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VIA ELECTRONIC FILING

Ms. Kimberley A. Campbell
Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

**RE: Joint Report of Duke Energy Progress, LLC and Duke Energy Carolinas, LLC on Second ISOP Stakeholder Forum
Docket Nos. E-100, Sub 157 and E-100, Sub 165**

Dear Ms. Campbell:

I enclose the joint report of Duke Energy Progress, LLC (“DEP”) and Duke Energy Carolinas, LLC (“DEC”) summarizing the August 21, 2020 Integrated Systems and Operations Planning (“ISOP”) stakeholder forum facilitated by ICF. DEC and DEP will provide additional updates to the Commission following the next stakeholder update session, which is not yet scheduled but expected to occur in the second or third quarter of 2021.

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

Sincerely,

Lawrence B. Somers

Enclosure

cc: Parties of Record

Duke Integrated System and Operations Planning (ISOP) Stakeholder Engagement Report

Prepared by ICF on behalf of Duke Energy

1. Executive Summary

Since December 2019, Duke Energy (Duke) has hosted four stakeholder engagement sessions with the goal of educating and soliciting feedback from interested parties on its Integrated System and Operations Planning (ISOP) initiative. These sessions focused on communicating the purpose and key elements of ISOP, discussing approaches to comparable efforts across the country, and gathering stakeholder perspectives on various attributes of the ISOP initiative. The sessions also served as platforms for interested parties to ask questions and provide input on activities related to ISOP. This report provides high-level summaries of the first three ISOP stakeholder engagement sessions and a more detailed synopsis of the fourth session hosted on August 21, 2020.

The following provides a short overview of each stakeholder engagement session, all of which included both North and South Carolina stakeholders:

- **Workshop 1**, which Duke hosted in Raleigh, North Carolina (as well as online) on December 10, 2019, informed stakeholders on ISOP's drivers, purpose, and key elements. The session also provided national context on related efforts. The workshop also featured two stakeholder panel sessions highlighting customer, advocate, environmental, and developer perspectives.
- **Webinar 1**, hosted on January 30, 2020, covered several examples of ISOP work under development, including emerging processes and information regarding non-traditional solution evaluation and the transmission project screening process.
- **Webinar 2** was held as a follow-up session to Webinar 1 on March 3, 2020, and featured information on the distribution screening process and the Distributed Generation (DG) Guidance Map.
- The ISOP **Virtual Workshop 2** was originally intended to be held on April 27, 2020 in Columbia, South Carolina (as well as online) as a follow-up to Workshop 1. However, due to safety and health precautions surrounding the COVID-19 pandemic, Duke postponed the workshop to determine whether it might be possible to conduct the session in-person later in the summer. After a few months, when it became apparent that it would still be unsafe to do so, Duke changed the format to an entirely virtual session, which was conducted on August 21, 2020. The session featured a recap of previous ISOP sessions, four stakeholder business use case presentations, presentations providing a national perspective on development of locational value of distributed energy resources (DER), Duke's winter peaking study, and an update on ISOP's processes, tools, and development timeline.

Webinar and workshop attendees were invited to submit questions throughout all stakeholder sessions. Questions that were unable to be addressed during the allotted timeframes for each session were answered by Duke following the events. As a follow-up to Workshop 1 and Virtual Workshop 2, participants were asked to fill out surveys to provide input about the effectiveness of the sessions and any suggested changes and topics for future engagements.

In addition to formal sessions, Duke is engaging stakeholders through its ISOP Reference Information Portal: www.duke-energy.com/our-company/isop. The portal provides interested parties with access to materials from the ISOP sessions including presentations and documented Q&A, contact information to provide Duke with additional questions or feedback, and general industry reports on integrated system planning

2. Summary of Stakeholder Engagement Sessions to Date

2.1. Workshop 1

Duke hosted its first ISOP stakeholder workshop on December 10, 2019 at the North Carolina Museum of Natural Sciences in Raleigh, North Carolina. ICF facilitated the workshop and presentations were delivered on the topics listed in Table 1. Excluding Duke and ICF staff, there were 50 in-person attendees and 24 webinar attendees participating virtually.

Table 1: ISOP Stakeholder Engagement Session 1 Presentations and Discussions

Presenter	Agenda Item
Tom Mimmagh, ICF	Setting the National Context
Mark Oliver, Duke	The Purpose of ISOP – Drivers, objectives, estimated timeline/milestones
Various Participants, Duke	Key Elements of ISOP <ul style="list-style-type: none"> Enhanced Forecasting – Rudy Bombien Advanced Distribution Planning – Clif Cates Non-Traditional Solutions – Mike Rib Generation-Transmission-Distribution Coordination – Mike Rib Feed-in to Integrated Resource Plan – Mike Rib
Moderated by Maria Scheller, ICF	Stakeholder Panels <ul style="list-style-type: none"> Panel 1: Customer and advocate perspectives <ul style="list-style-type: none"> David Beard, Pacolet Milliken Charlie Bayless, North Carolina Electric Membership Corporation Teresa Arnold, SC AARP Dustin Metz, NCUC Public Staff Panel 2: Environmental and developer perspectives <ul style="list-style-type: none"> Dave Rogers, Sierra Club Mike Wallace, Ecoplexus Isaac Panzarella, NC State Clean Energy Technology Center
Moderated by Maria Scheller, ICF	Open Q&A and Discussion

Stakeholders had the opportunity to submit questions for Duke throughout Workshop 1. Questions covered topics that included regulatory impact on ISOP initiatives, details on forecasting methods, opportunities for stakeholder education and engagement, and national integrated system planning best practices. Attendees were also encouraged to provide feedback on the workshop and potential focus areas for future engagements by completing a survey following the event. Stakeholder feedback from this workshop focused on the following:

- General support for ISOP implementation and integrated planning tools and processes
- A desire for Duke to continue sharing information and provide materials to help stakeholders – including those with non-technical backgrounds – understand key components and outputs of ISOP
- Interest in further exploring the analytical tools and regulatory framework for non-traditional solutions (NTS) to effectively defer or displace traditional utility investments
- Interest in participating in small-group discussions regarding more specific ISOP topics such as Duke modeling tools and outputs, data use cases, NTS and customer barriers, cost trends, and best practices

2.2. Webinars 1 & 2

Duke hosted and facilitated Webinar 1, titled *ISOP 102: Examples of ISOP Development Work*, on January 30, 2020. The webinar covered emerging processes and information regarding NTS evaluation and the transmission project screening process. Excluding Duke and ICF staff, 48 participants attended the webinar.

Duke provided examples of transmission and distribution investments that could potentially be deferred or replaced by NTS, such as substation upgrades, line upgrades, or a similar system capacity constraints. Based on this overview, stakeholders expressed interest in learning more about Duke's forecasting methodology, NTS screening criteria, proxy value calculations for ancillary service prices, and the results of technological characteristic studies on cost and performance. Duke confirmed that it will be able to provide additional information on these topics as the ISOP team gains more experience with NTS.

Attendees also inquired about the inclusion of non-traditional value streams such as the value of carbon reduction and resiliency as a part of NTS benefit-cost analyses. While Duke confirmed it would investigate this topic further, the company clarified that, at that time, the lack of a carbon mandate or pricing policy applicable to the Carolinas created challenges in justifying the economic value of carbon reductions associated with NTS.

Duke hosted and facilitated a follow-up stakeholder session to Webinar 1 with a session titled *ISOP 201: Additional Examples of ISOP Development Work*. The webinar featured information on the distribution screening process and the DG Guidance Map. Excluding Duke and ICF staff, 44 participants attended the webinar. The following key themes were covered during the event:

1. Duke indicated that a variety of technologies, including energy efficiency and battery storage, would be considered when evaluating non-traditional solutions. The company also indicated that it was evaluating best practices from other areas of the country for potential incorporation into ISOP programs.

2. Stakeholders indicated interest in further information on the DG Guidance Maps including refresh frequency and general capabilities. Duke indicated that the Maps would give developers a high-level understanding of which areas would require detailed interconnection studies and potentially costly upgrades. However, details and capabilities of the Maps were still under development.

2.3. Virtual Workshop 2 Summary

Similar to the first workshop, ICF facilitated Duke's second workshop, which was conducted on August 21, 2020 via webinar. Excluding Duke and ICF staff, the workshop featured 86 attendees. Table 2 provides a breakdown of stakeholder attendees by organization type and Table 3 provides an overview of the workshop's agenda. Each agenda segment allowed time for addressing stakeholder questions, which stakeholders were able to submit throughout the entirety of the webinar.

Table 2: Categorization of Virtual Workshop 2 Attendees

Stakeholder Category	Total Attendees
Academic/Research	9
Environmental	16
Government	25
Customers	8
Renewable/DER	5
Legal/Consulting	10
Utilities	5
Other/Unknown	8

Table 3: ISOP Virtual Workshop 2 Agenda

Presenter	Agenda Item
Cari Boyce, Duke	<ul style="list-style-type: none"> Safety Briefing and Opening Comments Review of ISOP Objectives, Guiding Principles, and Timeline
Elizabeth Bennett, Duke	ISOP Webinars 1 and 2 Recap
Moderated by Jake Berlin, ICF	Stakeholder Use Case Presentations <ul style="list-style-type: none"> Large Industrial Customer - Corning, Steve Frank Large-Scale DER Developer - Southern Current, Ron DiFelice Rooftop Solar PV Developer - Sunstore Solar, Bruce Wood Grid Solutions Provider - Varentec, Troy Cherry
Dale Murdock, ICF	Leveraging Locational Value: A National Perspective

Tom Hines, Tierra Resource Consultants	Winter Peak-Shaving
Mark Oliver, Duke	Update on ISOP Timelines, Processes and Tools
Elizabeth Bennett, Duke	<ul style="list-style-type: none"> • Future Stakeholder Interactions on ISOP: Initial Ideas and Brainstorming • Wrap-Up

2.3.1. Session Details

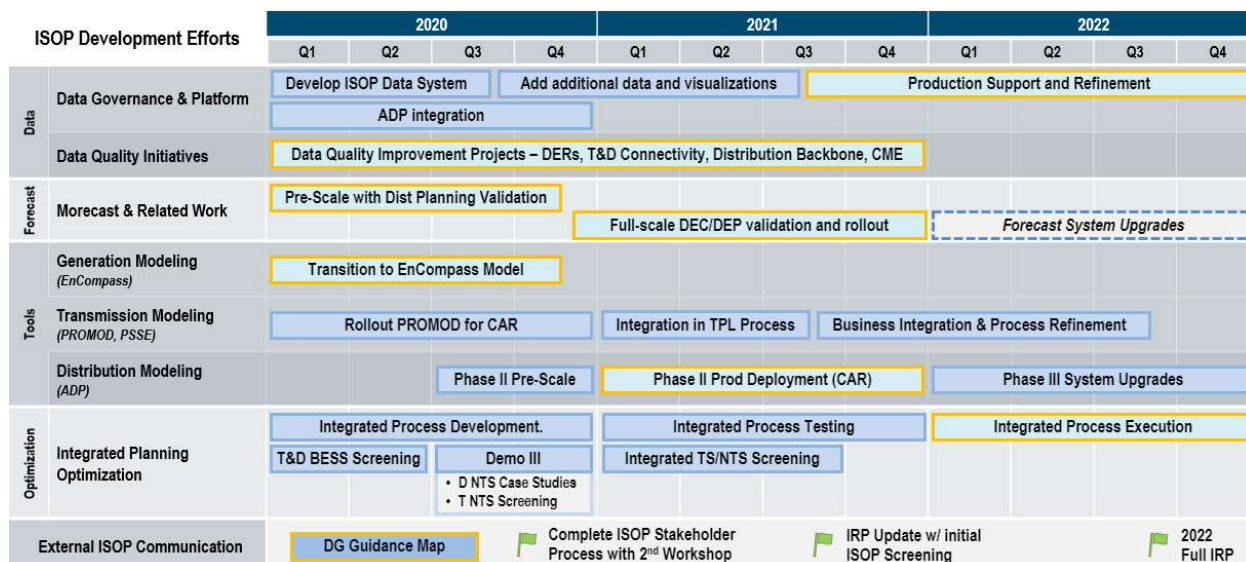
Details on the presentations and engagements from Virtual Workshop 2 are outlined below:

1. Jake Berlin (ICF) opened the session by welcoming attendees and reviewing the agenda, ground rules, and logistics for the session. ICF's role in facilitating the session was also discussed.
2. Cari Boyce (Duke) delivered a safety briefing and described the workshop's purpose of educating stakeholders and soliciting feedback to help guide future ISOP efforts. Cari reiterated ISOP's objectives, guiding principles, and timeline, highlighted the connection between Duke's Integrated Resource Plan and ISOP, and emphasized the need for continued dialogue between Duke and stakeholders.
3. Elizabeth Bennett (Duke) provided a recap of the topics covered in Workshop 1 and Webinars 1 and 2, stakeholder feedback received from those sessions, and developments in tools and processes since the March 2020 webinar.
4. Four stakeholders gave presentations on ISOP use cases for their business, including representatives from a large industrial customer (Corning), a utility-scale solar and storage developer (Southern Current), a rooftop solar PV developer (Sunstore Solar), and a provider of grid edge controls (Varentec). Each presentation was followed by a Q&A session moderated by Jake Berlin (ICF).
 - a. Steve Frank (Corning) expressed a business need for reasonable energy costs and consistent reliability, as well as a company goal to increase the use of renewable energy. Steve addressed the following questions asked by stakeholders at the conclusion of his remarks:
 - i. How do you measure reliability? How do you think about reliability?
 - ii. What are Corning's goals around climate and sustainability?
 - b. Ron DiFelice (Southern Current) discussed his company's desire to offer battery storage solutions to Duke as the utility explores NTS for transmission and distribution system upgrades. Ron addressed the following questions asked by stakeholders at the conclusion of his remarks:
 - i. Can you speak to the current state of IEEE standards for DER interconnection/operation and whether there are specific actions state commissions need to take to incorporate these new standards to facilitate this type of use case?

- ii. Can you please comment on energy storage placed at solar generation to act as a reserve and smooth output?
 - iii. Can you share the scale of battery storage deployments? Asking from the perspective of a large industrial user.
 - iv. Do you envision these energy storage devices being controlled directly by the utility or through some sort of schedule?
- c. Bruce Wood (Sunstore Solar) expressed a desire for accessible customer interval usage data and rate options including time-of-use data in order to properly calculate and maximize customer value. Sunstore Solar expressed support for programs and tools that would help developers develop rooftop solar at points of the grid with adequate hosting capacity such as hosting capacity maps and programs to incentivize adoption in strategic areas. Bruce concluded his remarks by commenting on the following questions:
 - i. Do you anticipate location-specific rates for exports from solar that reflect locational value? Or just location-specific one-time incentives?
 - ii. Some people tout smart inverters even in rooftop applications. How far out in time do you see that as being readily applied, what kind of costs are added to typical home for that, and does that require additional communication systems on a home?
 - iii. In your first use case you talked about obtaining customer information to calculate value. Have you heard customers opposed to releasing data?
- d. Troy Cherry (Varentec) was interested in offering services to help Duke identify NTS and increase circuit PV hosting capacity. Following Troy's remarks, he answered questions including:
 - i. Can you reduce distribution upgrades that are otherwise necessary to interconnect PV in the 1-20 MW range?
 - ii. Could you explain a little more about the economic metrics around T&D capex deferral and how those value streams could attract actual deferral projects?
- 5. Dale Murdock (ICF) presented a national perspective on identifying, valuing, and leveraging locational value. The discussion focused on nationwide progress in incorporating locational value into distribution planning, including case studies of utility action to date. Dale addressed the following at the end of his presentation:
 - a. If locational value is highest for the first measures that help ease constraints, how do other jurisdictions address the equity issues of who is allowed to benefit from being a so-called "first adopter?" E.g., Is there tension between using programs like low-income EE/DER and opening up to competitive alternatives (NWAs) that should be addressed?
- 6. Tom Hines (Tierra Resource Consulting) summarized the results of Duke's recent winter peak-shaving study. He concluded by explaining the ways future customer programs and innovative rate design could combine as NTS in the future. Following his remarks, Tom answered the following questions:
 - a. Customer awareness of their consumption seems very important to their role in reducing winter peaks. Did you consider a "green button" type of program in your study?

- b. Please provide some quantitative levels of how much winter peak capacity would be targeted (MW, % of load). You talked about customer-sited options, but not the co-ops and munis. How could more options be included for them compared to current limits?
 - c. Do you anticipate there will be impacts to this study as a result of COVID-19?
7. Mark Oliver (Duke) provided stakeholders with an overview of the ISOP timeline, processes, and tools, including:
 - a. An overview of the Morecast tool, which will provide circuit-level forecasts for the Carolinas' distribution system, including model development, inputs, and timelines for Duke's evolving forecasting system.
 - b. Ongoing Advanced Distribution Planning (ADP) and associated timelines, including the continued development of processes to screen Traditional Solutions (TS) and NTS in the new planning processes. The synopsis concluded with a review of longer-term ADP objectives.
 - c. Duke's transmission planning enhancements and timelines, current development focus, and the initial learnings from NTS screening.
 - d. ISOP integration and optimization results, including case studies on transmission storage (which showcased the first step in the "TS/NTS detailed study" process), updates on Duke's Portfolio Screening Tool, and the DDG Guidance Map.
 - e. A high-level timeline regarding data, forecasting, tools, and optimization as part of ISOP (Figure 1).

Figure 1: ISOP Timeline



- f. At the conclusion of his remarks, Mark addressed the following stakeholder questions:
 - i. In its IRP modeling, Duke Energy is using assumptions that reduce availability of storage devices. For example, the batteries are not discharged below 20%. This increases costs. What are your thoughts?

- ii. Can you speak to the connection between ISOP and the Solar Integration Services charge?
 - iii. Where do you factor in required CO2 reductions (i.e. IPCC science-based figures)?
 - iv. What is the opportunity for non-engineer stakeholders to participate in transmission planning? My understanding is that the NC Transmission Planning Collaborative's Transmission Advisory Group is geared to folks with technical expertise.
8. Elizabeth Bennett (Duke) concluded Virtual Workshop 2 by highlighting Duke's plan for future ISOP stakeholder interactions and next steps. Stakeholders were invited to provide feedback on the workshop through a short survey and/or by emailing ISOP-engagement@Duke-Energy.com.

Duke recorded all segments of the workshop excluding Q&A¹ and has made them publicly available for stakeholders on the ISOP Reference Information Portal. Additionally, Duke followed up on stakeholder questions which did not get addressed during the workshop, and posted both the questions and answers on ISOP Reference Information Portal.

2.3.2. Overview of Survey Responses

At the conclusion of Virtual Workshop 2, stakeholders were asked to complete a short survey to provide input about the effectiveness of the session and suggest changes for future engagements. 17% of attendees completed the survey which included the following questions:

1. How helpful was the Virtual Workshop in enhancing your understanding of Duke Energy's Integrated System & Operations Planning (ISOP) initiative?
2. How satisfied have you been with the opportunity to provide feedback to and engage in dialogue with Duke Energy?
3. How effective have these stakeholder engagement efforts been for you?
4. How likely would you be to engage in future ISOP discussions?
5. How effective has the structure of ISOP engagement to date been, with broader updates interspersed with periodic technical webinars?
6. What did you like best about today's workshop?
7. What ISOP-related topic or topics would you most like to learn more about in the future?
8. What else, if anything, would you like Duke Energy to know?

Questions 1-5 were ranked by stakeholders on a scale from 0-10, 0 meaning the stakeholder strongly disagreed with the question and 10 meaning the stakeholder strongly agreed with the question. Average answers to these questions can be found in Figure 2 while the distribution of stakeholder responses to each of the individual questions are shown in

Figure 3 through Figure 7.

¹ Duke did not record Q&A portions of the workshop to encourage open and constructive discussion.

Figure 2: Quantitative Question Average Scores

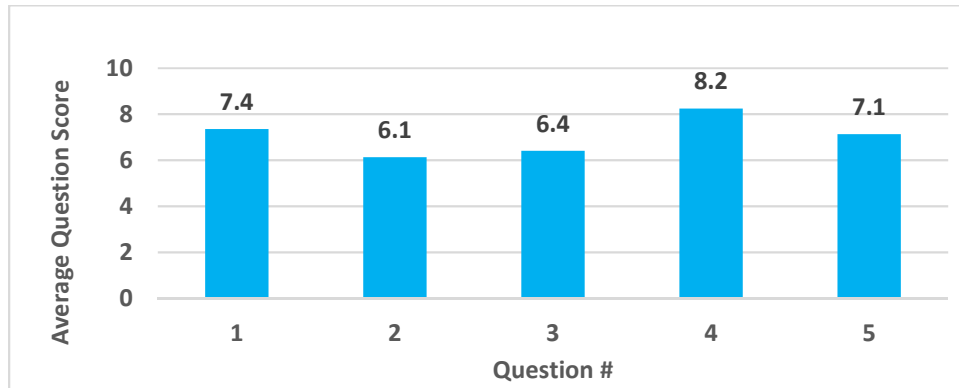


Figure 3: Survey Question 1 - How helpful was the Virtual Workshop in enhancing your understanding of Duke Energy's Integrated System & Operations Planning (ISOP) initiative? (0 = Not at all helpful, 10 = Extremely helpful)

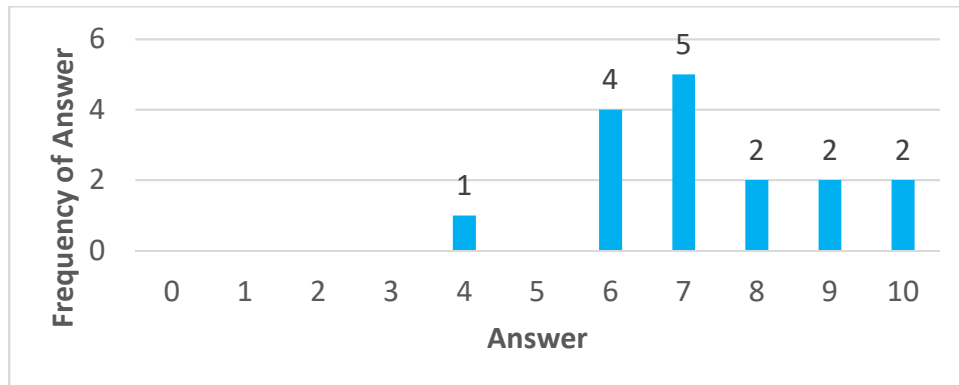


Figure 4: Survey Question 2 - How satisfied have you been with the opportunity to provide feedback to and engage in dialogue with Duke Energy? (0 = Not at all satisfied, 10 = Extremely Satisfied)

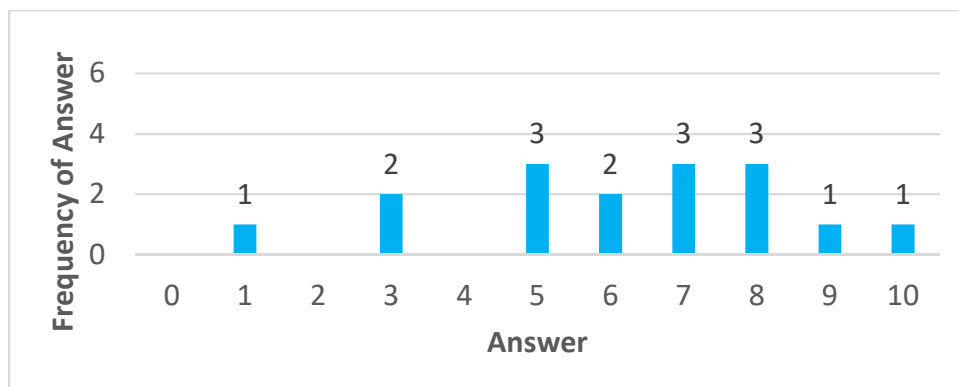


Figure 5: Survey Question 3 - How effective have these stakeholder engagement efforts been for you? (0 = Not at all effective, 10 = Extremely effective)

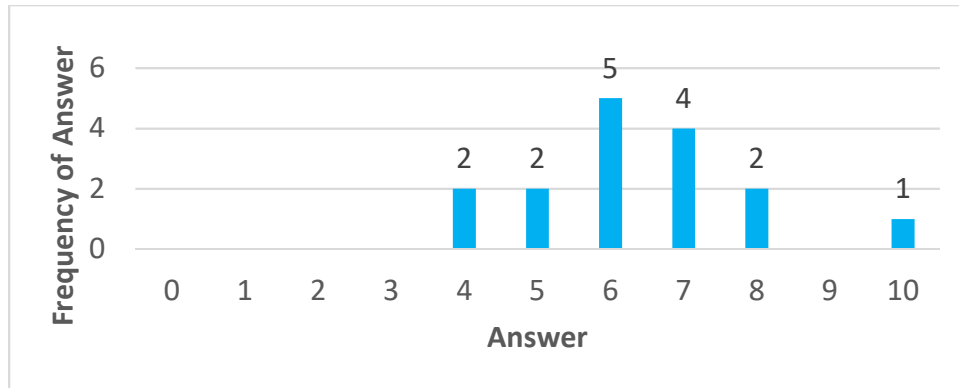


Figure 6: Survey Question 4 - How likely would you be to engage in future ISOP discussions? (0 = Not at all likely, 10 = Extremely likely)

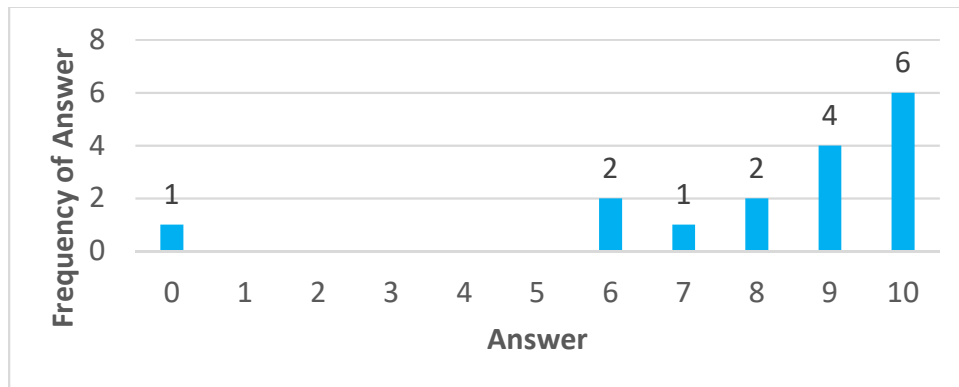
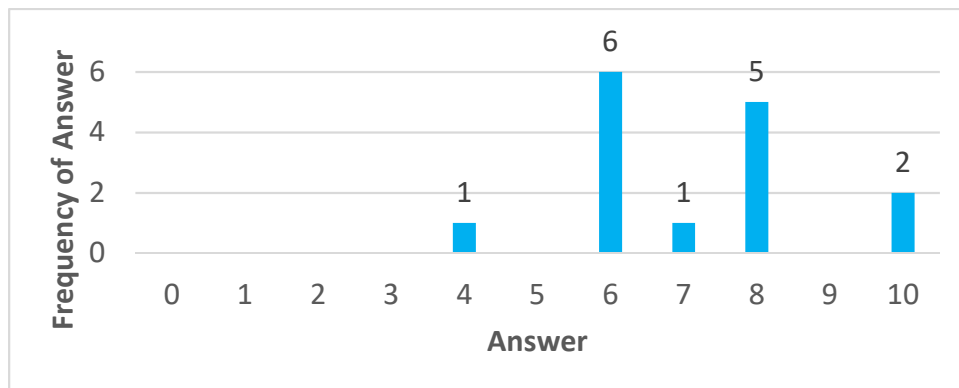


Figure 7: Survey Question 5 - How effective has the structure of ISOP engagement to date been, with broader updates interspersed with periodic technical webinars? (0 = Not at all effective, 10 = Extremely effective)



Questions 6-8 asked stakeholders to input their own short responses. The responses received for each question are listed below.

Stakeholder responses to survey question 6 - What did you like best about today's workshop?

- The business cases

- The winter peaking study info
- Good Information
- How third-party vendors and companies directly linked their solutions to the information they would want to see out of the ISOP process
- Relationship to distributed networks - such as PV - and visibility to both storage and voltage control approaches
- Could only attend last hour, so gave only limited feedback. Difficult to evaluate, since my own work prevented me from attending the first 2 hours of the workshop.
- Very informative. I liked the combination of stakeholders that presented.
- Winter peaking study discussion was interesting
- Good mix of technical and non-technical. Need examples as much as possible. Get away from technical jargon as much as possible- say what you mean. Give us the bottom line, even if it is unpleasant.
- Update on the timeline and information on the public access to planning applications.
- Good pace. Information was relevant

Stakeholder responses to survey question 7 - What ISOP-related topic or topics would you most like to learn more about in the future?

- I think the discussion of ancillary benefits, reserve margins, and costs of implementing utility scale solar on the grid should be integrated more fully into the ISOP discussion.
- More topics and discussion relevant to industrial / large customers.
- More about how the value of NTS are evaluated - what modeling software used, how ancillary services are estimated, etc.
- Wind energy - opportunities, legal impediments, etc.
- Battery storage options under different scenarios, exploration of battery storage options to facilitate more reliance on solar and wind.
- Advanced distribution planning and its transmission counterpart, nothing new for now.
- More info on Duke's screening analysis (how it was conducted, what assumptions were made, values attributed to discrete services) would be very helpful.
- What does Duke see as the most important barriers to overcome both in regulatory and technical spaces.

Stakeholder responses to survey question 8 - What else, if anything, would you like Duke Energy to know?

- This session felt very heavily geared toward residential / small business customers, almost to the exclusion of large/industrial customers. It would be great if future sessions could be more focused on industrial class of customers, perhaps customer class-specific ISOP workshops would be helpful?
- Doing a good job handling these in a virtual format, I know it is challenging.
- Wish you'd done a high-level update on what ISOP is at the beginning. I suspect you've done this before and would say I should find that on your ISOP webpage. But I'd hoped to get a summary of ISOP and what motivated this process at the outset of this meeting. Thanks for providing the workshop.

- The importance of following best climate science, which gives a picture of extreme urgency to reduce, not only carbon dioxide but also methane emissions. I fully understand Duke's need to consider costs and reliability issues related to the development of renewable energy, but Duke seems not to give sufficient weight to the present and future costs of global warming, nor the fact that methane emissions are far more damaging than Co2 emission. It seems that Duke has made a choice to obscure or minimize this fact. Given the knowledge & expertise Duke has amassed, & its position as a near monopoly, it could and should act as a true leader in the public arena.
- Thanks for starting to address winter peak in a more meaningful way. EE/DSM has been successful at lowering summer peak. While winter peak is harder, it still can be done using the similar approaches as ICF said.
- I'd like Duke Energy to acknowledge the climate change crisis and that in all its complex planning, science-based targets (IPCC) for CO2 reductions are part of the drivers in your ISOP and IRP processes and are evident to stakeholders in these briefings.

2.3.3. Virtual Workshop 2 Key Themes and Takeaways

The following represent some of the key themes and takeaways from stakeholder feedback received during the workshop and as part of the follow-on survey:

- Interest in developing battery storage offerings for Duke (e.g., as part of an NTS) and individual customers. There was agreement that capabilities developed through ISOP could assist in deploying these technologies in ways that were beneficial to the grid.
- Desire to learn more about the relationship between ISOP and other key initiatives and efforts, such as Duke's IRP, Grid Modernization Plan, and the Solar Integration Services Charge.
- Interest in better understanding large commercial and industrial customer perspectives.
- Desire to learn how ISOP could help reduce GHG emissions.
- Appreciation for Duke's work on the winter peaking study and desire to learn more about the NTS screening process.

3. Future Engagements

Stakeholders can visit Duke's [ISOP Reference Information Portal](#) or contact Duke via the engagement email (ISOP-engagement@Duke-Energy.com). Additional ISOP-related engagement sessions will be scheduled in the future as material updates become available to share. While the timing of the next update will be subject to progress on the project and the regulatory calendars for the Carolinas, an update session is generally expected by the third quarter of 2021.

CERTIFICATE OF SERVICE

I certify that Duke Energy Progress, LLC and Duke Energy Carolinas, LLC's Report of Second ISOP Stakeholder Forum, in Docket Nos. E-100, Sub 157 and E-100, Sub 165, has been served by electronic mail, hand delivery or by depositing a copy in the United States mail, postage prepaid to the following parties of record:

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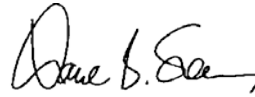
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This is the 9th day of November, 2020.



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