



Camal O. Robinson
Senior Counsel

Mailing Address:
550 South Tryon Street
Charlotte, NC 28202

o: 980.373.2631
c: 978.435.5131

camal.robinson@duke-energy.com

July 9, 2019

VIA ELECTRONIC FILING

M. Lynn Jarvis, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

**RE: Duke Energy Progress, LLC and Duke Energy Carolinas, LLC's
Report of Third NC Grid Improvement Technical Workshop
Docket Nos. E-2, Sub 1142 and E-7, Sub 1146**

Dear Ms. Jarvis:

Duke Energy Progress, LLC and Duke Energy Carolinas, LLC held a third Technical Workshop regarding Grid Improvement on May 16, 2019. I enclose the report prepared by Rocky Mountain Institute, the independent organization that facilitated the workshop.

Thank you for your attention to this matter. If you have any questions, please let me know.

Sincerely,

Camal O. Robinson

cc: Parties of Record

Enclosure

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Summary Report of Duke Energy North Carolina Grid Improvement Stakeholder Workshop

May 16, 2019 – Raleigh, North Carolina

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Executive Summary

Duke Energy hosted a workshop with North Carolina stakeholders on May 16, 2019 to increase stakeholder involvement, input and support for the Grid Improvement Plan (GIP). Duke Energy contracted Rocky Mountain Institute (RMI) as a third party to design the agenda and facilitate the workshop itself. RMI is the author of this summary report.

The workshop convened 41 stakeholders at the North Carolina State University Club in Raleigh; in addition, 11 Duke Energy staff were in attendance.

In this report, RMI summarizes the day's discussions, question and answers, survey results and outcomes. The report's synthesis does not attribute specific comments to specific parties, to respect the ground rules agreed to by participants at the beginning of the meeting. Specifically, participants agreed that what was discussed at the workshop could be shared publicly, but specific comments could not be attributed to individuals without their permission. The Appendix documents survey responses from the workshop.

Duke Energy will use the stakeholder feedback from the workshop and this report to inform the filing of the GIP, which is anticipated to occur later this year, and as a formative element of future stages of planning and stakeholder engagement.

Workshop Objectives

The workshop was organized around three objectives, listed below. RMI defined these objectives in consultation with Duke Energy and other participants interviewed in advance of the event.

1. Provide detailed updates and information to address grid improvement plan questions and priorities stakeholders have identified during the webinar.
2. Identify and discuss the areas of the plan where stakeholder interest in influencing the final plan is highest and most feasible.
3. Create and scope opportunities for Duke and stakeholders to commit and work together on areas of the current and future-plan.

In addition, Duke Energy held a technical webinar on April 25, and used participant polling to identify priority areas of interest for stakeholder discussion. The following topics identified during the webinar formed the basis for discussions and activities in the workshop: cost-benefit analysis, cost and cost recovery, DER enablement thru grid improvement. Workshop discussions and Q&A sessions were focused on:

- Breakout discussions on Cost Benefit Analysis (CBAs) for Self-Optimized Grid (SOG) SOG/Integrated Volt-Var Control (IVVC) and the Transmission Line Rebuild
- Breakout discussions on the goals and metrics for the GIP.
- DER enablement
- Cost and cost recovery
- Future stakeholder engagement and processes. Workshop Insights



Key Takeaways

The following key insights were synthesized by RMI from workshop discussions and from the perspectives expressed by Duke Energy and by stakeholders. These perspectives do not represent consensus of the entire stakeholder group.

- Duke Energy clarified that the Grid Improvement Plan they intend to file later this year represents a set of 'no regrets' investments that are required to build core grid capability to respond to megatrends, and are a technical prerequisite to future grid improvements that will enable the electricity system to meet ambitious stakeholder goals (that were raised in prior stakeholder engagements and in this workshop).
- Duke Energy brought internal subject matter experts to provide greater detail about the CBAs developed for various programs within the plan (IVVC, SOG and Transmission Line Rebuild). The CBA detail included a description of costs, benefits, and an overview of the analytic spreadsheet models used to generate cost-benefit results. These breakout conversations generated significant energy and participation from the broad stakeholder group. Key insights included:
 - Stakeholders generally assessed that Duke Energy has taken a conservative approach in many of the CBA assumptions, which could potentially result in overestimation of costs or underestimation of grid benefits from the investments. For these reasons, stakeholders requested a sensitivity analysis to provide a range for the costs and benefits.
 - Many stakeholders requested more details on assumptions and the methodology of analysis, replacement and upgrade prioritizations and the allocation of environmental benefits (especially with respect to the Transmission Line Rebuild CBA). Stakeholders requested comparable CBA summaries and work sessions for other programs in the GIP, in order to learn more about and provide feedback on these other plan components.
 - Since the workshop, Duke Energy has scheduled a series of webinars to focus on technical details of the other CBA's.
 - Stakeholders asked how carbon reduction benefits were quantified and monetized in the CBA.
 - Duke Energy agreed to provide more information on how carbon reduction benefits might be monetized.
 - Stakeholders seek to understand how investments are related to specific customer classes (especially with respect to transmission line rebuild) and how other cost-recovery efforts (e.g. SB 559 and securitization) impact these efforts.
 - Duke Energy has confirmed that this will be determined by the Utilities Commission, but the Company assumes that the Commission will approve costs allocations in the manner that they have traditionally done so.
- Duke Energy provided an outline of overarching GIP objectives using the framework of “protect, modernize and optimize,” as a starting point for discussion about goals and metrics for the GIP.
 - Many stakeholders requested an increase in transparency of the analysis supporting the development of this framework, as well as the allocation of customer and utility benefits described.



- Many stakeholders were concerned with how and whether the GIP provided equitable benefits to urban and rural customers, as well as to LMI customers. Several stakeholders requested that Duke Energy provide the upfront cost of, monetized benefit from, and quantified end goals of the GIP as they pertain to all customer classes.
 - Duke Energy is willing to work with stakeholders going forward to determine how performance against goals and targets should be reported.
- Some stakeholders voiced concern that benefits were looked at through a “utility lens” rather than the lens of maximizing benefits to customers. For example, increasing customer participation and penetration #'s can be a benefit to the utility, but stakeholders would instead like to see emphasis on the benefits customers get from aggregated participation.
- Many stakeholders were interested in collaborating on and influencing detailed and quantified goals and metrics, as well as defining a process for how Duke Energy could be held accountable for performance goals.
- Beyond the GIP, the discussion raised interest from several stakeholders in contributing to and informing performance-based rate making with Duke Energy.
 - Duke is willing to collaborate with stakeholders to discuss potential changes to the NC regulated utility business model and is interested to hear ideas that stakeholders have.
- Duke Energy provided an overview explaining how the current GIP enables DER adoption and integration. The overview addressed challenges to DER enablement relating to ownership, maintenance, roles and responsibilities, and technical limitations.
 - Many stakeholders want to understand how benefits from DER enablement (through the GIP) can be monetized. Stakeholders voiced that analysis to better understand the technical constraints and monetized benefits from DER enablement should be addressed in the near term.
 - For projects or programs that enable more customer-owned DERs, Duke Energy has not assigned a quantitative value to the enablement of customer-owned DERs through the GIP but instead listed this as a qualitative benefit. Duke Energy acknowledged that the Company's applicable benefit values are understated.
- Duke Energy discussed current legislation (e.g. SB 559) and the impacts of this legislation on the GIP filing through cost and cost recovery.
 - Several stakeholders expressed frustration that Duke Energy was siloing the discussion and regulatory treatment of GIP from that of rate recovery.
 - Stakeholders asked whether there was an opportunity for a deferral and/or support for a separate docket that would address long-term business model reform transformation and grid planning.
 - Duke Energy does not believe that a docketed proceeding is appropriate for this collaboration.
- Participants requested several specific types of stakeholder engagement with Duke Energy on the GIP going forward:
 - Requests for actions before the filing:
 - Several stakeholders felt unclear about the impact from current stakeholder engagement, and if/how stakeholder input has and will be



- meaningfully used in the GIP filing. In response, many stakeholders requested to see evidence and/or explicit explanations demonstrating how stakeholder feedback has thus far been incorporated.
- Stakeholders requested similar engagement and technical discussion with subject matter experts as was conducted with the CBAs at the workshop.
 - Many stakeholders requested future engagement to be focused by stakeholder group (e.g. industrial, LMI, environmental, etc.)
 - Requests for actions after the filing:
 - Several stakeholders were skeptical about how a “clean slate” for stakeholder engagement could be realized after the filing this year, given that the filing will have created a polarized foundation for future stakeholder discussions. What is possible under a “clean slate” scenario? What is not possible?
 - Stakeholders asked how a future integrated planning structure (ISOP) could inform future grid modernization/improvement investments. Duke Energy stated that this would be dependent on the outcome of the ISOP planning process
 - Many stakeholders requested increased detail on how the GIP discussions would influence and impact the parallel IRP and regulatory discussions.
 - Several stakeholders felt that the current IRP was outdated and discordant with the goals of the GIP and the state.
 - Several stakeholders voiced a strong interest in having influence on the plan for resource integration.
 - Some stakeholders expressed that they really appreciated the open process for input in the GIP, but that stakeholder processes needed to be revamped across other topics as well, in order to demonstrate genuine interest in stakeholder input.
 - Duke Energy expressed a commitment to consistent, dependable and transparent stakeholder engagement, and encouraged ongoing feedback from stakeholders on how the Company can improve stakeholder engagement activities.
 - Stakeholders were generally satisfied with the workshop and its ability to enhance their understanding of the GIP (average survey result of 7/10).
 - First time attendees expressed strong satisfaction with the workshop, while several stakeholders who had attended prior workshops felt that no new information was discussed.
 - Several stakeholders expressed frustration that despite the workshop, they felt they have little-to-no ability to impact the GIP filing this year.
 - Many stakeholders expressed interest in topic focused and/or sector (e.g. C&I customers) focused engagement moving forward and were interested in attending such sessions through webinars, or a Day-At-Duke.
 - Survey results showed stakeholders had strong “willingness to engage in future conversations” with Duke Energy, averaging 9.3/10.



Workshop Agenda and Attendee List

Before the workshop, Duke Energy prepared and sent stakeholders pre-read documents including a CBA slide deck for three programs: SOG, IVVC and Transmission Line Rebuild. In addition, stakeholders were forwarded the April 25th webinar link and the report from the November workshop.

Workshop Agenda

The workshop agenda was designed based on feedback and polling from stakeholders during Duke Energy's April 25 webinar and previous workshops.

Time	Session	Objective Addressed
9:00-9:30	Welcome, Introduction, Review Agenda and Objectives	
9:30-9:50	Grid Improvement Plan Introduction	1
9:50-12:15	Breakout Conversations: (1) IVVC + SOG CBAs, (2) Transmission Line Rebuild CBA, and (3) Goals and Metrics	1, 2
12:15-1:15	Lunch	
1:15-1:50	Cost and Cost Recovery	1, 2
1:50-3:10	Opportunities and Future Stakeholder Engagement	2, 3
3:10-3:40	DER Enablement	1, 2
3:40-3:55	Question and Answer	1, 2, 3
3:55-4:00	Closing Remarks and Adjournment	

Attendee List

The workshop convened 41 stakeholders at the North Carolina State University Club in Raleigh; four RMI staff facilitated the workshop, and 11 Duke Energy staff were in attendance.

Last Name	First Name	Organization
Adair	Sarah	Duke Energy
Ayers	Chris	Public Staff - NCUC
Bayless	Charles	NCEMC
Bowman	Kendal	Duke Energy
Bragg	Scott	Evergreen Packaging
Brooks	Jeff	Duke Energy
Brookshire	Daniel	NC Sustainable Energy Association
Brown	Justin	Duke Energy
Burnett	John	Duke Energy
Chan	Coreina	RMI
Coppola	Barbara	Duke Energy
Culley	Thad	Vote Solar
Delli-Gatti	Dionne	Environmental Defense Fund
DeMay	Stephen	Duke Energy
Edge	Chris	Duke Energy
Finnigan	John	Environmental Defense Fund
Fitch	Tyler	Vote Solar
Floyd	Jack	Public Staff - NCUC
Fondacci	Luis	NCEMCS
Garvin	Martin	Duke Energy
Gill	Harry	Duke Energy
Hahn	Steven	AARP



Hicks	Warren	Bailey & Dixon, LLP
Holder	Nathan	Advanced Energy
Howard	Preston	NCMA
Hughes	Mike	Duke Energy
Johnson	Peter	Ernst & Young
Keener	Mark	Duke Energy
Klein	PJ	Corning
Kruse	Susan	Duke Energy
Ledford	Peter	NC Sustainable Energy Association
Lillis	Genevieve	RMI
Luhr	Nadia	Public Staff - NCUC
Maley	Dan	Duke Energy
Martinez	Luis	NRDC
Masemore	Sushma	NCDEQ
McAward	Ryan	Duke Energy
McIlmoil	Rory	Appalachian Voices
Meyer	Jason	RMI
Musilek	Jim	NCEMC
Neal	David	SELC
O'Donnell	Kevin	CUCA
Oliver	Jay	Duke Energy
Palmer	Miko	Duke Energy
Poger	Lisa	Duke Energy
Redd	Cameron	SELC
Ripley	Alford	NC Justice
Robertson	Sally	NC WARN
Rogers	David	Sierra Club
Sandler	Simon	NCSU
Schull	Matt	Electricities
Scott	Will	NC Conservation Network
Sides	Jim	MCIEAST
Sipes	Robert	Duke Energy
Smith	Benjamin	NC Sustainable Energy Association
Thompson	Gudrun	SELC
Trathen	Marcus	Brooks Pierce
VonNessen	Joey	University of South Carolina
Walker	Faucette	Nutrien
Weiss	Jennifer	Nicholas Institute - Duke University
Williamson	David	Public Staff - NCUC
Williamson	Tommy	Public Staff - NCUC
Wills	Kristen	NC WARN
Zanchi	Roberto	RMI

Workshop Discussion and Outcomes

During the level setting introduction, Duke Energy identified the Grid Improvement Plan (GIP) as a foundational plan intended to address the seven megatrends that affect both customers and industry. The 18 initiatives within the GIP were previously prioritized by Duke Energy based on the number of megatrends addressed by each program. Duke Energy removed programs from the original Power Forward filing that were deemed to not address these megatrends. Duke Energy stated their intention was to use stakeholder input from this workshop to further prioritize programs within the GIP.



Cost Benefit Analysis

Duke Energy brought internal subject matter experts to provide greater detail about the CBAs developed for various programs within the plan (IVVC, SOG and Transmission Line Rebuild). The CBA detail included a description of costs, benefits, and an overview of the analytic spreadsheet models used to generate cost-benefit results. These breakout conversations generated significant energy and participation from the broad stakeholder group.

Question and Answer <i>Cost/Benefit Analyses – General</i>	
Below are a list of general Cost/Benefit Analyses questions posed by stakeholders throughout the day. Some of the answers below were provided by Duke Energy during the workshop and others were detailed by Duke Energy post-workshop.	
What does Duke Energy mean by a “Clean Slate” given the GIP and current priorities that have been identified?	The grid improvement plan currently under consideration is a first step in preparing Duke Energy’s grid for how the electric power grid will operate in the future. It is a foundational no-regrets step that can be built upon with future iterations. While it appears likely that future iterations will be required, Duke Energy has not begun planning for what those will be. Clean slate refers to the opportunity to begin planning for future iterations now together with interested stakeholders.
Can Duke Energy work with stakeholders to estimate a range of benefits and costs for each program through sensitivity analyses to help address current conservative estimates?	Where it is feasible and there is clear value/benefit for sensitivity analyses we’re willing to consider doing them. We would want to discuss the need and anticipated value/benefit with stakeholders first due to the significant time and resource commitments that would likely be required.
Can Duke Energy work with stakeholders to define difficult-to-quantify value drivers?	Identifying and quantifying value drivers associated with many of the grid improvement programs and projects is critically important as we progress down the path of grid modernization and improvement. Duke Energy is very interested in working with stakeholders on this important issue.
How does Duke Energy evaluate the cost/benefit of DER’s?	For projects or programs that enable more customer-owned DERs, the Company did not assign a quantitative value to this enablement but instead listed this as a qualitative benefit. Therefore, to the extent that private DER enablement can be measured quantitatively, the Company’s applicable benefit values are understated.
What alternative CBA’s were reviewed but rejected?	As Duke Energy has considered different programs and projects to be included in the GIP, we have taken a gated approach to making those decisions/choices. The first gate that is considered is megatrends. If a project/program addresses



	few/none of the megatrends it is rejected from consideration. The second gate is stakeholder feedback, and some projects and programs were eliminated based on stakeholder input. Finally, once projects/programs pass through the first two gates, a formal CBA is performed, where applicable, and if projects/programs do not pass that analysis, they are rejected for inclusion.
Is Duke able to explore the value to rural customers through separate CBA's? Is there a metric for ensuring the benefits are equitable for urban and rural customers? (e.g. SOG and IVVC)	Some programs in the GIP benefit all customers regardless of where they are located, and location-specific CBAs for those programs are not needed. At the project level, such as targeted undergrounding and battery storage, those projects are location specific, so CBAs for those projects have already accounted for customer locations.
Can Duke Energy calculate benefits that result from synergies across programs (not just within)? How do you ensure that projected benefits aren't double counted across CBA's?	Cost-benefit analyses (CBA) are created at a project and program level. Each CBA identifies distinct value to customers and are often aimed at different segments of the grid. As an example, self-optimizing grid is typically targeted at the circuit backbone to assist in reliability improvements and to create 2-way power flow capability, targeted undergrounding (TUG) targets problem areas on branch line circuits and customer premises, transformer retro-fit targets specific local service level equipment, transmission investments are aimed at substation and bulk power infrastructure. Additionally, a portfolio level cost benefit analysis will show a summary of the net benefits divided by the net costs from CBA and IMPLAN analyses from those projects and programs in the optimize part of the GIP framework. While Duke Energy has not calculated benefits that result from synergies across programs, additional benefits could be demonstrated.
Can Duke Energy provide more information on how carbon reduction benefits might be monetized?	Yes
The IVVC has 3-line items on savings, what would be an example of that metric for which you have certainty 5 years from now?	These are tied to the assumptions of the IRP and specifically tracked on lower system voltages and system average voltage decrease. The assumption is that because it is lower, the CVR function would be calculated into fuel savings.
Will there be a lag on GIP benefits since the new customer information system will not be in services until 2021/2022? Would timing of the new system have any impact on whether GIP costs	Benefits of the GIP to customers will begin accruing immediately. Implementation of the new customer information system could potentially provide greater capabilities and functionality that would enable more benefit/value for customers over and above what is accounted for in the current plan CBA's.

are in base rates vs. being shown as a fixed charge on customer bills?	
What is in store for Phase 2 (following the GIP) in terms of tools or techniques for CBA long term?	The Company appreciates any feedback that stakeholders may have on how to use new tools or techniques for cost/benefit analysis going forward.

<p>Question and Answer</p> <p><i>Cost/Benefit Analyses – AMI</i></p> <p>Below are a list of Cost/Benefit Analyses (AMI) questions posed by stakeholders throughout the day. Some of the answers below were provided by Duke Energy during the workshop and others were detailed by Duke Energy post-workshop.</p>	
Are the benefits indicating operational value or customer value? Are the benefits for customers such as increased control and convenience suggesting TOU and that customers have information that allows them to control off peak home times? What is the actual cost or the monetized benefit?	AMI is a foundational investment that provides both operational and customer benefits. The AMI cost benefit analyses for DEC and DEP quantified operational benefits such as performing connects and disconnects remotely, reading the meter remotely, and the ability to interrogate a meter remotely to see if a location has power. In each of these cases, there is an operational benefit by not sending a truck to the premise. The Company also noted the qualitative benefits for increased customer convenience, control, and transparency by providing access to interval and remote data from smart meters. Additionally, customers benefit from programs such as Pick Your Due Date, Usage Alerts, and time-of-use rate offerings. DEC recently filed multiple pilots in its North Carolina jurisdiction to assess potential dynamic pricing rate opportunities.
How does Duke Energy measure for customer benefits and customer engagement (for example whether peak demand has been reduced and if customers have shifted their usage as opposed to how many connections there have been)?	Duke Energy measures customer benefits and customer engagement in its customer programs enabled by AMI through tracking program participation and conducting customer feedback surveys. The Company plans to use customer engagement in its evaluation of the DEC dynamic pricing pilots when considering permanent rate offerings to all customers that incent load shifting during times with higher cost of service.
Why is preventing a high bill surprise listed as a benefit?	Customers who want to have more real-time transparency into their energy use value this as a qualitative benefit.
Would the business case for AMI that accounts for benefits attributable to rate design and peak-shaving be a worthy	AMI is a foundational investment that enables further programs, such as rate design and peak-shaving, which are best evaluated independently. Duke Energy has taken the first step

inclusion in the rate case? Are we missing an opportunity to highlight real benefits to the customer program?	in its evaluation of dynamic price rate designs with the nine pilot designs proposed by DEC to begin in October 2019. These pilots were developed after stakeholder discussions and seek to evaluate customer acceptance and response to different rate structures.
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Breakout Conversation: SOG/IVVC

In the SOG/IVVC deep dive, Duke Energy explained the methodology and assumptions behind the cost-benefit analysis for the IVVC and SOG programs and answered stakeholders' questions. In a case of IVVC deployment, Duke Energy identified a 1.1% demand reduction and 1% aggregated fuel savings to customers. In this methodology, Duke Energy applied fuel costs to a base case scenario and compared this to IVVC deployment over 26 years.

In addition, Duke Energy briefly discussed the reliability benefits associated with SOG, referencing that the program is expected to reduce 193,000 outages annually. When layered alongside IVVC, Duke Energy highlighted a 1% voltage reduction. Stakeholders asked questions about the incremental assumptions, depreciation schedules, the prioritization of deployment, fuel costs and environmental benefits. The assumptions behind the estimates in the SOG and IVVC CBAs were agreed to be conservative by both Duke Energy staff and stakeholders.

Breakout Conversation: Transmission Line Rebuild

Duke Energy discussed transmission line rebuild under three scenarios: a full system rebuild including disposal, a partial rebuild that could involve a section of line, or a replacement rebuild focused on replacing communications system or underground fiber. Duke Energy outlined three key considerations and evaluations for a transmission line rebuild including reliability (ensuring delivery, quality and a reduction in outages to customers), resilience (ensuring the system is able to return to full functionality following an event, and hardening (ensuring the system is prepared to withstand a possible event).

Participants at the transmission break-out table voiced initial questions relating to customer classes, the cost-benefit of resiliency, methodology, and the allocation of this transmission rebuild outside of business-as-usual maintenance. Participants asked technical questions focused on pole replacement plans, replacement prioritization, rebuild timelines, voltage level reporting, 'soft costs', substation upgrades, voltage class, capacity and right-of-ways.

Question and Answer <i>Transmission Line Rebuild</i>	
Below are a list of Transmission Line Rebuild questions posed by stakeholders in the breakout group. Some of the answers below were provided by Duke Energy during the workshop and others were detailed by Duke Energy post-workshop.	
What parts of Duke Energy's transmission system currently have rebuild programs underway or	DEP is targeting discrete Hardening & Resiliency improvements on the 115kV and 230kV voltage class; these projects not only replaces end of life



<p>planned? Provide the following details:</p> <ul style="list-style-type: none"> • DEP and/or DEC • Voltage class • Total line miles for each voltage class, line miles already rebuilt, and total line miles targeted for rebuild. <p>For rebuild program(s) already underway, what year were those programs started? For those not started, if any, when do we plan to start?</p>	<p>static/ground wire which could result in a line outage upon failure, they also expand the communication capability by installing fiber optic ground wire, enabling high speed relaying and remote monitoring and control functions. The 3-year plan includes 78.5 miles of static replacements. Under these projects wood poles are replaced with steel poles than can withstand much higher wind loading and are not susceptible to ground rot or pest infestation.</p> <p>DEC is rebuilding targeted 44kV transmission lines to 100kV specifications. The projects in the 3yr plan add up to approximately 80 miles, targeted at the highest risk lines from a customer outage perspective.</p> <p>DEC has approximately 1600 44kV transmission line segments totaling 2,815 miles.</p> <p>DEP has approximately 360 transmission line segments (115kV and 230kV) totaling 5,954 miles. Line rebuild projects are not new to Duke Energy Transmission although the pace and scale of these projects needs to be accelerated to meet enhanced customer reliability expectations. It is estimated that <5% of circuit mileage has been rebuilt.</p>
<p>For line rebuild projects, how is a decision made to include in base work vs. GIP work?</p>	<p>GIP work including line rebuilds does not fall under the maintain category, it falls under the optimize category. Both DEC and DEP have existing capital improvement line rebuild projects underway, although this is on a very limited basis. Through Grid Improvement, the pace and scale of these projects will be greatly accelerated in order to deliver reliability benefits to the customer in a shorter time period. Specifically excluded from GIP work, and classified as base maintain work, is time based wood pole circuit inspections to identify degraded poles in need of replacement, and the corrective replacements of those poles on a one-by-one basis.</p>
<p>Do you widen the R/W's during line rebuilds?</p>	<p>In some instances, Duke may reclaim ROW to the full legal easement width during line rebuild projects. It would be the rare exception to obtain additional ROW for a line rebuild. In DEC, rebuilding 44kV lines to the 100kV standard results in taller structures, elevating conductor above more vegetation, which reduces outage impacts from trees falling onto the lines from outside the ROW. This same benefit is achieved in some DEP projects through conversion from H-frame</p>



	horizontal framing to mono-pole phase over phase framing.
What is the plan to replace wood poles? How is pole replacement work coordinated with line rebuild projects?	All planned line projects will always include changing wood poles to steel or concrete, designed to the latest codes and standards.
How are line rebuild projects prioritized? Voltage? Radial feed? Other?	<p>Duke Energy uses Copperleaf C55 to model the criticality of the line, the health of a line, and rank these with a score. We use the ICE (Interruption Cost Estimator) tool to determine the reduction in customer outages that would be achieved with the rebuild.</p> <p>The probability of failure of an asset is determined using a Condition vs. Probability of Failure curve, which is calculated as a logistic regression that is specific to either Substation or Line assets. These curves are based on historical industry data specific to the asset category. The asset Condition is assigned a numerical value ranging from 10 (new) to 0 (imminent failure). Condition 3 represents end of life, typically assumed to be 40 years for substation and line assets. Condition is determined by a Subject Matter Experts based on a combination of field inspections, maintenance and test history, and age. The condition score is plotted on the regression curve and a probability of failure is determined. Probability will range from 0-30% for substation assets, and 0-1% for line assets (per individual structure, then multiplied out per number of spans). Frequency of failure is further determined by multiplying Probability of Failure times the number of asset being assessed in each grouping. Additional prioritization weighting factors include voltage level, the redundancy value (radial or networked), lost redundancy exposure, environmental risk, safety risk, and financial risk.</p>
Will rebuilding lines to higher voltage class increase capacity of the lines?	<p>Although the 44kV rebuild are built to 100kV standards, Duke Energy is not energizing to 100kV. The conductors and insulation is sized for this but the substation equipment would need to be replaced in order to energize to this level. The line rebuilds would facilitate future opportunities to increase voltage level though, as system demand warranted.</p> <p>The driver for the work and benefits from the higher voltage class is a reduction in customer outages; less vegetation impacts will be experienced due to taller structures, less animal impacts will be experienced due to larger phase</p>



	spacing, and fewer equipment failures will be experienced due to installation of modern equipment.
What line voltage levels are subject to NERC oversight/compliance standards?	Bulk Electric System (BES) components are subject to the Operating & Planning Standards published by NERC, BES components are generally 100kV and above with some specific Inclusions and Exclusions
<p>CBA Questions</p> <ul style="list-style-type: none"> Are additional kwh sales due to increased line reliability considered for hardening projects? In the ICE tool, are costs normalized to account for regional differences? 	<p>Duke Energy is using ‘hard numbers’ in outage costs and is not including revenue changes or improvements to safety for public and workers. Duke Energy conducts internal prioritization around the ‘soft costs’ and benefits.</p> <p>The ICE meta-dataset includes 34 different datasets from surveys fielded by 10 different utility companies between 1989 and 2012. Once the datasets from the various studies were combined, a two-part regression model was used to estimate customer damage functions that can be generally applied to calculate customer interruption costs per event by season, time of day, day of week, and geographical regions within the U.S. for industrial, commercial, and residential customers.</p>
How do tracking/reporting requirements for GIP work compare to those for base work?	All Transmission projects falling under the Grid Improvement Plan are tracked in one of four categories: System Intelligence, Line Hardening & Resiliency, Substation Hardening & Resiliency, or Security. This facilitates financial tracking and reporting specific to GIP work.
How are substation upgrades considered in this CBA?	Substation Hardening & Resiliency projects including breaker and transformer bank replacements are cost/benefit analyzed using a proactive versus reactive evaluation. Under the proactive model, assets are replaced prior to failure which eliminates extended customer outages. Under a reactive model, the asset fails and result in an unplanned customer outage of extended duration. The ICE tool is used to determine the customer cost of the outage, which is then compared against the cost of replacing the asset proactively.

Breakout Conversation: Goals and Metrics

Duke Energy provided a framework for goals and metrics centered on the three categories of the GIP: protect, modernize and optimize. Duke Energy referred to goals and metrics outlined in the pre-reading deck during this discussion.

- **Protect:** Duke Energy highlighted the difficulty in reporting metrics under the protect category but identified a zero-incidence rate as the ultimate goal.
- **Modernize:** Cost effectiveness was described as the most useful metric, in addition to functionality and creeping obsolesce.
- **Optimize:** the “hard metrics” of cost and benefits were described to apply at the program and project level with anticipated benefit to customer classes.

Participants at the goals and metrics break-out table voiced initial questions relating to impact and data transparency specific to customer classes, accountability in terms of tracking and evaluation, DER metrics, cost/ expense allocation and performance-based rate making. Following the introduction to goals and metrics lead by Duke Energy, participants asked questions relating to the allocation and equitable distribution of customer benefits and cost savings, accountability, customers costs and rate impacts, customer information, monitoring the equitable allocation of benefits across rural and urban environments, as well as the utility of the future and specifically, performance-based rate making.

Question and Answer <i>Metrics and Reporting</i>	
Below are a list of Metrics and Reporting questions posed by stakeholders in the breakout group. Some of the answers below were provided by Duke Energy during the workshop and others were detailed by Duke Energy post-workshop.	
If the GIP is approved, how is Duke Energy currently planning to report performance against the plan?	Duke Energy would report under 3 categories: a. Operations: Are we doing the work we said we would do within the time, manner and scope set out? b. Cost-effectiveness: Are we within budget and managing unexpected circumstances with agility. c. Benefits: Are expected benefits being achieved..
Is Duke Energy willing to work with stakeholders to determine what the goals/targets for the GIP should be?	Yes
Is Duke Energy willing to work with stakeholders to determine how performance against goals/targets should be reported?	Yes
Is Duke Energy willing to be held accountable for achieving goals/targets associated with the GIP?	Yes, the Company is already held accountable for the goals it plans to achieve with the GIP when it files them with the Commission and the Company would have to justify any material variances from those goals.



Is Duke Energy willing to work with stakeholders to determine the incentives/penalties related to goal/target achievement?	The Company is held accountable for the goals it plans to achieve with the GIP when it files them with the Commission and the Company would have to justify any material variances from those goals. The Company does not need any incentives to meet the goals it plans to achieve. The Commission already has penalties at its disposal if the Company does not meet its goals without justification for not meeting them.
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Deep Dive Conversation: DER Enablement

Duke Energy discussed DER enablement (specifically privately-owned rooftop solar and pilot storage projects) in the context of the current GIP, as well as in future phases of Grid Improvement. Duke Energy highlighted the challenge associated with enabling technologies that would support DER implementation. In addition, Duke Energy discussed the challenges associated with enabling business processes to support the technology including ownership, maintenance and responsibility.

In the case of SOG, Duke Energy discussed reconducting smaller wires to increase capacity, and the circuit-by-circuit methodology adopted to calculate this increase in potential hosting capacity. In addition, Duke Energy outlined net metering projections for capacity using anticipated rooftop solar installations over the next 20-30 years. Duke Energy outlined the opportunity to leverage SOG to ensure costs associated with increasing wire size are not passed on as incremental costs to customers as solar is added to the system in the absence of available capacity.

Participants asked questions relating to net metering, temporal data and the visibility of solar installations, and the monetization of DER benefits. Stakeholders expressed interest in taking advantage of DER opportunities soon and as such, requested further transparency on any technical restraints that would prevent DER enablement in the near term.

Deep Dive Conversation: Cost and Cost Recovery

Duke Energy provided an overview on current legislation and implications for filing if the current legislation were to pass. Duke Energy is planning to file rate cases in 2019 for DEC and DEP. In those rate cases, Duke Energy will file the GIP as outlined in the data room, pre-reads and the CBA. In the filing, Duke will ask the commission for a deferral of costs over 3 years with a weighted average cost of capital return. If senate bill 559 becomes law as it is written today, Duke Energy put up relevant provisions that could be used for the GIP. Duke Energy discussed the three options (retroactive, real-time, and forward-looking) for a multi-year GIP with participants.

Scenarios:

1. Retroactive: deferral mechanism with proceeding on back end
2. Real Time: annual review and move into rates
3. Forward-Looking: Projections ongoing with true-up on back end. May not be feasible given existing statutes.



At the completion, Duke Energy proposed a multi-year rate plan (MYRP) for the filing of the base rate case. This plan would include filing of the rate case with a 3-year deferral regardless of SB 559, with the addition of an alternative MYRP for the Commission to consider.

Participants asked questions relating to the language within SB 559, the potential for a deferral option, and support for a docket that would separate long term business model reform transformation and grid planning. Stakeholders seemed particularly concerned about whether this would be filed within a rate case, or as a separate docket that would separate long term business model reform from grid planning.

Question and Answer <i>Rate Impacts/Cost Recovery Regulation</i>	
Below are a list of Rate Impacts/Cost Recovery/Regulation questions posed by stakeholders throughout the day. Some of the answers below were provided by Duke Energy during the workshop and others were detailed by Duke Energy post-workshop.	
For the GIP, how will costs be allocated across customer classes?	This will be determined by the Utilities Commission, but the Company assumes that the Commission will approve costs allocations in the manner that they have traditionally done so.
To assist customers with planning, what are Duke Energy's estimates for rate increases in the coming years?	Specific rate increases or decreases in the coming years are not known at this time.
Can Duke Energy quantify the financial burden to low income customers from the GIP? How will projected direct financial benefits to these customers offset these costs?	Since the GIP is cost-benefit justified at the total portfolio level, all customers, including low-income customers, are expected to save money once the GIP is implemented.
Can Duke Energy provide data/evidence of how LMI customers can/will curb usage to get benefits from the GIP?	Yes. Depending on the project/program there will be both direct and secondary benefits that LMI customers will experience. Reduced usage is just one of those benefits.
If storm securitization legislation passes, what impact would it have on transmission line rebuilds or any other GIP program or project, when line segments or other infrastructure intended to be upgraded are rebuilt during storm restoration?	Storm securitization would have no impact.
Does Duke Energy agree that the issues of recovery mechanisms and the GIP should be addressed together? If so, how does Duke	Yes. Duke plans to address cost recovery in its request for the approval of the Grid Improvement Plan.

propose that this be accomplished?	
Is Duke Energy willing to work with stakeholders on reform of NC's regulated electric utility business model? Would you be willing to establish a separate docket for this purpose?	Duke is willing to collaborate with stakeholders to discuss potential changes to the NC regulated utility business model and is interested to hear ideas that stakeholders have. Duke does not believe that a docketed proceeding is appropriate for this collaboration.

Deep Dive Conversation: Stakeholder Engagement

Participants took part in a real-time survey and identified on a spectrum in response to the statement *“a blue-sky stakeholder workshop is required to kick-off and chart any path going forward after this initial filing.”* Participants self-sorted along a spectrum from ‘Completely agree’ to ‘Completely disagree.’ Approximately 40% of the participants stood at the end of “completely agree;” the remainder were spread relatively uniformly between this group and “Completely Disagree.”

To explain why participants had positions themselves where they were standing:

- Some who stood at the end of Completely Disagree end of the spectrum commented that “Duke Energy’s stakeholder engagement is ingenuine” given it was a requirement of the Commission and given the original Power Forward plan was filed without stakeholder engagement. In addition, one participant stated that “this is the third workshop and we still have not seen feedback incorporated.”
- Participants positioned close to the middle of the spectrum suggested success was conditional based on several variables. Some stakeholders stated that “this is the first workshop in which we all have a stake, ” that it “is self-evident if you want to buy-in, you need to engage early,” and that “blue sky is valuable but once you have a filing the posture changes and litigation makes it difficult to have blue sky.”
- At the Completely Agree end of the spectrum, a participant commented that “the open discussion [upfront] is valuable because once you have an initial filing, there’s going to be litigation.”

In general discussion following the survey, some stakeholders agreed that a blue-sky stakeholder workshop is essential in creating a unified path forward, but that it should form the initial step of planning to build consensus. Other stakeholders felt that in general, given the change in posture that occurs following a filing, blue sky engagement is better planned for after filings have occurred.

Plus - “What has been working for you”

Participants responded to a ‘plus’ and ‘delta’ prompt, reflecting their experience of the current stakeholder engagement process. Under the ‘plus’ category, participants responded to the prompt “what has been working for you?” Participant responses are reflected below:

- Stakeholders appreciated the sharing of data and increased level of detail provided in the data room for CBAs and the Grid Improvement Plan
- Stakeholders positively acknowledged the use of webinars, pre-reads, needs assessments and workshops to set priorities and shape the agenda for the workshop.



- Many stakeholders acknowledged and appreciated the in-person contact, listening and involvement of senior Duke Energy management and their willingness to respond to questions and incorporate thoughts and feedback.
- While some participants felt that stakeholder groups were not represented at the workshop, others expressed appreciation for the large and diverse stakeholder workshop.
- Stakeholders generally appreciated the use of a third-party facilitator and asked for one going forward for stakeholder engagements.

Delta - "What changes would you like to suggest"

Under the 'delta' category, participants responded to the prompt, "what changes would you like to suggest?" Participant responses are reflected below:

- While stakeholders appreciate and acknowledge the workshops as being a useful process for engagement, unexpected activities such as SB 559 continue to erode trust.
- Many stakeholders felt that ongoing litigation made it difficult to have 'blue sky' conversations focused on topics such as decarbonization.
- Many stakeholders stated that this process should have been undertaken prior to the filing and before design of the GIP, in order for there to be collaboration on the principles of the draft plan and end goals (and consequently buy-in)
- Stakeholders were generally interested in seeing evidence and/or explicit explanations demonstrating how their thoughts and feedback from the stakeholder engagement process were being incorporated.
- There is a request from many stakeholders for engagement to be consistent, ongoing and transparent rather than ad-hoc
- Stakeholders need to understand the benefits and implications of the GIP on customer classes with specific reference to rate making and rate recovery.
- There was an interest from stakeholders in understanding in depth other stakeholder group perspectives through short presentations that would provide space for specific recommendations from sectors (e.g. business, renewables, low-income and environmental)
- Some stakeholders felt their feedback was not being incorporated or informing the GIP filing later this year.
- While stakeholders generally appreciated the process, some stakeholders felt that surveys would be a valuable addition to the process to make the most of stakeholder time.
- One stakeholder suggested holding future stakeholder engagements outside of Raleigh.



Question and Answer <i>Stakeholder Engagement</i>	
Below are a list of Stakeholder Engagement questions posed by stakeholders throughout the day. Some of the answers below were provided by Duke Energy during the workshop and others were detailed by Duke Energy post-workshop.	
Can Duke Energy create a process for consistent, dependable, transparent and timely stakeholder engagement (e.g. meetings, surveys)	Yes, we are working hard to create such a process. We have begun using different tools to engage stakeholders more effectively and efficiently. We are also constantly asking stakeholders for feedback on how we can improve stakeholder engagement activities. Duke Energy is committed to making stakeholder engagement a normal way of conducting business in NC.
Is Duke Energy willing to hold technical sessions, before making any rate case filings, where their technical experts can meet/talk with stakeholder/3 rd party technical experts? Can these sessions be sector specific where appropriate?	Yes, we have already scheduled a series of webinars to focus on technical details of the CBA's.
In stakeholder forums (workshops, webinars, etc.) can Duke Energy provide time for stakeholder groups to share sector specific views/recommendations (e.g. business, renewables, low-income and environmental)?	Yes, stakeholder engagement should provide stakeholders with an opportunity to clearly express their views and the analysis they use to support them, if they are relevant to the topic at hand and presented in a constructive and efficient way. Duke Energy is committed to listening to what stakeholders have to say.
Does the data room have the functionality to ask/answer questions?	No. We will investigate ways that this might be accomplished and notify stakeholders if/when we have something in place.
Can Duke Energy include everything in the data room that they intend to file in the future rate case?	Yes, with respect to the Grid Improvement Plan, and the Company has already posted much of what it will file in the data room already.

Suggested topics for future stakeholder engagement

Stakeholders proposed the following suggestions for future stakeholder engagement in grid modernization efforts.

- ISOP/IRP/IDP
 - Background on what ISOP is and how would it integrate into the GIP
 - Integration of ISOP into current IRP for DER and central plan generation.
- Rate design
- EV: rate design, charging infrastructure and pricing structures
- Performance-based rate making (not led by Duke Energy)



- Low-Income energy burdens
- Utility of the future
- Development of Distribution Operators
- Just transition planning for coal plant communities
- Big picture consensus on targets/goals so we can plan how to get there from here
- Data Room including the ability to ask questions and show answers
- Stakeholder groups present views
- Net metering
- Energy storage implementation and protocols
- SB 559

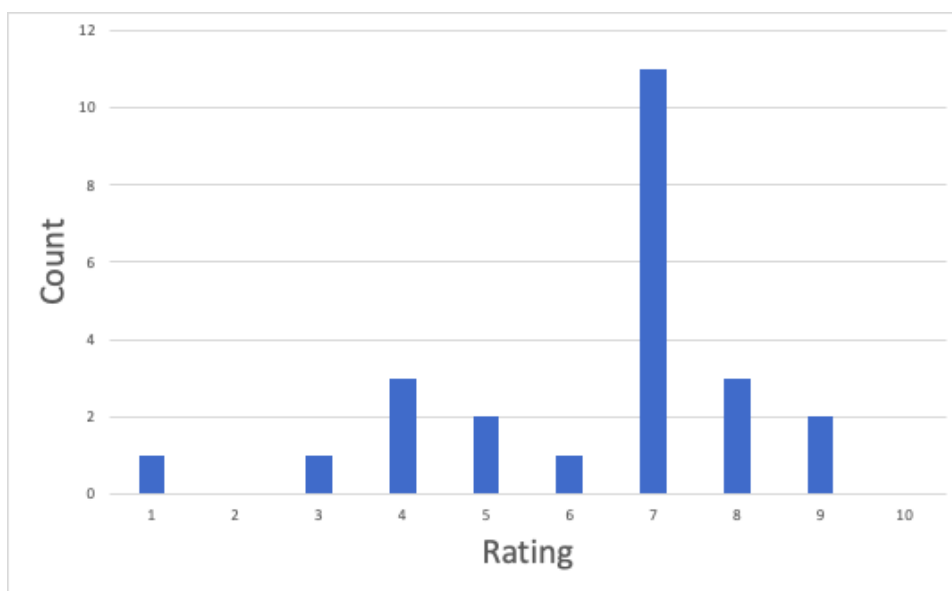


Appendix: Survey Results

There were 41 stakeholders present at the North Carolina Grid Improvement Plan workshop. The end-of-workshop survey was received by 24 of 41 participants, a survey completion rate of 59%. The survey results indicate that participants generally appreciated the chance to provide feedback to Duke Energy and the in-depth analysis provided by the CBAs. Overall satisfaction from participants with the workshop experience was relatively high with an average across Questions 1-5 of 7/10. All respondents showed a willingness to continue engagement in future conversations about grid improvement with Duke Energy.

1. On a scale of 1-10, how well did this workshop enhance your understanding of the proposed grid improvement investments?

Participants answered with an average of 6.3/10. Respondents demonstrated uncertainty in understanding how these investments constituted grid improvement as compared to a traditional utility investment and how the GIP would impact rates. Several participants felt that “nothing new was discussed” or that “they knew many of the details already” while others felt it was an “effective session as a first-time attendee”. Most respondents commented that the CBAs were helpful though some further stated they would like to look more deeply into the CBAs.



Comments:

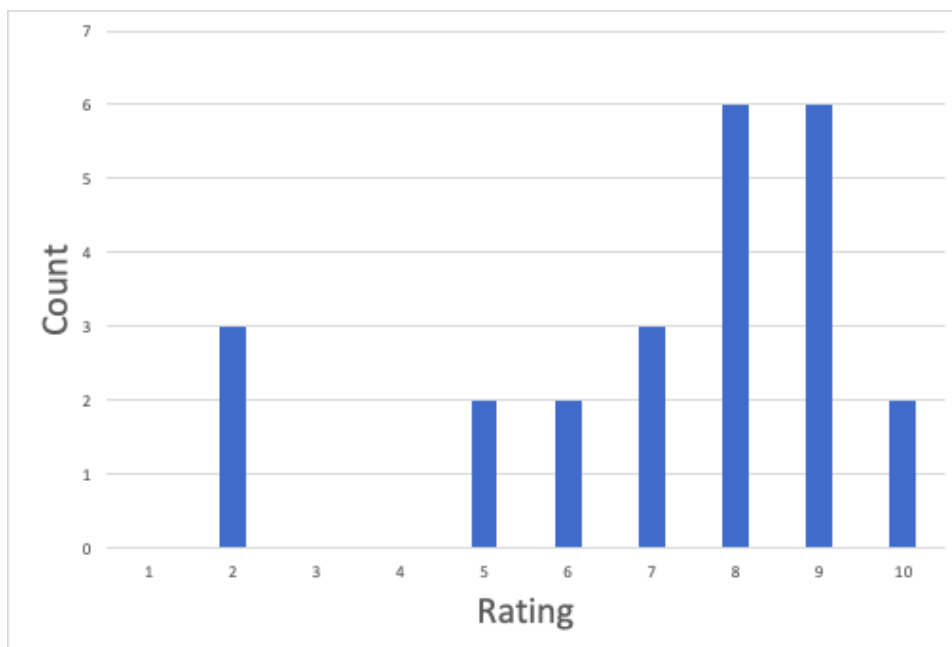
- What makes some of these investments ‘grid improvement’ versus traditional utility investment?
- Effective session as a first time attendee
- Didn’t really get any new info on the plan. RMI spent a lot of time getting feedback on process and future feedback.
- Nothing new was discussed



- I knew many of the details already. Good presentation.
- During breakouts, certain respondents dominated discussion and would have appreciated more moderation. Seems clear that some topics were omitted
- No rate increase numbers. We need cost increase values.
- Would like more in depth “dives” into the CBA for each project
- Anticipated looking more deeply into the CBAs
- Still need more detail on scope of the entire plan and parts
- It was informative in many ways especially given I am a 1st time attendee
- CBAs
- CBA on IVVC was helpful
- For individual topics covered

2. *On a scale of 1-10, how satisfied are you with the opportunity to provide feedback and dialogue with Duke Energy at this workshop?*

Participants answered with an average of 7.1/10, however demonstrated divergence in responses. Some participants commented that the session provided lots of opportunities to give feedback, an opportunity to share and appreciation for the face-to-face engagement, while others felt that they “would like more dialogue with Duke and less process related feedback.” One respondent commented that “Duke has ignored stakeholder feedback,” and “a rate case is the wrong venue to discuss.”



Comments:

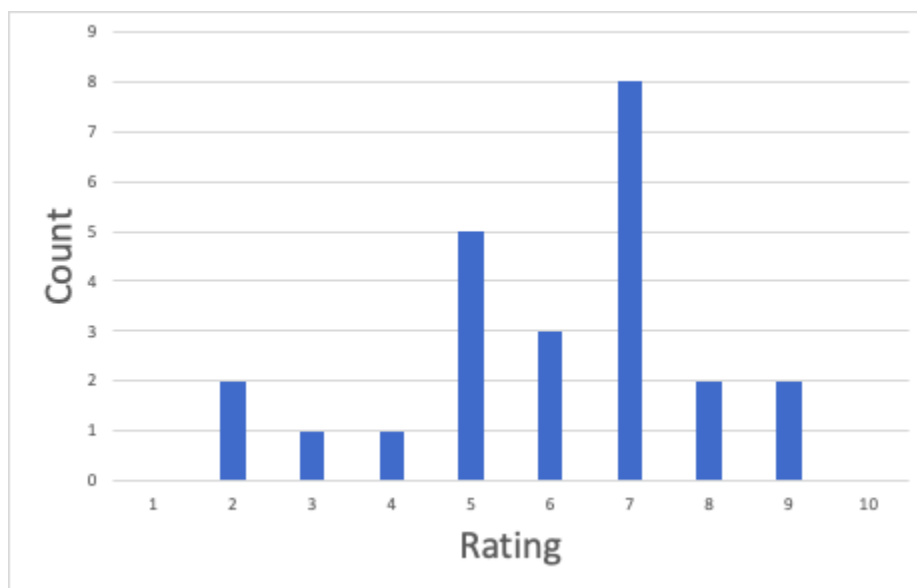
- Conversations were cut short many times
- Would like more dialogue with Duke and less process related feedback
- I felt this was more exploratory as a workshop than collaborative



- Duke representatives at tables made frank conversations more difficult
- Disheartening to learn that stakeholder feedback wasn't included in phase 1 of grid modernization and that Duke has ignored stakeholder feedback that a rate case is the wrong venue to discuss.
- We were given the opportunity to share
- Access to the data room and access to Duke resources
- Glad for face-to-face with key folks
- Lots of opportunities to give feedback

3. *On a scale of 1-10, how well did this workshop enhance your understanding about other stakeholders' points of view?*

Participants answered with an average of 6/10. While participants overall suggested that the workshop provided a good opportunity to “hear from other folks,” there were several comments that participants would like the opportunity to give and receive sector perspectives, or “to hear from other stakeholder groups.” There was a suggestion that some customer views were not represented in the workshop.

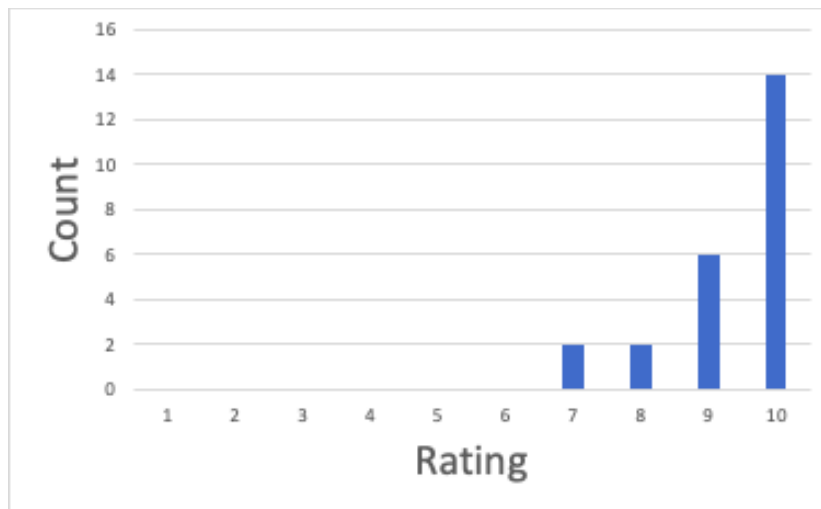


Comments:

- I'd be interested to hear more from other stakeholder groups like industrial customers, tech customers etc.
- Having more diverse stakeholders is a good thing
- Would be good to give stakeholder groups a chance to give sector perspectives
- Lots of perspectives, maybe sub-contractors of different stakeholders with GIP then come back
- Would like to make sure all customer views are represented at future workshops.
- I know most positions already
- Great to hear from other folks and public staff

4. *On a scale of 1-10, how willing are you to engage in potential future conversations with Duke Energy around grid improvement?*

Participants answered with an average of 9.3/10. There was strong consensus that “more communication is necessary,” and an interest from participants in continuing the dialogue. One participant indicated that they would be more willing to engage “in a case where my feedback is incorporated.”

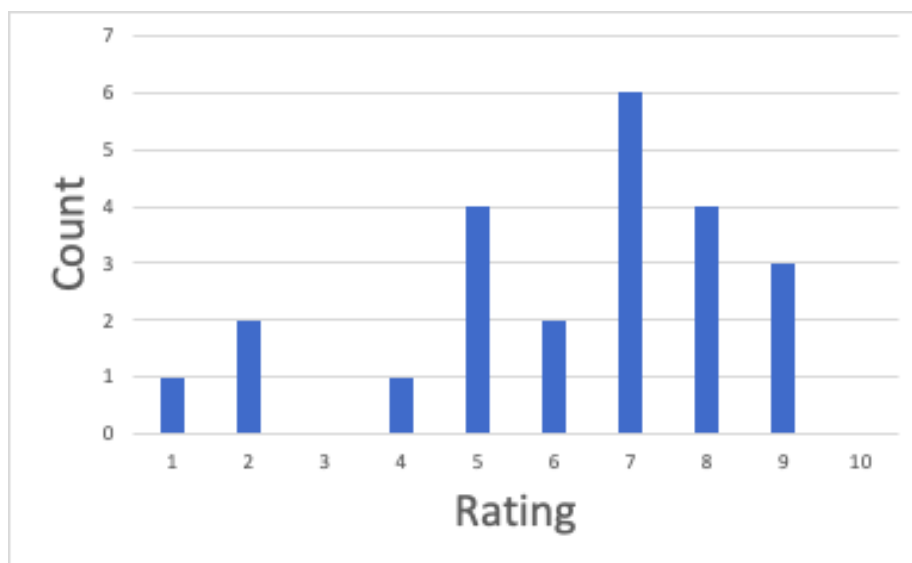


Comments:

- It is a necessity
- More communication is necessary, not just with industrial customers
- Only if you provide cost numbers
- But I'd love to do this in a case where my feedback is incorporated
- Always interested in continuing dialogue

5. *On a scale of 1-10, how effective was this workshop in providing a foundation for new kinds of conversation and collaboration going forward?*

Participants answered with an average of 6.0/10. Many of the comments from participants voiced frustrations with the level commitment from Duke Energy in incorporating feedback and implementing collaborative ideas into the plan. Several comments include: “it’s the same conversation as [the] last two but nothing has come of those,” “not sure on the opportunity for changes to this plan since it is being characterized as almost ready to file,” and that there are “hang ups on what Duke is already moving forward with.”



Comments:

- Seems like RMI spent a lot of time in this area
- More details on cost benefit analysis
- Not sure the opportunity for changes to this place since it is being characterized as almost ready to file.
- It's the same conversation as last two, but nothing has come of those.
- Actual commitment from Duke would be key
- Mixed: "Clean slate" moving forward but hang-ups on what Duke is already moving forward with.
- Frustrating to hear that this plan is already fully baked
- Need to see the workshops actually incorporate collaboration and then result in implementing collaborative ideas.

6. What did you find most useful about this day? Why?

Participants generally felt that the detail provided in the CBAs deep dive breakouts was the most useful activity for the day. Many stakeholders further appreciated the face-to-face contact with stakeholders and senior staff at Duke Energy, in accordance with the "open process and willingness to listen," as well as "learn from past mistakes and actions."

Comments:

- Didn't find much useful
- More details on cost benefit analysis
- Additional information and hand-outs
- Face-to-face discussion with key staff and stakeholders
- Discussion with Duke senior management and other stakeholders
- Learning Duke's plan to include grid mod in the rate case applications
- Cost recovery, admission on follow-on phases

- Networking with duke and other stakeholders
- Offline conversations with Duke personnel
- Breaking out into tables to discuss CBAs (SOG and IVVC)
- Duke did a good job of being open to hear options for stakeholders
- Deep dive into IVVC and SOG CBA but only because previous explanation was lacking previously
- Deep Dives
- Interaction with other stakeholders
- Stakeholder views
- SME Analysis (CBA). The starting point with #s – need 10 year forecast
- Breakout sessions and deep dives
- Open process, willingness to listen. Questions still remains whether the stakeholders were heard and what action will be taken/revised
- Willingness to engage participants
- IVVC CBA
- CBA discussion
- Duke is putting forward an effort hear from stakeholders and learning from past mistakes and actions

7. What information is still needed for the Data Room? What other changes or improvements are needed?

Many participants were “not sure,” had “not looked at it yet,” and required more time to “assess the site for an answer.” Several participants requested customer specific information to reflect customer classes, while others requested “more granular data on CBAs and prioritization decision making.”

Comments:

- Not sure yet
- Not looked at it yet
- Need to assess the site for an answer
- Don't know yet
- Have not had time to look at it
- Still need to access – Duke have not been very forthcoming in getting me the access.
- Need to see what has been updated in the past 2 weeks
- Anything Duke plans to file in the future rate case
- 10-year rate forecast
- Customer specific information for large customers. Cost per customer class.
- Ability to ask questions and provide feedback
- Full CBA information. More granular data on prioritization decision making
- Some insight into what could be proposed in future phases of this.
- CBA on each part of GIP with summary of each



8. *Would you be interested in attending a “Day-at-Duke?” If so, how would you want to use the time?*

All respondents were interested in attending a Day-at-Duke. The responses on how to use the time were significantly fragmented. Many participants commented more analysis on the CBAs and meetings with specific departments within the company would be valuable. Many felt that customer, technology (transmission and/or storage) or program specific segmented meetings would be most useful. Several other participants showed interest in “Duke Energy’s larger goals,” or the “long term generation plans.”

Comments:

- Yes - presentations/discussions/problem solving
- Yes - More CBA analysis and review all parts of Grid Mod
- Yes - Perhaps a meeting/session with AARP executive council
- Yes – would like a walk-through of how these costs will be divided up amongst different customer classes.
- Yes – CBA analysis (open up excel)
- Yes already have
- Yes but not sure what that would mean
- Yes - Meetings with departments to understand them well
- Yes - Technology-specific or program-specific issues
- Yes - With other industrial customers
- Yes - Focused subject matter or customer segment meetings
- Yes - Transmission upgrades (44kV in DEC)(230kV in DEP)
- Yes – mostly with CBA, amount and available interval load data
- Yes – see DER pilot
- CBA work through in excel
- Yes – talk about energy storage, add developers potentially
- Yes
- Yes – discussions about next steps after this phase and discussions about long term generation plans
- Maybe specific webinars instead of full day at Duke Energy
- Know Duke Energy’s larger goals.
- Not sure

9. *Would you be interested in attending another webinar? If so, how would you want to use the time?*

Participants were generally interested in attending future webinars. Again, many respondents suggested deeper dives into the CBAs or other CBAs not discussed in the workshop. In addition, several participants suggested segmenting webinars for stakeholder groups to present ideas and to discuss the future involvement of stakeholder segments in grid modernization and



ISOP. Others indicated an interest in further discussing DER Enablement and energy efficiency.

Comments:

- Yes
- Yes ASAP, more time before filing is better
- Maybe
- Pipeline
- Yes, deeper dives into CBA for top priority projects
- Yes, go into other CBAs
- Yes on CBAs
- Mostly would attend
- Yes, exploratory on SOG CBA and collaborative on rate design, storage, ISOP, etc.
- Yes - setting principles and goals for GIP
- Only if new material
- With other industrial customers (e.g. segmented)
- Yes, to present ideas for future stakeholder involvement in Grid Mod and ISOP
- Yes, send a pre-survey to get input ahead of time
- Yes, discuss DERs behind the meter DSM, and EE opportunities



CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Progress, LLC and Duke Energy Carolinas, LLC's Report of Third NC Grid Improvement Technical Workshop, in Docket No. E-7, Sub 1146 and E-2, Sub 1142, has been served by electronic mail, hand delivery or by depositing a copy in the United States mail, postage prepaid to the following parties:

David Drooz, Chief Counsel
Dianna Downey, Counsel
Lucy Edmondson, Counsel
Public Staff
North Carolina Utilities Commission
4326 Mail Service Center
Raleigh, NC 27699-4326
david.drooz@psncuc.nc.gov
dianna.downey@psncuc.nc.gov
lucy.edmondson@psncuc.nc.gov

Ralph McDonald
Warren Hicks
Bailey & Dixon, LLP
Counsel for CIGFUR
PO Box 1351
Raleigh, NC 27602-1351
rmcdonald@bdixon.com
whicks@bdixon.com

Jennifer T. Harrod, Special Deputy
Attorney General
Margaret Force, Asst. Attorney General
Teresa L. Townsend, Asst. Attorney
General
NC Department of Justice
PO Box 629
Raleigh, NC 27602-0629
pforce@ncdoj.gov
ttownsend@ncdoj.gov
jharrod@ncdoj.gov

Peter H. Ledford
NC Sustainable Energy Assn.
4800 Six Forks Rd., Ste. 300
Raleigh, NC 27609
peter@energync.org

Sharon Miller
Carolina Utility Customers Assn.
1708 Trawick Rd., Ste., 210
Raleigh, NC 27604
smiller@cucainc.org

Robert Page
Counsel for CUCA
Crisp, Page & Currin, LLP
4010 Barrett Dr., Ste. 205
Raleigh, NC 27609-6622
rpage@cpclaw.com

Kristin Willis, Attorney
Counsel for NC WARN
2121 Damascus Church Rd.,
Chapel Hill, NC 27516
kristin@ncwarn.com

Alan R. Jenkins
Jenkins at Law, LLC
2950 Yellowtail Ave.
Marathon, FL 33050
aj@jenkinsatlaw.com

Glen C. Raynor
Young Moore & Henderson PA
PO Box 31627
Raleigh, NC 27627
gcr@youngmoorelaw.com

Michael Colo
Christopher S. Dwight
Counsel for ASU
Poyner, Spruill LLP
PO Box 353
Rocky Mount, NC 27802
mscolo@poynerspruill.com
cdwight@poynerspruill.com

Matthew Quinn
F. Bryan Brice, Jr.
Catherine Cralle Jones
Law Offices of F. Bryan Brice, Jr.
127 W. Hargett St., Ste., 600
Raleigh, NC 27602
matt@attybryanbrice.com
bryan@attybryanbrice.com
cathy@attbryanbrice.com

Thomas Batchelor
Haywood Electric Membership Corp.
376 Grindstone Road
Waynesville, NC 28785
tom.batchelor@haywoodemc.com

Mona Lisa Wallace
John Hughes
Wallace & Graham PA
525 N. Main St.
Salisbury, NC 28144
mwallace@wallacegraham.com
jhughes@wallacegraham.com

Douglas W. Johnson
Blue Ridge EMC
1216 Blowing Rock Blvd., NE
Lenoir, NC 28645-0112
djohnson@blueridgeemc.com

Sarah Collins
NC League of Municipalities
PO Box 3069
Raleigh, NC 27602
scollins@nclm.org

Paul Meggett
ASU
PO Box 32126
Boone, NC 28608
meggett@appstate.edu

Stephen Hamlin
Piedmont EMC
PO Drawer 1179
Hillsborough, NC 27278
steve.hamlin@pemc.coop

Ben M. Royster
Royster & Royster
851 Marshall Street
Mt. Airy, NC 27030
benroyster@roysterlaw.com

H. Julian Philpott, Jr.
NC Farm Bureau Federation, Inc.
PO Box 27766
Raleigh, NC 27611
julian.philpott@ncfb.org

Nickey Hendricks, Jr.
City of Kings Mountain
PO Box 429
Kings Mountain, NC 28086
nickh@cityofkm.com

Kurt J. Boehm
Jody Kyler Cohn
Boehm, Kurtz & Lowry
36 E. Seventh St., Ste. 1510
Cincinnati, OH 45202
kboehm@BKLawfirm.com
jkylercohn@BKLawfirm.com

Jim W. Phillips
Brooks, Pierce, McLendon, Humphrey &
Leonard, LLP
230 N. Elm St.
Greensboro, NC 27401
jphillips@brookspierce.com

John J. Finnigan, Jr.
Environmental Defense Fund
128 Winding Brook Lane
Terrace Park, OH 45174
jfinnigan@edf.org

Bob Pate
City of Concord
PO Box 308
Concord, NC 28026
pateb@concordnc.gov

Nadia Luhr
David Neal
Gudrun Thompson
Southern Environmental Law Center
601 W. Rosemary St., Ste. 220
Chapel Hill, NC 27516
nluhr@selcnc.org
dneal@selcnc.org
gthompson@selcnc.org

Joseph H. Joplin
Rutherford EMC
PO Box 1569
Forest City, NC 28043-1569
jjoplin@remc.com

Marcus Trathen
Brooks, Pierce, McLendon, Humphrey &
Leonard, LLP
150 Fayetteville St., Ste. 1700
Raleigh, NC 27601
mtrathen@brookspierce.com

Karen M. Kemerait
Deborah Ross
Smith, Moore, Leatherwood, LLP
434 Fayetteville St., Ste. 2800
Raleigh, NC 27601
Karen.kemerait@smithmoorelaw.com
Deborah.ross@smithmoorelaw.com

Daniel Whittle
Environmental Defense Fund
4000 Westchase Blvd., Ste. 510
Raleigh, NC 27607-3965
dwhittle@edf.org

Sherri Zahn Rosenthal
Kimberly Reyberg
City of Durham
101 City Hall Plaza
Durham, NC 27701
Sherri.rosenthal@durhamnc.gov
Kimberly.rehberg@durhamnc.gov

Bridget Lee
Dorothy Jaffe
Sierra Club
50 F St., Floor 8
Washington, DC 20001
Bridge.lee@sierraclub.org
Dori.jaffe@sierraclub.org

J. Mark Wilson
Moore & Van Allen PLLC
100 North Tryon Street, Suite 4700
Charlotte, NC 28202-4003
markwilson@mvalaw.com

James P. West,
West Law Offices PC
434 Fayetteville Street
Suite 2325
Raleigh, NC 27601
jpwest@westlawpc.com

Brandon F. Marzo
Kiran Mehta
Troutman & Sanders, LLP
600 Peacetrete St. NE, Ste. 5200
Atlanta, GA 30308
Brandon.marzo@troutmansanders.com
Kiran.mehta@troutmansanders.com

Timothy Barwick
209 Mullins Lane
Roxboro, NC 27573

J. Brian Pridgen
Gabriel Du Sablon
Cauley Pridgen, P.A.
2500 Nash St., Ste C
Wilson, NC 27896-1394
bpridgen@cauleypridgen.com
gusablon@cauleypridgen.com

Electric Systems Director
City of Concord
35 Cabarrus Avenue W.
Concord, NC 28026
pateb@concordnc.gov

Paul Raaf
Office of the Forscom SIA
4700 Knox St.
Ft. Bragg, NC 28310-0001
Paul.a.raa.civ@mail.mil

Michael D. Youth
Richard Feathers
NCEMC
PO Box 27306
Raleigh, NC 27611
Michael.youth@ncemcs.com
Rick.feathers@ncemcs.com

Mary Lynne Grigg
Brett Breitschwerdt
McGuireWood LLP
434 Fayetteville St., Ste. 2600
Raleigh, NC 27611
mgrigg@mcguirewoods.com
bbreitschwerdt@mcguirewoods.com

Kyle J. Smith, General Atty.
US Army Legal Svcs. Agency
9275 Gunston Road
Fort Belvoir, VA 22060-5546
Kyle.j.smith124@civ@mail.mil

The Kroger Company
Attn: Corp. Energy Manager
1014 Vine St.
Cincinnati, OH 45202

Kevin Higgins
Energy Strategies LLC
215 S. State St., Ste. 200
Salt Lake City, UT 84111
khiggins@energystrat.com

This the 9th day of July, 2019.



Camal O. Robinson
Senior Counsel
Duke Energy Corporation
550 South Tryon Street
Charlotte, North Carolina 28202
Tel: 980.373.2631
camal.robinson@duke-energy.com

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