Jersey during Superstorm Sandy. Placement of facilities is another critical component of design and

must be updated periodically to account for changing geography, such as flood level potentials and vegetation growth. Several reports also noted that it is imperative when replacing grid components to consider stronger hardening measures rather than replacing the same units in kind or at minimum code requirements.

As to the relative costs of the various hardening choices, prices vary significantly depending on the specific hardening measure, the materials being used, soil and other environmental conditions and the skill needed to implement the hardening mechanism. The studies generally recommended, as with undergrounding, that widespread system hardening is cost-prohibitive and that the most effective use of hardening tools is through a targeted approach. The recommendations are to identify the most critical elements, the worst performing components, those units that have aged and weakened or those elements most in danger of failure and work to replace them with improved system designs such as composites, guying, stronger pole classes or relocation to name a few. Of course, the key to identifying and mitigating potential structural problems lies with robust inspection and maintenance plans. The reports highlight that infrastructure hardening should not come only as a result of storm damage and tear-downs, but as part of a regular maintenance schedule. As newer designs come to market and older designs and equipment are retired, the distribution grid will naturally become more resilient and require fewer replacements and rebuilds in the future.

Reports Referencing Higher Design and Construction Standards:

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Storm Reconstruction: Rebuild Smart – Reduce Outages, Save Lives, Protect Property (2013) prepared by the National Electrical Manufacturers Association (NEMA). <https://www.nema.org/Storm-Disaster-Recovery/Documents/Storm-Reconstruction-Rebuild-Smart-Book.pdf>

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Report on Transmission Facility Outages During the Northeast Snowstorm of October 29-30, 2011: Causes and Recommendations (May 31, 2012) prepared by the Staffs of the Federal Energy Regulatory Commission and the North American Electric Reliability Corporation. <http://www.ferc.gov/legal/staff-reports/05-31-2012-ne-outage-report.pdf>

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Potomac Electric Power Company Comprehensive Reliability Plan for District of Columbia including Distribution System Overview, Reliability Initiatives and Response to Public Service Commission of the District of Columbia Order No. 15568 (September 2010).

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Hardening and Resiliency: U.S. Energy Industry Response to Recent Hurricane Seasons (August 2010) prepared by Infrastructure Security and Energy Restoration, Office of Electricity Delivery and Energy Reliability, U.S. Department of Energy. <http://www.oe.netl.doe.gov/docs/HR-Report-final-081710.pdf>

New Hampshire December 2008 Ice Storm Assessment Report (October 28, 2009) prepared by NEI Electric Power Engineering. <http://www.puc.nh.gov/2008IceStorm/Final%20Reports/2009-10-30%20Final%20NEI%20Report%20With%20Utility%20Comments/Final%20Report%20with%20Utility%20Comments-complete%20103009.pdf>

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http://products.construction.com/swts_content_files/1475/593089.pdf

1.1.4. Smart Grid

As smart grid technologies are still being developed and have yet to experience a long history of widespread deployment, there is only anecdotal literature on how smart grid has effectively hardened the distribution system against outages. At least one utility has reported that mapping smart meter outages allowed it to expedite recovery and response after a tornado by precisely identifying the path of the storm damage.² Although, smart grid is becoming a featured part of the discussion regarding storm restoration and resiliency and has been cited in many of the studies referenced in this document, the benefits have yet to be tested in a widespread storm scenario. In the context of infrastructure hardening, the most cited benefits are the ability of the system to detect outages and remotely reroute electricity to undamaged (unfaulted) circuits and feeders. Through automated distribution technologies utilizing reclosers and automated feeder switches, faults can be isolated for greater system reliability and fewer customers affected. A key element of successfully utilizing these technologies is designing the distribution system as a looping system that provides for the rerouting of power rather than a radial linear system. However, as some studies have pointed out, smart grid relies on portions of the distribution system remaining intact. In cases of large tear-downs with many poles and wires out of service, there may be simply nowhere to reroute the power to. Therefore, in order for smart grid technologies to work adequately, it may need to be paired with other system hardening mechanisms.

As federal assistance has been made available for smart grid development and the technologies continue to develop, there has been little discussion regarding the relative costs of integrating smart grid technologies into the distribution system.

Reports Referencing Smart Grid:

Economic Benefits of Increasing Electric Grid Resilience to Weather Outages (August 2013) prepared by the President’s Council of Economic Advisers and the U.S. Department of Energy’s Office of Electricity Delivery and Energy Reliability, with assistance from the White House Office of Science and Technology.
http://energy.gov/sites/prod/files/2013/08/f2/Grid%20Resiliency%20Report_FINAL.pdf

U.S. Energy Sector Vulnerabilities to Climate Change and Extreme Weather (July 2013) prepared by the U.S. Department of Energy. <http://energy.gov/sites/prod/files/2013/07/f2/20130716-Energy%20Sector%20Vulnerabilities%20Report.pdf>

Post Sandy Enhancement Plan (June 20, 2013) prepared by Consolidated Edison Co. of New York and Orange and Rockland Utilities. http://www.coned.com/publicissues/PDF/post_sandy_enhancement_plan.pdf

Powering New York State’s Future Electricity Delivery System: Grid Modernization (January 2013) prepared by the New York State Smart Grid Consortium. http://nyssmartgrid.com/wp-content/uploads/2013/01/NYSSGC_2013_WhitePaper_013013.pdf

² See *Improving the Reliability and Resiliency of the US Electric Grid* (2012) from Metering International Issue – 1 authored by Debbie Haught and Joseph Paladino of the U.S. Department of Energy, p. 2.

Storm Reconstruction: Rebuild Smart – Reduce Outages, Save Lives, Protect Property (2013) prepared by the National Electrical Manufacturers Association (NEMA). <https://www.nema.org/Storm-Disaster-Recovery/Documents/Storm-Reconstruction-Rebuild-Smart-Book.pdf>

Improving the Reliability and Resiliency of the US Electric Grid (2012) from Metering International Issue – 1 authored by Debbie Haught and Joseph Paladino of the U.S. Department of Energy. <http://energy.gov/sites/prod/files/Improving%20the%20Reliability%20and%20Resiliency%20of%20the%20US%20Electric%20Grid%20-%20SGIG%20Article%20in%20Metering%20International%20Issue%201%202012.pdf>

Weathering the Storm: Report of the Grid Resiliency Task Force (September 24, 2012) delivered to the Office of Maryland Governor Martin O’Malley pursuant to Executive Order 01.01.2012.15. <http://www.governor.maryland.gov/documents/GridResiliencyTaskForceReport.pdf>

Weather-Related Power Outages and Electric System Resiliency (August 28, 2012) by Richard J. Campbell, Congressional Research Service. <http://www.fas.org/sgp/crs/misc/R42696.pdf>

Potomac Electric Power Company Comprehensive Reliability Plan for District of Columbia including Distribution System Overview, Reliability Initiatives and Response to Public Service Commission of the District of Columbia Order No. 15568 (September 2010). <http://www.pepco.com/res/documents/DCComprehensiveReliabilityPlan.pdf>

Hardening and Resiliency: U.S. Energy Industry Response to Recent Hurricane Seasons (August 2010) prepared by Infrastructure Security and Energy Restoration, Office of Electricity Delivery and Energy Reliability, U.S. Department of Energy. <http://www.oe.netl.doe.gov/docs/HR-Report-final-081710.pdf>

New Hampshire December 2008 Ice Storm Assessment Report (October 28, 2009) prepared by NEI Electric Power Engineering. <http://www.puc.nh.gov/2008IceStorm/Final%20Reports/2009-10-30%20Final%20NEI%20Report%20With%20Utility%20Comments/Final%20Report%20with%20Utility%20Comments-complete%20103009.pdf>

Cost-Benefit Analysis of the Deployment of Utility Infrastructure Upgrades and Storm Hardening Programs (March 4, 2009) prepared by Quanta Technology for the Public Utility Commission of Texas. http://www.puc.texas.gov/industry/electric/reports/infra/Utility_Infrastructure_Upgrades_rpt.pdf

The Value of Distribution Automation (March 2009) prepared by Navigant Consulting for the California Energy Commission – Public Interest Energy Research Program. <http://www.ilgridplan.org/Shared%20Documents/CEC%20PIER%20Report%20-%20The%20Value%20of%20Distribution%20Automation.pdf>

Oklahoma Corporation Commission’s Inquiry into Undergrounding Electric Facilities in the State of Oklahoma (June 30, 2008) prepared and submitted by Oklahoma Corporation Commission Public Utility Division Staff. <http://www.occeweb.com/pu/PUD%20Reports%20Page/Underground%20Report.pdf>

Value of Distribution Automation Applications (April 2007) prepared by Energy and Environmental Economics, Inc. and EPRI Solutions, Inc. for the California Energy Commission – Public Interest Energy Research Program. <http://www.energy.ca.gov/2007publications/CEC-500-2007-028/CEC-500-2007-028.PDF>

1.1.5. Microgrids

The concept of “microgrids” is still in the study phase and like smart grid has yet to see widespread deployment or demonstrated its resiliency capabilities during a major storm; however, recommendations highlighting microgrids increased dramatically after Superstorm Sandy. The concept of the microgrid is that it functions as an isolatable distribution network, usually connected to one or more distributed generation sources, that can seamlessly connect and disconnect from the main grid (referred to as “island-mode”) in times of widespread outages. Similar to smart grid applications, if major portions of the main grid or the microgrid are torn-down or destroyed in a major weather event, the microgrid capabilities are rendered less effective. There are limited studies of microgrid capabilities, especially as a hardening option. New York, Connecticut and California as well as the U.S. Department of Energy have begun to look into microgrid capabilities and some of the current regulatory frameworks hindering widespread deployment. Although microgrid applications are generally end-user driven and funded, the studies do address areas where utilities can and should be involved, especially with ensuring systems are optimized for interoperability and security. Utilities would also act as an active partner with customers and generators to facilitate and manage the aggregation of loads and the deployment of generation on the microgrid.

As previously mentioned, most microgrid deployment would be funded by the end-users rather than the utility (with estimated returns on investment over 15 years), however, microgrids can provide some cost benefits. By precisely controlling interconnected loads and managing customer voltage profiles, utilities can reduce the cost of providing reactive power and voltage control at microgrid participants’ locations. As microgrids remove some of the load that would otherwise be served by the utility on the main grid, microgrids can reduce peak demand or area load growth and similarly help utilities avoid or defer new power delivery capacity investments. As one study points out “[s]uch deferrals can produce financial value to both utilities (e.g., reduced capital budget, lower debt obligations, a lower cost of capital) and ratepayers (i.e., lower rates).”³ However, it should be noted that in situations where microgrids fail or are damaged and thus rely on the utility as a back-up, stranded investments and hurdles for cost recovery can become problematic for the utility.

Reports Referencing Microgrids:

Economic Benefits of Increasing Electric Grid Resilience to Weather Outages (August 2013) prepared by the President’s Council of Economic Advisers and the U.S. Department of Energy’s Office of Electricity Delivery and Energy Reliability, with assistance from the White House Office of Science and Technology. http://energy.gov/sites/prod/files/2013/08/f2/Grid%20Resiliency%20Report_FINAL.pdf

Massachusetts Electric Grid Modernization Stakeholder Working Group Process: Report to the Department of Public Utilities by the Steering Committee (July 2, 2013) MA DPU 12-76. <http://magrid.raabassociates.org/Articles/MA%20Grid%20Mod%20Working%20Group%20Report%2007-02-2013.pdf>

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³ *Microgrids: An Assessment of the Value, Opportunities and Barriers to Deployment in New York State* (September 2010) prepared for the New York State Energy Research and Development Authority, p. S-5.

A Stronger, More Resilient New York (June 11, 2013) from the City of New York Mayor Michael R. Bloomberg. http://nytelecom.vo.llnwd.net/o15/agencies/sirr/SIRR_spreads_Lo_Res.pdf
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http://www.gridwise.org/documents/ImprovingElectricGridReliabilityandResilience_6_6_13webFINAL.pdf

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<http://www.governor.maryland.gov/documents/GridResiliencyTaskForceReport.pdf>

Microgrids (September 12, 2012) prepared by Lee R. Hansen, Legislative Analyst for the Connecticut General Assembly, Office of Legislative Research. <http://www.cga.ct.gov/2012/rpt/2012-R-0417.htm>

Weather-Related Power Outages and Electric System Resiliency (August 28, 2012) by Richard J. Campbell, Congressional Research Service. <http://www.fas.org/sgp/crs/misc/R42696.pdf>

The Business Case for Microgrids (2011) white paper on the new fact of energy modernization prepared by Robert Liam Dohn of Siemens AG. http://www.energy.siemens.com/us/pool/us/energy/energy-topics/smart-grid/downloads/The%20business%20case%20for%20microgrids_Siemens%20white%20paper.pdf

DOE Microgrid Workshop Report (August 30 – 31, 2011) prepared by the Office of Electricity Delivery and Energy Reliability, Smart Grid R&D Program.
<http://energy.gov/sites/prod/files/Microgrid%20Workshop%20Report%20August%202011.pdf>

Microgrids: An Assessment of the Value, Opportunities and Barriers to Deployment in New York State (September 2010) prepared for the New York State Energy Research and Development Authority.
http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CD4QFjAA&url=http%3A%2F%2Fwww.nyserda.ny.gov%2F~%2Fmedia%2FFiles%2FPublications%2FResearch%2FElectric%2520Power%2520Delivery%2F10-35-microgrids.ashx%3Fsc_database%3Dweb&ei=0tC8UN2ZH4rh0QGg4oC4CA&usg=AFQjCNEMLDVWvr-RMvdfopz1FSAbn6bK3w&sig2=dUz2rZfgMcCr4AWDzm6rGQ

The Value of Distribution Automation (March 2009) prepared by Navigant Consulting for the California Energy Commission – Public Interest Energy Research Program.
<http://www.ilgridplan.org/Shared%20Documents/CEC%20PIER%20Report%20-%20The%20Value%20of%20Distribution%20Automation.pdf>

Value of Distribution Automation Applications (April 2007) prepared by Energy and Environmental Economics, Inc. and EPRI Solutions, Inc. for the California Energy Commission – Public Interest Energy Research Program. <http://www.energy.ca.gov/2007publications/CEC-500-2007-028/CEC-500-2007-028.PDF>

Microgrid: A Conceptual Solution (June 2004) prepared by Robert H. Lasseter and Paolo Piagi of the University of Wisconsin-Madison. <http://energy.lbl.gov/ea/certs/pdf/mg-pesc04.pdf>

1.1.6. *Advanced Technologies*

Many of the advanced technologies currently being studied and rolled out are closely related to smart grid applications in the areas of communication and circuit auto-reconfiguring. Other technologies being used to bolster utilities information gathering and control are various mapping technologies such as Geographic Information Systems (“GIS”) and Automated Mapping and Facilities Management (“AM/FM”). There is very limited literature on other technologies outside of smart grid applications; however, there has been some investigation into hydrophobic, nano-particle coatings on distribution lines and other facilities to enhance waterproofing, prevent ice formation on power lines, and combat corrosion and shorting caused from saltwater. Installation of self-healing cables reduces damage to wires by incorporating sealant between insulation layers that flow into any insulation breaks and seals them permanently to prevent further exposure. Of the studies reviewed, the relative cost of these advanced technologies was not included.

Reports Referencing Advanced Technologies:

Enhancing Distribution Resiliency – Opportunities for Applying Innovative Technologies (January 2013) prepared by the Electric Power Research Institute (EPRI).

<http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=00000000001026889>

Storm Reconstruction: Rebuild Smart – Reduce Outages, Save Lives, Protect Property (2013) prepared by the National Electrical Manufacturers Association (NEMA). <https://www.nema.org/Storm-Disaster-Recovery/Documents/Storm-Reconstruction-Rebuild-Smart-Book.pdf>

America’s Next Top Energy Innovator Challenge – SH Coating, LP, Oak Ridge National Laboratory. <http://energy.gov/americas-next-top-energy-innovator/sh-coatings-lp>

Hardening and Resiliency: U.S. Energy Industry Response to Recent Hurricane Seasons (August 2010) prepared by Infrastructure Security and Energy Restoration, Office of Electricity Delivery and Energy Reliability, U.S. Department of Energy. <http://www.oe.netl.doe.gov/docs/HR-Report-final-081710.pdf>

Cost-Benefit Analysis of the Deployment of Utility Infrastructure Upgrades and Storm Hardening Programs (March 4, 2009) prepared by Quanta Technology for the Public Utility Commission of Texas. http://www.puc.texas.gov/industry/electric/reports/infra/Utility_Infrastructure_Upgrades_rpt.pdf

1.2 Resiliency Measures

In the body of research that we reviewed, most of the resiliency measures were considered together in the recommendations and best practices and therefore we only include one “Sources” section that encompasses the storm response and restoration efforts utilized by utilities. Many of the sources cited have also been referenced in the “Hardening” section above as well.

Although the industry as a whole responded well to the massive restoration effort following Superstorm Sandy, utilities quickly agreed that the mutual assistance program should be enhanced and formalized. As described more fully in [Appendix C](#), the electric industry has instituted a formal process for responding to major outage events involving multiple regions that addresses many of the resiliency recommendations in this section.

1.2.1. Increased Labor Force

Sufficient restoration crews are essential to storm response and restoration. Of the studies reviewed by EEI, the major element of securing enough crew members in preparation for major storms is advanced planning. This includes adequate weather prediction paired with advanced reservation of additional crews whether through mutual assistance or outside contractors. All impacted stakeholders should bear in mind that widespread storms encompassing large areas and multiple service territories will lead to increased competition for resources and thus adequate planning is essential. Part of the planning includes securing shelter, food, first aid, shower and toilet facilities, parking and other essentials for crews working around the clock for days on end.

When securing crews, these additional costs should also be taken into consideration. Several studies warned that it is not always cost-effective, and increasingly subject to scrutiny by state officials, to cut full-time staff in favor of attempting to secure additional crews during emergency situations only. Utilities must measure the costs of having available crews compared with the costs of extended outages due to insufficient numbers of prepared crews.

1.2.2. Standby Equipment

Another key consideration in proper storm restoration and recovery, as documented in several studies, is to consider necessary arrangements for response equipment to be on standby (for example strategic alliances or material consignment). Extra trucks, supplied with necessary materials including maps, flashlights, mapping software, communication devices, to name a few, could be readily available to utilities without needing to secure such equipment from outside locations thus slowing response activities. In addition to equipped trucks, crews should be armed with GPS devices as many will be unfamiliar with local roads and service territories. As demonstrated during Hurricane Katrina and Superstorm Sandy, fuel can become scarce after extreme weather events and thus utilities must secure enough fuel for its service trucks, either through on-hand reserves or emergency fuel contracts with suppliers. Other standby equipment to be considered are mobile transformers, mobile substations and large generators that can enable temporary restoration of grid service, circumventing damaged infrastructure, to enable repair of grid components without extended interruptions to customers.

1.2.3. Restoration Materials

As part of storm response and restoration, multiple studies suggested that utilities must have adequate back-up restoration supplies such as poles, wires, transformers and other system components that are on location in storage or are easily obtained through contracts with suppliers. As with securing adequate labor and equipment, large storms with widespread outages may result in competition for materials. The State of New York launched a review of a potential equipment-sharing, inventory and stockpile programs and determined that such programs could facilitate improvement to individual utility practices and help coordinate utilities' response to major events. It was recommended that New York State utilities leverage existing stockpiles at utility and vendor locations statewide and develop a sharing agreement among utilities for deployment of restoration materials during major outage events. In November 2013, the State of New York Public Service Commission directed utilities to finalize the protocols, procedures and plans for sustaining a shared equipment and supplies stockpile.⁴

⁴ Order Instituting a Process for the Sharing of Critical Equipment, State of New York Public Service Commission Docket No. 13-M-0047 (November 19, 2013).

As with other recommendations, costs of such back-up restoration materials need to be compared with the costs of extended outages and lost restoration time while waiting for supplies to become available.

1.2.4. Enhanced Communication, Planning and Coordination

Several of the studies reviewed highlighted the many complications and logistical challenges associated with moving multiple crews to large areas all the while keeping customers, regulators and news agencies up-to-date with the latest restoration information. As stressed in one study, utility response must be scalable so that restoration efforts run smoothly whether there are 5,000, 50,000 or 500,000 customer outages.⁵ A crucial element in utility plans for major storm events is pre-staging. Having crews, equipment and resources safely positioned before the storm allows for a quicker response and avoids waiting for crews to arrive from outside the affected areas. However, for those crews that do arrive from out of town, standby equipment and restoration materials are already gathered and organized for immediate response. Certain utilities have commissioned new mobile command centers to accommodate response teams. These mobile command centers typically have state-of-the-art technology, including satellite and cellular communications, dispatcher workstations, video monitors with video switcher, SMART boards, and telescoping masts with cameras. These mobile command centers provide utilities with extended capability to manage restoration on location and closer to the customers experiencing outages. Recognizing the importance of pre-staging, some utilities are looking into hiring outside vendors to evaluate and map out staging areas to maximize resource flow and use of space. Part of this pre-staging effort entails coordinating with federal and state agencies to quickly obtain emergency permits and waivers for traveling crews and heavy equipment to bypass tolls and access normally restricted bridges and roadways. Procedures must be in place prior to large outage situations in order to avoid delays in getting mutual assistance crews to assist with restoration.

As several studies pointed out, response times are unnecessarily delayed as outage coordinators are unsure where their crews have been dispatched, what outages remain and where to dispatch crews that have completed a restoration project to ensure the least amount of driving or “windshield” time. Thus, coordination and constant communication is vitally important. As one study suggested, relying on satellite communications is a beneficial option for crew coordination as they are less reliant on terrestrial structures which may have been damaged during the storm or weather event.⁶

In addition, utility communications with its customers is vital. A key frustration, cited in the reports, was out-of-date information and inaccurate restoration estimates. Utilities are taking new and innovative steps to keep the communities and customers informed at all times. These include designating a central contact person or working team to serve as the “one voice” communicator with crews, state and federal government officials, news agencies and customers to ensure the continuity of communication and information for the most accurate assessments and response estimates. Some utilities have implemented storm communication guidelines to ensure consistent communication across all customer channels during the various phases of a storm. These guidelines provide for tailoring communication outreach by taking into account the magnitude of the storm and subsequent customer sentiment. The guidelines include monitoring of customer feedback and scripting for customer service representatives, interactive voice response, text messaging, mobile application notifications, utility websites, Twitter, Facebook, Flickr and YouTube. A number of new technologies have been developed such as text messaging programs and fully functional mobile applications that allow customers to report an outage, view outage information, and receive proactive push notifications with outage status updates.

⁵ See *Report of the Two Storm Panel* (January 2012) presented to Connecticut Governor Dannel P. Malloy, p. 12.

⁶ See *Cost-Benefit Analysis of the Deployment of Utility Infrastructure Upgrades and Storm Hardening Programs* (March 4, 2009) prepared by Quanta Technology for the Public Utility Commission of Texas, p. 74.

Though the studies did not explore specific costs attached to communication and coordination efforts, again the general consensus is that utilities must weigh these various costs against the costs of slower restoration and extended outages.

1.2.5. Advanced Technologies

Much of the conversation regarding advanced technologies, in the context of storm response, has centered on smart grid/smart meters. The two-way communication capabilities of smart meters allows utilities to monitor service continuity, identify outages and “ping” customer meters to ensure service has been restored. In the wake of Superstorm Sandy, advanced technologies involving outage management systems and developing better weather and damage forecast models has gained prominence in the discussion surrounding large outage events. An effective outage management system linking load and outage data with GIS allows restoration crews to isolate the areas where outages have occurred and focus their efforts solely on restoration rather than on truck roll-bys to identify damage and customer outages. Some software allows utilities to track restoration crews, equipment and fuel consumption to better manage logistics and allocate resources. Outage Management Systems are being used to detect and report reliability issues in addition to crews using infrared scanning equipment for surface and airborne damage assessment. Infrared scanning detects temperature variances which can indicate damaged or failed equipment. Airborne damage assessment allows technicians to survey damage where traditional vehicles are blocked due to downed trees, flooded roads and other obstacles thereby reducing response time by hours. Automated storm damage information can be instantaneously shared with restoration crews to speed up response and repairs, limiting the need for extra scouting crews. Utilities are recognizing the importance of integrating such data with data from local municipalities, police and fire departments to better coordinate restoration to critical areas.

A cost assessment for smart meters and other automated technologies is contained within the broader context of smart grid programs and differs by region and level of federal assistance. Although costs for many of the recommended advanced technologies may be costly, it is important to remember that those costs should be measured against the costs of delayed restoration when advanced capabilities are not being utilized. As one utility reported during Superstorm Sandy, use of advanced technologies reduced the number of truck rolls during Superstorm Sandy by over 6,000 resulting in a savings of least one million dollars in restoration costs.⁷

Reports Referencing Resiliency Measures:

Economic Benefits of Increasing Electric Grid Resilience to Weather Outages (August 2013) prepared by the President’s Council of Economic Advisers and the U.S. Department of Energy’s Office of Electricity Delivery and Energy Reliability, with assistance from the White House Office of Science and Technology. http://energy.gov/sites/prod/files/2013/08/f2/Grid%20Resiliency%20Report_FINAL.pdf

Hurricane Sandy Rebuilding Strategy: Stronger Communities, A Resilient Region (August 2013) prepared by the Hurricane Sandy Rebuilding Task for and presented to the President of the United States. <http://portal.hud.gov/hudportal/documents/huddoc?id=HSRebuildingStrategy.pdf>

⁷ See *Improving Electric Grid Reliability and Resilience: Lessons Learned from Superstorm Sandy and Other Extreme Events* (June 2013) prepared by the GridWise Alliance, p. 12.

Massachusetts Electric Grid Modernization Stakeholder Working Group Process: Report to the Department of Public Utilities by the Steering Committee (July 2, 2013) MA DPU 12-76.

<http://magrid.raabassociates.org/Articles/MA%20Grid%20Mod%20Working%20Group%20Report%2007-02-2013.pdf>

Moreland Commission on Utility Storm Preparation and Response - Final Report (June 22, 2013) delivered to New York Governor Andrew Cuomo.

<http://www.governor.ny.gov/assets/documents/MACfinalreportjune22.pdf>

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A Stronger, More Resilient New York (June 11, 2013) from the City of New York Mayor Michael R. Bloomberg. http://nytelecom.vo.llnwd.net/o15/agencies/sirr/SIRR_spreads_Lo_Res.pdf

Improving Electric Grid Reliability and Resilience: Lessons Learned from Superstorm Sandy and Other Extreme Events (June 2013) prepared by the GridWise Alliance.

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The October 2011 Snowstorm: New Hampshire's Regulated Utilities' Preparation and Response (November 20, 2012) prepared by the New Hampshire Public Utilities Commission.

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<http://www.nj.gov/bpu/pdf/announcements/2012/stormreport2011.pdf>

January 2012 Pacific Northwest Snowstorm – After Action Review (June 19, 2012) prepared by KEMA for Puget Sound Energy. <http://www.utc.wa.gov/docs/Pages/DocketLookup.aspx?FilingID=120231>

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New Hampshire December 2008 Ice Storm Assessment Report (October 28, 2009) prepared by NEI Electric Power Engineering. <http://www.puc.nh.gov/2008IceStorm/Final%20Reports/2009-10-30%20Final%20NEI%20Report%20With%20Utility%20Comments/Final%20Report%20with%20Utility%20Comments-complete%20103009.pdf>

Report to the Legislature on Enhancing the Reliability of Florida's Distribution and Transmission Grids During Extreme Weather (July 2008) submitted by the Florida Public Service Commission to the Governor and Legislature. <http://www.floridapsc.com/utilities/electricgas/eiproject/docs/AddendumSHLegislature.pdf>

CHAPTER 2: COST RECOVERY MECHANISMS

2.1 Types of Costs

Utility costs incurred to respond to storms before, during and after the event—collectively referred to as storm hardening and resiliency—are of two types: Operational and maintenance expenses, which are typically the costs of labor and consumable materials used in the process, and capital costs, which include replacement power poles, wires, transformers, and trucks driven by repair crews.

Traditionally, operational expenses are recovered in base rates after they are reviewed by state regulatory authorities. Capital expenses are usually included in a utility’s rate base and depreciated over time. When included in rate base, utilities are allowed to earn a return on these investments and the depreciation expense is included in rates.

Rate base additions and operational expenses traditionally have been considered in the context of general rate cases. However, for a variety of reasons, including the increasing costs involved and unpredictability, utilities and regulators are increasingly turning to other means to deal with cost recovery for storm response, as discussed in this section.

2.2 General Rate Case Recovery

The normal practice by which most investor-owned electric utilities recover costs is through a general rate case, where the utility seeks to change its rates based on either new plant additions or changes in expenses or both. The utility typically presents its costs in a defined “test year.” The test year often is an historical test year that ends before the rate case is filed. However, many states are using or moving toward use of current or future test years or hybrids.⁸ After reviewing the costs, the state regulatory commission approves or disallows costs and sets an authorized rate of return for the utility’s assets. Storm response expenses can be considered in the context of a general rate case, but there may be significant problems with this path for storm cost recovery.

First, if any of the storm costs were incurred outside the utility’s test year, they would not be eligible for recovery even if they were prudently incurred and legitimate expenses, except in some cases when post-test year additions are allowed under specified circumstances. Second, many states have prohibitions against single-issue ratemaking, meaning that all costs incurred by the utility must be considered together in a general rate case. A utility that does not have a general rate case scheduled in the near future would have no recourse to recover its costs, perhaps for years.

Moreover, rate cases can be very contentious and take years to resolve, depending on state rules, and they often result in at least some costs being disallowed as a compromise to reach a conclusion. All of this regulatory delay and uncertainty can add to the business risk of the utility and may harm its financial health, exposing it to potential credit downgrades by rating agencies and thus increasing its cost of capital, which in turn can lead to higher rates for customers.

⁸ *Innovative Regulation: A Survey of Remedies for Regulatory Lag* (April 2011) prepared by Pacific Economics Group Research LLC for Edison Electric Institute

The length of time for rate cases to resolve in many states also means that a utility may incur additional storm damage before the costs of previous storms are recovered, resulting in a pancaking effect.

Utilities may not have the capability to finance recovery of costs resulting from multiple storms, especially if storms are large and costly. General rate case recovery may be reasonable for storms with minor damage but can create problems when storms are large or frequent in nature. Many utilities have classifications for major versus minor storms and handle minor storms under regular accounting and cost recovery procedures.⁹ In addition, many utilities already collect revenue in base rates for “normal” storm damage based on test year data, which may be based on an historic average.

General rate case recovery may be a more viable method of cost recovery for known, approved capital expenses, such as pre-storm hardening of facilities or undergrounding. In these cases, it is appropriate that costs be capitalized and added to a utility’s rate base. Certain operational and maintenance costs are also appropriate for consideration in general rate cases. Routine vegetation management costs are an example of a normal, predictable expense that would typically be included and recovered in base rates.

General rate cases that employ mechanisms other than a historical test year or that use methodologies resulting in a higher rate base valuation than would occur under a traditional averaging method provide additional ways in which storm cost recovery can be achieved in a timely manner. An example is use of a future test year that allows projected capital expenditures (capex) to be included in base rates, thus reducing problems due to regulatory lag or the need for multiple rate cases.

Another example is application of end-of-test-year or “terminal” values to rate base, where rate base is set based on values at the end of the normal test period rather than on averaging values over the period. Use of terminal rate base can better reflect the level of investment during the period rates will be in effect, especially during times of high investment levels. For example, a utility that is in the midst of a large capex spending program for reliability improvement, system hardening, or storm damage resiliency measures might propose a future test year or terminal rate base valuation to ensure that the increased capital spending over historical averages is properly reflected in base rates. States that have allowed use of terminal test year include **Illinois**, **Maryland** and **Texas**.

2.3 Cost Deferral

Because immediate recovery of storm response costs—whether investments to harden systems to prevent storm damage or the costs of recovering from storm damage—may be too much of a burden to place on customers at the time such costs are incurred, often some or all of the costs are deferred. The accounting process for deferrals involves treatment of the costs as a regulatory asset (under-recovery) or regulatory liability (over-recovery). The state regulatory authority essentially allows the utility to place the costs on its balance sheet as an asset or liability, so it does not have to appear on the company’s balance sheet and be charged against current revenues (or credited against current costs). The utility maintains the asset or liability on its balance sheet until the costs are recovered from or refunded to customers. The value of the asset or liability does not have to be considered either as income or an expense for tax purposes until there is actually some activity with the asset.

Once the regulatory asset or liability is established, the ultimate cost recovery decision can be deferred until the next general rate case, where an asset can be recovered through base rates or through a multi-year rate

⁹ *After the Disaster: Utility Restoration Cost Recovery* (February 2005) prepared by Bradley W. for Edison Electric Institute, p. 9.

plan that negates the need for the utility to continually seek new rate cases. Or, as described below, costs associated with the regulatory asset can be recovered through a rate adjustment mechanism outside of a general rate case.

An issue that often arises with respect to cost deferral is whether utilities can charge the carrying costs associated with the asset to customers. This is important because there is an opportunity cost to the utility from delaying cost recovery, and investors are harmed if the opportunity cost is not reflected. The issue of cost deferral and carrying costs has been dealt with in many different ways.

States that have authorized individual utilities to defer storm-related costs include **Arkansas, Kentucky, Maryland, Massachusetts, New Jersey, New York, Ohio** and **Texas**. (See [Appendix A](#).)

2.4 Rate Adjustment Mechanisms

Rate adjustment mechanisms refer to trackers, riders, adders, cost recovery factors and similar terms (that are usually used interchangeably) for a customer surcharge that recovers the costs of one or more specific cost items or categories outside of base rates. These surcharges may be permanent or temporary charges that are approved by regulatory commissions to recover costs that were unforeseen in previous general rate cases, costs that are imposed on the utility and not within its control, costs that are particularly volatile and difficult to predict, costs that are substantial and non-recurring, and/or costs for which the regulatory authority wants to establish a separate line item on customer bills apart from base rates. The most common form of rate adjustment mechanism is a fuel adjustment clause, which allows utilities to collect their most volatile and significant cost as fuel costs change.

Rate adjustment mechanisms have become more prevalent in recent years because they allow utilities and regulators to target specific costs without the need for frequent rate cases, allow customers some transparency as to the components of the rates they pay when the charge appears on the bill as a separate line item, and are favored by the financial community as a means to ensure that utilities are not financially harmed due to slow cost recovery, as can occur when general rate cases are not filed at frequent intervals.

The level of a rate adjustment mechanism may be fixed in advance (usually with scheduled true-ups to reflect actual costs within certain defined periods) or may vary as costs change (usually subject to periodic reviews to ensure the costs were prudently incurred). In any event, there are almost always regulatory proceedings to ensure that the level of the surcharge is equal to actual, prudently incurred costs expended (or saved).

Rate adjustment mechanisms can be designed to end when the specific amount of cost recovery is satisfied and thus are particularly useful for storm response. Rate adjustment mechanisms are also typically used when a charge applies only to a certain set of customers or only for certain periods of the year, such as seasonal adjustments. Many times these mechanisms are used to collect costs imposed by other governmental agencies, such as tax collection riders, environmental riders, and economic development riders. They also may be used to implement special programs such as smart meter and smart grid programs or grid hardening projects.

Rate adjustment mechanisms may or may not include a return to the utility on the assets for which costs are being recovered. While there are exceptions, it is common for capital investments recovered in this way to include a return component while operations and maintenance expenses usually do not include a return.

These mechanisms also may be used to track and recover costs from (or return savings to) ratepayers that commissions have previously allowed to be deferred as regulatory assets (or liabilities). Agreement by

regulators to allow costs to be deferred for possible future recovery that would not have been reflected in a test year provides additional confidence to investors that costs will be recovered. Such use of rate adjustment mechanisms allows utilities flexibility, especially where storm costs are substantial and immediate recovery would severely harm utility customers. By obtaining regulatory approval to defer such costs as a regulatory asset (or liability), utilities also can avoid having to write off those expenses in the current period, which would cause harm to investors and increase the risk profile of the utility.

The operational details of rate adjustment mechanisms for deferred costs vary by state jurisdiction. In some cases, the utility is assured estimated cost recovery in a future period at the time the account is approved, subject to prudence review and true-up(s). In other cases, the commission may approve only the rate adjustment mechanism and require the utility to seek approval later of actual costs. Some jurisdictions may limit further additions to the account, while others will allow expenses pertinent to the mechanism's purpose to continue to be accumulated but impose limitations such as a cap to prevent excess earnings.

States that have authorized use of rate adjustment mechanisms include **Florida, Mississippi, Missouri, New Hampshire, Ohio, Oklahoma, Pennsylvania** and **Texas**. (See [Appendix A](#).)

2.5 Lost Revenue and Purchased Power Adjustments

Another potential storm-related cost for which rate adjustment mechanisms may be relevant is an adjustment for lost revenues. Utilities set their rates based on a revenue requirement established by the state regulatory authority and forecasted (or recent historical) sales. If a utility loses customers for extended periods following a storm, its revenues from customers will fall short, and the utility may be unable to pay its fixed costs that are unavoidable with or without customer sales. State regulatory authorities have in some cases approved a lost revenue adjustment clause to allow utilities to recover some or all of these costs.

- While there do not appear to be any lost revenue adjustment mechanisms that are directly targeted at recovering revenues lost because of storms, there are several utilities around the country that have similar mechanisms that automatically adjust rates to reflect changing weather conditions. For example, in September 2009, the **District of Columbia** Public Service Commission approved the implementation of a bill stabilization adjustment (BSA) for Pepco. The BSA is a “decoupling” mechanism applied monthly in order to mitigate the volatility of revenues and customer bills caused both by abnormal weather and customer participation in energy efficiency programs. A similar BSA mechanism in **Maryland** was ended by the regulator as it applied to major storms in October 2012 following a June 2012 “derecho” storm in response to complaints from citizens and elected officials.¹⁰

Along similar lines, if a utility's generating facilities become unavailable due to storm damage, it may have to purchase power from other sources at rates higher than expected in its cost forecast. Purchased power adjustment clauses are sometimes approved to recover some or all of these additional costs. Purchased power transactions also may be approved to address other storm-related circumstances.

- **Florida** approved a fuel and purchased power cost recovery clause (FPPCRC) that provides for the recovery of both prudently incurred fuel and purchased power costs. Costs of power purchased during storm recovery would be recoverable under this clause if found to be prudent by the Florida Public Service Commission. Florida also has a capacity cost recovery clause (CCRC) in place. The capacity component of purchase power agreements and post-2001 power plant security costs are

¹⁰ Maryland PSC, Case No. 9257 (October 26, 2012).

flowed through this clause.

- The **Texas** Public Utility Commission allowed Entergy Gulf States (EGS) to recover costs, via its fuel adjustment clause, of purchasing both surplus capacity and energy from affiliate Entergy New Orleans (ENO), which lost significant load as a result of Hurricane Katrina. The commission waived a rule restricting such recovery to energy-only costs. The transaction was intended to ease ENO's financial burden resulting from the hurricane, help facilitate restoration by the Entergy system, and save fuel costs for EGS customers. (See [Appendix A](#).)

2.6 Formula Rates

Formula rates are another way of allowing utilities to recover unforeseen costs between general rate cases. Formula rates simply allow utilities to adjust rates between general rate cases because of changes in costs so that they may continue to earn their authorized returns. Some formula rate plans only allow changes if rates fall outside a specific band (either above or below) the rate set in the general rate case.

In almost all cases, utilities still need to present their cost changes and receive regulatory approval before changing their rates. To the extent that a general rate case includes storm-related expenses, and the formula rate allows those costs to change to reflect additional costs, formula rates can be a way to get more immediate recovery of storm damage costs than would be available through the general rate case process.

States that have approved formula rates for individual utilities include **Illinois** and **Louisiana**.

2.7 Storm Reserve Accounts

Storm reserve accounts are a form of self-insurance used by many utilities to “collect in advance” for costs incurred to recover from storms. A storm reserve is an accounting technique that allows utilities to smooth out the earnings impact of storms.¹¹ Traditionally, a utility would credit a fixed amount from its earnings to a storm reserve account. Storm recovery costs, typically when they are incurred, are charged against the balance in the storm reserve account, subject to review by commissions. In this case, the storm reserve account does not provide any cash to pay the storm costs but rather lessens the earnings impact due to the cost impact of the storm. This only works if there have been sufficient accruals to the storm reserve account to pay the incurred costs.

There are exceptions where storm reserves are funded with cash rather than by accrual. In these cases, cash is withdrawn from the storm reserve account to pay for storm damage as it is needed. Florida Power & Light, for example, has funded storm reserves with cash.

The impacts of recent major storms often have far exceeded amounts available in storm reserves. In some cases, state regulatory authorities allowed utilities to account for the excess as a negative balance in the storm reserve account as a temporary solution. But regulators in many cases have begun allowing utilities to charge customers either to establish or replenish storm reserve accounts in advance of incurring storm recovery costs. In some cases, such customer-funded storm reserve accounts have been permitted by state legislation.

States that have authorized use of storm reserve accounts include **Arkansas, Florida, Louisiana, Massachusetts, Mississippi, New Hampshire, New Jersey, New York** and **Texas**. In response to severe

¹¹ Johnson. op. cit., p. 11.

storms over the past few years, states such as **New York** have approved increases in annual funding of storm reserves. (See [Appendix A](#).)

2.8 Securitization

Securitization is a financial tool that essentially packages bonds backed by secure revenue streams (usually supported by state legislation) and then sells the bonds on the market. By ensuring that the money being invested from the proceeds of these bonds has a high probability of being paid back—usually because a state legislature has mandated that the costs associated with repayment will be placed on customer bills as a surcharge—the bonds can be rated highly and thus get much lower interest rates than the utility would obtain by financing the investments itself. These lower interest costs then translate into lower costs for customers when they pay the servicing costs of the bonds through surcharges.

The first uses of this mechanism in the investor-owned electric utility segment were for so-called “stranded cost” bonds, where utilities—authorized by state legislatures—would set up a stranded cost securitization account, replenished by a surcharge on customer rates to pay whatever amount of stranded costs were allowed by the state. The state or utility would issue securitization bonds and the proceeds would be used by the utility to accelerate the depreciation on portions of their stranded plants to their market levels, with the bonds repaid from the customer surcharges.

The first use of securitization for recovering costs of damages to utility systems occurred after the terrorist acts of September 2001. Consolidated Edison Company of New York used securitized bonds to recover costs of damage to its systems. Since that time, and particularly following Hurricane Katrina, securitization has become an increasingly common method of recovering costs for major storms, especially in hurricane-prone states.

Securitization is not always a preferred mechanism for dealing with storm cost recovery. First it requires the legislature to act in most cases, followed by a favorable ruling from the regulator and then the underwriters. And the administrative costs can be significant. In most cases of securitization, the utility cannot earn on whatever investment results from the proceeds. For example, if a utility is using securitization to finance the reconstruction of a large part of its system, it might not be able to earn on that investment in the future and thus could face a reduced rate base.

While securitization has not been used to date to pay for hardening of facilities to prevent storm damage, it has been suggested as a possible tool for that purpose. For example, a recent report by the State of Maryland suggests securitization as an option for paying for the costs of undergrounding utility systems in the state.¹² Moreover, there may be some precedent for this type of use on the environmental side. For example, in **West Virginia**, securitization was authorized by the commission per a state statute to finance a flue gas desulfurization system at a utility generating plant. In this case, the bonds were backed by a nonbypassable environmental control charge.¹³

States that have authorized securitization of storm-related costs include **Arkansas, Florida, Louisiana, Mississippi, Ohio** and **Texas**.

¹² *Weathering the Storm: Report of the Grid Resiliency Task Force* (September 24, 2012) delivered to the Office of Maryland Governor Martin O’Malley pursuant to Executive Order 01.01.2012.15, pp. 67-68.

¹³ West Virginia PSC, Case No. 05-0402-E-CB, et al. (April 7, 2006), decided pursuant to WV Code § 24-2-4e.

2.9 Customer or Developer Funding/Matching Contributions

Where customers, groups of customers, or developers are interested in gaining protection against storm damage, they are often interested in the undergrounding or hardening of transmission and/or distribution lines. The costs of such hardening can be substantial as discussed elsewhere in this report. Some states such as Florida have begun to establish programs whereby utilities harden their systems and recover costs over time through base rates. In some cases, utilities will cover the costs of undergrounding for new residential developments where lines can be put in as excavation is done for other utilities. However, in other cases, the undergrounding of lines must be paid for in full or in part by the customer.

Almost every utility has a slightly different rule as to determining the costs of undergrounding for which the customer is responsible. The most common is that the customer pays for the difference in cost between overhead and underground lines for new installations, and the cost of undergrounding plus the cost of removing overhead lines, less any salvage value for the overhead equipment. In some cases—particularly for new installations—the utility will do a revenue analysis for the customer and reduce the cost of undergrounding if projected revenues are sufficient to cover some of the additional costs. Utilities in some circumstances might also match customer contributions.

With respect to transmission undergrounding, because transmission costs are seldom associated with a particular set of customers, utilities will need to seek regulatory approval for including the costs in rate base. Because of the substantial costs of undergrounding transmission, it is usually only done when circumstances dictate, such as in areas that are particularly environmentally or aesthetically sensitive, or where the terrain requires it.

There are situations where utilities can share costs with other utility providers that are undergrounding (such as gas pipelines or distribution lines or water mains), or take advantage of situations where roads or tunnels are being built and the incremental cost of undergrounding is much less than normal.

Where customers or other entities such as another utility provider pay for or contribute to the costs of undergrounding or other hardening measures, the payment by the contributor is referred to accounting-wise as a contribution in aid of construction (CIAC). Such contributions are generally not allowed to be recovered in a utility's rate base and may be considered as taxable income to the utility. In such cases, the amount to be collected from contributors is grossed up to collect any state or federal taxes that will be paid by the utility.

Florida is an example of a state that has authorized use of CIAC for storm-related investment.

2.10 Federal Funding

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (the Stafford Act) authorizes the Federal Emergency Management Agency (FEMA) to provide federal aid to individuals and families, certain nonprofit agencies, and public agencies upon declaration of a state of emergency by the President.¹⁴ Stafford Act funding is thus available to municipal, state, and rural electric cooperatives but not to investor-owned utilities. Over the past decade, there have been several unsuccessful attempts to amend the Stafford Act to include investor-owned utilities.

Federal funding has been made available, however, in very limited circumstances to investor-owned utilities under the Community Development Block Grant (CDBG) program of the U.S. Department of Housing and

¹⁴ Federal Stafford Act Disaster Assistance: Presidential Declarations, Eligible Activities, and Funding” (June 7, 2011) prepared by the Congressional Research Service.

Urban Development (HUD). CDBG funds are actually provided to the states, and the utilities wishing to utilize the funds for disaster recovery must do so through agreements with the state government. States must satisfy one or more of three grant objectives:

1. Principally benefit low and moderate income persons
2. Aid in eliminating or preventing slums or blight
3. Meet urgent community development needs because existing conditions pose a serious or immediate threat to the public¹⁵

It is the third of these requirements that is usually satisfied by storm recovery needs.

CDBG funds can only be used for activities not covered by FEMA or the Small Business Administration, which qualifies investor-owned utilities because they cannot take advantage of these other sources. CDBG funds can be used for short-term relief, mitigation activities to lessen the impact of future disasters, and long-term recovery activities. While there are multiple rules covering the use of CDBG funds, the HUD secretary has fairly broad discretion to waive requirements in emergencies. The CDBG program generally requires matching funds from the state, but those requirements can also be lessened or waived in emergencies.

Mississippi is an example of a state that certified storm restoration costs as eligible to receive CDBG funds.

2.11 Insurance

Up until the early 1990s, most utilities carried commercial insurance policies that covered storm damage up to the limits of the policy and after a deductible was met. But new commercial insurance policies to cover storm damage became difficult if not impossible to obtain following the destruction caused by Hurricane Andrew in 1992. Nonetheless, many utilities do carry legacy policies—usually small in amount and with high deductibles. For example, Connecticut Light and Power had a \$15 million policy (with a \$10 million deductible) in effect at the time of Tropical Storm Irene in 2011.¹⁶ Most utilities also have insurance that covers generating station damage and damage to the facilities immediately surrounding those stations.

Storm reserve accounts (discussed above) represent a form of self-insurance by electric utilities. Funds are collected in advance through customer surcharges and held in reserve by the utility for future storms. Utilities still must obtain approval to apply actual costs against the reserve.

Another form of insurance that has been discussed off and on for years by utilities—particularly those in storm-prone areas—is the idea of a mutually funded insurance reserve that would receive premiums from member companies and pay for damages to members' systems when needed according to pre-determined formulas. The proposed insurance fund would work similarly to NEIL (Nuclear Electric Insurance Limited), which provides insurance coverage to domestic and international nuclear utilities. To date, efforts to establish such an insurance fund have not come to fruition but it remains a possibility for the future.

¹⁵ Ibid., p. 1.

¹⁶ http://www.ctnewsjunkie.com/ctnj.php/archives/entry/assessment_of_storm_response_can_wait

CHAPTER 3: CROSS-SECTION OF STATE REGULATION

As the frequency and intensity of major storm events have increased in recent years in many areas, so too has state regulatory activity, including post-storm reviews of electric utility preparation and response. Many of these reviews have resulted in legislation, new rules or increased regulatory activity under existing authority to strengthen utility storm readiness and response capability, mitigate risk, and enhance reliability and resiliency of electric systems.

This chapter provides a brief overview of state regulation and a cross-section of key state regulatory activities involving utility storm hardening and resiliency. Recent policy and regulatory activities of 16 states are highlighted below. Regulatory actions in 28 states are described in more detail in a matrix in [Appendix A](#), EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency. The matrix is not comprehensive but rather provides a snapshot of recent regulatory actions.

3.1 Regulatory Focus on Hardening and Resiliency

The review of states shows that regulatory attention to storm hardening and resiliency to help prevent and mitigate outages has strengthened since Superstorm Sandy. However, regulatory approaches to storm hardening and resiliency – and related cost recovery – continue to vary from state to state and depend on the particular circumstances of the state and utility.

The effects of Sandy have prompted regulators in states such as **New Jersey**, **New York** and **Pennsylvania** to look more comprehensively and strategically at reliability and storm hardening and resilience. Other states have taken more incremental approaches post-Sandy such as **West Virginia**, which directed utilities to focus on expanded vegetation management programs in light of extensive forest growth in the rural state.

Many of these and other states such as **Florida** already had begun to consider or implement changes before Sandy as a result of previous severe weather events and/or out of recognition of electric service reliability issues arising from aging distribution and other infrastructure.

An example of a different approach to cost recovery can be found in **Maryland**, where regulators in several rate cases departed from their longstanding practice of using a historic test year and conditionally allowed test year adjustments to reflect actual and certain forecasted reliability investment. (See [Appendix A](#).) The actions came in recognition of increased reliability spending by utilities – with regulatory encouragement – and of the public need for such investment to reduce the risk of outages and mitigate their impacts.

Even with encouragement of increased utility spending to meet public need, cost recovery from ratepayers is not a given for system hardening and resiliency initiatives, which often mean higher costs for ratepayers. Utilities must, as they have always done, demonstrate the prudence of investments and provide assurance that spending is proportionate to the benefits delivered.

In some cases utilities must meet higher standards for performance that are aligned with higher customer expectations of reliability, as well as perform detailed recordkeeping to aid in assessments of the need for, and costs and benefits of, reliability and resilience investments. For example, the **Maryland** approvals of test year adjustments came with the condition that utilities must meet enhanced reliability performance metrics.

3.2 Changing Regulatory Frameworks

Some states have broadened their regulatory frameworks to enable regulators to give utilities more incentive and flexibility to address storm events and reliability infrastructure needs. The potential for financial and other penalties also is increasing in some states.

Examples of regulatory framework changes, which are more fully detailed in state highlights below and [Appendix A](#) and [B](#), include:

- A **Connecticut** law requiring state regulators to review a utility's performance in responding to storms, set new performance standards, and identify the most cost-effective levels of tree trimming and system hardening needed to achieve maximum system reliability and minimize outages. Financial penalties may be imposed for non-compliance with the performance standards.
- A **District of Columbia** law authorizes financing via issuance of revenue bonds to back a public-private partnership between the District and Pepco. The partnership is planning to implement a program to strategically underground feeders that are particularly susceptible to storms.
- An **Illinois** law authorizing use of performance-based formula rates and requiring participating utilities to invest large specified amounts in transmission and distribution systems, with cost recovery addressed in annual formula rate plan proceedings. Utilities file grid modernization plans with performance metrics that carry penalties for non-compliance.
- A **Massachusetts** law that expands the authority of the Department of Public Utilities to oversee utility storm restoration and set performance standards for emergency preparation and restoration of utility service. Financial penalties may be imposed for non-compliance with the performance standards.
- Development by **New York** regulators of a process to change the regulatory model for achieving policy objectives that include assurance of system reliability and resiliency. The regulatory model will include performance and outcome-based incentives.
- **Indiana, Pennsylvania** and **Texas** laws authorizing the use of innovative rate adjustment mechanisms to allow more timely cost recovery for eligible distribution investments between general rate cases.

Even in the absence of authority to levy financial penalties, state commissions have authority to determine whether and to what extent utilities may recover storm-related costs from ratepayers, determine the value of rate base, and set an allowed return on capital investments in storm hardening, reliability improvements, and other infrastructure projects. Some commissions have considered utility preparedness and performance in major storms in making such determinations. In determining cost recovery, regulators look to whether costs were prudently incurred and are reasonable in accord with the statutory and regulatory frameworks of each state.

3.3 After Action Reviews: Mixed Results

State public utility commission oversight will continue to be a critical part of initiatives on storm hardening and resiliency. As part of this oversight, regulators conduct post-storm audits—on their own motion or in response to complaints—that often result in new requirements for utilities.

Several investigations that reviewed utility response to Sandy, including proceedings in Connecticut, New York and Pennsylvania, had mixed results. (More details can be found in the state sections below and [Appendix A](#).)

- **Connecticut:** The Public Utilities Regulatory Authority found utilities performed in a “generally acceptable manner” in response to Sandy but also ordered certain improvements, e.g., in training and communications.
- **New York:** A report by the governor-appointed Moreland Commission found utilities unprepared to manage the perceived growing threat from major storms and recommended many changes to state and utility policies.
- **Pennsylvania:** The Public Utility Commission issued a report that was positive about utility response to Sandy and made recommendations for further improvements, e.g., in communications.

3.4 Distribution Reliability Improvements

Many states have taken steps to improve general distribution reliability to prevent or mitigate outages regardless of cause. Distribution reliability measures can include infrastructure inspection and maintenance, vegetation management, and other programs as discussed in Chapter 1 of this report. While the Federal Energy Regulatory Commission (FERC) regulates transmission power lines, including reliability standards that apply to transmission, it is up to state regulators to set vegetation management and other reliability standards for distribution facilities in their states.

Many regulators believe vegetation management and infrastructure inspection are key to improved reliability based on evidence that trees constitute the main cause of storm-related outages in most states. The **Missouri** Public Service Commission pointed to improved reliability as a result of new rules for enhanced vegetation management. In addition to Missouri, states that have directed improvements and/or authorized increased funding for vegetation management include **California, Connecticut, Maryland, Massachusetts, New Hampshire, North Carolina, Oklahoma** and **West Virginia**. (See [Appendix A](#).)

Other programs encompassing distribution reliability improvement such as infrastructure upgrades have been approved in states such as **California, New Hampshire** and **North Dakota**. (See [Appendix A](#).)

3.5 The Roles of Distributed Energy Resources and Smart Grid

The roles of smart grid technologies and distributed generation (DG) in grid resiliency and their interdependence with measures to protect critical infrastructure are the focus of heightened policy and regulatory discussion.

For example, Massachusetts is acting on a stakeholder grid modernization report urging regulators to provide guidelines to utilities to invest in grid modernization to improve system reliability and resiliency. The report linked distributed generation, grid modernization and grid resiliency, including recommendations for measures that improve a utility’s ability to reduce the impact of outages. Measures including hardening, distributed generation and storage, aging infrastructure replacement and vegetation management.¹⁷

Connecticut, New York and **New Jersey** are examples of other states embracing development of microgrids, expanding distributed generation, and/or stepping up grid modernization with smart grid technologies. (See state highlights below and [Appendix A](#)).

¹⁷ Massachusetts Electric Grid Modernization Stakeholder Working Group Process: Report to the Department of Public Utilities from the Steering Committee (July 2, 2013), Final Report; Massachusetts DPU Case No. 12-76-A (December 23, 2013), order presenting straw proposal for grid modernization.

3.6 Rate Impact Mitigation

Even as many state regulatory commissions are taking a more proactive stance to address storm hardening and resiliency and/or general distribution reliability, they are recognizing that customers have become increasingly resistant to rate increases. State regulators generally are expected to continue seeking to avert or mitigate the impact of rate increases as many utility customers continue to struggle financially in the current economic climate. Pressure to keep rates from increasing comes despite the wide recognition that infrastructure is aging and must be replaced, and that new infrastructure may be needed to better respond to increasingly severe and unpredictable weather events.

Although potential rate impacts are uppermost in the minds of many regulators and policymakers, rate case filings have significantly increased in recent years to reflect needed infrastructure investment and other reliability measures undertaken by utilities on their own initiative to maintain and improve electric service or in response to mandates such as storm hardening requirements in **Florida** and **Texas**. In addition, storms feature prominently in many recent rate case filings.¹⁸ This trend has continued post-Sandy.

3.7 State Highlights: AR, CA, CT, DC, FL, IL, IN, LA, MD, MA, MS, NJ, NY, NC, OH, PA

Arkansas

Securitization of Storm Costs: In March 2009, the Arkansas legislature passed Act 729, the Electric Utility Storm Securitization Recovery Act of 2009,¹⁹ in response to a January 2009 ice storm which caused hundreds of millions of dollars of damage to Arkansas utilities. Unlike some other states, under Act 729 utilities would issue storm bonds themselves, but could not be considered by the Arkansas Public Service Commission (PSC) to be debt of the utility other than for tax purposes. By the same token, revenues collected to repay the bonds could not be considered utility revenue. Act 729 included a requirement that in Financing Orders to be issued by the PSC under the statute, provisions would be made for costs to be recovered using a formula-based mechanism for making expeditious periodic adjustments in the storm recovery charges that customers are required to pay and for making any adjustments that are necessary to correct for any projected over-collection or under-collection of the charges. In its request to recover costs from the January 2009 ice storm, Entergy Arkansas availed itself of the securitization provisions of Act 729 and received approval from the PSC to recover the costs of securitized bonds through a non-bypassable rider on utility bills. The PSC also allowed the company to recover carrying costs during the time between when the costs were incurred and when the bonds securitized.

Storm Reserve Accounting: In a rate case that was filed in 2006, Entergy Arkansas attempted to establish a storm reserve account and to increase rates to begin building up that account. The company noted that the commission had previously approved reserve accounting for storm damage. However, in a decision in June 2007, the PSC rejected the company's request to establish a storm reserve account, stating that it amounted to retroactive and single issue ratemaking, contrary to PSC rules.²⁰ Following the January 2009 ice storm, concerned about the financial impact on the company of not being able to defer \$80-\$100 million in new costs, Entergy Arkansas sought the PSC's permission to defer the expense portion of the storm restoration costs pursuant to accounting standards, thereby removing the expense from the income statement and avoiding the reporting of a financial loss in the first quarter earnings report. The commission approved Entergy's request.²¹

¹⁸ Rate Case Summary, Q4 2011 Financial Update, prepared by Edison Electric Institute

¹⁹ Arkansas Code Annotated 5 23-18-901.

²⁰ Arkansas PSC Docket No. 06-101-U, Order No. 10 (June 15, 2007).

²¹ Arkansas PSC Docket No. 09-018-U (March 6, 2009).

Meanwhile, in 2009 the Arkansas legislature passed a bill specifically allowing Arkansas utilities to use storm reserve accounting.²² Entergy Arkansas made another filing after this bill was enacted to establish a storm reserve account, which was approved by the PSC in April 2010.²³

California

Storm Investigations: In December 2011 a windstorm in Southern California caused widespread outages and sparked criticism by local governments regarding pre-emergency planning and coordination. The California Public Utilities Commission (PUC) launched an investigation that resulted in a preliminary report that cited pole failure and flaws in emergency planning among other findings.²⁴ The windstorm also gave rise to legislation (AB 1650) that was signed into law in September 2012. The law requires the PUC to establish standards for disaster and emergency preparedness plans within an existing proceeding. The law also requires electric utilities to develop, adopt, and update an emergency and disaster preparedness plan every two years. Cities and counties must participate in the development such plans.²⁵

Distribution Reliability: The PUC in June 2010 adopted with modifications Pacific Gas and Electric's proposed Cornerstone program aimed at improving distribution system resiliency and reliability to provide customer benefits such as reduced frequency and duration of outages. Cornerstone capital costs and expenses are being recovered through a balancing account outside of general rate cases and are trued-up annually to reconcile actual with forecasted costs.²⁶

System Hardening and Cost Recovery Related to Wildfires: Effects of wildfires increasingly are being treated at local, state and national levels in a manner similar to treatment of disasters such as hurricanes and tornadoes, including funding assistance. The CPUC in 2009 undertook a broad review of fire hazards following a series of destructive wildfires in 2007 that the commission thought linked to electric and communications facilities. The commission concluded three phases of the proceeding with decisions that first focused on preparations for the autumn 2009 fire season, then revised rules to improve vegetation management practices, avoid pole failure and improve fire planning, and finally revised rules to incorporate use of modern materials and technologies such as smart grid as well as design and construction practices.²⁷ New tools were provided, such as giving utilities the ability to address situations where property owners seek to block access to their sites for tree trimming. Under the rules, utilities have authority to turn off power to such properties, subject to specified conditions.

Recovery of costs related to utility wildfire response that exceed insurance proceeds has been a controversial issue in the state. The PUC in late 2012 issued a final decision denying utility applications for recovery of uninsured expenses related to a series of 2007 wildfires through a separate, dedicated balancing account outside of a rate case.²⁸ The commission was concerned that the applications by an electric utility and a gas utility did not adequately address the possibility that limitless potential for ratepayers to fund third-party claims, including fire suppression and environmental damage, could invite a host of claims by others such as

²² Act 434 of 2009, "An Act to Require the Arkansas Public Service Commission to Permit Storm Cost Reserve Accounting for Electric Public Utilities When Requested; and for Other Purposes."

²³ Arkansas PSC Docket No. 09-031-U (April 16, 2010).

²⁴ *Investigation of Southern California Edison Company's Outages of November 30 and December 1, 2011*, Preliminary Report (February 1, 2012) prepared by California PUC Consumer Protection and Safety Division.

²⁵ AB 1650, enacted September 23, 2012,

http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_1601-1650/ab_1650_bill_20120923_chaptered.pdf

²⁶ California PUC Application 08-05-023 (June 24, 2010).

²⁷ California PUC Rulemaking 08-11-005 (August 20, 2009; January 12, 2012; February 5, 2014).

²⁸ California PUC Proceeding for Application 09-08-020, *Decision Denying Application* (December 20, 2012).

government entities. The commission also cited concern about the need to ensure that utilities are incentivized to defend against third-party claims and manage risk appropriately.

Grid Modernization: California also has been in the forefront of grid modernization efforts with approvals in recent years of smart grid-related programs for all three major investor-owned utilities in the state. Pacific Gas and Electric in its required annual update to the PUC detailed continued progress toward enhancing the reliability of its transmission and distribution systems. Activities include widespread deployment of smart meters, which have enabled implementation of an outage management integration project to better detect outage areas and “ping” individual meters to determine whether service has been restored. The result has been quicker and more accurate service restoration, the utility reported. San Diego Gas & Electric and Southern California Edison in their 2013 annual reports in the same proceeding highlighted similar developments.²⁹ In its 2013 annual report to the governor and legislature, the CPUC cited improved system resiliency and other benefits from smart grid investments.³⁰

Connecticut

Distribution reliability: In the wake of Tropical Storm Irene and an October 2011 snowstorm that caused widespread outages, Connecticut in June 2012 enacted SB 23, An Act Enhancing Emergency Preparedness and Response.³¹ The law requires the Public Utilities Regulatory Authority (PURA) to review the performance of utilities when more than 10 percent of its customers are without service for more than 48 consecutive hours. Utilities must file an emergency plan every two years. The law also established a pilot program to provide up to \$15 million in grants and loans for the development of microgrid infrastructure that supports 65 MW of onsite generation at critical facilities. The law also required PURA to establish emergency performance standards and to allow utilities to recover reasonable costs incurred for maintaining or improving infrastructure resiliency pursuant to their approved emergency plans. The PURA implemented performance standards in November 2012.³² In other related action, the PURA conditioned its approval in April 2012 of a merger of Northeast Utilities and NSTAR with requirements related to distribution reliability, including a directive to spend an incremental \$300 million on system resiliency and to develop microgrid infrastructure in collaboration with the state.³³

Distributed Energy Resources: The Act directed establishment of a first-of-its-kind statewide pilot program for the development of microgrid infrastructure to help protect critical facilities and increase the safety and quality of life of citizens during outages. A first round of the program, which is administered by the Department of Energy and Environmental Protection, awarded a total \$18 million to nine projects, which are expected to become operational within 18 months of the July 2013 announcement. A second round was announced a few months later by the governor in which \$15 million will be awarded. Selection is expected to be announced in September 2014.

Refrigerated Spoilage Loss: Another investigation directed by the Act resulted in a PURA report to the legislature describing a potential program to compensate customers for spoilage of refrigerated food and medications due to a verified outage. Ratepayers would fund the program through the existing systems benefit charge. The program would reflect a departure from traditional utility liability rules and an extra ratepayer expense, PURA found. Such a program would require legislation and “create a risk of some

²⁹ California PUC Rulemaking 08-12-009: annual reports filed by Pacific Gas and Electric, San Diego Gas & Electric and Southern California Edison (October 1, 2013).

³⁰ *Report to the Governor and the Legislature: California Smart Grid – 2012*, California PUC (May 2013).

³¹ Public Act 12-148.

³² Connecticut PURA Docket No. 12-06-09 (November 1, 2012).

³³ Connecticut PURA Docket No. 12-01-07 (April 2, 2012).

unknown magnitude that reimbursement payments will change the role of the [electric distribution companies] to customers. That change will create a precedent that will affect future regulatory and public policy decisions,” PURA said in its decision.³⁴ Citing a National Regulatory Research Institute report, PURA said only five other states have similar reimbursement programs: **California, Illinois, Michigan, Minnesota and New York.**³⁵

Storm Investigations: A panel convened by the governor to evaluate the state’s response to Tropical Storm Irene and the October 2011 snowstorm issued its report (“Two Storm Report”) in January 2012.³⁶ The report included 82 recommendations, many of which addressed areas affecting electric utilities, including tree trimming, storm hardening and communication issues. The PURA later investigated the performance of utilities in preparing and responding to Sandy, finding that utilities performed “in a generally acceptable manner.” The PURA also recommended areas for additional improvement, including communications and estimated restoration times.³⁷

Vegetation Management: The Two Storm Report found that Connecticut has one of the densest tree canopies in the country and that fallen trees and limbs caused most of the downed wires during Irene. A PURA investigation of tree trimming practices is currently under way in response to the governor’s directives. In a draft decision, PURA said utilities already are implementing most recommendations and requirements to make their infrastructure more resilient to storm damage and to promote shorter restoration time following outages from major storms.³⁸ Electric utilities have approved vegetation management plans with significantly increased budgets over the next five to eight years. The current PURA investigation is aimed at reviewing and clarifying the practices, procedures and requirements for utility vegetation management to comply with the Governor’s directives and legislative mandates. The PURA was set to hold a technical meeting and hear public comments in March 2014 before rendering a final decision.

District of Columbia

Reliability Regulations: In July 2012, the District of Columbia Public Service Commission (PSC) formally adopted comprehensive reliability standards related to major outages.³⁹ The regulations include requiring electric utilities to develop and implement plans to improve the performance of low performing feeders, and to develop a Major Service Outage Restoration Plan detailing internal and external communication policies concerning outage notifications; utility early storm detection and tracking efforts; staffing, materials and logistical information; and lists of restoration priorities.

Undergrounding: In the District of Columbia, the undergrounding of electric distribution lines has been a hot topic due to the reliability concerns related to major storm outages. In 2009, the PSC engaged a consulting firm, Shaw Consultants International, Inc., to conduct an independent study of the economic and technical feasibility and reliability implications of undergrounding electric distribution lines in the District of Columbia. The firm released its study in July 2010 making several recommendations to the PSC including the continued use of undergrounding when new residential developments are introduced; not undergrounding all existing circuits and selective undergrounding in specific situations where undergrounding can be

³⁴ Connecticut PURA Docket No.12-06-12 (January 8, 2013).

³⁵ *Should Public Utilities Compensate Customers for Service Interruptions?* Ken Costello, Principal Researcher, National Regulatory Research Institute, Report No. 12-08 (July 2012).

³⁶ *Report of the Two Storm Panel* (January 9, 2012) presented to Governor Dannel P. Malloy.

³⁷ Connecticut PURA Docket No. 12-11-07 (November 16, 2012).

³⁸ Connecticut PURA Docket No. 12-01-10, draft decision (November 19, 2013).

³⁹ *D.C. Mun. Regs.*, Title 15, § 3603 (2012).

bundled with infrastructure investments, such as road expansion efforts, and large scale water and sewer replacement.⁴⁰

A public-private partnership between D.C. and Pepco was subsequently announced in May 2013. The partnership plans to implement a \$1 billion program to strategically underground feeders that are particularly susceptible to storms. Enabling legislation was needed for the financing, and in February 2014 the D.C. Council passed a bill authorizing the district to issue revenue bonds to finance part of the project.⁴¹ The remainder would be financed through a surcharge mechanism also authorized by the bill.

Florida

Storm Hardening and Resiliency: Florida is probably unique in that it has adopted the most comprehensive program to date for hardening existing (and future) infrastructure to reduce damage from future storms. Florida has utilized a multifaceted approach that includes the development of new rules and regulations regarding vegetation management and other hardening activities, the development of overhead and underground construction standards, requirements for the filing of utility plans—including cost estimates—for hardening options, and required investments by utilities with predetermined cost recovery, subject to a prudence review. The Florida Public Service Commission (PSC) has also encouraged the filing of tariffs that reduce the costs of undergrounding to customers. The Florida effort also has included the initiation of several research programs at Florida universities to look at new methods to reduce storm damage costs and methods to assess the costs and benefits of various measures.

The Florida initiatives began in early 2006, when the legislature enacted a statute⁴² that among other provisions, required the PSC to determine what should be done to increase the reliability of the state's transmission and distribution systems during extreme weather events. The state's legislative action came in response to a series of devastating hurricanes (Dennis, Katrina, Wilma and Rita) in 2005 and 2004 (Charley, Frances, Ivan and Jeanne). The legislature requested recommendations from the PSC in the following areas:

- Encouraging underground electric distribution for new utility service or construction
- Encouraging the conversion of existing overhead distribution facilities to underground facilities, including any incentives for local-government-sponsored conversions
- Utility participation in local-government-sponsored conversion costs as an investment in grid reliability, with such investment recognized as a new plant in service for regulatory purposes
- Encouraging the use of road rights-of-way for the location of underground facilities in any local-government-sponsored conversion project, provided the customers of the public utility do not incur increased liability and future relocation costs.

The PSC initiated its efforts in January 2006 with a workshop on lessons learned from the hurricane seasons of 2004 and 2005. The commission then decided on its multifaceted, multiyear approach to investigate actions needed to harden systems and reduce the amount of future storm damage, including:

- Annual hurricane preparedness briefings by Florida utilities
- A formal electric utility pole inspection program

⁴⁰ *Study of the Feasibility and Reliability of Undergrounding Electric Distribution Lines in the District of Columbia* (July 1, 2010) prepared by Shaw Consultants International, Inc. submitted to the District of Columbia PSC pursuant to Formal Case No. 1026.

⁴¹ The Electric Company Infrastructure Improvement Financing Act of 2013, Bill No. 20-0387.

⁴² Chapter 2006-230, Sections 19(2) and (3), Laws of Florida.

- An annual assessment of comprehensive reliability reports by the electric utilities
- Ten storm-hardening initiatives that include Florida specific research
- University research on the measurement and effects of storm wind speeds on infrastructure
- University research on best practices for vegetation management
- Development of rules governing utility storm restoration costs
- A rulemaking regarding overhead and underground storm hardening construction standards
- A rulemaking to expand the calculation of contribution-in-aid-of-construction (CIAC) for new underground facilities and conversion of existing overhead facilities to underground to reflect the cost impacts of storm hardening and storm restoration
- Tariffs promoting underground electric distribution facilities
- University research to develop cost benefit methodologies to identify areas and circumstances to facilitate the conversion of overhead distribution facilities to underground facilities

The first related PSC rulemaking dealt with an inspection program for wood poles, requiring an eight-year mandatory wooden pole inspection program, including reporting, for all investor-owned electric utilities and local exchange telephone companies.⁴³ The commission next adopted a set of rules strengthening reporting requirements.⁴⁴ Prior reporting requirements allowed for the exclusion of reliability data that is typically related to power outages that were viewed as being outside the utility's control. Thus, absent the rule change, the reports provided no insight into storm-related impacts on reliable electric service in Florida. The rule changes also specifically require the utilities to retain records and data supporting annual reports.

In another proceeding the commission required utilities to file storm hardening plans and estimated implementation costs by June 1, 2006.⁴⁵ The following components were to be considered:

- Three-year vegetation management cycle for distribution circuits
- Audit of joint-use attachment agreements
- Six-year transmission structure inspection program
- Hardening of existing transmission structures
- Transmission and distribution geographic information system
- Post-storm data collection and forensic analysis
- Collection of detailed outage data differentiating between the reliability performance of overhead and underground systems
- Increased utility coordination with local governments
- Collaborative research on effects of hurricane winds and storm surge
- Natural disaster preparedness and recovery program

The commission approved most aspects of the utility storm preparedness initiative plans but required revisions in some areas.⁴⁶ The commission also required the companies to file updates to their storm

⁴³ Florida PSC Docket No. 060078-EI (February 27, 2006).

⁴⁴ Florida PSC Docket No. 060243-EI (July 31, 2006).

⁴⁵ Florida PSC Docket No. 060198-EI (April 4, 2006).

hardening plans by March 1, 2007. The commission did not address cost recovery for the approved initiatives, leaving those issues for the utility rate cases or other actions.

The overall effort by the commission also initiated several research programs by Florida universities on issues such as how to measure the costs and benefits of storm hardening activities, measuring the effects of storms on infrastructure, and best practices for vegetation management. In reviewing the utility storm hardening plans, the commission noted that the utilities were not, but needed to be, involved with these research programs. The effort to date has resulted in the publication of several research studies that have been made available on the PSC's web site.⁴⁷

In a final rulemaking initiated in 2006, the commission issued a series of rules and requirements for storm hardening⁴⁸. First, utilities were to file within 90 days a detailed storm hardening plan (different from the "storm response initiatives plan" requirements discussed above), containing a detailed description of the construction standards, policies, practices, and procedures employed to enhance the reliability of overhead and underground electrical transmission and distribution facilities. Such standards, practices and policies were to be in conformance with the provisions of the rule. Each utility storm hardening plan needed to explain the systematic approach the utility will follow to achieve the desired objectives of enhancing reliability and reducing restoration costs and outage times associated with extreme weather events. The hardening plan was also to include pole attachment standards. The PSC held public workshops on the plans filed by utilities in October 2007, and ultimately approved those plans.

The PSC summarized all these activities pursuant to the Florida statute in a required report to the legislature and governor submitted July 2, 2007.⁴⁹ In February 2008 an addendum to that report was issued⁵⁰ and in July 2008, an update to the 2007 report was provided to the legislature and the governor.⁵¹ These reports reflect the comprehensive and detailed nature of the commission's and the Florida utilities' efforts to improve the ability of the state's transmission and distribution infrastructure to withstand the large number of severe storms faced by the state.

The commission has continued to approve utility storm updates filed every year, finding that they are largely continuations of previously approved plans. The PSC also has noted the unavailability of data to evaluate the effects of the plans because of the dearth of named storms that have affected the state in more recent years.

Securitization of Storm Costs: Following the tremendous damage caused by the 2004 hurricanes, the Florida legislature in early 2005 enacted a statute giving utilities the ability to recover their storm damage costs and replenish storm reserve accounts by selling securitized bonds.⁵² Before bonds were issued to cover the 2004 costs, the utilities suffered additional damage from the 2005 hurricanes. With respect to Florida Power &

⁴⁶ Florida PSC Docket No. 060198-EI (September 19, 2006).

⁴⁷ <http://www.psc.state.fl.us/utilities/electricgas/eiproject/index.aspx>

⁴⁸ Florida PSC Docket Nos. 060172-EU and 060173-EU (January 17, 2007).

⁴⁹ *Report to the Legislature on Enhancing the Reliability of Florida's Distribution and Transmission Grids During Extreme Weather* (July 2007) prepared by the Florida Public Service Commission and submitted to the Governor and Legislature to fulfill the requirements of Chapter 2006-230, Sections 19(2) and (3), at 2615, Laws of Florida, enacted by the 2006 Florida Legislature (Senate Bill 888).

⁵⁰ *Addendum to the July 2007 Report to the Legislature On Enhancing the Reliability of Florida's Distribution and Transmission Grids During Extreme Weather*; Summary of Commission Actions; May 1, 2007 - December 15, 2007 (<http://www.psc.state.fl.us/utilities/electricgas/eiproject/docs/SHaddendum.pdf>)

⁵¹ *Report to the Legislature on Enhancing the Reliability of Florida's Distribution and Transmission Grids During Extreme Weather* (July 2008) submitted by the Florida Public Service Commission to the governor and legislature.

⁵² Title XXVII, Section 366.8260, Florida Statutes.

Light in particular, the PSC approved issuance of up to \$708 million in storm-recovery bonds, provided the initial average retail cents per kWh for the storm recovery charge would not exceed the average retail cents per kWh for the 2004 storm surcharge that was currently in effect.⁵³

Storm Reserve Accounting: In 2007, the PSC issued an Order allowing utilities to establish storm reserve accounts and capitalize the costs of storm recovery to that account.⁵⁴ It is the utility's option whether to expense storm recovery costs or credit them to a storm reserve account. A utility may petition the commission for the recovery of a debit balance in reserve account plus an amount to replenish the storm reserve through a surcharge, securitization, or other cost recovery mechanism. If a utility seeks a change to either the target accumulated balance or the annual accrual amount for the storm reserve, it must file a study with the commission.

Following approval of its storm hardening plan, Progress Energy Florida requested that it be allowed to recover approved storm hardening costs through its storm reserve account. The PSC denied the request,⁵⁵ saying it did not meet the purposes specified for storm damage reserve accounts under Florida's rules. In a separate proceeding, the PSC established a uniform procedure by which investor-owned electric utilities were to calculate amounts due as CIAC from customers who request new facilities or upgraded facilities in order to receive electric service.⁵⁶

Illinois

Infrastructure Investment: Illinois in 2012 enacted the Energy Infrastructure Modernization Act (EIMA), a law authorizing and incentivizing investment in upgrades and modernization of the electric grid to provide consumer benefits such as reduced duration of frequency of service outages, improved overall service reliability, and improved power restoration following storms.⁵⁷ Under the law, participating utilities may use performance-based formula rates and in return are required to make investments in transmission and distribution systems, including smart grid systems, over 10 years as follows: Commonwealth Edison must invest \$2.6 billion and Ameren Illinois must invest \$625 million. Electric system upgrades include storm hardening, underground residential distribution cable injection and replacement, and wood pole inspection and replacement. Smart grid investment includes distribution automation, substation microprocessor relay upgrades, and smart meters and related data communications network.

The law sets reliability, customer benefit and vendor diversity metrics. Utilities must file annual work plans and undergo annual rate reviews. The law specifies a formula for calculating ROE in the annual rate reviews and requires adjustments if earned ROE falls outside a 100-basis-point deadband around the authorized ROE. The program terminates in 2014 if the total residential bill increases by more than 2.5 percent per year. The program also may terminate in 2017 if additional spending cannot be justified, and it automatically sunsets in 2022. A "trailer bill," HB 3036, also was enacted that refines the EIMA program, including redirecting of \$200 million toward targeted infrastructure investments including undergrounding, storm hardening and other measures.⁵⁸

In 2013, S.B. 9 was enacted to further clarify EIMA provisions by specifying that in rate reconciliations in formula rate plan proceedings, the ICC must use terminal, or year-end, rate base values, year-end capital

⁵³ Florida PSC Docket No. 060038-EI (May 30, 2006).

⁵⁴ Florida PSC Docket No. 070011-EI (May 23, 2007).

⁵⁵ Florida PSC Docket No. 090145-EI (July 6, 2009).

⁵⁶ Florida PSC Docket Nos. 060172-EU and 060173-EU (January 17, 2007).

⁵⁷ SB 1652 (Public Act 97-0616), Energy Infrastructure Modernization Act, enacted October 31, 2011

⁵⁸ HB 3036 (Public Act 97-0646), enacted December 30, 2011

structures, and weighted average cost of capital.⁵⁹ Enactment occurred via legislative override of a veto by Governor Pat Quinn, who viewed the measure as a circumvention of longstanding regulatory precedent.

Formula Rate Plans: The Illinois Commerce Commission's (ICC) application of EIMA in decisions on initial formula rate plans prior to passage of S.B. 9 left both filing utilities, Commonwealth Edison and Ameren Illinois, with lower revenue prospects than anticipated.⁶⁰ This result led to a scaling back of the utilities' investment plans under EIMA. The cases highlighted the importance of methodologies for calculating rate base, capital structure, and interest for purposes of reconciliation adjustments in formula rate plans. The treatment specified by S.B. 9 is intended to better reflect the value of infrastructure investments than the treatment previously used by the ICC, which applied average rate base value, average capital structure, and inclusion only of debt return for reconciliation adjustments.

Following enactment of S.B. 9, the ICC issued a decision in Commonwealth Edison's general distribution rate case in late 2013 that approved use of year-end rate base treatment and capital structure and weighted average cost of capital as interest for purposes of reconciliation adjustments.⁶¹ The provisions of S.B. apply not only to future rate reconciliations under formula rate plans but also to past reconciliation proceedings. The ICC accordingly adjusted, in June 2013, a previous decision for Commonwealth Edison that resulted in a lower revenue requirement. Ameren had not yet gone through a reconciliation by the time of passage.

Refrigerated Spoilage Loss: For the first time under a 15-year-old statute,⁶² the ICC found that a utility, Commonwealth Edison, may be liable for damages such as food spoilage and other economic losses experienced by customers in relation to one of a series of storms in summer 2011. In other similar cases, the ICC has consistently waived utility liability for such damage, typically on the basis of findings that damage was unpreventable due to severity of weather. After being denied rehearing, Commonwealth Edison filed a compliance report with confidential information on customers or areas that could be entitled to compensation.

Indiana

Infrastructure Investment: In April 2013, Indiana joined the ranks of states such as **Pennsylvania** and **Texas** that allow distribution infrastructure investment riders for cost recovery for such projects outside of general rate cases. S.B. 560 was enacted to encourage transmission, distribution and energy storage infrastructure investment by utilities, including projects to improve safety and reliability and modernize the grid.⁶³ The law allows utilities to implement a transmission, distribution, and storage system improvement rider (TDSIC), conditioned on approval by the Indiana Utility Regulatory Commission (URC) of an accompanying seven-year project plan, which is subject to hearings and public comment. The TDSIC can be used to recover no more than 80 percent of capital expenditures related to the plan; 20 percent must be deferred until the next rate case. Utilities with approved TDSIC riders must file a base rate case every seven years. The URC approved the first electric utility TDSIC mechanism for Northern Indiana Public Service in February 2014.⁶⁴

The law also established shorter timeline (300 days) for general rate cases and included other provisions to reduce regulatory lag. The law allows utilities to use a historic test year, forward test year, or hybrid test year

⁵⁹ Public Act 098-0015

⁶⁰ ICC, Commonwealth Edison Docket No. 11-0721 (May 29, 2012, rehearing, October 3, 2012); Ameren Docket No. 12-0001 (September 19, 2012).

⁶¹ ICC, Commonwealth Edison Docket No. 13-0318 (December 18, 2013).

⁶² Public Utilities Act, Section 16-125(e).

⁶³ Public Law 133

⁶⁴ URC Docket Nos. 44370 and 44371 (February 17, 2014).

in general rate cases. Under specified circumstances, utilities also may implement interim rate increases to facilitate cost recovery before a final decision is rendered in a rate case.

Storm Reserve Accounting: The URC approved a major storm damage restoration reserve for Indiana Michigan Power. While it reduced the base amount, it allowed IMP to use a tracking mechanism to record variations in O&M expenses from the base amount as a regulatory asset or liability, to be recovered from or refunded to ratepayers in a future rate case. In its decision, the URC said that in the past it has allowed a utility to seek recovery of extraordinary storm restoration costs through a separate proceeding, but only when the related storm was a worst-case scenario. The commission found, however, that these stand-alone cases are often heavily litigated and highly contentious. The approved tracking mechanism will serve to “smooth out the impacts of major storms, thereby mitigating the financial consequences of a major storm,” the commission said.

Louisiana

Securitization of Storm Costs: There have been two bills passed by the Louisiana legislature that deal with securitization of utility storm damage costs, both of which resulted from the unprecedented damage caused to the Gulf Coast by Hurricanes Katrina and Rita. A 2006 Louisiana statute authorizing securitization of storm recovery costs, referred to as Act 64, required the companies to establish “special purpose entities” to sell securitization bonds. The Act simply stated that the Louisiana PSC must judge proposed bond issuances on the basis of whether it would result in lower overall costs or would mitigate the impact of storm recovery costs on customers. Rather than institute a separate surcharge for storm recovery, the statute provides that the utility recover its costs of the bonds in general rates. This statute also made clear that the bonds were not backed by the state of Louisiana.

Entergy Louisiana and Entergy Gulf States Louisiana applied for a financing order shortly after passage of the new statute to securitize its costs from Hurricanes Katrina and Rita. (The companies had already received permission to recover the unreimbursed costs in rates.) They received Commission approval,⁶⁵ but after over two years were unable to securitize storm costs at what the PSC considered to be favorable rates terms and conditions. Among the possible reasons cited were lack of transparency and the fact that Act 64 did not rely on a separate surcharge or rider for cost recovery, and the state of the securities markets at the time.⁶⁶ In 2007, the legislature passed a new law, Act 55, which established the Louisiana Utilities Restoration Corporation to serve as a co-applicant with the utility companies in requesting the sale of bonds for storm recovery by the Louisiana Public Facilities Authority. By establishing the Louisiana Utilities Restoration Corporation, and having the bonds issued by a state authority, the companies were able to successfully sell securitized bonds for storm cost recovery, and at a lower cost to consumers than was possible under Act 64. Act 55 was used again in 2010 to recover damage costs from Hurricanes Ike and Gustav through the sale of securitized bonds. In this case, the PSC established a rider for the collection of funds from customers to repay the bonds.⁶⁷

Storm Cost Recovery by Formula Rate: In 2009, Entergy New Orleans, which is regulated by the City Council of New Orleans Utilities Committee, requested and received approval to implement formula rates which included the recovery of costs due to storm damage, for a three-year period beginning in 2010.⁶⁸ The

⁶⁵ Louisiana PSC Docket Nos. U-29203- B, - C and -D (August 15, 2007).

⁶⁶ *February 2008 Cumulative Update – Critical Electric Power Infrastructure and Reconstruction: New Policy Initiatives in Four Gulf Coast States After 2005’s Catastrophic Hurricanes*, prepared by George Mason University School of Law, Critical Infrastructure Protection Program, p. 27.

⁶⁷ Louisiana PSC Docket Nos. U-30981 and U-309812 –A, -B and –C (April 21, 2010).

⁶⁸ New Orleans City Council Resolution R-09-136 (April 2, 2009).

formula rates include a rider that collects both for the costs of storm damage and replenishes the company's storm reserve fund.

Storm Investigations: Following Hurricanes Katrina and Rita, the PSC initiated an investigation into the appropriate level of cost recovery for Entergy Louisiana and Entergy Gulf States. Recognizing the catastrophic nature of the storm and the financial position that storm recovery expenditures was placing the companies in, the commission approved interim cost recovery in March 2006 and allowed the company to recover additional forecasted expenses through September of that year.⁶⁹ Recovery amounts were to be recovered as an extraordinary cost surcharge which would end when the full amount was collected. The PSC also ordered that after an investigation of the companies' full costs, it would develop a revenue requirement, to be added to rates, for permanent storm recovery.

In an order issued in August 2007, the PSC approved the level of permanent cost recovery for storm damage from Rita and Katrina at \$187 million for Entergy Gulf States and \$545 million for Entergy Louisiana.⁷⁰ Both companies were ordered to establish storm reserve accounts to cover costs of future storms. The PSC requested that the companies seek financing orders to securitize unreimbursed costs from storm damage.

Maryland

Storm Investigations: Maryland has been active in investigating and regulating the actions of investor-owned electric utilities in preparing for and responding to major storms. For example, in February 2011, the Maryland PSC initiated a proceeding to investigate whether the decoupling mechanisms approved for Maryland investor-owned-utilities inadvertently eliminated the incentive for the companies to quickly restore lost service to customers by authorizing the recovery of revenues foregone during extended outages, and if so, whether the decoupling mechanisms should be modified to prevent that outcome. In response to this investigation, the commission issued an order finding that the decoupling mechanisms as currently designed do not appropriately align company financial incentives with reliability goals, and therefore, the commission will require the modification of the decoupling mechanism to prevent collection of decoupling revenue if service is not restored to pre-major storm levels within 24 hours of the commencement of a Major Storm.⁷¹ In October 2012, the commission reaffirmed the January 2012 order and extended the prohibition on collecting decoupling revenue during the first 24 hours of a major outage.⁷²

The PSC more recently investigated utility response to the derecho storm of June 29, 2012 and found that the grid is not resilient enough to withstand unscathed a storm the magnitude of the derecho. The commission also found a "disconnect" between the public's expectations for distribution system reliability and the ability of the system to meet those expectations, and it directed utilities to take various steps, including development of shorter term as well as long-term plans to improve reliability. The PSC did not, however, find cause for civil penalties or further action.⁷³

The PSC directive built on other work that arose out of an Executive Order⁷⁴ issued by Maryland Governor Martin O'Malley initiating a task force to solicit recommendations on how to improve the resiliency and reliability of the Maryland electric distribution system. This task force issued 11 recommendations

⁶⁹ Louisiana PSC Docket No. U-29203-A (March 3, 2006).

⁷⁰ Louisiana PSC Docket Nos. U-29203- B, - C and -D (August 15, 2007).

⁷¹ Maryland PSC Case No. 9257, *et al.* (January 25, 2012).

⁷² Maryland PSC Case No. 9257, *et al.* (October 26, 2012).

⁷³ Maryland PSC Case No. 9298 (July 26, 2012).

⁷⁴ Executive Order 01.01.2012.15 (July 25, 2012).

concerning how specific technology, infrastructure, regulatory, and process improvements can improve the resiliency of Maryland’s distribution grid, including allowing a tracker cost recovery mechanism for accelerated and incremental investments.⁷⁵

Reliability Regulations: In 2011, the Maryland Electricity Service Quality and Reliability Act was signed into law requiring the PSC to adopt regulations imposing service quality and reliability standards on electric utility companies, and raising the maximum penalty for failure to comply with the regulations from \$500 to \$25,000 per violation. Then, in April 2012, the PSC adopted the regulations implementing the service quality and reliability standards in Rule Making 43 (RM43). RM43 set minimum reliability metrics for each utility based on past performance, established a mandatory annual performance reporting system, set up a customer communication survey, and mandated vegetation management and periodic inspections. Also, under RM43, utilities are required to submit a major outage event report within three weeks of a major outage, as well as a restoration plan detailing the utilities’ response to a major event. Finally, RM43 provides the PSC the authority to enact civil penalties and disallow costs based on non-compliance with the regulations.

Cost Recovery: In recent rate proceedings the PSC has departed from precedent by allowing application of end-of-test year values to reliability capital investments and post-test year reliability spending adjustments of up to three months in rate cases. The commission also has conditionally approved a reliability spending surcharge for three utilities, known as a grid resiliency charge, which the governor’s task force said may be appropriate and that is linked to specific projects such as expansion of poorest performing feeders.⁷⁶ Use of these tools, which better reflect for ratemaking purposes the level of investment during the rate period, was approved in recognition of the need to make and accelerate incremental infrastructure investments for safety and reliability. However, the commission has continued to reject longer-term post-test year adjustments, including proposals related to RM43 compliance. The commission cited concern about the estimated nature of such adjustments, including the limited experience with implementation of RM43 so far.⁷⁷

Undergrounding: Maryland has required undergrounding of distribution lines in new commercial and industrial buildings and residential structures since August 1969.⁷⁸ In addition, the governor’s grid resiliency task force held a session focusing on undergrounding Maryland’s electricity distribution system. The discussion touched broadly on the economic feasibility of undergrounding, whether undergrounding truly increases reliability, and the effect of undergrounding on grid resiliency. While the task force issued no specific recommendations concerning undergrounding or other, the consensus among the roundtable participants was that while undergrounding can significantly reduce outages caused by falling vegetation and high winds, due to costs considerations, selective undergrounding is preferable to complete undergrounding of the electric distribution system. The PSC remains cautious about undergrounding, approving half of a utility-requested selective undergrounding project and requiring more detailed information for the approved components.⁷⁹

⁷⁵ *Weathering the Storm: Report of the Grid Resiliency Task Force* (September 24, 2012), delivered to the Office of Maryland Governor Martin O’Malley pursuant to Executive Order 01.01.2012.15, pp. 67-68.

⁷⁶ See, *Delmarva Power and Light*, Case No. 9317 (September 3, 2013); *Potomac Electric Power Company*, Case No. 9311 (July 12, 2013); and *Baltimore Gas and Electric*, Case No. 9326 (December 13, 2013).

⁷⁷ *Baltimore Gas and Electric*, Case No. 9299

⁷⁸ COMAR 20.85.01, and COMAR 20.85.03.

⁷⁹ *Baltimore Gas and Electric*, Case No. 9326 (December 13, 2013).

Massachusetts

Storm Response: Massachusetts in November 2009 enacted H 4329, a law that expands the authority of the Department of Public Utilities (DPU) to oversee utility storm restoration.⁸⁰ The DPU in April 2010 adopted regulations to implement the law. Under the law, the DPU set performance standards for emergency preparation and restoration of utility service and established financial penalties to be applied for failure to meet the standards. Penalties for failing to meet emergency response plans required of each utility range up to \$250,000 per day per incident, with the maximum penalty for a series of violations capped at \$20 million. Penalties may not be recovered from ratepayers and instead must be credited to ratepayers of the affected utility in a single billing period, although utilities may petition for a longer period if the credit exceeds \$10 million.

The law also authorizes the DPU to issue extraordinary temporary orders for utilities to expend funds and redeploy service to restore service, and it gives the state attorney general the power to appoint a temporary receiver for small utilities (fewer than 100,000 customers) based on a determination that the utility has materially violated DPU standards or on evidence that compliance will not be possible without a receivership. The law was enacted following an investigation by the DPU of a utility's performance in a 2008 ice storm that resulted in findings of shortcomings. Enactment came during a DPU investigation of the response of several utilities to Tropical Storm Irene and an October snowstorm in 2009. The results of the investigation of Irene and the 2009 storm were announced in December 2012 and included financial penalties.⁸¹

Another law, S 2143, was enacted in August 2012 to establish a Storm Trust Fund, funded by a charge assessed utilities by the DPU that is not recoverable from ratepayers. The funds are used by the DPU to conduct investigations of utility storm response.

Storm Reserve Accounting: Through rate settlements, the DPU has adopted storm funds for various electric distribution companies.⁸²

Distribution Reliability: The DPU in late 2012 began reviewing utility service quality (SQ) and SQ guidelines. The department recognized that the attorney general was developing recommendations, which were submitted into the docket. The AG cited concerns that included recent storms and outages, and infrastructure investments and related rate increases. The DPU has solicited input on metrics, benchmarks, offsets and penalty levels.

Distributed Energy Resources: As part of the SQ proceeding above, which is still underway, the DPU has sought input on the possibility of creating a clean energy performance metric. In another initiative, Governor Deval Patrick on January 14, 2014, announced a climate change preparedness plan that includes a \$40 million municipal resiliency grant program to be funded by utilities via alternative compliance payments under the state renewables standard. The governor said DPU will work with utilities to accelerate storm hardening and deploy microgrids and resiliency projects for transmission and distribution.

Grid Modernization: The DPU in October 2012 opened an investigation of policies relating to grid modernization, a topic the DPU said has received increased attention in recent years as a result of customer outages following several severe storms. In support of the inquiry, the DPU cited the storm response law

⁸⁰ St. 2009, c. 133; 220 CMR § 19

⁸¹ Massachusetts DPU Docket No. DPU 11-119 (December 11, 2012).

⁸² Massachusetts DPU, Western Massachusetts Electric Docket No. DPU 06-55 (2006); Boston Edison Company/Cambridge Electric Light Company/Commonwealth Electric/NSTAR Gas Docket No. DTE 05-85 (2005).

discussed above and another recently enacted law, S. 2395, An Act Relative to Competitively Priced Electricity in the Commonwealth.⁸³ The DPU in December 2013 presented a straw proposal for grid modernization following a publication earlier in the year of a working group report.⁸⁴ The DPU directed utilities to submit within six months 10-year strategic grid modernization plans that contain infrastructure and performance metrics toward meeting four broad objectives, including reduction of outage effects.⁸⁵

Mississippi

Rate Adjustment Mechanism: In 2007, the Mississippi PSC approved Rider Schedule SRC for Entergy Mississippi as a mechanism to recover securitized and other funds authorized by the PSC.⁸⁶ The rider was designed to be applied as a nonbypassable surcharge to all customers. It includes a formula-based mechanism to allow expeditious adjustments intended to correct over- or under-recovery of costs. A similar order was issued for Mississippi Power Company. In 2011, the PSC approved changes in the storm damage rider to reflect an increase in frequency and severity of storms.⁸⁷ Rider collections were increased to allow companies to recover their deficit in storm damage reserves that occurred due to Hurricanes Gustav and Ike in 2010, and additional storms of April 2008. The cap on the storm reserve fund was also increased.

Securitization of Storm Costs: In June 2006, the Mississippi PSC issued financing orders permitting both Mississippi Power and Entergy Mississippi to issue securitized storm bonds to recover the costs of Hurricane Katrina that were not otherwise reimbursed by Community Development Block Grants or other payments.⁸⁸ The order was issued pursuant to the Hurricane Katrina Electric Utility Customer Relief and Electric Utility System Restoration Act of 2006 passed by the state legislature. By issuing the order, the State Bond Commission (also established by the 2006 legislation) was authorized to issue the bonds to finance recovery costs. Bond debt service is repaid via a system restoration surcharge on customer bills, to be reset by the companies annually to recover 110% of required annual debt service.

Storm Investigations: In approving the issuance of bonds to recover damage costs associated with Katrina, the PSC also determined that certain actions should be taken to reduce future storm damage, and in particular the jurisdictional Mississippi companies were ordered to harden their locations to withstand hurricane force winds approximately 10 miles inland from potential flooding. In addition, Mississippi Power was authorized to use proceeds of its bond sale to build a new storm operations center further from shore.

New Jersey

Storm Hardening and Resiliency: Following Sandy, the New Jersey Board of Public Utilities (BPU) opened various generic proceedings. In one proceeding, the BPU is investigating possible avenues to support utility infrastructure in withstanding major storms and it has asked for utility proposals for infrastructure upgrades.⁸⁹ In another proceeding the BPU is investigating the prudence of costs related to 2011 and 2012 major storms for which utilities are seeking rate recovery. Among the responses to the first investigation was Public Service Electric and Gas' proposed Energy Strong program, which is awaiting BPU action. The

⁸³ St. 2012, c. 209 (August 3, 2012).

⁸⁴ *Massachusetts Electric Grid Modernization Stakeholder Working Group Process: Report to the Department of Public Utilities from the Steering Committee*, Final Report (July 2, 2013).

⁸⁵ DPU Docket No. 12-76-A (December 23, 2013).

⁸⁶ Mississippi PSC Docket No. 2006-UA-350 (May 22, 2007).

⁸⁷ Mississippi PSC Docket No. 2010-UN-436, et al. (October 7, 2011).

⁸⁸ Mississippi PSC Docket No. 2006-UA-82 (June 28, 2006).

⁸⁹ New Jersey BPU Docket No. AX13030197 (March 20, 2013).

proposal is for a 10-year, \$3.9 billion investment program that includes deployment of smart grid technologies, strengthening of distribution infrastructure, and undergrounding in certain areas.

Storm Investigations: The BPU released a report that investigated the restoration efforts by New Jersey’s electric distribution companies (EDCs) prior to, during and after Hurricane Irene and the October 29, 2011 snowstorm.⁹⁰ The recommendations to the BPU included more detailed development of a vegetation management program; development of an Incident Command System; use of company websites and social media to provide more granular outage details and estimated time of restoration; conducting annual training and exercise drills; and use of benchmarking and external analysis of each company’s restoration experiences. This report served as a follow-up to a preliminary report issued by the NJ BPU on December 14, 2011 concerning major storm event planning and emergency response by New Jersey’s four EDCs.⁹¹ As a result of another investigation, the BPU imposed new requirements relating to communication among utilities, municipal officials, customers and the Board.⁹²

The Board also asked staff to work with Rutgers’ Center for Energy, Economic and Environmental Policy (CEEPP) to analyze specific areas that raise concerns and affect restoration efforts in the wake of Sandy. The areas include infrastructure investment such as selective undergrounding and substation protection, expansion of distributed generation, evaluation of smart grid technologies, and identification of best practices for vegetation management.

Distributed Energy Resources and Grid Modernization: New Jersey is focusing more attention on the roles that distributed generation, microgrids, and smart grid technologies may play in grid resiliency. The U.S. Department of Energy and the state last year announced a partnership to develop an advanced microgrid for the New Jersey transit system.⁹³ See also the discussion above for additional focus on distributed generation and smart grid via a CEEPP study.

Vegetation Management: The state of New Jersey has comprehensive vegetation management regulations for its EDCs.⁹⁴ The regulations provide for penalties up to a \$100 per day for each violation.⁹⁵ See discussion above for additional focus on vegetation management via a CEEPP study.

Undergrounding: In New Jersey, undergrounding of distribution lines is governed under Section 14:3-8.4 of the New Jersey Administrative Code.⁹⁶ Under the regulations, distribution lines are required to be constructed underground for new residential developments and streets that are constructed after August 2005.⁹⁷ See discussion above for additional focus on selective undergrounding via a CEEPP study.

New York

Storm Hardening and Resiliency: The New York Public Service Commission (PSC) in February 2014 approved multiyear rate plans for Consolidated Edison Co. of New York (Con Edison) that provide for major capital investment in storm hardening and resiliency, including strategic undergrounding and flood

⁹⁰ *Performance Review of EDCs in 2011 Major Storms* (August 9, 2012).

⁹¹ New Jersey BPU Docket No. EO11090543 (December 14, 2011).

⁹² New Jersey BPU Docket No. EO12111050 (May 29, 2012).

⁹³ Department of Energy press release (August 26, 2013).

⁹⁴ *Electric Utility Line Vegetation Management*, N.J.A.C. § 14:5-9.2 and 9.6

⁹⁵ N.J.A.C. § 14:5-9.10.

⁹⁶ *Regulation for Residential Electric Underground*, N.J.A.C. § 14:3-8.4.

⁹⁷ *Id.* at § 14:3-8.4(d).

protection projects to protect against coastal storm surge.⁹⁸ Concurrent with the rate proceeding was a collaborative track addressing storm hardening and resiliency issues. The PSC in the rate order adopted many of the collaborative's recommendations, which were included in the docket, and approved Phase 2 work, including a voluntary Con Edison climate change vulnerability study in 2014 and review of 2015-16 storm hardening initiatives.

Storm Investigations: New York Governor Andrew Cuomo in late 2012 issued an Executive Order establishing a commission under the Moreland Act to investigate the response, preparation, and management of New York's power utility companies with major storms hitting the state over the previous two years, including Hurricanes Sandy and Irene, and Tropical Storm Lee.⁹⁹ The Moreland Commission issued its final report on June 22, 2013, recommending a series of changes to state and utility policies. Recommendations included using public benefit funds and redirecting energy efficiency funds to use for better protecting the electric grid, as well as levying penalties and other measures. The report identified perceived deficiencies in utility storm preparation and restoration as well as best practices by some utilities that the commission said should be adopted statewide. The commission also made recommendations to reform the overlapping responsibilities and missions of the New York Power Authority, the Long Island Power Authority, the New York State Energy and Research Development Authority and the PSC.¹⁰⁰ In response to a request by Governor Cuomo, the PSC in late 2013 adopted a scorecard to serve as guidance to utilities as to what the PSC expects of them and for assessing utility performance related to major storm events.

Distributed Energy Resources: The Moreland Commission's recommendations included using public benefit funds and redirecting energy efficiency funds to use for better protecting the electric grid. In response, the PSC in late 2013 issued an order making changes to the state energy efficiency portfolio standard.¹⁰¹ The order also started a process for making significant regulatory changes that would address deployment and use of customer-based resources in a more comprehensive policy context. Among the core policy outcomes articulated by the PSC was assurance of system reliability and resiliency. As part of its order approving Con Edison's capital investment program, as discussed above, the PSC directed the utility to pursue development of a plan for a microgrid project as well as a plan to address significant load growth in a section of Brooklyn by offering distributed generation as an alternative to traditional infrastructure. In addition, Phase 2 of the Con Edison resiliency collaborative discussed above will include identification of potential alternative resilience strategies such as additional microgrid and distributed generation projects.

Smart Grid: In New York, while investor-owned electric utilities are making investments designed to modernize the electric power grid, no utility has undertaken mass deployment of smart meters. However, the PSC issued a Smart Grid Policy Statement¹⁰² where the commission recognized that smart meters could "[f]urnish utilities with additional outage management tools."¹⁰³

Vegetation Management: Under 16 NYCRR Part 84 of the New York PSC's Rules of Procedure and an order from Case 04-E-0822, each utility must develop and implement a long-range vegetation management plan for the utilities' right-of-ways. The PSC requires that a utility's long-range plans provide for vegetation management planning in right-of-way corridors for transmission facilities consisting of 34 kV and above, except where located entirely on public streets or roads in right-of-way corridors.

⁹⁸ New York PSC, Case No. 13-E-0030 (February 21, 2013).

⁹⁹ Executive Order No. 73 (November 13, 2012).

¹⁰⁰ *Final Report*, Moreland Commission on Utility Storm Preparation and Response (June 22, 2013).

¹⁰¹ New York PSC, Case No. 07-M-0548 (December 26, 2013).

¹⁰² New York PSC Case Number 10-E-0285 (August 19, 2011).

¹⁰³ *Id.* at 32.

Undergrounding: In New York, undergrounding is governed under both 16 NYCRR Part 98 and Part 101. New York was a very early adopter of distribution line undergrounding and since 1969, has required that extensions of electric distribution lines to most new residential subdivisions be placed underground with initial costs up to be borne by the utility up to 60 ft. per customer, with remaining costs to be borne by developers.¹⁰⁴

North Carolina

Storm Investigations: As a result of a 2002 ice storm that caused significant damage and disruptions, the North Carolina Utilities Commission (UC) initiated an investigation into the response of electric utilities that resulted in a report to the North Carolina Disaster Preparedness Task Force.¹⁰⁵ The UC found that the ice storm was unprecedented in North Carolina history in terms of customer outages for Duke Energy and almost unprecedented for Progress Energy. The report also found that while some government officials faulted companies for their communications during the storm, improvements have since been made. The report further found that utilities have adopted proper procedures for advance planning and getting aid from other utilities, but that the circumstances of this particular storm made things more difficult. The report recommended that utilities examine their tree trimming practices to determine whether improvements were possible.

Undergrounding: In a study conducted in conjunction with the investigation into the December 2002 ice storm noted above, the Public Staff of the UC conducted an examination regarding the feasibility of undergrounding electric distribution facilities.¹⁰⁶ Staff concluded that replacing overhead lines with underground would be prohibitively expensive (about six times the current value of the companies' current distribution assets) and result in higher operations and maintenance costs. The Public Staff did, however, recommend that companies identify the overhead facilities in each region they serve that repeatedly experience reliability problems, determine whether conversion to underground is a cost-effective option for those facilities, and, if so, develop a plan for undergrounding those facilities. In the interim, Public Staff recommended that the companies continue their current practices of: 1) placing new facilities underground when the additional revenues cover the costs or the cost differential is recovered through a contribution in aid of construction, 2) replacing existing overhead facilities with underground facilities when the requesting party pays the conversion costs, and 3) replacing overhead facilities with underground facilities in urban areas where factors such as load density and physical congestion make overhead service impractical.

Vegetation Management: As part of a settlement agreement in a general rate case, Duke Energy Carolinas agreed to review its vegetation management policies and procedures and develop a clear, comprehensive, consistent and publicly available policy description, and file it for review by the UC within 90 days.¹⁰⁷ The settlement agreement provision was based on Public Staff testimony regarding public complaints on the company's vegetation management practices. These complaints generally concerned removal of trees that customers did not want removed, the failure to remove trees that are interfering with power lines, and tree cutting debris being left on customer premises. Public staff believed that the company's practices and procedures were not well-defined or publicly available and therefore had recommended they be filed for commission review. The UC reviewed both Duke's policy description and detailed response to customer

¹⁰⁴ *In the Matter of Sleepy Hollow Lake, et al. v. Public Service Commission of the State of New York*, 352 NY Supp 2d 274, 43 A.D. 2d 439 (1974).

¹⁰⁵ *Response of Electric Utilities to the December 2002 Ice Storm* (September 2003) report of the North Carolina Public Utilities Commission and the Public Staff to the North Carolina Disaster Preparedness Task Force.

¹⁰⁶ *The Feasibility of Placing Electric Distribution Facilities Underground* (November 2003) report of the Public Staff to the North Carolina Natural Disaster Preparedness Task Force.

¹⁰⁷ North Carolina UC Docket No. E-7, Sub 989 (January 27, 2012).

concerns and found that the company implemented its vegetation management policies in a reasonable manner. However, the commission imposed additional reporting requirements.¹⁰⁸

Ohio

Distribution Reliability: The Public Utilities Commission (PUC) of Ohio requires investor-owned electric utilities in the state to file an annual report of their distribution reliability performance based on specified measures and criteria. Each utility also must file performance standards for approval. The approved standards are minimum performance levels, and missing a standard for two consecutive years constitutes a rule violation.¹⁰⁹ Performance standards can be revised under specified procedures. The PUC has encouraged electric utilities in the state to proactively replace aging distribution infrastructure to improve the reliability of electric service to customers. In deciding a case in 2012, the commission said: “We believe that it is detrimental to the state’s economy to require the utility to be reactionary or allow the performance standards to take a negative turn before we encourage the electric utility to proactively and efficiently replace and modernize infrastructure and, therefore find it reasonable to permit the recovery of prudently incurred distribution infrastructure investment costs.”¹¹⁰

Vegetation Management: Enhanced vegetation management is seen by the PUC as a critical factor in distribution reliability. Utility vegetation management budgets have increased in the years following the Northeast blackout of August 2003, which implicated vegetation management practices as one of the root causes.¹¹¹ Reliability rules provide for the inspection, maintenance, repair and replacement of utility transmission and distribution system facilities (circuits and equipment), including vegetation management along rights of way.¹¹²

Rate adjustment mechanisms: The commission has approved numerous rate adjustment mechanisms that enable timely recovery of investment costs between rate cases to facilitate improved service reliability and to better align utility and customer expectations. Among the riders approved by the PUC in recent years are distribution reliability-related riders for AEP, Duke Energy and First Energy; a vegetation management rider for AEP; and a grid modernization rider for AEP’s gridSMART program.

Deferrals: The PUC has allowed several utilities to defer costs related to specific storms for possible future recovery via base rates or storm riders. However, the commission has not always allowed full recovery of deferred costs.

Securitization of Storm Costs: Ohio in December 2011 enacted H.B. 364, which provides electric distribution companies with a mechanism to securitize, through the issuance of phase-in-recovery (PIR) bonds, certain debt previously approved by the PUC.¹¹³ An intended benefit of securitization is customer savings and rate impact mitigation because of lower interest rates on PIR bonds as compared to authorized carrying charges on deferred assets. Deferred assets may include costs related to storm restoration, infrastructure, fuel, environmental cleanup and other areas. In one of the first cases decided under the law, the PUC allowed American Electric Power-Ohio Power to securitize approximately \$298 million in previously approved deferred costs, including storm restoration costs related to a Hurricane Ike windstorm in September 2008.¹¹⁴ The bonds will be backed with a phase-in-rider, which will replace an existing deferred

¹⁰⁸ North Carolina UC Docket No. E-7, Sub 1014 (June 3, 2013).

¹⁰⁹ Rule 4901:1-10-10 (Rule 10) O.A.C.

¹¹⁰ Ohio PUC Case No. 11-346-EL-SSO, *et al.* (August 8, 2012).

¹¹¹ *Final Report on the August 14, 2003 Blackout in the U.S. and Canada: Causes and Recommendations* (April 2004) U.S.-Canada Power System Outage Task Force.

¹¹² Rule 4901:1-10-27 O.A.C.

¹¹³ Establishes Sections 4928.23-4928.2318 of the Revised Code (December 21, 2011).

¹¹⁴ Ohio PUC Case No. 12-1969-EL-ATS (March 20, 2013).

asset recovery rider (DARR). The DARR was approved previously to collect costs related to the storm and other approved regulatory assets.

Undergrounding: Cost allocation for undergrounding distribution lines has been an issue in the state. A PUC decision in 2011, which was upheld by the state Supreme Court in 2012,¹¹⁵ found that AEP appropriately applied a tariff under which it charged a city for costs of relocating overhead distribution lines underground because the city had required such relocation. The city challenged the decision, saying a local ordinance supersedes the tariff. The state high court found that the ordinance was an exercise of police power to promote the health, safety and welfare of the public and did not overcome the “general law” of the state that is attached to the tariff.

Pennsylvania

Rate adjustment mechanism: The state in February 2012 enacted HB 1294 (Act 11) to reduce regulatory lag and provide more ratemaking flexibility for recovery of prudently incurred distribution and other infrastructure costs.¹¹⁶ The measure is aimed at improving utility access to capital at lower rates and to accelerate improvement and replacement of aging, unreliable infrastructure. The Pennsylvania Public Utility Commission (PUC) in August 2012 issued a final order implementing the new law, which allows electric and other utilities to petition for a voluntary distribution system improvement charge (DSIC) to recover fixed costs related to specific infrastructure projects between general rate cases.¹¹⁷ The DSIC is capped at 5 percent of distribution rate revenue and is subject to audit. As a pre-requisite, a utility must submit a five- to 10-year long-term infrastructure improvement plan that the PUC must review at least once every five years. The law also allows utilities to use a fully projected test year in rate cases. In May 2013, the PUC approved the first DSIC for an electric utility, PPL Electric, after first approving its long term infrastructure plan to which the DSIC is linked.¹¹⁸

Cost deferral: The PUC has approved deferral by utilities of extraordinary storm-related costs for regulatory accounting and reporting purposes, including a recent case where it made clear that future cost recovery of deferred amounts is not guaranteed and that approving a deferral does not constitute a ruling on the reasonableness of costs.¹¹⁹

Storm Investigations: The PUC in May 2013 released its report on utility response to Hurricane Sandy, finding that utilities applied lessons learned from 2011 storms with a positive result, especially in communicating with customers and officials and liaising with county 911 and emergency operations centers. The PUC recommended action steps for utilities to continue improvements in these and other areas, such as management of estimated restoration times. In addition, the PUC recommended that its staff continue ongoing work with utilities to reduce the duration and number of outages on worst performing circuits.

In separate action, the PUC issued a proposed policy statement that would revise existing response, recovery and public notification guidelines based on experience gained in recent significant storm-related service outages.¹²⁰ The PUC in issuing the proposal also established and sought comment on a Critical Infrastructure Interdependency Working Group in recognition of the need for different types of utilities and other entities to

¹¹⁵ Ohio Supreme Court, *In re Complaint of Reynoldsburg*, Docket No. 2011-1274 (November 15, 2012).

¹¹⁶ Public Utility Code (66 Pa.C.S.).

¹¹⁷ Pennsylvania PUC Docket No. M-2012-2293611 (August 2, 2012).

¹¹⁸ Pennsylvania PUC Docket No. P-2012-2325034 (May 23, 2013).

¹¹⁹ Pennsylvania PUC Docket No. P-2011-2270396 (December 15, 2011).

¹²⁰ Pennsylvania PUC Docket No. M-2013-2382943 (September 26, 2013).

coordinate restoration of critical infrastructure. The working group will meet at least once a year to identify mission critical facilities and discuss interdependencies and best practices.

CHAPTER 4: CROSS-SECTION OF STATE LEGISLATION

As with state regulatory activity, inevitably after each major storm or outage event, there is increased executive and legislative activity by governors and other state policymakers. Action in this area tends to focus on reliability standards, emergency preparedness and response plans, infrastructure hardening, and cost recovery issues. As of this report, Connecticut and Massachusetts have passed legislation that allows certain penalties to be assessed to utilities should certain reliability standards and storm response measures not be met.

This section provides a brief overview of recently proposed or enacted state legislation involving utility storm resiliency and response. A more detailed description is included in a matrix in [Appendix B](#), EEI Cross-Section of State Legislative Proposals on Storm Hardening and Resiliency. The matrix will be expanded and updated as additional information is obtained or as developments occur. The matrix is not comprehensive but rather provides a snapshot of recent legislative activity which usually serves as the basis for new regulatory proposals.

4.1 State Highlights: CA, CT, IL, MA, MD, MS, NJ, NY, VT, WI

California

Following the extreme windstorm that occurred in December 2011 in Southern California, the state legislature passed two bills in September 2012 addressing deficiencies in utility outage response. The new legislation requires the California Public Service Commission to establish standards for disaster and emergency preparedness plans for utilities and requires public utilities to preserve all records and evidence collected after any unplanned outages.

Connecticut

The combined effects of Hurricane Irene in August 2011 followed by the October 2011 snowstorm caused significant damage to utility infrastructure in the Northeast with the majority of electrical outages caused by weakened and fallen trees. In June 2012, the Governor signed Senate Bill 23, Public Act No. 12-148, requiring the Connecticut Public Utilities Regulatory Authority to investigate utility practices and establish reliability and emergency response standards for electric utilities as well as identify the most cost-effective means for system reliability. The newly enacted legislation allows for the Public Utilities Regulatory Authority to grant cost recovery in a future proceeding for utility investment in improved resiliency.

District of Columbia

After a series of severe weather events in 2012 that caused widespread outages and left extensive wind damage across the region, Washington D.C. Mayor Gray established the Mayor's Power Line Undergrounding Task Force to study the feasibility of undergrounding major portions of Washington's distribution network. In March 2014, Mayor Gray signed into law the recommendations of the Task Force which authorizes the issuance of revenue Bonds to finance the undergrounding of the 60 most vulnerable overhead distribution power lines and their ancillary facilities.

Illinois

After several major storms and widespread outages in the Chicago area in 2011, several bills were proposed in the Fall of 2011 regarding utility emergency preparedness, communication protocols and vegetation management. In December 2011, the Governor signed into law certain requirements for utility upgrade investments pursuant to an infrastructure investment program and provided for utilities to recover the reasonable costs incurred to maintain or improve the resiliency of its infrastructure necessary to meet established standards.

Massachusetts

Several bills were introduced during the 2013 session proposing hardening measures including vegetation management, infrastructure upgrades and undergrounding. In August 2012, the Governor signed a law establishing the Department of Public Utilities Storm Trust Fund to be used by the department of public utilities to fund investigations into the preparation for and responses to storm and other emergency events by electric companies doing business in the commonwealth. The funds will come from annual assessments made by the department proportional to each electric utility's annual revenues. Any penalties levied against the utilities for any violations of storm response and emergency preparedness will be credited back to utility customers. The law also required electric utilities to file an annual emergency response plan.

Maryland

In August 2012, proposed emergency legislation prohibiting the Public Service Commission from authorizing an adjustment to an electric company's rates to recover profits lost during a disruption in electrical service was introduced to the state Senate; however, there has been no movement on this proposal since its introduction.

Mississippi

Following the devastation of Hurricane Katrina in 2005, the state enacted the Hurricane Katrina Electric Utility Customer Relief and Electric Utility System Restoration Act which provides that the state may issue system restoration bonds with proceeds to be used to securitize the system restoration costs and storm damage reserve levels of those electric utilities affected by Hurricane Katrina, thereby providing electric utility customers relief from traditional methods of recovering system restoration costs.

New Jersey

In the wake of Superstorm Sandy, the legislature has introduced numerous bills in 2013 and 2014 mostly calling for the New Jersey Board of Public Utilities (BPU) to establish performance standards in emergency situations and require utilities to file emergency preparedness plans with the BPU. Other bills have been introduced that require inspections and hardening of the existing infrastructure looking towards the necessity for certain facility construction standards. Prior to Superstorm Sandy, bill A.B. 2760 was introduced giving authority to the BPU to authorize the recovery of all reasonable and prudent costs incurred by an electric utility in repairing, improving, and replacing its equipment and property reasonably associated with the improvement of utility service reliability. This measure was reintroduced in the 2014 session.

New York

Also widely affected by Superstorm Sandy, the New York state legislature introduced several bills aimed at requiring new standards for utility emergency preparedness and response. The proposed "Natural Disaster

Preparedness and Mitigation Act” (S.B. 3761) establishes a disaster preparedness commission consisting of commissioners from each of the New York public sectors, including the chair of the public service commission, to oversee and coordinate state emergency preparedness and response activities. The proposal also calls for the disaster preparedness commission to “utilize, in rate setting proceedings, to recover the reasonable costs incurred to maintain and improve the resiliency of the utility’s infrastructure necessary to comply with [established standards].”

Vermont

Citing the devastating effects of Hurricane Irene, Governor Peter Shumlin signed Executive Order 04-13 in April 2013 establishing the Governor’s Emergency Preparedness Advisory Council which will review the state emergency preparedness system. Governor Shumlin ordered that the Council must take into consideration the interdependencies between federal, state and local government as well as public service sectors serving the community and provide recommendations on ways to bolster such relationships in emergency preparedness policies and communications.

Wisconsin

In December 2013, Governor Scott Walker signed into law an act creating a State and Province Emergency Management Assistance Compact providing for several states and Canadian provinces to participate in mutual assistance operations such as the sharing of emergency operations plans, resources and communications in responding to an emergency affecting several participating jurisdictions.

APPENDIX A

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

March 2014

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
AR (Public Service Commission)	Generic	<ul style="list-style-type: none"> Decided 1/30/09 Case 09-12-U Order No. 1 	<ul style="list-style-type: none"> To facilitate/encourage restoration efforts during Jan 2009 ice storm, grants temporary waiver of certain general service rules, e.g., those governing daily meter reading and customer billing, until utilities are able to resume full compliance 	<ul style="list-style-type: none"> Invites all public utilities to file in this docket specific proposals for recovery of extraordinary storm restoration expenses related to recent ice storms (see entries below) 	
AR	Entergy Arkansas	<ul style="list-style-type: none"> Decided 12/30/13 Case 13-028-U Order 		<ul style="list-style-type: none"> Approves \$5.8m increase in annual storm reserve Approves \$20.1m related to 2013 winter storm Approves co.-requested \$2m increase in test-year vegetation management expense based on 3-yr. average of known & measureable costs Rejects co. proposal for \$2.3m to shorten vegetation management cycle time, saying costs are not yet known & measureable 	
AR	Entergy Arkansas	<ul style="list-style-type: none"> Decided 5/25/10 Case 10-008-U Order No. 5 		<ul style="list-style-type: none"> Approves co. request to securitize costs related to damage from Jan 2009 ice storm Authorizes cost recovery to back bonds, including carrying charges & upfront financing costs, via new Storm Recovery Charges Rider (Rider SRC) Rider SRC rates to be calculated using demand (kW) for Large General Service customers & energy (kWh) for all other customer classes Reduces requested \$121.9m increase by \$293K to 	Financing order issued pursuant to Arkansas Electric Utility Storm Securitization Recovery Act of 2009 (AR Code Annotated 5 23-18-901) (Act 729)

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				<p>avoid potential double-recovery regarding plant that was damaged by ice storm and retired rather than replaced</p> <ul style="list-style-type: none"> Costs to be recovered from all existing and future customers receiving transmission or distribution service from co. Regarding carrying cost recovery, notes significant time lag between incurrence of storm recovery costs and filing to recover those costs <ul style="list-style-type: none"> Finds delay not unreasonable considering the law authorizing securitization was neither adopted nor in effect till months after storm Caps interest rate on securitized bonds @4.4% Requires co. to reduce amt. to be securitized by any credit balance in storm reserve account 	
AR	Entergy Arkansas	<ul style="list-style-type: none"> Decided 4/16/10 Case 09-031-U Order No. 3 		<ul style="list-style-type: none"> Approves request to establish storm reserve account, w/initial amount of \$14.449 to be accrued monthly as of Jan 2009 per new Act 434 Authorizes co. to charge reserve account for O&M storm restoration costs that are reasonable/prudent and not otherwise recovered Requires quarterly reports Staff to audit/adjust all storm restoration costs to ensure only reasonable/prudent storm restoration costs are included in reserve account consistent w/statutory provisions 	Filing made under provisions of Act 434 of 2009, An Act to Require the Arkansas Public Service Commission to Permit Storm Cost Reserve Accounting for Electric Public Utilities When Requested; and for Other Purposes
AR	Entergy Arkansas	<ul style="list-style-type: none"> Decided 3/6/09 Case 09-018-U Order 		<ul style="list-style-type: none"> Allows co. to defer \$80m-\$100m in storm recovery O&M expenses resulting from Jan 2009 ice storm Allows co. to defer expense portion of storm restoration costs per accounting standards, thereby removing expense from income statement and avoiding the reporting of financial loss in 1Q earnings report 	<ul style="list-style-type: none"> Co. stated that w/o accounting order authorizing deferral of storm recovery costs, "there will be a significant negative impact on earnings"
AR	Entergy Arkansas	<ul style="list-style-type: none"> Decided 6/15/07 06-101-U Order No. 10 		<ul style="list-style-type: none"> Rejects co.-proposed use of reserve accounting for rate purposes for both storm damage reserve & storm damage expense, saying co. proposal would constitute retroactive ratemaking by crediting almost \$50m of storm costs incurred in 	<ul style="list-style-type: none"> Co. had proposed that storm-related O&M costs are appropriately booked using reserve accounting; it argued that "(t)he use of reserve

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				<p>prior periods to rate base or CAOL (Current Accrued & Other Liabilities) account and amortizing prior period costs as current expense; says co. method also would constitute single issue ratemaking by isolating one component of revenue requirement for proposed ratemaking treatment w/o taking other components into account</p> <ul style="list-style-type: none"> - Accepts staff recommendation for inclusion of normal expected annual level of storm damage costs of \$14.5m based on historical average; requires co. to reduce amount in storm reserve account to zero 	<p>accounting for storm costs is appropriate because of the nature of storm costs ... (given that) ... (t)he severity and number of storms are clearly out of the Company's control." Co. also asserted that normalization vs. use of reserve method "would improperly provide no recovery of previously incurred storm costs above the current level of accrual."</p>
CA (Public Utilities Commission)	Generic	<ul style="list-style-type: none"> • Decided 2/5/14 • Case R08-11-005 • Decision Adopting Regulations to Reduce the Fire Hazards Associated with Overhead Electric Utility Facilities and Aerial Communications Facilities 	<ul style="list-style-type: none"> • Revises General Order 95 to incorporate new and modified rules, including: <ul style="list-style-type: none"> - Communications facilities in proximity to lines must be built w/higher safety standards - Overhead facilities must be able to support higher vertical loads to reflect increased weight of workers & their equipment - Incorporation of use of modern design & construction materials /standards • Approves consensus plan for utilities to report fire incidents to CPUC enforcement staff for identification of systemic fire safety risks and development of measures to mitigate risk 	<ul style="list-style-type: none"> • Authorizes utilities to track related costs for future recovery in general rate cases 	<ul style="list-style-type: none"> • This decision concludes Phase 3 of docket. Phase 2 concluded with 1/12/12 decision (below). Phase 1 concluded with 8/20/09 decision (below.)
CA	Generic	<ul style="list-style-type: none"> • Decided 1/16/14 • Case R08-11-005 • Decision Approving the Work Plan for the Development of Fire Map 1 	<ul style="list-style-type: none"> • Approves work plan for design, development & adoption of statewide fire-threat map depicting physical & environmental conditions associated with an elevated risk of power-line fires. PG&E, SDG&E and SCE to jointly provide up to \$250K for state to obtain consultants. 	<ul style="list-style-type: none"> • Establishes rebuttable presumption that utility payments (per previous column) are reasonable and may be recovered in rates. 	<ul style="list-style-type: none"> •
CA	Generic	<ul style="list-style-type: none"> • Decided 1/12/12 • Case R08-11-005 • Decision Adopting Regulations to Reduce Fire Hazards Associated with 	<ul style="list-style-type: none"> • Revises General Orders 95, 165 & 166 as follows: <ul style="list-style-type: none"> - Requires utilities to remove vegetation strain on conductors energized @ ≤ 750 volts, authorizes increases to time-of-trim vegetation clearances around bare-line 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Rules were adopted following series of 2007 wildfires • Resolution E-4576 was issued 5/23/13 approving advice letters (ALs) filed by utilities including PG&E, SDG&E and

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		<p>Overhead Power Lines and Communication Facilities</p> <p>On reconsideration: In 6/27/13 decision, eases definition of “year” for purposes of inspection intervals for overhead lines. Says revision will enhance ability to perform inspection, enhance public safety in certain situations, and may reduce cost.</p>	<p>conducts per specified circumstances</p> <ul style="list-style-type: none"> - Conditionally authorizes utilities to turn off power supply to property owners who block vegetation mgt. activities around overhead power lines - Requires utilities in Southern CA to prepare fire prevention plans based on specified tasks & criteria; utilities in Northern CA must conduct risk determination and prepare similar plan if need shown - Requires utilities to calculate weight loads on poles when new attachments are made • Institutes additional phase of proceeding to consider materials & practices including use of smart technologies to protect public safety & critical infrastructure, standards regarding wood structures, fire threat mapping, reporting requirements & other matters. This phase was concluded w/2/5/14 decision in this docket (entry above). 		<p>SCE. The ALs comply w/the provision to file FPPs. The FPPs, whose specific content was not approved, will be incorporated in annually submitted emergency action plans/reports of the utilities per General Order 166.</p>
CA	Generic	<ul style="list-style-type: none"> • Decided 8/20/09 • Case R08-11-005 • Decision in Phase 1 – Measures to Reduce Fire Hazards in California Before the 2009 Fall Fire Season 	<ul style="list-style-type: none"> • Directs implementation of numerous measures for electric transmission & distribution lines and related communications facilities prior to autumn 2009 fire season. - This is first phase of broad commission review of fire hazards following destructive wildfires that commission says may be linked to electric and communications lines. The orders seeks to strengthen and clarify existing rules for such facilities. 	•	•
CA	Pacific Gas and Electric	<ul style="list-style-type: none"> • Decided 6/27/13 • Case A11-09-014 • Decision Authorizing Pacific Gas and Electric Company to Recover Costs Recorded in the Catastrophic Event Memorandum 	•	<ul style="list-style-type: none"> • Approves settlement providing for recovery of \$26.537m of incremental disaster-related costs recorded in CEMA and incurred responding to 7 events (several wildfires, an earthquake and 2 winter storms). The approved level is closer to ratepayer advocate-recommended disallowances than PG&E’s initial request of \$32.4m. - Ratepayer advocate had raised concerns about accounting & recovery methods, reasonableness & justification, existence of 	•

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		Account [CEMA] Related to Certain Disasters		official disaster declarations, and other items.	
CA	Pacific Gas and Electric	<ul style="list-style-type: none"> Decided 6/24/10 Case A08-05-023 Decision on Pacific Gas and Electric Company Request to Implement a Program to Improve Electric Distribution System Reliability 	<ul style="list-style-type: none"> Approves co.-proposed Cornerstone program to increase distribution system resiliency & reliability but at lower than requested funding levels; says need not shown for all proposed projects but that co. may re-propose them later; next co. rate case is in 2014 Authorizes \$357.4m in capital & \$9.2m in expense for 2010-2013 for projects that: 1) address identified problems related to worst-performing circuits & substation transformer emergency capacity, and 2) implement feeder interconnectivity and rural reliability projects that are cost-effective 	<ul style="list-style-type: none"> Adopts ratemaking treatment under which rates to be set initially to recover forecast project costs, w/true-up to actual costs achieved via new balancing account; after 2013 program termination, project costs to be recovered via GRC Co. has flexibility in how it spends authorized funds but must provide annual reports on work performed & forecasted work Revenue requirements & rates covering program to be revised annually w/true-up Underspending to result in customer refunds; overspending not authorized 	
CA	<ul style="list-style-type: none"> Pacific Gas and Electric San Diego Gas & Electric Southern California Edison 3 other IOUs 	<ul style="list-style-type: none"> Decided 9/13/12 Case E-4493 Resolution 	<ul style="list-style-type: none"> Adopts contested co.-filed tariff changes under which power may be conditionally shut off to customers who do not allow access to their property for vegetation mgt. activities for fire hazard prevention 		<ul style="list-style-type: none"> Filings were made per 1/12/12 decision adopting regulations to reduce fire hazards associated w/overhead power lines (Case R08-11-005; see entry above)
CA	<ul style="list-style-type: none"> Pacific Gas and Electric San Diego Gas & Electric Southern California Edison Southern 	<ul style="list-style-type: none"> Decided 7/29/10 Case E-4311 Resolution 		<ul style="list-style-type: none"> Approves establishment of wildfire expense memorandum accounts (WEMAs) as interim mechanisms for recording uninsured wildfire-related costs, except for certain financing costs, incurred while PUC considers establishment of wildfire expense balancing accounts (WEBAs) in Case A09-08-020 (see entry above) <ul style="list-style-type: none"> If WEBAs are approved in Case A09-08-020, WEMA balances would be transferred to WEBAs for potential base rate recovery Categories of allowed costs for recording: 1) 	

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	California Gas			payments to satisfy wildfire claims including co-insurance & deductibles expense, 2) outside legal expenses, 3) increases/decreases in wildfire insurance premiums from amounts authorized in GRCs	
CA	<ul style="list-style-type: none"> San Diego Gas & Electric 	<ul style="list-style-type: none"> Decided 5/9/13 Case A10-12-005 Decision on General Rate Cases of San Diego Gas & Electric Company and Southern California Gas Company 	<ul style="list-style-type: none"> Requires SDG&E to implement performance incentives previously developed for co. in D08-07-046, which SDG&E had declined as then authorized. Notes that while uncertainties exist, the record shows clear link between incentives and reliability performance. Co. must include at minimum SAIDI, SAIDET & SAIFI indices, and track/record outage causes. Data to be included in next GRC filing. Fire prevention improvements cited by co. as key contributor to reliability. 	<ul style="list-style-type: none"> Denies co. request for treating tree/pole brushing costs in 2-way balancing account, leaves door open to revisit in next GRC. Says 1-way account encourages tree performance while containing costs, and pole brushing costs are fairly stable. Approves funding of various smart grid capital projects but at lower than requested levels, citing financial impact on ratepayers as among the factors. Projects include SCADA controls that PUC says will reduce time it takes to locate and repair problems, to be funded at \$2.25m vs. requested \$4.699m. Approves \$25.5m for O&M costs related to tree-trimming (400,000 potentially encroaching trees) vs. co.-requested \$27.419m and lower intervenor requests. Says activities likely to increase due to more inspections/clearances as required elsewhere and upward cost pressures from tree growth/mortality/diseases and weather. Approves slight pole brushing increase to \$4m based on data review vs. co.-requested \$5.354m and lower intervenor requests. 	
CA	<ul style="list-style-type: none"> San Diego Gas & Electric Southern California Gas 	<ul style="list-style-type: none"> Decided 12/20/12 Case A09-08-020 Decision Denying Application 		<ul style="list-style-type: none"> Denies recovery of uninsured expenses related to 2007 wildfires via wildfire expense balancing account (WEBA), saying companies had not met burden of showing all legal and factual issues were addressed, including whether limitless potential for ratepayers to fund 3rd party claims would open door to claims by others such as government entities, and for utility incentives to defend against 3rd-party claims and manage risk Allows existing wildfire expense memorandum accounts, in which utilities began recording costs in July 2010, to continue. These tracking accounts 	

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				were authorized in Case E-4311 (below)	
CA	• Southern California Edison	<ul style="list-style-type: none"> Decided 9/19/13 Case I09-01-018 Decision Conditionally Approving the Southern California Edison Company Settlement Agreement Regarding the Malibu Canyon Fire 	<ul style="list-style-type: none"> Approves settlement between co. and CPUC enforcement division involving fire caused by 3 utility poles that fell during a Santa Ana windstorm. Under the settlement, SCE: <ul style="list-style-type: none"> Made certain admissions Agreed to pay \$20m to state General Fund Agreed to provide \$17m for assessment & remediation program for approx. 1,453 poles in the Malibu area Imposes conditions, including: <ul style="list-style-type: none"> Pole program to be completed w/in 18 mos. Bi-monthly reports & comprehensive report 	<ul style="list-style-type: none"> Total \$37m settlement amount to be funded by shareholders 	
CA	• Southern California Edison	<ul style="list-style-type: none"> Decided 7/11/2013 Case A07-06-031 Decision Granting the city of Chino Hills' Petition for Modification of Decision 09-12-044 and Requiring Undergrounding of Segment 8A of the Tehachapi Renewable Transmission Project 	<ul style="list-style-type: none"> Finds 10/28/11 decision effectively ignored "community values" and placed an unfair, unreasonable burden on Chino Hills residents by requiring abovegrounding Segment 8A w/massive new transmission towers set in narrow right of way. Approves undergrounding this 3.5-mile segment, capped @\$224m, saying it can be built on timely basis and at reasonable cost. 		<ul style="list-style-type: none"> Two commissioners dissented, saying reconsidering 4-year-old decision creates uncertainty for developers; costs more than 50x the \$4m abovegrounding, which poses burden for ratepayers, esp. large energy users; and appears to send message that communities that can afford to pay attorneys will succeed in changing PUC mind.
CA	• Southern California Edison	<ul style="list-style-type: none"> Decided 11/29/12 Case A10-11-015 Decision on Test Year 2012 General Rate Case for Southern California Edison Company 	<ul style="list-style-type: none"> Authorizes enhanced equipment inspections & new technology to better track condition/service record of co. assets, esp. poles and wires. Capital program includes infrastructure replacement, distribution construction & maintenance, and development of smart grid/other technologies Orders independent assessment of system utility poles to determine whether current loads meet legal standards Requires progress report on various initiatives to improve emergency communications & responses following Dec 2011 windstorms 	<ul style="list-style-type: none"> Makes numerous adjustments to rate base and forecasted expenses but overall is supportive of major infrastructure program, including significant distribution infrastructure monitoring, replacement & expansion 	

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			<ul style="list-style-type: none"> Requires independent audit of reliability investment incentive mechanisms (RIIM), which provides incentive to spend funds authorized for reliability vs. diverting them; results must be submitted w/analysis of short-term reliability stats (SAIDI, SAIFI) tracked w/RIIM expenditures since 2003 		
CT (Public Utilities Regulatory Authority)	Generic	<ul style="list-style-type: none"> Decided 1/28/14 Case 12-01-10 Decision 	<ul style="list-style-type: none"> Reopens record to address motion by UI for technical hearing prior to final decision in tree trimming investigation Will take public comment in March 2014 		<ul style="list-style-type: none"> Draft decision issued 11/19/13 reviews/clarifies practices, procedures and requirements for utility vegetation mgt. to comply w/governor's directives and legislative mandates
CT	Generic	<ul style="list-style-type: none"> Decided 8/21/13 Case 12-11-07 Decision 	<ul style="list-style-type: none"> Makes findings from investigation into the performance of electric distribution and gas companies in restoring service following Storm Sandy. (See item below.) Finds companies performed in "a generally acceptable manner in preparing for and responding to the storm." Finds areas that can be improved. For example: <ul style="list-style-type: none"> For CL&P and UI: Found significant progress in many areas such as communications since previous storms. Required further improvements in estimated time of restoration (ETR) and inclusion of analysis of ETR accuracy in future After Action Reports. Required further collaborative work with governmental agencies to identify and prioritize critical facilities. In response to consumer advocate concerns, including effect on customers of backup generator failure, requires CL&P and UI to report on feasibility of emergency generator operational readiness management program. 		
CT	Generic	<ul style="list-style-type: none"> Decided 1/8/13 Cases 12-06-12 Decision 	<ul style="list-style-type: none"> Describes potential refrigerated spoilage program. Legislation would be required. Key features include: 	<ul style="list-style-type: none"> Potential refrigerated spoilage program would be funded by ratepayers via existing systems benefit charge 	<ul style="list-style-type: none"> Decision is PURA report to legislature in response to directive in S.B. 23 (see below,

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			<ul style="list-style-type: none"> - Residential-only - Communications package - \$150 bill credit for food spoilage - Up to \$200 credit for medication spoilage - Outage verification by utility - Application process w/utility 		Case 12-06-09, Notes column)
CT	Generic	<ul style="list-style-type: none"> • Opened 11/16/12 • Case 12-11-07 • PURA Investigation into the Performance of Connecticut's Electric Distribution Companies and Gas Companies in Restoring Service Following Storm Sandy 	<ul style="list-style-type: none"> • Performance to be reviewed against standards set per Act 12-148 (see entry below) • Says it may order remedies, compliance filings or issue other orders and determine whether sanctions are warranted 		<ul style="list-style-type: none"> • PURA also is investigating cost-effective ways for CL&P to harden its system in Case 12-07-06 and ways to improve cost-effectiveness of CL&P and UI vegetation mgt. programs in Case 12-01-10
CT	Generic	<ul style="list-style-type: none"> • Decided 11/1/12 • Case 12-06-09 • Decision-PURA Establishment of Performance Standards for Electric and Gas Companies 	<ul style="list-style-type: none"> • Requires electric and gas distribution companies to incorporate performance standards in Emergency Response Plans addressing: <ul style="list-style-type: none"> - Emergency planning, including storm preparation and communications plans - Restoration & recovery • Sets reporting requirements • Noncompliance can result in civil penalties • CL&P to initiate pilot to determine feasibility/cost-effectiveness of option-like arrangement to procure contract resources for storm response 	<ul style="list-style-type: none"> • Determines that costs incurred to comply w/performance standards are generally recoverable in rates in future proceeding, including carrying costs calculated at co. avg. cost of capital, subject to review 	<ul style="list-style-type: none"> • Case was opened per requirement of S.B. 23, enacted in 2012 as Public Act 12-148, An Act Enhancing Emergency Preparedness and Response, following TS Irene & Oct 2011 snowstorm. Act requires PURA to review performance of utility when more than 10% of its customers are w/o service for more than 48 consecutive hours.
CT	Connecticut Light and Power, United Illuminating	<ul style="list-style-type: none"> • Decided 8/1/12 • Case 11-09-09 • Decision-PURA Investigation of Public Service Companies' Response to 2011 Storms 	<ul style="list-style-type: none"> • Establishes rebuttable presumption that CL&P ROE will be reduced in next rate case as penalty for poor mgt. performance in response to storms; CL&P will have opportunity to rebut • Both companies to track/implement recommendations from all reviews of 2011 storms (or explain why not implementing) 		

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			<ul style="list-style-type: none"> Both companies to implement 4-year tree trimming cycles vs. previous 5- to 7-year cycles CL&P to file report in Case 12-06-09 (see entry above) on effectiveness of enhanced tree trimming on circuit reliability CL&P to develop plan to establish heightened readiness for storms, including line worker resources Both companies to discuss ways to improve mutual assistance process w/EEI & mutual assistance groups CL&P to develop plan for real-time damage assessment & outage restoration data 		
CT	Northeast Utilities-Connecticut Light and Power	<ul style="list-style-type: none"> Decided 3/12/14 Case 13-03-23 Decision 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Approves \$365m storm cost reserve recovery, to be amortized over 6 yrs. w/carrying charges as of 12/1/14 when existing rate freeze expires <ul style="list-style-type: none"> - Amount is net of \$8.3m storm reserve fund balance and \$40m of costs written down per settlement agreement approved 4/2/12 in Case 12-01-07 (below) - Amounts relate to costs incurred for 5 storms in 2011-12 including Sandy - Finds most costs related to line crews and other utilities/contractors needed to repair system Disallows \$49m including amounts transferred to capital, reimbursements subsequent to filing, and those found to be already included in base rates <ul style="list-style-type: none"> - Recovery of capitalized amounts to be determined in next rate case 	
CT	Northeast Utilities-Connecticut Light and Power	<ul style="list-style-type: none"> Decided 1/16/13 Case 12-07-06 Decision 	<ul style="list-style-type: none"> Approves co. 5-year system resiliency plan per April 2012 decision in this docket (below). Plan calls for: <ul style="list-style-type: none"> - Spending \$300m: \$258m capital, \$42m expense - Short-term plan w/two phases: 1) 2013-14 increased vegetation mgt. efforts; 2) 2015-17, increased vegetation mgt. as well as structural/electrical hardening 	<ul style="list-style-type: none"> Approves co. proposal to recover costs through existing nonbypassable federal mandated congestion charge, subject to semi-annual reconciliation, until co.'s next rate case, at which time costs to be factored into revenue requirements 	

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			<ul style="list-style-type: none"> - Long-term plan after 2017 to be developed based on learnings from short-term plan • Requires detailed regular status report on implementation • Prohibits commingling of storm resiliency spending w/other program spending 		
CT	<ul style="list-style-type: none"> • Northeast Utilities-Connecticut Light and Power • NSTAR 	<ul style="list-style-type: none"> • Decided 4/2/12 • Case 12-01-07 • Decision-Application for Approval of Holding Company Transaction Involving Northeast Utilities and NSTAR 	<ul style="list-style-type: none"> • Approves settlement providing for CL&P to: <ul style="list-style-type: none"> - Spend \$300m on additional distribution system resiliency - Develop microgrid infrastructure in collaboration w/CT Dept. of Energy & Environmental Protection - Enhance Center for Storm and Power System Resiliency at U of Conn. 	<ul style="list-style-type: none"> • CL&P distribution rates frozen until 12/1/14; other retail rate components not affected by freeze • CL&P to file for base rate cost recovery related to TS Irene & Oct 2011 snowstorm net of insurance proceeds & storm fund but must write off \$40m of such costs; approved costs may be recovered at end of rate freeze over 6 years • CL&P to submit multiyear plan & cost recovery mechanism w/in 90 days for \$300m system resiliency program (see Notes column); recovery to occur via system benefits charge, federally mandated congestion charge or similar mechanism; CL&P to spend up to \$100m during rate freeze period, w/revenue requirement capped @\$25m, recoverable during freeze period beginning 1/1/13 	<ul style="list-style-type: none"> • CL&P on 7/9/12 submitted an application for approval of a multiyear system resiliency plan (Case 12-07-06)
CT	United Illuminating	<ul style="list-style-type: none"> • Decided 8/14/13 • Case 13-01-19 • Decision <p><u>Rehearing</u></p> <ul style="list-style-type: none"> • Decided 12/16/13 	<ul style="list-style-type: none"> • Approves \$100m ETT program but requires 8-yr. implementation (\$12.5m/yr.) vs. requested 4 yrs.; requires more detailed plan before 2014 work can begin 	<ul style="list-style-type: none"> • Offsets entire \$53.3m regulatory asset that co. requested to amortize over 6 yrs. through disallowances – reducing amount to \$46.1m for 2009-12 – and by offsetting remaining balance via accrued earnings sharing mechanism and other accrued regulatory liabilities. Approved regulatory asset consisted of extraordinary storm expenses related to Irene, Sandy, and 2011 Nor’easter and 4 other major storm events. <ul style="list-style-type: none"> - Sets definition of “major storm” as having \$1m expense threshold before deferral allowed • Approves reinstatement of storm reserve, funded annually @ \$2m for major storm costs. (Once reserve funding is exhausted, co. may use deferred accounting.) • Allows co. to capitalize ETT (see previous column); 	<ul style="list-style-type: none"> • On rehearing, approves \$1.3m increase in storm regulatory asset and additional \$5.5m in costs related to previously disallowed storms; acknowledges “mixed signals,” e.g., new storm definition differed from that previously used for determining which storm costs could be recorded as regulatory asset. • <u>Note:</u> Co. had used storm reserve accounting until 2006, at which time PURA approved regulatory asset treatment of major storm costs out of

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				<p>approves 5-yr. amortization of each year's costs; allows carrying charges @approved cost of capital</p> <ul style="list-style-type: none"> • Approves infrastructure replacement costs of \$45m/yr. for 2013-18 vs. requested \$57.3m/yr., saying additional levels will be considered in future subject to co. providing long-term plan • Reduces rate recognition of T&D operational excellence initiative (TDOEI) consisting of products/tools for restoration work related to major storms, from requested \$98.3m to \$56.4m (total) for 2013-16; says additional funding may be considered subject to co. providing more detailed plan w/cost-benefit analysis 	concern over potential overfunding of reserve.
DC (Public Service Commission)	Generic	<ul style="list-style-type: none"> • Released 7/1/10 • Case FC-1026 • Study of the Feasibility and Reliability of Undergrounding Electric Distribution Lines in the District of Columbia 	<ul style="list-style-type: none"> • Consultant hired by PSC made recommendations concerning undergrounding including for: <ul style="list-style-type: none"> ○ Continued use of undergrounding when new residential developments are introduced ○ Selective undergrounding in specific situations where undergrounding can be bundled with infrastructure investments, such as road expansion efforts, and large scale water and sewer replacement • Does not recommend undergrounding for all existing circuits 		Generic
DC	Potomac Electric Power	<ul style="list-style-type: none"> • Decided 10/26/12 • Case FC-1087 • Order 	• N/A	<ul style="list-style-type: none"> • Rejects proposal to amortize over 3 years \$2.1m related to Hurricane Irene, saying Irene should not be treated differently than other storms; instead orders factoring of expenses into 3-year average storm costs • Approves increase of \$500K related to new Enhanced Integrated Vegetation Management (EIVM) program <ul style="list-style-type: none"> ○ Requires co. to file annual plan for EIVM w/quarterly targeted Milestones & quarterly reports detailing EIVM effort 	<ul style="list-style-type: none"> • EIVM is a comprehensive program designed to address tree-related outages and increase reliability by removing hazardous trees, and trimming and removing vegetation above utility lines to prevent damage from falling limbs

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
FL (Public Service Commission)	Generic	<ul style="list-style-type: none"> Decided 5/23/07 Case 070011-EI Order PSC-07-0444-FOF-EI Notice of Adoption of Rule 		<ul style="list-style-type: none"> Amends FL Administrative Code re use of storm reserve accounts Establishes sub-account to cover property leased from others In determining costs to be charged to cover storm-related damages, utility to use an Incremental Cost and Capitalization Approach methodology (ICCA) <ul style="list-style-type: none"> Under ICCA, costs charged to cover storm-related damages exclude costs that normally would be charged to non-cost recovery clause operating expenses in absence of a storm Specifies types of storm-related costs allowed to be charged to reserve under ICCA methodology Utility may choose to expense storm recovery costs vs. crediting them to storm reserve account Utility may petition for recovery of a debit balance in reserve account + an amount to replenish storm reserve via surcharge, securitization or other cost recovery mechanism If utility seeks to change either target accumulated balance or annual accrual amount for storm reserve, it must file study w/PSC 	<ul style="list-style-type: none"> Rule 25-6.0143, F.A.C.
FL	Generic	<ul style="list-style-type: none"> Decided 1/17/07 Cases 060172-EU, 060173-EU, et al. Order PSC-07-0043-FOF-EU Notice of Adoption of Rules 	<ul style="list-style-type: none"> Amends FL Administrative Code re standards of construction, location of facilities, storm hardening & CIAC Utilities to file by May 2007 and every three years thereafter, a detailed storm hardening plan that must: <ul style="list-style-type: none"> Contain detailed description of construction standards, policies, practices & procedures used to enhance reliability of overhead & underground electrical T&D facilities in conformance w/rule provisions Explain systematic approach utility will follow to enhance reliability & reduce restoration costs/outage times related to extreme weather events 	<ul style="list-style-type: none"> Establishes uniform procedure by which IOUs calculate amounts due as CIAC from customers who request new facilities or upgraded facilities in order to receive electric service Incremental costs associated with hardening/resiliency to be recovered through base rates 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			- Include pole attachment standards		
FL	Generic- utility storm hardening plans	<ul style="list-style-type: none"> Decided 4/25/06 Case 060198-EI Order Requiring Storm Implementation Plans 	<ul style="list-style-type: none"> Requires all investor-owned utilities to file plans & estimated implementation costs for 10 storm preparedness initiatives that will be ongoing: <ul style="list-style-type: none"> 3-yr. vegetation management cycle for distribution circuits Audit of joint-use attachment agreements 6-yr. transmission structure inspection program Hardening existing transmission structures Transmission & distribution GIS Post-storm data collection/forensic analysis Collection of detailed outage data differentiating reliability performance of overhead & underground systems Increased utility coordination w/local governments Collaborative research on effects of hurricane winds & storm surge Natural disaster preparedness/recovery program 		<ul style="list-style-type: none"> The PSC on 5/19/08 approved FPUC's plan as part of its general rate case (Case 070300-EI); and on 12/28/07, approved plans filed by TECO (Case 070297-EI), PEF (070298), Gulf (070299) and FPL (070301). The PSC on 10/26/10 approved plan updates filed by PEF (Case 100262-EI), TECO (100263), FPUC (100264), and Gulf (100265); and on 1/31/11 approved FPL's update (100266). Says the updates largely are continuations of the previously approved plans and notes unavailability of data to evaluate effects of plans due to lack of named storms affecting FL. The PSC on 12/3/13 approved 2013-15 plan updates filed by Duke (Case 130129-EI), FPL (Case 130132-EI), FPUC (130131), Gulf (130139) and TECO (130138). Says the updates largely are continuations of the previously approved plans; notes unavailability of data to evaluate effects of plans due to lack of storms. Finds utilities are taking proactive steps to withstand severe weather events and reduce restoration and outage times.
FL	Generic	<ul style="list-style-type: none"> Decided 2/27/06 	<ul style="list-style-type: none"> Requires investor-owned utilities to begin 		

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
		<ul style="list-style-type: none"> • Case 060078-EI • Order Requiring Each Investor-owned Utility to Implement Eight-year Pole Inspection Cycle and Requiring Reports 	<p>implementing 8-yr. inspection cycle of transmission & distribution wooden poles based on National Electrical Safety Code compliance</p> <ul style="list-style-type: none"> • Requires annual reporting of prior year inspection results 		
FL	Florida Power & Light	<ul style="list-style-type: none"> • Decided 1/14/13 • Case 120015-EI • Order Approving Revised Stipulation and Settlement 		<ul style="list-style-type: none"> • Approves settlement providing for co. to implement monthly storm cost recovery surcharge, which co. proposed in lieu of seeking annual accrual to storm reserve <ul style="list-style-type: none"> - 60 days following a request for storm cost recovery, co. would implement on interim basis surcharge ≤ \$4/1,000 kWh on residential bills based on 12-mo. recovery period - Any storm costs exceeding that level are to be recovered later as determined by PSC • If co.'s costs related to named storms exceed \$800m in any one year, co. may also request increase of \$4/1,000 kWh rate accordingly 	
FL	Florida Power & Light	<ul style="list-style-type: none"> • Filed 8/15/12 • Case 120015-EI • Order pending • Joint petition to Suspend Procedural Schedule 		<ul style="list-style-type: none"> • Co. requests approval of settlement allowing it to implement monthly storm cost recovery surcharge <ul style="list-style-type: none"> - 60 days following a request for storm cost recovery, co. would implement on interim basis surcharge ≤ \$4/1,000 kWh on residential bills based on 12-mo. recovery period - Any storm costs exceeding that level to be recovered later as determined by PSC • If co.'s costs related to named storms exceed \$800m in any one year, co. may also request increase of \$4/1,000 kWh rate accordingly • Surcharge mechanism proposed in lieu of co. seeking annual accrual to storm reserve 	<ul style="list-style-type: none"> • Settlement, including this provision, was approved by the FPSC on 12/13/12
FL	Florida Power & Light	<ul style="list-style-type: none"> • Decided 5/30/06 • Case 060038-EI • Order PSC-06-0464-FOF-EI 		<ul style="list-style-type: none"> • Approves issuance of up to \$708m, 12-year storm-recovery bonds backed by customer surcharge, provided initial avg. retail cents per kWh surcharge will not exceed avg. retail cents 	<ul style="list-style-type: none"> • Similar financing orders were issued for other FL utilities • PSC on 7/2/2007 submitted report to Governor and

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
		<ul style="list-style-type: none"> Financing Order 		<p>per kWh for separate 2004 storm surcharge currently in effect</p> <p><u>Background:</u></p> <ul style="list-style-type: none"> As result of hurricanes Charley, Frances & Jeanne in 2004, FPL incurred storm-related costs of ~\$890m and deficit of ~\$536m in its storm reserve as of end of 2004 PSC on 9/21/05 (Case 041291-EI) approved recovery of \$442m of estimated deficit via mo. customer surcharge over 36 months 2005 FL Legislature passed law giving utilities ability to securitize storm recovery costs <ul style="list-style-type: none"> Co. subsequently filed to suspend payments to reserve account and make a new filing to recover costs in an alternative way FPL's service territory was impacted by four storms in 2005: Dennis, Katrina, Rita & Wilma, two of which inflicted the most damage subsequent to execution of settlement on storm cost amounts, leaving FPL w/even larger reserve deficit estimated @ ~\$880m net of insurance proceeds for all four storms FPL requested financing order in this case (No. 060038) authorizing issuance of storm recovery bonds of up to \$1.5b to: 1) recover remaining unrecovered balance of 2004 storm costs, 2) recover prudently incurred 2005 storm costs, less capital costs & insurance proceeds, 3) replenish storm reserve & 4) recover bond issuance costs 	<p>Legislature analyzing additional actions necessary to enhance reliability of FL utilities during extreme weather. See: http://www.psc.state.fl.us/publications/pdf/electricgas/stormhardening2007.pdf</p> <ul style="list-style-type: none"> Pursuant to Financing Order - \$652 million of storm recovery bonds issued May 2007. Previously approved 2004 Storm surcharge suspended and replaced by Storm Bond recovery charge.
FL	Florida Power & Light	<ul style="list-style-type: none"> Decided 9/14/05 Case 050045-E1, et al. Order PSC-05-0902-S-EI Order Approving Stipulation and Settlement 		<ul style="list-style-type: none"> Per settlement, co. agreed to suspend current accrual (~\$20m) to storm reserve as of 1/1/06 Target level for storm reserve to be set in separate proceeding Replenishment of storm reserve to target level to be accomplished via securitization per §366.8260, FL Statutes, or via separate surcharge that is independent of & incremental to retail base rates, as approved by PSC 	
FL	Progress	<ul style="list-style-type: none"> Decided 6/18/10 		<ul style="list-style-type: none"> Allows co. to implement on interim basis, 60 days 	

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
	Energy Florida	<ul style="list-style-type: none"> • Case 090145-EI, et al. • Order PSC-10-0398-S-EI • Order Approving Stipulation and Settlement 		<p>following a request for storm damage cost recovery, a mo. storm cost recovery surcharge of up to \$4.00/1,000 kWh on residential customer bills over 12 mos.</p> <ul style="list-style-type: none"> - If storm costs exceed that level, any additional costs to be recovered in subsequent year(s) as determined by PSC • Co. may also use surcharge to replenish storm damage reserve to level as of settlement implementation date 	
FL	Progress Energy Florida	<ul style="list-style-type: none"> • Decided 7/6/09 • Case 090145-EI • Order PSC-09-0484-PAA-EI • Notice of Proposed Agency Action Order Denying Rule Waiver 		<ul style="list-style-type: none"> • Denies co. request for waiver of rules to allow recovery via storm reserve account of projected \$33m of storm hardening distribution & transmission O&M expenses and depreciation expense vs. normal operating expenses - Waiver required because rules allow only storm damage expense to be recovered via storm reserves • Finds co. had not sufficiently established that a substantial technological, economic, legal, or other type of hardship would result from its compliance w/rule 	
GA (Public Service Commission)	Georgia Power	<ul style="list-style-type: none"> • Decided 12/17/13 • Case 36989 • Order Adopting Settlement Agreement 		<ul style="list-style-type: none"> • Approves extension of amortization period, from 3 to 6 yrs., for recovery of previously incurred storm costs (Storm Damage Regulatory Asset), resulting in \$6.9m adjustment. Says adjustment does not adversely affect ability to recover prudently incurred storm expenses but rather is a timing step that reduces impact of overall rate increase on ratepayers. 	
IL (Commerce Commission)	Ameren Illinois	<ul style="list-style-type: none"> • Decided 9/19/12 • Case 12-0001 		<ul style="list-style-type: none"> • Requires 5.6% distribution rate reduction in decision on initial formula rate plan filed under Energy Infrastructure Modernization Act (see entry below) vs. co.-proposed \$19.9 million reduction, as revised 	<ul style="list-style-type: none"> • Co. has annual formula rate update pending that will result in rate adjustment in January 2013 (Case 12-0293)
IL	Commonwealth Edison	<ul style="list-style-type: none"> • Decided 12/18/13 • Case 13-0318 • Order 	<ul style="list-style-type: none"> • In 3rd formula rate plan (FRP) proceeding under 2011 legislation (SB 1652, below), approves delivery rates that reflect further statutory changes per SB 9 (2013). (See Cost 	<ul style="list-style-type: none"> • Approves year-end (terminal) rate base, year-end capital structures for FRP rate reconciliations, and weighted cost of capital as interest rate on reconciliation amount, as required by SB 9. 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			Recovery.)	<ul style="list-style-type: none"> - The changes resulted in approval of a general rate increase (\$324.6m) that exceeded the original filed amount (\$292m), but was lower than ComEd's revised filing submitted following S.B. 9 enactment (\$336.7m.) - Revenue requirement reflects 2012 reconciliation adjustment & 2014 initial rate year revenue requirement (including projected 2013 plant additions) 	
IL	Commonwealth Edison	<ul style="list-style-type: none"> • Decided 6/5/13 • Case 11-0662 • Order 	<ul style="list-style-type: none"> • Grants co. waiver of liability for service interruptions that occurred 2/1/11 during major winter storm. Finds damage to distribution system was unpreventable due to severity of weather. • Declines AG request to open investigation into ComEd infrastructure and storm hardening investments, saying it found no basis. 		
IL	Commonwealth Edison	<ul style="list-style-type: none"> • Decided 6/5/13 • Case 11-0588 • Order 	<ul style="list-style-type: none"> • Waives liability for damages experienced by customers due to service interruptions for 5 of 6 storms in summer 2011 but for first time under 15-year-old Public Utilities Act (Section 16-125(e), said co. may be responsible for such damages related to 1 of the storms. Orders co. to notify 34,559 customers that they are eligible to file a claim for reimbursement for outages. • Rejects AG request to open investigation of ComEd system, saying it did not find any systematic failure by co. 		
IL	Commonwealth Edison	<ul style="list-style-type: none"> • Decided 11/8/12 • Case 11-0692 • Order 	<ul style="list-style-type: none"> • Approves undergrounding as least cost option (\$121m) for 4.3-mile, 345 kV Burnham/Taylor transmission line in Chicago • Accepts co. finding that overhead options not viable because of: <ul style="list-style-type: none"> - insufficient space for poles - inability to secure easements on IL DOT property due to IL DOT regs - inability to cross Metra (commuter rail) ROW & meet safety standards due to 		

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			obstructions - ComEd does not own or have rights to most of property needed for overhead route		
IL	Commonwealth Edison	<ul style="list-style-type: none"> • Decided 5/29/12 • Case 11-0721 • Reheard 10/3/12 • Order 		<ul style="list-style-type: none"> • Approves 3-year, performance-based formula rate tariff under new law (see Notes column) <ul style="list-style-type: none"> - Results in rate reduction larger than co. expected • As part of formula rate plan, approves 5-year amortization of \$2.2m as unusual operating expense related to Jun 2010 storm and rate-basing of unamortized storm costs of \$8.9m w/deferred tax impact • On rehearing, affirms use of average rate base for calculating revenue requirement in annual FRP reconciliations vs. co. request to use year-end rate base, saying year-end method does not take into account certain depreciation or give proper weight to what actually happens in rate base prior to 12/31 of each year; that there is room for legislative interpretation; and that impact on customers should be weighed <ul style="list-style-type: none"> - Largely upholds approved methodology for calculating interest on reconciliation adjustments that relies on short-term debt rate vs. co.-proposed weighted avg. cost of capital - Following rehearing, co. announced it would slow pace of investment under new law 	<ul style="list-style-type: none"> • This is first formula rate plan (FRP) proceeding under new ratemaking framework set by SB 1652, Energy Infrastructure Modernization Act, enacted 19/31/12(Public Act 97-0616). The law: <ul style="list-style-type: none"> - Provides for performance-based formula rate plans (FRPs) under which storm & other specified unusual operating expenses to be amortized over 5 years; any unamortized balance to be rate-based - Requires participating electric utilities to invest in T&D systems, w/cost recovery addressed in annual FRP proceedings, subject to CC review & approval - ComEd must invest \$2.6b & Ameren IL \$625m over 10 years - HB 3036, trailer bill enacted separately, re-directs \$200m toward targeted undergrounding, tree-resistant overhead conductors & other storm hardening measures, in addition to inspection & replacement of residential underground & mainline cable programs per SB 1652 - ComEd filed investment plan

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
					<p>on 1/6/12 & Ameren filed plan on 3/3/12 for informational purposes (undocketed)</p> <p>- CC retains</p>
IN (Utility Regulatory Commission)	Northern Indiana Public Service	<ul style="list-style-type: none"> Decided 2/17/14 Case 44370 Order of the Commission 	<ul style="list-style-type: none"> Approves co.-proposed projects in 7-yr. plan that accompanied TDSIC proposal (below, Case 44371) <ul style="list-style-type: none"> Some project approvals are subject to further definition and more specifics in plan update proceedings Plan largely consists of replacement projects for T&D infrastructure for purposes of safety, reliability, system modernization & economic development - 		<ul style="list-style-type: none"> SB 560, enacted 4/30/13, authorizes URC to approve a TDSIC rider to facilitate recovery, outside of a general rate case, of costs related to infrastructure investments. A utility seeking approval of a TDSIC rider must file a 7-yr. project plan. A utility with such a tracker must file a base rate case every 7 yrs.
IN		<ul style="list-style-type: none"> Decided 2/17/14 Case 44371 Order of the Commission 		<ul style="list-style-type: none"> Approves transmission, distribution, and storage system improvement charge (TDSIC) Total projected revenue requirement related to 7-yr. plan (above, Case 44370) is approx. \$262m, w/additional \$139m (deferred balance over life of plan) to be recovered via base rates; rate case to be filed before end of 7-yr. plan TDSIC: <ul style="list-style-type: none"> To recover 80% of eligible/approved capital expenditures & TDSIC costs (e.g., depreciation, property taxes); remaining 20% to be deferred Adjusted semiannually Any related rate increase to be capped at 2% in 12-mo. period; incremental amts. to be deferred Overall return used in rate adjustments must be calculated using regulatory capital structure that includes zero-cost capital, e.g., deferred income tax 10.2% ROE (as approved in last rate case) 	

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
IN	Indiana Michigan Power	<ul style="list-style-type: none"> Decided 2/13/13 Case 44075 Order of the Commission 		<ul style="list-style-type: none"> Approves \$4.2m major storm damage restoration reserve based on 5-yr. average, reduced from co.-requested \$6.2m based on 3-yr. average Approves tracker for recovery of incremental variations from reserve (\$4.2m) in storm O&M costs; costs to be recorded monthly as regulatory asset or liability for recovery/refund in future rate case; says this will “smooth out the impacts of major storms, thereby mitigating the financial consequences of a major storm.” 	
KY (Public Service Commission)	Generic	<ul style="list-style-type: none"> Decided 5/30/13 Case 2011-00450 Order 	<ul style="list-style-type: none"> Requires each utility to collect/maintain all records necessary to evaluate system reliability performance in accord w/most recent IEEE Std. No. 1366 and to file reports annually w/specified information, e.g., SAIDI and SAIFI systemwide and for each circuit - Order based on finding that outage reporting requirements are not sufficient to judge adequacy of service 		<ul style="list-style-type: none"> Utilities filed rehearing petitions arguing that additional costs are imposed w/o guaranteeing reliability improvements. The PSC in a 7/9/13 order agreed to rehear the decision.
KY	Louisville Gas & Electric	<ul style="list-style-type: none"> Decided 12/27/11 Case 2011-00380 Order 		<ul style="list-style-type: none"> Approves establishment of \$8.1m regulatory asset to track O&M costs related to Aug 2011 thunderstorm w/high winds - Amt. in excess of \$4.8m in storm damage expense currently embedded in base rates per 10/21/10 order (Case 2009-00549) - As total costs become known, LG&E to adjust downward if total < \$8.1m & expense any actual costs exceeding \$8.1m Says in light of increasing requests for regulatory assets for severe weather events in recent years and results of previous post-storm audits, it will conduct more detailed reasonableness review than in previous cases when co. seeks recovery of deferred amounts in future rate case 	<ul style="list-style-type: none"> Notes similar regulatory assets were approved for LG&E and Kentucky Utilities for storm-related costs: <ul style="list-style-type: none"> - LG&E Case 2008-00456, et al. for storm damage from Hurricane Ike & Jan 2009 ice storm - KU Case 2008-00457, et al. for same events above - KU Case 2003-00434 for portion of 2003 ice storm expenses - LG&E Case 6220 for costs related to 1974 tornado
LA (Public Service Commission)	Entergy Gulf States (LA)	<ul style="list-style-type: none"> Decided 1/7/14 Case U-32707-A Order 		<ul style="list-style-type: none"> Approves settlement providing for withdrawal of co. request to increase storm reserve accruals in base rates. Co.’s formula rate plan (FRP) to be extended 3 yrs. - To extent Hurricane Isaac-related escrow amts. 	

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				are not funded to at least \$87m, inclusive of current \$21.5m balance, co. may re-request accrual increase during FRP extension period	
LA	<ul style="list-style-type: none"> • Entergy LA 	<ul style="list-style-type: none"> • Decided 1/7/14 • Case U-32708-A • Order 		<ul style="list-style-type: none"> • Approves settlement providing for withdrawal of co. request to increase storm reserve accruals in base rates. Co.'s formula rate plan (FRP) to be extended 3 yrs. <ul style="list-style-type: none"> - To extent Hurricane Isaac-related escrow amts. are not funded to at least \$187m, co. may re-request increase during FRP extension period 	
LA	<ul style="list-style-type: none"> • Entergy LA • Entergy Gulf States (LA) 	<ul style="list-style-type: none"> • Decided 4/21/10 • Cases U-30981, U-30981-A, -B, -C • Order 		<ul style="list-style-type: none"> • Approves "black box" settlement providing for recovery of \$11.64m less than requested; approved amounts = \$394m for EL & \$233.9m for EGSL (including amounts already recovered via existing storm fund = \$134m for EL, \$85.5m for EGSL) • Approves mechanisms for companies & LA Utilities Restoration Corp. to finance – via Act 55 bond issuance – system restoration costs & replenishment of storm damage reserves up to \$200m for EL & up to \$90m for EGSL <ul style="list-style-type: none"> - Bonds to be backed by all ratepayers via mo. nonbypassable surcharge (Rider FSC II) - Separate order (Case U-30981-C) addresses calculation of offsets to FSC II Rider based on insurance proceeds, sharing of tax benefits from securitization, and other offsets - Reaffirms previous decisions that all customers/loads taking service from companies must share in cost to repair & restore service as well as cost to fund storm damage reserve, including customers taking service at transmission levels • Cost allocation was negotiated separately & included in settlement <ul style="list-style-type: none"> - For Entergy LA, 86.28% of costs to be classified as distribution related, 13.72% as transmission & generation related. Retail customers taking service at transmission voltages to be assigned 	<ul style="list-style-type: none"> • Act 64 enacted in 2006 authorizes electric utilities to file for PSC approval to issue taxable bonds to securitize hurricane restoration costs • Act 55 enacted in 2007 established LA Utilities Restoration Corp., which may issue state tax-exempt bonds to finance hurricane restoration costs

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				<p>base revenue share of 33% of costs deemed to be distribution related and 12 coincident peak share of costs deemed to be transmission & generation related</p> <ul style="list-style-type: none"> - Percentages slightly differ for EGS - All approved system restoration & storm reserve costs not assigned to transmission-level retail customers to be assigned to other retail rate schedules based on each schedule's share of base revenue 	
LA	<ul style="list-style-type: none"> • Entergy LA • Entergy Gulf States (LA) 	<ul style="list-style-type: none"> • Decided 4/16/08 • Cases U-29203-E, -F, -G • Order 		<ul style="list-style-type: none"> • Approves settlement resolving remaining issues for recovery of storm damage costs • Accompanying financing orders authorize securitization of costs per 2007 Act 55 • Provides for additional benefits to customers over those that would have been available under previous orders (pursuant to 2006 Act 64-see entry above-Notes column) <ul style="list-style-type: none"> - Estimates customers will save additional \$40m due to tax benefits achievable under new law that companies agreed to share w/customers, as well as other savings - Requires that any credits for insurance, government grants & certain tax benefits be credited back to customers 100%, w/o offset due to any ratemaking mechanisms - Because of potential tax savings, companies agreed to, and PSC approved, hold-harmless clause under which customers guaranteed to be at least as well off under new financing as they would have been under previously approved financing (see entry below) 	<ul style="list-style-type: none"> • For various reasons including state of securities markets, companies were unable to issue bonds to recover costs of hurricanes Katrina & Rita per previous financing orders in this docket on terms acceptable to PSC • This case was initiated based on Act 55 enacted in 2007 allowing companies to securitize bonds at lower costs & w/additional tax benefits (see also entry above)
LA	<ul style="list-style-type: none"> • Entergy LA • Entergy Gulf States (LA) 	<ul style="list-style-type: none"> • Decided 8/15/07 • Cases U-29203-B, -C, -D • Order 		<ul style="list-style-type: none"> • Approves overall level of permanent storm damage recovery for hurricanes Rita & Katrina @\$187m for EGSL & \$545m for EL • Accompanying financing orders authorize securitization of costs per 2006 Act 64 (see entry above-Notes column) • Requires both companies to establish storm 	

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				<ul style="list-style-type: none"> reserve accounts to cover costs of future storms • Requires funding of both recovery costs & establishment of storm reserve accounts via bond issuance per Act 64 • Bonds to be backed by revenue from nonbypassable customer surcharge (Securitized Storm Cost Offset Rider) <ul style="list-style-type: none"> - Customers cannot bypass storm charges via self-generation or co-generation; charge to be collected from all existing/future customers using transmission or distribution - Total costs to be allocated to customer classes based on their contribution to base revenues • Securitization to be performed via establishment of "Special Purpose Entities," which would be subsidiaries of companies • PSC may review proposed bond issuances 	
LA	<ul style="list-style-type: none"> • Entergy LA • Entergy Gulf States (LA) 	<ul style="list-style-type: none"> • Decided 3/3/06 • Case U-29203-A • Order 		<ul style="list-style-type: none"> • Grants co.-requested interim rate relief due to recovery from hurricanes Rita & Katrina • Allows EGSL to recover ≤ \$6m and EL ≤ \$14m for costs incurred between Mar-Sep 2006 • Recovery amounts to be recovered as extraordinary cost surcharge, to end when full amount collected • Says it will develop revenue requirement after investigation of full costs for permanent storm recovery • Requires companies to develop securitization proposal • Hires outside consultant to audit co. expenses 	
LA	Entergy New Orleans	<ul style="list-style-type: none"> • Decided 4/2/09 • City Council Resolution R-09-136 • Resolution and Order Approving Agreement in Principal 		<ul style="list-style-type: none"> • Approves settlement in GRC providing for formula rates for 3 years as of 1/1/10 • Formula rate plan includes recovery of non-capital storm damage costs & re-funding of storm reserves via storm reserve rider • City's auditors to review final costs of co. response to hurricanes Rita & Katrina for inclusion in rider • Capital costs to be addressed in 2010 formula rate 	

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				plan review	
MA (Department of Public Utilities)	Generic	<ul style="list-style-type: none"> Decided 12/23/13 Case 12-76-A Order 	<ul style="list-style-type: none"> Presents straw proposal for grid modernization (GM) following Working Group report (Notes column). Plan has 2 parts: <ol style="list-style-type: none"> Directive to each electric distribution co. to submit, w/in 6 mos. of final order, a 10-year strategic grid modernization plan (GMPs) as part of planning process. Plan must have infrastructure & performance metrics toward meeting 4 objectives including reduction of outage effects. First GMP must include comprehensive advanced metering plan. GMPs required at least every 5 years. Address in separate proceedings GM topics including time-varying rates; cybersecurity, privacy and access to meter data; and electric vehicles Notes co. methods of reducing outage effects is under review in service quality proceeding; GMPs are expected to help achieve any new reliability metrics or standards set in that proceeding (Case 12-120, below) Seeks comment, plans hearings 	<ul style="list-style-type: none"> Says it will examine advanced metering functionality under targeted regulatory framework including: 1) review/preauthorization by DPU; 2) benefit-cost analysis w/in a business case; benefits must exceed costs; and 3) if justified, targeted cost recovery mechanism. If an investment is preauthorized, prudence would be evaluated in later cost recovery proceeding. <ul style="list-style-type: none"> Finds capital expenditure tracking mechanism is appropriate for targeted cost recovery Declines to adopt future test year for cost recovery model, saying it would be based on projections involving speculation and uncertainty, exposing ratepayers to unwarranted risk 	<ul style="list-style-type: none"> Stakeholder Working Group on 7/2/13 submitted to DPU a report containing information, principles, recommendations on wide array of GM issues
MA	Generic	<ul style="list-style-type: none"> Opened 7/31/13 Case 13-09 Order Instituting Rulemaking 	<ul style="list-style-type: none"> Opens docket for purpose of implementing requirement of 2012 law, An Act Relative to Emergency Service Response of Public Utility Companies, requiring notification by transmission companies of vegetation management activities. The DPU and others must be notified at least 30 days ahead. 		
MA	Generic	<ul style="list-style-type: none"> Opened 12/11/12 Docket No. 12-120 Vote to Open Investigation 	<ul style="list-style-type: none"> Undertakes review of utility service quality (SQ) metrics in SQ standards to determine whether changes are needed. DPU is developing a straw proposal in a process involving discovery and hearing. Topics include: penalties; offsets; existing and potential new metrics for reliability, safety, customer satisfaction; potential new penalty for downed wire response; potential clean 		

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			energy metrics; benchmarking for metrics; potential new or deleted metrics.		
MA	Generic	<ul style="list-style-type: none"> • Opened 10/2/12 • Case 12-76 • Vote and Order Opening Investigation 	<ul style="list-style-type: none"> • Opens investigation into electric grid modernization (GM) • Says GM technologies & policies are vital for maintaining/improving electric system reliability & offer opportunity to reduce frequency/duration of outages via automated remote-controlled grid devices & real-time communication to distribution companies of outages & infrastructure failures • Seeks to develop roadmap to GM over short, medium & long term; potential policies include: <ul style="list-style-type: none"> - Planning procedures to allow stakeholder input on GM initiatives - Requirements for EDCs to achieve specific GM goals - Performance standards for GM practices - Cost recovery treatment of GM investments - Investigation policies for consumer protection • GM Stakeholder Working Group (WG) established with series of meetings scheduled <ul style="list-style-type: none"> - Initial WG report is due Jun 2013 		
MA	National Grid	<ul style="list-style-type: none"> • Decided 5/3/13 • Case 13-59 • Order 	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • Allows co. to replenish storm fund outside base rate case band before prudence review by \$40m annually over next 3 yrs. for total \$120m <ul style="list-style-type: none"> - Says replenishment will save ratepayers \$41m in interest as compared to alternative deferral scenario - Says co. not entitled to replenishment until prudence review completed in separate proceeding for costs incurred related to 14 extraordinary storms in previous 3 yrs; any overcollection to be returned to ratepayers w/interest 	
MA	National Grid	<ul style="list-style-type: none"> • Decided 8/3/12 • Case 11-129 	<ul style="list-style-type: none"> • Approves 2-year voluntary smart grid pilot, citing among potential benefits reduced 	<ul style="list-style-type: none"> • Approves 5-year depreciation for all smart grid technology related to pilot 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
		<ul style="list-style-type: none"> Order 	customer outage time & increased operational efficiency of grid - Pilot includes testing of remote power outage sensors that enable crews to be dispatched directly to source of problem & restore power more quickly. It also will include systems to help identify affected customers during storms, thereby improving restoration times.	<ul style="list-style-type: none"> Allows use of co. tax-adjusted weighted avg. cost of capital as carrying charge for all pilot investments Approves allocation of grid-facing costs to distribution customers and allocation of customer-facing costs to basic service customers; approves co.-proposed method for allocating shared capital expenses to both components Co. to file request for cost recovery in year after costs incurred 	
MA	National Grid	<ul style="list-style-type: none"> Decided 9/22/11 Case 11-03 Order on Amended Settlement 	<ul style="list-style-type: none"> Approves settlement providing for: <ul style="list-style-type: none"> Voluntary \$1.2m penalty Implementation of automated system to identify affected life support customers, make required notifications & related actions Improved wires down dispatch & related service quality metric for response times Co.-funded study at MA university on correlation between wind speed, direction, geography, weather conditions & outages, @\$50K to \$100K cost. Co. contribution of \$50K for firefighting training at MA academy & additional \$50K each to United Way of MA and American Red Cross 		
MA	National Grid	<ul style="list-style-type: none"> Decided 11/30/09 Case 09-39 Order 	<ul style="list-style-type: none"> N/A N/A 	<ul style="list-style-type: none"> Permits continued operation of storm fund after 12/31/09 expiration set in previously approved settlement (Case 99-47 (1999)); cites leveling effect on rates <ul style="list-style-type: none"> Allows annual collection of ~\$4m in base rates for fund Allows fund to be used to recover non-capital storm costs in excess of \$1.25m Fund balance accrues interest @co. weighted avg. cost of capital Fund capped @\$20m (symmetrical); any excess returned to ratepayers via reconcilable surcharge w/interest; for deficits co. may 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				<p>propose recovery method</p> <ul style="list-style-type: none"> Allows recovery of ~\$30m storm fund deficit balance resulting from 2008 winter storm via 5-year surcharge + interest, subject to prudence review; cites “excellent preparedness” by co. 	
MA	<ul style="list-style-type: none"> Northeast Utilities-Western Massachusetts Electric NSTAR 	<ul style="list-style-type: none"> Decided 4/4/12 Case 10-170-B Order 		<ul style="list-style-type: none"> Approves NU-NSTAR merger settlement providing that storm costs incurred by NSTAR for TS Irene & Oct 2011 snowstorm will be excluded from storm fund calculation & deferred, w/carrying costs calculated @prime rate, to be recovered via surcharge outside of base rates over 5 years, subject to prudence review WMECO recovery of Oct 2011 storm costs to be deferred until final decision in Case 11-119-C Says settlement does not shield merging companies from penalties if ongoing storm investigations find violations of regulatory standards set in CMR §19.03 	
MA	NSTAR	<ul style="list-style-type: none"> Decided 12/30/13 Case 13-52 Order 		<ul style="list-style-type: none"> Disallows \$3.5m of requested \$38m in costs related to T.S. Irene & Oct 2011 snowstorm; finds remaining costs were incremental, storm-related, and reasonably & prudently incurred <ul style="list-style-type: none"> Finds co. imprudent in not seeking reimbursement from Verizon for vegetation mgt. of jointly owned poles; disallows 50% of requested \$6.2m + carrying charges Disallows some incremental telephone & fuel costs, citing lack of record support Requires utilities in future storm cost recovery filings to provide “complete, reviewable, and cohesive documentation,” including specified work order information; cites difficulty in reviewing storm-related costs in this proceeding 	
MA	Western Massachusetts Electric	<ul style="list-style-type: none"> Decided 1/31/11 Case 10-70 Order 		<ul style="list-style-type: none"> Permits continued operation of storm fund previously set per 2006 settlement (Case 06-55) <ul style="list-style-type: none"> Increases annual revenue to existing storm fund from \$300K to \$575K to better reflect incremental expenses Caps storm fund @\$3m (symmetrical) 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				<ul style="list-style-type: none"> - Allows fund to be used to recover storm costs in excess of \$300K • Allows ~\$15m in non-capital costs from 2008 ice storm to be recovered outside of base rates & outside of storm fund via reconcilable storm surcharge over 5 years, w/carrying costs calculated @customer deposit rate • Allows co. to propose cost recovery mechanism if storm fund deficit exceeds \$3m • Will conduct separate prudence inquiry on actual costs to be applied against fund 	
MD (Public Service Commission)	Generic	<ul style="list-style-type: none"> • Decided 9/3/13 • Rulemaking (RM) 43 • Order 	<ul style="list-style-type: none"> • Accepts 1st annual reports by utilities under RM43 (below) for partial year 2012 as well as corrective action plans where warranted, and w/certain modifications • Finds utilities substantially complied w/systemwide reliability standards 		
MD	Generic	<ul style="list-style-type: none"> • Decided 2/27/13 • Case 9298 • Order 	<ul style="list-style-type: none"> • Following investigation of utility response to 2012 derecho, finds no cause for civil penalties or further action • Finds “disconnect” between public expectations for distribution reliability and ability of systems to meet those expectations • Directs utilities to file shorter-term (5 yr.) plans to improve reliability • For longer term, directs utilities to submit studies on infrastructure or operational investments needed to reduce outages • Directs staff to draft proposed changes to reliability regs to include major outage event data and strengthen poorest performing feeder standard • Directs staff to study performance-based ratemaking to better align rates w/reliability, including provision for penalties • Directs other utility steps, including reports on staffing and communications, and participation in work group w/staff 		
	Generic	<ul style="list-style-type: none"> • Decided 10/26/12 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Affirms & expands 1/25/12 order in this docket 	

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
		<ul style="list-style-type: none"> Cases 9257, 9258, 9260 Order 		(see entry below) to prevent imposition on customers of decoupling surcharge for revenue losses even during first 24 hours of the onset of a major storm	
MD	Generic	<ul style="list-style-type: none"> Executive Order .01.01.2012.15 Issued 9/24/12 	<ul style="list-style-type: none"> In late July 2012, following 6/29 Derecho, Gov. O'Malley issued Executive Order creating task force to issue report about options for improving resiliency of electric distribution system in MD as well as options for financing and cost recovery of such options Task Force made 11 recommendations: <ul style="list-style-type: none"> Improve RM 43's reliability and reporting requirements (see below for RM 43 details) Accelerate RM 43's march toward reliability Allow tracker cost recovery mechanism for accelerated and incremental investments Implement a ratemaking structure that aligns customer and utility incentives by rewarding reliability that exceeds metrics and penalizes reliability that doesn't Perform joint exercises between state and utilities Facilitate information sharing among utilities, state agencies and emergency management agencies Increase citizen participation in "special needs" customer lists and share information with emergency management agencies Evaluate state-wide vegetation management regulations and practices Determine cost-effective levels of investment in resiliency Study staffing pressures due to graying of workforce Task Energy Future Coalition with developing a pilot proposal 	<ul style="list-style-type: none"> See task force recommendations 	
MD	Generic	<ul style="list-style-type: none"> Effective 5/28/2012 Rulemaking (RM) 43 	<ul style="list-style-type: none"> Rulemaking to address reliability and service quality standards initiated as result of legislation passed by MD General Assembly 	<ul style="list-style-type: none"> Legislation increased potential penalties for non-compliance with regulations 	

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			<ul style="list-style-type: none"> • Requires utilities to achieve standards of reliability performance and report certain data re service quality (SQ) and reliability • Among other things, the regulations: <ul style="list-style-type: none"> - Establish specific SAIFI and SAIDI metrics for each utility from 2012 to 2015 - Require that remediation action be taken for poorest performing 3% of feeders and protective devices activities 5 times or more during a 12 month period - Require at least 92% of sustained outages during normal events be restored w/in 8 hrs. - Require at least 95% of sustained outages during “Major Events” of < 400,000 or 40% of customers be restored w/in 50 hrs. - Require response to a government emergency responder-guarded downed wire w/in 4 hrs. after notification by a fire or police department, or 911 emergency dispatcher at least 90% of the time - Set min. vegetation management standards 		
MD	Generic	<ul style="list-style-type: none"> • Decided 1/25/12 • Case 9257, et al. • Order 		<ul style="list-style-type: none"> • Finds decoupling mechanisms for utilities as currently designed do not appropriately align company financial incentives w/reliability goals • Prevents imposition on customers of decoupling surcharge for revenue losses beginning 24 hours after commencement of a major storm and continuing until all major storm-related sustained interruptions are restored 	<ul style="list-style-type: none"> • PSC established these non-consolidated dockets to investigate whether decoupling mechanisms previously approved for MD electric utilities inadvertently eliminated incentive for utilities to quickly restore lost service to customers by authorizing the recovery of revenues foregone during extended outages, and if so, whether the decoupling mechanisms should be modified to prevent that outcome
MD	Baltimore Gas and Electric	<ul style="list-style-type: none"> • Decided 12/13/13 • Case 9326 	<ul style="list-style-type: none"> • Conditionally approves 5-yr., \$72.6m Electric Reliability Investment (ERI) program consisting 	<ul style="list-style-type: none"> • Approves recovery of costs related to 5 approved ERI programs via annually trued up surcharge, 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
		<ul style="list-style-type: none"> Order 	<p>of 5 of 8 co.-proposed programs: 1) Expansion of poorest performing feeders, 2 & 3) expanded recloser deployment (13 kV distribution feeders & 34 kV lines), 4) diverse routing of 34 kV supply circuits, and 5) half of selective undergrounding initiative. Revenue requirement increases from \$2.3m in 2014 to \$9.5m in 2018; cites cost in approving only half of this program.</p> <ul style="list-style-type: none"> - Conditions including enhanced reporting requirements. - Approval criteria: cost-effectiveness; provision of accelerated & incremental benefits to increase reliability & resiliency; appropriateness for surcharge cost recovery. - Prudence of actual expenditures to be reviewed later. <ul style="list-style-type: none"> Reasons for rejecting 3 of 8 proposed ERI programs: 1) expansion of vegetation mgt.; says fuller understanding of impact needed; 2) CIADI improvement; cites uncertainty over cost-effectiveness; and 3) substation reliability performance improvement; cites minimal estimated benefits to ratepayers. 	<p>called grid resiliency charge, to sunset in 5 years.</p> <ul style="list-style-type: none"> Rejects consumer advocate proposed basis point reduction in overall ROE as result of surcharge, saying this can be addressed later in rate case As in other cases (e.g., Case 9299 below), accepts 2 rate base adjustments: <ul style="list-style-type: none"> - Terminal test year treatment of non-revenue producing investments to improve safety & reliability; increases electric rate base by \$58.4m - Actual post-test year safety & reliability investments thru Oct 2013; increases electric rate base by \$20.4m As in Case 9299 (below), rejects post-test year projected investment because “not known and measureable” Rejects co. proposal to recover storm restoration expense over 3 yrs. vs. existing 5 yrs., citing lack of “demonstrable scientific evidence” that extreme weather would continue to occur on any predictable basis and that 5 yrs. is insufficient. Approves annualized vegetation management expense, saying RM43 compliance will marginally increase such expenses & require time before they normalize 	
MD	Baltimore Gas and Electric	<ul style="list-style-type: none"> Decided 9/9/13 Case 9291-Phase 1 Order 	<ul style="list-style-type: none"> Based on staff investigation of 14 feeders, finds BGE did not violate state law or regulation but also finds some feeders in Howard Co. have significant reliability issues Directs co. to continue work on its Reliability Enhancement Work Plan and report on results Directs co. to annually survey customers on these feeders on satisfaction w/work plan 		<ul style="list-style-type: none"> Proceeding was initiated by apparently first of its kind petition whereby a PSC investigation is triggered when at least 100 customers join to file a complaint Phase 2 will involve staff investigation of 33 additional feeders in Howard Co. identified by complaint
MD	Baltimore Gas and Electric	<ul style="list-style-type: none"> Decided 2/22/13 Case 9299 Order 		<ul style="list-style-type: none"> Approves adjustments to historical test year treatment as follows: <ul style="list-style-type: none"> - Terminal test year treatment of non-revenue producing investments to improve safety & 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				reliability and comply w/RM43 (generic item above 5/28/12); says this increases electric rate base by approx. \$41.5m total (w/ corresponding operating income adjustments). Says approval based on co. demonstration of commitment to safety & reliability - Actual post-test year safety & reliability and RM43 investments for Oct-Nov 2012 • Rejects inclusion of planned post-test year safety & reliability and RM43 investments for Dec 2012-Dec 2013, finding the adjustment fails to meet “known and measurable” standard because it is based on estimate that is based on limited experience to date	
MD	Baltimore Gas and Electric	<ul style="list-style-type: none"> Decided 3/9/11 Case 9230 Order 		<ul style="list-style-type: none"> Approves creation of regulatory asset allowing deferral of non-capital storm restoration costs for Dec 2009 & Feb 2010 snowstorms, which were not “major storms” per PSC) Continued historical practice of 5 year normalization of major storm costs Declines co. proposal to utilize terminal test year rate base instead of 13-month avg. test year rate base for reliability investments, saying co. did not show that its proposed adjustments were required to address existing or ongoing reliability shortfalls 	
MD	Delmarva Power and Light	<ul style="list-style-type: none"> Decided 9/3/13 Case 9317 Public Utility Law Judge Division- Letter to Parties Finalizing the Proposed Order 		<ul style="list-style-type: none"> Adopts settlement providing for 3-yr., reconcilable grid resiliency charge (GRC) w/2014 revenue requirement of \$0.1m; future amounts to be decided in annual true-up proceedings <ul style="list-style-type: none"> GRC to recognize investments in accelerated feeder-line replacement Same conditions apply as those included in Pepco GRC (Case 9311 below) 	
	Delmarva Power and Light	<ul style="list-style-type: none"> Decided 7/20/12 Case 9285 Order 		<ul style="list-style-type: none"> Allows use of terminal test year basis for reliability investments (instead of avg. test year basis) and inclusion of post-test year reliability investments (that don’t produce add’l revenue) in rate base Approves amortization over 5 years of capital 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				<p>costs incurred during Hurricane Irene</p> <ul style="list-style-type: none"> • Negatively adjusts recoverable amount of Irene capital costs by 7.66%, citing inadequate tree trimming practices that it says resulted in excessive expenses in restoration efforts • Denies cost recovery related to Service Quality and Reliability Standards (RM43) that defined reliability & service quality performance standards for distribution systems on grounds that costs are not known or measurable as the regulations had just recently become effective • Rejects proposal for Reliability Investment Recovery Mechanism (RIM) to remain consistent in denying all such requests for infrastructure surcharges and saying reliability surcharge will not enhance reliability 	
MD	Delmarva Power and Light	<ul style="list-style-type: none"> • Decide 12/30/09 • Case 9192 • Order 		<ul style="list-style-type: none"> • Allows in rate base post-test year reliability investments that will not generate additional revenue 	
MD	Potomac Electric Power	<ul style="list-style-type: none"> • Decided 7/12/13 • Case 9311 • Order 	<ul style="list-style-type: none"> • Disallows \$23.4m related to AMI meters, saying co. has not yet demonstrated cost-effectiveness; declines to follow previous order (No. 85028 in Case 9286) where rate recovery was allowed for AMI meters on basis of being “used and useful.” 	<ul style="list-style-type: none"> • Conditionally approves 3-yr. reconcilable grid resiliency charge (GRC), including return on investment, for 1 co.-proposed project: \$24m accelerated priority feeder replacement project <ul style="list-style-type: none"> - Co. must meet new reporting requirements including detailed project description, performance objectives, incremental milestones and projected costs - Declines to adopt related co.-proposed performance-based incentive mechanism, citing limited scope of GRC • Rejects GRC for 2 other co.-proposed projects: 1) accelerated vegetation mgt.; says one-time benefit does not justify GRC treatment; and 2) selective undergrounding; says approval premature and directs further study. • Approves terminal test year treatment of reliability projects completed through 2012 test year, increasing rate base by \$12.5m • Approves post-test year additions of reliability 	<ul style="list-style-type: none"> • Commissioner Williams filed partial dissent on GRC, saying he would have preferred a deferred 2-yr. regulatory asset • Commissioner Brenner issued concurrence, citing concerns over GRC and saying he would have preferred a deferred regulatory asset

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				<p>projects completed in 1Q 2013, increasing rate base by \$45m</p> <ul style="list-style-type: none"> • Rejects post-test year projected investment beyond 1Q 2013 because “not known and measureable”; reflects \$123.5m of investment not included • Approves 5-year amortizations of O&M costs related to 2012 Derecho and Sandy and inclusion of unamortized balances in rate base, finding co. testimony “credible but unverified”; requires audit on which to base any future adjustments to these items • Approves expenses for compliance w/RM 43 (below) reliability regulations. 	
MD	Potomac Electric Power	<ul style="list-style-type: none"> • Decided 7/20/12 • Case 9286 • Order 		<ul style="list-style-type: none"> • Allows use of terminal test year basis for reliability investments (instead of average test year basis) and inclusion of post test year reliability investments (that don’t produce add’l revenue) in rate base • Approves amortization over 5 years of capital costs incurred during Jan 2011 snowstorm & Hurricane Irene • Negatively adjusts recoverable amount of Hurricane Irene costs by 1.5% and Jan 2011 storm by 6.2%, citing inadequate tree trimming practices that it says resulted in excessive expenses in storm restoration efforts • Denies cost recovery related to Service Quality and Reliability Standards (RM43) that defined reliability & service quality performance standards for distribution systems on grounds that costs are not known or measurable as the regulations had just recently become effective • Disallows recovery for vegetation mgt. program, citing significant amount of under-spending in past years and saying the non-industry standard 2-year trim cycle maintained by co. has resulted in continued catch-up spending due to imprudence • Rejects co. proposal for Reliability Investment 	<ul style="list-style-type: none"> • Co. filed for recovery of costs related to annual vegetation mgt. costs @\$23.5m, including \$15m for forecasted tree trimming • Dissenting opinion would allow immediate full recovery of storm costs due to their ‘minor storm’ status

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				Recovery Mechanism (RIM) to remain consistent in denying all such requests for infrastructure surcharges and saying reliability surcharge will not enhance reliability	
MD	Potomac Electric Power	<ul style="list-style-type: none"> Decided 8/6/10 Case 9217 Order 	<ul style="list-style-type: none"> Approves establishment of new Enhanced Integrated Vegetation Management (EIVM) initiative that includes: hazard tree removal; removal of over-hanging limbs; removal of undergrowth and aggressive clearance pruning 	<ul style="list-style-type: none"> Approves 10-year amortization of ~\$7.5m in non-capital costs related to Feb 2010 snowstorm Approves increase in net annual O&M expenses related to new EIVM initiative Defers decision to approve \$1.6m of AMI expenses because it had not yet approved co.'s AMI program in a separate preceding Rejected co. proposal to use terminal test year basis for reliability investments (instead of average test year basis) and to include post test year reliability investments in rate base 	
MI (Public Service Commission)	Generic	<ul style="list-style-type: none"> Opened 1/8/14 Case U-17542 Order Commencing Investigation 	<ul style="list-style-type: none"> Opens investigation related to ice storm that hit Lower Peninsula 2/21-22/13. Issues: <ul style="list-style-type: none"> - Impact on utility distribution systems - Utility response before/during storm - Whether changes needed to reduce outage potential - Whether utilities failed to properly maintain distribution systems - Customer reporting of outages - Safety concerns related to downed lines Sets timetable for reports and comments Remedial action possible 		
MO (Public Service Commission)	Generic	<ul style="list-style-type: none"> Opened 3/20/13 Case EW-2013-0425 Order Opening an Investigation to Address Legislative Concerns Regarding Proposals to Modify Ratemaking Procedures for Electric Utilities and Establishing a Procedural Schedule 		<ul style="list-style-type: none"> Opens docket to gather comments in response to request by legislator on pending bills, HB 398 and SB 207. Bills would authorize utility implementation of infrastructure system replacement surcharge (ISRS) and expense tracker for tracking/recovery, outside of general rate cases, of costs related to reliability and other infrastructure investments. Gas utilities in the state use ISRS mechanisms. 	<ul style="list-style-type: none"> Comments were gathered by the PSC. However, the bills failed.

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
MO	Generic	<ul style="list-style-type: none"> Effective 6/1/08 Rule 4 240-23.020- Electrical Corporation Infrastructure Standards Rule 4 CSR 240-23.030- Electrical Corporation Vegetation Management Standards and Reporting Requirements 	<ul style="list-style-type: none"> Establishes standards requiring electric utilities to inspect/replace old & damaged T&D infrastructure Requires utilities to more aggressively trim trees/other vegetation: 4-year cycle for urban infrastructure & 6-year cycle for rural 	<ul style="list-style-type: none"> Both rules include provisions allowing utility to seek recovery of extra costs incurred to comply. 	<ul style="list-style-type: none"> Rules were implemented following extensive storm-related outages in 2006
MO	Ameren-Union Electric	<ul style="list-style-type: none"> Decided 7/13/11 Case ER-2011-0028 Report and Order 	<ul style="list-style-type: none"> Finds co. reliability has improved since two new rules took effect on 6/30/08: Rule 4 CSR 240-23.020) & (Rule 4 CSR 240-23.030 (see entry above) Encourages co. to continue spending money to improve reliability Requires co. to spend ~\$1.3m/year on heavy underground apprentice program under which staff to be trained on industrial type routing of underground electric lines in urban areas; adds ~\$1.3m to revenue requirement 	<ul style="list-style-type: none"> Approves continuation of vegetation mgt. & infrastructure inspection tracker (see entry below) Sets tracker base levels @\$52.2m for vegetation mgt.; \$7.7m for infrastructure Accepts contested 47-mo. normalization for calculating avg. annual non-labor storm costs; allows recovery via base rates of co.-requested \$7.1m test year storm costs 	<ul style="list-style-type: none"> Says storm costs vary greatly from year to year, citing as examples: <ul style="list-style-type: none"> - Co. incurred \$6m in non-labor storm restoration costs in 9 mos. ending 12/31/07 - \$4.8m in 2008 - \$9m in 2009 - \$38K in 2010 - \$8.1m in Feb 2011
MO	Ameren-Union Electric	<ul style="list-style-type: none"> Decided 5/28/10 Case ER-2010-0036 Report and Order 		<ul style="list-style-type: none"> Approves continuation of vegetation mgt. & infrastructure inspection tracker (see entry below) Sets tracker base levels @\$50.4m for vegetation mgt.; \$7.6m for infrastructure, based on spending in 12 mos. thru 1/31/10 Orders refund to customers of \$3.4m overcollection, amortized over 3 years Denies co.-requested tracker for storm restoration costs, citing unwillingness to expand use of trackers; finds existing accounting authority order (AAO) approach adequate under which co. allowed to accumulate/defer extraordinary storm non-labor O&M costs, to be considered for recovery – typically over 5 years – in next GRC. 	

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				<ul style="list-style-type: none"> Allows base rate recovery of \$6.4m in test year storm costs; remaining \$4m in extraordinary storm expense to be amortized/recovered over 5 years 	
MO	Ameren-Union Electric	<ul style="list-style-type: none"> Decided 1/27/09 Case ER-2008-0318 Report and Order 		<ul style="list-style-type: none"> Citing uncertainty re cost of complying w/2 new rules (per entry above), establishes two-way tracker under which co. to track actual expenditures around base levels. Co. to create regulatory asset/liability for possible future recovery/refund. Spending above base level capped @\$10%. Co. may request accounting order for amounts exceeding cap. Assets & liabilities to be netted against each other & considered in next GRC Sets tracker base levels @\$54.1m for vegetation mgt.; \$10.7m for infrastructure inspection 	
MO	Empire District Electric	<ul style="list-style-type: none"> Decided 2/27/13 Case ER-2012-0345 Order Approving Stipulation and Agreement 		<ul style="list-style-type: none"> Approves settlement providing for continuation of vegetation mgt. tracker mechanism, w/expense base level of \$12m In 10/31/12 decision in this docket, denied co.-requested interim increase, citing order in Case EU-2011-0387 (below) and other factors that it says make co. adequately protected until final rate decision 	<ul style="list-style-type: none"> Generate rate increase request had as key drivers restoration costs related to May 2011 tornado and loss of customers related to tornado
MO	Empire District Electric	<ul style="list-style-type: none"> Decided 11/30/11 Case EU-2011-0387 Order Approving and Incorporating Unanimous Stipulation and Agreement 		<ul style="list-style-type: none"> Allows co. to defer & capitalize expenses related to May 2011 tornado for possible future recovery in next GRC - Co. to defer actual incremental O&M costs related to restoration following tornado as well as depreciation & carrying charges = ongoing AFUDC rates related to tornado capex 	
MO	Empire District Electric	<ul style="list-style-type: none"> Decided 7/30/08 Case ER-2008-0093 Report and Order 		<ul style="list-style-type: none"> Allows co. to implement 2-way tracker to track costs related to vegetation mgt. & infrastructure inspection around base level and defer for future recovery/refund Sets tracker base level @total \$8.6m 	<ul style="list-style-type: none"> Tracker is similar to one approved for AmerenUE; see entry above for further detail PSC on 2/27/13 approved settlement providing for continuation of vegetation mgt. tracker & \$12m base level (Case ER-2012-0345)

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State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
MS (Public Service Commission)	Entergy MS	<ul style="list-style-type: none"> Decided 10/7/11 Case 2010-UN-436, et al. Order Adopting Joint Stipulation 		<ul style="list-style-type: none"> Approves change in existing storm damage rider to reflect increase in frequency/severity of storms <ul style="list-style-type: none"> Increases rider collections to allow co. to recover deficit in storm damage reserves that occurred due to hurricanes Gustav & Ike in 2010, and additional storms of 4/4/08 Increases cap of storm reserve fund from \$15m to \$25m 	
MS	Entergy MS	<ul style="list-style-type: none"> Decided 5/22/07 Case 2006-UA-350 System Restoration Charge Order 		<ul style="list-style-type: none"> Approves Rider Schedule SRC as mechanism to recover securitized & other funds authorized by PSC <ul style="list-style-type: none"> Rider is to be applied as non-bypassable surcharge to all customers Includes formula-based mechanism to allow expeditious adjustments intended to correct over-/under-recovery of costs Estimated to initially increase customer bills by 1.5% 	
MS	Entergy MS MS Power	<ul style="list-style-type: none"> Decided 6/28/06 Case 2006-UA-82 Order Decided 6/28/06 Case 2005-UA-0555 Order 	<ul style="list-style-type: none"> Orders both companies to harden their locations to withstand hurricane force winds ~10 miles inland from potential flooding Grants MS Power funds for new storm operations center & facility annex 	<ul style="list-style-type: none"> Approves recovery of \$89.2m for Entergy and \$303.4m for MS Power for recovery of costs from Hurricane Katrina Requires companies to mitigate customer impacts by securitizing these costs pursuant to "Hurricane Katrina Electric Utility Customer Relief and Electric Utility System Restoration Act of 2006" Authorizes State Bond Commission (established by legislation) to issue bonds to finance recovery costs Bond debt service is repaid via system restoration charges reset by companies annually to recover 110% of required annual debt service System restoration charge is a bill surcharge paid by all customers 	<ul style="list-style-type: none"> Approved recovery to be reduced by any funds received via Community Development Block Grants or other sources ~\$350m of CDBG funds were ultimately made available to MS utility customers
NC (Utilities Commission)	Generic	<ul style="list-style-type: none"> Issued 11/21/03 Undocketed Report of the Public Staff to the North Carolina Natural Disaster 	<ul style="list-style-type: none"> Reflects results of feasibility investigation conducted in conjunction w/investigation of utility response to Dec 2002 ice storm (see entry below) Staff focuses on undergrounding distribution, saying most damage sustained in severe 		

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
		Preparedness Task Force. "The Feasibility of Placing Electric Distribution Facilities Underground," Nov 2003	<p>weather events usually involves distribution vs. transmission lines</p> <ul style="list-style-type: none"> • Staff concludes that replacing overhead lines w/underground would be prohibitively expensive (~ 6X current value of utility distribution assets) and would also result in higher O&M costs • Staff recommends that companies identify overhead facilities that repeatedly experience reliability problems, determine whether conversion to underground is cost-effective option and, if so, develop plan for undergrounding those facilities • In interim, Staff recommends companies continue current practices of: 1) placing new facilities underground when additional revenues cover costs or cost differential is recovered via CIAC, 2) replacing existing overhead facilities w/underground when requesting party pays conversion costs, and 3) replacing overhead facilities w/underground in urban areas where factors such as load density & physical congestion make overhead service impractical 		
NC	Generic	<ul style="list-style-type: none"> • Issued 8/29/03 • Undocketed • Report of the North Carolina Public Utilities Commission and the Public Staff to the North Carolina Disaster Preparedness Task Force. "Response of Electric Utilities to the December 2002 ice Storm," Sep 2003 	<ul style="list-style-type: none"> • Finds ice storm was unprecedented in NC history in terms of customer outages for Duke Energy and almost unprecedented for Progress Energy • Finds some government officials faulted companies for communications during storm and improvements have since been made • Finds utilities have in place proper procedures for advance planning & obtaining aid from other utilities that were disrupted to some extent by circumstances of this storm • Finds that all utilities should examine tree trimming practices to determine whether improvements are possible 	<ul style="list-style-type: none"> • Notes costs of storm are being recovered in current rates, making rate increase unnecessary 	
NC	Duke	<ul style="list-style-type: none"> • Decided 3/5/14 	<ul style="list-style-type: none"> • Asserts exclusive jurisdiction over utility 		<ul style="list-style-type: none"> • The case arose out of

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
	Energy Carolinas	<ul style="list-style-type: none"> • Case E-7, Sub 1038 • Order on Jurisdiction and Dismissal of Complaint 	implementation of vegetation management practices, dismisses city complaint <ul style="list-style-type: none"> - Determines that 4 proposed areas of utility regulation by the City of Greensboro via a Utility Vegetation Management Ordinance are preempted by state law - The 4 areas are: 1) trimming standards, 2) trimming cycle, 3) appeals process, 4) large debris removal 		Greensboro resident complaints over tree trimming activities by Duke pursuant to its vegetation management plan and policies (VMPP) filed with the commission in May 2012 in Case E-7, Sub 1014 (below)
NC	Duke Energy Carolinas	<ul style="list-style-type: none"> • Decided 6/3/13 • Case E-7, Sub 1014 • Order Accepting Compliance Filings and Requiring Filing of Reliability Data 	<ul style="list-style-type: none"> • Reviews co. filing of vegetation management policy & practices as required in Case E-7, Sub 989 (below) as well as co. response to customer concerns. • Finds co. implemented policies in reasonable manner but imposed additional reporting requirements 		
NC	Duke Energy Carolinas	<ul style="list-style-type: none"> • 1/27/12 • Case E-7, Sub 989 • Order Granting General Increase in the Matter of Application of Duke Energy Carolinas, LLC for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina 	<ul style="list-style-type: none"> • Approves GRC settlement providing for co. to review vegetation mgt. policies/ procedures & develop clear, comprehensive, consistent & publicly available policy description, to be filed for review in separate docket w/in 90 days <ul style="list-style-type: none"> - Provision arose out of Public Staff testimony re public complaints on vegetation mgt. practices - Complaints generally concerned removal of trees that customers did not want removed, failure to remove trees that are interfering w/power lines & tree cutting debris being left on customer premises • Staff said co. practices/procedures were not well-defined or publicly available 		<ul style="list-style-type: none"> • Similar recent finding made for Progress Energy Carolinas • Following several extensions, co. filed vegetation mgt. policies/procedures on 5/21/12 (Case E-7, Sub 1014; Status = open)
ND (Public Service Commission)	Xcel-Northern States Power	<ul style="list-style-type: none"> • Decided 2/29/12 • Case PU-10-657, et al. • Order on Settlement 	<ul style="list-style-type: none"> • Approves settlement providing for co. to file PBR plan w/metrics to measure/evaluate system reliability, including rate of return incentives & penalties <ul style="list-style-type: none"> - Plan to include focus on localized reliability performance • Approves increased funding for reliability improvements including additional engineer 		

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State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			<ul style="list-style-type: none"> Sets additional reporting requirements Approves new funding for additional veg. mgt. crew (\$212,000 in 2012) Approves recovery of capital investments related to Minot flood restoration effort 		
NH (Public Utilities Commission)	Public Service Co. of New Hampshire	<ul style="list-style-type: none"> Decided 6/27/13 Case DE 13-127 Order Following Hearing 		<ul style="list-style-type: none"> Approves co. request to increase annual revenue amt. to be deposited in major storm reserve fund from \$7m to \$12m, citing frequency/severity of recent storms & related repair/restoration costs Approves co. request to recover pre-staging costs for qualifying storms; PUC encouraged pre-staging as part of review of Dec 2008 & Oct 2011 storms Affirms co. capital cost treatment of hazard tree removal that was formerly O&M expense, saying there is no evidence that capitalization is inconsistent w/FERC chart of accounts, and it is subject to audit 	
NH	Public Service Co. of New Hampshire	<ul style="list-style-type: none"> Decided 6/28/10 Case DE 09-035 Order Approving Settlement Agreement on Permanent Rates 	<ul style="list-style-type: none"> Approves continuation of, and base rate increases for, reliability enhancement program (REP) (previously approved 5/25/07, Case DE 06-028): <ul style="list-style-type: none"> Co. to continue spending \$8.2m/year for O&M for existing Co. to invest \$12.8m/year in capital projects for expanded program (REP II) Co. to spend additional \$2.4m in O&M thru 6/30/12, followed by additional increases for O&M, for REP II Co. to file annual reports Approves high level design for geographic information system including GIS-based outage mgt. system 	<ul style="list-style-type: none"> Approves \$3.5m/year base rate funding for existing major storm cost reserve (Note: This amount was doubled to \$7m/year in order issued 6/27/12, Case DE-12-110, approving step increase per settlement) Approves amortization of ~\$44m of costs related to 2008 ice storm on straight-line basis over 7 years; any unamortized balance to accrue interest @4.5%/year 	
NH	Unitil Energy Systems	<ul style="list-style-type: none"> Decided 4/26/11 Case DE 10-055 Order Approving Settlement Agreement 	<ul style="list-style-type: none"> Approves expanded reliability enhancement program (REP) & vegetation mgt. program (VMP): <ul style="list-style-type: none"> Co. to spend \$1.75m/year in REP capex during 5-year settlement term & increase annual REP O&M expense by \$300K as of 5/1/12. Additional amts. to be included in 	<ul style="list-style-type: none"> Approves storm cost reserve w/annual \$0.4m funding to enable cost recovery for major storms as of 7/1/10 thru 5-year settlement term Allows levelized recovery of previously deferred \$7.7m + interest related to 2008 ice storm & 2010 wind storm via reconcilable storm recovery adjustment factor surcharge; any unamortized 	<ul style="list-style-type: none"> This action came with approval of 5-year rate plan w/4 step adjustments; specific amounts for future increases are not yet approved PUC on 6/29/10 approved interim base rate increase

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			future step increases - VMP to incorporate 5-year trim cycle on multi-/single- phase distribution systems; augmented spending includes \$1.25m step increase as of 5/1/11 & additional amt. in future step increase, subject to review • Co. to file annual reports for REP, VMP & complete fuse and re-closer studies	balance to accrue interest • Funding for REP, VMP capital and O&M expenses to be included in base rate step increases as follows: - REP revenue requirements to be based on actual capex, capped @\$2m in 2012, 2013 & 2014 - VMP increases in step adjustments are ~\$1.3m in 2011 & ~\$1m in 2012	including recovery of \$0.5m of costs related to Dec 2008 ice storm and \$0.5m of incremental costs related to vegetation mgt.
NJ (Board of Public Utilities)	Generic	<ul style="list-style-type: none"> Decided 5/29/13 Case EO12111050 Order Requiring Electric Utilities to Implement Recommendations 	<ul style="list-style-type: none"> Imposes new requirements aimed at improving communications among utilities, municipal officials, customers and the Board during extreme weather events/outages 		
NJ	Generic	<ul style="list-style-type: none"> Decided 3/20/13 Case AX13030196, EO13020155, et al. Establishment of a Generic Proceeding 	<ul style="list-style-type: none"> Opens investigation of the prudence of costs related to 2011 & 2012 major storms for which electric distribution companies (EDCs) are seeking rate recovery. - For each pending or future base rate case, EDCs must file detailed report by 7/1/13 		<ul style="list-style-type: none"> See 3/19/14 entry below for JCP&L
NJ	Generic	<ul style="list-style-type: none"> Decided 3/20/13 Case AX13030197, EO13020155, et al. Establishment of a Proceeding 	<ul style="list-style-type: none"> Opens generic docket, "Storm Mitigation Proceeding," to investigate ways to support/protect utility infrastructure in relation to major storms – for all regulated utilities, not only electric distribution companies (investor owned). Invites all regulated utilities to submit detailed proposals for infrastructure upgrades, per parameters set by 1/23/13 order (below) Directs staff to evaluate PSEG's proposed Energy Strong measures 		
NJ	Generic	<ul style="list-style-type: none"> Decided 2/20/13 Case EO12070650 Order 	<ul style="list-style-type: none"> Imposes new reporting requirements on power outages, circuit performance, hazard trees in the aftermath of Sandy - The information will be used to identify areas or equipment that may warrant further investigation 		
NJ	Generic	<ul style="list-style-type: none"> Decided 1/23/13 	<ul style="list-style-type: none"> Accepts consultant report released 8/9/12 		<ul style="list-style-type: none"> Hurricane Sandy is not

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
		<ul style="list-style-type: none"> • Case EO11090543 • Order Accepting Consultant's Report and Additional Staff Recommendations and Requiring Electric Utilities to Implement Recommendations 	<p>(below) and requires actions by utilities in specified timeframes in 5 categories of potential improvements:</p> <ul style="list-style-type: none"> - Preparedness: Conduct 1st annual training exercise simulating response to outage affecting 75% of customers - Communications: Provide pre-/post-event information thru various methods to assist customers, govt. & emergency mgt. officials, and mutual aid crews in preparing for & dealing w/aftermath of major events - Restoration & response: Establish better process for obtaining mutual assistance, esp. when large-scale events affecting multiple utilities occurs, and better track/support crews - Post event: Track and use "lessons learned" from each major event to make improvements and seek stakeholder input - Underlying infrastructure issues: Provide cost-benefit analyses related to various upgrades; examine infrastructure and use available data to determine how to better protect substations from flooding, how vegetation mgt. is impacting electric systems, and how distribution automation can be incorporated to improve reliability 		addressed in order and is the subject of a separate investigation.
NJ	Generic	<ul style="list-style-type: none"> • Report released 8/9/2012 • Performance Review of EDCs in 2011 Major Storms 	<ul style="list-style-type: none"> • Recommendations for EDCs include: <ul style="list-style-type: none"> - more detailed development of vegetation management program - development of Incident Command System - using company websites & social media to provide more granular outage details & estimated time of restoration - conducting annual training/exercise drills - require practice of benchmarking & external analysis of each company's restoration experiences 		<ul style="list-style-type: none"> • Report prepared for BPU by Emergency Preparedness Partnership in response to 12/14/11 Order (Case EO11090543)
NJ	Generic	<ul style="list-style-type: none"> • Decided 12/14/11 • Case EO11090543 	<ul style="list-style-type: none"> • BPU orders EDCs to take several actions including: 		<ul style="list-style-type: none"> • In addition to preliminary order, BPU ordered the hiring

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
		<ul style="list-style-type: none"> Investigation of New Jersey's Utilities' Response to Hurricane Irene 	<ul style="list-style-type: none"> Improved coordination of resources/staff w/government officials Improved outage websites & use of social media for restoration updates Development of process for more accurate, timely & more geographically targeted estimated time of restoration Review/revision of customer call back scripts to better convey messaging Reevaluate provision of restoration information to specific customer classes including special needs customers & well-water dependent customers Coordinate more closely w/state & local crews working to clear roads and remove storm debris For one EDC, directs full implementation of its Preliminary Communications Plan for any subsequent severe weather events 		of a consultant to further investigate the Storms of 2011 in more detail with emphasis on substations, vegetation management, and customer communications
NJ	Atlantic City Electric	<ul style="list-style-type: none"> Decided 6/21/13 Case ER12121071 Order Approving Stipulations 		<ul style="list-style-type: none"> Approves settlement adopting co. proposal to fully recover \$70m of incremental storm restoration costs related to 2012 derecho wind storm and Sandy. Of the total, \$44.2m in capital costs will be included in rate base and \$25.8m in O&M costs will be recovered in base rates via 3-yr. amortization, with no rate base treatment of unamortized balance. ACE agreed not to seek further rate increases associated w/the 2 storms. 	<ul style="list-style-type: none"> The storm-related settlement amount was based on a finding of prudence in a generic proceeding (Case AX13030196, above).
NJ	Jersey Central Power & Light	<ul style="list-style-type: none"> Decided 3/19/14 (written order pending) Case AX13030196 		<ul style="list-style-type: none"> Approves settlement providing for recovery of \$736m of requested \$744m of costs related to 2011-12 storms including Sandy <ul style="list-style-type: none"> Of total, \$163m of costs related to Irene and an Oct 2011 snowstorm will be reflected in a separate, pending distribution rate case (Case ER-12111052); recovery mechanism for remainder of settlement costs is uncertain 	<ul style="list-style-type: none"> The decision for JCP&L came in a generic investigation of the prudence of utility storm costs (above)
NJ	Public Service Electric and	<ul style="list-style-type: none"> Decided 6/21/13 Case EO13020155, et al. 	<ul style="list-style-type: none"> Directs PSEG to implement staff recommendations to: <ul style="list-style-type: none"> Begin work on Energy Strong Station Flood 		

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
	Gas	<ul style="list-style-type: none"> Order – Request for Specific Action and Additional Information 	and Storm Surge Mitigation subprogram w/investigations & planning - Provide detailed cost estimates		
NM (Public Regulation Commission)	Generic	<ul style="list-style-type: none"> Decided 11/27/12 Case 12-00089-UT Final Order and Final Amended Rules 	<ul style="list-style-type: none"> Promulgates final rules based on 12/21/11 staff report, “Severe Weather Event of February, 2011 and its Cascading Impact on NM Utility Service.” Rules require electric & gas utilities to: <ul style="list-style-type: none"> - Explicitly consider fuel diversity, alternative or redundant fuel delivery systems, and backup fuel capability in planning processes - Recognize electricity- and gas-dependent facilities that serve retail load as critical load - Modify/standardize outage reporting - Implement emergency plans including specified components 		
NV (Public Utilities Commission)	Generic	<ul style="list-style-type: none"> Decided 10/4/05 Case 05-5014 Order 		<ul style="list-style-type: none"> Requires utilities to develop analysis of incremental undergrounding costs in cases where localities mandate such undergrounding and to maintain in records until cost recovery determined in general rate proceeding <ul style="list-style-type: none"> - Points to New Mexico Public Service undergrounding special services tariff as reasonable starting point for such analysis 	
NV	Sierra Pacific Power	<ul style="list-style-type: none"> Decided 12/23/10 Case 10-06001, et al. Order 	<ul style="list-style-type: none"> Approves ~\$25m related to Phase II Tracy-Silver Lake transmission line w/some undergrounding; incremental ~\$15m undergrounding costs estimated generally @4x cost of overhead option; co. to file actual costs in compliance filing Approves ~\$1.7m for Fairview 900 AM distribution feeder facilities including ~\$1.5m for undergrounding costs, of which \$961,624 was incremental (higher than would have been paid for aboveground option) Approves ~\$1.9m for Radio Channel Project to upgrade radio communications as result of lessons learned in 2005 fire in Carson City 	<ul style="list-style-type: none"> Allocates incremental T&D undergrounding costs to ratepayers of two localities that mandated underground portions as conditions of permits; cites cost causation principles; direct costs + interest to be amortized over 3 years or until paid, to be recovered via surcharge @levelized per kWh rate Radio channel upgrade costs to be recovered via base rates 	<ul style="list-style-type: none"> Phase 1 approvals given in 2007 GRC, Case 07-12001

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State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
NV	Sierra Pacific Power	<ul style="list-style-type: none"> Decided 6/27/08 Case 07-12001 Order 	<ul style="list-style-type: none"> Approves ~\$10m related to 16-mi., 120 kV Tracy to Sugarloaf transmission line, including \$5.9m for undergrounding 3.36 mi. 	<ul style="list-style-type: none"> Assigns incremental undergrounding costs to ratepayers of locality that mandated undergrounding as condition of permits; cites cost causation principles; direct costs + interest to be amortized over 3 years and recovered via surcharge; costs treated as non-standard installation where customers provide CIAC 	
NY (Public Service Commission)	Generic	<ul style="list-style-type: none"> Decided 12/26/13 Case 07-M-0548 Order Approving EEPS [Energy Efficiency Portfolio Standard] Program Changes 	<ul style="list-style-type: none"> Directs staff to recommend in 1Q 2014 a process for decisions to change regulatory model, including performance- and outcome-based incentives, that will be required to achieve policy objectives. <ul style="list-style-type: none"> Policy outcomes include assurance of system reliability & resiliency. Says customer-based resources should be deployed and used to support economically efficient system resiliency Directs staff, NYSERDA and utility program administrators (EEPS) to convene “E² working group” to develop action plan Makes specified changes to EEPS for 2014-15 		<ul style="list-style-type: none"> The order was issued in keeping with the Moreland Commission Final Report issued 6/22/13), which recommended, among other things, redirecting public benefit and energy efficiency funds to use to better protect the grid
NY	Generic	<ul style="list-style-type: none"> Decided 12/23/13 Case 13-E-0140 Order Approving the Scorecard for Use by the Commission as a Guidance Document to Assess Electric Utility Response to Significant Outages 	<ul style="list-style-type: none"> Adopts quantitative tool, or “scorecard,” for use by utilities and PSC to assess utility storm restoration performance; says it is intended as guide in assessing utility performance and in setting utility expectations of what PSC wants. <ul style="list-style-type: none"> Assigns metrics & points into 3 categories: Preparation (150 pts.), operational response (550 pts.) and communications (300 pts.) Utilities must submit specified data on per-event basis w/in 30 days of restoration for use by staff to score each outage for each utility 		
NY	Generic	<ul style="list-style-type: none"> Decided 11/19/13 Case 13-M-0047 Order Instituting a Process for the Sharing of Critical Equipment 	<ul style="list-style-type: none"> Directs utilities to finalize protocols, procedures & plans for sustaining shared equipment & supplies stockpile, to be filed by 12/16/13 <ul style="list-style-type: none"> Program to build on existing utility equipment storage & delivery system 		<ul style="list-style-type: none"> Proceeding was initiated by 2/13/13 order to address recommendations by Gov. Cuomo to establish inventory of long-term capital assets and critical equipment for mutual

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			<ul style="list-style-type: none"> • Urges utilities to work toward standardizing their most common materials • Urges uniform accounting practices for sale of utility shared critical equipment & supplies • Grants pre-approval of equipment transfers, subject to conditions, e.g., annual reporting • For security purposes, urges utilities to request trade secret protection for storeroom location and inventory information • Directs utilities to form Material Sharing Group to formulate detailed procedures and protocols for sharing equipment & supplies 		use of utilities during emergency events
NY	Consolidated Edison Co. of New York	<ul style="list-style-type: none"> • Decided 2/21/14 • Case 13-E-0030, et al. • Order Approving Electric, Gas and Steam Rate Plans in Accord with Joint Proposal 	<ul style="list-style-type: none"> • Approves settlement providing for minimum \$1b investment over 4 years in capital projects & programs to address reliability, storm hardening & resiliency, and related areas • Provides for ConEd to develop plan to address load growth in section of Brooklyn that offers DG as alternative to traditional infrastructure, facilitates DG installation, and other measures • Approves development of implementation plan for microgrid project • Approves changes to reliability performance and customer service metrics to provide incentives for higher performance levels • Approves expanded business incentive rate program to help small businesses recovering from Superstorm Sandy • Approves second phase of Resiliency Collaborative, which will focus on completion of co.'s voluntary 2014 climate change vulnerability study, review of 2015-16 storm hardening initiatives, ID of potential alternative resilience strategies such as microgrids and DG, and other areas (See Notes column) 	<ul style="list-style-type: none"> • Approves recovery of \$247m of Sandy costs and \$78m in costs related to other storms, to be amortized over 3 yrs. subject to refund following staff review <ul style="list-style-type: none"> - Finds \$124m in incremental storm costs reflected in above amounts (relative to current rates) to be appropriate in light of increased frequency of storms w/higher restoration costs • Approves increase in storm reserve fund from \$5.6m/yr. to \$21.4m/yr. <ul style="list-style-type: none"> - Approves new rules relating to costs charged to reserve to avoid potential double recovery and ensure efficient use of resources - 	<ul style="list-style-type: none"> • The ALJ for the proceeding led a collaborative track of the proceeding regarding storm hardening & resiliency issues. The collaborative resulted in a stipulation on flood maps and a report filed by ConEd on 12/5/13. The collaborative parties agreed on an interim design standard to protect critical utility infrastructure from flooding in the future. Four working groups address: 1) storm hardening design standards, 2) alternative resiliency strategies, 3) natural gas system resiliency, and 4) risk assessment/cost benefit analysis.
NY	Consolidated Edison Co. of New York	<ul style="list-style-type: none"> • Decided 3/26/10 • Case 09-E-0428 • Order 	<ul style="list-style-type: none"> • Reaffirms outage notification system & incentive mechanism detailed in Case 00-M-0095 (decided 4/23/02) whereby failure to 	<ul style="list-style-type: none"> • Co. agrees as part of settlement to defer costs in excess of storm reserves of \$16.8m for future recovery 	

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
	York		meet applicable performance thresholds will result in revenue adjustment		
NY	National Grid-Niagara Mohawk Power	<ul style="list-style-type: none"> Decided 3/15/13 Case 12-E-0201, et al. Order Approving Electric and Gas Rate Plans in Accord with Joint Proposal 	<ul style="list-style-type: none"> Adopts 3-yr. rate plan as outlined by major parties in Joint Proposal (JP), which allows for new PSC storm preparedness initiatives during rate period Reliability performance incentives are linked to SAIFI and CAIDI but do not apply to major storms; however, JP specifies that staff makes/submits findings after major storms JP provides for system hardening activities, e.g., equipment inspections, periodic tree-trimming, targeted feeder work, flood mitigation and new transformer banks 	<ul style="list-style-type: none"> Per JP, approves \$29m for major storm recovery, reflecting 10-yr. avg. and \$6m increase from last rate case (10-E-0050) <ul style="list-style-type: none"> Amount is reconcilable; costs exceeding \$29m to be deferred via simplified mechanism NiMo can change capital projects (previous column), accommodated w/in overall capital funding levels; if cost of change exceeds \$8.8m annual threshold, co. can defer added costs 	
NY	National Grid-Niagara Mohawk Power	<ul style="list-style-type: none"> Decided 9/23/11 Case 10-E-0050 Order Approving Emergency Economic Development Programs with Modifications 	<ul style="list-style-type: none"> Approves w/changes co.-proposed 4 emergency economic development programs for qualifying non-residential customers affected by Hurricane Irene and TS Lee. <ul style="list-style-type: none"> Co. to provide grants up of to \$100K per community to customers and communities for activities such as capital investment. Imposes reporting requirements Requires outreach/communication plan 	<ul style="list-style-type: none"> Approves deferral of up to \$6m for potential future recovery 	<ul style="list-style-type: none"> Approves on 7/19/13 similar program for nonresidential customers affected by flooding from rains in Jun 2013; capped @\$2m total. Deferral not allowed but co. may petition later. Case 12-E-0201, et al. This emergency rule was made permanent in order issued 10/15/13.
NY	National Grid-Niagara Mohawk Power	<ul style="list-style-type: none"> Decided 1/24/11 Case 10-E-0050 Order 		<ul style="list-style-type: none"> Approves \$23m base rate allowance for major storm expenses Denies co. proposal to establish \$30m storm reserve account, citing inability to accurately estimate storm costs Approves establishment of deferral account for major storms w/ \$2.205m per storm deductible for use in severe weather events where costs exceed annual budgeted amount 	
NY	Orange & Rockland Utilities	<ul style="list-style-type: none"> Decided 6/14/12 Case 11-E-0408 Order 		<ul style="list-style-type: none"> Approves continued use of storm reserves for major storm events Approves amortization of costs of Hurricane Irene & Oct 2011 snowstorm = \$2.08m annual rate expense; recovery to begin in Rate Year 2 of multiyear rate plan 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
NY	Orange & Rockland Utilities	<ul style="list-style-type: none"> Decided 6/16/11 Case 10-E-0362 Order 		<ul style="list-style-type: none"> Approves continued use of storm reserve accounting for storm restoration Adopts 5-year amortization schedule for deficit between actual expenditures & storm reserves 	
OH (Public Utilities Commission)	AEP-Ohio Power	<ul style="list-style-type: none"> Decided 3/20/13 Case 12-1969-EL-ATS Financing Order 		<ul style="list-style-type: none"> Approves securitization of approx. \$298m of previously approved deferred costs, including storm costs related to Hurricane Ike windstorm in Sep 2008 <ul style="list-style-type: none"> Storm cost deferral was approved 12/19/08 in Case 08-1301-EL-AAM Deferred asset recovery rider (DARR) was approved 12/4/11 to collect costs related to storm cost deferral and other approved regulatory assets. DARR to be withdrawn under securitization order. Bonds to be backed by new phase-in rider, to be trued up annually Bond proceeds to be used to redeem, retire or repay portion of existing debt, resulting in estimated savings to customers of \$22m (nominal) or \$28.8m (net present value). Savings result from lower effective interest rate as compared to currently authorized carrying charge on deferred assets 	<ul style="list-style-type: none"> Approval is made under recent law, H.B. 364, enacted 12/21/11. Law allows electric distribution companies to securitize previously deferred assets via issuance of phase-in-recovery (PIR) bonds. Deferred assets may consist of fuel costs, infrastructure costs, environmental cleanup and other costs. This case represents one of first times PUC has issued a decision under the law.
OH	AEP-Ohio Power	<ul style="list-style-type: none"> Decided 8/8/12 Case 11-346-EL-SSO, et al. Opinion and Order 		<ul style="list-style-type: none"> Approves distribution investment rider (DIR) to accelerate recovery of prudently incurred capital costs, including carrying costs, for incremental infrastructure to maintain/improve reliability <ul style="list-style-type: none"> Finds DIR will facilitate better service reliability & align co./customer expectations DIR includes 10.2% ROE DIR to be capped @\$86m in 2012, \$104m in 2013, \$124m in 2014 & \$51.7m after that thru 5/31/15, when electric security plan (ESP) expires, for total \$365.7m. Overages/under-recoveries to be applied to increase or decrease next-year cap DIR to be adjusted quarterly to reflect in-service net capital additions; to be reviewed annually 	<ul style="list-style-type: none"> Actions are part of case involving continued transition to competitive market via electric security plan, which has as major goal improvement of service reliability Enhanced vegetation mgt. program was first approved 3/18/09; co. is moving from performance-based to 4-year, cycle-based program (Case 08-917-EL-SSO)

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				<ul style="list-style-type: none"> - DIR to be collected as % of base distribution revenues; co. agrees not to seek base rate change before 6/1/15 - Directs co. to work w/staff to develop distribution maintenance/replacement plan • Approves deferral of incremental storm costs above or below \$5m/year for possible future recovery, pending outcomes of prudence reviews; if costs are incurred due to unexpected large storms, co. to file separate application each year throughout 3-year term of ESP • Approves continuation of enhanced vegetation mgt. program via previously approved Enhanced Service Reliability Rider (ESRR) <ul style="list-style-type: none"> - Approves merger of ESRR zonal rates into 1 rate - Directs co. to file revised vegetation mgt. program by 12/31/12 • Approves continuation of previously approved gridSMART rider, subject to annual true-up/reconciliation, w/certain changes; gridSMART investment not included in DIR rider (see above) 	
OH	AEP- Columbus Southern Power	<ul style="list-style-type: none"> • Decided 4/5/11 • Case 08-846-EL-CSS • Opinion and Order 	<ul style="list-style-type: none"> • Denies allegation by city of Reynoldsburg that co. Tariff 17 providing that munis must pay for cost of undergrounding to extent cost exceeds that of standard overhead lines is unjust, unreasonable or unlawful • Finds it does not have authority to resolve questions whether local ordinance supersedes tariff or whether tariff violates state Constitution; says those are matters for court to resolve <ul style="list-style-type: none"> - Reynoldsburg ordinance authorizes city to require a utility to relocate its facilities underground at its own cost - City sought to recover \$1.2m it spent in relocation costs • Finds AEP appropriately applied tariff and charged city for relocation costs 		<ul style="list-style-type: none"> • OH Supreme Court found tariff supersedes ordinance, saying ordinance was exercise of police power to promote public health/safety and did not overcome “general law” of the state attached to the tariff (Slip Opinion 2012-Ohio-5720; Case 2011-1274, decided 11/15/12) • Tariff 17, “Temporary and Special Service,” was approved 5/12/92 (Case 91-418-EL-AIR) • Reynoldsburg Ordinance (City Code Chapter 907) was passed 5/9/05
OH	Dayton	<ul style="list-style-type: none"> • Decided 12/19/12 		<ul style="list-style-type: none"> • Allows deferral of incremental O&M expenses 	<ul style="list-style-type: none"> • DP&L is seeking to recover

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
	Power and Light	<ul style="list-style-type: none"> • Case 12-2281-EL-AAM • Finding and Order 		<p>related to June 2012 wind storm but reduces requested amt. by 3-yr. avg. of O&M expenses related to major storms</p> <ul style="list-style-type: none"> - Carrying cost is most recent approved cost of long-term debt = 5.86% 	O&M expenses related to major storms in 2011 & 2012 and certain 2008 expenses, and requested approval of a storm cost recovery rider for expenses going forward, in Case 12-3062-EL-RDR
OH	Duke Energy Ohio	<ul style="list-style-type: none"> • Decided 5/1/13 • Case 12-1682-EL-AIR, et al. • Opinion and Order 		<ul style="list-style-type: none"> • Adopts settlement providing for: <ul style="list-style-type: none"> - \$11 increase for vegetation mgt. to maintain 4-yr. trim cycle - Withdrawal of co. request for storm deferral/tracking mechanism and incremental recovery of 2012 storm costs 	
OH	Duke Energy Ohio	<ul style="list-style-type: none"> • Decided 1/11/11 • Case 09-1946-EL-RDR • Opinion and Order 		<ul style="list-style-type: none"> • Approves recovery of ~ \$14m of incremental O&M costs related to 2008 Hurricane Ike wind storm, lowering by about half co.'s \$28.5m request • Says co. did not meet burden of proof in showing disallowed costs were prudently incurred, e.g., discretionary supplemental expenses for salaried employees and certain contractor costs billed to OH rather than IN & KY • Costs to be recovered via previously approved Distribution Reliability Rider (DR-IKE) over 3 years; carrying charges included @most recently approved long-term debt rate of 6.45% • Costs to be allocated to distribution customers; demand-billed customers to be charged on per-kW basis & all other classes to be billed class-specific mo. customer charge 	<ul style="list-style-type: none"> • OH Supreme Court on 4/5/12 upheld PUC decision against Duke challenge (Slip Opinion 2012-Ohio-1509, Case 2011-0767, Decided 4/5/12) • Related PUC actions: <ul style="list-style-type: none"> - Approved on 7/8/09 Duke's Distribution Reliability Rider, set at zero, for 2008 Ike storm costs as part of GRC settlement; authorized co. to file for initial rider level later (Case 08-709-EL-AIR) - Approved on 1/14/08 Duke deferral of \$31m of incremental O&M expenses related to 2008 Ike storm w/carrying costs for possible future recovery (Case 08-709-EL-AIR) - Approved on 1/14/08 similar deferra7 for Dayton Power & Light @unspecified amount (Case 08-1332-EL-AAM)
OK	Oklahoma	<ul style="list-style-type: none"> • Decided 7/9/12 	<ul style="list-style-type: none"> • Approves funding for increased vegetation 	<ul style="list-style-type: none"> • Adjusts smart grid rider 	Cites to: Order No. 558445 in

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
(Corporation Commission)	Gas and Electric	<ul style="list-style-type: none"> Case PUD 201100087 Final Order Approving Joint Stipulation and Settlement Agreement 	<p>mgt.</p> <ul style="list-style-type: none"> Report required on results of smart grid deployment 	<ul style="list-style-type: none"> Extends storm cost recovery rider Modifies system hardening program rider 	Cause Nos. PUD 200800215 and PUD 200700447; Cause PUD 200800398; Arkansas Docket 10-109-U, Order No. 8)
OK	Public Service Co. of Oklahoma	<ul style="list-style-type: none"> Decided 1/5/11 Case PUD 201000050 Final Order Approving Joint Stipulation and Settlement Agreement 			
OK	Public Service Co. of Oklahoma	<ul style="list-style-type: none"> Decided 12/18/09 Case PUD 200900181 Final Order Approving Joint Stipulation and Settlement Agreement 		<ul style="list-style-type: none"> Approves capital investment rider under which co. to annually recover ~\$30m, reflecting return of/on costs related to certain incremental generation and T&D investments (including vegetation mgt.) not yet reflected in existing rates Rider amts. subject to refund pending review in next GRC 	
PA (Public Utility Commission)	<ul style="list-style-type: none"> Generic 	<ul style="list-style-type: none"> Decided 3/6/14 Case M-2013-2382943 Policy Statement 	<ul style="list-style-type: none"> Finalizes proposed policy statement that revises existing response, recovery & public notification guidelines <ul style="list-style-type: none"> Adds storm preparation and response best practices developed following hurricanes Irene & Sandy Focus is on coordination, communications, event forecasting, and holding exercises to better respond to major storms Establishes Critical Infrastructure Interdependency Working Group, which will identify mission critical facilities and discuss interdependencies & best practices of different types of utilities and other entities involved in restoration of critical infrastructure 		

EEI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
PA	• Generic	<ul style="list-style-type: none"> • Issued 5/7/13 • Undocketed • Summary Report of Outage Information Submitted by Electric Distribution Companies Affected by Hurricane Sandy October 29-31, 2012 	<ul style="list-style-type: none"> • Releases report on Hurricane Sandy prepared by PUC Bureau of Technical Utility Services • Report finds utility response reflected many lessons learned from 2011 storms, especially regarding communicating w/customers, elected officials & local emergency mgt. • Recommendations to utilities include: <ul style="list-style-type: none"> - Continued use/enhancement of social media & other communication methods - Collaboration on best practices for managing estimated restoration times - Continued work on messaging - Continued cooperation/communication w/local emergency mgt. - Continued work on peak call volume issues - Continued offering of regional concalls before a storm and during restoration • Report provides that staff will continue to work w/utilities to reduce duration/number of outages due to worst performing 5% of circuits and to ensure circuits help are not on 5% list for more than 4 consecutive quarters 		
PA	• Generic	<ul style="list-style-type: none"> • Decided 8/2/12 • Case M-2012-2293611 • Final Implementation Order 	<ul style="list-style-type: none"> • As precondition for DSIC approval, a utility must submit 5- to 10-year long-term infrastructure improvement plan (LTIIP) & asset optimization (AAO) plan (see Cost Recovery column) <ul style="list-style-type: none"> • LTIIPs must reflect/maintain acceleration of infrastructure replacement over historic levels • AAO Plans must describe eligible property repaired/replaced/improved in previous 12 mos. and those to be improved in upcoming 12 mos. • PUC must review plans at least once every five years • Will initiate separate rulemaking proceeding regarding periodic review of LTIIPs 	<ul style="list-style-type: none"> • Authorizes electric/other utilities to apply for cost recovery between GRCs for distribution infrastructure repair, replacement & improvement via distribution system improvement charge (DSIC), a voluntary project-specific mechanism formerly available only to water utilities <ul style="list-style-type: none"> - DSIC subject to audit - Cost of equity = ROE approved in utility's most recent fully litigated base rate case, including ROE set via settlement, w/in previous 2 years - If last GRC was > 2 years ago, ROE set by other means; will form working group to address related issues - Caps DSIC-related rate increases between GRCs @5% of distribution rates billed; PUC says waivers are allowed but it is not likely to waive 	<ul style="list-style-type: none"> • HB 1294 (Act 11) enacted on 2/14/12, amending Title 66 of PA Consolidated Statutes, to reduce regulatory lag & provide more ratemaking flexibility for time recovery of prudently incurred infrastructure costs so as to improve access to capital at lower rates and accelerate infrastructure improvement & replacement • PUC Commissioner Gardner dissented on the final rule's acceptance of use of a stipulated ROE for the DSIC vs. fully litigated, non-settled ROE

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				<ul style="list-style-type: none"> cap absent experience w/actual operation of DSIC - DSIC is reset to zero if new base rates are set or if showing is made that utility will earn ROR used to calculate fixed costs beyond authorized level • Sets procedures for use of fully projected test year in base rate cases; will initiate separate rulemaking to further address related issues 	
PA	PPL Electric	<ul style="list-style-type: none"> • Decided 10/31/13 • Case M-2013-2275471 • Opinion and Order 	<ul style="list-style-type: none"> • Approves settlement providing for co. to add provision to storm restoration procedures instructing personnel not to deviate from co. guidelines when assigning restoration crews • Per settlement, co. to pay \$60K civil penalty • Finds underlying incident, which involved alleged reassignment of crew from higher priority to lower priority job related to Oct 2011 snowstorm, appears to be of a singular, non-recurring nature 		
PA	PPL Electric	<ul style="list-style-type: none"> • Decided 5/23/13 • Case P-2012-2325034 • Opinion and Order 		<ul style="list-style-type: none"> • Approves distribution system improvement charge (DSIC) mechanism for projected included in previously approved long-term infrastructure improvement plan (LTIP). Projects include repairs, replacement or upgrade of poles & towers, overhead/underground conductors, transformers & distribution substation equipment, and other capital projects. Features include: <ul style="list-style-type: none"> - 5% cap on total revenue collected - Annual reconciliations - PUC audits - Customer notification of changes in DSIC - Reset to zero when eligible plant is included in rate base - Reset to zero when PPL is determined to have overearned • Directs some issues to ALJ for hearing and recommended decision, e.g., whether revenues associated with other riders are properly included as distribution revenue 	<ul style="list-style-type: none"> • PPL's DSIC is first such mechanism approved for electric utility under Act 11 (See entry above for Case M-2012-2293611.)

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State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				- DSIC rates are subject to refund pending final resolution of ALJ issues	
PA	PPL Electric	<ul style="list-style-type: none"> Decided 12/15/11 Case P-2011-2270396 		<ul style="list-style-type: none"> Allows deferral of unanticipated O&M expenses, possibly \$15m to \$20m but unknown at this time, related to Hurricane Irene in Aug 2011 for potential recovery in future rate case Says it is not ruling on reasonableness of costs and future recovery is not guaranteed Does not specify amortization schedule but says PPL should expense deferred amounts on "reasonable" schedule 	<ul style="list-style-type: none"> Notes approved deferral is similar to deferrals approved in the past for accounting purposes
TX (Public Utility Commission)	Generic	<ul style="list-style-type: none"> Decided 9/22/11 Case 39465 Order Adopting New §25.243 as Approved at the September 25, 2011 Open Meeting 		<ul style="list-style-type: none"> Approves distribution cost recovery factor (DCRF) mechanism similar to existing interim transmission cost recovery mechanism Enables utilities to more efficiently/timely recovery & earn return on distribution-related investment including storm hardening & smart grid investment if included in eligible FERC accounts as follows: <ul style="list-style-type: none"> Distribution plant-FERC 352, 353, 360-374, 391 Distribution-related intangible plant-FERC 303 Distribution-related communication & networks-FERC 397 Prudence review/reconciliation occurs in next general base rate case DCRF may be considered in setting rate of return in GRC 	<ul style="list-style-type: none"> No utility DCRF application had been made as of 11/19/12 Rule implements SB 1693, enacted 5/28/11; provides for streamlined proceedings to authorize recovery of/on new distribution investment + related taxes; does not provide for recovery of expenses; applies to both restructured & vertically integrated utilities; allows annual rate updates, capped @four increases between full rate cases; new DCRF rates should reflect increases in base rate revenue resulting from load growth; requires PUC rule under which utilities to file earnings reports; law sunsets 8/31/17
TX	Generic	<ul style="list-style-type: none"> Decided 6/24/10 Case 37475 Order Adopting New §25.95 as Approved at the June 11, 2010 Open Meeting 	<ul style="list-style-type: none"> Adopts rule requiring utilities to develop infrastructure storm hardening plan providing for cost-effective strategies to increase ability of T&D facilities to withstand extreme weather conditions Requires each utility to submit forward- 		

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State	Company	Date/Docket/Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			looking plans over 5-year period as of 1/1/11, updated every 5 years		
TX	Generic	<ul style="list-style-type: none"> Decided 12/14/09 Case 37472 Order Adopting New \$25.94 as Approved at the December 2, 2009 Open Meeting 	<ul style="list-style-type: none"> Requires each utility to submit annual report describing efforts to identify areas w/in service territory that are esp. susceptible to damage during severe weather and to harden T&D facilities in those areas 		<ul style="list-style-type: none"> Rule implements HB 1831 enacted in 2009 <ul style="list-style-type: none"> Makes various changes to existing law regarding disaster preparedness, emergency management and vehicles used in emergencies Emphasizes importance of T&D infrastructure risk mgt. & maintenance
TX	CenterPoint Energy Houston Electric	<ul style="list-style-type: none"> Decided 8/26/09 Case 3720 Financing Order 		<ul style="list-style-type: none"> Approves securitization, authorizes issuance of 13-year transition bonds backed by nonbypassable system restoration surcharge imposed on retail electric providers to finance \$662.8m of system restoration costs related to hurricanes Ike & Gustav + carrying costs <ul style="list-style-type: none"> Amount reached via settlement approved 4/17/09 (Case 36918) Says transaction will save ratepayers \$417m (nominal) over bond term & \$326m on present-value basis 	
TX	Entergy Gulf States	<ul style="list-style-type: none"> Decided 1/17/06 Case 31710 Order 		<ul style="list-style-type: none"> Grants waiver to allow recovery via existing fuel adjustment clause (FAC) of surplus capacity/energy costs of purchasing surplus power from affiliate Entergy New Orleans (ENO), which lost significant for unknown period as result of Hurricane Katrina <ul style="list-style-type: none"> Only energy cost recovery allowed in absence of waiver Cites special circumstances and co. position that low-priced, short-term arrangement helps mitigate ENO financial burden resulting from hurricane, allows time for Entergy system restoration efforts, and saves fuel costs for EGS customers Limits recovery to actual all-in contract or cost 	

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
				that would have been incurred/recovered via FAC but for those purchases, the latter based on reported prices for on-/off-peak energy	
TX	Entergy TX	<ul style="list-style-type: none"> Decided 9/14/12 Case 39896 Order 		<ul style="list-style-type: none"> Reduces regulatory asset balance for deferred Hurricane Rita costs from \$22.2m to \$15.2m, saying calculation begins w/co.-claimed amt. in previous rate case (Case 37744-black box settlement of Rita costs approved), less amortization accruals (over 5 years) to end of test year in present case, less additional insurance proceeds received since previous rate case <ul style="list-style-type: none"> Says accrual of carrying charges on asset should have ceased when Case 37744 concluded because the asset would have then begun earning return as part of rate base Says co. should continue recording annual storm reserve accrual until modified by PUC order. <ul style="list-style-type: none"> Finds appropriate total annual self-insurance storm reserve expense is ~\$8.3m, consisting of annual \$4.4m accrual for avg. annual expected storm losses + annual \$3.9m accrual for 20 years to restore reserve from current deficit Says target self-insurance reserve is ~\$17.6m 	
TX	Entergy TX	<ul style="list-style-type: none"> Decided 9/11/09 Case 37247 Financing Order 		<ul style="list-style-type: none"> Approves securitization, authorizes issuance of 14-year transition bonds backed by nonbypassable customer transition surcharge to finance \$539.8m of system restoration costs related to Hurricane Ike + estimated upfront qualified costs & carrying costs <ul style="list-style-type: none"> Amount reached via settlement approved 8/18/09 (Case 36931) Says transaction will save ratepayers \$322m (nominal) over bond term & \$240m on present-value basis 	<ul style="list-style-type: none"> SB 769 enacted in 2009 authorizes securitization to obtain timely recovery of system restoration costs
TX	Xcel Energy-Southwestern Public Service	<ul style="list-style-type: none"> Decided 6/19/13 Case 40824 Order 		<ul style="list-style-type: none"> Approves settlement under which SPS agrees to refrain for filing for distribution cost recovery factor in 2013 	

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State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
VA (State Corporation Commission)	Dominion Virginia Power	<ul style="list-style-type: none"> Decided 7/15/05 Case PUE-2004-00062 	<ul style="list-style-type: none"> Approves construction of \$13.1m, 8-mile, 500 kV transmission line on company-preferred route in Fauquier Co. to meet reliability needs Rejects intervenor-proposed underground alternative, saying co. showed higher cost, reliability risk (e.g., effects on power flows per co. testimony) outweigh ratepayer benefits 		<ul style="list-style-type: none"> Co. testimony cited other cases (e.g., PUE-2002-00702, Decided 10/8/04) where SCC has declined to require or commented unfavorably on undergrounding when feasible overhead options exist
WV (Public Service Commission)	Generic	<ul style="list-style-type: none"> Decided 1/23/13 Case 12-0993-E-T-W-GI Commission Order 	<ul style="list-style-type: none"> Following investigation of effects of derecho and Hurricane Sandy in 2012, finds increased right of way (ROW) maintenance will lessen future storm impacts. Requires utilities to: <ul style="list-style-type: none"> File petitions for approval of comprehensive, time cycle-based ROW vegetation mgt. programs w/spot trimming as necessary File status reports on progress toward planned improvements to storm response procedures as stated in derecho storm reports filed in this proceeding 	<ul style="list-style-type: none"> Required petitions for ROW programs (previous column) must propose cost recovery mechanism for any rate increase <ul style="list-style-type: none"> Proposals for surcharges or other adjustment mechanisms must contain specified information, e.g., calculation methodology and true-up procedure 	<ul style="list-style-type: none"> Says it might be appropriate for utilities to seek legislation authorizing trimming outside of existing ROWs if trees pose significant risk to utility service
WV	Generic	<ul style="list-style-type: none"> Decided 11/7/12 Case 12-0014-E-PC, et al. Commission Order 	<ul style="list-style-type: none"> Adopts settlements under which utilities agree to meet reliability targets recommended by staff. The SAIDI, CAIDI and SAIFI targets will be effective 2014-18. 		<ul style="list-style-type: none"> Following a severe snowstorm and outages in 2009-10, the commission adopted reliability rules in July 2011. Rules for the Government of Electric Utilities, 150 C.S.R. 3. The rules required utilities to file reliability targets, which they did in this proceeding, resulting in the approved settlements.
WV	AEP-Appalachian Power, Wheeling Power	<ul style="list-style-type: none"> Decided 3/18/14 Case 13-0557-E-P Commission Order 	<ul style="list-style-type: none"> Approves co.-proposed 4-yr., end-to-end, cycle-based vegetation management program (VMP), which is significant expansion of existing program. <ul style="list-style-type: none"> Finds it is in the public interest to institute an "aggressive" program in light of increasingly severe storms since 2009. "The enhanced VMP will cost money, but doing 	<ul style="list-style-type: none"> States that it will develop a cost recovery mechanism in co.'s upcoming base rate case <ul style="list-style-type: none"> VMP costs incurred before end of rate case to be deferred @4% interest Mechanism will recover actual & projected costs, w/periodic review Mechanism may include surcharge, base rate increment, or combination 	<ul style="list-style-type: none"> AEP filed in response to 1/23/13 order requiring utilities to make filings for expanded vegetation management plans (See case entry above)

EI Cross-Section of State Regulatory Decisions on Storm Hardening and Resiliency

State	Company	Date/Docket/ Title	Infrastructure Hardening & Storm Resiliency Measures	Cost Recovery	Notes
			nothing, in our opinion, costs even more.”		

Note: Public utility commission cases are listed first by any generic orders, then alphabetically by company and chronologically for each company, starting with the most recent

Sources: Published material from state utility commissions, state legislatures, courts and companies; SNL Financial Inc.

EI contact: Martha Rowley, Manager, Regulatory Analysis, 202-508-5797, mrowley@eei.org

Acronyms & Abbreviations

AAO – accounting authority order
AFUDC – allowance for funds used during construction
AMI – advanced metering infrastructure
BPU – Board of Public Utilities
CAIDI – customer average interruption frequency index
CC – Commerce Commission or Corporation Commission
CIAC – contributions in aid of construction
CIS – customer information system
DCRF – distribution cost recovery factor
DOT – department of transportation
DPU – Department of Public Utilities
DSIC – distribution system improvement charge
EDC – electric distribution company
EIVM – enhanced integrated vegetation management
Generic – applies to more than one utility
GM – grid modernization
GRC – general rate case
IOUs – investor-owned utilities
MOU – memorandum of understanding
N/A – not applicable or not addressed
O&M – operation and maintenance
PBR – performance-based regulation
PSC – Public Service Commission
PUC – Public Utility Commission or Public Utilities Commission
PURA – Public Utilities Regulatory Authority
ROE – return on equity
ROW – right of way
SAIDI – system average interruption frequency index
SB – Senate bill
SG – smart grid
T&D – transmission and distribution
TBD – to be determined
TS – tropical storm
UC – Utilities Commission



APPENDIX B

EEI Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

March 2014

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
CA	<ul style="list-style-type: none"> Approved 9/23/12 A.B. 1650 Portantino. Public utilities: emergency and disaster preparedness 	<ul style="list-style-type: none"> Requires the commission to establish standards for disaster and emergency preparedness plans within an existing proceeding, as specified. Requires an electrical corporation to develop, adopt, and update an emergency and disaster preparedness plan, as specified. Authorizes every city, county, or city and county within the electrical corporation's service area to designate a point of contact for the electrical corporation to consult with on emergency and disaster preparedness plans. 	<ul style="list-style-type: none"> N/A 	<p>Enacted 9/23/12</p> <p>Adds Section 768.6 to the Public Utilities Code</p>
	<ul style="list-style-type: none"> Approved 9/7/12 A.B. 2584 Bradford. Electrical corporations: investigations. 	<ul style="list-style-type: none"> Requires every electrical corporation and gas corporation that has an unplanned service outage resulting from an accident, natural event, or caused by the unplanned act of a utility employee, to preserve and not dispose of any materials that evidence the cause of the unplanned outage for 5 business days following the unplanned outage. 	<ul style="list-style-type: none"> N/A 	<p>Signed by the Governor 9/7/12</p> <p>Adds Section 316 to the Public Utilities Code</p>

EEl Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
CT	<ul style="list-style-type: none"> • Approved 6/15/12 • S.B. 23 • An Act Enhancing Emergency Preparedness and Response – Public Act No. 12-148 	<ul style="list-style-type: none"> • The Public Utilities Regulatory Authority shall initiate a docket to establish industry specific standards for acceptable performance by each utility in an emergency to protect public health and safety, to ensure the reliability of such utility's services to prevent and minimize the number of service outages or disruptions and to reduce the duration of such outages and disruptions, to facilitate restoration of such services after such outages or disruptions, and to identify the most cost-effective level of tree trimming and system hardening, including undergrounding, necessary to achieve the maximum reliability of the system and to minimize service outages. 	<ul style="list-style-type: none"> • The authority shall allow, in a future rate proceeding, each utility to recover the reasonable costs incurred by such utility to maintain or improve the resiliency of such utility's infrastructure necessary to meet the standards established pursuant to this section pursuant to a plan first approved by the authority. 	<p>Signed by the Governor 6/15/12</p> <p>Replaces subsection (b) of section 28-5 of the 2012 supplement to the general statutes</p>
	<ul style="list-style-type: none"> • Introduced 3/21/12 • H.B. 5551 • An Act Concerning the Protection of Power and Telephone Lines 	<ul style="list-style-type: none"> • To (1) allow companies that provide electric or telephone services to acquire by eminent domain a tree or shrub that is on or adjacent to an existing right-of-way or easement held by the company if the company determines that such tree or shrub would cause an interruption in the delivery of such service due to the condition of the tree or in the event of a storm accompanied by winds of hurricane force, snow or ice, and (2) make technical changes. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by the Judiciary Committee 3/21/12</p> <p>Public hearing 3/29/12</p>

EEl Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
CT	<ul style="list-style-type: none"> • Introduced 3/12/12 • H.B. 5544 • An Act Concerning Storm Preparation and Emergency Response 	<ul style="list-style-type: none"> • To review the emergency response and service restoration efforts of certain public service companies and to establish emergency response and service restoration performance standards for such companies; to require back-up generators for telecommunications towers; to encourage the placement of certain utility infrastructure underground; to enable increased tree trimming; and to establish a micro-grid grant and loan pilot program. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by the Energy and Technology Committee 3/12/12</p> <p>Public hearing 3/20/12</p>
	<ul style="list-style-type: none"> • Introduced 3/2/12 • H.B. 5407 • An Act Concerning Performance Standards for Public Utilities 	<ul style="list-style-type: none"> • Requires the Commissioner of Energy and Environmental Protection to recommend performance standards for utility companies with the objective of enhancing communication during emergencies. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by the Planning and Development Committee on 3/2/12</p> <p>Public hearing 3/9/12</p>
DC	<ul style="list-style-type: none"> • Approved 3/3/14 • B. 20-387 • Electric Company Infrastructure Improvement Financing Act of 2013 	<ul style="list-style-type: none"> • Provides for the filing of a triennial Underground Infrastructure Improvement Projects Plan to identify problem feeders and recommendations for undergrounding the worst performing overhead feeders 	<ul style="list-style-type: none"> • Authorizes and provides for the issuance of revenue Bonds in an aggregate principal amount not to exceed \$375 M to finance the construction by the District Department of Transportation of underground facilities to be used by the Potomac Electric Power Company in connection with the undergrounding of certain electric power lines and their ancillary facilities. 	<p>Signed by Mayor Vincent Gray 3/3/14</p>
HI	<ul style="list-style-type: none"> • Introduced 1/22/14 • H.B. 2384 • Relating to Natural Disasters 	<ul style="list-style-type: none"> • Establishes the natural disaster working group to develop procedures for expediting recovery from natural disasters that are not declared "state disasters" by the governor. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Representative Cindy Evans (D)</p> <p>Referred to House Committee on Public Safety 1/27/14</p> <p>Referred to House Committee on Finance 1/27/14</p>

EEl Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
IL	<ul style="list-style-type: none"> Approved 12/30/11 H.B. 3036 Public Utilities – Net Metering – Upgrade Investments – Public Act No. 97-0646 	<ul style="list-style-type: none"> provides for an infrastructure investment program for improvements designed to reduce outages due to storms 	<ul style="list-style-type: none"> A participating utility shall recover the expenditures made under the infrastructure investment program through the ratemaking process, including, but not limited to, the performance-based formula rate process 	<p>Signed by the Governor 12/30/11</p> <p>Adds 16-108.5 (b)</p>
	<ul style="list-style-type: none"> Introduced 11/21/11 H.B. 3884 Overhead Utility Facilities Damage Prevention Act 	<ul style="list-style-type: none"> Provides that it shall be unlawful for any person to plant restricted vegetation within 20 feet of an electric utility pole or overhead electrical conductor located within the State. Provides that any restricted vegetation planted, whether by a person or by natural means, within 20 feet of an electric utility pole or overhead electrical conductor located within the State shall be subject to removal. 	<ul style="list-style-type: none"> N/A 	<p>Introduced by Representative Jack Franks (D) 11/21/11</p> <p>House Session Sine Die 1/8/13</p>
	<ul style="list-style-type: none"> Introduced 10/24/11 S.B. 2507 Electric Utility Outages 	<ul style="list-style-type: none"> Amends the Public Utilities Act. Creates a new Article concerning electrical outages and emergency preparedness for electric utilities. Defines "area outage emergency". Provides that an electric utility must establish an Emergency Operations Center capable of receiving communications from municipalities and counties regarding down power lines or other damage during an area outage emergency. 	<ul style="list-style-type: none"> N/A 	<p>Introduced by Senator Sue Garrett 10/24/11</p> <p>Senate Session Sine Die 1/8/13</p>
MA	<ul style="list-style-type: none"> Introduced 7/3/13 H.D. 3750 An Act relative to public utility company vegetation management. 	<ul style="list-style-type: none"> [Bill text not yet available] 	<ul style="list-style-type: none"> N/A 	<p>Introduced by Representative Josh Cutler (D)</p>

EI Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
MA	<ul style="list-style-type: none"> • Introduced 1/15/13 • H.B. 2929 • An Act promoting storm resistant utility infrastructure upgrades 	<ul style="list-style-type: none"> • Modifies existing law related to emergency response plans to require the identification of necessary upgrades to transmission and distribution infrastructure to ensure reliable service to customers, including, but not limited to, the replacement of damaged wires, transformers, conduits or substations with storm-resistant, modernized technologies and other upgrades to prevent service disruption during emergencies. <p>Establishes that each investor-owned electric distribution, transmission or natural gas distribution company, when implementing an emergency response plan, shall replace damaged or destroyed distribution or transmission infrastructure with upgraded, storm-resistant or other modernized infrastructure to prevent future service disruptions, as determined in advance by the department. The department shall consider and approve of such necessary upgrades annually in each emergency response plan.</p>	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Representative Stephen DiNatale (D)</p> <p>Referred to Joint Committee on Telecommunications, Utilities and Energy 1/22/2013 Hearing scheduled 9/10/13</p>

EI Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
MA	<ul style="list-style-type: none"> • Introduced 1/17/13 • H.B. 2989 • An Act relative to underground infrastructure 	<ul style="list-style-type: none"> • Directs the Department of Public Utilities to promulgate rules and regulations relating to the construction of utility infrastructure designed to shield the utility infrastructure from damage due to storms, vandalism, security issues, maintenance issues and overload issues. Directs the Department of Public Utilities to prioritize and incentivize the creation of underground utilities wherever feasible. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Representative Chris Walsh (D)</p> <p>Referred to Joint Committee on Telecommunications, Utilities and Energy 1/22/2013</p> <p>Hearing held 9/10/2013 – a vote was not taken on the measure</p>
	<ul style="list-style-type: none"> • Approved 8/6/12 • S.B. 2143 • An Act relative to the emergency service response of public utility companies 	<ul style="list-style-type: none"> • Provides for filing of emergency preparedness plans, sharing of information and designation of emergency staff 	<ul style="list-style-type: none"> • Establishes Department of Public Utilities Storm Trust Fund to reimburse department of public utilities for investigations into the preparation for and responses to storm and other emergency events by the electric companies • funding is provided through an assessment against each electric company based upon the intrastate operating revenues derived from sales within the commonwealth of electric service • specifies that any penalty levied by the department against an investor-owned electric distribution, transmission or natural gas distribution company for any violation of the department's standards of acceptable performance for emergency preparation and restoration shall be credited by the company to the affected customers of the penalized company 	<p>Signed by the Governor on 8/6/12</p> <p>Adds sections to General Law Chapters 25 and 164</p>

EEl Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
MD	<ul style="list-style-type: none"> • Introduced 8/9/12 • S.B. 9 • Electric Companies - Rate Adjustment to Recover Profits Lost During Service Disruption - Prohibition 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Prohibits the Public Service Commission from authorizing an electric company to adjust the electric company's rates to recover profits lost during a disruption in electrical service; and making the Act an emergency measure. 	<p>Introduced by Senator Frosh 8/9/12</p> <p>First reading in Senate Rules</p>
MS	<ul style="list-style-type: none"> • Approved 3/6/06 • H.B. 1498 • The Hurricane Katrina Electric Utility Customer Relief and Electric Utility System Restoration Act 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Authorizes state general obligation bonds to be issued to pay for damage to electric utilities caused by Hurricane Katrina 	<p>Signed by the Governor 3/6/06</p>
NJ	<ul style="list-style-type: none"> • Introduced 1/14/14 • A.B. 248 	<ul style="list-style-type: none"> • Directs Board of Public Utilities (BPU) to adopt best practices and standards concerning electric, gas and water public utility infrastructure design and response to service interruptions resulting from a major catastrophic event which is defined to mean a natural or humanly caused occurrence arising from conditions beyond the control of the public utility, including, but not limited to, a thunderstorm, tornado, hurricane, flood, heat wave, snowstorm, ice storm or an earthquake, which results in a sustained interruption of utility service to at least 10% of the customers in an operating area or 10% of the customers of a municipality or county located in an operating area or the declaration of a state of emergency or disaster by the State or by the federal government. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Sean Kean (R) and Assembly member David Rible (R)</p> <p>Referred to Assembly Telecommunications and Utilities Committee</p> <p>Identical bills from last session: A.B. 3532, S.B. 2439</p>

EEl Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
NJ	<ul style="list-style-type: none"> • Introduced 1/14/14 • A.B. 274 	<ul style="list-style-type: none"> • Requires public utilities to meet with county emergency management coordinators on a daily basis for the duration a major catastrophic event. Provides that, no later than 24 hours following a major catastrophic event, a public utility representative is required to be available to meet with the county emergency management coordinator at a location in the county experiencing the major catastrophic event. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Donna Simon (R)</p> <p>Referred to Assembly Homeland and Security and State Preparedness Committee</p>
	<ul style="list-style-type: none"> • Introduced 1/14/14 • A.B. 1014 	<ul style="list-style-type: none"> • Requires certain electric public utilities to file emergency response plan with BPU. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Daniel Benson (D)</p> <p>Referred to Assembly Telecommunications and Utilities Committee</p>
	<ul style="list-style-type: none"> • Introduced 1/14/14 • A.B. 1032 • The Reliability, Preparedness, and Storm Response Act 	<ul style="list-style-type: none"> • Requires public utilities to file certain information concerning emergency preparedness with BPU and increases penalties. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Daniel Benson (D)</p> <p>Referred to Assembly Telecommunications and Utilities Committee</p>

EEl Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
NJ	<ul style="list-style-type: none"> Introduced 1/14/14 A.B. 1412 An Act establishing uniform Statewide reliability standards for electric and gas public utilities 	<ul style="list-style-type: none"> Requires the BPU to establish uniform statewide standards of acceptable performance for service reliability and restoration of service after a service interruption that every investor-owned electric and gas public utility in the State must follow and requires electric public utilities to submit to the board a review of strategies to mitigate flooding of substations within flood zones. Requires all electric and gas public utilities to file a service reliability plan and an emergency communications strategic plan for review and approval by the board; Allows the board to impose civil penalties if it finds that the length of the service interruptions were materially longer than they would have been but for the utility's failure. 	<ul style="list-style-type: none"> amendment authorizes BPU to authorize the recovery of all reasonable and prudent costs incurred by an electric or gas public utility in repairing, improving, and replacing its equipment and property reasonably associated with the improvement of utility service reliability consistent with the provisions of the bill. For the purpose of determining rates, such costs may include placing them in the respective public utility's rate base through an annual adjustment or recovering the costs through another ratemaking methodology approved by the board. All costs associated with repairing, improving, and replacing utility equipment and property reasonably associated with the improvement of utility service reliability may be eligible for rate treatment that is approved by the board, including a full return on the public utility's invested capital. 	<p>Introduced by Assembly member Upendra Chivukula (D)</p> <p>Referred to Assembly Telecommunications and Utilities Committee <u>Hearing held; amended; passed 2/6/14</u></p> <p>Identical bill from previous session: A.B. 2760</p>
	<ul style="list-style-type: none"> Introduced 1/14/14 S.B. 166 The Reliability, Preparedness, and Storm Response Act 	<ul style="list-style-type: none"> Requires public utilities to file certain information concerning emergency preparedness with BPU and increases certain penalties 	<ul style="list-style-type: none"> N/A 	<p>Introduced by Senator Jim Whelan (D) and Senator Shirley Turner (D)</p> <p>Referred to Senate Economic Growth Committee</p> <p>Identical bills from previous session: S.B. 26, A.B. 3671</p>

EEl Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
NJ	<ul style="list-style-type: none"> • Introduced 1/8/13 • S.B. 2429 • Public Utility Reliability Investment Act 	<ul style="list-style-type: none"> • Requires public utilities to file infrastructure improvement plans to increase service reliability with the Board of Public Utilities 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Senator Raymond Lesniak (D) 1/8/13</p> <p>Identical bill: A.B. 3816 Introduced 2/11/13</p> <p>Referred to Assembly Telecommunications and Utilities Committee</p>
	<ul style="list-style-type: none"> • Introduced 12/17/12 • S.B. 2414 	<ul style="list-style-type: none"> • Directs the BPU to study, prepare and submit, within six months of the effective date of the bill, to the Governor and to the Legislature, a written report which shall make findings which shall include the BPU's determination of whether the state's electric distribution system is maintained and operated by the electric public utilities in a manner that meets BPU standard and an assessment of the reliability of the state's electric distribution system through an application of other applicable standards. Directs the BPU to provide recommendations to improve reliability. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Senator James Holzaphel (R) 12/17/12</p> <p>Referred to Senate Economic Growth Committee</p> <p>Identical bill: A.B. 3616</p> <p>Referred to Assembly Telecommunications and Utilities Committee</p>
	<ul style="list-style-type: none"> • Introduced 12/13/12 • A.B. 3621 	<ul style="list-style-type: none"> • Establishes requirements for newly installed and replacement electric utility poles and transmission towers. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member John McKeon (D) 12/13/12</p> <p>Referred to Assembly Telecommunications and Utilities Committee</p>
	<ul style="list-style-type: none"> • Introduced 12/13/12 • A.B. 3622 	<ul style="list-style-type: none"> • Directs the BPU to study the feasibility of adopting certain requirements for the installation of new and replacement electric distribution utility poles and transmission towers. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member John McKeon (D) 12/13/12</p> <p>Referred to Assembly Telecommunications and Utilities Committee</p>

EI Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
NJ	<ul style="list-style-type: none"> Introduced 12/6/12 A.B. 3589 	<ul style="list-style-type: none"> Requires new electric distribution lines to be located underground wherever practicable 	<ul style="list-style-type: none"> N/A 	<p>Introduced by Assembly member Michael Carroll (R)</p> <p>Referred to Assembly Telecommunications and Utilities Committee 12/10/12</p>
	<ul style="list-style-type: none"> Introduced 12/3/12 A.B. 3535 	<ul style="list-style-type: none"> Establishes Energy Infrastructure Study Commission. Tasks the commission with making recommendations for improving the State's electric utility infrastructure 	<ul style="list-style-type: none"> N/A 	<p>Introduced by Assembly member Wayne DeAngelo (D)</p> <p>Passed by Assembly 5/20/13</p> <p>Referred to Senate Economic Growth Committee 5/20/13</p>
	<ul style="list-style-type: none"> Introduced 11/19/12 A.B. 3488 	<ul style="list-style-type: none"> Requires the BPU to adopt standards providing that, in operating areas that have been affected by a major catastrophic event, every electric distribution line of an electric public utility installed after the effective date of the bill, or installed, reinstalled, or repaired in response to damage resulting from a major catastrophic event, shall be located underground, wherever feasible, as determined by the BPU 	<ul style="list-style-type: none"> N/A 	<p>Introduced by Senator James Holzapfel (R)</p> <p>Referred to Telecommunications and Utilities Committee 12/3/2012</p> <p>Identical bill: S.B. 2358</p> <p>Referred to Senate Economic Growth Committee</p>
	<ul style="list-style-type: none"> Introduced 11/19/12 A.B. 3482 	<ul style="list-style-type: none"> Requires the State's electric public utilities having ownership or control of utility plant infrastructure located in a flood hazard area to establish a plan to move the utility plant infrastructure out of the flood hazard area or to submit information showing that any plan to move utility plant infrastructure would not be feasible 	<ul style="list-style-type: none"> N/A 	<p>Introduced by Assembly member Jack Ciattarelli (R)</p> <p>Referred to Telecommunications and Utilities Committee 12/3/2012</p>

EI Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
NJ	<ul style="list-style-type: none"> • Introduced 11/19/12 • A.B. 3483 	<ul style="list-style-type: none"> • Establishes in the Department of Community Affairs, the "New Jersey Task Force on Underground Utility Lines" (task force). Specifies that the purpose of the task force is to study and evaluate the extent to which underground utility lines have been installed in the state, and to develop recommendations relating to the feasibility of expanding the number of underground utility line installations, the various options for the financing of such expansion, and the consequences of expanding installation of underground utility lines in this State 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Amy Handlin (R)</p> <p>Referred to Telecommunications and Utilities Committee 12/3/2012</p>
	<ul style="list-style-type: none"> • Introduced 9/27/12 • A.B. 3255 • The Reliability, Preparedness, and Storm Response Act of 2012 	<ul style="list-style-type: none"> • Requires the BPU to develop and enforce performance benchmarks for service reliability and communications for electric public utilities and requires electric public utilities to submit to the BPU a review of strategies to mitigate flooding of substations within flood zones. In addition, the bill requires all public utilities conducting business in the State to file a service reliability plan and an emergency communications strategic plan for review and approval by the BPU. After review of a public utility's service reliability plan and communications plan, in either or both, the BPU may order the public utility to make such modifications as it deems reasonably necessary to remedy any deficiency • Gives BPU authority to increase certain penalties 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Gregory McGuckin (R) 9/27/12</p> <p>Referred to Assembly Homeland Security and State Preparedness Committee</p> <p>Identical bill: S.B. 2206</p> <p>Referred to Senate Economic Growth Committee</p>

EI Cross-Section of State Legislative Proposals on Storm Hardening & Resiliency

State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
NY	<ul style="list-style-type: none"> • Introduced 1/9/14 • A.B. 8387 	<ul style="list-style-type: none"> • Requires every city in the state, who has a population of 95,000 or more, to conduct a study of preparedness and readiness in the case of a disaster, natural or man-made, that would affect the state's power grid in such city. Requires each city to study their ability to maintain vital services, backup generating systems, law enforcement, hospitals, the integrity of computer systems operated by institutions within the city, first responders for immediate deployment and any further analyses that the Commissioner of Homeland Security and Emergency Services or Director of the Office of Emergency Management deems necessary. States that the purpose of these studies is for the cities to identify those areas of concern. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Felix Ortiz (D)</p> <p>Referred to Assembly Committee on Cities</p>
	<ul style="list-style-type: none"> • Introduced 4/4/13 • A.B. 6502 • Utility Preparedness Act of 2014 	<ul style="list-style-type: none"> • Creates a utility preparedness program, which will impose new standards for preparedness and power restoration to address forthcoming major utility outages, like that experienced during Hurricane Sandy. • States that the public service commission adopt and enforce rules, performance incentives and standards for each transmission and distribution company during power outages in which more than ten percent of a transmission and distribution company's customers are without power for more than forty eight-consecutive hours. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Shelley Mayer (D)</p> <p>Referred to Assembly Corporations Authorities Commissions Committee Amended 1/28/14</p> <p>Identical bill: S.B. 4502</p> <p>Referred to Senate Energy and Telecommunications Committee Re-referred to Senate Energy and Telecommunications Committee 1/8/14 Amended 1/24/14</p>

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NY	<ul style="list-style-type: none"> • Introduced 2/14/13 • S.B. 3761 • Natural Disaster Preparedness and Mitigation Act 	<ul style="list-style-type: none"> • Enacts the "natural disaster preparedness and mitigation act" providing for enhanced disaster preparedness and recovery from disasters. 	<ul style="list-style-type: none"> • The disaster preparedness Commission shall utilize, in rate setting proceedings, to recover the reasonable costs incurred to maintain or improve the resiliency of the utility's infrastructure necessary to comply with the established standards 	<p>Introduced by Senator Malcolm Smith (D)</p> <p>Referred to Senate Veterans, Homeland Security & Military Affairs Committee</p> <p>Re-referred to Senate Veterans, Homeland Security & Military Affairs Committee 1/8/14</p> <p>Amended 1/28/14</p>
	<ul style="list-style-type: none"> • Introduced 1/29/13 • A.B. 3822 	<ul style="list-style-type: none"> • Requires electric corporations to submit electric utility emergency plans to the public service commission for review and approval; provides such plans shall set forth training and planning for power outages, procedures to determine the extent of outages, procedures to determine the length of time the outages will continue, load relief policies, decision making plans, and any other information such commission requires; annually requires electric corporations file emergency plans and verification of the ability to implement such plan; requires electric corporations to report to the public service commission within 60 days of an outage which lasts more than 48 hours. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Francisco Moya (D)</p> <p>Referred to Assembly Energy Committee 1/29/13</p> <p>Re-referred to Assembly Environmental Energy 1/8/14</p> <p>Identical bill: S.B. 2773</p> <p>Referred to Senate Energy and Telecommunications Committee 1/23/13</p> <p>Re-referred to Senate Energy and Telecommunications Committee 1/8/14</p>
	<ul style="list-style-type: none"> • Introduced 1/14/13 • A.B. 2300 	<ul style="list-style-type: none"> • Regulates the cutting, topping and removal of trees upon rights of way by providers of electric service. Requires the planting of replacement trees in certain cases. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Assembly member Thomas Abinanti (D)</p> <p>Referred to Assembly Energy Committee 1/14/13</p> <p>Re-referred to Assembly Environmental Energy 1/8/14</p>

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State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
NY	<ul style="list-style-type: none"> • Introduced 1/9/13 • S.B. 710 	<ul style="list-style-type: none"> • Requires the public service commission to establish standards of acceptable performance for electric corporations. 	<ul style="list-style-type: none"> • N/A. 	Introduced by Senator Kevin Parker (D) Referred to Energy and Telecommunications Re-referred to Energy and Telecommunications 1/8/14
	<ul style="list-style-type: none"> • Introduced 1/9/13 • S.B. 1345 	<ul style="list-style-type: none"> • Requires that the Public Service Commission ensure equitable treatment of all retail customers of electric corporations and municipal electric utilities by requiring investor owned utilities include them in any filed storm preparation and response plans. 	<ul style="list-style-type: none"> • N/A 	Introduced by Senator George Maziarz (R) Referred to Energy and Telecommunications Re-referred to Energy and Telecommunications 1/8/14 Recommit, enacting clause stricken 1/22/14
	<ul style="list-style-type: none"> • Introduced 1/4/12 • S.B. 6094 	<ul style="list-style-type: none"> • Amend the public service law, in relation to requiring the PSC to establish standards of acceptable performance for electric corporations in the event of a power outage and subsequent power restoration 	<ul style="list-style-type: none"> • N/A 	Introduced by Senator Kevin Parker (D) 1/4/12 Referred to Energy and Telecommunications
	<ul style="list-style-type: none"> • Introduced 1/27/11 • S.B. 1777 • Safety and Reliability Inspection 	<ul style="list-style-type: none"> • Requires a safety and reliability inspection of all utility poles used by electric corporations providing electric service to over 300,000 customers and the replacement or removal of deficient poles 	<ul style="list-style-type: none"> • N/A 	Introduced by Senator Bill Perkins (D) 1/27/11 Referred to Codes 6/14/11 Referred to Ways and Means 6/17/11 Enacting Clause stricken 7/11/11 Identical bill A.B. 6181; Amended 6/8/11 Referred to Energy and Telecommunications 1/4/12 Amended and recommitted to Energy and Telecommunications 6/8/11 Referred to Energy and Telecommunications 1/4/12

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PA	<ul style="list-style-type: none"> • Introduced 2/6/13 • S.B. 35 	<ul style="list-style-type: none"> • Authorizes and provides for the coordination of activities relating to disaster preparedness and emergency management activities by agencies and officers of the Commonwealth, and similar Federal-State and State-Local activities in which the Commonwealth, and its political subdivisions, intergovernmental cooperative entities, regional task forces, councils of governments, school districts and other appropriate public and private entities participate. 	<ul style="list-style-type: none"> • N/A 	<p>Introduced by Senator Lisa Baker (R)</p> <p>Referred to Veterans Affairs and Emergency Preparedness Committee</p>
TX	<ul style="list-style-type: none"> • Approved 6/17/11 • S.B. 937 	<ul style="list-style-type: none"> • Requires the Public Utility Commission of Texas by rule to require an electric utility, municipally owned utility, electric cooperative, qualifying facility, power generation company, exempt wholesale generator, or power marketer to give to a nursing facility, an assisted living facility, and a facility that provides hospice services the same priority that it gives to a hospital in its emergency operations plan for restoring power after an extended power outage. 	<ul style="list-style-type: none"> • N/A 	<p>Signed by the Governor 6/17/11</p> <p>Subchapter D, Chapter 38, Utilities Code, is amended by adding Section 38.072</p>
	<ul style="list-style-type: none"> • Approved 4/16/09 • S.B. 769 	<ul style="list-style-type: none"> • N/A 	<ul style="list-style-type: none"> • Provides for securitization methods for the recovery of system restoration costs incurred by electric utilities following hurricanes, tropical storms, ice or snow storms, floods, and other weather-related events and natural disasters. 	<p>Signed by the Governor 4/16/09</p> <p>Amends Chapter 36, Utilities Code, by adding Subchapter I</p>

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VT	<ul style="list-style-type: none"> • Approved 4/4/13 • Executive Order 04-13 • Governor’s Emergency Preparedness Advisory Council 	<ul style="list-style-type: none"> • The order states that the mission of the Governor's Emergency Preparedness Advisory Council shall be to assess the state's overall homeland security preparedness, policies, communications and to advise on strategies to improve the system already in effect. • The order also states that the Council shall carefully consider the interdependencies between federal, state, local governments, Vermont National Guard, first responders, law enforcement, emergency managers, public health officials and private community organizations. The Council is also urged to take into consideration the available financial resources. 	<ul style="list-style-type: none"> • N/A 	<p>Signed by Governor Peter Shumlin (D) 4/4/13</p> <p>Expires 7/15/19</p>

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State	Date/Bill/Title	Infrastructure Hardening & Resiliency Measures	Cost Recovery	Status
WI	<ul style="list-style-type: none"> • Approved 12/13/13 • S.B. 119 	<ul style="list-style-type: none"> • Ratifies a compact between several states and provinces of Canada that would provide for the possibility of mutual assistance in managing an emergency or disaster. • Allows for the temporary suspension, to the extent authorized by law, of statutes or ordinances that impede the response to an emergency or disaster. Requires members to agree to respond to the request for assistance as soon as possible, but the compact allows a member to withhold or withdraw resources to protect its own jurisdiction. • Provides that the states currently considering ratifying the compact as Illinois, Indiana, Ohio, Michigan, Minnesota, Montana, North Dakota, Pennsylvania, New York and Wisconsin and the Canadian provinces of Alberta, Manitoba, Ontario and Saskatchewan. Allows other states and provinces to ratify the compact. 	<ul style="list-style-type: none"> • N/A 	<p>Approved by Governor Scott Walker (R) 12/13/13</p> <p>2013 Wisconsin Act 97</p> <p>Identical bill: A.B. 136</p>

APPENDIX C

National Response Event

In 2013, EEI and its members ratified a new mutual assistance framework for events that require a national, industry-wide response. Going forward, when an event requires a national response, the industry will declare a “national response event” (NRE). An NRE is a natural or man-made event that is forecast to cause or that causes widespread power outages impacting a significant population or several regions across the U.S. and requires resources from multiple Regional Mutual Assistance Groups (RMAGs). When an NRE is declared, the industry’s mutual assistance efforts will be scaled to the national level and coordinated so industry restoration resources are allocated in a singular and seamless fashion. All available emergency restoration resources (including contractors) will be pooled and allocated to participating utilities in a safe, efficient, transparent, and equitable manner. The NRE framework is designed to help increase public safety, accelerate the industry’s response during national events, and minimize economic consequences for consumers and the nation.

- In the case of an industry-wide NRE, the industry’s mutual assistance process will be coordinated at the national level in order to ensure industry resources are seamlessly allocated in the most efficient manner possible. For regional or local outages, mutual assistance resources will continue to be managed through the RMAG process.
- A new National Response Executive Committee (NREC), comprised of senior-level utility executives from all regions of the country, will govern the NRE allocation process. Upon request of an affected utility CEO, the NREC will declare an NRE and will activate the National Mutual Assistance Resource Team (NMART).
- The NMART evaluates mutual assistance requests and assigns available resources to affected utilities in coordination with the RMAGs. When an NRE is declared, all available industry emergency restoration resources (including contractors) will be pooled and allocated to participating utilities to best meet restoration needs in a catastrophic event.
- During an NRE, mutual assistance is provided in a coordinated, transparent, and equitable manner to restore power as efficiently and safely as possible for all customers and communities.
- An NRE designation is reserved for only the most significant events, such as a major hurricane, earthquake, an act of war, or other occurrence that results in widespread power outages.

The electric power industry is prepared for significant outage events and continues to improve its coordination and response and recovery efforts. Customers have increasing expectations and electricity dependence, and the industry is committed to making the mutual assistance process efficient, transparent, and equitable regardless of the size and scope of the event.

Electric Power Industry-Government Partnerships

Improving Communication and Coordination

In order to facilitate and improve information sharing, communication, and coordination during major outages, senior electric power industry officials will be embedded with government response teams at the U.S. Department of Energy and will coordinate with the Federal Emergency Management Agency. This allows a direct, two-way flow of information between industry responders and government emergency managers.

Streamlining Transportation

The industry is partnering with the U.S. Department of Transportation and state transportation agencies to expedite the movement of electric utility resources in support of mutual assistance and power restoration. EEI, with the support of federal and state governments, is developing information resources and tools to address the specific needs of utilities to move fleets and resources across state lines during a significant outage event.

The industry also has negotiated a new procedure for U.S. and Canadian border crossings with the Department of Homeland Security and the Canadian Border Services Agency to minimize delays and to ensure timely movement of mutual assistance crews across the international border.

Enhancing Logistical Support, Security, and Road Access

During Sandy, the U.S. Department of Defense (DOD) assisted the industry by providing airlift for crews and equipment. The industry is currently engaged in an ongoing dialogue with the DOD to build upon the unique capabilities that the military can provide during an emergency.

This effort includes working to expand logistical support, such as access to DOD property and facilities for pre-staging areas, exploring ways to enhance security and road access with the National Guard, and securing access to critical supplies and equipment from the Army Corps of Engineers.

The result of these partnerships is a higher level of collaboration between the electric power industry and government to ensure we are all better prepared for the next major outage event.

For more information on the National Response Event framework, please see <http://www.eei.org/issuesandpolicy/electricreliability/mutualassistance/RestorationResources/Pages/default.aspx>

The **Edison Electric Institute** (EEI) is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for 220 million Americans, operate in all 50 states and the District of Columbia, and directly employ more than 500,000 workers.

With more than \$85 billion in annual capital expenditures, the electric power industry is responsible for millions of additional jobs. Reliable, affordable, and sustainable electricity powers the economy and enhances the lives of all Americans.

EEI has 70 international electric companies as Affiliate Members, and 250 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.



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701 Pennsylvania Ave., N.W. | Washington, D.C. 20004-2696 | 202.508.5000 | www.eei.org