BEFORE THE
LOUISIANA PUBLIC SERVICE COMMISSION

APPLICATION OF ENTERGY LOUISIANA, LLC FOR APPROVAL OF GENERATION AND TRANSMISSION RESOURCES PROPOSED IN CONNECTION WITH SERVICE TO A SIGNIFICANT CUSTOMER PROJECT IN NORTH LOUISIANA, INCLUDING PROPOSED RIDER, AND REQUEST FOR TIMELY TREATMENT	)	**DOCKET NO. 37425**

Direct Testimony of Devi Glick

On Behalf of Sierra Club

Public Version

April 11, 2025

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1. INTRODUCTION AND PURPOSE OF TESTIMONY

Q Please state your name and occupation.

A My name is Devi Glick. I am a Senior Principal at Synapse Energy Economics, Inc ("Synapse"). My business address is 485 Massachusetts Avenue, Suite 3, Cambridge, Massachusetts 02139.

Q Please describe Synapse Energy Economics.

A Synapse is a research and consulting firm specializing in energy and environmental issues, including electric generation, transmission and distribution system reliability, ratemaking and rate design, electric industry restructuring and market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Synapse's clients include state consumer advocates, public utilities commission staff, attorneys general, environmental organizations, federal government agencies, and utilities.

Q Please summarize your work experience and educational background.

A At Synapse, I conduct economic analysis and write testimony and publications that focus on a variety of issues related to electric utilities. These issues include power plant economics, electric system dispatch, integrated resource planning, environmental compliance technologies and strategies, and valuation of distributed energy resources. I have submitted expert testimony in over 60 different proceedings before state utility regulators in more than 20 states.

In the course of my work, I develop in-house models and perform analysis using industry-standard electricity power system models. I am proficient in the use of spreadsheet analysis tools, as well as widely used optimization and electric dispatch

models. I have directly run EnCompass and PLEXOS and have reviewed inputs and outputs for several other models.

Before joining Synapse, I worked at Rocky Mountain Institute, focusing on a wide range of energy and electricity issues. I have a master's degree in public policy and a master's degree in environmental science from the University of Michigan, as well as a bachelor's degree in environmental studies from Middlebury College. I have more than 12 years of professional experience as a consultant, researcher, and analyst. A copy of my current resume is attached as Exhibit DG-1.

Q On whose behalf are you testifying in this case?

A I am testifying on behalf of Sierra Club.

Q Have you testified previously before the Louisiana Public Service Commission ("Commission")?

A Yes, I testified in Docket No. U-36932, Cleco Power LLC's 2024 rate case. I also filed testimony in two dockets in Texas related to Entergy Texas Inc., PUC Docket No. 53719 and PUC Docket No. 52487.

Q What is the purpose of your testimony in this proceeding?

A In my testimony for this proceeding, I evaluate several topics: First, I evaluate whether Entergy Louisiana, LLC ("Entergy", "ELL", or "the Company") has established the need for the three proposed combined-cycle combustion turbines ("CCCTs") totaling 2,262 megawatts ("MW"). Second, I evaluate whether the data center customer ("Meta" or "the Customer") is covering its full incremental cost of service through the proposed Large Load, High Load Factor Power Service Rate Schedule ("Rate Schedule LLHLFPS-L"), and the minimum monthly charge during the term of the Energy Service Agreement ("ESA") as well as its allocated share of fixed and variable costs and associated riders. Third I evaluate whether Meta is covering the full incremental cost of transmission expansion projects being built to serve the data center, particularly the Mount Olive to

Sarepta transmission line, and whether ELL is maximizing the value to ratepayers of that transmission project. Fourth, I evaluate ELL's load and resource balance to determine how ELL is serving Meta's load beyond what can be supplied by the three CCCTs. Finally, I evaluate the likely impact of the planned data center build ("the Project") on ELL's customers in the near term and over the long term.

Q How is your testimony structured?

A In Section 2, I summarize my findings and recommendations for the Commission.

In Section 3, I summarize ELL's application and proposal including the data center load, the generation plan, the transmission plan, and the tariff and ESA. I outline the items that the Company is seeking approval for in this application as well as what it is not seeking approval for.

In Section 4, I review ELL's load and resource balance with and without the data center customer load. I also evaluate ELL's plan for serving data center load beyond what can be met by the three CCCTs.

In Section 5, I evaluate ELL's claims that the project will deliver net benefits to ratepayers. Specifically, I review ELL's economic analysis and outline its flaws and shortcomings. I discuss my concerns with ELL's failure to conduct any production cost analysis; its failure to evaluate the costs and risks to existing customers when Meta's 15-year term expires; the failure to evaluate reasonably likely scenarios where Meta extends or cancels its contract; and ELL's failure to update the analysis to address Meta's increased load forecasts. I also present my findings on how the results would change in different scenarios.

In Section 6, I outline the risks and costs ELL is imposing on its non-data center ratepayers by proposing to build three new CCCTs to serve the large load customer including: (1) the risk of locking ratepayers into a resource 15 years in advance with uncertainty on how resource costs, fuel prices, and regulations will change in that time; (2) the increase in system costs by building on an accelerated timeline with limited

supply-side resource options available to meet demand; (3) the increase in system costs by committing to the CCCTs without properly evaluating how a portfolio that also contained renewables and battery energy storage systems ("BESS") could reduce the quantity of new gas needed to serve the data centers; and (4) the cost of the transmission projects needed to serve the data center that ELL is seeking to pass on to all ratepayers as System Improvements.

Q What documents do you rely upon for your analysis, findings, and observations?

A My analysis relies primarily upon the workpapers, exhibits, and discovery responses of ELL witnesses associated with this proceeding, as well as discovery from other proceedings where applicable. To a limited extent, I also rely on certain external, publicly available documents.

2. FINDINGS AND RECOMMENDATIONS

Q Please summarize your findings.

A My primary findings are:

1. The data center load, which ELL updated from [redacted] MW in the original application to [redacted] now,[1] is unprecedented in size; it will be the largest in Meta's portfolio and likely is the largest in the United States.[2]
2. The shortfall between Meta's load and the installed capacity of the CCCT is [redacted]. ELL will have to use existing capacity on its system, contract with an external party for capacity from an existing resource, or else build new capacity, to make up that capacity shortfall.
3. Even without the new data center, ELL has projected a capacity shortfall starting in 2026 based on its projected load growth and current unit retirement schedule.[3]

[1] Supplemental Direct Testimony of Beauchamp at 4.
[2] ELL Response to Staff Request 1-22.
[3] ELL Response to LEUG Request 1-8, HSPM Attachment LEUG Request 1-8_A_HSPM.

4. ELL has established deactivation dates for many of its legacy fossil resources, including Little Gypsy units 2 and 3 in 2028, White Bluff 1 and 2 in 2029, and Nelson 6 coal plant in 2030. The Company has not committed to these dates and has already extended the life of at least one unit to serve data center and other growing load, despite the units' costly and inefficient operations.
5. ELL did not justify selection of the three CCCTs over alternatives, such as a portfolio with less gas and incremental solar PV and battery energy storage, with the kind of robust modeling or alternatives analysis that is standard and expected in evaluating need and whether a project is in the public interest.
6. The economic analysis ELL conducted to support its claim that the project will result a net value for ratepayers is outdated, based on a single and limited scenario, omits consideration of production cost and other impacts, and over-states the future value of transferring the three CCCTs back to ELL's non-data center ratepayers in 2041. When ELL's analysis is modified to assume Meta pays only its minimum bill over the term of the ESA, the net benefits from the project essentially disappear.
7. ELL has not demonstrated that the Mount Olive to Sarepta Transmission line is needed immediately but for the data center load and therefore has not justified classifying it as a System Improvement and allocating the costs to all ratepayers.
8. ELL has not provided parties with an updated ESA, nor has it updated its economic analysis or rate analysis to reflect Meta's increased data center load.
9. Neither ELL nor Meta has provided any information on the data center's projected demand including hourly load shape, load flexibility, and major drivers of energy consumption.
10. ELL has also not robustly evaluated the potential for load flexibility at the new data center, grid enhancing technologies ("GETs"), or other alternative technologies to reduce system costs as it expands its system to meet new customer demand.
11. Given the substantial cost of the proposed gas generators and transmission investments, and the risks to Entergy's existing customers who may be required to bear a significant portion of those costs, I do not find the Project to be in the

public interest unless the application is modified to increase protections for the non-data center customers as outlined in the recommendations below.

Q Please summarize your recommendations.

A Based on my findings, I offer the following chief recommendations:

1. The Commission should not approve the certificate of public convenience and necessity ("CPCN") without also requiring ELL to bring online at least 1,500 MW of standalone and paired solar PV and storage in the next five years. The solar and storage will reduce the gap between the capacity of the proposed CCCTs and the demand of the data center customer, it will reduce fuel costs for all ratepayers, and it will help Meta meet its commitment to match 100 percent of its electricity use with clean energy.
2. ELL should not be permitted to delay the retirement of its expensive and inefficient legacy fossil plants, including Nelson 6, to support Meta's increasing load. The legacy units should be retired as soon as possible and any ongoing investments and costs that ELL's seeks to pass on to all its customers for the sake of serving Meta's load should be limited and scrutinized by the Commission.
3. ELL should only be allowed to delay the retirement of its legacy units with planned near-term deactivation dates if the Company has formally committed to, and is in the process of bringing online, at least the 1,500 MW of incremental solar and storage to meet data center demand.
4. ELL should study and file with the Commission a report that evaluates how much solar and hybrid solar PV and storage is necessary to fill the gap between the data center's demand and the capacity of the three CCCTs proposed.
5. ELL should update its Economic Analysis – and file that update with the Commission – to reflect the updated customer load and should evaluate the net system impacts from the project under a number of scenarios instead of just a single view of Meta's projected load.
6. The Commission should not allow ELL to place the System Improvement costs into rate base during the near-term time when the project was not needed but for

the data center load. The Commission should require a clear study and plan – to be filed with the Commission – for how ELL is going to utilize the Mount Olive to Sarepta transmission line to the benefit of ELL ratepayers, including to facilitate the deployment of more renewables and BESS resources, before it is allowed to put the costs into rate base.

7. The Commission should require ELL to file with the Commission more information about the data center's energy demand including hourly load shape, load flexibility, and major drives of energy consumption.
8. ELL should require the customer to study and file with the Commission a report that evaluates the potential for load flexibility at its site and the Company should study the value of load flexibility during the top 0.25, 0.5 and 1.0 percent highest load hours in the year.
9. ELL should study and file with the Commission a report that evaluates the role of GETs in allowing it to serve Customer load, and the rest of ratepayers, in a more economic manner.

3. OVERVIEW OF REQUEST

Q What does the Company request in the Application?

A Entergy makes four major requests related to transmission and generation facilities in the Application.

First, the Company requests a CPCN to construct three new CCCTs and requests certification that the Company has met all of its requirements to enter into an ESA with the data center customer.[4]

Second, the Company requests a CPCN for a new 500 kV transmission line extending from a substation near Sarepta, Louisiana to a substation near Mt. Olive, Louisiana as

[4] Application at 25.

well as for associated equipment upgrades at the 500 kV substation near Sterlington, Louisiana.[5] ELL seeks to place these two transmission assets into rate base and recover them through the Formula Rate Plan ("FRP").[6]

Third, the Company requests approval of the Contribution in Aid of Construction ("CIAC") mechanism and associated accounting treatment to be used to fund the construction of certain transmission facilities as well as the construction financing costs for the three CCCTs. These facilities will be funded entirely by the Customer and their costs will not be added to the rate base.[7]

Finally, the Company asks for approval of the Corporate Sustainability Rider ("CSR") which would make it exempt from compliance with the Commission's Market-Based Mechanisms General Order and allow for expedited approval of solar or hybrid solar and storage resources.[8]

Q What is the Customer's projected load and current schedule to take service according to the Application and supplemental testimony?

A Meta's projected load is [redacted]—updated from [redacted] in the initial Application.[9] The Customer plans to begin taking power for construction activities in 2025 and ramp up to full capacity by 2029.[10]

[5] Application at 2-3.
[6] Application at 16.
[7] Application at 29; Direct Testimony of May at 16.
[8] Application at 3.
[9] Supplemental Direct Testimony of Beauchamp at 4.
[10] Direct Testimony of May at 17.

Q How does the Customer load impact ELL's overall load?

A Entergy's load will increase by [redacted] percent or approximately [redacted] with the addition of the Customer load.[11]

On an energy basis, ELL has indicated that Meta's demand (originally [redacted]) translates to an increase of approximately [redacted] percent over the annual TWh currently sold by Entergy statewide.[12] The updated, higher projected load of [redacted] represents an even greater increase over the annual terawatt hours ("TWh") currently sold by the Company statewide.

Q How is Entergy proposing to meet Meta's load?

A Entergy proposes building three new CCCT generators with a combined installed capacity of 2,262 MW.[13] The Company proposes installing two of the CCCTs adjacent to the Customer at Franklin Farm Site in Richland Parish in 2028.[14] The Company also proposes installing the third CCCT at ELL's Waterford site in Killona, Louisiana in 2029.[15]

The Company estimated a total capital investment of approximately $3.2 billion for the new generators. [16]

Since Meta increased its projected load to [redacted], Entergy has not requested approval from the Commission for additional generators, although ELL has acknowledged that it is evaluating options for additional generators.[17]

[11] Calculation based on ELL Response to LEUG Request 1-8, HSPM Attachment LEUG Request 1-8_A_HSPM.
[12] Direct Testimony of May at 18.
[13] *Id.* at 4.
[14] *Id.* at 20, 24.
[15] Supplemental Testimony of Beauchamp at 2-3; Direct Testimony of May at 24.
[16] Direct Testimony of May at 23.
[17] Supplemental Direct Testimony of Beauchamp at 4; Direct Testimony of Beauchamp at 19.

Q Is Entergy also making transmission investments to serve the Project?

A Entergy proposes making a number of large transmission investments to serve the Project. ELL estimated a total capital investment of approximately [redacted] for transmission investments and upgrades in the original application, which comes to a revised total of [redacted] with the additional transmission facilities in Beauchamp's supplemental testimony.[18] The Company describes two categories of transmission facilities: (1) facilities being funded solely by the Customer and (2) System Improvement facilities that will be added to the rate base and paid for by all ratepayers including the Customer.

Q Describe the Customer-funded transmission investments.

A The Customer-funded transmission facilities will be exclusively paid for by Meta, at a cost of [redacted] to meet the increased load noted in Beauchamp's supplemental testimony.[19] The Customer-paid facilities include substations and projects that are located at the point of delivery or are being constructed for the express purpose of accommodating the Customer's load and are not providing benefits to the wider system.[20] The Customer is paying for these investments through the Contribution in Aid of Construction (CIAC) agreement.[21] The Customer's CAIC payment will total [redacted].[22]

[18] Direct Testimony of May at 23; Supplemental Direct Testimony of Beauchamp at 4.
[19] Direct Testimony of Kline at 15; Supplemental Direct Testimony of Beauchamp at 4.
[20] Supplemental Direct Testimony of Beauchamp at 5.
[21] Direct Testimony of Beauchamp at 9-10; Supplemental Direct Testimony of Beauchamp at 4-5. Note that in supplemental testimony, Beauchamp does not specify that the Customer will pay the costs for the "additional facilities" through the CIAC, just that the Customer will be the one to pay the costs.
[22] Direct Testimony of May at 24, 29; Direct Testimony of Beauchamp at 14-15.

Q Describe the System Improvement transmission investments.

A The second category of transmission facilities that the Company describes is the System Improvement facilities. System Improvement projects will cost ratepayers around $546 million.[23] ELL asserts that these facilities are necessary to serve the Customer but have other "benefits, needs, and drivers" independent of the Project. The Company requests to have the cost of these facilities be shared by all customers as they serve other needs unrelated to the Project and will provide significant system benefits once in service.[24] The Company has shared that these facilities will improve reliability by increasing load-serving capability, improving operational flexibility, and enhancing resilience.[25] Specifically, the Mount Olive to Sarepta 500 kV transmission facilities, discussed further below, are needed for North American Electric Reliability Corporation ("NERC") compliance.[26]

The Company seeks to place these facilities into rate base and recover them through the FRP.[27] The Customer will contribute a share of the costs for these facilities like all other customers.

There are two projects in this category: (1) the Mount Olive to Sarepta 500 kV transmission lines and facilities with a cost of $546 million, and (2) the substation equipment upgrades at the Sterlington 500 kV substation with a cost of $0.75 million.[28] The Customer's contribution to these projects is estimated at [redacted] total or approximately [redacted] per year.[29]

[23] Direct Testimony of Kline at 15.
[24] Direct Testimony of May at 25.
[25] Direct Testimony of Kline at 36-37.
[26] Direct Testimony of May at 21.
[27] Application at 16.
[28] Direct Testimony of Kline at 15.
[29] Direct Testimony of Beauchamp at 11.

Q How will the Customer be charged for the generation and transmission projects outlined above?

A The Customer and Company negotiated an ESA that specifies how the Customer will be charged for electricity service. The Customer will take service under the Company's Large Load, High Load Factor Power Service Rate Schedule (Rate Schedule LLHLFPS-L) and will be subject to the FRP rate adjustment, the fuel adjustment clause ("FAC"), and an allocated share of other riders including the storm cost rider and the resilience plan costs. ELL expects that the Customer will contribute an estimated [redacted] towards the storm rider and an estimated [redacted] towards the resilience rider.[30] The cost of the planned generators will be offset through a minimum monthly charge paid by the Customer for the 15-year term of the ESA.[31]

Even if the Customer uses no electricity, the ESA requires the Customer to pay a minimum monthly charge to ensure that the tariff covers the incremental revenue requirement of the planned investments. The Company states that the minimum charge and rate treatment of the Customer are sufficient to offset the incremental revenue requirement of the investments and costs necessary to serve the customer during the ESA.[32]

The ESA has automatic renewals for subsequent 5-year periods, but either party can provide advance notice of intent to not renew beyond the 15-year initial term.[33]

Separately, for the Customer-funded transmission projects as well as the generator construction financing costs, the Customer will pay [redacted] through a CIAC agreement as discussed in a previous question.[34]

[30] Direct Testimony of May at 27.
[31] *Id.* at 24.
[32] *Id.* at 26-27.
[33] *Id.* at 25.
[34] Direct Testimony of Beauchamp at 15.

Q What happens if the Customer decides to terminate the ESA prior to the end of the 15-year term?

A In the event the Customer terminates the ESA prior to the end of the 15-year term, the Customer will pay the Company a termination fee that is equal to the remaining value of the ESA. Specifically, "[redacted]"[35]

Q The Project is driving investment in gas generation. What are ELL's and Meta's sustainability goals and how does this Project relate to those goals?

A Entergy's current sustainability targets are to achieve net-zero greenhouse gas emissions by 2050 and to cease coal power operations by 2030.[36] Meta has a goal of matching 100 percent of its electricity use with renewable energy.[37] ELL and Meta plan to offset a portion of the emissions from the planned generators through a CSR that is part of the ESA and that is available to Meta only. The CSR is an agreement to identify Meta-specific commitments for clean resources including solar, hybrid, CCS, and potentially wind and other clean resources, as well as charges for those resources.[38] Meta will essentially pay for a portfolio of clean resources and receive the associated renewable credits.[39]

ELL estimates that the CSR's clean energy could offset 60 percent of anticipated annual energy production from the planned generators (9.5 TWh out of the total projected 15.9 TWh output from the three CCCTs).[40] But what is concerning is that only about one-fifth

[35] Direct Testimony of May at 26.
[36] *Id.* at 35.
[37] *See,* Meta Sustainability. Available at https://sustainability.atmeta.com/. Accessed April 9, 2025; ELL Response to NPO Request 1-8; ELL Response to NPO Request 2-19.
[38] Direct Testimony of May at 31-32.
[39] Direct Testimony of Ingram at 5.
[40] ELL Response to Staff Request 1-10.

of the generation is projected to be offset by solar PV. Two-fifths is attributed to the [redacted] from a carbon capture project at Lake Charges Power Station.[41] Neither ELL nor Meta has explained how the data center customer plans to meet its goal for the remaining two-fifths of the CCCT's generation to meet Meta's 100 percent clean generation goal. It is also unclear how Meta plans to offset its emissions during the years before the solar and CCS projects are active; ELL states only that "the Company and the Customer continue to explore other options such as wind and nuclear."[42]

Q How is the Company finding projects for the CSR and what is the status of those projects?

A ELL states that it will solicit and procure 1.5 GW of incremental solar and/or hybrid resources using same process approved in Order No. U-36697 (the "3 GW Order"), but the Company also asserts that it is not actually seeking approval for those resources in this Application.[43]

The Company will procure the projects through a request for proposals ("RFP") process and use an expedited certification process for projects that fall within the breakeven parameters approved by the Commission.[44] Projects above the breakeven cost will seek standard certification.[45] The Company will also consider unsolicited offers.[46]

Again, in the current Application, the Company is not seeking certification of any resources associated with the CSR. But the Company has indicated that it could amend its Application if a commercially reasonable opportunity came up quickly.[47]

[41] ELL Response to NPO Request 1-8; Direct Testimony of Ingram at 22.
[42] ELL Response to NPO Request 1-8.
[43] Direct Testimony of Ingram at 3, 7.
[44] *Id.* at 8.
[45] *Id.* at 11.
[46] *Id.* at 10.
[47] *Id.* at 14-15.

Q How will the Customer contribute financially towards the CSR projects?

A The Customer's bill will include a CSR Renewable Charge that accounts for the Customer's subscription to the renewable resources.[48] The CSR Renewable Charge has the potential to be a bill credit depending on the specifics during a given month. The CSR Renewable Charge has three components: a charge based on the levelized cost of the resources, and credits for both the energy and capacity revenues earned in the MISO market.[49]

Q Will the CSR affect other ratepayers?

A Yes. ELL requests to recover the costs for the CSR resources through the FAC and FRP.[50] The Company states that it expects the costs and benefits of the initial 1.5 GW of CSR resources to offset one another such that there is minimal impact on all customers. ELL expects the CRS collectively will result in overall net benefits to all customers.[51]

4. ELL'S CUSTOMERS WILL FACE A CAPACITY DEFICIT BEFORE 2030 EVEN WITHOUT THE NEW DATA CENTER LOAD…BUT THAT DEFICIT WILL GROW WITH DATA CENTER LOAD

Q What is ELL's current capacity position?

A According to its most recent Business Plan (BP 25), [redacted].[52] That means that the capacity of its generators [redacted] the capacity it needs to meet its peak demand with an added reserve margin. In the summers of 2025 and 2026, the Company is expected to have [redacted] capacity of [redacted] and [redacted]. Starting in 2027, ELL is expected to have a capacity [redacted] based on its current unit deactivation schedule and without the addition of new resources.

[48] *Id.* at 17.
[49] *Id.* at 17-18.
[50] *Id.* at 28.
[51] *Id.* at 32.
[52] ELL Response to LEUG Request 1-8, HSPM Attachment LEUG 1-8_A_HSPM.

Q How was ELL's capacity position expected to change in the near term prior to the data center customer's application?

A ELL's Business Plan ("BP 24") pre-dates the data center load and provides the clearest picture of Entergy's pre-data center capacity position. BP 24 shows that without the data center, the Company [redacted] As discussed directly above, this [redacted] is one year earlier than shown in BP 25.

[redacted] With these planned additions, [redacted]

Confidential Figure 1 below shows the Company's load and resource balance based on BP 24. ELL summarizes its need by stating "ELL will need in [redacted]"[56]

[53] *Id.*
[54] Installed capacity estimated based on BP24 planning assessment in ELL Response to LEUG 1-8, HSPM Attachment LEUG 1-8_A_HSPM.
[55] *Id.*
[56] Direct Testimony of Beauchamp at 33.

Confidential Figure 1. ELL load and resource balance before data center (BP 24)

Source: Graph based on data provided in ELL Response to LEUG Request 1-8, HSPM Attachment LEUG 1-8_A_HSPM.

Q How did ELL's capacity position change with the addition of the data center load?

A Based on ELL's Business Plan 25 ("BP 25") (with my modifications to update the data center load from [redacted] ELL will need [redacted] in the next five to ten years.

[redacted]

[57] This deficit is based on the updated data center load from the Supplemental Testimony of Witness Beauchamp.

[redacted] ELL already indicated in discovery that it plans to push back the deactivation date for Nelson 6 from 2028 to 2030.[58]

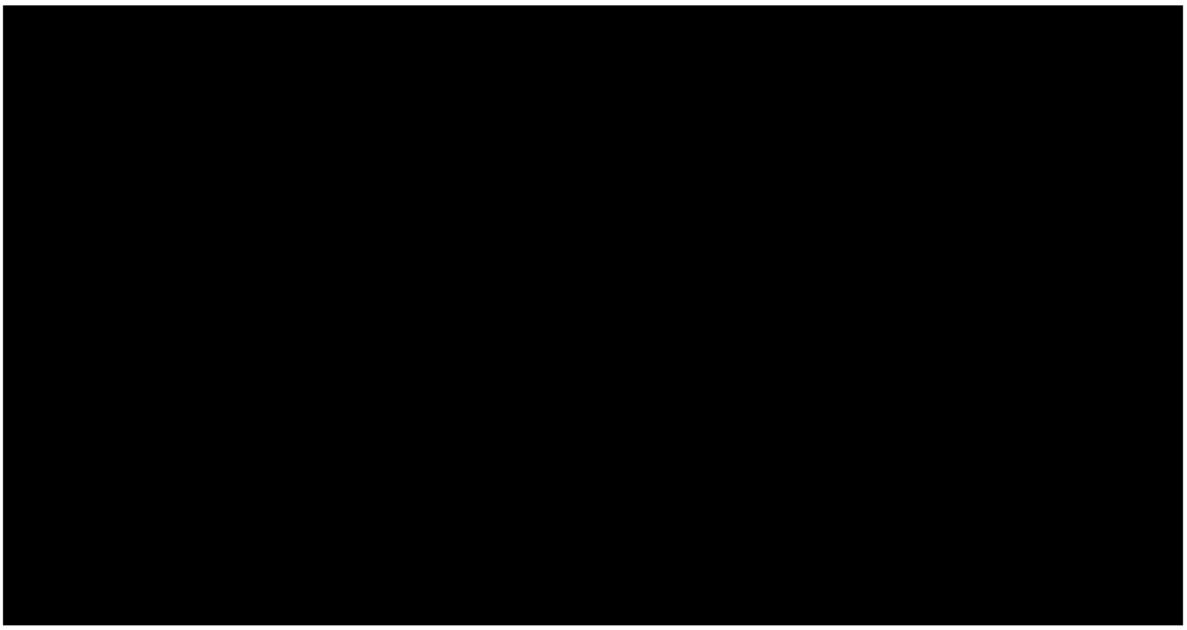
4. After ELL adds the three CCCT generators proposed in this docket in 2029–2030 (as well as [redacted]) the Company is projected to have [redacted]. Despite this, BP25 shows ELL adding an additional [redacted]

5. [redacted]

Confidential Figure 2 below shows the Company's capacity position with the original and updated data center load.

[58] ELL Response to Sierra Club Request 5-1(d).

Confidential Figure 2. Capacity position with data center load



Source: Graph based on data provided in ELL Response to LEUG Request 1-8, HSPM Attachment LEUG 1-8_A_HSPM.

Q How will ELL serve the Customer's load?

A As discussed, ELL is proposing to build three CCCTs totaling 2,262 MW for the purpose of meeting the data center demand. Originally, this plan left around a [redacted] gap between Meta's projected load of [redacted] and the capacity of the proposed CCCTs. But that gap [redacted] when ELL updated Meta's load to [redacted] in supplemental testimony.[59] This is concerning because Entergy is now effectively committing ELL's other resources—and its existing customers' resources—to supply [redacted] of Meta's need.

In direct testimony, Entergy Witness Beauchamp stated that ELL expects to use its current resource portfolio to supply part of the [redacted][60] and that the Company is [redacted][61] [redacted]

[59] Supplemental Testimony of Beauchamp at 4.
[60] Direct Testimony of Beauchamp at 19.
[61] *Id.* at 46.

[redacted] [62] In discovery, ELL elaborated that in June 2024 it had issued a final version of its 2024 Request for Proposals for Capacity and Energy for Existing Generation Resources.[63] Since then, ELL has identified specific resources that it intends to rely on and is currently negotiating terms.[64] But that RFP pre-dates the Customer's updated load provided in supplemental testimony, and it is unclear how ELL plans to supply the additional [redacted]. Beauchamp stated that "The Company has determined that it will be able to serve the Customer's additional load as well as the load of ELL's other customers without constructing any additional generation at this time."[65] It's unclear how ELL has excess capacity to serve the Customer given that the Company has a capacity deficit even without the data center load.

Q How will ELL serve its non-data center customer load?

A ELL's most-recent Business Plan, BP 25, shows the Company building and bringing online over 5,000 MW of solar PV by 2030. Just over 1,000 MW of that solar is specifically named projects or PPAs, 3 GW is associated with Docket U-36697, and 1,250 MW is new generic planned solar projects incremental to the 3 GW. BP 25 also shows a 600 MW BESS project planned in 2029.

BP 25 also shows ELL bringing online [redacted] beyond the three the Company is building to meet the data center customer load by 2030. But the Company has provided no other information about the [redacted]. Instead, ELL is focusing on resources needed to meet the data center load. As I will discuss in the next section, given the current market with a surge in demand for supply-side resources and constrained supply, if ELL immediately begins planning and building those incremental CCCTs, they will be costlier than the current CCCTs proposed.

[62] *Id.* at 19.
[63] I understand this 2024 RFP to be different than RFPs that ELL is issuing to procure 1.5 GW of renewables.
[64] ELL Response to Walmart Request 1-4(a) and (b).
[65] Supplemental Testimony of Beauchamp at 4.

5. ELL'S ECONOMIC ANALYSIS PRESENTS A LIMITED AND SKEWED VIEW OF THE IMPACT OF THE DATA CENTER LOAD

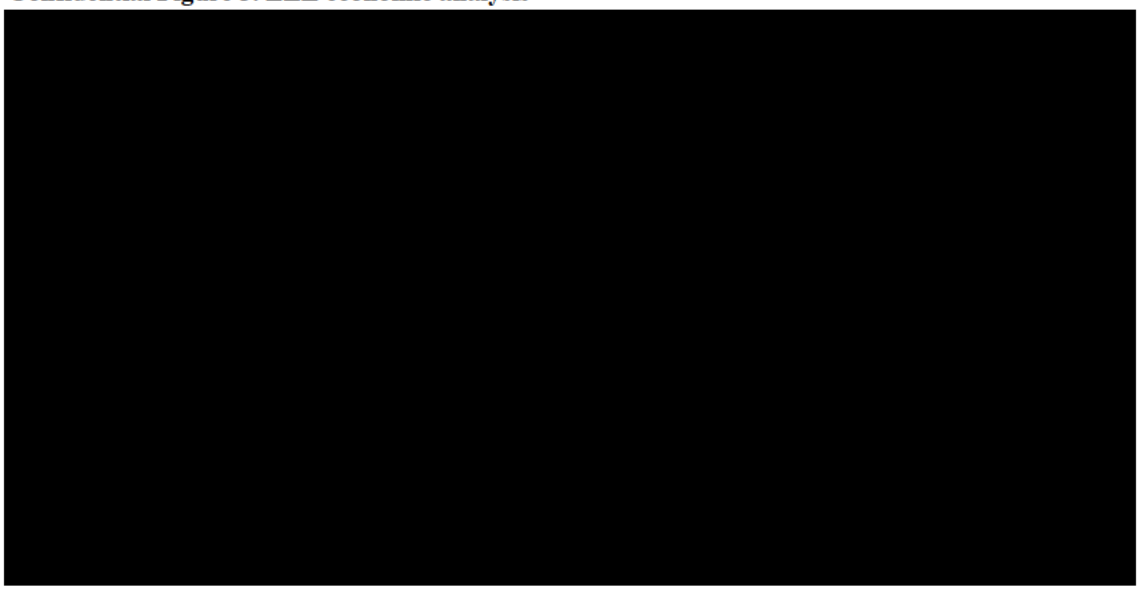
Q Has ELL conducted any analysis on the total impact of the proposed project on ELL ratepayers?

A Yes. ELL conducted an economic analysis sponsored by Witness Datta that purports to show that the project will deliver net benefits to ELL ratepayers. Specifically, ELL claims that its analysis shows, "relative to a scenario where the Customer were to choose not to locate its Project in Louisiana, the structure of the transaction is expected to save ELL's [existing customers] hundreds of millions of dollars in the form of reduced rates during the term of the ESA."[66] But I am concerned that this analysis presents a limited view of the potential impacts of the ESA, and in fact ELL ratepayers could end up with much lower benefits than ELL projects—and net even costs from the data center customer—if the analysis were conducted with a more robust methodology.

The results of ELL's analysis are shown in Confidential Figure 3 below. The analysis starts by netting out (1) the revenue requirement and (2) revenues from the ESA over the first 15 years, then subtracting (3) the costs associated with the revenue requirement to ELL ratepayers after the first 15 years and the cost of the Mt. Olive to Sarepta Transmission line, and finally adding back (4) the benefit of the capacity that ELL would otherwise be procuring in 2041 and net capacity benefits. Each of these components is explained in more detail below. There are a number of shortcomings with this analysis. I am concerned that the benefits ELL cites are being driven by the avoided cost of otherwise-needed generators in the 2040's rather than the payments being made by the Customer, and that in fact, the payments from the Customer under the ESA are not sufficient to cover the cost of the project.

[66] Direct Testimony of Beauchamp at 8.

Confidential Figure 3. ELL economic analysis



Source: ELL Response to SREA 1-20, HSPM Attachment SD-2 HSPM_ELL Titanium Analysis Addendum.

Q Explain the components of the analysis.

A The analysis contains four broad categories of cost, benefits, and avoided costs:[67]

1. **Data center Customer costs:** 15-year revenue requirement of 3 CCCTs, associated property taxes, fixed fuel demand costs for three units (through 2041); firm collateral requirement; ; operations and maintenance (O&M) on Customer Transmission through 2041.
2. **Benefits to ELL from the data center:** ESA revenue through 2041; Resilience Plan Recovery and Storm Charges through 2041.
3. **Costs to ELL non-data center customers:** Remaining revenue requirement of CCCTs (post 2041), associated property taxes and fixed fuel demand charges; O&M on Customer Transmission post 2041; Sarepta to Mount Olive Transmission line revenue requirement.
4. **Avoided costs to ELL non-data center customers:** Revenue requirement of planned combined-cycle and combustion turbines from BP25 in early 2040's that

[67] ELL Response to SREA 1-20, HSPM Attachment SD-2 HSPM_ELL Titanium Analysis Addendum; Direct Testimony of Datta at 6, 17-18.

are now not needed and associated fixed fuel demand charges; delta in capacity benefits between scenarios.

Q Do you have any concerns with the methodology or the calculations ELL used to complete this analysis?

A Yes, I have a number of concerns.

First, ELL did not perform comprehensive modeling of its system with and without the customer load and the new resources (capacity expansion modeling). A capacity expansion analysis would serve as a critical first step, and underlying benchmark, for the most cost-effective new resource portfolio. Its absence is glaring. It would be particularly useful to analytically ascertain which resources would be best considered for the period after the 15-year term expires to help value the avoided cost (i.e., the benefit) that is critical to ELL's projection of net benefit for other (non-project) ratepayers. Instead, the Company conducted a piecemeal analysis. ELL also did not perform production cost modeling and therefore did not evaluate changes in dispatch, operations, fuel costs, locational marginal prices ("LMP"), from the addition of the data center load.[68] ELL claimed this was a conservatism in its analysis because it expects the new combined-cycle resources to capture energy margins and provide value to ELL customers. It is concerning that ELL would discount the importance of understanding how a large new load would change the cost of dispatching its system and just assume that market revenues would go up. Without production cost analysis, ELL also has no way to robustly evaluate the risks to its customers from increasing reliance on gas resources and the impact of high or volatile gas prices, for example.

Second, ELL only evaluated a single scenario where it assumed that Meta would take service for 15 years and then exit. ELL did not evaluate alternatives to determine the net

[68] Direct Testimony of Datta at 16-17; ELL Response to NPO Request 7-3; ELL Response to Staff Request 3-1; ELL Response to Staff Request 3-2.

costs of benefits if, for example, the Customer took service beyond 15 years, paid only its minimum monthly charge, or canceled the contract prior to 15 years.

Third, ELL did not update the analysis to reflect the updated data center load. This means that the analysis undercounts a number of components in the analysis, including the capacity purchases required to make up the [redacted] gap and Meta's share of transmission costs and transmission O&M. This should be somewhat offset if the ESA revenue is updated, specifically if the minimum bill under the Customer's tariff is updated to cover the costs of the incremental capacity purchases, but ELL has provided no definitive information on this.

Fourth, ELL made no attempts as part of the analysis to quantify the potential costs and benefits that it claimed the Mt. Olive to Sarepta Extra High Voltage ("EHV") transmission line could deliver to ratepayers. These benefits, according to ELL, include accommodating load growth, adding resiliency to the system, and facilitating a continued transition to a more sustainable generation portfolio. A transparent analysis of those costs and benefits is critical to understanding the net benefits of the project. ELL makes no effort to consider the opportunity costs of constructing *this* transmission line, compared to other lines that may be better poised to provide value for ratepayers by way of their location and ability to facilitate integration of new capacity and energy resources that are least cost for ratepayers.

Fifth, as mentioned above, ELL's finding that the project delivers net value is driven in large part by the avoided cost of otherwise-needed generators. The cost of avoided generators is based on the cost of building [redacted]. Witness Datta claims this is based on the Company's BP 25, but the BP workbook that ELL provided in discovery doesn't extend past 2043 and doesn't contain the final CCCT.[69] Additionally, ELL ratepayers are not getting *new* resources. They will be acquiring three 15-year old gas plants that will require ongoing capital investments to maintain. This is not accounted for in the analysis.

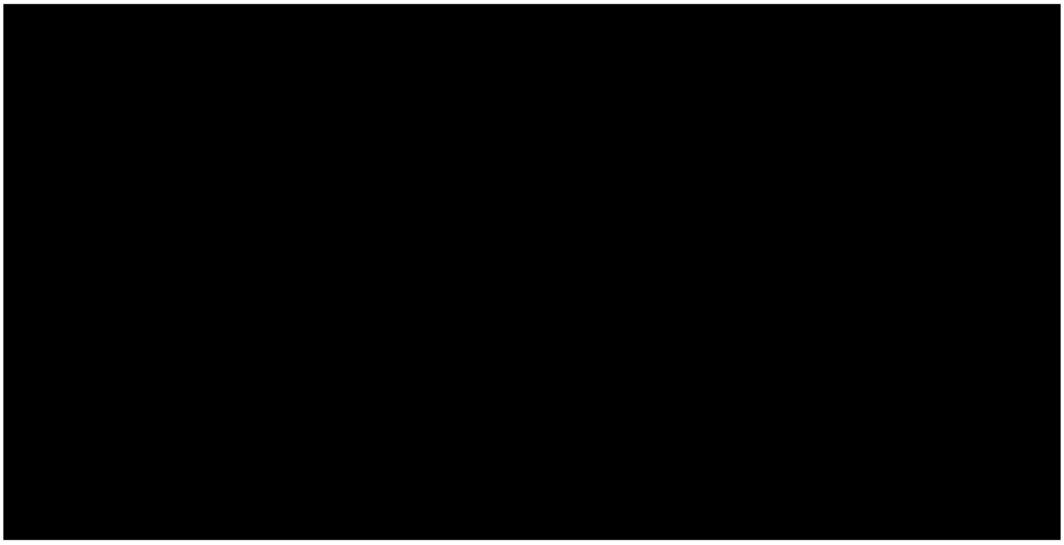
[69] Direct Testimony of Datta at 17-18.

Q Explain your concerns with the project's net benefits coming from avoided generation value?

A As discussed, ELL modeled only one scenario which assumed that the data center takes service for 15 years and pays more than its minimum bill each month. The net benefit findings were driven largely by the avoided cost of building new resources in the 2040s. It is concerning that ELL is justifying construction of 2.2 GW of new generation based in large part on the value it may provide in 15 years. I looked at what would happen to ELL's economic model under two alternative scenarios.[70]

First, if instead of exiting the ESA after 15 years, the Customer chose to continue taking service beyond the 2040s, all of the benefits associated with the avoided generators would disappear. Net ESA revenue will increase, but by a smaller amount than the benefits ELL is claiming from the avoided cost of otherwise-needed generators. I estimate that the total net benefits from the project [redacted] relative to ELL's scenario (Confidential Figure 4).[71]

Confidential Figure 4. ELL economic analysis – data center takes service beyond 2041



Source: Calculations based on ELL Response to SREA 1-20, HSPM Attachment SD-2 HSPM_ELL Titanium Analysis Addendum.

[70] ELL didn't provide updated modeling to reflect the higher load.
[71] Calculations based on ELL Response to SREA 1-20, HSPM Attachment SD-2 HSPM_ELL Titanium Analysis Addendum.

Second, and alternatively, assuming the customer once again does exit after 15 years but pays only the minimum bill every month rather than operating at the high capacity factor that ELL assumes, I find minimal benefits from the project (Confidential Figure 5). Specifically, according to Witness Datta's model, it does not appear that ESA revenues would be sufficient to cover the generation and transmission resource costs that the ESA is intended to cover. This will result in a net ESA cost to ELL's other ratepayers and a total project benefit of only [redacted] that Witness Datta projects and likely not large enough to even represent a statistically significant value for a 30-year revenue requirement for $3.2 billion in generation assets.[72] This is concerning given that ELL stated multiple times in the application that the ESA minimum monthly charge will cover, during the 15-year Original Term of the ESA, the full annual revenue requirement for the Planned Generators, its allocated share of fixed and variable costs, and all associated riders.[73] Witness Datta's analysis does not align with the Company's statements around the ESA. If this is simply a result of outdated or erroneous modeling, ELL should update its Economic Analysis and clarify the net costs assuming only minimum bill payments over the term of the ESA.

[72] Calculations based on ELL Response to SREA 1-20, HSPM Attachment SD-2 HSPM_ELL Titanium Analysis Addendum.
[73] Application at 5.

Confidential Figure 5. ELL economic analysis - minimum bill payments

Source: Calculations based on ELL Response to SREA 1-20, HSPM Attachment SD-2 HSPM_ELL Titanium Analysis Addendum.

Q How did you determine that net benefits to ELL ratepayers will go down under the two scenarios you outline above?

A I relied on the confidential economic modeling provided by Witness Datta[74] ("Economic Analysis model") and the rate analysis model provided by Witness Jones ("Rate Analysis model").[75] ELL updated both pieces of analysis after the application was filed.

To calculate the change in ESA revenue assuming that the Customer continues to take service after 2041, I extended Entergy's revenue calculations and sample bill calculations in the Rate Analysis model out through 2059.[76] I used the billing results from beyond 2041 to represent the ESA revenue in the Economic Analysis model between 2041 and 2059. I also extended out the Resilience Plan Recovery Charges and Storm Charges.[77] My updated analysis now consisted of only the ESA Revenue 2026–2059, the cost of the Project resources 2026–2059, and the cost of the Mt. Olive to Sarepta transmission line; I

[74] ELL Response to SREA Request 1-20, HSPM Attachment SREA 1-20 - SD-2 HSPM_ELL Titanium Analysis Addendum.
[75] ELL Response to SREA Request 1-19, HSPM Attachment SREA 1-19 - RDJ-2 HSPM_Rate Analysis Model Addendum.
[76] Revenue Calculations and Sample Bill tabs in the Updated Economic Analysis Model.
[77] All in the Analysis tab in the Economic Analysis Model.

removed the capacity benefits, avoided customer costs of otherwise-needed generation, and the generator revenue requirement from beyond 2041 that previously was allocated to all ratepayers.

To calculate the change in ESA revenues assuming the Customer pays its minimum bill and ends the contract in 2041, I once again relied on the Rate Analysis model. I changed the Customer load and average demand to 0 kW for each month of the contract and found the associated bill.[78] I updated the ESA revenues from 2026–2041 in the Economic Analysis model with the minimum bill I had just calculated. All other costs and benefits were unchanged.

Q What type of analysis should ELL have conducted instead of its Economic Analysis model?

A To evaluate the net impact of the data center load, ELL should have conducted capacity expansion and production cost modeling to evaluate the revenue requirement of building and operating its system both with and without the data center load and new generator. This would allow it to measure how the cost of both building and operating its system changes with higher load and would allow it to evaluate the risk to ratepayers under varying assumptions. ELL should also have, at the very least, attempted to quantify the claimed benefits that the Mt. Olive to Sarepta transmission line can deliver to its ratepayers and started mapping out a plan for maximizing the line's value. But instead of a comprehensive dynamic analysis, ELL pieced together various pieces of static analysis that show a selective snapshot of the system under a single set of assumptions. This analysis omitted consideration of many risks and potential impacts on existing ELL ratepayers, as I will discuss in the next section.

[78] Revenue Calculations and Sample Bill tabs in the Updated Economic Analysis Model.

6. ELL IS EXPOSING EXISTING RATEPAYERS TO HIGH FUTURE COST AND RISK BY BUILDING FOR LARGE LOAD

i. ELL is locking its non-data center ratepayers into a resource 15 years into the future

Q If the Customer is covering (at least the majority of) the revenue requirement of the project over the first 15 years, why are you concerned about risks on existing ratepayers?

A Ultimately, Entergy's existing ratepayers will serve as a backstop for the data center Customer. The cost of the CCCTs will be placed into ELL's rate base and the existing ratepayers will be responsible for the costs of those generators beyond 15 years. In the Company's Economic Analysis, ELL classifies this transfer of the resource back to ratepayers after 15 years as a benefit based on the Company's ability to avoid building other new resources in the early 2040s. But ELL is locking customers into a resource more than 15 years in advance. This means that regardless of how its load needs change, or how resource costs, regulations, fuel prices, and technological advancements change over the next 15 years, ELL ratepayers will have to pay for three 15-year old CCCTs. This puts ratepayers at risk if gas prices increase or become volatile, or gas supply become limited, or alternative resource costs decline more than ELL currently projects them to decline—which may be the case for both renewable energy and BESS resources. Similarly, if environmental regulations are implemented, at either the state or federal level—revised or more stringent carbon regulations, for example—that limit ELL's ability to operate the plant as projected, then the value of the plant to ELL ratepayers will be substantially lower than ELL forecasts, and the generators could even become a stranded asset for ELL ratepayers.

Q Explain the risks posed to ELL ratepayers by fuel price volatility.

A High reliance on gas resources can expose ratepayers to fuel price volatility for which ratepayers cannot plan. Gas is a global commodity, which means that both domestic and global market forces can impact the price and demand for the resource. After roughly

doubling from 2019 to 2023, North American liquid natural gas ("LNG") export capacity was projected to double again by 2028, from current levels of 11.4 billion cubic feet per day to more than 24 billion cubic feet per day in 2028.[79] To put this in perspective, U.S. total gas consumption in 2023 averaged roughly 89 billion cubic feet per day.[80] But the recently announced United States trade tariffs have injected substantial uncertainty into the global natural gas market. According to industry analysts, this uncertainty is driven in part by the role of LNG as both a tool to rebalance trade with the United States, for nations looking to ease relations with the United States, and a countermeasure for those looking to retaliate against the United States for the steep tariffs.[81] In the near term, this uncertainty has driven up March Nymex gas future contracts and natural gas sport market prices.[82] And regardless of where the trade balance ends, the domestic natural gas markets will continue to feel the impacts of global uncertainty.

When the market is constrained and prices spike, those costs are passed directly to ratepayers. This happened recently in 2022 when Russia invaded Ukraine and European gas customers turned increasingly to U.S. gas. This drove up domestic gas prices, and those high costs were passed on directly to ratepayers. For example, DTE Electric Company in Michigan filed its 2022 Fuel Reconciliation Docket and noted that gas spending was 74 percent higher than planned. As a result, DTE requested recover an additional $154 million for 2022 fuel costs alone.[83] Absent action from the Michigan Commission, DTE and its shareholders are not impacted by these gas price spikes since these costs are entirely passed on to ratepayers. The same phenomenon could happen just as easily in Louisiana. ELL should take this into account in its integrated resource plan

[79] Victoria Zaretskaya, U.S. Energy Information Administration, "North America's LNG export capacity is on track to more than double by 2028." (December 30, 2028), available at: https://www.eia.gov/todayinenergy/detail.php?id=64128.
[80] U.S. Energy Information Administration, "Natural Gas Consumption by End Use," February, 2025. Available at: https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_a.htm.
[81] Gavin Maguire. *US natural gas prices brace for impact from tariff crossfire: Maguire.* Reuters, Available at https://www.reuters.com/business/energy/us-natural-gas-prices-brace-impact-tariff-crossfire-maguire-2025-04-02/.
[82] Kevin Dobbs. Natural Gas Futures, *Spot Prices Soar as Trump Tariff Fallout Awakens Bulls*. Natural Gas Intelligence, February 2023. Available at https://naturalgasintel.com/news/natural-gas-futures-spot-prices-soar-as-trump-tariff-fallout-awakens-bears/.
[83] DTE Elec. Co. 2023. *Exhibit A-7.* Mich. Pub. Serv. Comm'n Docket No. E-21051. March 31, 2023.

modeling, and in planning its future resource mix. Reducing its reliance on fossil resources is the best way to protect its ratepayers from these future price volatility risks.

Q Does ELL need the capacity to serve other ratepayers in 2041?

A No. According to BP 25, ELL won't need 2,262 MW of new capacity in 2041. [redacted] By transferring the 3 CCCTs back to ELL ratepayers in 2041, ELL is making its ratepayers pay for more capacity than they likely need, and on a timeline ahead of when customers need capacity.

Q Is the data center Customer actually covering the full cost to maintain the CCCTs as part of the tariff?

A No, ELL's non-data center customers are likely to be responsible for an outsized share of ongoing capital expenditures at the three CCCTs. The cost of ongoing capital expenditures, for both sustaining capital expenses and environmental expenditures will be placed in rate base at the time the costs are incurred and amortized across the remaining life of the plant. Assuming the data center Customer ends service in 2041, all costs amortized beyond 2041 will be the responsibility of ELL's other ratepayers. ELL confirmed this when asked about who is responsible for the cost of upgrades:

> *The Customer would not be solely responsible for the cost of modifications to the Planned Generators. The Planned Generators are proposed as system resources meaning that they serve to meet the resource adequacy requirements associated with the provision of service to all of ELL's customers, not only the Customer. For that reason, the cost of compliance with changing regulations would be shared with all customers in a manner to be determined in the future.*[84]

It is not clear if Meta will pay for an amortized share of any expenditures made during the term of the ESA. But even if it does, if the majority of the plant life is beyond the

[84] ELL Response to LEUG Request 6-15.

term of the ESA, that means that the majority of the cost will be amortized over the time period beyond 2041. If, for example, ELL incurs a capital expenditure in 2035, and the Customer pays for an amortized share of the cost in the years between 2035 and 2041, this still leaves the majority of the project balance beyond 2041 for the rest of ELL ratepayers.

ii. ELL is building for data center load on an accelerated timeline, regardless of how it impacts costs for all ratepayers

Q What is the current timeline to bring a new gas plant online?

A ELL Witness Bulpitt indicated that the typical construction timeline for a new CCCT is 5 years, but that with the current market and constrained supply chain extending lead times, it is unlikely that a new CCCT facility can be "conceived, designed, market tested, approved, and constructed in less than 6 years."[85] In discovery ELL indicated that the timeline – based on recent experience – may be between six years and six and a half years.[86]According to ELL's Business Plan 2025 Technology Assessment, the timeline for deploying solar and BESS is at least [redacted] than the timeline for deploying a CCCT.[87]

Q What is the timeline ELL has outlined for serving the data center load?

A ELL indicated in testimony that Meta approached the Company in January 2024.[88] It was too late at that point to include the data center load in the normal integrated resource planning process, so ELL instead evaluated the load separately.[89] ELL signed the reservation agreement and paid the reservation fee for the first two units in August 2024

[85] Direct Testimony of Bulpitt at 16-17.
[86] ELL Response to Sierra Club Request 6-7.
[87] ELL Response to NPO Request 1-4, HSPM Attachment NPO 1-4 BP25 TA 20240515_HSPM at slide 28.
[88] Direct Testimony of Beauchamp at 26.
[89] *Id.*

and for the third unit in March 2025.[90] The data center is scheduled to be fully powered up by [redacted].[91]

ELL expects that the Project's first two new CCCTs will be substantially complete by November 2028 and in commercial operation by December 2028.[92] Based on Bulpitt's construction timeline, the only way ELL could have the two CCCTs online by the end of 2028 is if the Company was already in the process of procuring the resources (presumably to meet its non-data center load) prior to January 2024. Bulpitt confirms this, stating that ELL leveraged Entergy Texas' ("ETI") competitive solicitation for Power Island Equipment ("PIE") for a CCCT that was performed in 2023. [redacted] and a Letter of Recommendation was sent to accept the bid in November 2023.[93] This means that ELL had accepted a bid for two new CCCTs before the data center Customer approached ELL.

Q Why is it concerning that ELL is serving the data center load with resources that it procured prior to the data center approaching it in January 2024?

A I am concerned that ELL is prioritizing serving data center load over serving its existing customers. [redacted][94] It is likely that the two CCCTs, now being labeled Units 1 and 2 for the data center Project, would otherwise have been used to serve ELL's non-data center load growth. It is now unclear if ELL is still planning to build new CCCTs to serve non-data center load in the [redacted] (although as discussed above, ELL will have a substantial capacity surplus if it does build two new CCCTs in 2030), how ELL is planning to secure those resources, or how the cost to procure future resource will compare to the CCCTs in the current project given

[90] ELL Response to Sierra Club Request 6-8.
[91] Direct Testimony of Beauchamp at 6.
[92] Direct Testimony of Bulpitt at 18.
[93] *Id.* at 19-20.
[94] ELL Response to LEUG Request 1-8, HSPM Attachment LEUG 1-8_A_HSPM.

current market conditions. ELL indicated in discovery that it has not currently reserved equipment for CCCTs or CTs beyond the three proposed in this docket.[95]

This is important because even though ELL is classifying the three proposed CCCTs as system resources, the Customer's minimum bill is set based on the revenue requirement of the current projects. If future projects are significantly more expensive than the currently proposed CCCTs, then it is not clear that the Customer's minimum bill will cover the incremental cost of the new CCCTs. In this instance, Meta's "jumping the queue" may have a material economic impact on non-data center load, forcing it to be on the hook for more expensive incremental CCCT costs.

Q Explain the constraints in the new gas turbine supply chain.

A An influx of new demand from data centers concentrated in late 2020's has caused a shortage in the gas turbine market. Industry sources are citing delivery backlogs stretching beyond 2029, with some manufactures advising that companies should plan for a 7- to 8-year timeline to secure new turbines.[96] This is longer than the 5- to 6-year timeline that Company Witness Bulpitt stated.

There are a finite number of turbine manufacturers in the world. Three companies—GE Vernova, Siemens Energy, and Mitsubishi Power—are responsible for over two-thirds of the turbines under construction globally with GE Vernova leading the way with 55 GW of turbines under construction (but the majority of the turbines are going to Asia).[97] These manufacturers have the ability to produce a set number of turbines per year and

[95] ELL Response to Sierra Club Request 6-9.
[96] Zachary Skidmore. Data Center Dynamics. *Gas turbine manufactures struggling to meet surging demand from data centers – report.* March 2025. Available at https://www.datacenterdynamics.com/en/news/gas-turbine-manufacturers-struggling-to-meet-surging-demand-from-data-centers-report/.
[97] Jenny Martos. Global Energy Monitor. *Leading three manufacturers providing two-thirds of turbines for gas-fired power plants under construction.* August 2024, available at https://globalenergymonitor.org/report/leading-three-manufacturers-providing-two-thirds-of-turbines-for-gas-fired-power-plants-under-construction/.

they are not interested in significantly ramping up production and risking overexposure for an uncertain and potentially short-term trend that could threaten their margins and shareholder value.[98] Instead, they are taking orders and just lengthening the lead time for delivery.[99] And that means it is going be harder for utilities to get new gas turbines to serve normal load growth.

The limited turbines that are available in the next few years will go to the highest bidder willing to pay for the "premium slots in 2028 and 2029" according to GE' Vernova's CEO.[100] That means that utilities will be paying higher costs in the near term to bring online new gas plants, and those costs are likely to be passed on to ratepayers.

Q What does this mean for ELL's existing expensive legacy coal and gas resources?

A As it becomes harder to procure new gas resources, ELL might continue to rely on its costly legacy coal resources. ELL indicated in discovery that its unit deactivation assumptions are just for planning purposes and that until a formal decision is made, they do not represent a decision to deactivate or retire.[101] And in fact, the Company already pushed back its planned deactivation date for the Nelson 6 unit from 2028 to 2030.

The incremental load from data centers does not make the coal plants less costly to operate—in fact it should have minimal impacts on the costs to operate the coal plants. Instead, with higher demand and limited supply in the present—and real-world limits on how much can be built out each year to meet demand—energy and capacity markets become more constrained and prices go up. ELL has to turn to costlier resources further up the supply stack to meet demand, which in turn increases system costs. This means

[98] Advait Arun. Heatmap. *The Natural gas turbine crisis.* February 2025. Available at https://heatmap.news/ideas/natural-gas-turbine-crisis?ref=ctvc.co; Zachary Skidmore. Data Center Dynamics. *Gas turbine manufactures struggling to meet surging demand from data centers – report.* March 2025. Available at https://www.datacenterdynamics.com/en/news/gas-turbine-manufacturers-struggling-to-meet-surging-demand-from-data-centers-report/.

[99] As a practical matter, it's not likely that turbine manufacturers could ramp up production on a timeline that would align with the data center boom over the next five years.

[100] Advit Arun. Heatmap. *The Natural gas turbine crisis.* February 2025. Available at https://heatmap.news/ideas/natural-gas-turbine-crisis?ref=ctvc.co.

[101] ELL Response to LEUG Request 1-8.

that absent action from the Commission to protect existing ratepayers, non-data center customers will be unfairly subsidizing the cost to maintain legacy resources. These are resources that would not be needed but for the data centers and which will increase system costs for all customers. Instead of extending the lives of legacy assets, ELL should focus on deploying low-cost renewable and efficient replacement resources.

Another concern is that ELL's legacy resources, especially coal plants, have high operating costs that make them relatively uneconomic sources of energy. They also are not nimble or fast-ramping which means they are not well suited to facilitate the integration of renewables, particularly the 3 GW of solar PV that ELL is already planning to deploy. ELL's decision to potentially maintain its legacy fossil units to meet data center capacity needs is therefore undermining its ability to build out low-cost solar PV to provide zero-marginal cost energy. This is concerning given that there are capacity resources—such as BESS—that are able to both provide capacity and support the integration of renewable resources.

Q What risks does ELL face from continued reliance on coal assets?

A The coal market has seen dramatic price volatility in some parts of the United States over the past few years.[102] There have also been labor challenges both at the mines and the railroad companies that transport the coal, as coal workers demand better pay and have more options in the labor market. Additionally, as more coal plants across the United States retire and the demand for coal contracts shrinks, coal companies could consolidate. Concentration of the coal supply in a few companies means less competition, which in turn can lead to higher coal prices.[103]

[102] U.S. Energy Information Administration, "Coal Markets." Available at https://www.eia.gov/coal/markets/.
[103] Duke Energy. "Coal Retirement Analysis," available at: https://www.duke-energy.com/-/media/pdfs/our-company/carolinas-resource-plan/appendix-f-coal-retirement-study.pdf?rev=4c1c4df441a14248b2e23ba0368d9855.

Electric power sector coal consumption was down in 2023 relative to prior years and accounted for around 15 percent of generating capacity and 16 percent of total utility-scale generation.[104] Preliminary data from the U.S. Energy Information Administration indicates that this trend continued in 2024.[105] This is novel because coal's national market share of electric generation had been around 20 percent each month between 2020–2022; and prior to 2020, coal had never comprised less than 20 percent market of the market in any month.[106] Additionally, risks from increased environmental regulations at any point during a plant's life could result in higher costs and higher risks. Higher risk impacts not just resource planning economics, but also company risk profiles which can lead to downgraded credit ratings; and this can impact access to capital.

Q What are the best alternatives to serving ELL's near-term load needs?

A ELL should focus on increased investment in renewables and BESS. These resources have a faster timeline to come online than gas resources. Renewables should be able to get accelerated approval under the CSR or using the same process approved in Order No, U-36697, the 3 GW Order.[107]

It is especially important for ELL to be pursuing incremental renewables with the proposed new transmission line that ELL is proposing to build from Mount Olive to Sarepta, as discussed below. One of the Company's main justifications for the construction of this line is its ability to help with the sustainable transition.

ELL should also focus on technologies such as GETs and load management and flexibility tools that allow it to get more out of the existing system, or at the very least

[104] U.S. Energy Information Administration, "Electricity Explained." Available at https://www.eia.gov/energyexplained/electricity/electricity-in-the-us-generation-capacity-and-sales.php.
[105] U.S. Energy Information Administration, "Form EIA-923." Available at https://www.eia.gov/electricity/data/eia923/.
[106] Institute for Energy Economics and Financial Analysis, "Coal Use at U.S. Power Plants Continues Downward Spiral; Full Impact on Mines to be Felt in 2024," (Nov. 2, 2023), available at: https://ieefa.org/resources/coal-use-us-power-plants-continues-downward-spiral-full-impact-mines-be-felt-2024.
[107] Direct Testimony of Ingram at 7.

reduce the new resources needed. I will discuss these resource options more in the next section.

iii. ELL did not robustly evaluate renewable and other alternatives to the three proposed CCCTs

Q Did ELL evaluate alternatives to the three CCCTs?

A No, not robustly. Company Witness Beauchamp discusses the alternatives that the Company evaluated, specifically: (1) constructing all new CCCTs with minimal transmission facilities and no renewables; (2) serving the Customer's load with renewables only; (3) building a 2x1 CCCT in lieu of two 1x1 CCCTs at Franklin Farms (the site in Richland Parish of the Customer's Project); (4) serving the Customer through transmission alone; and (5) deciding not to serve the Customer's load—but Witness Beauchamp stated that the Company determined all were infeasible or inferior.[108] What is missing from the Company's analysis is any manner of optimized capacity expansion modeling, or at the very least evaluation of a hybrid solution with a combination of renewables, BESS and gas resource (both combustion turbines and CCCTs). It is unclear why ELL tested such a limited set of resource options given the extraordinary magnitude of the proposed additional load, and the relative ease (for a large, experienced utility) with which such modeling could be completed. Without robust modeling, ELL has not demonstrated that the three proposed CCCTs are the lowest-cost manner of serving demand.

Q How much new renewable and storage capacity does ELL have planned according to its most recent BPs?

A According to ELL's most recent BP 25, the Company is building [redacted] solar PV—[redacted] 3,000 MW associated with Docket U-36697, [redacted]—and [redacted] BESS by [redacted].[109] The Company has

[108] Direct Testimony of Beauchamp at 43.
[109] ELL Response to LEUG 1-8, HSPM Attachment LEUG 1-8_A_HSPM.

not formally committed to build all of this solar. However, in Docket U-36697, ELL received Commission approval to build 3 GW of solar PV with no further approval required for each individual project provided the project costs are below a certain threshold. The Company indicated that it has issued the 3 GW RFP and that the first procurement window is ongoing.[110]

Q Is the Customer procuring incremental renewables to meet any of its own sustainability goals?

A The Customer appears to be interested in procuring incremental renewables to offset the emissions associated with the CCCTs. This aligns with its corporate goal of matching its electricity use with 100 percent clean energy.[111] ELL stated that it anticipates that the solar, as well as the carbon capture project at Lake Charles Power Station,[112] will offset up to 60 percent of the gas MWh from the new CCCTs.[113] But that still leaves a 40 percent gap. In discovery, ELL indicated that the Company and the Customer are "committed to offsetting 100% of the emissions of the proposed CCCTs and will continue to explore other opportunities to secure other clean resources, including wind and nuclear generation."[114]

ELL has stated that it is committed to identifying the full portfolio of resources to serve the 1.5 GW of solar and hybrid resources by 2030.[115] But the CSR doesn't oblige ELL or the Customer to procure renewables or include any penalties if it fails to do so. All the CSR does is expedite approval for 1,500 MW of solar PV or solar-plus-storage hybrid resources and outline how the resources will be paid for. And even if ELL does procure sufficient renewables to meet 100 percent of the Customer's load, that doesn't take the three CCCTs off ELL's system; it just moves the associated emissions to ELL's other customers.

[110] ELL Response to NPO Request 3-1.
[111] ELL Response to NPO Request 1-8.
[112] Direct Testimony of Beauchamp at 7.
[113] *Id.* at 65; ELL Response to Staff Request 1-10.
[114] ELL Response to SREA Request 1-7.
[115] ELL Response to LEUG Request 3-1.

Q What are Grid Enhancing Technologies?

A GETs is a broad term that covers a range of hardware and software grid technologies that can improve operational flexibility and improve grid performance. Software solutions can enhance control, protection, metering, and response while hardware solutions can improve physical assets and infrastructure that transmits electricity. Some examples include:

- Dynamic Line Ratings and Dynamic Transformer Ratings utilize sensors to calculate line and transformer ratings based on real-time weather conditions rather than using the conservative static rating.

- Flexible AC Transmission Systems are devices that control voltage levels that help dynamically support system voltage across operating conditions, reduce losses, and help with system voltage recovery following a loss event.

- Fixed Series Capacitor Banks are devices that compensate for the impedance of overhead lines and reduce voltage drops at points of connection.

- Advanced Power Flow Controllers are modular devices that can be quickly deployed to allow grid operators to divert electricity flows to avoid congested areas.

- Topology Optimization is a software technology that allows grid operators to re-rout power flows around congested areas.

A number of studies have evaluated and quantified potential benefits from various GETs.[116]

[116] Yaron Miller, Maureen Quinlan. "To Ease Energy Transmission Gridlock, States Look to Grid-Enhancing Technologies." Pew. May 2024. Available at https://www.pewtrusts.org/en/research-and-analysis/articles/2024/05/08/to-ease-energy-transmission-gridlock-states-look-to-grid-enhancing-technologies.

- A study from CIGRE evaluated DLRs and found that the technology could increase transmission capacity 33 percent in the winter and 19 percent in the summer. The pay-back of the technology was extremely short—at less than six months.[117]

- Separate studies from RMI (partner with Quanta Technologies)[118] and Brattle Group[119] found that nationwide GETs could deliver $5 billion in savings by reducing wholesale energy costs, and between $2 billion and $8 billion annually (based on data from the past decade) in reducing grid congestion costs.[120]

A study for RMI evaluated GET projects across five states in the PJM region (Illinois, Indiana, Ohio, Pennsylvania, and Virginia) and found that they could help connect 6.6 GW of new solar PV, wind, and storage by 2027. Further, GET solutions were found to be substantially less expensive than traditional network upgrades required for interconnection.[121]

GETs are not intended to displace the need for new generation to serve large and concentrated data center load, but rather to ensure that ratepayers are getting the most of out the existing technology and infrastructure on the grid. While data center load growth is front and center in the current integrated resource plan, the electric grid is still facing

[117] K. Engel, J. Marmillo, M, Amini, H. Elyas, and B. Enayati. "An Empirical Analysis of the Operational Efficiency and Risks Associated with Static, Ambient Adjusted, and Dynamic Line Rating Methodologies." CIGRE-US National Committee, 2021 Next Generation Network Paper Committee. July 2021. Available at https://cigre-usnc.org/wp-content/uploads/2021/11/An-Empirical-Analysis-of-the-Operational-Efficiencies-and-Risks-Associated-with-Line-Rating-Methodologies.pdf.

[118] Katie Siegner, Sarah Toth, Chaz Teplin, and Katie Mulvaney, GETting Interconnected in PJM: Grid-Enhancing Technologies (GETs) Can Increase the Speed and Scale of New Entry from PJM's Queue, RMI, 2024, https:// rmi.org/insight/analyzing-gets-as-a-tool-for-increasing-interconnection-throughput-from-pjmsqueue/.

[119] T. Bruce Tsuchida, Stephanie Ross, and Adam Bigelow. "Unlocking the Queue with Grid-Enhancing Technologies." Brattle Group. February 2021. Available at https://watt-transmission.org/wp-content/uploads/2021/02/Brattle__Unlocking-the-Queue-with-Grid-Enhancing-Technologies__Final-Report_Public-Version.pdf90.pdf.

[120] Neil Chatterjee. "Grid technology could save billion but for a policy vacuum." Utility Dive, March 2024. Available at https://www.utilitydive.com/news/grid-technology-could-save-billions-Chatterjee/711068/.

[121] Katie Siegner, Sarah Toth, Chaz Teplin, and Katie Mulvaney, GETting Interconnected in PJM: Grid-Enhancing Technologies (GETs) Can Increase the Speed and Scale of New Entry from PJM's Queue, RMI, 2024, https:// rmi.org/insight/analyzing-gets-as-a-tool-for-increasing-interconnection-throughput-from-pjmsqueue/.

issues around electric vehicle load, home electrification, renewable curtailment, and transmission congestion. GETs can help ELL address these and other challenges, increase the deployment of renewables to the grid, and increase the utilization and efficiency of the resources that are already built—and all at a lower cost than relying on new generation solutions or even existing network upgrade solutions. ELL should conduct a study of the potential for GETs to lower system costs and increase utilization of its existing assets.

Q What is load flexibility and how does it work?

A ELL builds its system to meet peak demand. If an end-use customer such as the data center has flexible load and is able to reduce its electricity consumption during times of system peak by moving that consumption to hours in the day with lower demand, then ELL doesn't need to maintain as much generating capacity or operate its most expensive peaking resources as often. With new large loads coming online, managing peak is especially important for ELL to reduce or defer capital spending.

Duke University recently published a study[122] that quantifies the capacity already available to the system if new loads are designed to be curtailable for a small number of hours each year. Specifically, the study evaluated the amount of new (incremental) load that can be served in each balancing authority before temporary curtailment is needed. The study was repeated with assumptions of various levels of curtailment including 0.25 percent, 0.5 percent, and 1.0 percent of the time. The study found that MISO has between 11.6 and 18.5 GW of excess headroom, depending on the level of curtailment (0.25 percent to 1 percent). Further, the study found that during nearly 90 percent of hours that require load curtailment, less than 50 percent of new load is curtailed.

[122] Norris, T. H., T. Profeta, D. Patino-Echeverri, and A. Cowie-Haskell. 2025. *Rethinking Load Growth: Assessing the Potential for Integration of Large Flexible Loads in US Power Systems*. NI R 25-01. Durham, NC: Nicholas Institute for Energy, Environment & Sustainability, Duke University. https://nicholasinstitute.duke.edu/publications/rethinking-load-growth.

Q How could load flexibility reduce system costs for ELL?

A Load flexibility at the data center could reduce how much capacity ELL needs to build to meet the data center's load, or it could allow ELL to utilize some of the CCCT capacity built to serve the data center for other customers. In exchange, Meta could be compensated for the value it provides by curtailing its load with a demand-response program.

ELL has provided no specific information about the data center's load shape, what functions it plans on using the data center energy for, or the Customer's ability to ramp operations up or down.[123] ELL also provided no assessment of Meta's flexibility and didn't provide sufficient information for me to assess the data center's potential for flexibility. But I can identify savings available to ELL *if* the data center is able to introduce flexibility into its operations based on its total load. Specifically, ELL calculated a capacity value as part of its economic model of the CCCTs at [redacted] (escalating at the rate of inflation). This means that if Meta could reduce its firm load by even 10 percent during the peak times of year and make that portion flexible, it could provide [redacted] in value to ELL's system.

Q What do you recommend to the Commission regarding procurement of renewables to meet the data center load?

A The Commission can, and should, require ELL to procure at a minimum 1.5 GW of solar (standalone or hybrid with storage) as a condition of approval of the three CCCTs. ELL has already acknowledged that the Application could be amended to add renewables as part of the project.[124] Based on its capacity shortfall, the risks and costs of reliance on new gas assets and legacy coal assets, and the relatively low cost and risk associated with renewables, the Commission should order ELL to pursue renewables in tandem with the CCCTs.

[123] ELL Response to NPO Request 8-1.
[124] Direct Testimony of Ingram at 14-15.

iv. ELL is making all customers cover the cost of new transmission and gas infrastructure costs needed to serve data center load

Q What new transmission projects is ELL proposing that are not funded by the Customer?

A ELL is proposing to build the Sterling 500 kV substation and the Mount Olive to Sarepta 500 kW Transmission Facility. ELL is classifying these as System Improvements, so unlike the other transmission projects that the Company is proposing and covering through the CAIC, ELL is asking all ratepayers to cover the cost of these System Improvements.[125] Based on its rates, ELL states that Customer is expected to pay for a significant portion of the cost of the system improvements; but ELL provided no specific calculations.[126] The Company estimates that the transmission project will increase the average ELL customer bills by $1.66 a month (assuming an average consumption of 1,000 kWh).[127]

Q Why is ELL classifying it as a System Improvement?

A ELL defends its System Resource classification by claiming that the line improves reliability by increasing load-serving capability and improving operation flexibility and resilience. ELL specifically calls out that the line will provide resilience benefits in an area (presumably Northern Louisiana) which experiences ice storms and tornados.[128]

ELL also asserts that the line will improve north-south transmission ties and aligns with the Company's long-term strategic vision for the area "which includes EHV expansion that would accommodate the continued transition to a more sustainable generation portfolio."[129] ELL further stated in discovery that the Mt. Olive line is needed to maintain

[125] Direct Testimony of Kline at 14.
[126] Direct Testimony of Beauchamp at 10-11.
[127] Direct Testimony of Jones at 43.
[128] Direct Testimony of Kline at 51.
[129] *Id.*

NERC Transmission Planning ("NERC TPL") reliability standard compliance with the load and the three CCCTs.[130]

Q Has ELL adequately justified the System Improvement classification?

A No. ELL has performed no analysis to demonstrate that the Sarepta line would reduce outages or shorten storm recovery time, or otherwise directly supported its resilience claims.[131]

ELL has not demonstrated that but for the data center Customer, the line would still be needed to ensure reliability.[132] ELL stated that as part of the MISO Transmission Expansion Planning ("MTEP") process, in October 2024 ELL requested that the Sarepta line be classified as a Baseline Reliability Project. In February 2025 MISO determined that the project was reliability-driven and assigned it the Baseline Reliability Project designation. But ELL admits in discovery that it cannot make a determination that absent the data center Customer the project would be classified as a Baseline Reliability Project.[133] And eventually, ELL admitted that but for the Customer Project there would be no *immediate* need for the Sarepta line. But ELL is adamant that the project is still part of the Company's long-term vision and would at some point be built regardless.[134] ELL provided no response or analysis when asked if it believed that the proposed Sarepta line would be needed within the next 10 years even without the data center.[135]

Q Do you believe that the project provides sufficient value to ELL's system to justify the investment as currently proposed?

A No. I don't disagree that the System Improvements could provide value to ratepayers and to the system. In the same way that putting a new roof on my house or re-paving the street in my neighborhood only increases my home's value if it is truly needed, the

[130] ELL Response to Staff Request 3-14; Direct Testimony of Jones at 37.
[131] ELL Response to NPO Request 13-8.
[132] ELL Response to Sierra Club Request 1-2.
[133] ELL Response to Staff Request 4-1.
[134] ELL Response to NPO Request 13-8(c)(ii).
[135] ELL Response to LEUG Request 13-8(b).

System Improvements only make sense if the investment is truly needed (and cannot be deferred) and if the investment is being leveraged to maximize the value of the asset. ELL has not justified why the upgrades are needed now (independent of the data center), ELL has not demonstrated that the benefits outweigh the costs, and therefore ELL has not justified passing the costs on to all customers. It is especially unjustified to charge non-data center ratepayers for the cost of the Sarepta line during the early years of the line's operation which would represent the deferral period in the absence of the Customer load.

The Company has also not provided any details on how the line can specifically be used to support the build-out of new renewable capacity. While ELL has presented the CSR as part of this application, the Customer has not formally committed to any projects that are directly tied to this proposed transmission line.

Q How can ELL improve the value of the System Improvements to ratepayers?

A ELL should evaluate the potential to leverage the new transmission line to increase deployment of renewables and BESS and lay out a plan for doing so before it is permitted to place the cost of the proposed EHV line into rate base. ELL states in discovery that "Extra High Voltage (EHV) transmissions systems play a key role in making renewable energy more accessible by addressing the challenges associated with transmitting renewable energy over long distances and providing facilities to collect the energy from more local lower voltage systems."[136] ELL goes on to say that the line will make renewable energy more accessible in remote areas of North Louisiana where solar farms are less likely to operate. But when asked in discovery to provide a breakdown of the expected benefits and associated expected revenues, ELL references a limited section in the direct testimony of Witness Klein which had no specific cost or revenue estimates. ELL provided no specifics on how its resource plan will utilize the proposed line to maximize its benefits and allow for the buildout of renewables. The Company should be required to do so as a condition of putting the costs in rate base.

[136] ELL Response to Sierra Club Request 2-5.

Q What is ELL proposing in terms of new gas infrastructure?

A A similar risk of non-data center customers bearing increased system costs driven by Meta's demand is present with the Gas Pipeline buildout that ELL has planned.[137] ELL admitted in discovery that the Company doesn't have excess natural gas capacity to provide a firm supply to the new plants. The Company indicated that it plans on contracting for firm transportation and all the necessary infrastructure. The costs associated with the necessary pipelines and laterals will be passed on to ELL customers through the FAC dockets.[138] Meta will pay a share of the associated cost through the FAC, but that share will not necessarily be equivalent to its incremental impact on ELL's demand for gas.

Q What do you recommend to the Commission regarding incremental transmission and gas system costs that will be passed on to non-data center ratepayers?

A ELL has not demonstrated that the incremental costs of building out its transmission and gas systems would be reasonably incurred but for Meta's load. ELL has therefore has not justified passing along the costs of the Sarepta System Improvements project as through rate base or the costs of new firm gas capacity through the FAC dockets. ELL should be required to outline a clear plan for delivering value to ratepayers from the Transmission investments before it is allowed to collect the associated costs from the non-data center ratepayers.

Q Does this conclude your testimony?

A Yes.

[137] ELL Response to Sierra Club Request 5-2.
[138] *Id.*