



DUKE ENERGY CAROLINAS

2021 UPDATE TO 2020

SHORT-TERM ACTION PLAN, NC REPS AND CPRE PLAN

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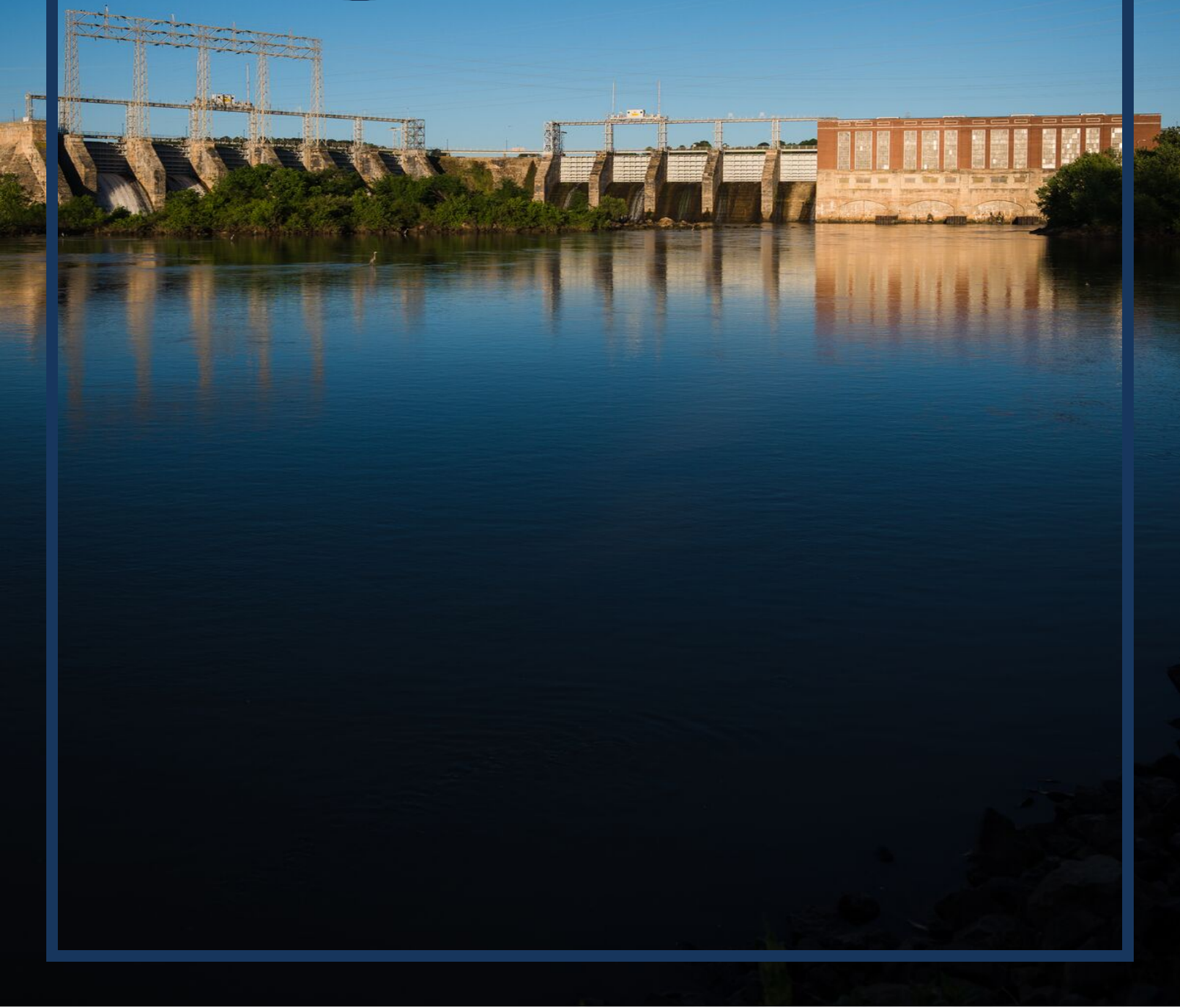


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DUKE ENERGY CAROLINAS, LLC 2021 UPDATE TO 2020 SHORT-TERM ACTION PLAN





1 DUKE ENERGY CAROLINAS, LLC 2021 UPDATE TO 2020 SHORT-TERM ACTION PLAN

Duke Energy Carolinas, LLC (“DEC” or “Company”) is filing this 2021 Update to its 2020 biennial Integrated Resource Plan (“IRP”) Short-Term Action Plan pursuant to North Carolina Utilities Commission (“NCUC” or the “Commission”) Rule R8-60(h)(3) and the Commission’s June 29, 2021 Order Waiving In Part Rule R8-60(h)(2) and Giving Notice of Additional Proceedings. Following a review of the Commission’s Order and the 2020 IRP, DEC has determined that there are no changes to the new resources contained in the Short-Term Action Plan presented in the 2020 IRP. This update is intended to inform the Commission regarding ongoing resource planning efforts to be reflected in the 2022 IRP and identifies developments since the Short-Term Action Plan presented in DEC’s 2020 IRP.





CONTINUED COLLABORATIVE STAKEHOLDER ENGAGEMENT PROCESS





DEC will continue its robust, proactive process to collaborate with stakeholders to inform the development of the 2022 IRP. Stakeholders in North Carolina and South Carolina will be given an opportunity to provide their perspectives in all significant areas of IRP development, including: energy efficiency (“EE”) and demand reduction, coal retirement analysis, carbon reduction, resource adequacy and power system reliability, technology cost and performance forecasts, distributed resource potential and other planning related topics leading up to the development of the 2022 comprehensive IRP.

CONTINUED IMPROVEMENT OF RESOURCE PLANNING PROCESSES

DEC and Duke Energy Progress (“DEP”) continually look for ways to improve their resource planning processes. The Companies will soon begin planning for their next comprehensive IRP to be filed in September 2022. Table 1 presents examples of enhancements and new studies that are planned to support development of the comprehensive 2022 IRP which include, but are not limited to the following:

TABLE 1
 PLANNED IRP ENHANCEMENTS FOR 2022 IRP

Enhancements	
	• Utilization of the Encompass modeling framework for system optimization and production cost modeling.
	• Incorporation of the initial capabilities of Integrated Systems Operations and Planning (ISOP).
	• Incorporation of additional portfolio, scenario and sensitivity analysis.
	• Integration of additional demand-side management and energy efficiency programs as identified through the EE collaborative work.

Study	Scope of Study
 Coal Retirement Study	• Analysis to determine the quantitative and qualitative factors associated with coal unit retirements.
 Resource Adequacy Study/ Reserve Margin Study	• Analysis that will inform DEC's capacity needs to serve anticipated peak electrical load, and applicable planning reserve margins to ensure power supply reliability.
 Effective Load Carrying Capability (ELCC) Study	• Evaluate the capacity value of renewable resources under multiple conditions, including contribution to winter peak and considerations with increasing levels of renewable penetration.
 Energy Efficiency and Market Potential Study	• Continue to expand energy efficiency and demand response initiatives through the DSM Collaborative, leveraging the results of the Market Potential Study and Winter Peak Study.

Additional information on these enhancements are discussed below.

CONTINUED FOCUS ON RESOURCE ADEQUACY IN RESOURCE PLANNING

In an effort for continued improvement in the IRP process, the Companies are beginning work on an updated Resource Adequacy Study for inclusion in the 2022 comprehensive IRP. This analysis will inform DEC's capacity needs to serve anticipated peak electrical load, and applicable planning reserve margins to ensure power supply reliability. The Company plans to engage stakeholders to inform the methodology and assumptions to be used in the study.

CONTINUED RELIANCE ON EE AND DSM RESOURCES

The Company is committed to growing the amount of EE and demand-side management ("DSM") resources utilized to meet customer growth. Since the 2020 IRP was filed on September 1, 2020, DEC has obtained approvals for modifications in the residential demand response programs to include a winter-focused "Bring Your Own Thermostat" Program ("BYOT Program")¹, modification in the Multifamily Program² to expand the measure offerings, and an expansion of Small Business Energy Saver³ to include larger businesses (now called "Business Energy Saver").

Additional plans for increasing these resources are as follows:

- Continue to execute the Company's EE and DSM plan, which includes a diverse portfolio of EE and DSM programs spanning the Residential, Commercial, and Industrial classes.
- Continue on-going collaborative work to develop and implement additional cost-effective EE and DSM products and services, such as: (1) adding new or expanding existing programs to include additional measures drawing on insights gained through the updated Market Potential Study ("MPS"); (2) program modifications to account for changing market conditions and new measurement and verification ("M&V") results; and (3) other EE research and development pilots.
- Continue to seek approval to deploy additional DSM programs employing both rate-enabled and traditional equipment-based measures that will specifically provide load reduction benefits during winter peak situations.

¹ Winter-focused BYOT Program: Docket No. E-7, Sub 1032 (NC) and Docket No. 2013-298-E; 2020-831 (SC).

² Multifamily Program: Docket No. E-7, Sub 1032 (NC) and Docket No. 2013-298-E; 2021-230 (SC).

³ SmartPath Program: Docket No. E-7, Sub 1055 (NC) and Docket No. 2014-252-E; 2021-334 (SC).

The Company undertook a detailed study completed in December 2020 to specifically examine the potential for additional winter demand-side peak savings through innovative rate initiatives combined with advanced demand response and load shifting programs that were outside of the MPS scope. Initiatives resulting from the Winter Peak Study include:

- Expanding the existing summer-peak focused BYOT Program to include winter season peak events.
- Filing for a permanent tariff leveraging the results from the Flex Savings Options Pilot along with plans to continue expansion of Time-of-Use (“TOU”) and TOU + Critical-Peak Pricing (“CPP”) rate offerings.
- Developing programs to address potential from customer-owned batteries and managed EV charging.

The Company is planning to undertake ongoing stakeholder engagement to investigate and deploy, subject to regulatory approval, additional cost-effective programs identified through this effort. Over time as new programs/rate designs are approved and become established, the Company will gain additional insights into customer participation rates and peak savings potential and will reflect such findings in future DSM forecasts.

Furthermore, the Company is engaging with EE/DSM Consultant, Nexant, to update and expand the 2020 Market Potential Study to include a re-evaluation of Achievable Potential using the Utility Cost Test (“UCT”) in addition to the Total Resource Cost test (“TRC”) used in the 2020 study. As part of the update, the Company intends to increase engagement between Nexant and the DSM Collaborative to further refine or expand the list of measures included in the analysis, discuss potential program enhancements along with their potential impact on adoption assumptions, and clarify the provisions in the study methodology to account for emerging technologies and other advancements.

CONTINUED FOCUS ON RENEWABLE ENERGY RESOURCES

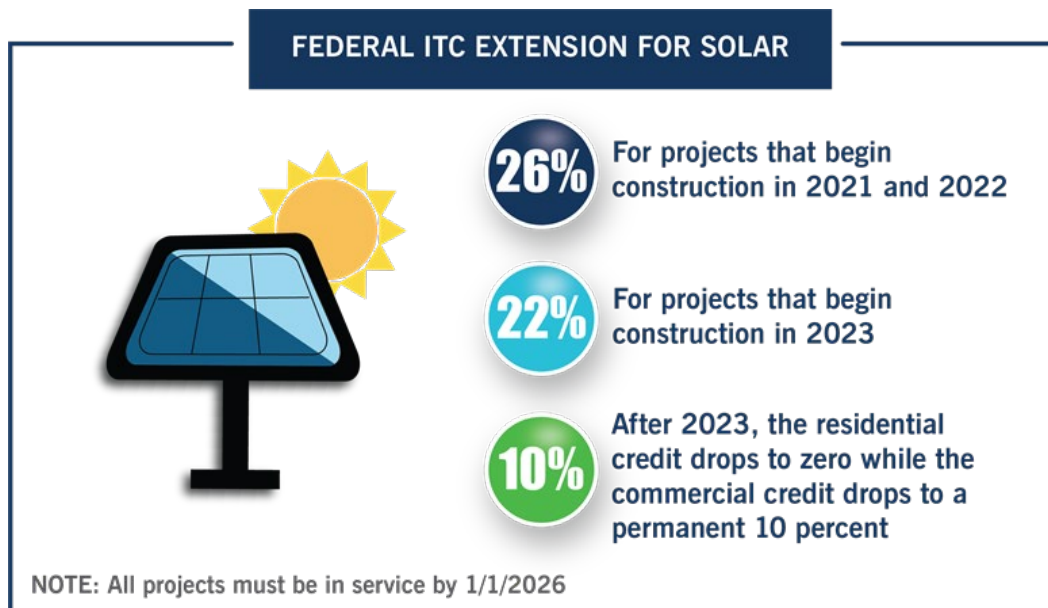
DEC is committed to the continued growth of its industry-leading renewable generation resource portfolio to meet customer energy needs. Supportive policies such as NC REPS, NC HB 589, SC Act 236 and SC Act 62 have all contributed to DEC’s deployment of renewables and aggressive plans to integrate more renewable resources. DEC is committed to meeting its targets under HB 589 through the

procurement of renewable energy and capacity under the North Carolina Competitive Procurement of Renewable Energy (“CPRE”) program. DEC/DEP have completed two solicitations under CPRE, resulting in procurement of 1,024 MW of nameplate solar to be installed in DEC. Approximately 215 MW of new solar capacity is under development and committed to be deployed under DEC’s large customer-directed renewable energy procurement Green Source Advantage Program.

As discussed in more detail in the September 2021 CPRE Program Plan also being filed today with the Commission, the Company is recommending immediate action to engage stakeholders concerning a plan to initiate a Competitive Procurement of Renewable Energy Program Tranche 3 RFP in 2021 as part of the Transitional Cluster Study being implemented under Queue Reform. DEC and DEP plan to continue jointly implementing the CPRE Program across the NC and SC service territories.

Additionally, as the Companies continually look for ways to improve their resource planning processes, DEC and DEP are working on updating the Effective Load Carrying Capability (“ELCC”) studies for renewable resources in preparation for the 2022 comprehensive IRP filing.

Since the filing of the 2020 IRP, the federal investment tax credit (“ITC”) applicable to solar plants and certain other renewable energy resources has been extended.

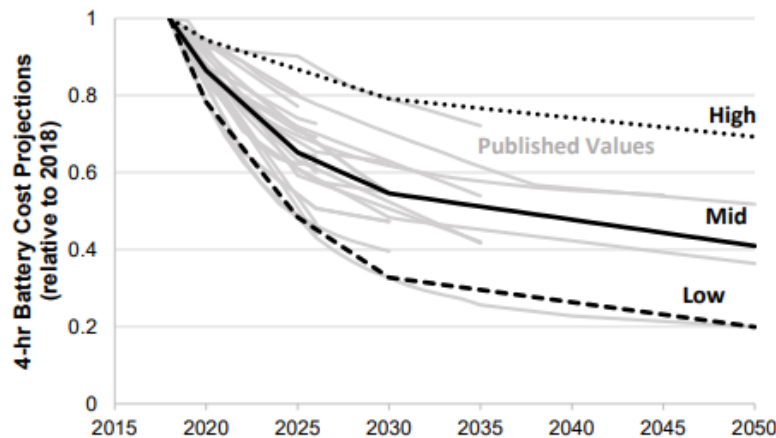


The impacts of this ITC extension, or any future legislative or regulatory action on renewable incentives, will be incorporated in future IRP updates and comprehensive filings, if such updates are available with sufficient time to include in future resource plan filings.

INTEGRATION OF BATTERY STORAGE ON THE SYSTEM

As the Company moves toward the deployment of more battery storage on the system, technology data inputs are constantly under review. Given rapidly changing battery supply chains, safety requirements and capital and operating costs to deploy battery storage, the Companies will continue to evaluate battery prices to include the most appropriate information for use in planning. Currently, the Companies are evaluating using published resources such as National Renewable Energy Laboratory (“NREL”) battery storage cost projections ⁴ as a starting point for battery storage costs in future IRP submittals.

FIGURE ES-1 FROM NREL’S “COST PROJECTIONS FOR UTILITY-SCALE BATTERY STORAGE: 2020 UPDATE” REPORT SHOWING HIGH, MID, LOW BATTERY NORMALIZED BATTERY COSTS COMPARED TO NORMALIZED PUBLISHED VALUES



In addition to cost forecasts, as mentioned above, the Company is also working on updating the ELCC studies for energy storage resources in preparation for the 2022 comprehensive IRP filing.

⁴ Cole, Wesley, and A. Will Frazier. 2020. Cost Projections for Utility-Scale Battery Storage: 2020 Update. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-75385. <https://www.nrel.gov/docs/fy20osti/75385.pdf>.

IVVC IMPLEMENTATION AS PART OF THE GRID IMPROVEMENT PLAN

In the 2020 IRP filing, the Companies included the impacts of Integrated Voltage/VAR Control (“IVVC”). IVVC is part of the DEC Grid Improvement Plan (“GIP”) and involves the coordinated control of distribution equipment in substations and on distribution lines to optimize voltages and power factors on the distribution grid supporting voltage reduction and energy conservation on a year round basis, for approximately 90% of the hours in the year.

The IVVC program is expected to be fully implemented in DEC by 2025.

CONTINUE TO FIND OPPORTUNITIES TO ENHANCE EXISTING CLEAN RESOURCES

DEC is committed to continually looking for opportunities to improve and enhance its existing resources. As stated in the 2020 IRP, DEC has committed to the replacement of the runners on each of its four Bad Creek pumped storage units. Each replacement is expected to gain approximately 65 MW of capacity.

Since the 2020 IRP filing, the first Bad Creek runner replacement was completed on Unit 2 in October 2020. Upon completion of the replacement, testing revealed the unit was able to achieve an 80 MW gain in capacity as opposed to the 65 MW previously projected. The Unit 3 runner replacement is underway and expected to be completed by the end of 2021. The runners of the remaining two units will be replaced in 2022 and 2023. It is unknown at this time what the capacity increase will be on the remaining units. As such, the Companies will continue to utilize an increase of 65 MW per unit in its planning analysis until testing is completed after the runner installations at each unit.

Additionally, DEC is expecting capacity uprates to its existing Oconee nuclear units due to upcoming projects. DEC is planning to complete Measurement Uncertainty Recapture (“MUR”) enhancements at Oconee units 1 through 3 in 2022 and 2023 for an increased capacity of 15 MW per unit, which is unchanged since the 2020 IRP.

ADDITION OF CLEANER AND FLEXIBLE NATURAL GAS RESOURCES

The Company continues to evaluate advanced combined cycle (“CC”) and combustion turbine (“CT”) technologies with the capability of burning natural gas and hydrogen as viable options to accelerate an

energy transition toward a lower carbon footprint with the ultimate goal of being net zero carbon emitting by 2050. Improving efficiency and reliability of CC and CT units makes these resources more economically attractive, as well as effective resources for enabling significant carbon reductions through accelerated economic coal retirements and providing the flexibility needed to incorporate significant levels of incremental intermittent renewable generation onto the system. As older units on the DEC system are retired, CC and CT units continue to play a vital role in maintaining the reliability of the Company's system to meet customer needs during the transition to a net-zero carbon future, with a gradual shift in mission over the long term, towards ultimately backstanding renewables and storage.

- In collaboration with Siemens, an advanced combustion turbine unit began extended commissioning at the Lincoln CT Plant in North Carolina in 2020. Testing is currently underway. The Company will take care, custody, and control of the completed 402 MW unit in 2024.⁵
- DEC continues to plan for and evaluate uprates to existing CC and CT units as well as deployment of new dependable and dispatchable CC and CT resources to meet future capacity needs.
- The Companies continue to work with potential customers with continuous large thermal loads on additional regulated Combined Heat and Power offers. Updates to this process will be included in future IRPs.

CONTINUE WITH PLAN FOR SUBSEQUENT LICENSE RENEWAL OF EXISTING NUCLEAR UNITS

In September 2019, Duke Energy announced its intent to pursue subsequent license renewal ("SLR") for all eleven nuclear units in the operating fleet. Nuclear generation is a necessary resource in the Companies' plans to aggressively reduce carbon emissions.

Since the 2020 IRP filing, Duke Energy Carolinas submitted its first SLR application for the Oconee Nuclear Station in June 2021. SLR applications take approximately three years to prepare and approximately two years to be reviewed and approved. Oconee's current licenses are set to expire in 2034 and 2035.

⁵ Capacity represents the winter rating.

Information on SLR applications for other Carolinas nuclear units as well as updates on the Oconee SLR application will be provided in future IRPs.

CONTINUED TRANSITION TOWARD INTEGRATED SYSTEMS AND OPERATIONS PLANNING

Integrated Systems and Operations Planning (“ISOP”) development is progressing and the Company shared substantive progress and a look-ahead update in a stakeholder engagement session held on July 27, 2021. In August 2021, initial production versions of the new Morecast forecasting tools and the new Advanced Distribution Planning (“ADP”) power flow models were released to the Distribution Planning organization to support the distribution capacity planning cycle in the second half of 2021 and into 2022. The ISOP team has also continued development and testing of new processes to review planned distribution and transmission upgrade projects.

Looking ahead for ISOP, the Company anticipates expanding these efforts as more experience is gained to begin examining new customer programs as potential non-traditional solutions for grid planning. As this development effort will just be getting underway in the 2022 planning cycle, specific results related to customer programs as non-traditional solutions for distribution or transmission are not anticipated to be included in the 2022 IRP cycle. In October 2020 the ISOP team published the Distributed Generation Guidance Map as a first phase for hosting analysis to provide insights for areas in the Carolinas where there may be opportunities for integrating additional generation to the distribution and transmission system without new system upgrades. The Companies are continuing to develop the ISOP planning platform’s capabilities to provide more detailed hosting capacity analysis for a representative sample of circuits by December 2024. The Companies are also progressing the Carolinas Transmission and Distribution Climate Risk and Resilience Study in coordination with the third-party consultant, ICF. Final results of the Carolinas Transmission and Distribution Climate Risk and Resilience study are expected by 2024.

CONTINUED COMMITMENT TO MEETING THE COMPANY’S CARBON REDUCTION GOALS

DEC is committed to reducing emissions consistent with Duke Energy Corporation’s carbon reduction goals for electricity generation of at least a 50% reduction below 2005 levels by 2030 and net-zero carbon emissions by 2050. As part of Duke Energy’s transition strategy and ongoing commitment to

carbon reductions, older coal and CT units have been retired and replaced with cleaner renewable energy resources and advanced CC and CT units. The overall effort includes the following elements:

- DEC has retired approximately 1,700 MW of older coal generation since 2011. As of April 2015, DEC has no remaining older, un-scrubbed coal units in operation.⁶
- In the 2020 IRP, the Companies performed coal retirement analyses in compliance with the Commission's 2018 IRP and 2019 IRP update orders in Docket No. E-10, Sub 157. As mentioned above, the Company will update this analysis for use in the 2022 IRP filing with stakeholders having opportunities to provide input to the process.
- In the most economic retirement case, the Allen unit retirements were assumed to occur in YE2021 and YE2023. As with all unit retirement dates in the IRP, this is not a commitment to retire the Allen units on this timeline but rather contains the Company's most recent estimate of retirement economics at the time of this filing. However, since the filing of the 2020 IRP, the Company made the decision to retire the Allen 3 unit nine months early on March 31, 2021. The decision was made due to equipment condition and economic evaluations. The NCUC was notified of the Company's plan on February 2, 2021, prior to the retirement of the unit.

CONTINUE TO MONITOR REGULATORY DEVELOPMENTS

- North Carolina Regulatory Oversight of Integrated Resource Planning
 - The Company will participate in the IRP Technical Conference scheduled by the Commission for September 30 - October 1, 2021 and incorporate any guidance or forthcoming orders from the Commission into its 2022 IRP.
- South Carolina Regulatory Oversight of Integrated Resource Planning
 - On September 1, 2020, DEC filed its comprehensive 2020 IRP with the Commission in Docket No. E-100, Sub 165, as well as with the Public Service Commission of

⁶ The ultimate timing of unit retirements can be influenced by factors changing the economics of continued unit operations. Such factors include changes in relative fuel prices, operations and maintenance costs and the costs associated with compliance of evolving environmental regulations. As such, unit retirement schedules are expected to change over time as market conditions change.

South Carolina (“PSCSC”) in PSCSC Docket No. 2019-224-E. The PSCSC held a proceeding pursuant to S.C. Code Ann. Section 58-37-40 to review the Company’s 2020 IRP and issued Order No. 2021-447 Requiring Modifications to DEC’s Integrated Resource Plans on June 28, 2021. As required by that Order, the Company filed a Modified IRP including nine new South Carolina Supplemental Portfolios on August 27, 2021. The South Carolina Supplemental Portfolios were developed with modeling assumptions similar to the corresponding original six portfolios presented in the September 2020 IRP, except as modified in response to Order No. 2021-447. In compliance with Order No. 2021-447, the Company also selected a “preferred portfolio.” The Company selected Portfolio C1 (Modified Earliest Practicable Coal Retirements) as prioritizing retirement of the Company’s existing coal fleet in the most expeditious manner to accelerate carbon reduction, while ensuring affordability and reliable service for customers by using proven technologies that are economic today. In its filing, the Company explained that the selection of Portfolio C1 should be understood as directional in nature, demonstrating Duke Energy’s desire to closely examine pathways to significant, near term carbon reductions as opposed to a firm commitment to execute a specific resource plan at this point in time.

By statute, the PSCSC is required to rule on the Company’s Modified IRP by the end of 2021. Order No. 2021-447 also included certain directives that will apply to the Company’s next comprehensive IRP to be filed in both North Carolina and South Carolina in September 2022.

- Continue to monitor energy-related statutory and regulatory activities at federal and state levels.
 - NC House Bill 951 (“HB 951”) was introduced in May of 2021 and has been passed by the North Carolina House of Representatives. The Companies will continue to monitor any further legislative developments and, if energy legislation is enacted, incorporate applicable requirements into future IRP filings.
- Continue to examine the benefits of joint capacity planning and pursue appropriate regulatory actions, as appropriate.



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DUKE ENERGY CAROLINAS NC REPS COMPLIANCE PLAN



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INTRODUCTION

Duke Energy Carolinas, LLC (“DEC” or “the Company”) submits its annual Renewable Energy and Energy Efficiency Portfolio Standard (“NC REPS” or “REPS”) Compliance Plan (“Compliance Plan”) in accordance with NC Gen. Stat. § 62-133.8 and North Carolina Utilities Commission (“the Commission”) Rule R8-67(b). This Compliance Plan, set forth in detail in Section II and Section III, provides the required information and outlines the Company’s projected plans to comply with NC REPS for the period 2021 to 2023 (“the Planning Period”). Section IV addresses the cost implications of the Company’s REPS Compliance Plan.

In 2007, the North Carolina General Assembly enacted Session Law 2007-397 (Senate Bill 3), codified in relevant part as NC Gen. Stat. § 62-133.8, in order to:

- Diversify the resources used to reliably meet the energy needs of consumers in the State;
- Provide greater energy security through the use of indigenous energy resources available within the State;
- Encourage private investment in renewable energy and energy efficiency; and
- Provide improved air quality and other benefits to energy consumers and citizens of the State.

As part of the broad policy initiatives listed above, Senate Bill 3 established the NC REPS, which requires the investor-owned utilities, electric membership corporations or co-operatives, and municipalities to procure or produce renewable energy, or achieve energy efficiency savings, in amounts equivalent to specified percentages of their respective retail megawatt-hour (“MWh”) sales from the prior calendar year.

Duke Energy Carolinas seeks to advance these State policies and comply with its REPS obligations through a diverse portfolio of cost-effective renewable energy and energy efficiency resources. Specifically, the key components of Duke Energy Carolinas’ 2021 Compliance Plan include:

(1) purchases of renewable energy certificates (“RECs”); (2) purchases of renewable biogas to generate RECs; (3) constructing and operating Company-owned renewable facilities; (4) energy efficiency programs that will generate savings that can be counted towards the Company’s REPS obligation; and (5) research studies to enhance the Company’s ability to comply with its future REPS obligations. The Company believes that these actions yield a diverse portfolio of qualifying resources and allow a flexible mechanism for compliance with the requirements of NC Gen. Stat. § 62-133.8.

In addition, the Company has undertaken, and will continue to undertake, specific regulatory and operational initiatives to support REPS compliance, including: (1) submission of regulatory applications to pursue reasonable and appropriate renewable energy and energy efficiency initiatives in support of the Company’s REPS compliance needs; (2) solicitation, review, and analysis of proposals from renewable energy suppliers offering RECs and diligent pursuit of the most attractive opportunities, as appropriate; and (3) development and implementation of administrative processes to manage the Company’s REPS compliance operations, such as procuring and managing renewable resource contracts, accounting for RECs, safely interconnecting renewable energy suppliers, reporting renewable generation to the North Carolina Renewable Energy Tracking System (“NC-RETS”), and forecasting renewable resource availability and cost in the future.

The Company believes these actions collectively constitute a thorough and prudent plan for compliance with NC REPS and demonstrate the Company’s commitment to pursue its renewable energy and energy efficiency strategies for the benefit of its customers.

II. REPS COMPLIANCE OBLIGATION

Duke Energy Carolinas calculates its NC REPS Compliance Obligations¹ for 2021, 2022, and 2023 based on interpretation of the statute (NC Gen. Stat. § 62-133.8), the Commission’s rules implementing Senate Bill 3 (Rule R8-67), and subsequent Commission orders, as applied to the Company’s actual or forecasted retail sales in the Planning Period, as well as the actual and forecasted retail sales of those

¹ For the purposes of this Compliance Plan, Compliance Obligation is more specifically defined as the sum of Duke Energy Carolinas’ native load obligations for both the Company’s retail sales and for wholesale native load priority customers’ retail sales for whom the Company is supplying REPS compliance. All references to the respective Set-Aside requirements, the General Requirements, and REPS Compliance Obligation of the Company include the aggregate obligations of both Duke Energy Carolinas and the Wholesale Customers. Also, for purposes of this Compliance Plan, all references to the compliance activities and plans of the Company shall encompass such activities and plans being undertaken by Duke Energy Carolinas on behalf of the Wholesale Customers.

wholesale customers for whom the Company is supplying REPS compliance services. The Company's wholesale customers for whom it supplies REPS compliance services are Rutherford Electric Membership Corporation, Blue Ridge Electric Membership Corporation, Town of Dallas, Town of Forest City, and the Town of Highlands (collectively referred to as "Wholesale" or "Wholesale Customers")². Table 1 below shows the Company's retail and Wholesale customers' REPS Compliance Obligation.

TABLE 1
DUKE ENERGY CAROLINAS' NC REPS COMPLIANCE OBLIGATION

Compliance Year	Previous Year DEC Retail Sales (MWhs) (1)	Previous Year DEC Wholesale Sales (MWhs) (1)	Total Retail Sales for REPS Compliance (MWhs)	Solar Set-Aside (RECS)	Swine Set-Aside (RECS)	Poultry Set-Aside (RECS)	REPS Requirement (%) (2)	Total REPS Compliance Obligation (RECS)
2021	55,511,864	2,523,367	58,035,231	116,073	40,628	406,068	12.5%	7,191,323
2022	57,928,369	2,514,997	60,443,366	120,889	84,623	406,068	12.5%	7,492,550
2023	58,604,912	2,520,448	61,125,360	122,253	85,579	406,068	12.5%	7,577,663

(1) Annual compliance REC requirements are determined based on prior-year MWh sales. Retail sales figures shown for compliance years 2022 and 2023, are estimates of 2021 and 2022 retail sales, respectively.

(2) 2021 through 2023 REPS requirement is 12.5% of prior-year Retail MWh sales and 10% of prior-year Wholesale MWh sales.

As shown in Table 1, the Company's requirements in the Planning Period include the solar energy resource requirement ("Solar Set-Aside"), swine waste resource requirement ("Swine Waste Set-Aside"), and poultry waste resource requirement ("Poultry Waste Set-Aside"). In addition, the Company must also ensure that, in total, the RECs that it produces or procures, combined with energy efficiency savings, are an amount equivalent to 12.5% of its prior-year retail sales in compliance years 2021, 2022, and 2023, taking into account the requirements for wholesale customers remain at 10% of prior-year sales. The Company refers to this as its Total Obligation. For clarification, the Company refers to its Total Obligation, net of the Solar, Swine Waste, and Poultry Waste Set-Aside requirements, as its General Requirement.

III. REPS COMPLIANCE PLAN

In accordance with Commission Rule R8-67b(1)(i), the Company describes its planned actions to comply with the Solar, Swine Waste, and Poultry Waste Set-Asides, as well as the General Requirement below. The discussion first addresses the Company's efforts to meet the Set-Aside requirements and then outlines the Company's efforts to meet its General Requirement in the Planning Period.

² For purposes of this Compliance Plan, Retail Sales is defined as the sum of Duke Energy Carolinas retail sales and the retail sales of the Wholesale Customers for whom the Company is supplying REPS compliance.

A. SOLAR ENERGY RESOURCES

Pursuant to NC Gen. Stat. § 62-133.8(d), the Company must produce or procure solar RECs equal to a minimum of 0.20% of the prior year's total electric energy in MWh sold to retail customers in North Carolina in 2021, 2022 and 2023.

Based on the Company's actual retail sales in 2020, the Solar Set-Aside is 116,073 RECs in 2021. Based on forecasted retail sales, the Solar Set-Aside is projected to be approximately 120,889 RECs in 2022 and 122,253 RECs in 2023. The Company has fully satisfied and exceeded the minimum Solar Set-Aside requirements in the Planning Period through a combination of Power Purchase Agreements and Company-owned solar facilities, including those listed below.

- Monroe Solar Facility – 55MW, located in Union County, placed in service in March 2017;
- Mocksville Solar Facility – 15MW, located in Davie County, placed in service in December 2016;
- Woodleaf Solar Facility – 6 MW, located in Rowan County, placed in service in December 2018;
- Maiden Creek Solar Facility – 69MW, located in Catawba County, placed in service in December 2020; and
- Gaston Solar Facility – 25MW, located in Gaston County, placed in service on December 2020.

Additional details with respect to the REC purchase agreements are set forth in Exhibit A.

B. SWINE WASTE-TO-ENERGY RESOURCES

Pursuant to NC Gen. Stat. § 62-133.8(e), as amended by the North Carolina Utilities Commission's ("NCUC") *Order Modifying the Swine and Poultry Waste Set-Aside Requirement and Providing Other Relief* (December 16, 2019), its *Errata Order* (February 13, 2020), and its *Order Modifying the Swine Waste Set-Aside Requirements and Providing Other Relief* (December 30, 2020) in Docket No. E-100, Sub 113, for compliance year 2021, at least 0.07%, and in 2022 and 2023, at least 0.14%, of

prior-year total retail electric energy sold in aggregate by utilities in North Carolina must be supplied by energy derived from swine waste. The Company's Swine Waste Set-Aside is estimated to be 40,628 RECs in 2021, 84,623 RECs in 2022, and 85,579 RECs in 2023.

In an effort to meet compliance with the Swine Waste Set Aside, the Company (1) continues direct negotiations for additional supplies of both in-state and out-of-state resources; (2) continues pursuit of swine-derived directed biogas³ from North Carolina facilities, working with Piedmont to locate favorable biogas injection sites, and directing such biogas to combined cycle plants for combustion and generation; (3) works diligently to understand the technological, permitting, and operational risks associated with various methods of producing qualifying swine waste RECs and to aid developers in overcoming those risks; when those risks cannot be overcome, the Company works with developers via contract amendments to adjust for outcomes that the developers believe are achievable based on new experience; (4) explores modifications to current bioenergy and set-asides contracts by working with developers to add swine waste to their fuel mix; (5) utilizes the broker market for out-of-state swine RECs available in the market; (6) supports research studies through North Carolina State University associated with on-farm swine waste drying technology and through Research Triangle Institute associated with biogas utilization in North Carolina; and (7) engages the North Carolina Pork Council ("NCPC") in a project evaluation collaboration effort that will allow the Company and the NCPC to discuss project viability, as appropriate with respect to the Company's obligations to keep certain sensitive commercial information confidential.

Duke Energy Carolinas is in a position to comply with its Swine Waste Set-Aside requirement in 2021. However, compliance with the swine waste set-aside for 2022 and beyond may be difficult to meet as the swine waste obligation increases. Swine waste-to-energy compliance challenges have been numerous and varied. Existing contracts have not been able to reach contracted levels of production, and new contracts have not come online in the timeframe originally planned and have taken longer than expected to ramp up production. One new swine waste-to-energy project is under construction and is scheduled to come online in 2022. The ability of this new facility to come online and for all facilities to

³ "Directed Biogas" is defined as pipeline quality methane, injected into the pipeline system, and nominated to Duke Energy generating facilities; this methane is biogenically derived from Swine Waste, Poultry Waste, and general Biomass sources. The Company has worked diligently with Piedmont Natural Gas Company, Inc. ("Piedmont") and other market participants to help develop specifications for injection. Continued challenges in this area include pipeline interconnection costs, gas clean-up requirements prior to injection and the general lack of physical proximity between clusters of farms and pipeline infrastructure.

produce their full contracted RECs will determine the levels of compliance that DEC is able to meet in the near term.

Successfully developing additional swine waste-to-energy projects in North Carolina has been a slow and tedious process over the last few years due to several factors. First, the Company understands that current swine waste-to-energy projects have encountered difficulties in achieving the full REC output of their contracts due to issues including local opposition to siting of the facilities, the inability to secure firm and reliable sources of swine waste feedstock from waste producers in North Carolina, difficulties securing project financing and technological challenges encountered when ramping up production. Second, the outbreak of the COVID-19 pandemic adversely impacted swine and poultry farms and processing plants in North Carolina through staff shortages, personal protective equipment supply issues, and delivery challenges in 2020 and 2021. COVID-19 has also created supply shortages and price increases for equipment and building materials and has increased wait times on development of new facilities. Third, developers have communicated potential delays as they work through the regulatory process and other stakeholder concerns to their development plans.

In the course of the company's negotiations for swine-derived Renewable Natural Gas ("RNG"), developers have pushed up prices on the basis of assertions and alleged modeling concerning competitiveness from California markets. Additionally, in June 2018, the NCUC issued an *Order Approving Appendix F and Establishing a Pilot Program* in Docket No. G-9, Sub 698. This Order introduced some uncertainty surrounding the future of swine and poultry waste-derived directed biogas projects, as it established a three-year pilot program where Piedmont would provide information to the NCUC regarding the impact of Alternative Gas⁴ on its system operations and its customers. The additional filing requirement and the Commission's approval process added to the time for additional projects to come on-line in the short term. On April 5, 2021 the Commission issued an Order Requesting Comments on the adequacy of the information that had been gained thus far from the pilot program about the safety and quality of renewable gas, and on other information obtained during the pilot program. Comments and reply comments were filed by several parties. On June 16, 2021, the Commission issued an Order Extending the Renewable Gas Pilot Program, until further order of the Commission, while the Commission continues its deliberations on the matter. The Companies are awaiting a final

⁴ "Alternative Gas" is defined in Appendix F as gas capable of combustion in customer appliances or facilities which is similar in heat content and chemical characteristics to natural gas produced from traditional underground well sources and which is intended to act as a substitute or replacement for Natural Gas (as that term is defined in Piedmont's North Carolina Service Regulations). Alternative Gas shall include but not be limited to biogas, biomethane, and landfill gas, as well as any other type of natural gas equivalent produced or manufactured from sources other than traditional underground well sources.

ruling from the Commission and believe that the pilot program has helped ensure that Alternative Gas did not negatively impact the greater Piedmont system.

The Company remains actively engaged in seeking additional resources and continues to make every reasonable effort to comply with the Swine Waste Set-Aside requirements. Additional details with respect to the Company's compliance efforts and REC purchase agreements are set forth in Exhibit A and the Company's semiannual progress reports, filed confidentially in Docket No. E-100, Sub 113A.

C. POULTRY WASTE-TO-ENERGY RESOURCES

Pursuant to NC Gen. Stat. § 62-133.8(f), as amended by NCUC *Order Modifying the Swine and Poultry Waste Set-Aside Requirements and Providing Other Relief* (December 16, 2019), and its *Errata Order* (February 13, 2020), in Docket No. E-100, Sub 113, for compliance years 2021, 2022 and 2023, at least 900,000 MWhs, or an equivalent amount of energy, shall be produced or procured each year from poultry waste, as defined per the Statute and additional clarifying Orders. As the Company's retail sales share of the State's total retail megawatt-hour sales is approximately 45%, the Company's Poultry Waste Set-Aside is estimated to be 403,068 RECs in 2021, 2022 and 2023. Please note that the load ratio shares of the state-wide aggregate poultry waste set-aside requirement allocations will be re-evaluated in 2022, so the 2022 and 2023 estimates may change.

In an effort to meet compliance with the Poultry Waste Set-Aside, the Company (1) continues direct negotiations for additional supplies of both in-state and out-of-state resources with multiple counterparties; (2) works diligently to understand the technological, permitting, and operational risks associated with various methods of producing qualifying poultry RECs and to aid developers in overcoming those risks; when those risks cannot be overcome, the Company works with developers via contract amendments to adjust for more realistic outcomes; (3) explores leveraging current biomass contracts by working with developers to add poultry waste to their fuel mix; (4) explores adding thermal capabilities to current poultry sites to bolster REC production; (5) explores poultry-derived directed biogas at facilities located in North Carolina and directing such biogas to combined cycle plants for combustion and electric generation; (6) utilizes the broker market for out-of-state poultry RECs available in the market; and (7) supports a research study through Research Triangle Institute associated with biogas utilization in North Carolina.

Duke Energy Carolinas is in a position to comply with its Poultry Waste Set-Aside requirement in 2021, but the Company's ability to procure sufficient volumes of RECs to meet its pro-rata share of the Poultry Waste Set-Aside requirements in 2022 and 2023 is dependent on the performance of poultry waste-to-energy developers under current contracts, particularly achievement of projected delivery requirements and commercial operation milestones. One new poultry waste-to-energy project is expected to come online in 2022 and three others are expected to come online in 2023. DEC's ability to comply in 2022 and 2023 is dependent on facilities producing at their contracted levels, and historical experience indicates that facilities usually experience some start-up issues and take time to reach full expected production levels. Ramping up to meet the increased compliance targets has been problematic because suppliers have either delayed projects or lowered the volume of RECs to be produced. In addition, one facility that was previously generating poultry RECs for DEC is currently offline for repairs and modifications and is not expected to be generating RECs again until 2023. The Company is, nevertheless, encouraged by the growing use of thermal poultry RECs and the proposals that it has recently received from developers.

The Company remains actively engaged in seeking additional resources and continues to make every reasonable effort to comply with the Poultry Waste Set-Aside requirements. Additional details with respect to the Company's compliance efforts and REC purchase agreements are set forth in Exhibit A and the Company's semiannual progress reports, filed confidentially in Docket No. E-100, Sub 113A.

D. GENERAL REQUIREMENT RESOURCES

Pursuant to NC Gen. Stat. § 62-133.8, DEC is required to comply with its Total Obligation by submitting for retirement a total volume of RECs equivalent to 12.5% of its prior-year retail and wholesale sales in compliance years 2021, 2022 and 2023, taking into account the requirement for wholesale customers remains at 10% of prior-year sales. Based on the Company's actual retail sales in 2020, the Total Requirement is 7,191,323 RECs in 2021. Based on forecasted retail sales, the Total Requirement is projected to be approximately 7,492,550 RECs in 2022, and 7,577,663 RECs in 2023. This requirement net of the Solar, Swine Waste, and Poultry Waste Set-Aside requirements, referred to as the General Requirement, is estimated to be 6,631,554 RECs in 2021, 6,883,970 RECs in 2022, and 6,966,763 RECs in 2023. The various resource options available to the Company to meet the General Requirement are discussed below, as well as the Company's plan to meet the General Requirement with these resources. The Company has contracted for, or has a plan to procure, sufficient resources to meet its General Requirement in the Planning Period. The Company submits that

the actions and plans described herein represent a reasonable and prudent plan for meeting the General Requirement.

1. USE OF SOLAR RESOURCES FOR GENERAL REQUIREMENT

Duke Energy Carolinas plans to meet a portion of the General Requirement with RECs from solar facilities. Solar energy has emerged as a predominant renewable energy resource in the Southeast. As such, the Company is using solar resources to contribute to our compliance efforts beyond the Solar Set-Aside minimum threshold for NC REPS, and will continue to do so during the Planning Period.

i. NET METERING FACILITIES

Under the current Net Metering for Renewable Energy Facilities Rider offered by DEC (Rider NM), a customer receiving electric service under a schedule other than a time-of-use schedule with demand rates shall provide any RECs to DEC at no cost. Per the NCUC's June 2018 *Order Approving Rider and Granting Waiver Request*, filed in Docket No. E-7, Sub 1113, since net metering generators are not individually metered, DEC is permitted to estimate the RECs generated by these facilities using the PVWatts Solar Calculator developed by the National Renewable Energy Laboratory. Thus, DEC will follow the calculations approved by the NCUC to estimate the number of RECs generated from net metering facilities and will use these RECs for REPS compliance.

ii. NORTH CAROLINA SOLAR REBATE PROGRAM

North Carolina HB 589 introduced a solar rebate program, which offers incentives to residential and non-residential customers for the installation of small customer owned or leased solar energy facilities participating in the Company's net metering tariff. The incentive is limited to 10 kilowatts alternating current ("kW AC") for residential solar installations and 100 kW AC for non-residential solar installations. HB 589 limited the program incentive to 10,000 kW of installed capacity annually starting January 1, 2018 and continuing until December 31, 2022. Since all customers participating in the Solar Rebate Program must be participating in DEC's net metering tariff, DEC retains the rights to the RECs from these facilities, as described in the net metering section above. In addition, under HB 589, DEC shall be authorized to recover all reasonable and prudent costs of incentives provided to customers and program administrative costs through the REPS Rider. Projected costs associated with the Solar Rebate Program are included in Table 5.

2. ENERGY EFFICIENCY

During the Planning Period, the Company plans to meet up to 40% of the Total Obligation with Energy Efficiency (“EE”) savings, which is the maximum allowable amount under NC Gen. Stat. § 62-133.8(b)(2)c. The Company continues to develop and offer its customers new and innovative EE programs that will deliver savings and count towards its future NC REPS requirements. Pursuant to Commission Rule R8-67b(1)(iii), the Company has attached a list of those EE measures that it plans to use toward REPS compliance, including projected impacts and a description of the measure, as Exhibit B.

3. BIOMASS RESOURCES

Duke Energy Carolinas plans to meet a portion of the General Requirement through a variety of biomass resources, including landfill gas to energy, biomass-fueled combined heat and power, and direct combustion of biomass fuels. Please see Exhibit A for more information on each of these contracts.

Duke Energy Carolinas notes, however, that reliance on direct-combustion biomass remains limited in long-term planning horizons, in part due to continued uncertainties around the developable potential of such resources in the Carolinas and the projected availability of more cost-effective forms of renewable resources.

4. HYDROELECTRIC POWER

Duke Energy Carolinas plans to use hydroelectric power from four sources to meet a portion of the General Requirement in the Planning Period: (1) Duke-owned hydroelectric stations that are approved as new renewable energy facilities; (2) Duke-owned hydroelectric stations that are approved as renewable energy facilities; (3) Wholesale Customers’ Southeastern Power Administration (“SEPA”) allocations; and (4) hydroelectric generation suppliers whose facilities have received Qualifying Facility (“QF” or “QF Hydro”) status.

- (1) In 2012, the Company received Commission approval for a new, incremental capacity addition at one of its hydro facilities, Bridgewater. The Company applies RECs generated by this facility toward the General Requirements of Duke Energy Carolinas’ retail customers.

- (2) The Company has received Commission approval for ten of its hydroelectric stations as renewable energy facilities. The Company continues to use, as appropriate, the RECs generated by these facilities to meet the General Requirements of Duke Energy Carolinas' Wholesale Customers, pursuant to NC Gen. Stat. § 62-133.8(c)(2)d.
- (3) Wholesale Customers may also bank and utilize hydroelectric resources arising from their full allocations of SEPA. When supplying compliance for the Wholesale Customers, the Company will ensure that hydroelectric resources do not comprise more than 30% of each Wholesale Customers' respective compliance portfolio, pursuant to NC Gen. Stat. § 62-133.8(c)(2)c.
- (4) In addition, the Company is purchasing RECs from multiple QF Hydro facilities in the Carolinas and will use RECs from these facilities toward the General Requirements of Duke Energy Carolinas' retail and wholesale customers. Please see Exhibit A for more information on these contracts.

5. WIND

Duke Energy Carolinas considers wind a potential viable option to support increased diversity of the renewables portfolio and potentially long-term general compliance needs. While the Company may rely upon wind resources for future REPS compliance, the extent and timing will depend on deliverability, policy changes and market prices. The North Carolina Governor signed Executive Order No. 218, 'Advancing North Carolina's Economic and Clean Energy Future with Offshore Wind, on June 9, 2021. Through this Executive Order, "North Carolina will strive for development of 2.8 gigawatts ("GW") of offshore wind energy resources off the North Carolina coast by 2030 and 8.0 GW by 2040." DEC will monitor the progress toward this goal for in-state wind development as well as any additional opportunities to transmit wind energy from out of state regions where wind is more prevalent into the Carolinas.

6. COMPETITIVE PROCUREMENT OF RENEWABLE ENERGY ("CPRE")

North Carolina HB 589 introduced a competitive procurement process for adding 2,660 MW (subject to adjustment) of additional renewable energy and capacity in the Carolinas, with proposals issued over a 45-month period beginning on February 21, 2018, when the NCUC approved the CPRE Program.

Renewable energy facilities eligible to participate in the CPRE solicitation(s) include those facilities that use renewable energy resources identified in NC Gen. Stat. § 62-133.8(a)(8), the REPS statute. DEC plans to use the RECs acquired through the CPRE RFP solicitations as needed for its future REPS compliance requirements and has therefore included the planned MW allocation and timeline in its REPS compliance planning process. Please see the CPRE Program Plan, which is included as Attachment II to this IRP, for additional information.

7. POLICY CHANGES

North Carolina House Bill 951 (“NC HB 951”) was introduced on June 15, 2021 and passed in the North Carolina House on July 15, 2021. NC HB 951 outlines an energy transition for North Carolina, including a new CPRE program through which electric public utilities shall issue requests for proposals to procure renewable energy and capacity from facilities that use renewable energy resources identified in the REPS statute, beginning in 2021 and concluding in 2026. Electric public utilities may jointly implement the aggregate competitive procurement and would retain the rights to the RECs from these new renewable facilities from the CPRE expansion. Therefore, the Company will continue to monitor the legislation as it moves through the legislative process and will include these additional MW in its REPS compliance planning if the final bill is signed into law.

E. SUMMARY OF RENEWABLE RESOURCES

The Company has evaluated, procured, and/or developed a variety of types of renewable energy and energy efficiency resources to meet its NC REPS requirements within the compliance Planning Period. As noted above, several risks and uncertainties exist across the various types of resources and the associated parameters of the NC REPS requirements. The Company continues to carefully monitor opportunities and unexpected developments across all facets of its compliance requirements. Duke Energy Carolinas submits that it has crafted a prudent, reasonable plan with a diversified balance of renewable resources that will allow the Company to comply with its NC REPS obligation over the Planning Period.

IV. COST IMPLICATIONS OF REPS COMPLIANCE PLAN

A. CURRENT AND PROJECTED AVOIDED COST RATES

The Current Avoided Energy and Capacity costs included in the table below represent key data elements used to determine the PP (NC) tariff rates filed for DEC in Docket No. E-100, Sub 158.

The “Energy” columns reflect the cost of fuel and variable O&M per kilowatt-hour (“kWh”) embedded in the filed tariff energy rates. The “Capacity” column is based on the installed cost and capacity rating of a combustion turbine unit as reflected in the filed capacity rates.

The Projected Avoided Energy Costs included below reflect updated estimates of the same data elements provided with the current costs. The capacity cost shown is a placeholder based on the current avoided cost filing.

The avoided costs contained herein are subject to change, including (but not limited to) fuel price projections, variable O&M estimates, turbine costs and equipment capability.

**TABLE 2
CURRENT AND PROJECTED AVOIDED COST RATES TABLE**

[BEGIN CONFIDENTIAL]

CURRENT AVOIDED ENERGY AND CAPACITY COST ^(1,2,3)										
DEC	Summer Premium Peak (\$/MWh)	Summer PM On Peak (\$/MWh)	Summer Off Peak (\$/MWh)	Winter Premium Peak (\$/MWh)	Winter AM On Peak (\$/MWh)	Winter PM On Peak (\$/MWh)	Winter Off Peak (\$/MWh)	Shoulder On Peak (\$/MWh)	Shoulder Off Peak (\$/MWh)	Capacity Cost – Installed CT Cost (\$/kW)
2022	30.30	25.22	25.54	42.29	40.14	30.65	26.91	27.74	22.18	
2023	27.66	28.17	25.59	37.07	32.20	31.14	25.87	29.68	20.56	
2024	24.02	27.05	26.07	33.84	36.54	31.65	27.09	27.72	21.53	

PROJECTED AVOIDED ENERGY AND CAPACITY COST ^(1,2,3)										
	Summer Premium Peak (\$/MWh)	Summer PM On Peak (\$/MWh)	Summer Off Peak (\$/MWh)	Winter Premium Peak (\$/MWh)	Winter AM On Peak (\$/MWh)	Winter PM On Peak (\$/MWh)	Winter Off Peak (\$/MWh)	Shoulder On Peak (\$/MWh)	Shoulder Off Peak (\$/MWh)	Capacity Cost – Installed CT Cost (\$/kW)
2022										
2023										
2024										

NOTES:

- (1) On-peak and off-peak energy rates based on hours and information derived using methodology filed in Docket No. E-100, Sub 167 on 8/13/2021.
- (2) Capacity Cost column based on the installed CT cost with AFUDC /nominal capacity rating approved in Docket No. E-100, Sub 167 on 8/13/2021.
- (3) Does not incorporate additional considerations used in rate calculation and is subject to change.

[END CONFIDENTIAL]

B. PROJECTED TOTAL NORTH CAROLINA RETAIL AND WHOLESALE SALES AND YEAR-END NUMBER OF CUSTOMER ACCOUNTS BY CLASS

**TABLE 3
RETAIL SALES FOR RETAIL AND WHOLESALE CUSTOMERS**

	2020 Actual	2021 Forecast	2022 Forecast	2023 Forecast
Retail MWh Sales	55,511,864	57,928,369	58,604,912	58,619,653
Wholesale MWh Sales	2,523,367	2,514,997	2,520,448	2,525,924
Total MWh Sales	58,035,231	60,443,366	61,125,360	61,145,577

**TABLE 4
RETAIL AND WHOLESALE YEAR-END NUMBER OF CUSTOMER ACCOUNTS**

	2020 Actual	2021 Projected	2022 Projected	2023 Projected
Residential Accts	1,940,436	1,965,120	1,993,767	2,022,653
General Accts	272,230	274,387	276,858	279,319
Industrial Accts	4,842	4,797	4,755	4,716

C. PROJECTED ANNUAL COST CAP COMPARISON OF TOTAL AND INCREMENTAL COSTS, REPS RIDER AND FUEL COST IMPACT

Projected compliance costs for the Planning Period are presented in the cost tables below by calendar year. The cost cap data is based on the number of accounts as reported above.

**TABLE 5
PROJECTED ANNUAL COST CAPS AND FUEL RELATED COST IMPACT**

	\$	2022	2023
REPS Compliance – Avoided Cost (recovered through the Fuel Rider)	\$71,878,104	\$106,947,070	\$140,696,117
REPS Compliance – Incremental Cost	\$39,814,130	\$40,953,716	\$57,596,500
Total Incremental REPS Compliance Cost, including Regulatory Fee	\$39,865,956	\$41,007,025	\$57,671,473
Projected Annual Cost Caps (REPS Rider)	\$98,068,408	\$99,013,066	\$100,115,697
Solar Rebate Program Cost	\$1,957,049	\$2,357,535	\$2,603,999
Total Incremental REPS Compliance Cost & Solar Rebate Program Cost	\$41,771,179	\$43,311,251	\$60,200,499
Total projected REPS Compliance Costs	\$113,649,283	\$150,258,322	\$200,896,617

EXHIBIT A

DUKE ENERGY CAROLINAS, LLC'S 2021 REPS COMPLIANCE PLAN
 DUKE ENERGY CAROLINAS' RENEWABLE RESOURCE PROCUREMENT FROM 3RD PARTIES
 (SIGNED CONTRACTS AS OF JUNE 30, 2021)

[BEGIN CONFIDENTIAL]

RESOURCE SUPPLIER	CONTRACT DURATION	REC ONLY?	ESTIMATED RECS		
			2021	2022	2023
SOLAR RESOURCES					
[REDACTED]					

RESOURCE SUPPLIER	CONTRACT DURATION	REC ONLY?	ESTIMATED RECS		
SOLAR RESOURCES			2021	2022	2023
[Redacted Content]					

RESOURCE SUPPLIER	CONTRACT DURATION	REC ONLY?	ESTIMATED RECS		
SOLAR RESOURCES			2021	2022	2023

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RESOURCE SUPPLIER	CONTRACT DURATION	REC ONLY?	ESTIMATED RECS		
SOLAR RESOURCES			2021	2022	2023

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RESOURCE SUPPLIER	CONTRACT DURATION	REC ONLY?	ESTIMATED RECS		
			2021	2022	2023
SOLAR RESOURCES					

BIOMASS RESOURCES	2021	2022	2023

RESOURCE SUPPLIER	CONTRACT DURATION	REC ONLY?	ESTIMATED RECS		
SOLAR RESOURCES			2021	2022	2023
[Redacted Content]					

POULTRY WASTE-TO-ENERGY RESOURCES	2021	2022	2023
[Redacted Content]			

RESOURCE SUPPLIER	CONTRACT DURATION	REC ONLY?	ESTIMATED RECS		
			2021	2022	2023
SOLAR RESOURCES					
[Redacted]					

SWINE WASTE-TO-ENERGY RESOURCES	2021	2022	2023
[Redacted]			

HYDROELECTRIC ENERGY RESOURCES	2021	2022	2023
[Redacted]			

RESOURCE SUPPLIER	CONTRACT DURATION	REC ONLY?	ESTIMATED RECS		
SOLAR RESOURCES			2021	2022	2023

[END CONFIDENTIAL]

EXHIBIT B

Duke Energy Carolinas, LLC's 2021 REPS Compliance Plan
 Duke Energy Carolinas, LLC's EE Programs and Projected REPS Impacts

Forecast of Annual Energy Efficiency Impacts for the REPS Compliance Planning Period 2021-2023 (kWh)			
Residential Programs	2021	2022	2023
Energy Efficient Appliances and Devices	99,715,631	96,325,853	70,350,073
Energy Efficiency Education Program for Schools	6,446,606	6,446,606	6,446,606
Low Income Energy Efficiency and Weatherization Assistance Program	7,142,420	7,142,440	7,142,420
Multi-Family Energy Efficiency	15,919,251	13,602,366	11,735,353
My Home Energy Report	240,487,294	240,487,294	240,487,294
Residential Energy Assessments	11,908,234	11,788,369	11,788,775
Residential Smart Saver Energy Efficiency	5,738,101	5,794,535	5,853,559
Sub Total	387,357,536	381,587,462	353,804,079
Non-Residential Programs	2021	2022	2023
Non-Residential Smart \$aver Custom	41,773,656	42,296,097	48,933,886
Non-Residential Smart \$aver Custom Assessments	4,959,113	4,959,113	5,465,501
Non-Residential Smart Saver Performance Incentive	5,774,816	6,426,508	24,329,056
Non-Residential Smart \$aver Prescriptive	161,281,871	157,172,251	153,048,103
Small Business Energy Saver	39,502,184	36,140,296	35,299,824
EnergyWise for Business	742,117	742,117	742,117
Sub Total	254,033,758	247,736,382	267,818,489
Total	641,391,294	629,323,844	621,622,568

DEC ENERGY EFFICIENCY PROGRAMS

DEC continues to pursue a long-term, balanced capacity and energy strategy to meet the future electricity needs of its customers. This balanced strategy includes a strong commitment to demand-side management (DSM) and energy efficiency (EE) programs, investments in renewable and emerging energy technologies, and state-of-the-art power plants and delivery systems.

DEC uses EE and DSM programs in its IRP to efficiently and cost-effectively alter customer demands and reduce the long-run supply costs for energy and peak demand. These programs can vary greatly in their dispatch characteristics, size and duration of load response, certainty of load response, and level and frequency of customer participation. In general, programs are offered in two primary categories: Energy efficiency (EE) programs that reduce energy consumption and demand-side management (DSM) programs that reduce peak demand (demand-side management or demand response programs and certain rate structure programs).

Following are the EE and DSM programs available through DEC as of December 31, 2020:

RESIDENTIAL EE PROGRAMS

- Energy Efficient Appliances and Devices
- Energy Efficiency Education
- Multi-Family Energy Efficiency
- My Home Energy Report
- Income-Qualified Energy Efficiency and Weatherization Assistance
- Energy Assessments
- Smart \$aver® Energy Efficiency

NON-RESIDENTIAL EE PROGRAMS

- Non-Residential Smart \$aver® Prescriptive
- Non-Residential Smart \$aver® Custom
- Non-Residential Smart \$aver® Custom Assessment
- Non-Residential Smart \$aver® Performance Incentive
- Small Business Energy Saver

- EnergyWise for Business

ENERGY EFFICIENCY PROGRAMS

Energy Efficiency programs are typically non-dispatchable education or incentive-based programs. Energy and capacity savings are achieved by changing customer behavior or through the installation of more energy-efficient equipment or structures. All cumulative effects (gross of Free Riders, at the Plant⁵) since the inception of these existing programs through the end of 2019 are summarized below. Please note that the cumulative impacts listed below include the impact of any Measurement and Verification performed since program inception and also note that a “Participant” in the information included below is based on the unit of measure for the specific energy efficiency measure (e.g. number of bulbs, kWh of savings, tons of refrigeration, etc.), and may not be the same as the number of customers that actually participate in these programs. The following provides more detail on DEC’s existing EE programs:

RESIDENTIAL EE PROGRAMS

ENERGY EFFICIENT APPLIANCES AND DEVICES PROGRAM

The Energy Efficient Appliances and Devices Program provides incentives to residential customers for installing energy efficient appliances and devices to drive reductions in energy usage. The program includes the following measures:

- **Energy Efficient Specialty Lighting:** DEC customers can take advantage of several program options and delivery mechanisms to improve lighting efficiency, including:
 - a. **The Duke Energy Savings Store** is an extension of the on-demand ordering platform enabling eligible customers to purchase specialty bulbs and have them shipped directly to their homes. The Store offers a variety of LEDs including Recessed, Globes, Candelabra, 3-Way, and Outdoor Reflectors type bulbs.

⁵ “Gross of Free Riders” means that the impacts associated with the EE programs have not been reduced for the impact of Free Riders. “At the Plant” means that the impacts associated with the EE programs have been increased to include line losses.

- b. **The Retail Lighting program** partners with retailers and manufacturers across North and South Carolina to provide price markdowns on customer purchases of efficient lighting. Product mix includes Energy Star rated standard, reflector, and specialty LEDs, and fixtures. Participating retailers include a variety of channel types, including Big Box, DIY, Club, and Discount stores.
- **Energy Efficient Water Heating and Usage:** This program component encourages the adoption of low flow showerheads and faucet aerators, water heater insulation, and pipe wrap.
 - **Other Energy Efficiency Products and Services:** Other energy efficient measures recently added to the program are Wi-Fi enabled smart thermostats, smart strips, and LED fixtures.

This program previously offered variable speed pool pump and heat pump water heaters, however, in late 2017 those measures were moved to the Residential Smart \$aver® Energy Efficiency Program.

ENERGY EFFICIENCY EDUCATION PROGRAM

The Energy Efficiency Education Program is an energy efficiency program available to students in grades K-12 enrolled in public and private schools who reside in households served by Duke Energy Carolinas. The Program provides principals and teachers with an innovative curriculum that educates students about energy, resources, how energy and resources are related, ways energy is wasted and how to be more energy efficient. The centerpiece of the current curriculum is a live theatrical production performed by two professional actors that is focused on concepts such as energy, renewable fuels and energy efficiency. As a result of the COVID-19 pandemic, the program pivoted to offer its performances via internet livestream which consists of a live host and several pre-recorded segments that offer the same educational content as the traditional live performance. This will continue until assemblies from outside groups are allowed back in schools.

Following the performance, students are encouraged to request an Energy Efficiency Starter Kit. The kit contains specific energy efficiency measures to reduce home energy consumption and is available at no cost to student households served by Duke Energy at participating schools. Teachers receive supportive educational material for classroom and student take home assignments. The workbooks, assignments and activities meet state curriculum requirements.

MULTI-FAMILY ENERGY EFFICIENCY PROGRAM

The Multi-Family Energy Efficiency Program provides energy efficient lighting and water measures to reduce energy usage in eligible multi-family properties. The Program allows Duke Energy Carolinas to utilize an alternative delivery channel which targets multi-family apartment complexes. The measures are installed in permanent fixtures by the program administrator. The program offers LED bulbs and energy efficient water measures such as bath and kitchen faucet aerators, water saving showerheads and pipe wrap are available at no cost. Smart thermostats are available at a discounted price for properties with electric heat.

MY HOME ENERGY REPORT PROGRAM

The My Home Energy Report (MyHER) Program provides residential customers with a comparative usage report that engages and motivates customers by comparing energy use to similar residences in the same geographical area based upon the age, size and heating source of the home. The report also empowers customers to become more efficient by providing them with specific energy saving recommendations to improve the efficiency of their homes. The actionable energy savings tips, as well as measure-specific coupons, rebates or other Company program offers that may be included in a customer's report are based on that specific customer's energy profile.

The program includes an interactive online portal that allows customers to further engage and learn more about their energy use and opportunities to reduce usage. In addition, all MyHER customers with an email address on file with the Company receive an electronic version of their report monthly.

INCOME-QUALIFIED ENERGY EFFICIENCY AND WEATHERIZATION ASSISTANCE PROGRAM

The Income-Qualified Energy Efficiency and Weatherization Assistance Program consists of three distinct components designed to provide EE to different segments of its low-income customers:

- **Neighborhood Energy Saver (NES)** is available only to individually metered residences served by Duke Energy Carolinas in neighborhoods selected by the Company, which are considered low-income based on third party and census data, which includes income level and household size. Neighborhoods targeted for participation in this program will typically have

approximately 50% or more of the households with income below 200% of the poverty level established by the U.S. Government. This approach allows the Company to reach a larger audience of low-income customers than traditional government agency flow-through methods. The Program reduces energy usage through the direct installation of energy efficiency measures within the households of income qualifying residential customers utilizing a Company-selected vendor to: (1) provide an on-site energy assessment of the residence to identify appropriate energy conservation measures, (2) install a comprehensive package of energy conservation measures at no cost to the customer, and (3) provide one-on-one energy education. Program measures address end-uses in lighting, refrigeration, air infiltration and HVAC applications.

- **Weatherization and Equipment Replacement Program (WERP)** recognizes the existence of customers whose EE needs surpass the standard low-cost measure offerings provided through NES. WERP is available to income-qualified customers in the Duke Energy Carolinas service territory for existing, individually metered, single-family, condominiums, and mobile homes. Funds are available for weatherization measures and/or heating system replacement with a 15 or greater SEER heat pump. A full energy audit of the residence is used to determine the measures eligible for funding. Customers are placed into a tier based on energy usage, where Tier 1 provides up to \$600 for energy efficiency services; while Tier 2 provides up to \$4,000 for energy efficiency services, including insulation, thus allowing high energy users to receive more extensive weatherization measures. The total dollar amount available is \$6,000 for heating system and cooling system replacement.
- **The Refrigerator Replacement Program (RRP)** is available to replace inefficient operable refrigerators in low income households. The program will be available to homeowners, renters, and landlords with income qualified tenants that own a qualified appliance. Income eligibility for RRP will mirror the income eligibility standards for the North Carolina Weatherization Assistance Program. The maximum dollar amount available for refrigerator replacement is \$1,000.

WERP and RRP are delivered in coordination with State agencies that administer the state's weatherization programs.

ENERGY ASSESSMENTS PROGRAM

The Energy Assessments Program provides eligible customers with a free in-home energy assessment, performed by a Building Performance Institute (BPI) certified energy specialist and designed to help customers reduce energy usage and save money. The BPI certified energy specialist completes a 60 to 90-minute walk through assessment of a customer's home and analyzes energy usage to identify energy savings opportunities. The energy specialist discusses behavioral and equipment modifications that can save energy and money with the customer. The customer also receives a customized report that identifies actions the customer can take to increase their home's efficiency.

In addition to a customized report, customers receive an energy efficiency starter kit with a variety of measures that can be directly installed by the energy specialist. The kit includes measures such as energy efficient LED lighting, low flow shower head, low flow faucet aerators, outlet/switch gaskets, weather stripping and an energy saving tips booklet. When applicable, the energy specialist will install additional low flow bath aerators and pipe wrap at no cost. Additional discounted energy efficient LED specialty bulbs are available to be installed by the auditor as needed. The customer may choose to schedule a diagnostic blower door test during their audit for an additional charge. The blower door test will measure airtightness and determine the overall energy efficiency of the home.

SMART \$AVER® ENERGY EFFICIENCY PROGRAM

The Smart \$aver® Energy Efficiency Program offers measures that allow eligible Duke Energy Carolinas customers to take action and reduce energy consumption in their home. The Program offering provides incentives for the purchase and installation of eligible central air conditioner or heat pump replacements in addition to Wi-Fi enabled Smart Thermostats when installed and programmed at the time of installation of the heating ventilation and air conditioning (HVAC) system. Program participants may also receive an incentive for attic insulation/air sealing, duct sealing, variable speed pool pumps, and heat pump water heaters.

The prescriptive and a-la-carte design of the program allows customers to implement individual, high priority measures in their homes without having to commit to multiple measures and higher price tags. A referral channel provides free, trusted referrals to customers seeking reliable, qualified contractors for their energy saving home improvement needs. This program previously offered HVAC Tune-Ups and Duct Insulation; however, those measures were removed due to no longer

being cost-effective.

NON-RESIDENTIAL EE PROGRAMS

NON-RESIDENTIAL SMART \$AVER ENERGY EFFICIENT PRODUCTS AND ASSESSMENT PROGRAM

The **Non-Residential Smart \$aver Energy Efficient Products and Assessment Program** provides incentives to eligible DEC commercial and industrial customers to install high efficiency equipment in applications involving new construction and retrofits and to replace failed equipment.

Commercial and industrial customers can have significant energy consumption but may lack knowledge and understanding of the benefits of high efficiency alternatives. The Program provides financial incentives to help reduce the cost differential between standard and high efficiency equipment, offer a quicker return on investment, save money on customers' utility bills that can be reinvested in their business, and foster a cleaner environment. In addition, the Program encourages dealers and distributors (or market providers) to stock and provide these high efficiency alternatives to meet increased demand for the products.

The program provides incentives through prescriptive measures, custom measures and technical assistance.

- **Prescriptive Measures:** Customers receive incentive payments after the installation of certain high efficiency equipment found on the list of pre-defined prescriptive measures, including specialty lighting; heating, ventilating and air conditioning equipment; and refrigeration measures and equipment.
- **Custom Measures:** Custom measures are designed for customers with electrical energy saving projects involving more complicated or alternative technologies, whole-building projects, or those measures not included in the Prescriptive measure list. The intent of the Program is to encourage the implementation of energy efficiency projects that would not otherwise be completed without the Company's technical or financial assistance. Unlike the Prescriptive portion of the program, all Custom measure incentives require pre-approval prior to the project implementation.

- **Energy Assessments and Design Assistance:** Incentives are available to assist customers with energy studies such as energy audits, retro commissioning, and system-specific energy audits for existing buildings and with design assistance such as energy modeling for new construction. Customers may use a contracted Duke Energy vendor to perform the work or they may select their own vendor. Additionally, the Program assists customers who identify measures that may qualify for Smart \$aver Incentives with their applications. Pre-approval is required.

NON-RESIDENTIAL SMART \$AVER PERFORMANCE INCENTIVE PROGRAM

The Non-Residential Smart \$aver® Performance Incentive Program offers financial assistance to qualifying commercial, industrial and institutional customers to enhance their ability to adopt and install cost-effective electrical energy efficiency projects. The Program encourages the installation of new high efficiency equipment in new and existing nonresidential establishments as well as efficiency-related repair activities designed to maintain or enhance efficiency levels in currently installed equipment. Incentive payments are provided to offset a portion of the higher cost of energy efficient installations that are not eligible under either the Smart \$aver® Prescriptive or Custom programs. The Program requires pre-approval prior to project initiation.

The types of projects covered by the Program include projects with some combination of unknown building conditions or system constraints, or uncertain operating, occupancy, or production schedules. The intent of the Program is to broaden participation in non-residential efficiency programs by being able to provide incentives for projects that previously were deemed too unpredictable to calculate an acceptably accurate savings amount, and therefore ineligible for incentives. This Program provides a platform to understand new technologies better. Only projects that demonstrate that they clearly reduce electrical consumption and/or demand are eligible for incentives.

The key difference between this program and the Non-Residential Smart \$aver Energy® Custom program is that Performance Incentive participants get paid based on actual measure performance and involves the following two step process.

- **Incentive #1:** For the portion of savings that are expected to be achieved with a high degree of confidence, an initial incentive is paid once the installation is complete.

- **Incentive #2:** After actual performance is measured and verified, the performance-based part of the incentive is paid. The amount of the payout is tied directly to the savings achieved by the measures.

SMALL BUSINESS ENERGY SAVER PROGRAM

The Small Business Energy Saver Program reduces energy usage through the direct installation of energy efficiency measures within qualifying non-residential customer facilities. Program measures address major end-uses in lighting, refrigeration, process and HVAC applications. The program is available to existing non-residential customers that are not opted-out of the Company's EE/DSM Rider and have an average annual demand of 180 kW or less per active account.

Recently a program modification was approved by the NC & SC utility commissions for SmartPath under the original Small Business Energy Saver Program. SmartPath is meant to build upon the traditional Small Business Energy Saver Program by minimizing financial barriers to customer participation by allowing customers to finance and implement energy efficiency upgrades at little to no upfront costs to the customer. SmartPath is open to any opted in non-residential Duke Energy customer and is not implemented by one Vendor. The program is implemented by a qualified Trade Ally network who develop proposals and implement the projects on the program's behalf. The SmartPath modification to the Program is available to all existing non-residential customers that are not opted-out of the Company's Energy Efficiency Rider. SmartPath is not limited by the 180 kW rule that applies to Small Business Energy Saver program.

Small Business Energy program participants receive a free, no-obligation energy assessment of their facility followed by a recommendation of energy efficiency measures to be installed in their facility along with the projected energy savings, costs of all materials and installation, and up-front incentive amount from Duke Energy Progress. The customer makes the final determination of which measures will be installed after receiving the results of the energy assessment. The Company-authorized vendor schedules the installation of the energy efficiency measures at a convenient time for the customer, and electrical subcontractors perform the work.

SmartPath program participants work with qualified trade allies to receive a free, no-obligation energy assessment of their facility followed by a recommendation of energy efficiency measures to be installed in their facility along with the projected energy savings, costs of all materials and installation, and up-

front incentive amount from Duke Energy Progress. The customer works with the trade ally to make the final determination of which measures will be installed after receiving the results of the energy assessment, sign a contract with the trade ally, and pursue financing for the project if required. The Qualified Trade Ally then schedules the installation of the energy efficiency measures at a convenient time for the customer, and electrical subcontractors perform the work. The trade ally works with the customer and Duke Energy to enroll their project and receive rebates to offset the equipment and labor costs of the project.

ENERGYWISE® BUSINESS PROGRAM

EnergyWise® Business is both an energy efficiency and demand response program for non-residential customers that allows DEP to reduce the operation of participants' air conditioning units to mitigate system capacity constraints and improve reliability of the power grid.

Program participants can choose between a Wi-Fi thermostat or load control switch that will be professionally installed for free on each air conditioning or heat pump unit. In addition to equipment choice, participants can also select the cycling level they prefer (i.e., a 30%, 50% or 75% reduction of the normal on/off cycle of the unit). During a conservation period, DEP will send a signal to the thermostat or switch to reduce the on time of the unit by the cycling percentage selected by the participant. Participating customers will receive a \$50 annual bill credit for each unit at the 30% cycling level, \$85 for 50% cycling, or \$135 for 75% cycling. Participants that have a heat pump unit with electric resistance emergency/back up heat and choose the thermostat can also participate in a winter option that allows control of the emergency/back up heat at 100% cycling for an additional \$25 annual bill credit. Participants will also be allowed to override two conservation periods per year.

Participants choosing the thermostat will be given access to a portal that will allow them to set schedules, adjust the temperature set points, and receive energy conservation tips and communications from DEP anywhere they have internet access. In addition to the portal access, participants will also receive conservation period notifications, so they can make adjustments to their schedules or notify their employees of upcoming conservation periods.



3

DUKE ENERGY CAROLINAS, LLC'S & DUKE ENERGY
PROGRESS, LLC'S COMPETITIVE PROCUREMENT
OF RENEWABLE ENERGY (CPRE)
PROGRAM PLAN UPDATE



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DUKE ENERGY CAROLINAS, LLC'S & DUKE ENERGY PROGRESS, LLC'S COMPETITIVE PROCUREMENT OF RENEWABLE ENERGY (CPRE) PROGRAM PLAN UPDATE

INTRODUCTION

In accordance with North Carolina Utilities Commission (“NCUC” or the “Commission”) Rule R8-71(g), Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP” and together with DEC, “Duke Energy” or “the Companies”) provide this update to the Competitive Procurement of Renewable Energy (“CPRE”) Program Plan.

The CPRE Program is being implemented pursuant to N.C. Gen. Stat. § 62-110.8, as enacted by North Carolina Session Law 2017-192 (“HB 589”). This updated Program Plan presents the Companies’ current plans for implementing the CPRE Program for the remainder of the CPRE Program Procurement Period, which ends November 21, 2021. Upon the expiration of the CPRE Program Procurement Period, the Companies will file a CPRE Program Plan in the following calendar year (2022) identifying any additional CPRE Program procurement requirements, as provided for in G.S. 62-110.8(a). See NCUC Rule R8-71(g)(3).

The Companies’ CPRE Compliance Reports (mostly recently filed in Docket No. E-7, Sub 1247 for DEC and Docket No. E-2, Sub 1275 for DEP) detail the outcome and status of the Companies’ ongoing actions to comply with the requirements of G.S. 62-110.8 for the applicable reporting periods. In summary, Tranche 1 and Tranche 2 have been successful, procuring approximately 1,185 MW of resources at prices below administratively-established avoided costs.

1. CPRE PLAN

1.1. IMPLEMENTATION OF AGGREGATE CPRE PROGRAM REQUIREMENTS

Under N.C. Gen. Stat. § 62-110.8(a), the Companies are responsible for procuring renewable energy and capacity through a competitive procurement program in a manner that allows the Companies to continue to reliably and cost-effectively serve customers' future energy needs. The Companies are required to procure energy and capacity from renewable energy facilities in the aggregate amount of 2,660 MW during the 45-month CPRE Program Procurement Period, which is subject to adjustments as described in more detail below. The CPRE requests for proposals ("RFPs") must be reasonably allocated over the CPRE Program Procurement Period, which commenced as of the Commission's approval of the CPRE Program on February 21, 2018 and concludes on November 21, 2021.

Renewable energy facilities eligible to participate in the CPRE RFPs include those facilities that use renewable energy resources identified in N.C. Gen. Stat. § 62-133.8(a)(8) but are limited to a nameplate capacity rating of 80 MW or less that are placed in service after the date of the electric public utility's initial competitive procurement. The renewable energy facilities to be developed or acquired by the Companies or procured from a third party through a power purchase agreement under the CPRE Program must also deliver to the Companies all of the environmental and renewable attributes associated with the electric output.

The Companies can satisfy the CPRE Program requirements through any of the following:

- (i) Renewable energy facilities to be acquired from third parties and subsequently owned and operated by the Companies;

- (ii) Self-developed renewable energy facilities to be constructed, owned, and operated by the Companies up to a 30% cap identified in N.C. Gen. Stat. § 62-110.8(b)(4)¹; or

- (iii) The purchase of renewable energy, capacity, and environmental and renewable attributes from renewable energy facilities owned and operated by third parties that commit to allow the Companies rights to dispatch, operate, and control the solicited renewable energy facilities in the same manner as the Companies' own generating resources.

¹ The Companies voluntarily agree to recognize both Self-developed Proposals, as well as third-party PPA Proposals offered by any Duke Energy affiliate bid into the CPRE RFP Solicitation(s), as being subject to the 30% cap.

Per N.C. Gen. Stat. § 62-110.8(b), electric public utilities may jointly or individually implement these aggregate competitive procurement requirements. The Companies plan to continue to jointly implement the CPRE Program.

1.2. TRANSITION MW

N.C. Gen. Stat. § 62-110.8(b)(1) provides that if prior to the end of the initial 45-month CPRE Program Procurement Period (concluding November 21, 2021), the Companies have executed Power Purchase Agreements (“PPA”) and interconnection agreements for renewable energy and capacity within their Balancing Authority Areas (“BAAs”) that are not subject to economic dispatch or curtailment and were not procured pursuant to N.C. Gen. Stat. § 62-159.2 (“Transition MW Projects”) having an aggregate capacity in excess of 3,500 MW, the Commission shall reduce the competitive procurement aggregate amount by the amount of such exceedance. If the aggregate capacity of such Transition MW Projects is less than 3,500 MW at the end of the initial 45-month CPRE Program Procurement Period, the Commission shall require the Companies to conduct an additional competitive procurement in the amount of such deficit.

As of August 12, 2021, there are approximately 4,448 MW of resources that qualify as Transition MW (comprised of approximately 4,155 MW of solar capacity and approximately 294 MW of non-solar capacity). Therefore, as of August 12, 2021, the CPRE procurement target will be reduced by a minimum of 948 MW (4,448 MW – 3,500 MW).

The Companies project an additional 230 MW of resources will qualify as Transition MW by the end of the CPRE Program Procurement Period. Therefore, the Companies project that the final Transition MW will be 4,683 MW, resulting in a total remaining amount to be procured of 300 MW.

Within five business days of the end of the CPRE Procurement Period (November 21, 2021), the Companies will file with the Commission notification of the final amount of Transition MW. This notification will allow the Commission to make its final determination regarding the amount of reduction under N.C. Gen. Stat. § 62-110.8(b)(1).

**FIGURE 1
TRANSITION MW**

CONSOLIDATED TRANSITION SUMMARY	DEP (MW)	DEC (MW)	TOTAL (MW)
Solar Connected	2,804	805	3,610
Non-Solar Connected	151	143	294
Additional Solar with a PPA/IA	428	116	545
Current Transition MW	3,384	1,064	4,448
Projected Additional Transition MW*	180	50	230
Total	1,247	3,436	4,683

*Includes projects with a signed PPA but no Interconnection Agreement, or a signed Interconnection Agreement but no PPA, as well as projects with a LEO but no PPA.

Note that the Companies' projections for CPRE procurement do not currently assume that there will be any re-allocation of capacity to the CPRE program for unsubscribed MW under the Green Source Advantage Program (N.C. Gen. Stat. § 62-159.2 (Renewable Energy Procurement for Major Military Installations, Public Universities and Other Large Customers)).

The Companies' plans for Tranche 3 are addressed in Section 1.4.

1.3. TRANCHE 1 AND 2 RFP RESULTS

TRANCHE 1:

The contracting period for Tranche 1 concluded on July 8, 2019. Below is a summary of the results for DEC and DEP:

600 MW DEC REQUEST

- 58 proposals ranging from 7 to 80 MW-AC totaling 2,733 MW
 - Median proposal was 50 MW

- All proposals were solar, 3 included storage
- 1,416 MW proposed in NC, 1,317 MW in SC
- 10 projects were contracted totaling 435 MW
 - 9 in NC totaling 415 MW; 1 in SC totaling 20 MW
 - 2 projects included energy storage
 - 2 DEC utility-owned projects selected (94 MW) and 3 Duke affiliate (Duke Energy Renewables “DER”) projects selected (95 MW)
 - Average all in delivered price ~\$38.86/MWh; estimated savings versus avoided cost of \$213.24 million over 20-year term

80 MW DEP REQUEST

- 20 proposals ranging from 7 to 80 MW-AC totaling 1,231 MW
 - Median proposal was 75 MW
- All proposals were solar, 1 included storage
- 617 MW proposed in NC, 614 MW in SC
- 2 projects were contracted totaling 87 MW
 - 1 in NC totaling 80 MW; 1 in SC totaling 7 MW
 - Average all in delivered price ~\$38.31/MWh; estimated savings versus projected avoided cost of \$33.17 million over 20-year term

TRANCHE 2

The contracting period for Tranche 2 concluded on October 15, 2020. Below is a summary of the results for DEC and DEP:

600 MW DEC REQUEST

- 37 proposals ranging from 15 – 80 MW-AC, totaling 1,710.4 MW
 - Median proposal was 50 MW
- All proposals were solar, 3 included storage

- 1,051 MW proposed in NC, 802.7 MW in SC
- 10 projects were contracted totaling 589 MW
 - 9 in NC totaling 514 MW, 1 in SC totaling 70 MW

80 MW DEP Request

- 6 proposals ranging from 56 – 80 MW-AC, totaling 440.9 MW
 - Median proposal was 75 MW
- All proposals were solar, 1 included storage
- 366 MW proposed in NC, 74.9 MW proposed in SC
- 1 project was contracted totaling 75 MW, located in NC

The 11 projects awarded in Tranche 2 have an estimated savings versus projected avoided cost of \$98.663 million over the 20-year contract term. There were no Duke Energy projects selected as finalists and no finalist projects include energy storage.

1.4. TRANCHE 3 - PLANNED RFP SOLICITATION

As summarized in Section 1.2, the Companies project a need to conduct a procurement of 300 MW in Tranche 3 (subject to the Commission's final determination of reduction under N.C. Gen. Stat. § 62-110.8(b)(1) based on the final amount of Transition MW as of the end of the initial CPRE Program Procurement Period).

The implementation of Queue Reform introduces an additional layer of complexity regarding the timing of Tranche 3, due to the need to integrate a competitive procurement solicitation into future planned cluster studies, which have established timelines approved by this Commission, the Federal Energy Regulatory Commission ("FERC"), and the Public Service Commission of South Carolina. Tranches 1 and 2 were conducted prior to implementation of Queue Reform, and the Companies sought and received approvals to study CPRE projects in Tranches 1 and 2 in their own group study that was conducted within the serial process then applicable to all non-CPRE interconnection requests. As the Commission is aware, the serial process is being replaced by the cluster study process under Queue Reform, which is being implemented by the Companies beginning with the Transitional Cluster Study process and followed thereafter by subsequent annual cluster study processes (referred as the Definitive Interconnection System Impact Study ("DISIS") Clusters).

The Companies had previously assumed that Tranche 3 would need to align with the first DISIS (occurring in 2022) due to the timing of the Transitional Cluster Study — inclusion in the 2022 DISIS would not require expediting the Tranche 3 RFP process and would also avoid the complexities of the initial Transitional Cluster Study (which is expected to have more speculative projects due to the lower entry requirements as compared with future DISIS Clusters). However, due to the delay in FERC's approval of Queue Reform and in light of feedback reflected in intervenor comments in Docket Nos. E-2, Sub 1159 and E-7, Sub 1156, as well as informal feedback from Market Participants, the Companies are considering creative solutions to integrate Tranche 3 into the Transitional Cluster Study to allow for an earlier procurement.

Eligibility for the Transitional Cluster Study is based on interconnection queue status as of August 20, 2021, the effective date of the revised North Carolina Interconnection Procedures. The initial Phase 1 Study (which is a power flow study that provides a network upgrade cost estimate required as part of Step 2 of the CPRE evaluation process) of the Transitional Cluster Study is scheduled to commence on or around December 1, 2021. If Tranche 3 is integrated into the Transitional Cluster Study, the RFP would be targeted to open for bids in early 4Q 2021, which would allow for selection of Tranche 3 winners in 2Q 2022. The alternative to integrating Tranche 3 into the Transitional Cluster Study is to defer Tranche 3 to the 2022 DISIS Cluster, which is scheduled to formally begin July 1, 2022, with the initial Phase 1 Study to commence on or around October 1, 2022. If Tranche 3 is integrated into the 2022 DISIS Cluster, the RFP would open for bids in Q3 2022, which would result in the selection of Tranche 3 winners in early 2023. In summary, if Tranche 3 is not integrated into the Transitional Cluster Study, then Tranche 3 will be pushed to late 2022/early 2023 in order to align with the 2022 DISIS cluster.

The timeline required to integrate Tranche 3 with the Transitional Cluster Study is aggressive but appears feasible subject to guidance from the Independent Administrator ("IA") and stakeholder feedback. However, integrating Tranche 3 with the Transitional Cluster Study would require that Tranche 3 bidders have an assigned queue number prior to August 20, 2021. There are a significant number of projects currently eligible to elect into the Transition Cluster Study that would potentially consider participating in Tranche 3 if it is integrated with the Transitional Study—based on the Companies' preliminary analysis, it appears that there are over 100 state jurisdictional renewable, transmission-connected interconnection requests adding up to more than 5,500 MW.

Integrating Tranche 3 into the Transitional Cluster Study will only be possible if no major RFP structural changes are required (*i.e.*, if Tranche 3 is substantially similar to Tranche 2, thereby

allowing for a more efficient process). At this time, the Companies are not aware of the need for any such major structural changes. Integrating Tranche 3 into the Transitional Cluster Study will also require substantial stakeholder consensus, including consensus regarding the acceptability of compressing certain timelines (e.g., shortening the pre-solicitation comment period under Rule R8-71(f)). With the IA's assistance, the Companies plan to engage stakeholders concerning these issues and will follow up with notification to the Commission concerning the timing for Tranche 3. If a determination is made to integrate Tranche 3 into the Transitional Cluster Study, the Companies will inform the Commission regarding the timing of such integration and request any waivers needed to achieve such integration.

Assuming that Tranche 3 is integrated into the Transitional Cluster Study, the Companies do not believe that it is necessary or appropriate at this time to consider whether any further procurement is needed under N.C. Gen. Stat. § 62-110.8(a), particularly since N.C. Gen. Stat. § 62-110.8(a) contemplates that such additional need-based procurement is not to occur until after the initial CPRE Program Procurement Period. As contemplated by the Commission's rules, the Companies will complete the initial CPRE Program procurement and then file a CPRE Program Plan in the following calendar year (2022) identifying any additional CPRE Program procurement requirements, as provided for in G.S. 62-110.8(a). See Rule R8-71(g)(3).

1.5. ALLOCATIONS OF RESOURCES

As prescribed by N.C. Gen. Stat. § 62-110.8(c), the Companies have the authority to determine the location and allocated amount of the MWs to be procured within their respective service territories taking into consideration:

(i) the State's desire to foster diversification of siting of renewable energy resources throughout the State;

(ii) the efficiency and reliability impacts of siting of additional renewable energy facilities in each public utility's service territory; and

(iii) the potential for increased delivered cost to a public utility's customers as a result of siting additional renewable energy facilities in a public utility's service territory, including additional costs of ancillary services that may be imposed due to the operational or locational

characteristics of a specific renewable energy resource technology, such as non-dispatchability, unreliability of availability, and creation or exacerbation of system congestion that may increase redispatch costs.

As discussed above, Tranche 1 and Tranche 2 have been completed. Figure 2 shows the amount of additional resources projected to be required in Tranche 3.

**FIGURE 2
CPRE SOLICITATIONS BY TRANCHE**

	DEC (MW)	DEP (MW)
Tranche 1 – under contract	435	86
Tranche 2 – under contract	589	75
Tranche 3	TBD*	TBD*

*As explained in Section 1.2, the Companies project a Tranche 3 procurement need of 300 MW (subject to a final determination by the Commission). However, the allocation for Tranche 3 is still under consideration and will be informed by achieving optimal RFP efficiencies and outcomes, along with cluster study considerations such as cost allocation.

The Companies’ operational experience integrating additional renewable energy resource capacity into both the DEC and DEP systems will inform the manner in which the Companies allocate the remaining CPRE tranches between the DEC and DEP service territories. The Companies’ allocation in Tranches 1 and 2 was informed by the growing concentration of legacy PURPA solar facilities installed in the DEP BAA, associated operational challenges and reliability risks on the DEP system, the growing risks of uncompensated system emergency curtailments in DEP, and the projections of DEP’s and DEC’s respective ability to reliably accommodate additional solar energy. The Companies have also indicated that the designated allocation of CPRE Program capacity may evolve over the CPRE Procurement Period, and the Companies intend to meet the CPRE Program requirements in a manner that ensures continued reliable electric service to customers while procuring cost-effective renewable energy resource capacity located within the DEC and DEP service territories. The Companies will update the planned allocation, if it is determined that changes are appropriate.

1.6. LOCATIONAL DESIGNATION

For purposes of the Tranche 1 and Tranche 2 CPRE RFP Solicitation, the Companies published Grid Locational Guidance information to the IA's website. This guidance was intended to provide market participants with information on areas that have known transmission limitations. The goal of providing this grid locational guidance is to minimize the need for costly network upgrades to integrate CPRE renewable energy facilities and to provide information to market participants for use when planning development activities for the proposals submitted into the Tranche 2 CPRE RFP. The grid locational guidance information consists of a map and a table of circuits and substations that are in the pre-identified constrained areas.

The Companies continue to evaluate how to provide further updates to this guidance to provide potential participants in CPRE as much information as possible to enable the most cost-effective proposals to be bid into the RFP.

2. CPRE TRANCHE 2 RFP DOCUMENT AND PRO FORMA PPA

The Tranche 2 RFP constituted the Companies' Program Guidelines for Tranche 2. The Tranche 2 RFP document and pro-forma PPA were posted to the Independent Administrator's website in draft form on October 15, 2019 and as final documents on February 7, 2020 (RFP) and March 3, 2020 (PPA). The Companies made minor revisions to the Tranche 2 documents from the Tranche 1 versions in response to stakeholder feedback. The Commission approved the pro forma PPA for use in Tranche 2 on January 24, 2020.

TRANCHE 2 STAKEHOLDER ENGAGEMENT

Pursuant to the Commissions' July 2, 2019 *Order Modifying and Accepting CPRE Program Plan*, the pre-solicitation process for Tranche 2 allowed for comment opportunity with stakeholders that was supervised by the IA. The Commission order required monthly stakeholder meetings to address any issues not specifically addressed in the order and to reach consensus on Tranche 2 documents. The schedule of these meetings is provided in Figure 3.

**FIGURE 3
TRANCHE 2 STAKEHOLDER MEETING SCHEDULE**

DATE	TOPIC(S)
August 7, 2019	Review of IA's final Tranche 1 Report Grid Locational Guidance Discussion concerning PPA Storage Protocols
September 12, 2019	PPA Terms and Conditions Grouping Study Base Case
October 10, 2019	General RFP Structure Asset Acquisition Discussion
November 13, 2019	Bidding Questions Tranche 2 Schedule
February 6, 2020	SISC Implementation T&D Evaluation

3. TRANCHE 3 INDEPENDENT ADMINISTRATOR SCOPE OF WORK & ESTIMATED COST

The Commission's August 17, 2021 *Order Approving CPRE Rider and CPRE Program Compliance Report* in Docket No. E-7, Sub 1247 required that the Companies provide (1) the IA's proposed scope of work to implement Tranche 3, (2) an IA fee estimate based on the proposed scope of work, and (3) a proposed Tranche 3 program fee structure designed to recover all Tranche 3-related IA fees from Tranche 3 market participants. Because a final scope and schedule for Tranche 3 has not been established, the Companies do not have enough detail to allow the IA to provide a final scope and estimate at this time. The Companies will work with the IA to provide such information promptly upon making a final determination regarding Tranche 3 as detailed above in Section 1.4.



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