

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-100, SUB 126

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	
Investigation of Integrated Resource) ORDER AMENDING COMMISSION RULE
Planning in North Carolina – Smart Grid) R8-60 AND ADOPTING COMMISSION
Technology Plans) RULE R8-60.1

BY THE COMMISSION: On December 28, 2009, after having considered and declined to adopt a federal smart grid standard in Docket No. E-100, Sub 123,¹ the Commission issued an Order in the above-captioned docket requesting comments on a proposed amendment to Commission Rule R8-60, Integrated Resource Planning and Filings, which would require investor-owned utilities (IOUs) to include a description of their smart grid technology plans as part of their biennial integrated resource plan (IRP) filing. In that Order, the Commission made all parties of record in Docket No. E-100, Sub 124 parties to this docket. Further, the Commission allowed other interested parties to intervene and scheduled presentations by the State's IOUs of their smart grid technology plans for January 26, 2010.

On December 30, 2009, the North Carolina Attorney General filed his notice of intervention.

On January 26, 2010, Carolina Power & Light Company, d/b/a Progress Energy Carolinas, Inc. (PEC); Duke Energy Carolinas, LLC (Duke); and Virginia Electric and Power Company, d/b/a Dominion North Carolina Power (DNCP), appeared before the Commission to present their smart grid technology plans, as scheduled.

On February 26, 2010, comments on the proposed amendment to Rule R8-60 were filed by Duke and DNCP, jointly, the North Carolina Sustainable Energy Association (NCSEA), and the Public Staff.

On March 3, 2010, NCSEA filed a motion for leave to file supplemental comments.

¹ Sections 532 and 1307 of the Energy Independence and Security Act of 2007, Pub. L. 110-140 (EISA) amended section 111 of the Public Utility Regulatory Policies Act of 1978 (PURPA), 16 U.S.C. 2621, requiring each state regulatory authority, with respect to each electric utility for which it has ratemaking authority, to consider new federal standards and to determine whether or not implementing such standards were appropriate for carrying out the purposes of PURPA. Section 532 of EISA amended PURPA by adding sections 111(d)(16)-(17): (16) Integrated resource planning; (17) Rate design modifications to promote energy efficiency as a priority resource. Section 1307 of EISA amended PURPA by adding sections 111(d)(18)-(19): (18) Consideration of smart grid investments; (19) Smart grid information.

On March 8, 2010, and March 9, 2010, respectively, PEC and Duke filed motions requesting the opportunity for parties to file reply comments. By Order issued March 11, 2010, the Commission granted all parties an opportunity to file reply comments.

On March 26, 2010, joint reply comments on the proposed amendment to Rule R8-60 were filed by Duke, DNCP and PEC, and separate reply comments were filed by the Public Staff.

COMMENTS AND PROPOSED AMENDMENTS OF THE PARTIES

DUKE/DNCP

In their joint comments, Duke and DNCP agreed with the concept of the Commission's proposed amendment, noting that they believe the potential impacts of a utility's smart grid plans should be incorporated in the IRP process. However, Duke and DNCP expressed concern with the level of detail proposed in the amendment. Specifically, Duke and DNCP contended that restructuring the proposed amendment to focus on an overview of a utility's smart grid program was better aligned with their understanding of the intent of the IRP process, a focus on resource planning and load forecasting. Further, Duke and DNCP believe that the Commission's proposed amendment of Rule R8-60 is more consistent with the requirements of a certificate of public convenience and necessity (CPCN) or a petition for approval of an energy efficiency (EE) program or demand-side management (DSM) program, as opposed to the IRP process. Additionally, Duke and DNCP argued that utilities would be unnecessarily burdened to provide details for smart grid plans that are not fully developed and subject to frequent change. Duke and DNCP stated that, if the Commission's proposed amendment of Rule R8-60 is not revised to reflect an overview of a utility's smart grid plans, the appropriate procedural action would be for the Commission to adopt a stand-alone docket to address the details of a utility's smart grid plans. Finally, Duke and DNCP's recommended amendments that reflect their views regarding the purpose of including smart grid plans in the IRP filing.

NCSEA

In its comments, NCSEA concurred with the Commission's recommendation to incorporate smart grid technology plans in the IRP process. Specifically, NCSEA believes that including smart grid technology plans in the IRP process would expose technology investments in smart grid to new levels of transparency and scrutiny, thus potentially resulting in more thorough and tighter smart grid plans. Subject to the technological improvements and evolving nature of smart grid technology, NCSEA emphasized that smart grid investments may not always be superior to standard technologies. Additionally, NCSEA believes that inclusion of smart grid plans in the vetting requirements of the IRP process may work to address issues related to stranded investment and least-cost resource mix.

While concurring with the proposed amendment of Rule R8-60, NCSEA noted multiple areas of concern. First, NCSEA recommended that the term “two-way communication” be incorporated in the definition of smart grid technologies because it believes that this is an essential characteristic of smart grid technologies. Second, NCSEA recommended expanding the information requested for smart grid technology plans to include details related to the utility’s goals and/or objectives, consistent with the proposed technology to be utilized. Third, NCSEA recommended that the proposed amendment include a comparative analysis of the proposed technologies and other technologies available to meet the goals and/or objectives defined in a utility’s smart grid plans. Fourth, NCSEA recommended that an analysis be included to demonstrate and ensure the interoperability of proposed technologies and respective legacy systems. Finally, NCSEA proposed amendments that reflect its views regarding the purpose of including smart grid plans in the IRP filings.

PUBLIC STAFF

In its comments, the Public Staff also noted multiple areas of concern. First, the Public Staff stated that the proposed amendment only addresses the State’s IOUs and that it should encompass all entities subject to the IRP process, including electric membership corporations. Thus, to the extent that such information is available, North Carolina Electric Membership Corporations (NCEMC) and any individual electric membership corporation (EMC) subject to the IRP Rule, Rule R8-60, should provide smart grid information. Second, the Public Staff recommended that the Commission enhance the proposed amendment to include a description of the smart grid technologies that each electric utility is planning to install. The Public Staff further recommended that the description of the smart grid technologies be aligned with the Commission’s description of smart grid technologies and incorporate a current and five-year outlook for the technologies being installed. The Public Staff believes that such an enhancement would be more consistent with the timeframe of the fifteen-year native load forecast currently required in the IRP process. Third, the Public Staff objected to the inclusion of cost recovery details associated with smart grid technology plans, stating that the IRP is not a cost recovery proceeding and that the inclusion of such information may impact ratemaking and cost recovery proceedings currently established by G.S. 62-133.

The Public Staff agreed with the Commission’s proposed amendment requiring the inclusion of customer impacts for smart grid technologies, by class, as part of the smart grid technology plans. However, the Public Staff stated that inclusion of customer impacts should also be described on a system, retail jurisdictional, and retail customer class basis, along with respective measurement and verification plans. The Public Staff also agreed with the Commission’s proposal to include: (1) capital expenditures associated with smart grid technologies, (2) a cost benefit analysis for smart grid technologies, and (3) a description of existing equipment to be rendered obsolete (if any), and documentation of its anticipated book value, along with its salvage life. Further, the Public Staff concurred with the Commission’s proposal regarding the detail of pilots and government or grant-funded initiatives. Finally, the Public Staff

recommended that details addressing the privacy and security of customer information should also be included.

SUPPLEMENTAL COMMENTS OF NCSEA

In its supplemental comments, NCSEA reiterated its concurrence with the Commission's recommendation for inclusion of smart grid technology plans in the IRP process. NCSEA understands that the IRP represents an electric utility's statement of anticipated consumer demand and an explanation as to how those needs will be met – it is essentially a resource planning tool. Further, NCSEA believes that inclusion of smart grid plans in the IRP process should be as thorough and complete as possible, ultimately providing a clear understanding of how smart grid technologies are being utilized and what relevant benefits are derived from its utilization.

Specifically, NCSEA recommended that the Commission consider incorporating, in part or whole, the following:

1. A description of installations that could be either “smart” or “conventional” and an explanation for the choice made;
2. A description of transmission, distribution, and generation projects deferred due to the smart grid projects adopted or to be adopted;
3. A description of how proposed smart grid projects will improve reliability and security of the grid;
4. An estimate of greenhouse gas (GHG) emissions offset by the installation of smart grid technology and estimates of renewable energy credits earned via reductions in generation from the implementation of the smart grid technology;
5. The percentage reduction in output occurring at non-baseload generating facilities than can be attributed to the implementation of smart grid technologies and, if possible, a breakdown by technology;
6. A description of societal benefits that are or can be attributed to smart grid technology; and
7. A description of non-utility investments in the electric grid that can be attributed to smart grid technology investments.

REPLY COMMENTS OF THE PARTIES

DUKE / DNCP / PEC

In their joint initial comments, Duke and DNCP agreed with the Commission's proposed amendment, but only in concept. In their reply comments, Duke and DNCP raised areas of concern and recommended that the Commission adopt a stand-alone docket to address the details of smart grid technology plans, subject to their understanding of the intent of the IRP and the level of detail proposed by the Commission for smart grid technology plans. Inasmuch as PEC initially reserved comment on the Commission's proposed amendment, PEC now joined with Duke and DNCP in their initial recommendations.

In their joint reply comments, Duke, DNCP and PEC stated that their understanding of the purpose of the IRP process is to aid "the Commission with its analysis of long-range needs for the expansion of facilities for the generation of electricity in North Carolina". Further, Duke, DNCP and PEC stated that the energy forecast, demand requirements, and impacts of DSM and EE programs to load forecast and resource requirements are inherent to the Commission's IRP analysis. With regard to the impacts on load forecast and resource requirements, the companies emphasized that not all smart grid initiatives may result in load improvements. Rather, some may improve grid operations, system reliability, or, in some cases, enable DSM/EE programs.

Duke, DNCP and PEC agreed with the Public Staff's recommendation to exclude cost recovery plans associated with smart grid technology plans. Further, the utilities argued that the requirements proposed by NCSEA are too broad in scope and ill-defined, potentially resulting in no value-added benefit, an inefficient utilization of resources, and, in some cases, pursuit of information not available to an electric utility. Duke and DNCP concluded by reiterating their initial comments, with which PEC now concurs, that they believe it is more appropriate for the proposed amendment of Rule R8-60 to be focused on an overview of a utility's smart grid program, its deployment of that program, and the demand and energy impacts of program deployment, while reserving any smart grid program details for consideration in a separate docket.

PUBLIC STAFF

In its reply comments, the Public Staff provided both its revised recommendation for the Commission's proposed amendment to Rule R8-60 and its proposal for the adoption of an additional smart grid rule, Rule R8-60.1, to address details regarding a utility's smart grid technology plans. In its revised recommendation, the Public Staff concurred with Duke, DNCP and PEC that the focus of the proposed amendment should be revised to emphasize the impacts of smart grid technology on resource planning and load forecasting, as opposed to the details of a smart grid technology plan. However, the Public Staff cited differences between its proposed amendment and Duke,

DNCP and PEC's proposed revision. Specifically, the Public Staff stated that the description of the impacts of the smart grid technology should include a description of the technology producing the impacts. The Public Staff acknowledged that smart grid technologies are evolving and that levels of uncertainty may exist. However, the Public Staff cited PEC's January 26, 2010, smart grid presentation before the Commission and its inclusion of a "roadmap" for PEC's smart grid strategy beyond 2013. Thus, the Public Staff reiterated its initial recommendation to incorporate a current and five-year outlook as an amendment to the proposed IRP rule with regard to smart grid.

Further, the Public Staff believes that identifying the potential demand and energy savings resulting from a technology is consistent with its understanding of the intent of the IRP process. The Public Staff concurred with Duke and DNCP's initial recommendation to include a description of "gross" demand and energy impacts as part of the smart grid submission. However, the Public Staff reiterated its initial recommendation that demand and energy impacts should also be classified on a system, retail jurisdictional, and retail customer class basis, as opposed to being classified as Duke and DNCP suggested in their initial comments. Further, the Public Staff reiterated its recommendation to exclude costs associated with smart grid technologies and also disagreed with NCSEA's recommendation to define smart grid technologies as either DSM or EE resources.² Finally, the Public Staff concurred with NCSEA's recommendation to include the term "two-way communication" in the definition of smart grid technologies, but recommended that the definition of smart grid technologies not be limited only to "two-way communication" as it may not be a component of every smart grid technology.

In addition, the Public Staff recommended that the Commission be kept apprised of other aspects of a utility's plans regarding the implementation of smart grid technologies. Therefore, the Public Staff recommended that the Commission adopt an additional smart grid rule, Rule R8-60.1, outside the context of the current IRP process to address the filing of smart grid plans with the Commission on a periodic basis, so that the Commission remains apprised of smart grid development. The Public Staff believes that the January 26, 2010, smart grid presentations by the IOUs demonstrated that smart grid technologies have a tremendous potential effect on the energy delivery of an electric utility in North Carolina. Further, the Public Staff noted that, based on its understanding of the IOUs' presentations, the deployment of smart grid technologies will require substantial investments by both the electric utilities and the ratepayers. Based on this understanding, the Public Staff recommended transparency, from both a service and cost perspective, where possible.

² As discussed in its initial comments and excluded in its revised amendment, the Public Staff opposed the inclusion of smart grid cost and cost recovery information, stating that the IRP is not a cost recovery proceeding and that the inclusion of such information may impact ratemaking and cost recovery proceedings. Additionally, the Public Staff excluded any proposed requirement that smart grid technologies be classified as either DSM or EE. In its exclusion of DSM or EE classification, the Public Staff argued that, similar to cost recovery, determination and classification of such remains within the discretion of the Commission in DSM and EE program approval proceedings.

In its proposed Rule R8-60.1, the Public Staff recommended that the utilities make filings every two years, with annual updates, providing information regarding an electric utility's goals and objectives for smart grid, the interoperability of smart grid technologies proposed, the respective impacts of smart grid technologies to reliability and grid security, and a demonstrated correlation of how proposed smart grid technologies will improve an electric utility's goals and objectives for utility operations. Further, the Public Staff recommended that the description of smart grid technologies be broadened beyond the scope of the IRP context to address the potential concerns regarding the double-counting of impacts from DSM and EE programs. Lastly, the Public Staff recommended that summary information be required to be provided for smart grid pilot and non-pilot projects, including a description of whether, and to what extent, a project is government funded. The Public Staff recommended excluding NCSEA's recommendation for the inclusion on non-utility investments in the electric grid attributable to smart grid technology investments, citing its inability to determine whether NCSEA's recommendation referred to government grants or other investments.

Finally, the Public Staff recommended excluding NCSEA's recommendation to include a description of transmission and distribution projects deferred due to smart grid projects, as well as a description of the societal benefits attributable to smart grid technologies. Rather, the Public Staff believes that utilities may provide such information with respect to the deferral of projects in their IRPs and cost-benefit analyses. Similarly, the Public Staff stated that specific identification regarding projects may be problematic within the context of a utility's supply-side expansion process, in which the scale and timing of projects are simultaneously impacted by many variables. Finally, the Public Staff concurred with NCSEA that there may be significant societal benefits from smart grid. However, the Public Staff believes that benefits should be clearly quantifiable in order to be included in the cost-benefit analysis portion of its proposed rule. To the extent that the societal benefits proposed by NCSEA are not clearly quantifiable, the Public Staff does not believe its proposed rule should require a description of such.

DISCUSSION AND CONCLUSIONS

Based upon the foregoing and the entire record in this proceeding, the Commission agrees with and finds merit in many of the recommendations proposed in the comments by the parties. First, the Commission agrees with the Public Staff that the amendment to Rule R8-60 should apply to all entities subject to the IRP Rule, as opposed to only the IOUs. Further, the Commission agrees that the proposed amendment of Rule R8-60 should be revised to emphasize the potential impacts of smart grid technology on resource planning and load forecasting, as opposed to a smart grid technology plan irrespective of its impacts to the IRP. The Commission is persuaded that an emphasis on the impacts of smart grid technologies on resource planning and load forecasting are more aligned with the functional intent of the IRP process. The Commission also agrees with the Public Staff that the description of the proposed smart grid technologies should be based on the smart grid technology producing the impacts on resource planning and load forecasting. Consistent with the

revised focus and description of smart grid technology impact plans, the Commission concludes that the smart grid impact plans should reflect a present and five-year outlook. The Commission is persuaded that a five-year outlook provides a reasonable projection with respect to the fifteen-year forecast of native load and other system capacity or firm energy obligations as currently defined in the IRP process. Further, the Commission acknowledges PEC's use of the Smart Grid Maturity Model (SGMM) in its development of a smart grid roadmap and/or deployment plan. The Commission concludes that PEC's use of the SGMM and/or use of a comparable industry accepted resources enhances the Commission's initial proposal with regard to managing a smart grid technology plan.³

Further, the Commission agrees with the recommendation that utilities should be required to identify the potential demand and energy benefits derived from the smart grid technologies deployed. The Public Staff's revised recommendation that demand and energy impacts be classified on a system, retail jurisdictional, and retail customer class basis enhances the Commission's initial proposal on this issue. The Commission is persuaded that measurement and verification plans with respect to the impact classifications should be provided as part of the smart grid impact plan. The Commission is further persuaded that the inclusion of cost recovery plans and anticipated tariff details are inconsistent with the IRP process.

The Commission agrees with NCSEA that the term "two-way communication" should be included in the definition of smart grid technology. However, the Commission does not seek to limit the definition of smart grid only to "two-way communication". The Commission acknowledges that two-way communication is an essential characteristic of smart grid technologies. The "smart" in smart grid speaks to the ability to process information, thus establishing an intrinsic need to receive information for processing. Additionally, in order for the information received and processed to have value beyond the system performing the processing, the system must have the ability to also communicate results, thus establishing a two-way communication as an element of an intelligent or smart technology. Consistent with this understanding of smart grid, the Commission agrees that the term two-way communication should be added to the definition of smart grid, but does not seek to restrict smart grid only to two-way communication.

Regarding NCSEA's recommendation that utilities classify a smart grid technology as either a DSM or EE resources in their IRP filings, the Commission agrees with the Public Staff that designation of such classifications are not necessary within the IRP process. Further, the Commission notes that DSM and EE program determinations are specifically addressed under Rule R8-68, as opposed to Rule R8-60.

³ The SGMM is a management tool hosted by Carnegie Mellon University's Software Engineering Institute that "helps utilities plan smart grid implementation, prioritize options, and measure progress." The SGMM is not to be utilized as a prescriptive smart grid tool, but rather as a resource to aid utilities in their transformation and deployment of smart grid technologies.

Finally, the Commission agrees with the Public Staff's recommendation that the Commission adopt an additional smart grid rule, Rule R8-60.1, to provide periodic reporting on additional details regarding a utility's smart grid technology plan. Further, the Commission concludes that Rule R8-60.1, as adopted by the Commission, reasonably addresses the comments made by the parties. The Commission agrees with the Public Staff that details regarding GHG emissions impacts, societal benefits, transmission and distribution deferrals, and non-utility investments related to smart grid should not be included in Rule R8-60.1. Specifically, GHG emissions and societal benefits are subjective in nature. To the extent relevant, reasonable and comparable information currently included in the IRP filing address and/or can be discerned with respect to GHG emissions and societal benefits. The Commission also agrees with the Public Staff that the utilities may provide some information with respect to the deferral of transmission and distribution projects in their IRPs and cost-benefit analyses, but the specific identification of such projects may be problematic within the context of a utility's supply-side expansion process, in which the scale and timing of projects are simultaneously impacted by many variables. Finally, the Commission concludes that requiring information on the status of pilot projects and current and/or existing projects, along with a description of its funding affiliation, reasonably address non-utility investments regarding smart grid.

Appendix A attached to this Order is a clean version of Rules R8-60 and R8-60.1, as provided herein. Appendix B attached to this Order is a black-lined version of the final rules comparing the final Rule R8-60 to the proposed rule attached to the Commission's December 28, 2009 Order and comparing the final Rule R8-60.1 to the proposed rule attached to the Public Staff's March 26, 2010 reply comments.

IT IS, THEREFORE, ORDERED that Rules R8-60 and R8-60.1, attached as Appendix A, shall be, and are hereby, adopted.

ISSUED BY ORDER OF THE COMMISSION.

This the 11th day of April, 2012.

NORTH CAROLINA UTILITIES COMMISSION

A handwritten signature in black ink that reads "Patricia Swenson". The signature is written in a cursive, flowing style.

Patricia Swenson, Deputy Clerk

k2041112.02

Rule R8-60(i)(10) is revised as follows:

(i) Contents of Reports. Each utility shall include in each biennial report, revised as applicable in each annual report, the following:

...

(10) Smart Grid Impacts. – Each utility shall provide information regarding the impacts of its smart grid deployment plan on the overall IRP.

For purposes of this requirement, the term “smart” in smart grid shall be understood to mean, but is not limited to, a system having the ability to receive, process, and send information and/or data – essentially establishing a two-way communication protocol.

For purposes of this requirement, smart grid technologies that are implemented in a smart grid deployment plan may include those that: (1) utilize digital information and controls technology to improve the reliability, security and efficiency of an electric utility’s distribution or transmission system; (2) optimize grid operations dynamically; (3) improve the operational integration of distributed and/or intermittent generation sources, energy storage, demand response, demand-side resources and energy efficiency; (4) provide utility operators with data concerning the operations and status of the distribution and/or transmission system, as well as automating some operations; and/or (5) provide customers with usage information.

The information provided shall include:

(a) A description of the technology installed and for which installation is scheduled to begin in the next five years and the resulting and projected net impacts from installation of that technology, including, if applicable, the potential demand (MW) and energy (MWh) savings resulting from the described technology.

(b) A comparison to “gross” MW and MWh without installation of the described smart grid technology.

(c) A description of MW and MWh impacts on a system, North Carolina retail jurisdictional, and North Carolina retail customer class basis, including proposed plans for measurement and verification of customer impacts or actual measurement and verification of customer impacts.

Rule R8-60.1 is added as follows:

Rule R8-60.1. Smart Grid Technology Plans and Filings

(a) Purpose. – The purpose of this rule is to establish guidelines for the reporting of information regarding a utility's smart grid technology plan in addition to that required in Rule R8-60.

(b) Smart Grid Technology Plan. – By July 1, 2013, and every two years thereafter, each utility subject to Rule R8-60 shall file with the Commission its smart grid technology plan. Significant amendments or revisions to a smart grid technology plan shall be reported to the Commission in each year in which the biennial smart grid technology plan is not required to be filed.

(c) For purposes of this Rule, smart grid technologies are as set forth in Rule R8-60 and shall also include those that provide real-time, automated, interactive technologies that enable the optimization and/or operation of consumer devices and appliances, including metering of customer usage and providing customers with control options.

The plan shall include:

(1) A description of the technology for which installation is scheduled to begin in the next five years, including the goal and objective of that technology, options for ensuring interoperability of the technology with different technologies and the legacy system, and the life of the technology.

(2) A smart grid maturity model "roadmap," if applicable, or roadmap from a comparable industry accepted resource suitable for the development of smart grid technology.

(3) Approximate timing and amount of capital expenditures.

(4) Cost-benefit analyses for installations that are planned to begin within the next five years, including an explanation of the methodology and inputs used to perform the cost-benefit analyses.

(5) A description of existing equipment, if any, to be rendered obsolete by the new technology, its anticipated book value at time of retirement, alternative uses of the existing equipment, and the expected salvage value of the existing equipment.

(6) Status of pilot projects and projects, including a description of whether and to what extent these projects are or will be funded by government grants.

(7) A description, if applicable, of how the utility intends the technology to transfer information between it and the customer while maintaining the security of that information.

(8) A description, if applicable, of how third parties will implement or utilize any portion of the technology, including transfers of customer-specific information from the utility to third parties, and how customers will authorize that information for release by the utility to third parties.

(9) A description of how the proposed smart grid technology plan will improve reliability and security of the grid.

(d) Within 30 days after the filing of each utility's smart grid technology plan, the Public Staff or any other intervenor may file comments on any or all of the plans. Within 14 days after the filing of initial comments, the parties may file reply comments addressing any substantive or procedural issues raised by any other party. A hearing to address issues raised by the Public Staff or any other intervenors may be scheduled at the discretion of the Commission. The scope of such hearing shall be limited to such issues as identified by the Commission. Any approval of a smart grid technology plan shall not constitute an approval of the recovery of costs or of any specific technology or program associated with the plan.

Rule R8-60(i)(10) is revised as follows:

(i) Contents of Reports. Each utility shall include in each biennial report, revised as applicable in each annual report, the following:

...

(10) ~~Smart Grid Technology Plan Impacts.~~ – Each investor-owned electric utility shall provide information regarding the impacts of its smart grid technology deployment plan on the overall IRP.

For purposes of this requirement, the term “smart” in smart grid shall be understood to mean, but is not limited to, a system having the ability to receive, process, and send information and/or data – essentially establishing a two-way communication protocol.

For purposes of this requirement, smart grid technologies that are implemented in a smart grid deployment plan may include those that (1) use ~~utilize~~ digital information and controls technology to improve the reliability, security and efficiency of the electric utility’s distribution or transmission system; (2) optimize grid operations dynamically; (3) improve the operational integration of distributed and/or intermittent generation sources, energy storage, demand response, demand-side resources and energy efficiency; (4) provide real-time, automated, interactive technologies that optimize operation of consumer devices and appliances, including metering of customer usage; (5) provide utility operators with data concerning the operations and status of the distribution and/or transmission system, as well as automating some operations; and/or (6) provide customers with usage information and control options.

The plan information provided shall include:

(Aa) A description of the technology installed and for which installation is scheduled to begin in the next five years and the resulting and projected net impacts from installation of that technology, including, if applicable, the potential demand (MW) and energy (MWh) savings resulting from the described technology, including the life of the technology, the impacts on the utility’s delivery system, and, if applicable, the potential energy and peak demand savings resulting from the described technology.

(Bb) A comparison to “gross” MW and MWh without installation of the described smart grid technology.

(Cc) A description of customer MW and MWh impacts on a system, North Carolina retail jurisdictional, and North Carolina retail customer class basis, including functions/services to be provided and proposed plans for measurement and verification of customer impacts or actual measurement and verification of customer impacts.

~~(C) Approximate timing and amount of capital expenditures.~~

~~(D) — Cost-benefit analyses for installations that are planned to begin within the next five years, including an explanation of the methodology and inputs used to perform the cost-benefit analyses.~~

~~(E) — A description of existing equipment, if any, to be rendered obsolete by the new technology, its anticipated book value at time of retirement, alternative uses of the existing equipment, and the expected salvage value of the existing equipment.~~

~~(F) — Status of pilot projects and projects, including a description of whether and to what extent these projects are or will be funded by government grants.~~

~~(G) — A description, if applicable, of how the utility intends the technology to transfer information between it and the customer while maintaining the security of that information.~~

~~(H) — A description, if applicable, of how third parties will implement or utilize any portion of the technology, including transfers of customer-specific information from the utility to third parties, and how customers will authorize that information for release by the utility to third parties.~~

Rule R8-60.1 is added as follows:

Commission Rule R8-60.1. Smart Grid technology plans and filings

(a) Purpose. – The purpose of this rule is to establish guidelines for the reporting of information regarding a utility’s smart grid technology plan in addition to that required in Rule R8-60.

(a10b) Smart Grid Technology Plan. – By July 1, 20103, and every two years thereafter, Each investor-owned electric utility subject to Rule R8-60 shall provide file with the Commission its smart grid technology plan. Significant amendments or revisions to a smart grid technology plan shall be reported to the Commission in each year in which the biennial smart grid technology plan is not required to be filed.

(bc) For purposes of this Rule, Smart grid technologies are as set forth in Rule R8-60 and shall also shall include those that (1) use digital information and controls technology to improve reliability, security and efficiency of the electric distribution or transmission system; (2) optimize grid operations dynamically; (3) improve the operational integration of distributed and/or intermittent generation sources, energy storage, demand response, demand-side resources and energy efficiency; (4) provide real-time, automated, interactive technologies that enable the optimization and/or operation of consumer devices and appliances, including metering of customer usage and; (5) provide utility operators with data concerning the operations and status of the distribution and/or transmission system, as well as automating some operations; and/or (6) provide customers with usage information and control options.

The plan shall include:

(1A) A description of the technology to be for which installation is scheduled to begin in the next five years, including the goal and objective of that technology, options for ensuring interoperability of the technology with different technologies and the legacy system, and the life of the technology.

(2) A smart grid maturity model “roadmap”, if applicable, or roadmap from a comparable industry accepted resource suitable for the development of smart grid technology.

(B2) A description of customer impacts on a system, North Carolina retail jurisdictional, and North Carolina retail customer class basis, including functions/services to be provided and proposed plans for measurement and verification of customer impacts or actual measurement and verification of customer impacts.

(G3-) Approximate timing and size amount of capital expenditures.

(D34) Cost-benefit analyses for installations that are planned to begin within the next five years, including an explanation of the methodology and inputs used to perform the cost-benefit analyses.

(E45) A description of existing equipment, if any, to be rendered obsolete by the new technology, and its anticipated book value at time of retirement, alternative uses of the existing equipment, and the expected salvage value of the existing equipment.

(G56) Status of pilot projects and projects, including a description of whether and to what extent these projects are or will be funded at least partially by government grants.

(G67) A description, if applicable, of how the utility intends the technology to transfer information between it and the customer while maintaining the security of that information.

(78) A description, if applicable, of how third parties will implement or utilize any portion of the technology, including transfers of customer-specific information from the utility to third parties, and how customers will authorize that information for release by the utility to third parties.

(89) A description of how the proposed smart grid technology plan will improve reliability and security of the grid.

(ed) Within 30 days after the filing of each utility’s smart grid technology plan, the Public Staff or any other intervenor may file comments on any or all of the plans. Within 14 days after the filing of initial comments, the parties may file reply comments addressing any substantive or procedural issue raised by any other party. A hearing to

address issues raised by the Public Staff or any other intervenors may be scheduled at the discretion of the Commission. The scope of such hearing shall be limited to such issues as identified by the Commission. Any approval of a smart grid technology plan shall not constitute an approval of the recovery of costs or of any specific technology or program associated with the plan.