

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-7, SUB 1289
DOCKET NO. E-2, SUB 1314

In the Matter of
Petition of Duke Energy Progress, LLC,)
and Duke Energy Carolinas, LLC,)
Requesting Approval of Green Source)
Advantage Choice Program and Rider)
GSAC

INITIAL COMMENTS OF
GOOGLE LLC

Google LLC (“Google”), by and through its undersigned counsel, respectfully submits these comments pursuant to the Commission’s *Order Requesting Comments* issued on February 9, 2023, in the above-referenced proceedings. In its order, the Commission seeks comments on, among other things, the *Joint Petition for Approval of Green Source Advantage Choice Program* (the “Petition”) filed by Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP,” and together with DEC, “Duke” or “Duke Energy”) on January 27, 2023.

I. Introduction

Google appreciates the opportunity to file initial comments on the Green Source Advantage Choice (“GSA Choice”) program proposed by Duke Energy in these proceedings. Google is a large commercial customer of DEC with a data center in Lenoir, North Carolina.

Google was an early pioneer of clean energy investment and has invested in over 7 GWs of clean energy around the globe. From 2010 to 2021, Google has committed approximately \$6 billion to purchase clean energy from wind and solar projects globally through 2040. In doing so, Google has learned a tremendous amount about the

opportunities and barriers to the deployment and integration of clean energy and now, more than ever, recognizes the economic development opportunity of clean energy deployment.

In many areas of its portfolio, Google's investments in renewable energy have reduced operating costs. In areas where companies have access to wholesale markets, long-term power contracts, like PPAs, have played a critical role in enabling C&I consumers to support the development of new clean energy capacity, while also insulating customers from volatile fuel prices—thus reducing cost and risk and supporting industrial competitiveness.

Google's investments in clean energy have created thousands of jobs and spurred innovation throughout the energy ecosystem.¹ For example, in 2020, Google partnered with Nevada Energy to jointly invest in a novel solar plus storage investment that was structured so that Google's private investments could be utilized to provide benefits to all customers.² In 2021, Google partnered with AES to create a novel commercial product, referred to as a Carbon Free Energy Manager model, which shapes a portfolio of clean energy technologies in PJM to align with the hourly needs of Google's footprint, thereby ensuring that the resources Google invested in would benefit the decarbonization system needs of the entire grid.³ More recently, Google's first-of-its-kind partnership with EDPR NA Distributed Generation created a 500-MW community-based solar portfolio in PJM which provides Google with Renewable Energy Credits but is structured so that at least 10% of

¹ <https://www.oxfordeconomics.com/resource/d8d830e4-6327-460e-95a5-c695a32916d9/>

² <https://www.utilitydive.com/news/google-nv-energy-renewable-deal-one-of-the-largest-includes-rare-storage/570131/>

³ <https://cloud.google.com/blog/topics/sustainability/a-new-clean-energy-purchasing-model-to-drive-decarbonization>.

the portfolio's revenues will be redirected annually for up to 15 years as utility bill credits to more than 25,000 households facing a high energy burden.⁴

Throughout its decade plus experience in the contracting, structuring, buying, selling, and shaping of power, Google has learned the critical importance of aligning and optimizing the deployment of clean energy resources with the decarbonization needs of the grid. Google has also learned that if structured correctly, the private investment of large clean energy buyers can reduce overall risk and costs to all consumers.⁵ Google's experiences in clean energy procurement and decarbonization give it a unique and helpful perspective into the design and implementation of clean energy programs such as GSA Choice.

As detailed in the following comments, the proposed GSA Choice program builds on past offerings from Duke and provides many beneficial aspects. However, the proposal falls short in a number key areas, most notably in its failure to align the deployment of private capital with decarbonization needs of the grid and its failure to provide program investors with the full value of the clean energy resources. As a result, the program misses the opportunity to decrease overall system decarbonization costs for both participants and non-participants, and to support C&I competitiveness. The comments below (1) outline best practices for green tariffs in the context of a decarbonizing electric utility, (2) review Duke's GSA Choice program, and (3) offer recommendations for the Commission's consideration.

⁴ <https://edprnadg.com/expanding%20the%20benefits%20of%20clean%20energy%20through%20innovation>.

⁵ Since 2014, C&I customers have used private capital to deploy 64.5 GW of clean energy. <https://cebuyers.org/deal-tracker/>.

II. Green Tariffs in Decarbonizing Utility Markets

Duke's original Green Source Rider was among the nation's first green tariff programs when it was approved in 2013.⁶ With its follow-on Green Source Advantage ("GSA") and GSA Bridge offerings, Duke has continued to provide an option for interested customers to bring new renewable energy onto the grid, while receiving bill credits based on avoided costs and associated renewable energy credits ("RECs"). These products were offered during a time in which the State of North Carolina had a renewable portfolio standard for investor-owned utilities of just 12.5% by 2021.⁷

On October 13, 2021, Governor Cooper signed into law House Bill 951 (S.L. 2021-165), which is a transformative statement of state carbon policy. Section 1 of S.L. 2021-165, codified as N.C. Gen. Stat. § 62-110.9, directs the Commission to develop a Carbon Plan by which Duke will achieve a carbon dioxide emissions reduction of 70% from 2005 levels by the year 2030 and carbon neutrality by the year 2050.⁸ Further, Section 5 of S.L. 2021-165 directs the Commission to:

establish a rider for a voluntary program that will allow industrial, commercial, and residential customers who elect to purchase from the electric public utility renewable energy or renewable energy credits . . . to offset their energy consumption, which shall ensure that customers who voluntarily elect to purchase renewable energy or renewable energy credits through such programs bear the full direct and indirect cost of those purchases, and that customers that do not participate in such arrangements are held harmless, and neither advantaged nor disadvantaged, from the impacts of the renewable energy procured on behalf of the program customer, and no cross-subsidization occurs.

⁶ See Order Approving Rider, Docket No. E-7, Sub 1043 (Dec. 19, 2013). See also Bonguli, Celina, et.al. Clean Energy Buyers Institute. "U.S. Electricity Markets: Utility Green Tariff Update," December 2020, available at <https://rebuyers.org/download/654/>.

⁷ See N.C. Gen. Stat. § 62-133.8(b)(1).

⁸ N.C. Gen. Stat. § 62-110.9.

In light of this evolving state policy and the specific statutory directive, Duke Energy is seeking approval of its GSA Choice customer program in this proceeding.

Achieving carbon neutrality for North Carolina by 2050 will require significant investment in new carbon-free resources and sophisticated integrated resource planning to ensure optimal use of supply and demand side resources to maintain reliability. Large customers with a willingness to pay to drive new clean energy investment can be an important piece of the solution, but customer programs must be appropriately designed to accelerate the speed and lower the cost of overall grid decarbonization as well as appropriately value clean energy resources when they are needed most.

It is this alignment between customer procurement and the investment needed to maintain reliable and cost-effective service on a decarbonizing electric grid that provides the foundation to Google's approach to 24/7 clean energy. While customer programs that target annual renewable matching are important and have prompted significant development of additional renewable energy, as the grid moves towards full decarbonization, Google urges the Commission to consider what additional programs may be necessary to better align customer procurement objectives with grid needs. Google believes that targeting hourly operations on a 24/7 basis is key to achieving this alignment.

Electricity-based emissions vary significantly over time, due to daily and seasonal variability in the mix of power plants delivering electricity to a given grid. Using annual accounting can overstate market-based GHG reductions by more than 50% when compared to using hourly accounting.⁹ In effect, companies that purchase wind or solar energy to match 100% of their annual electricity consumption may still rely on carbon-emitting grid

⁹ de Chalendar and Benson, *Why 100% Renewable Energy Is Not Enough* (2019), available at <https://www.sciencedirect.com/science/article/pii/S2542435119302144>.

electricity for over 50% of their demand. Crediting these clean energy purchases as reductions to their inventories—irrespective of the degree to which the associated clean energy generation matches their underlying energy consumption—can underestimate their real-world carbon footprints and may obscure reliance on electricity generated by carbon-emitting sources.

To illustrate this point, Google has released a paper¹⁰ showing how, even though it matched global annual electricity consumption with renewable energy purchases, Google's operations continued to rely on grid energy in many locations and at many times, as shown below in Figure 1.

Figure 1



As this figure illustrates, to truly and verifiably eliminate the carbon emissions associated with their energy use, companies like Google increasingly need access to more refined data and products that permit targeted purchases of carbon-free renewable energy to match hourly load profiles. Such products are consistent with the statutory directive to establish a voluntary customer program allowing customers to “offset their energy

¹⁰ Google, *Moving toward 24x7 Carbon-Free Energy at Google Data Centers: Progress and Insights* (2018) available at <https://resource-platform.eu/wp-content/uploads/files/statements/Google%201.pdf>.

consumption” (Section 5 of S.L. 2021-165) and are increasingly necessary as customer needs evolve.

Google recommends that the Commission look to evolve the basic structures of programs like GSA Choice to better enable customers to align procurement with the needs of a decarbonizing utility. In Nevada, Google has proposed a Clean Transition Tariff (CTT) that would enable customers, in partnership with the utility, to develop portfolios of carbon-free resources that accelerate the utility’s decarbonization pathway.¹¹ This novel tariff structure would enable customers to purchase the carbon-free portion of energy and capacity embedded in the otherwise applicable tariff and would seek to procure resources above and beyond the utility’s clean portfolio to enable customer progress towards 24/7 carbon-free energy (“CFE”). On February 16, 2023, the Public Utilities Commission of Nevada ordered the utility to hold stakeholder discussions regarding new tariffs in line with Google’s proposed CTT.¹² These discussions are ongoing and may provide a model for the Commission to examine as it considers future programs that fit the needs and goals of North Carolina.

III. Duke’s Proposed GSA Choice Program

Google wishes to commend Duke on its continued commitment to providing customer programs that allow for access to clean energy. Google emphasizes that many

¹¹ See *Sierra Pacific Power Co. d/b/a NV Energy for authority to adjust its annual revenue requirement for general rates*, Testimony of Carolyn A. Berry, Ph.D. on behalf of Google, LLC, Pub. Utils. Comm’n of Nevada, Docket No. 22-06014 (Oct. 11, 2022), available at https://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2020_THRU_PRESENT/2022-6/21601.pdf.

¹² *Sierra Pacific Power Co. d/b/a NV Energy for authority to adjust its annual revenue requirement for general rates*, Pub. Utils. Comm’n of Nevada, Docket No. 22-06014, Modified Final Order, at ¶ 916 (Feb. 16, 2023), available at https://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2020_THRU_PRESENT/2022-6/24156.pdf.

large users are aligned with the State's clean energy goals and customer programs such as those proposed are just one way that customers can advance these goals.

In its development of the GSA Choice program, Duke held stakeholder workshops and responded to questions and concerns from participants. Duke also met with Google to gather feedback on the proposal. While the ultimate filing does not reflect all of Google's feedback, Google is pleased to see inclusion of a number of attributes that are important to Google including:

- **Technology Inclusivity** - Google supports the proposed GSA Choice program's inclusion of battery storage in both the Duke-owned and third-party options. In addition, Google supports the inclusion of additional clean energy resources above and beyond short-duration battery storage. While it is expected that solar, wind and Li-ion batteries will make up the majority of near-term procurements, it is essential to provide pathways for new scale resources that will be critical to the State's net-zero-by-2050 standard.
- **Hourly Granularity** - Google supports the continuation of the hourly pricing option present in the existing GSA program. By enabling the inclusion of hourly pricing, the proposed GSA Choice program signals to customers the differential value ascribed to energy at different hours of the day and year, enabling products to be procured that maximize value to the customer and the system.
- **Inclusion of Carbon-Free Attributes** - As the State and many customers expand their focus to clean energy inclusive of but not limited to renewable energy, it is critical that programs address the conveyance of both RECs and carbon-free attributes of electricity under customer programs. Google appreciates Duke's acknowledgement of the importance of retirement of Clean Energy Environmental Attributes ("CEEAs") which are inclusive of both RECs and carbon-free attributes in its proposal.¹³
- **Opportunity for Competitive Procurement** - Like its predecessor GSA program, Duke's proposed GSA Choice program provides the opportunity for customers to secure clean energy from either utility-owned generation or third-party generation. In nearly every market in which it operates, Google has found access to competitive

¹³ Petition, at 5. Note that to demonstrate compliance with HB 951, Duke must also demonstrate that non-participants are "held harmless, and neither advantaged or disadvantaged" by customer participation in GSA Choice. *See* S.L. 2021-165, at sec. 1, subdiv. (2), sub-subdiv. b. Ensuring that the program incentivizes investment that is above-and-beyond Duke's business as usual and serves to accelerate efficiencies in the pathway to decarbonization is critical to this effort.

procurement to be cost beneficial and values this continued opportunity in the Duke service territories.

- **Hourly Accounting and Reporting** - Google supports Duke's willingness to work with interested stakeholders to establish an hourly accounting and reporting system.¹⁴ Success in this initiative will be critical to development of successful customer programs that align procurement with grid needs. Google offers specific recommendations on this topic below.

While the above-listed attributes are positive, in other aspects, the proposed GSA Choice program falls short on its ability to deploy customer investment to accelerate decarbonization. A well-functioning tariff will communicate accurate price signals that incentivize behavior to balance value to the system and value to the customer. Unfortunately, the proposed GSA Choice tariff contains a capacity credit for GSA facilities that does not send the right price signal to customers. Addressing this concern—whether in this program or in follow-on programs—will help ensure robust customer participation, will address specific customer needs, and will protect against “overbuilding” system capacity to the detriment of non-participating customers.

A. Capacity Valuation

Under the proposed GSA Choice program, participating customers selecting the hourly pricing option would receive limited capacity credits. In the proposed DEC tariff this is defined as a Rationing Charge equal to the “marginal capacity cost during hours with generation constraint.”¹⁵ In the proposed DEP tariff it is defined as a Capacity Charge “applicable whenever the day-ahead forecast of the ratio of hourly available generation to hourly demand is equal or less than 1.15.”¹⁶

¹⁴ Petition, at 12.

¹⁵ Proposed DEC Rider GSAC, at 3.

¹⁶ Proposed DEP Rider GSAC-1, at 4.

These structures unnecessarily restrict the capacity value of GSA Facility generation to the limited hours in which the Duke system is expected to be within its 15% planning reserve margin (“PRM”). With good utility planning and resource development, customers would expect that such a condition would not be present in the vast majority of hours, as PRM-based planning is a key metric for maintaining reliability on the system. From this perspective, tying capacity value to PRM virtually ensures that GSA Choice participants would receive little, if any, capacity benefit from participation in the program.

From a pricing perspective, the proposed valuation of GSA Facility capacity—and the absence of meaningful capacity value—fails to capture the actual value that such clean energy resources, including dispatchable battery storage, can provide to the system.

The challenges of intermittency and the cost associated with integrating intermittent resources has been well documented. In DEC’s pending rate case, the company offered testimony discussing challenges to operation and performance of the distribution system and the costs necessary to operate and maintain it:

Distributed resources, particularly solar, are intermittent. Overcast conditions or changes to cloud coverage can cause solar electricity to fluctuate, creating unpredictable demand curves. Additionally, the grid must be able to quickly ramp up and down traditional generation to meet gaps in production and demand. The grid therefore needs to successfully balance these supply and demand changes instantaneously all while maintaining proper frequency and voltage. Investing in sufficient communication and automation ensures utilities can integrate DERs in real time – maximizing the value they can add to the grid (e.g., contributing to meeting peak load needs) while minimizing the strain (e.g., intermittency on the grid during peak times).¹⁷

¹⁷ Testimony of Brent C. Guyton on behalf of Duke Energy Carolinas, LLC, Docket No. 3-7, Sub 1276, at 28 (Jan. 19, 2023).

In the most recent avoided cost proceeding, the Commission considered evidence of the cost to integrate variable and intermittent resources onto the grid and accepted a showing by the incumbent utilities that as solar penetration increases the cost to integrate the resources while maintaining operational reliability also increases.¹⁸ Based on this evidence, and an updated analysis of Duke’s consultant, Astrapé, the Commission approved inclusion of solar integration cost decrements of \$1.05 per MWh (DEC) and \$2.26 per MWh (DEP) in uncontrolled solar avoided energy rates.¹⁹ While these charges are not direct analogues to capacity values, they do demonstrate in a concrete fashion the cost to the system of intermittency—and the corresponding financial benefit to the system of dispatchable or controlled dispatch of renewable resources such as that offered by storage.

Winter Storm Elliott further illustrated these potential benefits.²⁰ Early in the morning of December 24, 2022—Christmas Eve—unexpectedly cold weather caused higher demand than expected and the loss of some generation sources, resulting in insufficient generation to meet demand and causing DEC and DEP to implement rolling blackouts.²¹ DEC and DEP’s forecasts had underestimated load by approximately 10

¹⁸ See Order Establishing Standard Rates and Contract Terms for Qualifying Facilities, Docket No. E-100, Sub 175, at 34 (Nov. 22, 2022).

¹⁹ *Id.* at 38.

²⁰ Winter Storm Elliott also highlighted the reliability value that additional interregional transmission capacity can provide during stressed system conditions. See The Value of Transmission During Winter Storm Elliott, Michael Goggin and Zachary Zimmerma (Feb. 23, 2023), at 1-2: “Additional transmission into the Duke/Progress utility area in the Carolinas and the Tennessee Valley Authority (TVA) would have provided the largest benefit by alleviating customers’ rolling outages.”

²¹ Testimony of Kendal Bowman on behalf of Duke Energy Carolinas, LLC, and Duke Energy Progress, LLC, Docket No. M-1, Sub 7, at 11-13 (Jan. 3, 2023); Duke Energy Carolina, LLC and Duke Energy Progress, LLC’s Presentation and Generating Unit Status Summary Document Docket Nos. M-100, Sub 163 and M-1, Sub 0, at 3-10 (Jan. 3, 2023) (“Duke Energy Timeline”).

percent and 6 percent, respectively,²² and combined with weather-induced generation losses, Duke's generation fell short of demand by hundreds of megawatts in each service territory. Notably, the event occurred before sunrise, so that solar resources—which eventually provided hundreds of megawatts of generation that morning—were not yet online.²³ However, if the solar generation were paired with storage at significant scale the system potentially could have used stored energy as an additional power source to meet the peak demand.²⁴

But the ability of storage to shift generation is not valuable only when the system is constrained. Rather, storage also provides value by reducing the likelihood that there would be insufficient generation in the first place—helping to avoid the constrained conditions under which the GSA Choice program would provide capacity payments. In other words, the effectiveness of storage as a resource will result in undervaluation of its contributions to system capacity.

By limiting capacity value in such a manner, the proposed GSA Choice program fails to incentivize optimal dispatch of battery storage to the benefit of the system. This missed opportunity not only hinders the economic value to participating customers under the proposed GSA Choice Program, but by failing to incentivize deployment of clean resources in line with system needs, it may also lead to inefficient procurement, resulting in an overbuilt system and increased costs for customers.

²² Testimony of Nelson Peeler on behalf of Duke Energy Carolinas, LLC, and Duke Energy Progress, LLC, Docket No. M-1, Sub 7, at 65 (Jan. 3, 2023).

²³ Testimony of Preston Gillespie and Sam Holeman on behalf of Duke Energy Carolinas, LLC, and Duke Energy Progress, LLC, Docket No. M-1, Sub 7, at 123 (Jan. 3, 2023).

²⁴ See, e.g., NC State Energy Storage Team, *Energy Storage Options for North Carolina*, (CCEBA Comments Ex. H), Docket No. E-100, Sub 179, at 93 (July 15, 2022), available at <https://starw1.ncuc.gov/NCUC/ViewFile.aspx?Id=cf9f6553-561f-4399-9547-8336bc061f57>.

B. Opportunity to Improve Data Reporting

Google appreciates Duke's recognition of the importance of tracking and reporting tools to stakeholders, including Google. As noted above, Duke has indicated a willingness to work with interested stakeholders on this topic.²⁵

This is a timely discussion as these tools are being developed and implemented in other jurisdictions. For example, PJM recently announced that it will provide hourly, time-stamped certificates for PJM generation.²⁶ These certificates will be issued by PJM's Generation Attribute Tracking System (GATS) and will represent one megawatt-hour of electricity produced. The certificates will include generator location, emissions output, fuel source, and date the generator went online. According to PJM's press release on this new offering, GATS will be the first registry in the U.S. to produce hourly, time-stamped certificates to reflect not only where but when energy is produced.

State public service commissions are taking steps to investigate hourly tracking. In a recent ruling, the Arizona Corporation Commission instructed Arizona Public Service Company to investigate and report on the technical requirements, costs, and processes associated with tracking hourly Renewable Energy Credits during the course of its Renewable Energy Standard Implementation Plan.²⁷ Similarly, Colorado utility regulators recently approved Xcel Colorado's Renewable Energy Compliance Plan, including a

²⁵ Petition at 12.

²⁶ See <https://insidelines.pjm.com/pjm-eis-to-produce-energy-certificates-hourly/>.

²⁷ Application of Arizona Public Serv. Co. For Approval of its 2023 Renewable Energy Standard Implementation Plan for Reset of Renewable Energy Adjustor, Docket No. E-01345A-22-0181, Decision No. 78782 (Nov. 21, 2022), at 9 lines 12-16 (available at <https://docket.images.azcc.gov/0000208036.pdf?i=1681249758224>).

directive for the utility to “investigate the technical requirements, costs, and processes associated with tracking hourly RECs” during the course of the plan's implementation.²⁸

North Carolina has been a leader in adopting policies supportive of renewable energy, being the first state in the southeast to adopt a Renewable Energy and Energy Efficiency Portfolio Standard (REPS) in 2007 and among the first states nationally to adopt a green tariff program in 2013. Google encourages the Commission to continue the legacy of targeted and effective measures promoting renewable energy development and deployment by requiring further investigation of, and stakeholder engagement concerning, the technical requirements, costs, and processes associated with tracking hourly Renewable Energy Credits.

Recent research from Princeton University demonstrates that the implementation of time-based certificate trading will significantly lower the cost of procuring 24/7 clean energy by lowering transaction costs and providing greater accessibility to cheap energy during key times of the day.²⁹ Among the benefits are:

²⁸ See *Application of Public Service Company of Colorado for Approval of Its 2022-2025 Renewable Energy Compliance Plan*, Decision Approving Comprehensive Settlement Agreement, Decision No. C22-0678, Proceeding No. 21A-0625EG (Nov. 3, 2022), ¶ 50 (“Public Service commits to exploring emerging issues, including the potential for flexible interconnection and the technical requirements, costs, and processes to track hourly RECs.”) (available at https://www.dora.state.co.us/pls/efi/efi_p2_v2_demo.show_document?p_dms_document_id=984504&p_session_id=); Unopposed Comprehensive Settlement Agreement, at ¶ 101 (“Public Service agrees to investigate the technical requirements, costs, and processes associated with tracking hourly RECs during the course of this RE Plan and report on it as part of its annual RES Compliance Report”) (available at https://www.dora.state.co.us/pls/efi/efi_p2_v2_demo.show_document?p_dms_document_id=979605&p_session_id=).

²⁹ Qingyu Xu and Jesse Jenkins, *Electricity System and Market Impacts of Time-based Attribute Trading and 24/7 Carbon-free Electricity Procurement*, Princeton University, Zero-carbon Energy Systems Research and Optimization Laboratory (Sept. 15, 2022) available at <https://acee.princeton.edu/24-7/>.

- Improving the economic efficiency, affordability, and accessibility of 24/7 CFE;
- Generating hourly price signals to incentivize clean energy investment and operation when and where it is needed most
- Helping 24/7 CFE participants hedge against uncertainties like forecast errors.³⁰

As North Carolina transitions to a clean energy based generation portfolio, it will be important to have more granular tools available that help drive investments in multiple technologies (nuclear, hydrogen, energy efficiency, battery storage, and other emerging carbon-free technologies) that align with evolving grid needs. Ensuring the availability of more granular measurement tools is the first, necessary step in this process.

The Commission should use this opportunity and the willingness expressed by Duke in its Petition to require Duke to take concrete steps in this docket to bolster success of tracking and reporting tool development under consideration. In particular, Google recommends that the Commission:

1. **Require that Duke report its hourly carbon-free generation**, within 90 days of the Commission's approval of this tariff, and going forward, on an annual basis, as a historical hourly clean energy profile for default electricity service for the prior 12-month period. The hourly clean energy profile should be reported as MWh of carbon-free energy per total MWh for each hour in each of the DEP and DEC systems. In addition, in future integrated resource plans (IRPs) and Carbon Plan proceedings under section 62-110.9, the Commission should require that Duke project its hourly clean energy profile for a period of fifteen years.
2. **Require that Duke transparently and systematically allocate and certify clean energy generation to individual customers** in the GSA Choice program on an hourly basis. Duke's allocation and accounting methods should be documented so that customers clearly understand their specific CFE-content claim relative to their load, and to ensure that there is no double counting on an hourly basis. Customer-

³⁰ Id.

specific matching and allocation also provides the building blocks to a system-level hourly residual mix that can be used by customers, irrespective of participation in the GSA program, for carbon accounting purposes. Allocation and accounting methods should also consider how to handle imports and exports. The inclusion of imports and exports in the grid emissions factor will provide a consumption-based perspective for customers, to better reflect the reality of what they are consuming on the grid. Facilitating greater customer transparency and choice will also be critical. For example: providing users with streamlined access to hourly customer load data, developing a standardized API to facilitate data access, and ability to enable hourly consumer energy choice. Consumer choice should be based on the attributes of time-based RECs such as production time interval (with maximum hourly intervals), and asset type, age, and location. Duke should also generate an attestation report to validate its time-based REC matching.

3. **Require that Duke work with external stakeholders, or pre-existing solutions, to reduce costs and standardize implementation** where possible. Entities such as EnergyTag,³¹ Linux Foundation Energy³² and Green Button³³ have done considerable work in developing standards for hourly accounting that are consistent with other markets and which could be leveraged by Duke for the benefit of its customers. Standardization enables effective coordination across regions, ensuring that systems can speak to each other in a consistent manner to account for power trade flows or REC trade flows between regions. For example, the Commission should ensure that the energy tracking system Duke creates in North Carolina is consistent with what PJM is building to avoid power import / export data issues and mitigate double counting risk. Requiring the use of existing standards will allow stakeholders, Duke, and the Commission to rely on what has already been done and lessons learned from past demonstrations to reduce costs compared to developing energy tracking from scratch. Lastly, standardization is more efficient and better for customers who have to work with utilities and systems across the United States, so that they don't have to build custom solutions to integrate with data outputs from each utility.

IV. Conclusion

Google commends the parties and the Commission for their efforts to craft constructive customer programs which are responsive to customer needs and concerns and supportive of bringing renewable energy onto the grid. As the Commission considers new and innovative customer programs that are supportive of and consistent with the policies

³¹ <https://energytag.org/>.

³² <https://www.lfenergy.org/projects/carbon-data-specification-cds/>.

³³ <https://www.greenbuttondata.org/>.

adopted by the General Assembly in H.B. 951, including the Green Source Advantage program, Google encourages the Commission to:

- Continue to ensure the availability of competitive procurement options, including for battery storage.
- Promote programs that will allow customers to match renewable energy to local production profiles.
- Establish customer programs that capture the actual value, including capacity value, that renewable energy brings to the grid.
- Improve data reporting and facilitate stakeholder processes to investigate the technical requirements, costs and processes associated with hourly tracking of renewable energy and associated carbon attribute certificates.

Respectfully submitted, this 25th day of April, 2023.



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Certificate of Service

I hereby certify that a copy of the foregoing *Initial Comments of Google LLC* has been served this day upon all parties of record in this proceeding, or their legal counsel, by electronic mail or by delivery to the United States Post Office, first-class postage pre-paid.

This the 25th day of April, 2023.

BROOKS, PIERCE, MCLENDON,
HUMPHREY & LEONARD, LLP

By: /s/ Marcus Trathen