

REPORT OF THE DEMAND-SIDE RESOURCES & SMART GRID COMMITTEE

This report summarizes a selection of legislative and regulatory developments at the federal and state level in the areas of smart grid and demand-side resources from January 1 through December 31, 2013.*

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I. SMART GRID DEVELOPMENTS

A. Federal Activity

1. Department of Energy

a. Privacy Voluntary Code of Conduct

In 2013, the Federal Smart Grid Task Force (Task Force), led by the Department of Energy's (DOE) Office of Electricity Delivery and Energy Reliability, launched a stakeholder process to develop a voluntary, enforceable smart grid data privacy code (Voluntary Code of Conduct or VCC) for utilities and third parties providing consumer energy use services.¹ The process, which

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1. *DOE Addresses Privacy for Data Enabled by Smart Grid Technologies: Convenes Multistakeholder Process to Develop Voluntary Code of Conduct*, SMARTGRID.GOV, <http://www.smartgrid.gov/privacy> (last visited Jan. 4, 2014) [hereinafter *DOE Convenes Multistakeholder Process*].

is intended to address consumer privacy concerns related to data enabled by smart grid technologies, was based on principles set forth in the White House's Consumer Privacy Bill of Rights Report released in February 2012.² The Task Force convened meetings in February, June, and November 2013,³ culminating in a set of draft principles.⁴ These principles are intended to:

- (1) encourage innovation while appropriately protecting the privacy of Customer Data and providing reliable, affordable electric and energy-related services;
- (2) provide customers with appropriate access to their own Customer Data; and
- (3) . . . not infringe on or supersede any law, regulation, or governance by any applicable federal, state, or local regulatory authority.⁵

They are designed to apply "as high level principles of conduct for both utilities and third parties."⁶

As the draft explains,

The intent is for utilities and third parties to consider adopting the VCC in its entirety. However, a utility or third party could potentially adopt the principles of the VCC with some limited exception, such as when laws, regulatory guidance, governing documents, and/or prevailing state/local business practices indicate a different approach. In these instances, utilities or third parties should explicitly note the reason for the deviation(s) and prominently indicate such in any depiction that they have adopted the VCC, such as in a privacy policy or other notice of adoption.⁷

2. WHITE HOUSE, EXEC. OFFICE OF THE PRESIDENT, CONSUMER DATA PRIVACY IN A NETWORKED WORLD: A FRAMEWORK FOR PROTECTING PRIVACY AND PROMOTING INNOVATION IN THE GLOBAL DIGITAL ECONOMY (2012) [hereinafter WHITE HOUSE REPORT], available at <http://www.whitehouse.gov/sites/default/files/privacy-final.pdf>. The White House Report set forth a Consumer Privacy Bill of Rights based on the following principles:

- (1) Individual Control: Consumers have a right to exercise control over what personal data companies collect from them and how they use it;
- (2) Transparency: Consumers have a right to easily understandable and accessible information about privacy and security practices;
- (3) Respect for Context: Consumers have a right to expect that companies will collect, use, and disclose personal data in ways that are consistent with the context in which consumers provide the data;
- (4) Security: Consumers have a right to secure and responsible handling of personal data;
- (5) Access and Accuracy: Consumers have a right to access and correct personal data in usable formats, in a manner that is appropriate to the sensitivity of the data and the risk of adverse consequences to consumers if the data is inaccurate;
- (6) Focused Collection: Consumers have a right to reasonable limits on the personal data that companies collect and retain; and
- (7) Accountability: Consumers have a right to have personal data handled by companies with appropriate measures in place to assure they adhere to the Consumer Privacy Bill of Rights.

Id. at 1. The White House Report proposes that "individual companies, industry groups, privacy advocates, consumer groups, . . . academics," and state and federal officials "participate in multistakeholder processes to develop [specific industry] codes of conduct that implement these general principles." *Id.* at 23. Once a company has signed on to a code of conduct, its commitment "will become enforceable under Section 5 of the FTC Act." *Id.* at 27. Moreover, even those companies which had not signed might be subject to FTC enforcement action under existing law for "[failing] to use reasonable security measures to protect personal information about consumers." *Id.* at 29.

3. DOE Convenes Multistakeholder Process, *supra* note 1.

4. Meeting Minutes, Federal Smart Grid Task Force, Voluntary Code of Conduct (VCC) Multistakeholder Process (Nov. 22, 2013), available at http://www.smartgrid.gov/sites/default/files/VCC%20Meeting%20Minutes_Nov%2022%20FINAL.pdf.

5. *Id.* at 2.

6. *Id.*

7. *Id.*

The draft principles include the following topics: Notice and Awareness (data management; notification; customer rights; data classification; customer awareness);⁸ Choice and Consent (customer control; informed consent; valid consent; controlled disclosure; efficient management);⁹ Self-Enforcement Management and Redress;¹⁰ Data Access and Participation (data collection; data use; data retention; data access rights; data access methods; aggregated data);¹¹ and Integrity and Security (security and safeguards; data quality and accuracy).¹²

b. Investment and Economic Impact

In 2013, the DOE made further progress in the use of American Recovery and Reinvestment Act of 2009 (Recovery Act)¹³ funds to promote smart grid projects, releasing several reports analyzing the economic impact of smart grid deployment and the success of the agency's Smart Grid Investment Grant (SGIG) program, as discussed below.

In April 2013, the DOE released a study analyzing the economy-wide impacts of the Recovery Act funding for smart grid project deployment in the United States (specifically, the SGIG and the Smart Grid Demonstration Program (SGDP)), covering the period from August 2009 through March 2012.¹⁴ "These investments under the Recovery Act were intended to serve a dual mission . . . of economic stimulus" and supporting "the modernization of the United States electricity grid."¹⁵ The DOE found that "the SGIG and SGDP programs generated a significant impact on the U.S. economy[, with] . . . a total invested value of \$2.96 billion to support Smart Grid projects generat[ing] at least \$6.8 billion in total economic output."¹⁶ It also found that "smart grid deployment positively impacted employment and labor income throughout the economy. . . . Overall, about 47,000 full-time equivalent jobs were supported by [smart grid] investments," including approximately 12,000 direct jobs in the manufacturing, IT, or technical services space.¹⁷ Finally, the DOE concluded that for every \$1 million of direct smart grid spending (including Recovery Act funds and private sector matching), the gross domestic product (GDP) increased by at least \$2.5 million.¹⁸

8. *Id.* at 5-8.

9. *Id.* at 15-17.

10. *Id.* at 14-15.

11. *Id.* at 24-28.

12. *Id.* at 20-21.

13. American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115.

14. U.S. DEP'T OF ENERGY, ECONOMIC IMPACT OF RECOVERY ACT INVESTMENTS IN THE SMART GRID 1 (2013), available at <http://www.smartgrid.gov/sites/default/files/doc/files/Smart%20Grid%20Economic%20Impact%20Report.pdf>.

15. *Id.*

16. *Id.*

17. *Id.*

18. *Id.*

In October 2013, the DOE issued a report focused on the progress of the SGIG program.¹⁹ Supported by \$3.4 billion in Recovery Act funds and \$4.5 billion in private funding, SGIG has invested in projects involving more than 200 participating “electric utilities and other organizations to modernize the electric grid, strengthen cybersecurity, improve interoperability, and collect an unprecedented level of data on smart grid operations.”²⁰ The DOE announced that the majority of SGIG-funded projects were scheduled to complete installations in 2013 and provide data analysis and reports through 2015.²¹ In 2014, the SGIG program will move toward project completion and continue to deploy smart grid technologies and systems, with quarterly reports on installations and costs.²²

c. Customer Engagement

In late 2012, the DOE convened an electric industry Customer Engagement Working Group to discuss the ways in which consumers can take a more proactive role in managing their energy use.²³ In July 2013, the group produced a guide, *Voices of Experience: Insights on Smart Grid Customer Engagement*, that provides advice to utilities on how to educate and engage their customers.²⁴ The DOE noted, “[c]ustomer engagement within the electric power industry is an evolving, ongoing process that is just beginning to emerge.”²⁵ The guide explains that “(1) [s]mart [g]rid impacts the entire organization and must be championed by the top executives, (2) smart grid technology changes the customer-utility relationships [and] is a cultural shift in the utility industry, (3) [it] is a community effort [and] not just a utility effort,” (4) customer choice is important because “[u]tility customers do not all have the same needs and preferences,” and (5) media coverage (especially social media) “can change community perceptions quickly, [particularly] if customers have not been [sufficiently] informed and educated.”²⁶

d. Electric Vehicles

In mid-2013, the DOE launched a new Electric Vehicle-Smart Grid Interoperability Center at Argonne National Laboratory to work on harmonizing electric vehicle (EV) and smart grid technologies.²⁷ The center “will focus on establishing requirements and test procedures to assess EV-electric vehicle

19. U.S. DEP’T OF ENERGY, AMERICAN RECOVERY & REINVESTMENT ACT OF 2009: SMART GRID INVESTMENT GRANT PROGRAM PROGRESS REPORT II (2013), available at https://www.smartgrid.gov/sites/default/files/doc/files/SGIG_progress_report_2013.pdf.

20. *Id.* at iv.

21. *Id.* at v.

22. *Id.*

23. U.S. DEP’T OF ENERGY, VOICES OF EXPERIENCE: INSIGHTS ON SMART GRID CUSTOMER ENGAGEMENT 3 (2013), available at http://www.smartgrid.gov/sites/default/files/VoicesofExperience_Brochure_9.26.2013.pdf.

24. *Id.* at 4.

25. *Id.* at 3.

26. *Id.* at 3.

27. Barbara Vergetis Lundin, *Harmonizing EV and Smart Grid Technology*, FIERCESMARTGRID (July 24, 2013), <http://www.fiercesmartgrid.com/story/harmonizing-ev-and-smart-grid-technology/2013-07-24>.

supply equipment compatibility[;] developing and verifying connectivity technologies, communication protocols and standards[; and] . . . identify[ing] gaps where new standards or technologies are needed for solutions using proof-of-concept hardware/software systems.”²⁸ “Th[e] work . . . will be complemented by the launch of a European Interoperability Center,” which will work with the U.S. government “to ensure harmonized technologies and prevent unnecessary” divergence in regulatory regimes.²⁹

e. Energy Storage

In December 2013, the DOE released a report recommending that energy storage be considered a “well-accepted contributor to realization of smart grid benefits—specifically, enabling confident deployment of electric transportation and optimal utilization of demand-side assets.”³⁰ The report stressed that storage technology will be instrumental to the management of electrical grid reliability and resiliency, in part due to its capability to improve smart grid functionality.³¹

f. Federal Agency Smart Grid Implementation

The DOE has supported the Green Button Initiative, an industry-led effort prompted by the Administration, to provide utility customers with simple and secure access to their own energy usage information.³² Approximately “100 million Americans already have access to their Green Button energy data.”³³

In December 2013, President Obama issued a memorandum (Memorandum) directing federal agencies to redouble efforts to use renewable energy and manage their energy usage more efficiently and effectively.³⁴ The Memorandum set a new target for federal agencies to increase their consumption of renewable energy to 20% of their total amount of electric energy use by 2020 and instructed agencies to incorporate the Green Button data standard into their energy management practices.³⁵ Pursuant to the Memorandum, the DOE, along with the General Services Administration (GSA) and the Environmental Protection Agency (EPA), will create and initiate a pilot to use Green Button at federal facilities.³⁶ Based on the outcomes of this pilot, these agencies will issue guidance for other facilities to follow suit by incorporating Green Button into reporting, data analytics and automation, and processes in consultation with local utilities.³⁷

28. *Id.*

29. *Id.*

30. U.S. DEP’T OF ENERGY, GRID ENERGY STORAGE 5 (2013), available at http://www.smartgridnews.com/artman/uploads/2/Grid_Energy_Storage_December_2013.pdf.

31. *Id.* at 9.

32. Ari Phillips, *As Part of Renewable Energy Strategy Obama Pushes “Green Button,”* CLIMATE PROGRESS (Dec. 11, 2013, 2:30 PM), available at <http://thinkprogress.org/climate/2013/12/11/3048041/renewable-energy-obama-green-button/>.

33. *Id.*

34. Memorandum on Federal Leadership on Energy Management, 78 Fed. Reg. 75,209, 75,209 (Dec. 10, 2013) (issued to the agencies on December 5, 2013).

35. *Id.*

36. *Id.* at 75,211.

37. *Id.*

2. National Institute of Standards and Technology

In February 2013, the Obama Administration released an Executive Order (EO) and related Presidential Policy Directive to address the “cyber threat to critical infrastructure” and “enhance the security and resilience” of relevant organizations, including those in the energy sector.³⁸ The EO called for the development of a “voluntary Cybersecurity Framework . . . that provides a ‘prioritized, flexible, repeatable, performance-based, and cost-effective approach’” for critical infrastructure organizations to address cybersecurity concerns.³⁹ On October 22, 2013, the National Institute of Standards and Technology (NIST) released its Preliminary Cybersecurity Framework (Framework), which “relies on existing standards, guidance, and best practices to achieve outcomes that can assist organizations in managing their cybersecurity risk.”⁴⁰

In releasing the Framework for public comment, NIST Director Dr. Patrick Gallagher described the Framework as “having really two major moving parts.”⁴¹ First, the Framework is a “compendium of existing standards and best practices. These are practices that have been proven to be worthwhile in protecting IT systems from cyber threats.”⁴² Second, the Framework “provides a structure for using that compendium. . . . [I]t’s a framework for organizing those practices and providing tools to support their use and adoption in businesses and organizations.”⁴³ The goal of the Framework, as stated by the director, is to “turn today’s best practices into common and expected practices.”⁴⁴

The Framework consists of three categories: Framework Core, Framework Profile, and Framework Implementation Tiers.⁴⁵ The Framework Core organizes cybersecurity activities (e.g., maintaining audit log records) into distinct categories and then provides an existing standard, guideline, or best practice for each category.⁴⁶ The Framework Profile is a tool for organizations to measure their current cybersecurity practices against the practices identified in the Framework Core to create a “Current Profile.”⁴⁷ After conducting a risk assessment on potential cyber threats, the organization is tasked with creating an

38. Exec. Order No. 13,636, 78 Fed. Reg. 11,739, 11,739 (Feb. 19, 2013); *see also* Press Release, White House, Presidential Policy Directive—Critical Infrastructure Security and Resilience (Feb. 12, 2013), *available at* <http://www.whitehouse.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil> (listing the energy sector as one of sixteen identified critical infrastructure sectors).

39. NAT’L INST. OF STANDARDS & TECH., IMPROVING CRITICAL INFRASTRUCTURE CYBERSECURITY EXECUTIVE ORDER 13636: PRELIMINARY CYBERSECURITY FRAMEWORK 1 (2014) (quoting Exec. Order No. 13,636, 78 Fed. Reg. at 11,741), *available at* <http://www.nist.gov/itl/upload/preliminary-cybersecurity-framework.pdf>.

40. *Id.*

41. Patrick Gallagher, Nat’l Inst. of Standards & Tech., Opening Remarks: Preliminary Cybersecurity Framework (Oct. 20, 2013), *available at* <http://www.nist.gov/director/speeches/cybersecurity-framework-remarks-102213.cfm>.

42. *Id.*

43. *Id.*

44. *Id.*

45. NAT’L INST. OF STANDARDS & TECH., *supra* note 39, at 2.

46. *Id.*

47. *Id.* at 2-3.

aspirational “Target Profile” showing an improved cybersecurity posture.⁴⁸ The Implementation Tiers allow organizations to determine how sophisticated their practices are with respect to cybersecurity and identify what tier the organization currently falls, and should fall, into based on their industry position and available resources.⁴⁹

The Framework also includes an appendix (Privacy Appendix) meant to address privacy and civil liberties concerns by categorizing privacy practices in a manner similar to the Framework Core, thereby providing a methodology for how organizations should treat personal information vis-à-vis each cybersecurity activity.⁵⁰ The Privacy Appendix, unlike the Framework Core, provides suggested privacy principles, rather than standards, that can be used as a benchmark against which organizations can measure their privacy practices.⁵¹

Comments have been filed and the final Framework is expected to be released on February 12, 2014.⁵²

II. DEMAND SIDE RESOURCE DEVELOPMENTS

A. Federal Activities

In February 2013, the Federal Energy and Regulatory Commission (FERC) and the DOE released reports prepared by the National Forum on Demand Response to address cost effectiveness, measurement and verification, program design and implementation, and tools and methods.⁵³ The National Forum is comprised of DOE and FERC staff, as well as state officials, industry representatives and experts, and members of the National Action Plan Coalition.⁵⁴ Participants in the National Forum collaborate to identify barriers and possible solutions for advancing demand response.⁵⁵

The FERC issued final rulemaking Order No. 676-G in March 2013, incorporating into its regulations the North American Energy Standards Board’s (NAESB) business practice standards for the measurement and verification of demand response and energy efficiency resources participating in regional transmission organization (RTO) and independent system operator (ISO)

48. *Id.* at 7.

49. *Id.* at 9.

50. *Id.* app. B at 28.

51. *Id.* app. B at 28-35.

52. *Update on the Development of the Cybersecurity Framework (December 4, 2013)*, NIST, http://www.nist.gov/itl/upload/nist_cybersecurity_framework_update_120413.pdf (last visited Feb. 4, 2014). The NIST in fact released its first version of the Framework on February 12, 2014. *Cybersecurity Framework*, NIST, <http://www.nist.gov/cyberframework/index.cfm> (last visited Mar. 12, 2014).

53. *A National Forum on Demand Response: Results on What Remains to Be Done to Achieve Its Potential*, U.S. DEP’T ENERGY, <http://energy.gov/oe/services/electricity-policy-coordination-and-implementation/state-and-regional-policy-assistanc-7> (last visited Mar. 21, 2014).

54. FED. ENERGY REGULATORY COMM’N & U.S. DEP’T OF ENERGY, IMPLEMENTATION PROPOSAL FOR THE NATIONAL ACTION PLAN ON DEMAND RESPONSE 5 (2011) [hereinafter FERC & DOE PROPOSAL], available at <http://www.ferc.gov/legal/staff-reports/07-11-dr-action-plan.pdf>. The Coalition is part of a larger effort by the DOE and FERC to implement the National Action Plan. *Id.*

55. *Id.*

markets.⁵⁶ The FERC intends for the standards to improve accuracy, consistency, and transparency when RTOs/ISOs measure and credit demand response and energy efficiency resources.⁵⁷ The demand response standards in particular further detail existing standards on meter data reporting, advanced notification, and telemetry and meter accuracy.⁵⁸ The FERC directed each RTO and ISO to revise its Open Access Transmission Tariff (OATT) to incorporate the NAESB standards by December 31, 2013.⁵⁹

In October 2013, the FERC staff issued its eighth annual Staff Report assessing demand response and advanced metering.⁶⁰ The FERC staff analyzed “publically-available information and discussions with market participants and industry experts” to develop its report.⁶¹ Based on the information analyzed, demand response potential in the RTO and ISO markets has risen 4.1% since 2009.⁶² Demand response resources also helped balance supply and demand during RTO/ISO system emergencies caused by heat waves in the summer of 2013.⁶³ Advanced metering penetration has also improved, up from 9% in 2009 to 25% by early 2012.⁶⁴

B. State Activities

1. Arkansas

On April 11, 2013, Arkansas enacted Senate Bill 640 authorizing property-assessed clean energy (PACE) financing, which allows property owners to borrow money to pay for energy improvements.⁶⁵ The amount borrowed is typically subject to a special assessment against the property over a given period of years, which is then repaid through property taxes.⁶⁶

State and local governments may create districts where this financing is available.⁶⁷ The districts must be operated by a board of directors, and the law gives each district authority to design its own programs.⁶⁸ The types of eligible

56. Order No. 676-G, *Standards for Business Practices and Communication Protocols for Public Utilities*, F.E.R.C. STATS. & REGS. ¶ 31,343, 78 Fed. Reg. 14,654 (2013) (to be codified at 18 C.F.R. pt. 38) [hereinafter Order No. 676-G].

57. FED. ENERGY REGULATORY COMM’N STAFF, ASSESSMENT OF DEMAND RESPONSE AND ADVANCED METERING: STAFF REPORT 18 (2013) [hereinafter FERC STAFF REPORT], available at <http://www.ferc.gov/legal/staff-reports/2013/oct-demand-response.pdf>.

58. Order No. 676-G, *supra* note 56, at PP 33-35.

59. *Id.* at PP 54-55.

60. FERC STAFF REPORT, *supra* note 56. The report fulfills an Energy Policy Act of 2005 requirement that the FERC prepare and publish an annual report assessing demand response resources, including those available from consumer classes. *Id.* at 1.

61. *Id.*

62. *Id.* The California ISO, ERCOT and ISO-NE experienced an increase in demand response while other RTO and ISO markets realized a decline. *Id.* at 11.

63. *Id.* at 1.

64. *Id.*

65. S.B. 640, 89th Gen. Assemb., Reg. Sess. (Ark. 2013) (to be codified at ARK. CODE ANN. § 8-15-101-19 (2013)).

66. *Id.* §§ 8-15-113(c)(1), (e)(2)(A).

67. *Id.* § 8-15-105.

68. *Id.* § 8-15-107.

technologies and the available sectors are determined locally; although commercial, industrial, and residential properties all potentially qualify.⁶⁹

In 2001, Arkansas enacted legislation directing the Arkansas Public Service Commission (PSC) to establish net-metering rules for renewable energy systems.⁷⁰ Arkansas has since expanded the availability of net-metering and clarified many of the open questions presented when the law was first enacted.⁷¹

Until 2013, customers were only able to carry over next excess generation (NEG) to the following month. With House Bill 2019, customers may carry over NEG in the amount of four months of average usage.⁷² Moreover, “customer[s] with multiple meters within a single utility’s . . . territory may designate [them] to be offset by a single net metering system or multiple systems.”⁷³

2. Florida

With House Bill 277 enacted on May 30, 2013, Florida provides a residential property tax exemption for certain solar, wind, and geothermal systems installed on or after January 1, 2013.⁷⁴ The exemption is such that property tax valuation should ignore the installation of the equipment when valuing a home.⁷⁵ The exemption applies to assessments beginning January 1, 2014.⁷⁶

3. Georgia

In Georgia PSC Docket No. 36325, Georgia Power began offering the Advanced Solar Initiative solar energy purchase program.⁷⁷ The program will purchase energy from solar developers as well as smaller facilities.⁷⁸ Georgia Power only purchases the energy, and the seller retains all renewable energy credits.⁷⁹

69. *Id.* § 8-15-103, -107, -114.

70. H.B. 2325, 83d Gen. Assemb., Reg. Sess. § 4(a) (Ark 2001) (codified as amended at ARK. CODE ANN. § 23-18-604 (2013)).

71. *E.g.*, *Arkansas: Incentives/Policies for Renewables & Efficiency*, DSIRE, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=AR03R (last updated Sept. 23, 2013).

72. H.B. 2019, 89th Gen. Assemb., Reg. Sess. § 1 (Ark. 2013) (amending ARK. CODE ANN. § 23-18-604).

73. *Arkansas Incentives/Policies*, *supra* note 71.

74. H.B. 277, 2013 Reg. Sess. (Fla. 2013) (enacted).

75. FLA. STAT. § 193.624(2) (2013).

76. *Id.* § 193.624(3).

77. Georgia Power Company’s Advanced Solar Initiative, No. 36325, (Ga. P.S.C. Nov. 20, 2012) (order approving the program with modifications); *Advanced Solar Initiative*, GEORGIA POWER, <http://www.georgiapower.com/about-energy/energy-sources/solar/asi/advanced-solar-initiative.cshhtml> (last visited Mar. 12, 2014).

78. *Advanced Solar Initiative*, *supra* note 77.

79. *Georgia: Incentives/Policies for Renewables & Efficiency*, DSIRE, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=GA77F&ee=0 (last updated Mar. 6, 2013).

4. North Carolina

Through House Bill 484, enacted and made effective on May 17, 2013, North Carolina instituted statewide permitting requirements for wind energy facilities.⁸⁰ The legislation only applies to the commercial sector—only wind turbines located within a half mile from each other with a capacity of one megawatt (MW) must be permitted by the Department of Environment and Natural Resources (DENR) before beginning construction.⁸¹

5. Pennsylvania

Act 129 of 2008 requires the Pennsylvania Public Utility Commission (PaPUC or Commission) to “compare the total costs of [the electric distribution company’s (EDC)] energy efficiency and conservation plans . . . to the total savings in energy and capacity costs to retail customers in [Pennsylvania]” by November 30, 2013.⁸² “[I]f the [C]ommission determines that the benefits of the plans exceed the costs, the [PaPUC] shall set additional incremental requirements for reduction in peak demand for the 100 hours of greatest demand . . . measured from the [EDC’s] peak demand for the period from June 1, 2011, through May 31, 2012.”⁸³ The additional reductions must be accomplished no later than May 31, 2017.⁸⁴

To assist the Commission in determining the cost-effectiveness of the peak demand reduction program, the Commission directed the Act 129 Statewide Evaluator (Evaluator) to conduct a Demand Response Study to fully assess the costs and benefits of the current peak demand reduction programs.⁸⁵ In May 2013, the Commission released the Act 129 Demand Response Study—Final Report (DR Study).⁸⁶ To provide an overview of the Evaluator’s findings and recommendations and to solicit feedback from stakeholders, the PaPUC held a demand response study stakeholders’ meeting in June, 2013.⁸⁷ Based on feedback from stakeholders, the Commission directed the Evaluator to conduct a preliminary wholesale price suppression and prospective total resource cost (TRC) analysis of the peak demand reduction program.⁸⁸ The Evaluator’s

80. H.B. 484, 2013 Gen. Assemb., Reg. Sess. (N.C. 2013) (codified at N.C. GEN. STAT. § 143-215.115-126), available at <http://www.ncleg.net/Sessions/2013/Bills/House/PDF/H484v9.pdf>.

81. *Id.* §§ 143-215.115-.116.

82. 66 PA. CONS. STAT. § 2806.1(d)(2) (2013); H.B. 2200, 2008 Gen. Assemb., Reg. Sess. (Pa. 2008) (enacted). There is flexibility in this formula. The Act provides the Commission the discretion to use other costs as determined by the Commission. 66 PA. CONS. STAT. § 2806.1(d)(2).

83. 66 PA. CONS. STAT. § 2806.1(d)(2). Act 129 provides the Commission the discretion to use other methods as well.

84. *Id.*

85. *Act 129 Statewide Evaluator (SWE)*, PA. PUB. UTIL. COMM’N, http://www.puc.pa.gov/filing_resources/issues_laws_regulations/act_129_information/act_129_statewide_evaluator_swe_.aspx (last visited Mar. 13, 2014).

86. GDS ASSOCS., INC., PA. PUB. UTIL. COMM’N, ACT 129 DEMAND RESPONSE STUDY: FINAL REPORT (2013) [hereinafter MAY FINAL REPORT], available at http://www.puc.pa.gov/filing_resources/issues_laws_regulations/act_129_information/act_129_statewide_evaluator_swe_.aspx.

87. Pa. Pub. Util. Comm’n, Act 129: Demand Response Stakeholders’ Meeting (June 11, 2013), available at http://www.puc.pa.gov/Electric/pdf/Act129/SWE_Presentation_Act_129_DR_Study.pdf.

88. MAY FINAL REPORT, *supra* note 86, at 38, 51-52.

analysis and amended report (Amended Report) was completed on November 1, 2013.⁸⁹

The Amended Report stated that the majority of Act 129 DR programs offered in 2012 were not cost-effective.⁹⁰ It also concluded that an effective demand response goal in the 2% to 2.5% range in a single year is more aggressive than other jurisdictions and attributed to the low TRC ratios for the 2012 DR programs.⁹¹ The Evaluator asserted that the potential for fines for non-compliance led to the EDCs paying incentives much larger than the average locational marginal pricing (LMP) during the top 100 hours, leading to lower TRC ratios.⁹²

The Evaluator's Amended Report made the following recommendations⁹³:

- “[T]he top 100 hours methodology [should] be discontinued for any future phases of Act 129 as it leads to predictive difficulties and low TRC ratios.”
- “[T]he Commission should adopt the California methodology of including 75% of the incentive payment as a proxy for participant costs, as opposed to the 100% proxy currently being utilized.”
- “[I]f residential [demand load curtailment (DLC)] programs are continued, the EDCs bid the reduction into the PJM forward capacity auctions.”
- “[D]ue to differences in LMPs and capacity prices across the state, any future DR targets [should] be EDC-specific.”
- Future DR targets, if any, should be dependent on regional capacity prices.
- “[T]he Commission [should] consider avoided generation costs when determining any future DR targets.”
- “[T]he Commission [should] consider the incremental value to the existing PJM DR market when proposing any future commercial and industrial DR targets.”

On November 14, 2013, the PaPUC issued a tentative order, seeking comments⁹⁴ and reply comments⁹⁵ on the “Statewide Evaluator’s Amended [Report], the proposed demand response program methodology for future phases of Act 129, and the potential implementation of Demand Response Potential and Wholesale Price Suppression Studies.”⁹⁶

89. GDS ASSOCS., INC., PA. PUB. UTIL. COMM’N, ACT 129 DEMAND RESPONSE STUDY FINAL REPORT(2013) [hereinafter NOV. FINAL REPORT], available at http://www.puc.state.pa.us/filing_resources/issues_laws_regulations/act_129_information/act_129_statewide_evaluator_swe_.aspx (addendum added).

90. *Id.* at 2.

91. *Id.* at 12, 18.

92. *Id.* at 20.

93. Energy Efficiency and Conservation Program, Nos. M-2012-2289411, M-2008-2069887 (Pa. P.U.C. Nov. 14, 2013) [hereinafter Tentative Order]; see also Act 129 Energy Efficiency and Conservation Program, 43 Pa. B. 7050 (Nov. 30, 2013).

94. Tentative Order, *supra* note 93, at 35 (comments were due December 30, 2013).

95. *Id.* at 36 (reply comments were due January 14, 2014).

96. *Id.*

6. Texas

In 2009, Texas created PACE financing, which allows property owners to borrow money to pay for energy improvements.⁹⁷ The amount borrowed is typically subject to a special assessment against the property over a given period of years, which is then repaid through property taxes.⁹⁸ Municipalities were authorized to institute particular programs.⁹⁹

In 2013, through Senate Bill 385, enacted on June 14, 2013, Texas authorized counties to establish PACE programs as well.¹⁰⁰ Now cities or counties may create regions within their particular boundaries.¹⁰¹

7. Virginia

Beginning June 20, 2013, the Virginia State Corporation Commission approved a rate program for Dominion Power customers that install solar technology.¹⁰² The approved rate is \$0.15 per kilowatt-hour (kWh) with a five year contract.¹⁰³ The program applies to the commercial, residential, nonprofit, educational, government, and other sectors, and 60% of the 3 MW maximum capacity is reserved for residential customers.¹⁰⁴

97. H.B. 1937, 81st Leg., Reg. Sess. (Tex. 2009) (codified at TEX. LOC. GOV'T CODE ANN. § 376.001-.008).

98. TEX. LOC. GOV'T CODE ANN. § 376.006(5) (2013).

99. *Id.* § 376.001.

100. S.B. 385, 83d Leg., Reg. Sess. (Tex. 2013) (codified at TEX. LOC. GOV'T CODE ANN. § 399.001-.018); see also *Texas Senate Bill 385*, LEGISCAN, <http://legiscan.com/TX/text/SB385/2013> (last visited Mar. 14, 2014) (showing the date enacted and providing the bill text).

101. TEX. LOC. GOV'T CODE ANN. § 399.007 (2013).

102. Virginia Elec. & Power Co., No. PUE-2012-00064, 2013 WL 1281585 (Va. S.C.C. Mar. 22, 2013); Peter Bacque, *Dominion Virginia Power to Buy Electricity from Small Solar Power Generators*, TIMES DISPATCH (Mar. 26, 2013, 12:00 AM), http://www.timesdispatch.com/business/energy/dominion-virginia-power-to-buy-electricity-from-small-solar-power/article_78d4fe4b-41e0-53cf-8ebb-4b2d585231c4.html?TN=NoMobile.

103. *Virginia Elec. & Power*, 2013 WL 1281585, at *1-2.

104. *Id.* at *1; see also *Dominion Virginia Power—Solar Purchase Program*, DSIRE, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=VA58F (last updated June 20, 2013).

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DEMAND-SIDE RESOURCES & SMART GRID

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