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MISSOURI PUBLIC SERVICE COMMISSION

FILE NO. ET-2025-0184

DIRECT TESTIMONY

OF

STEVEN M. WILLS

ON

BEHALF OF

UNION ELECTRIC COMPANY

D/B/A AMEREN MISSOURI

**St. Louis, Missouri
May, 2025**

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DIRECT TESTIMONY

OF

STEVEN M. WILLS

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I. INTRODUCTION

1

2 **Q. Please state your name and business address.**

2

3 A. Steven M. Wills, Union Electric Company d/b/a Ameren Missouri
4 ("Ameren Missouri" or "Company"), One Ameren Plaza, 1901 Chouteau Avenue,
5 St. Louis, Missouri 63103.

3

4 ("Ameren Missouri" or "Company"), One Ameren Plaza, 1901 Chouteau Avenue,
5 St. Louis, Missouri 63103.

5

6 **Q. What is your position with Ameren Missouri?**

6

7 A. I am the Senior Director of Regulatory Affairs.

7

8 **Q. Please describe your educational background and employment**
9 **experience.**

8

9 **experience.**
10 A. I received a Bachelor of Music degree from the University of Missouri-
11 Columbia in 1996. I subsequently earned a Master of Music degree from Rice University
12 in 1998, then a Master of Business Administration ("M.B.A.") degree with an emphasis in
13 Economics from St. Louis University in 2002. While pursuing my M.B.A., I interned at
14 Ameren Energy in the Pricing and Analysis Group. Following completion of my M.B.A.
15 in May 2002, I was hired by Laclede Gas Company as a Senior Analyst in its Financial
16 Services Department. In this role, I assisted the Manager of Financial Services in
17 coordinating all financial aspects of rate cases, regulatory filings, rating agency studies and
18 numerous other projects.

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17

18 numerous other projects.

18

1 In June 2004, I joined Ameren Services as a Forecasting Specialist. In this role, I
2 developed forecasting models and systems that supported the Ameren operating
3 companies' involvement in the Midwest Independent Transmission System Operator,
4 Inc.'s ("MISO")¹ Day 2 Energy Markets. In November 2005, I moved into the Corporate
5 Analysis Department of Ameren Services, where I was responsible for performing load
6 research activities, electric and gas sales forecasts, and assisting with weather
7 normalization for rate cases. In January 2007, I accepted a role I briefly held with Ameren
8 Energy Marketing Company as an Asset and Trading Optimization Specialist before
9 returning to Ameren Services as a Senior Commercial Transactions Analyst in July 2007.
10 I was subsequently promoted to the position of Manager, Quantitative Analytics, where I
11 was responsible for overseeing load research, forecasting and weather normalization
12 activities, as well as developing prices for structured wholesale transactions.

13 In April 2015, I accepted a position with Ameren Illinois as its Director, Rates &
14 Analysis. In this role, I was responsible for the group that performed Class Cost of Service,
15 revenue allocation, and rate design activities for Ameren Illinois, as well as maintained and
16 administered that company's tariffs and riders. In December 2016, I accepted a position
17 with the same title at Ameren Missouri. In July of 2022, I was promoted to Director,
18 Regulatory Affairs, and in January 2024 promoted to Senior Director, Regulatory Affairs.
19 In this role, I oversee the teams responsible for contributing to all aspects of the Company's
20 state regulated activities, including the Rates and Analysis team I previously directed.

¹ Now known as the Midcontinent Independent System Operator, Inc.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your direct testimony?

A. The purpose of my testimony is to sponsor new and revised tariffs that, collectively, represent a new paradigm of service for the Company related to the emerging customer segment I will refer to generally as large loads. Specifically, I will provide the details of changes to Service Classification 11M – Large Primary Service ("LPS"), which will include new terms and conditions for customers with a demand of at least 100 megawatts ("MW"), including a requirement for such customers to enter into an Electric Service Agreement ("ESA") with the Company and that the ESA be approved by the Commission. Additionally, I will discuss four new program tariffs, under which large load customers can subscribe to premium services that help meet the clean energy goals that many of these customers have, three of which can provide incremental revenues that would reduce the general revenue requirement for the benefit of all customers while also providing additional assurance that other customers are not expected to be impacted by any unjust or unreasonable costs.² Third, I will discuss the expected impact of new large load customers on the general revenue requirement that will impact all customers and present risk analysis that will demonstrate that under the tariff and ESA structure proposed by the Company, the large load customers are expected to pay a fair share of costs and other customers should not be expected to bear any unjust or unreasonable costs arising from the Company's service of potential large load customers.³ Finally, I will discuss how the structure of the proposed tariffs, including the Commission's authority to approve (or not

² One of these Riders is not designed to produce incremental revenues that would lower the overall revenue requirement but instead would allow these customers to cover the cost of resources in a Commission-approved alternative resource plan that these customers may desire to support.

³ As I discuss below, in my view the concept of large load customers paying a fair share aligns with the new provision in SB 4 that, taken as a whole (and referring to a "representative share"), indicates that what the Commission must do when it establishes a tariff structure for such loads is to do so fairly, to do so in a manner that is not unjust and not unreasonable.

1 approve) ESAs, and to examine the adequacy of revenues from future large load customers, will
2 further ensure that future large load customers pay a fair share of the costs to serve them.

3 **III. INDUSTRY BACKDROP – EMERGING LARGE LOAD CUSTOMER**
4 **DEMAND**

5 **Q. Please provide a brief description of the industry trends that resulted in the**
6 **Company's development of the proposed large load customer framework that you will be**
7 **discussing in this case.**

8 A. The details of this trend are discussed more fully in the testimonies of Company
9 witnesses Ajay Arora and Robert Dixon. But for brief context, and as the Commission and
10 anyone following the electric utility industry is acutely aware, the pace of current and
11 prospective electric demand growth, both nationally and regionally, has skyrocketed in the last
12 couple of years. The trend is largely driven by increasing electric requirements associated with
13 the data center industry due to the emergence and/or proliferation of a number of energy
14 intensive applications including artificial intelligence and cloud computing, but also includes
15 more traditional industrial load as a number of macro trends are driving higher levels of
16 domestic and advanced manufacturing as well. The size and scale of new demand is truly
17 historic. Individual large load customers in the hundreds, or even thousands, of MW are seeking
18 service throughout the country, and here in the Company's service territory. For context, the
19 largest individual customer on the Company's system in 2024 had a peak demand of
20 approximately 32 MW. In an environment where we have seen load growth in the zero to one
21 percent per year range for the better part of a couple of decades, we now are faced with the
22 prospect of double-digit percentage demand increases in a few short years. Utilities that
23 experience this growth will almost universally need to advance investment in new infrastructure,
24 most notably new electric generating resources, on an accelerated timeline. This reality creates

1 an imperative to address the terms of service for those extremely large loads that would seek
2 service in our territory and cause the acceleration of this investment. The terms and conditions
3 of such service must be carefully balanced to make the Company's service territory attractive to
4 new growth and the economic benefits it will bring, as discussed by witnesses Arora and Dixon,
5 while providing reasonable protections to ensure that existing customers do not bear unjust costs
6 as a result of the acceleration of investments needed to bring service to large load customers.

7 **Q. Have other electric utilities proposed frameworks recently to serve large**
8 **load customers in their territories?**

9 A. Yes. A number of utilities across the country have proposed new tariffs and
10 frameworks for providing service to large load customers. Commissions in a number of states
11 including but not limited to Indiana, Ohio, Virginia, Louisiana, and Nevada have recently
12 evaluated or are currently evaluating utility proposals for large load service. Here in Missouri,
13 Evergy has recently brought forth such a proposal for the Commission's consideration.

14 The Company is aware and mindful of the approaches taken by utilities throughout the
15 industry, including Evergy. Many of the types of terms, conditions, and programs we are
16 proposing are similar in nature to those of our peers. While each utility's circumstance is unique
17 in some ways, there are also common challenges and tools to address those challenges. The
18 Company's proposal in this case is reasonably in line with the types of proposals we see in the
19 industry while addressing the specific circumstances in our service territory. I will later discuss
20 an analysis of Ameren Missouri's proposal in the context of the facts specific to our system -
21 including future generation investments that will need to be accelerated to integrate the service
22 of large load customers onto the system, of our expectations for new large load customer
23 demand, and of our existing rates and tariffs, to illustrate how our proposed package of terms,

1 conditions, and programs will provide an appropriate balance between attracting the beneficial
2 investment in Missouri that large loads can bring, and protecting existing customers from unjust
3 or unreasonable rate impacts.

4 **IV. LARGE LOAD TARIFF FRAMEWORK**

5 **Q. Please provide some contextual background of the rationale for the**
6 **Company's proposed large load tariff framework.**

7 A. There are a few key things that were front of mind for the Company in
8 developing its proposed large load tariff framework. First, the Company exists as a vertically
9 integrated utility with an obligation to serve all customers that request electric service within its
10 certificated service territory. New large load customers represent retail load and have a right to
11 seek service like any other customer. To that end, the system resources we will use to serve
12 these customers are shared between existing and new customers, both small and large. In that
13 regard, large load customers must be given fair and equitable access to the system with terms
14 and conditions similar to other customers to the extent that their load characteristics and service
15 requirements allow. That said, the unique nature of these loads relative to the entire existing
16 retail customer base is impossible to ignore and demands special consideration. The
17 characteristic that differentiates large load customers is simply their size. No other individual
18 customer or customer class has the same potential to impact the Company's resource adequacy
19 position in a way that will drive the scope and scale of accelerated generation investment that
20 will be required to serve large loads. The resource implications of large load customers are
21 discussed in more detail in the testimony of Company witness Matt Michels. The potential
22 acceleration of billions of dollars of investment in energy and capacity resources to meet the
23 needs of large load customers will unambiguously increase the Company's revenue requirement

1 in the near term. If the Company is going to make this significant level of long-term investment
2 in infrastructure to serve a small number of individual customers, and that investment will be
3 reflected in its revenue requirement, it is critical that we have a long-term commitment from
4 those customers to provide a revenue stream that will contribute to recovery of the incremental
5 revenue requirement associated with that accelerated investment so that these customers pay a
6 fair share of the cost to serve them, else the Company's existing customer base would be subject
7 to the potential for unjust or unreasonable rate impacts. The Company's objective in developing
8 the large load tariff was to implement a framework designed such that these large load customers
9 are reasonably expected to pay their fair share over a long enough term to justify investment in
10 long-lived generating assets so as to avoid such impacts on the remainder of the customer base.

11 During the time which the Company was developing its large load tariff framework, the
12 General Assembly passed and the governor signed Senate Bill 4 ("SB 4"). There is a provision
13 contained within SB 4 that addresses the very same considerations that I just discussed –
14 namely, the potential for large load customers to unjustly or unreasonably impact the cost of
15 utility service for the remainder of the customer base. Specifically, SB 4 contains the following
16 provision:

Each electrical corporation providing electric service to more than two hundred fifty thousand customers shall develop and submit to the commission schedules to include in the electrical corporation's service tariff applicable to customers who are reasonably projected to have above an annual peak demand of one hundred megawatts or more. The schedules should reasonably ensure such customers' rates will reflect the customers' representative share of the costs incurred to serve the customers and prevent other customer classes' rates from reflecting any unjust or unreasonable costs arising from service to such customers.⁴

17 The approach that the Company was developing aligns with the requirements of SB 4.
18 I believe that the same considerations that drove the legislature's decision to enact this provision

⁴ Section 393.130.7, RSMo. (to become effective August 28, 2025)

1 are the considerations that the Company was already contemplating in the development of its
2 large load tariff framework. That said, SB 4 created a legal standard to guide the Commission's
3 decisions on the tariff structure that should apply to large load customers, including a need to
4 consider the impact of large load customers on the existing customer base. Later in my
5 testimony I will discuss a risk analysis that the Company conducted to simulate the potential
6 impacts of the framework on existing customers which provides a sound basis for the
7 Commission to conclude that the Company's proposed framework is designed to reasonably
8 ensure that there will be no unjust or unreasonable rate impacts arising from the service that
9 may be provided to large load customers.

10 **Q. What existing and new tariffs are implicated by the Company's large load**
11 **tariff framework?**

12 A. The foundation of the framework is the creation of a new subclass within the
13 Company's LPS tariff, which is subject to new terms and conditions that apply only to large load
14 customers, as defined therein. These large load provisions within the LPS tariff require
15 customers within this subclass to enter into long-term ESA's with the Company (to be approved
16 by the Commission) that require these customers to agree to certain additional terms and
17 conditions to provide revenue assurance for the acceleration of investment in generation. These
18 provisions also contemplate their participation in up to three new programs pursuant to which
19 additional revenues would be generated above and beyond the level of revenue that will result
20 from application of the LPS base retail charges. Based on discussions with prospective large
21 load customers, the Company anticipates that these customers will provide additional revenues
22 under these programs and thus provide further insurance against any scenario where there are
23 incremental costs associated with adding large load customers to the system not otherwise

covered by their rate revenues. The form of ESA for which we are seeking approval as part of approval of the tariff changes sought in this docket is included in the exemplar 11(M) tariff attached to my testimony as Schedule SMW-D1.

Beyond the changes to the LPS tariff to create this new subclass, and the ESA requirements that go with it, the large load tariff framework includes the following four new program tariffs:

- Renewable Solutions – Large Load Customers ("Rider RSP-LLC")
- Clean Capacity Advancement Program ("Rider CCAP")
- Nuclear Energy Credits ("Rider NEC")
- Clean Energy Choice ("Rider CEC")

a. Large Load Provisions within LPS Tariff

Q. Please discuss the creation of a large load subclass within the LPS tariff.

A. The first thing necessary to create a new subclass is to define the characteristics of the customers that will be subject to inclusion within it. The Company has defined this class as customers with an actual or expected demand greater than or equal to 100 MW and further has required that such customers take service at transmission voltages, i.e., at service voltages exceeding 115 kilovolts ("kV").

Q. Why was the threshold for the large load subclass set at 100 MW?

A. It is clear that the type of large loads that the industry is experiencing are unique enough to warrant differentiated treatment from other customers with respect to certain elements of their provision of service. However, it is also clear that there is not a precise cut-off where one can objectively determine where that unique characteristic becomes present. There must, therefore, be a reasonable threshold selected to define the class. The Company considered a

1 number of factors in its selection of the subclass threshold. First, SB 4 contains this 100 MW
2 threshold in its establishment of a legal requirement for separation of large load customers. This
3 alone is likely all the justification the Company needed to select this threshold. Regardless, the
4 100 MW threshold makes sense for a couple of other reasons. First, it is sufficiently different
5 from all existing customers on the system that it creates a clear separation from existing LPS
6 customers. Recall that earlier I mentioned that the largest customer on the system at present has
7 a peak demand of approximately 32 MW. The 100 MW threshold is slightly more than 3 times
8 the peak demand of our current largest customer, clearly differentiating potential customers in
9 the large load class from those already served without the terms and conditions that will apply
10 to large load customers. A second consideration relates to resource planning, since the impact
11 of these large loads on the Company's resource portfolio is the driving factor in establishing a
12 new class. The Company is currently in the process of deploying new capacity resources,
13 irrespective of new large load customers in the form of gas combustion turbines. The Castle
14 Bluff Energy Center, for example, is currently under construction following the Commission's
15 granting of a Certificate of Convenience and Necessity ("CCN"). Castle Bluff consists of four
16 200 MW (nameplate capacity) units, which is a common size of the type of generators the
17 Company would continue to deploy. A single customer that is larger than the 100 MW threshold
18 established for the large load subclass itself would require the majority of the capacity of a single
19 such combustion turbine unit when accounting for the fact that 100 MW of nameplate capacity
20 does not equate to 100 MW of accredited capacity and after taking into account planning reserve
21 margin requirements generated by new load. That a single customer will require a majority or
22 the entirety of the capacity of a typical new gas unit is indicative of the unique impact large load
23 customers can have on generation investment. Triangulating between the requirements of SB 4,

1 the relative size of large load customers versus existing LPS customers, and the impact on
2 generation capacity needs relative to the incremental unit of capacity the Company is deploying
3 today, 100 MW clearly makes sense as a reasonable threshold at which to establish the large
4 load subclass.

5 **Q. Why are large load customers required to take service at transmission**
6 **voltages?**

7 A. For a couple of reasons. First, it is generally standard practice in the utility
8 industry for customers of this magnitude to own the substations that transform electricity to the
9 voltage at which the end use applications operate since the energy the utility needs to deliver to
10 them can be provided most efficiently in bulk quantities at higher voltages. Simply put, most
11 such customers typically are served at transmission voltage. Second, requiring customers to take
12 service at transmission voltage simplifies cost of service analysis related to these customers by
13 taking allocations of distribution infrastructure out of the equation. Retail revenues derived from
14 large load customers under this paradigm can be analyzed through the lens of just looking at the
15 transmission and generation costs of the provision of service to large load customers.

16 **Q. Please discuss the terms and conditions that apply to customers in the large**
17 **load subclass as reflected in the modifications to the LPS tariff.**

18 A. The majority of the terms and conditions generally relate to the goal I articulated
19 earlier of ensuring an adequate long-term revenue stream from large load customers to support
20 the long-term investments in generating assets the Company will need to accelerate in order to
21 serve them. Specifically, large load customers will be required to enter into ESAs with the
22 Company with the following terms related to providing long-term revenue assurance, and which
23 shall be subject to Commission approval:

- 1 • Large load customers must contractually commit to a term of service of at least
2 15 years. The term will be broken down into a ramp period and a full load
3 period. The ramp period may be selected by the customer and may extend for
4 up to 5 years. The full load period will commence immediately upon conclusion
5 of the ramp period and will extend for an additional 12 years.
- 6 • Large load customers must commit to a minimum level of demand charges to
7 be reflected on their monthly bill for the term of their ESA that is equal to 70%
8 of the contracted capacity reflected in their ESA. The applicable contract
9 capacity will be spelled out for the customer's ramp period in the ESA and there
10 shall be a single contract capacity applicable to the full load term as agreed
11 between the customer and the Company, unless reduced one time (post the ramp
12 period) by 10% (i.e., the contract capacity could become 90% of the original
13 contract capacity) upon payment of a capacity reduction fee. After the original
14 term of an applicable ESA ends, large load customers will be served under the
15 general terms of the LPS tariff but will retain the obligation to pay demand
16 charges equal to 70% of the maximum demand specified in the ESA for which
17 the original term has ended.
- 18 • Large load customers must either have a credit rating at or above A- from S&P
19 Global Ratings and A3 from Moody's Investor Services and liquidity greater
20 than 10 times 50% of the customer's minimum capacity and clean energy
21 commitments for the remaining term of service under its ESA and clean energy
22 participation agreements, or else post collateral equal to that amount.

- 1 • Large load customers may terminate their ESA upon 24 months written notice
2 to the Company but will be subject to a termination fee equal to the sum of (A)
3 the aggregate minimum demand multiplied by the demand charges as of the
4 termination date for each of (i) the remaining term of the ramp period and (ii)
5 the lesser of (x) a period of five (5) calendar years after the termination date or
6 (y) the remaining term, as well as termination fees related to their participation
7 in any optional clean energy programs. Termination fees are subject to
8 mitigation detailed in the tariff if the Company is able to find a replacement
9 customer to take on the capacity or alternatively sells the capacity for which the
10 customer has paid through its termination fee into the capacity market.
- 11 • Customers may reduce their maximum contract capacity by up to 10% after the
12 first five years of their ESA, subject to a prorated termination fee applied to the
13 amount of capacity being reduced, without opportunity for mitigation.

14 **Q. Please explain the rationale for the specific terms and conditions listed**
15 **above that have been added to the LPS tariff for large load customers?**

16 A. The terms and conditions, as I discussed previously, and as is also discussed in
17 the direct testimony of witness Arora, are intended to provide a balance between the type of
18 commercial terms that will help Missouri to be competitive in attracting the beneficial
19 investment and economic development activity associated with large loads to the state and terms
20 that are sufficient to ensure a reasonable level of revenues over a sufficient term to reasonably
21 assure that other customers will not bear any unjust or unreasonable costs associated with the
22 acceleration of new generation that will need to occur to integrate the loads onto the system.
23 The minimum 15-year contract term, 70% minimum demand billing requirement, and the

1 termination notification and fee provisions work in concert to ensure that base level of revenues.
2 The adequacy of revenues under this combination of commercial terms is analyzed in greater
3 depth later in my testimony where I describe the results of the robust risk analysis the Company
4 undertook to understand the impact of expected levels of large load demand on the revenue
5 requirement and rates that will impact existing customers under a variety of future conditions
6 and scenarios. That analysis demonstrates that the combination of contract term, minimum
7 demands, and termination fees stand up to the variety of future outcomes and provide a
8 reasonable level of revenue assurance to justify the investment acceleration needed to bring
9 approximately 2 gigawatts of load onto the system over the next several years.

10 **Q. What base tariff rates will apply to the large load subclass?**

11 A. Large load customers will be subject to the rates within the LPS tariff, subject
12 to the terms and conditions described above.

13 **Q. Why is the LPS rate the appropriate rate for service to these large load**
14 **customers?**

15 A. The LPS rate is based on the Company's embedded cost of serving the largest
16 customers on the system and is reasonably representative of the embedded cost of serving new
17 large load customers. The primary determinants of embedded cost rates developed for the
18 Company's various rate classes are the relative relationship between a customer's or customer
19 classes' energy consumption and their peak demand (i.e., their load factor),⁵ as well as the
20 voltage at which the customer or customer class is served. With respect to load factor and service
21 voltage, large load customers fit neatly within the LPS class. Large load customers are generally

⁵ For purposes of determining the embedded cost of service, a few different measurements of demand are relevant, such as coincident and non-coincident peak demands. These concepts are related but not identical, but for purposes of my testimony here I will generically refer to peak demand as an umbrella concept that covers all of the different "flavors" of peak demand that may be studied in a cost of service study.

1 expected to have high load factors – likely in the 85-90% range. This places them at the higher
2 end of load factors of customers within the LPS class. The LPS overall average customer load
3 factor in 2024 was 66%, and individual customer load factors within the class ranged from 59%
4 to 93%.⁶ Further, the LPS rate already includes customers served at the transmission voltage
5 level at which large load customers will be served, and includes rate provisions, specifically
6 Rider B, that apply to customers served at transmission voltages. The combination of a high
7 expected load factor and service at transmission voltage will almost certainly make the large
8 load customers the lowest cost customers to serve on the entire system on an embedded cost
9 cents per kilowatt-hour ("kWh") basis. And the LPS tariff with application of Rider B credits
10 associated with transmission voltage service is the lowest rate on a cents per kWh offered by
11 the Company. This rate is appropriate for and aligned with the service characteristics of large
12 load customers as a basis for serving them at the Company's embedded cost.

13 **Q. Does that mean that other customers will not be unjustly impacted by the**
14 **Company providing service to large load customers, so long as the large load customers**
15 **pay the LPS rate for the term of their ESAs?**

16 A. Not necessarily. As I clearly articulated above, the LPS rate is the appropriate
17 rate for reflecting the *embedded* cost of service to large load customers. That said, the
18 acceleration of generation resources will cause *incremental* costs that have the potential to
19 increase the revenue requirement on a net present value basis for all customers relative to
20 conditions that would exist if the Company could wait and add those resources later if it were
21 not serving large load customers. It is important to consider the impact of these incremental
22 costs that will necessarily be advanced in order to accelerate the generation needed to integrate

⁶ Excluding one outlier at around 20% that is likely based on anomalous circumstances in that year.

1 these loads onto the system reliably. Those incremental costs will never be observable in an
2 embedded cost of service study performed in a future rate case. That is because an embedded
3 cost of service study is based on a snapshot of the Company's investments and operating costs
4 at a given point in time – the Company's embedded cost annual revenue requirement - which is
5 then allocated fairly to all classes based on a snapshot of those classes' utilization of the shared
6 system. The type of incremental costs that will arise from the acceleration of the generation
7 resources needed to integrate the large loads onto the system can only be observed in a
8 comparative analysis of the costs the Company is incurring relative to the costs that would have
9 existed without the presence of the large loads. Given the vertically integrated and fully
10 regulated retail rate environment in Missouri that results in a shared system for all retail load, it
11 would be inappropriate from an embedded cost of service perspective to shortcut this
12 comparative analysis and try to directly assign the cost of particular resources that are a part of
13 that shared system that exists for the benefit of all retail customers, including large load
14 customers, to any specific customers, including those large load customers. Generation
15 resources are not planned, developed, or constructed on a customer-specific basis⁷, and their
16 allocation or assignment on that basis would unfairly deprive large load customers of retail
17 service on equivalent terms as other retail customers. I will discuss later in my testimony the
18 appropriate lens through which to evaluate the impact on existing customers of the accelerated
19 generation investment the Company will need to make in order to serve large load customers.
20 But first, I will turn to a discussion of other tariff changes proposed as a part of the entire large
21 load paradigm proposed by the Company – specifically new program tariffs that will allow new
22 large load customers to subscribe to received premium services associated with the attributes of

⁷ An exception could exist under Rider CEC that I will discuss below where a specific customer may request a specific resource. The costs of such resources will be separately addressed within Rider CEC.

1 specific forms of generation that may meet such customers' goals related to clean energy and/or
2 sustainability.

3 **b. New Program Tariffs**

4 **Q. Why is the Company proposing new program tariffs as a part of the**
5 **paradigm under which it plans to serve large load customers?**

6 A. Large load customers are very sophisticated energy users, and many have
7 specific corporate objectives with respect to the nature of their electric service. Specifically,
8 many such customers have clean, or carbon-free, energy goals that drive their energy
9 procurement activities, and which can influence their decisions regarding where to locate. The
10 Company recognizes that, in order to gain the economic development benefits that large load
11 customers can bring to a region and to the system, a utility must provide solutions that are able
12 to help the large load customers achieve their clean energy goals. All four of the new program
13 offerings are directed toward this need. Additionally, large load customers' willingness to pay
14 for clean energy attributes can be a source of incremental revenues that can offset the general
15 revenue requirement and lower rates for all customers, a benefit that three of the four
16 programs create. This is a win-win dynamic, in that clean energy programs can be a useful tool
17 for attracting customers and the investment they bring to the region while also reducing the
18 revenue requirement responsibility of all customers.

19 I will discuss the details of each program below. Participation agreements for each of
20 these programs will be subject to Commission approval, which will include approval of any
21 applicable terms, quantities, prices, termination provisions, and other terms and conditions
22 contained therein.

1 **1. Rider RSP-LLC**

2 **Q. What is Rider RSP-LLC?**

3 A. RSP-LLC stands for Renewable Solution Program – Large Load Customers
4 (the tariff for which is included in attached Schedule SMW-D2). This is a closely related variant
5 of the Company's existing Renewable Solutions Program ("RSP"), which to-date has
6 successfully resulted in customer subscriptions for 300 MW of solar capacity and approximately
7 \$7 million in annual net revenue that is offsetting the Company's revenue requirement.

8 The general premise, and many of the details, of Rider RSP-LLC are identical to the
9 existing RSP program. However, certain provisions have been modified to address the specific
10 circumstances of large load customers, primarily to align the terms of the program with the
11 terms of service that will otherwise apply to these customers through their ESAs.

12 **Q. Please describe the terms of the program that align with the existing RSP**
13 **program.**

14 A. Under both "flavors" of the RSP, subscribing customers support specific
15 generation capacity⁸ in exchange for a claim on the renewable energy attributes of the energy it
16 generates. Subscribers are subject to an incremental charge – the Renewable Resource Charge
17 - designed to loosely reflect the capital cost of the facility to which they are subscribing,⁹ and
18 also receive a bill credit – the Renewable Benefits Credit – related to the energy output of that

⁸ This could be a specific energy center or a portion of specific energy centers, or both.

⁹ I say the Renewable Resource Charge is "loosely" reflective of the capital cost of the facility because that is conceptually what the charge was originally designed to represent. However, in implementing the second "phase" of the RSP, the Company pivoted to an auction-based pricing paradigm that effectively allowed market forces of supply and demand establish the ultimate level of the subscription charge.

1 facility. The net of the charge and credit will be a charge in the overwhelming majority of
2 circumstances, which will be added to the subscribing customer's bill on top of their otherwise
3 applicable base tariff charges. In exchange for the net charge on their bill, subscribing customers
4 will have Renewable Energy Credits ("RECs") generated by the facility retired on their behalf,
5 reflecting the fact that, by virtue of their subscription to the renewable resources, their load is
6 being served from clean renewable generation.

7 **Q. What are the differences between the existing RSP and the proposed RSP-**
8 **LLC?**

9 A. As I mentioned above, the program has been modified slightly to align the
10 subscription terms with the nature of the terms large load customers will be subject to under the
11 ESAs that will govern their service. In the original RSP, all program resources are subscribed
12 for a 15-year term. Under the RSP-LLC, the subscription term may be established for multiple
13 resources that are all subscribed by the same customer, and which go into service at different
14 points in time. As a result, the term of subscription may be customized for each resource based
15 on the time it goes into service and the relevant term of the large load customer's ESA. The
16 specifics will be reflected in the participation agreement that will be executed between the
17 customer and the Company.

18 Another nuanced difference between the original RSP and the RSP-LLC is that the
19 Renewable Resource Rate and Renewable Benefits Rate will be customer specific, rather than
20 resource specific. Under the RSP, each individual renewable resource – or more specifically,
21 each program phase - is priced independently. This is because the relationship between
22 customers and resources is many-to-one. Said another way, many individual customers may
23 subscribe to portions of a single resource. Under the RSP-LLC, the relationship between

1 customers and resources could be one-to-many, meaning that one individual customer may
2 subscribe to the entire capacity associated with multiple different renewable energy projects.
3 Under the RSP-LLC, the pricing will be determined for all resources to which an individual
4 customer is subscribing by year and that single price will be applied to each of the customers'
5 subscribed resources that are commercially operational within that year. This is also different
6 from the original RSP in a nuanced way. Under the RSP a price is specific to the resource by
7 year of the resource's life. For example, when a resource goes into service in the program, one
8 Renewable Resource Rate is in effect in the first year of the program phase, then a different rate
9 applies for the next year, and so on. Under the RSP-LLC the price is established by year for
10 each participant. In year one there is a price that applies to any RSP-LLC resource to which a
11 particular customer is subscribed and that is in commercial operation that year, then another
12 price applicable during year 2 that applies to then-operational resources, and so on. So, if one
13 program resource comes online in year one of a customer's ESA, and another resource comes
14 on in year 3 of the ESA, they will both be subject to the same price in year 3, year 4, and so on.

15 Finally, the last noteworthy difference in the flavors of the program is that under the
16 RSP-LLC, the volume of the subscription will simply be stated in the subscribing customer's
17 participation agreement as a number of MW of capacity by resource, rather than as a percentage
18 of a customer's annual usage to which they desire to subscribe. This is a function of the "many-
19 to-one" versus "one-to-many" contrast that I laid out earlier. Because one customer will
20 potentially subscribe to the full capacity of a number of renewable resources, there is not a need
21 to break down the capacity of each resource into multiple pieces according to a percentage of
22 annual load that each participating customer desires to subscribe. In the event that only part of
23 the capacity of a resource is included in a subscriber's "portfolio" to "round out" their total

1 subscription, there will still be a MW quantity of capacity associated with that resource stated
2 in the participation agreement rather than a percentage.

3 **2. Rider CCAP**

4 **Q. What is the purpose of the Clean Capacity Advancement Program (Rider**
5 **CCAP)?**

6 A. Rider CCAP (which is included in attached Schedule SMW-D2) is a new
7 program that will allow large load customers with clean energy goals to enable clean energy
8 storage systems ("ESS") as capacity solutions to help integrate higher levels of clean but variable
9 energy production systems – generally, renewable energy.

10 **Q. How does the program work?**

11 A. Participants will identify a quantity of battery or other energy storage capacity
12 that they wish to support in order to encourage the utility to advance solutions to increase the
13 quantity of clean energy on the grid. Many large load users have clean energy goals that are
14 among the most aggressive and sophisticated of any energy consumers in the world. Many such
15 customers have goals to meet 100% of their annual load with carbon free energy. Some go even
16 a step further, trying to match their hourly usage with carbon free energy 24 hours a day, 365
17 days a year. Customers with such ambitions understand that they must take a proactive role in
18 promoting the types of carbon free capacity resources that can help smooth out the variable
19 production profiles of solar and wind energy. The customer and the Company will enter into a
20 CCAP participation agreement that will specify the MW quantity of battery or other energy
21 storage assets that the customer will further support with revenues from the program and that
22 will also specify the price per MW (or kW) that the customer will pay each month. The monthly
23 charge to the participating customer will be a simple price times quantity calculation, and the

1 total amount due will be added to the customers' base bill for utility service. There is no discount
2 or offset to base billing amounts, so the contribution made by participating customers will
3 represent incremental revenue above and beyond their retail charges, which will support the
4 ESS asset and offset the general revenue requirement for the benefit of all customers.

5 **Q. What is the term of a participants' agreement to support an ESS?**

6 A. The term will depend on the timeline on which the assets that the Company
7 develops for the program go into service. The CCAP participation agreement will identify a
8 specific investment in an ESS asset that the participant will support along with an expected in-
9 service date for that asset. The term of the participation will begin at an agreed upon date at or
10 after that in-service date and extend through the end of the term outlined in the customer's
11 ESA.

12 **Q. Are there any other noteworthy program provisions you would highlight**
13 **at this time?**

14 A. Yes. I noted earlier the sophistication and advanced goals that many large load
15 customers have, including aspirations to have hourly matching of their load with carbon free
16 energy. In order to track progress toward such goals and account for their clean energy supply
17 at a granular level, participants may request to receive hourly data about the charging and
18 discharging patterns of the ESS which they are supporting, including information about the
19 energy supply mix on the grid at the time of such charging and discharging.

20 **3. Rider NEC**

21 **Q. What is Rider NEC?**

22 A. Rider NEC (which is included in attached Schedule SMW-D2) is a program
23 under which large load customers can elect to receive nuclear energy credits ("NECs")

1 generated by the Company's Callaway nuclear energy center or any other future nuclear
2 energy center owned by the Company in exchange for program payments. Again, this
3 program is designed to be responsive to large load customers' carbon free energy aspirations.
4 Nuclear energy is a substantial source of carbon free energy that can help position a customer
5 to meet its carbon free energy goals as well as their aspirations to have hourly matching of
6 their load with carbon free energy. Rider NEC provides the opportunity for the customer to
7 pay a premium on its bill in order to claim the carbon free attribute of the nuclear energy
8 generated by Callaway.

9 **Q. How does the program work?**

10 A. Conceptually it is very similar to the prior two voluntary clean energy
11 programs that I discussed, Riders RSP-LLC and CCAP. Interested customers will enter into a
12 program participation agreement, which will specify a quantity, price, and term for the NECs
13 that they wish to acquire. The quantity of NECs that a participating customer may subscribe to
14 will not exceed their anticipated annual energy usage. Each month, the customer will be billed
15 a program charge equal to the quantity of subscribed NECs multiplied by the NEC Rate
16 specified in their participation agreement. The Company will annually have the nuclear energy
17 credits certified by a third party. The NECs delivered will be trued-up and a refund issued to
18 the participant for payments they made for NECs that could not be delivered in the event that
19 the Callaway (or other future) energy center does not produce sufficient NECs to fulfill the
20 subscription for any reason, such as an unplanned outage.

21 **4. Rider CEC**

22 **Q. What is Rider CEC?**

1 A. Rider CEC or the Clean Energy Choice Program (which is included in
2 attached Schedule SMW-D2), is a very flexible and customizable framework under which the
3 Company and large load customers can collaborate to explore, and potentially implement,
4 subject to Commission approval, additional deployment of clean energy technologies above
5 and beyond the amounts of those resource types reflected in the Company's Preferred
6 Resource Plan ("PRP"), as selected in the Company's Integrated Resource Planning Process
7 ("IRP").

8 **Q. How does Rider CEC work?**

9 A. A large load customer that wishes to encourage the development of new,
10 different, or more clean energy resources than are reflected in the Company's PRP may ask the
11 Company to study an alternative "Clean Energy PRP." The Company would then conduct the
12 study of the Clean Energy PRP, and if it was found to be capable of providing safe and
13 reliable service, the large load customer could enter into an agreement with the Company to
14 cover the costs associated with the selected technologies within the alternative Clean Energy
15 PRP in order to encourage the Company to adopt that plan and deploy the resources reflected
16 within it. The Company ultimately retains the discretion of what plans to both study and
17 implement but will work collaboratively with the interested large load customer in good faith
18 to advance proposals that are feasible from the perspective of safety and reliability as well as
19 efficient from an economic perspective for non-participating customers.

20 **Q. If an alternative Clean Energy PRP is adopted, how will the new plan be**
21 **paid for by the participating customers?**

22 A. The large load customer will enter into a CEC participation agreement (to
23 ultimately be approved by the Commission) that details the terms of payment. It is anticipated

1 that, due to the nature of Rider CEC that may result in the selection of a PRP with a higher net
2 present value of revenue requirement ("NPVRR") than the Company's then-existing PRP,
3 more stringent terms will apply to participation agreements under this program than under the
4 other three voluntary programs. By this I mean there will potentially be more stringent
5 termination and credit provisions in order to ensure that the increased NPVRR is covered by
6 the requesting customer. That said, because of the very customized nature of solutions
7 expected to be contemplated under Rider CEC, the program tariff provides a template for
8 engaging in the study and selection of alternative Clean Energy PRPs, while leaving the
9 specifics of program pricing and payments to be fully detailed within the participation
10 agreement itself. Again, all such terms and conditions, including prices, quantities, duration,
11 termination provisions, and any other salient features of the agreement will be brought before
12 the Commission for approval prior to implementation of any Clean Energy PRP.

13 **V. EXISTING CUSTOMER IMPACT AND RISK ANALYSIS**

14 **Q. You discussed previously that large load customers would be the lowest**
15 **cost customers on the system from an average rate embedded cost perspective. But you**
16 **also mentioned that the impact of accelerating generation investment could cause an**
17 **incremental increase in the NPVRR of service that could potentially impact other**
18 **customers. Please discuss the lens through which the impact of large load customers on**
19 **existing customers should be viewed in order to determine whether existing customers**
20 **are sufficiently protected from bearing unjust or unreasonable costs as a result of the**
21 **service to large load customers.**

22 **A.** This question can only be properly considered by estimating the costs and
23 revenues that would exist under scenarios where the Company *serves* large load customers,

1 and then comparing the result to an estimate of the costs and revenues under the scenario
2 where the Company does *not* serve them. This comparison should occur in the context of a
3 long-term analytical framework such as that provided for by the Company's IRP. Under
4 vertically integrated retail ratemaking, which, as I discussed earlier is the paradigm under
5 which Missouri utilities operate, there is no practical or reasonable way to ringfence the costs
6 of serving one set of retail customers – i.e., large load customers - such that any other retail
7 customers' rates are entirely isolated from impacts, including transient rate impacts arising
8 from the timing of accelerated investments and new revenues. Nor would this be appropriate
9 given that large load customers, like all customers, have a right to seek service. A proper long-
10 term analysis, and resulting estimates, based on a range of reasonable assumptions about
11 future conditions can, however, frame a range of potential outcomes from which one can
12 gauge whether existing customers are likely to experience unjust or unreasonable cost impacts
13 as a result of the Company providing service to new large load customers. It is important to
14 note that this analysis is a comparison between two future world states – i.e., one with new
15 large load customers at a certain demand level and one with no such new customers – that by
16 definition will never be able to be observed together – i.e., either we will or will not serve
17 large load customers, so one of the scenarios will certainly be a counterfactual that will never
18 be observed. While it will be possible in the future to observe certain costs and revenues that
19 do materialize, there will always be assumptions necessary to understand what costs and
20 revenues would have existed in the alternative scenario. This is not unlike traditional
21 ratemaking in general, where the Commission relies on a proxy revenue requirement, based
22 on historical costs and revenues with annualizations, normalizations, and other adjustments, to
23 set rates that will apply in the future. It will never be the case that costs and revenues will turn

1 out exactly as assumed when the rates were set, but through the rate case process, the
2 Commission nonetheless is able to set just and reasonable rates. Perhaps an even more apt
3 analogy is how costs are allocated to classes in traditional ratemaking. Just and reasonable
4 allocations of the revenue requirement to the various customer classes are informed by the
5 estimates of the cost of serving the various service classifications from class cost of service
6 studies. But the Commission can and does consider a variety of factors in determining which
7 customers pay how much. Just and reasonable rates do not always strictly follow the estimated
8 cost of service of a particular class but may include consideration of a variety of other policy
9 goals and practical considerations. I would note that in recent rate cases, the Staff of the
10 Commission has generally articulated that rates that are designed to produce revenues within
11 5% of the estimated cost of serving that class are just and reasonable and do not warrant
12 interclass revenue shifts.¹⁰ This frame of reference is useful for understanding guardrails
13 around class revenue allocations that remain within the realm of "just and reasonable".

14 Similarly, it is reasonable for the Commission to make an upfront assessment of the
15 estimated incremental impacts of service to new large load customers and determine whether
16 the terms of that service are such that there is not expected to be any unjust or unreasonable
17 impacts on other customers, even though as things play out in reality there almost certainly
18 will be some impact, whether it is directionally positive or negative over a given window of
19 time. After making that assessment in evaluating the requested approval of the Company's
20 proposal in this case, large load customers would just be subject to normal embedded cost of
21 service ratemaking to ensure that existing customers are not subject to any unjust or
22 unreasonable cost impacts resulting from that large load service – i.e., future LPS rates should

¹⁰ File No. ER-2024-0319, Sarah L.K. Lange Direct Testimony, p. 6, ll. 10-14 and File No. ER-2022-0337, Sarah L.K. Lange Direct Testimony, p. 26, ll. 10-14.

1 simply be set at levels that cover the embedded cost of service as determined by the
2 Commission at that time.

3 **Q. Please describe the analysis that you have conducted.**

4 A. The analysis consists of two phases. In the first phase, either 1.5 gigawatts
5 ("GW") or 2 GW of large load customer load comes onto the system via approved ESAs in
6 the next few years, and none of the load is terminated.¹¹ In the second phase, I account for
7 possible termination of some or all of the ESAs at various points in time while accounting for
8 the termination fee provisions included in the proposed tariff. Based on the construction
9 agreements that the Company has entered into with prospective customers and the advanced
10 stage of discussions with end-use customers for those locations, I will focus on the 2 GW case.

11 The basis of these scenarios (analyzed in Phases I and II) is the IRP analysis discussed
12 in the testimony of Company witness Matt Michels. As witness Michels described, the
13 Company analyzed a number of different incremental large load demand cases when it
14 updated its PRP in February 2025. I analyzed resource plans based on load cases 6 (1.5 GW of
15 new demand declining to 500 MW over time) and 7 (2 GW of new demand declining to 500
16 MW over time) as shown in Michels Table 1 and the discussion around it in witness Michels'
17 Direct Testimony, as compared to a baseline resource plan which included no incremental
18 large load demand. These particular cases, as he describes, are designed to isolate the revenue
19 requirement impact of *accelerating* the generation resources necessary to *integrate* the level of
20 demand reflected in that case. This is an important point. The incremental cost assessment of
21 the impact of the large load customers should be focused on the accelerated resources that are

¹¹ As a modeling convention to analyze only resource acceleration while preventing significant imbalances in the capacity positions in these cases, load is reduced in later years of the analysis to align with resource availability in those scenarios when other load growth or generation retirements cause new resources to be included in the plan. But these load reductions are not contemplated as manifestations of ESA terminations.

1 required to enable reliable service on the Company's system with the existence of the large
2 loads. Once those resources are added, the system is able to serve the load with then-existing
3 resources. Additional changes to resource needs after that – i.e., in this scenario, resource
4 needs in the late 2030's and into the 2040's, are *not* acceleration costs that can or should be
5 attributed to the large load customer. Those arise from additional load growth and/or existing
6 resource retirements anticipated out into the future. The assessment of the incremental cost
7 impact of new large loads is appropriately focused on the resources that must be brought
8 forward up until the point that the new large load customers are successfully and reliably
9 integrated into the system.

10 **Q. How does the 2 GW large load resource acceleration case compare to the**
11 **"no large load" scenario?**

12 A. Load case 7, or the 2 GW acceleration case, produces an estimated increase in
13 the 20-year NPVRR from the "no large load" scenario of \$8.8 billion based on Probability
14 Weighted Average ("PWA") assumptions.

15 **Q. So, does that estimated increase in the NPVRR represent the potential**
16 **impact of the prospective large load customers on existing customers?**

17 A. No. It is only *one side of* that impact. The revenue requirement is expected to
18 increase by that amount as a result of the accelerated generation investments associated with
19 providing service to the demand of large loads. Those large load customers, of course, *will*
20 *also provide new incremental retail* (and likely program) *revenues* that will have the effect of
21 partially, entirely, or more than fully, covering that incremental revenue requirement. It is the
22 residual effect of the increase in the NPVRR of serving the customers *and* the net present
23 value of the increase in retail and program revenues that will have the potential to impact the

1 rates, and therefore long-term costs, of existing customers. Said another way, if the revenue
2 requirement increases by an amount less than or equal to the new revenue, existing customers
3 will either benefit from or be neutral to the Company providing service to large load
4 customers.

5 **Q. What is that magnitude of that residual effect?**

6 A. The simple answer is it depends. First and foremost, it depends on the retail
7 rate levels that exist over the planning horizon. Just as the incremental NPVRR of providing
8 large load service, as established in the IRP, is based on projections of *future* costs and energy
9 market conditions, the projection of retail revenues provided by large load customers must be
10 a projection of those revenues under *future* retail rates. The first phase of my risk-based
11 analysis will focus on this uncertain factor by analyzing the retail revenues expected from
12 large loads under a range of assumptions about future rate levels.

13 It also depends on the extent to which the large load customers continue to take
14 service at anticipated levels and pay those rates subject to the terms and conditions, including
15 the termination provisions, of their ESAs. The second phase of my risk-based analysis will
16 test sensitivities to future large load customer load reductions – i.e., terminations, consistent
17 with the proposed termination provisions in the large load tariff framework I discussed earlier
18 in my testimony.

19 **A. The Retail Rate Growth Factor**

20 **Q. How did you model the impact of the uncertain level of future retail rates**
21 **in this risk-based analysis?**

1 A. The starting point of that analysis is of course today's rates. I modeled retail
2 revenues based on the application of today's LPS rates¹² to the amount of incremental load
3 reflected in the respective IRP large load scenario that I was studying. Then I developed three
4 sensitivities of future rate growth trajectories that reflect annual rate increases of 3, 4 and 5
5 percent.¹³ I selected these scenarios as appropriate sensitivities based on consideration of
6 recent historical average rate increases over the past several years, as well as an awareness of
7 the elevated investment level reflected in the Company's current Smart Energy Plan and the
8 Company's PRP (elevated investment levels that we are seeing across the industry) which
9 suggests that there will be a sustained level of average rate growth exceeding the recent
10 historical experience. I would note that this is also consistent with trends in the industry, which
11 is in a cycle of investment made out of necessity due to the age of utility infrastructure,
12 environmental regulation of legacy fossil fueled generation, and increasing concerns regarding
13 reliability, and therefore which is generally causing rate growth across the country at levels
14 higher than general inflation.

15 **Q. Please provide some context to understand the recent historical trend in**
16 **retail rate growth, both for the Company and the industry.**

17 A. Retail rates for electric service have reflected the reality of those higher
18 investment levels I just mentioned, both locally and industrywide. I calculated the compound
19 annual growth rate of base retail rates for the Company, both for the LPS class standalone and
20 on a system-wide average basis for recent periods to determine the pace of rate growth that

¹² As reflected in the March 20, 2025, Stipulation and Agreement in File No. ER-2024-0319, which was approved by the Commission.

¹³ For modeling simplicity, I have assumed in these scenarios that rates increase by the respective percentage that defines the scenario each year. In practice, rate increases will be "lumpier," in that there may be longer periods without any increase followed by a slightly larger increase that reflects the rate growth compounded for the time period since rates were last reset.

has been experienced over the last roughly 5 years. I calculated this for several different periods, because such a calculation is very sensitive to the starting and ending point of the analysis, largely due to the "lumpy" nature of regulated rate changes. Table 1 below shows the compound annual growth rates ("CAGR") in the Company's retail rates for the periods listed.

Table 1 – CAGR in Ameren Missouri Retail Rates¹⁴

Start of Period	End of Period	Base Rate CAGR	
		LPS	System wide
April 1, 2019	April 1, 2024	2.0%	2.8%
April 1, 2020	April 1, 2025	2.3%	2.9%
June 1, 2020 ¹⁵	June 1, 2025	3.9%	5.0%

Q. How do the above figures compare to rate trajectories of the Company's peers in the industry?

A. To answer that question, I also calculated the five-year CAGR in both the Midwest and National average system-wide retail rates¹⁶ for multiple periods through the most recent data available to me, which are shown in Table 2.

Table 2 – CAGR in Midwest and National Average Retail Rates

Start of Period	End of Period	Retail Rate CAGR	
		Midwest Avg	National Avg
12 months ended June 2018	12 months ended June 2023	2.9%	4.6%
12 months ended Dec 2018	12 months ended Dec 2023	2.9%	4.4%
12 months ended June 2019	12 months ended June 2024	3.9%	4.3%

¹⁴ While I show the LPS CAGR, the System Wide CAGR is much more representative because the LPS increase in File No. ER-2022-0337 was capped by a statutory provision (that no longer exists, former Section 393.1655) which had it not existed, would have resulted in a 5.1% LPS increase in that case instead of 2.1%.

¹⁵ Based on rates reflected in the Stipulation and Agreement and approved by the Commission in File No. ER-2024-0319.

¹⁶ Midwest and National average rates based on Edison Electric Institute's Typical Bills and Average Rates Reports.

1

2 Both Company and Midwest and the national average trends show an acceleration in
3 rate growth, with the most recent levels – which I expect to be more in line with the future -- at
4 or exceeding 4% CAGRs. This is very informative as far as expectations for future trends on
5 which to inform our expectations of large load base retail revenues, as the factors driving the
6 investment cycle in utility infrastructure are not letting up. While the expectation of continued
7 rate growth is not necessarily a positive from a strictly customer expense perspective, it is an
8 unavoidable reality of the current state of the system and the need to maintain a reliable and
9 resilient system, which customers would absolutely want if we did not have it and which they
10 therefore need to pay for. At the same time, higher future retail electric rates do mean a greater
11 level of revenue contribution from large load customers, and therefore more potential to
12 benefit existing customers. So, the greater the expectation one has about higher future utility
13 rates, the more likely it is that new load will cover its incremental costs and contribute to the
14 fixed costs of the existing system for the benefit of all customers.

15 **Q. Are there any other details of the modeling you performed that you wish**
16 **to explain before presenting the results of the first phase of the analysis?**

17 A. Yes. I want to clarify again that I focused on the change in NPVRR estimated
18 from the IRP analysis, which represents, as I have stated multiple times already, the cost of
19 accelerating generation. As such, I wanted to focus on the retail revenues available to cover
20 generation costs. Because retail rates in Missouri are bundled, meaning they cover all elements
21 of the vertically integrated utility structure, including generation, transmission, and
22 distribution, I carefully considered the treatment of retail revenues in this analysis. To be more
23 specific, I carved out revenues related to the transmission function based on those transmission

1 function costs allocated to the LPS class in the class cost of service study from the Company's
2 most recent electric rate review (File No, ER-2024-0319) and did not consider them as an
3 offset to the incremental cost of accelerated generation from the IRP-based analysis. The
4 transmission-related portion of the retail revenues should be available to cover transmission-
5 related costs and not assumed as an offset to the generation-related incremental retail revenue
6 requirement. Note that large load customers should not be allocated any distribution costs,
7 since they are to be served at transmission voltages, and therefore any costs reflected in the
8 LPS rate that are distribution-related can reasonably be used as an offset to the incremental
9 generation revenue requirement.

10 To provide a little more color around the "carve out" of transmission costs and
11 revenues, I should note that this analysis is predicated on the assumption that the transmission
12 revenues will be fair and adequate to cover transmission-related costs that may arise from
13 service to large load customers. This is a reasonable assumption because large load customers,
14 by virtue of the construction agreements that the Company has entered into, will pay for any
15 customer specific transmission (or distribution, if some limited amount of distribution
16 infrastructure were needed for any reason) upfront. Therefore, there will not be incremental
17 transmission costs of serving these customers other than their share of any future system-wide
18 upgrades as well as MISO allocated transmission costs, which are all reflected fairly in the
19 CCOS from the rate case.

20 **Q. Please discuss the results of this first phase of the risk analysis.**

21 A. Table 3 below shows the 20-year NPVRR of the residual revenue requirement
22 impact of large load service on other customers after considering both the incremental costs of

accelerated generation investment and incremental retail revenues, using the 3%, 4%, and 5% sensitivities for future retail rate growth.

Table 3 – Residual Revenue Requirement Impact NPVRR

	Future Retail Rate Growth		
	3%	4%	5%
NPVRR (\$Millions)	\$762	\$144	(\$537)

An immediate observation is that the impact of large load customer on other customers is nearly symmetrical across the future rate growth scenarios, ranging from a roughly three quarters of a billion estimated "detriment" in the 3% rate growth scenario to a half of a billion dollar estimated "benefit" in the 5% rate growth view.

Q. So, other customers could experience higher rates if overall rates only increase 3% annually?

A. While that is what these estimates show, the overall takeaways are (1) that the estimates suggest that there is almost as much of a chance that their rates go down by adding these loads (if you assume the odds of a 5% annual growth rate in rates is equal to the odds of a 3% annual growth rate; in my opinion the odds of the 5% annual growth rate are higher); and (2) placed in the proper context, these results suggest adding large load customers (even if we assume no additional program revenues) is largely a "wash." I say that it is largely a wash because, while hundreds of millions of dollars (about \$700 million on the downside; about \$500 million on the upside) is undoubtedly a meaningful amount of money, the total estimated NPVRR in the baseline scenario of \$91.5 billion over the period in question is *more than 100 times greater*. That is, the range of potential impacts (between the 3% to 5% annual CAGR in rate trajectory scenarios) is just a positive 0.8% to negative 0.6% impact on future retail rates –

1 figures which when we are talking about dollars of this magnitude are well within the bounds
2 of just and reasonable rate allocations to classes. And in the rate growth scenario most closely
3 matched to recent history (4%) the residual impact is just 0.2% (positive) of the full 20 year
4 revenue requirement from the baseline analysis.

5 **Q. What other considerations, then, are important to understanding the full**
6 **scope of the potential impact of 2 GW of large load customers on other customers?**

7 A. We know at this point that there is a largely symmetrical range of impacts that
8 could result in a modest net benefit or net detriment to existing customers based on the
9 Company providing service at LPS rates alone. Now it is important to layer on top of that the
10 revenue contributions that could arise from large load customer participation in some or all of
11 the optional clean energy programs that the Company is also proposing in this case. Revenues
12 from such programs would provide further insurance against any scenario where otherwise it
13 might be possible for there to be a gap in the residual analysis between the incremental costs
14 and revenues of providing this service.

15 **Q. Can you provide some context for the potential clean energy revenues?**

16 A. Yes. While clean energy agreements are still being negotiated with potential
17 large load customers, it is possible to develop a range of expectations around what revenues
18 may arise from those programs, and how those revenues would interplay with the analysis I
19 discussed above.

20 Consider the amount of renewable generation reflected in the Company's PRP (and in
21 the acceleration cases around that PRP) that is available to "sell" through programs and
22 generate revenues. The IRP scenarios are discussed in more detail in the testimony of witness
23 Michels. The Company could potentially sell the RECs associated with 2.2 GW of solar

1 capacity and 2 GW of wind capacity Using recent Renewable Solutions Program pricing as
2 guideposts, one can calculate the potential value – i.e., net revenue – that could be derived
3 from selling the renewable attributes from the resources in the PRP. Recall that the Company
4 has so far sold RECs from two large scale facilities – the Boomtown and Cass County Energy
5 Centers - under the existing RSP program. While the pricing under RSP is slightly more
6 complex than a simple dollar per REC price, one can infer a dollar per REC value from the
7 program based on assumptions about the capacity factor at which the program resources will
8 operate. Under the first two phases of the RSP, the implied value per REC on an NPV basis of
9 the program prices at which the resources were fully subscribed based off of expected capacity
10 factors were \$3.95 and \$14.95 respectively. Using those prices as bookends for potential
11 revenues under the RSP-LLC and applying them as a range to the amounts of capacity that I
12 discussed just above, the potential exists to generate revenues from Rider RSP-LLC shown in
13 Table 4 below.

Table 4 – Illustrative RSP-LLC Revenue Contribution (Millions)

Implied Price / REC	Nominal Revenues	NPV of Revenues
\$4	\$594	\$296
\$5	\$742	\$370
\$6	\$890	\$444
\$7	\$1,039	\$518
\$8	\$1,187	\$592
\$9	\$1,336	\$666
\$10	\$1,484	\$740
\$11	\$1,632	\$814
\$12	\$1,781	\$888
\$13	\$1,929	\$962
\$14	\$2,077	\$1,036
\$15	\$2,226	\$1,110

1 Keep in mind that that is only the range of potential impact of Rider RSP-LLC. The
2 Company also may see participation interest in Riders CCAP and NEC, which would
3 potentially generate additional incremental revenues above and beyond the range I estimated
4 for Rider RSP-LLC. It quickly becomes clear that clean energy programs can be a powerful
5 tool to improve the affordability of service for existing customers while satisfying large
6 customer demand for clean energy. And they are a tool that has the potential to largely or
7 entirely offset any potential estimated "gap" in incremental revenues relative to incremental
8 costs associated with large load service even under conservative assumptions about future
9 retail rates (which as noted earlier, are in relative terms quite small anyway). Or alternatively,
10 such program revenues would simply increase the benefits to existing customers of large load
11 service. It is this juxtaposition that should contribute to the Commission's analysis of whether
12 approval of the Company's proposal in this case (as required by SB 4) would result in just and
13 reasonable rates for other customers.

14 **B. Potential Terminations**

15 **Q. Please turn to a discussion of the second phase of your risk analysis that**
16 **addresses risk associated with the termination provisions in the large load framework.**

17 A. I built on to the analysis I just presented above to also add in the sensitivity of
18 the residual revenue requirement impact to large load customer load reductions that would
19 manifest as terminations under customer ESAs. In those termination scenarios, I included the
20 termination fees that would apply as required by the tariff and the ESA but then included no
21 more incremental retail revenue associated with that load going forward from the point of
22 termination. I modeled terminations of 50% and 100% of the large load customer load

1 reflected in the respective IRP scenario, and I modeled each level of termination occurring in
2 each year of the period from 2028 through 2037.¹⁷

3 I iterated through all potential combinations of these parameters for all the acceleration
4 cases, resulting in hundreds of permutations. This gives a detailed picture of the range of
5 possible outcomes of the residual impact on the revenue requirement of providing service to
6 these particular levels of large load customers, including the impact of any potential ESA
7 terminations.

8 A final step layered on to this analysis was to consider the potential to mitigate any
9 residual impacts on the revenue requirement if a customer termination were to occur. For
10 example, if a large load customer were to terminate its ESA in an early year, say for example
11 2030, the Company could and would expect to adjust its generation investment plan to defer
12 some of the previously accelerated generation that is giving rise to the incremental revenue
13 requirement associated with large load service.

14 Witness Arora discusses the generation deferrals that would be most likely to occur if
15 large load terminations occurred in selected years analyzed in my risk analysis. I then
16 accounted for changes in the incremental NPVRR associated with avoiding the capital
17 investment associated with that now-deferred generation. I have layered those impacts into
18 these scenarios as well, to illustrate the most likely impact of load terminations in any given
19 year. Table 5 below shows for those selected years scenarios¹⁸ the mitigated impact that
20 should be considered the residual impact of each scenario that is most representative of what

¹⁷ I ended the analysis in 2037 because by that point in time, payment of a termination fee of up to five years of minimum demand charges would cover most or all of the remaining term of the contracts and, as the analysis will demonstrate, at that time the residual impact on other customers begins to meaningfully converge with the results of the first phase of the analysis where no load terminates at all.

¹⁸ Full results available in my workpapers.

- 1 should be expected to occur in reality if all of the large load under ESAs terminated in that
2 year, while Table 6 shows the modeled impacts for those same scenarios prior to consideration
3 of any mitigations that may occur (but including termination revenues).

4 **Table 5 – Residual Impact of Large Load Service *With* Mitigation –
2 GW of Demand Case (Millions)**

Termination Year	Future Retail Rate Growth	100% of Large Load Terminates
2028	3%	\$300
2030	3%	(\$324)
2035	3%	(\$793)
2037	3%	(\$931)
2028	4%	\$267
2030	4%	(\$402)
2035	4%	(\$1,117)
2037	4%	(\$1,362)
2028	5%	\$233
2030	5%	(\$482.00)
2035	5%	(\$1,463)
2037	5%	(\$1,826)

5 **Table 6 – Residual Impact of Large Load Service *Without* Mitigation –
2 GW of Demand Case (Millions)**

Termination Year	Future Retail Rate Growth	100% of Large Load Terminates
2028	3%	\$1,897.64
2030	3%	\$1,672.87
2035	3%	\$900.62
2037	3%	\$763.18
2028	4%	\$1,864.66
2030	4%	\$1,595.39
2035	4%	\$576.60
2037	4%	\$332.19
2028	5%	\$1,830.51
2030	5%	\$1,514.96
2035	5%	\$231.09
2037	5%	(\$132.10)

1 **Q. Please explain what Tables 5 and 6 show.**

2 A. Each number in the body of each table represents the 20-year NPVRR of the
3 residual impact I have been discussing – i.e., the modeled impact on existing customers – of
4 service to large load customers under 1 set of assumptions to the risk analysis, in millions of
5 dollars. Those in Table 5 include mitigation of generation investments upon termination, while
6 those in Table 6 do not (but they do both include payment of termination fees). So for
7 example, in Table 5, in the column labeled "100% of Large Load Terminates", and in the row
8 labeled with a termination year of 2030 and a Future Retail Rate Growth of 3%, the value of
9 negative \$324 million is the NPVRR of the modeled impact (a benefit in this instance because
10 of the negative residual revenue requirement impact) of large loads on "other" customers
11 given those assumptions. In other words, in that case where future retail rates grow on
12 average at 3% annually and 100% of the large load added to the system terminates their ESAs
13 in 2030 and stops taking service, but pays the contractual fee due for termination at that time,
14 the Company would mitigate the residual impact on other customers by changing (deferring)
15 its generation plans which would actually produce a benefit for all customers.

16 **Q. You've presented two tables, but isn't the first one, Table 5, how things**
17 **would be likely to play out in reality?**

18 A. Yes, because we would seek to mitigate any terminations by deferring later
19 generation additions.¹⁹ But I included both tables because one can think about the difference
20 between these two tables as the value of potential generation mitigation itself. I also wanted to
21 be transparent about an *extremely unlikely* but theoretically possible worst-case scenario. In
22 that very worst- and unlikely-case scenario, the Company would have entered into and the

¹⁹ Subject to consistency with the then current PRP incorporating any needed adjustments to account for the termination of the ESAs.

1 Commission would have approved ESAs to serve 2 GW of large loads and would have started
2 developing generation resources to meet that load, but then, *immediately, that entire load --*
3 *100% of it* – would take a 180 degree turn and terminate their ESAs almost immediately in
4 2028 (they can't terminate before then because they must give 2 years of advanced notice).
5 Under this scenario, the base risk analysis (without mitigation) would show a residual revenue
6 requirement impact of \$1.9 billion (in the 3% retail rate growth scenario).²⁰ However, given
7 the two-year advance notice for termination required under the proposed large load tariff
8 framework (i.e., notice would be required in 2026 in this scenario) and the timelines for
9 generation development, the Company anticipates that it could avoid the acceleration of a
10 certain amount of energy and capacity resources. In fact, as discussed in the testimony of
11 witness Arora, in this scenario the Company would expect to defer the timing of a 600 MW
12 simple cycle gas plant, a 600 MW combined cycle gas plant, and 1 GW of battery storage,
13 resulting in a reduction in the NPVRR of the acceleration case of \$2.1 billion. Such a
14 reduction would mitigate the overwhelming majority of the \$1.9 billion residual impact that
15 the initial risk analysis showed for even this, the most extreme termination case possible
16 (comparing the 2028, 3% case in Table 6 to that case in Table 5). As also highlighted by
17 witness Michels, the accelerated generation that *was* placed into service – i.e., that which
18 would not be cancelled as a mitigation strategy because of the stage of development that it had
19 reached - relative to the no large load scenario in this mitigation scenario, would also have
20 additional benefits for all customers in terms of reliability, flexibility, and risk mitigation
21 going forward.

²⁰ With such early terminations, retail rate growth is not a very influential factor, as there is a very limited time period where retail revenues are being generated at all. So, the residual revenue requirement impact is very similar in this termination scenario regardless of which retail rate growth trajectory case one looks at.

1 **Q. What is the takeaway from Table 5?**

2 A. Essentially, mitigation should address all of the residual risk (after termination
3 payments) created by the prospect of early termination allowed under the terms of the large
4 load tariff (as shown in table 6) under all scenarios other than the very improbable extreme
5 edge case (100% load termination immediately after large load customers sign ESAs), and
6 even in that extreme case it mitigates most of the potential impact. It is also noteworthy that in
7 Table 6 (with no mitigation), by the end of the 10 year period of analysis, in the 3% retail rate
8 growth case (which is the most likely case to create a detrimental impact of large load service
9 on other customers but is also an unlikely case for the reasons discussed above), the residual
10 impact has essentially completely converged with the residual impact that would occur under
11 that rate growth scenario if the load is permanent (see Table 4 above), suggesting that
12 termination is not the driving factor of risk at that point. The termination fee structure,
13 combined with the likelihood of actionable mitigation strategies, thoroughly address any
14 incremental risk above and beyond that which exists in the scenario where the load is
15 permanent.

16 **C. The Commission's Authority**

17 **Q. You noted earlier that the Commission must approve ESAs and any**
18 **associated clean energy program participation agreements. Please explain the thinking**
19 **behind the approval provision.**

20 A. There is of course uncertainty in the future respecting exactly what impact
21 adding new large loads will have, just as there is uncertainty when any new customer
22 (especially large ones, including other LPS customers) is added to the system, expands or
23 reduces operations, or leaves altogether. It is true that large load customers by definition can

1 have a greater impact than other customers, but the principle that we can't perfectly predict the
2 future holds for all customers. Given the Commission's traditional responsibility to set just
3 and reasonable rates and the additional guidance provided by the standard in SB 4, it is
4 appropriate that the Commission approve the ESAs with an understanding provided by a
5 risk analysis to determine that the impacts are expected to be in line with the standard in
6 SB 4. Further, the Commission can exercise its existing authority to perform appropriate cost-
7 of-service allocation in future rate cases on an ongoing basis to ensure the standard is met.
8 The bottom line is that approval of the proposed tariff framework is just a part of the step of
9 facilitating the Company's ability to obtain these loads, since the Commission will be asked to
10 approve each and every large load ESA and participation agreement, giving them final say on
11 whether to commence service at a time when they will know the revenues that the customer
12 has committed to, including those under the various optional clean energy programs.

13 **Q. Please summarize the risk analysis you presented and provide perspective**
14 **on how the Commission can utilize this information to consider both the large load tariff**
15 **framework proposed by the Company.**

16 A. Consideration of the potential impacts of large loads on existing customers
17 into the future is a complex undertaking, best understood through risk analysis that can
18 quantify outcomes under potential future states of key parameters that will be determinative of
19 those outcomes. The Company has undertaken such a risk analysis that provides a valuable
20 lens for understanding the spectrum of impacts that may occur given an expectation of the
21 incremental revenue requirement of serving large load customers along with a variety of future
22 trajectories of retail rates to offset that revenue requirement, while also considering the risk

1 posed by the potential for load to terminate under the requirements of the large load tariff
2 framework and the governing ESAs.

3 This analysis demonstrates that, even if prospective large load customers only pay the
4 base LPS tariff charges – i.e., do not contribute any clean energy revenues – it is likely that
5 these customers will be neutral to beneficial for existing customers, while acknowledging the
6 modest risk that there could be some gap in the residual revenue requirement impact actually
7 experienced, just as can happen today every time revenue requirements are set in a rate case
8 and every time those revenue requirements are allocated across customer classes. The
9 Commission certainly would be justified to approve ESAs under these circumstances given
10 the expectation that risk is symmetrical and quite modest in the grand scheme of a 20-year
11 revenue requirement. However, the prospect of incremental revenues under the clean energy
12 programs proposed in this proceeding is a layer on top of the LPS tariff revenues that is likely
13 to provide even more revenue assurance to accelerate needed generation and an even higher
14 probability of falling into favorable territory for all customers. ESAs accompanied by clean
15 energy program participation agreements at a meaningful scale should be viewed favorably by
16 the Commission as an opportunity to not only bring the investment to the state represented by
17 the facilities that will be developed by large load customers and to accelerate generation that
18 can benefit reliability for all customers and, but also as an opportunity to spread the fixed costs
19 of the system over a larger customer base that can reduce rates in the long run below the level
20 that would otherwise be experienced. This framework creates the opportunity for true win-win
21 outcomes for the state, the communities in the Company's service territory, and all customers.
22 I recommend that the Commission approve the tariffs proposed by the Company in this case

1 and prepare to evaluate specific large load customer opportunities to be brought forward in the
2 future.

3 **VI. MISCELLANEOUS ISSUES**

4 **Q. Are there any other terms or conditions of service under the proposed**
5 **LPS large load tariff provisions that warrant discussion?**

6 A. Yes. There are a couple of other provisions that do not directly relate to those
7 terms and conditions that I discussed earlier related to providing revenue assurance, but which
8 are important considerations in their own right. Specifically, the large load provisions of the
9 LPS tariff also include the following:

- 10 • Large load customers' bills will be due 30 days after they are issued, rather
11 than the 21-day period applicable to other retail customers.
- 12 • Large load customers that retire, or have retired on their behalf, through
13 participation in optional Company clean energy programs, Renewable Energy
14 Credits ("RECs") in sufficient quantity to satisfy the Company's RES
15 requirement associated with that customer's load will be exempt from charges
16 under the Renewable Energy Standard Rate Adjustment Mechanism
17 ("RESRAM"). The Company has requested a variance from a Commission
18 rule related to this provision that will also result in the exclusion of such a
19 customer's load from the Company's RES obligations as I will discuss further
20 below.

1 **Q. Please explain why the proposed tariff provisions provide large load**
2 **customers with nine more days (30 days versus 21 for other customers) than other retail**
3 **customers to pay their bills?**

4 A. Simply put, large load customers' bills will be the largest and most complex
5 bills that the Company issues. We expect some of these customers to participate in various,
6 and potentially multiple, optional clean energy programs that each have their own nuances and
7 impacts. And the bills themselves could be several tens of millions of dollars per month. We
8 understand from conversations with prospective large load customers that the internal
9 processes they will need to go through to analyze and pay these bills can understandably be
10 lengthy. In recognition of the much higher level of complexity of the large load bill relative to
11 a typical bill for retail service, the Company has proposed this nine-day extension of the time
12 large load customers have to process their bills and render payment.

13 **Q. Why are large load customers that retire, or have retired on their**
14 **behalf, sufficient RECs associated with their load exempt from paying RESRAM**
15 **charges?**

16 A. To understand the reason why, it is instructive to first understand the
17 Commission rule variance that the Company has requested in its application in this case.

18 **Q. Please discuss the variance request.**

19 A. The Company is requesting a variance from 20 CSR 4240-20.100, which
20 requires that the RES portfolio requirement, which establishes a percentage of renewable
21 energy that Missouri utilities must produce or procure, be applied to the total retail electric
22 sales of the electric utility. Specifically, the variance requested proposes to exclude the load
23 associated with large load customers that meet the exemption requirement from the total retail

1 electric sales of the electric utility used to establish its RES obligation. Under this variance, the
2 Company's annual RES compliance and RES plan filings with the Commission would reflect
3 this determination of total retail electric sales excluding sales made to qualifying large load
4 customers.

5 As I mentioned previously, large load customers are extremely sophisticated
6 customers, many of which have ambitious clean, or carbon free energy goals. As a result, it is
7 anticipated that some – perhaps all, or at least most - large load customers will have
8 comprehensive renewable energy acquisition programs that may include participation in
9 optional Company-sponsored programs discussed in greater detail earlier in my testimony. To
10 the extent that a large load customer does participate in such a program, that load will, by
11 definition, be served by renewable energy. The Company's RES requirement ensures that a
12 specified percentage of the load served by the Company is met with renewable energy. The
13 load the Company serves, and the customer's load for which they have acquired RECs, are one
14 and the same. If these two processes – the customer's acquisition of renewable energy for its
15 load and the Company's acquisition or production of renewable energy to serve its load – are
16 completely independent, then the result will be duplication of effort and cost and potentially
17 the eventual retirement of more RECs than there was load to serve.

18 **Q. Could you please provide an example of such a situation?**

19 A. Yes. Imagine a customer with 1 million MWh of load in a year that has a
20 100% carbon free energy goal that it meets entirely through participation in Rider RSP-LLC.
21 The customer has acquired 1 million MWh worth of RECs on its own. Now imagine that the
22 Company separately produces the necessary RECs to meet its RES obligation related to that
23 same load by virtue of its inclusion in the Company's total retail electric sales and the

1 application of the RES portfolio requirement of 15%. In total, there would have been RECs
2 retired, specific to that same 1 million MWh of load, equal to 1.15 million MWh, exceeding
3 the load itself by the 15% of duplicative RECs.

4 Practically speaking, without this variance the Company would need to plan for and
5 eventually produce or acquire *substantial* quantities (given the huge size of these prospective
6 customer loads) of renewable energy to "green" load that may already be "green" through the
7 customer's participation in Company programs, which the Company already will have
8 developed renewable energy resources to support. This duplication of resources would raise
9 costs for everyone. It is logical and efficient to recognize that the load of large customers that
10 acquire RECs under one of our programs is already meeting the requirements of the RES, and
11 that we should thus avoid the cost of overcompliance that would result if the Company
12 duplicated some sub-set of the renewables already acquired by the customer. The simple and
13 obvious solution is to exclude these customers' loads from the determination of total retail
14 electric sales.

15 **Q. Is there any precedent in Missouri for this concept?**

16 A. Yes, the Commission approved a similar variance for Evergy Missouri West
17 associated with potential customers to be served under its MKT tariff in its Second Amended
18 Report and Order in File No. EO-2022-0061, saying:

19 The Commission finds that exclusion of the MKT customer's entire load from
20 EMW's total retail electric sales when the MKT customer demonstrates it has
21 retired, or had retired on its behalf, Renewable Energy Credits greater than or
22 equal to the RES requirement that would have been applied to the MKT
23 customer load is consistent with the goals and framework of the RES.

1 **Q. Returning to the potential exemption of the large load customer from**
2 **charges under Rider RESRAM, please explain why this is appropriate.**

3 A. Rider RESRAM is designed specifically to recover costs and return benefits
4 associated with the Company's efforts to produce or procure RECs to meet its RES portfolio
5 requirement. If a large load customer has independently procured and paid for the costs of
6 RECs through an optional program, and the Company is able to exclude that customer's load
7 from its RES obligations, then there is no causative link between the customer's load and the
8 Company's RES costs and benefits. It is simply fair and equitable to exempt the customer
9 from a charge related to activities that it is not participating in or contributing to the need for.
10 This is also consistent with the Evergy order in File No. EO-2022-0061 that I described just
11 above.

12 **Q. How will this exemption work in practice?**

13 A. Large load customers may enter into participation agreements for Company
14 programs at a level sufficient to provide the RECs necessary to annually meet or exceed the
15 RES portfolio requirement as applied to its load. The Company will monitor the number of
16 RECs provided through the program and any changes in the large load customer's load to
17 ensure that the program RECs continue to cover the RES portfolio requirement. If the changes
18 in load or program participation status indicate that the customer has failed to meet the annual
19 RES portfolio requirement level, RESRAM charges will be applied prospectively, and the
20 customer's load will be included in the determination of the Company's total retail electric
21 sales prospectively as well.

22 **Q. Since resources whose RECs are committed to large load customers**
23 **under Rider RSP-LLC will be indirectly satisfying a portion of the Company's RES**

1 **portfolio requirement, will the Company propose to include the costs and benefits of**
2 **those resources in Rider RESRAM?**

3 A. No. Those resources will have dedicated incremental revenue streams
4 through Rider RSP-LLC, and by the explicit terms of the variance requested by the
5 Company, will not be included in the Company's RES compliance reporting, since the
6 large load customers' loads that are served with RECs from them will not be included in
7 the total retail electric sales in that reporting. Such assets will not be considered eligible
8 for RESRAM treatment.

9 **Q. Are there any other tariff issues implicated by provisions of the large load**
10 **framework within the LPS tariff?**

11 A. Yes, there certain circumstances that the Company has identified that would
12 require special consideration in the Company's Fuel Adjustment Clause ("FAC") tariff. The
13 circumstances relate to the treatment of costs and revenues of capacity. If the Company were
14 to enter into any contractual arrangements under which capacity revenues and/or costs
15 were dedicated to a large load customer (including mitigation of termination fees), then
16 the revenues and costs of that capacity should not be included in the FAC, which would pass
17 them on to all customers and would result in the potential for double counting of their
18 impact. The Company has developed tariff language that it proposes to incorporate into its
19 FAC to carve out the capacity costs and revenues that are directly related to contractually
20 dedicated capacity transactions. I am advised by counsel that the FAC tariff cannot be
21 changed outside of a general rate case, so in the context of this case I have attached an
22 exemplar tariff illustrating the required change to my testimony as Schedule SMW-D3. Upon
23 approval of the large load framework by the Commission, the Company will submit the FAC

1 tariff changes reflected in the illustrative tariff for formal approval and implementation in a
2 subsequent rate case.

3 **Q. Is the Company seeking authorization for an accounting deferral**
4 **mechanism (i.e., tracker) associated with the large load framework?**

5 A. Yes. A key outcome of the three clean energy programs that generate
6 incremental revenue is the affordability benefits that accrue to all customers as a result of
7 subscribers paying a premium in order to claim the renewable attributes of the program
8 resources. Additionally, the termination fee (and capacity reduction fee) provisions of the
9 tariff framework are a key affordability protection mechanism for all customers. A
10 tracker is needed to ensure that *all* of those affordability benefits (from the three
11 programs as well as any termination/capacity reduction fees) do ultimately accrue to all
12 customers. In order to make that happen, the Company is requesting that the Commission
13 authorize it to track all net program revenues associated with the three optional programs
14 proposed in this case that generate new incremental revenues²¹ (in the case of the RSP-
15 LLC program the net revenues are those based on the net bill of subscribers, reflecting
16 both charges and credits) so that those revenues can be reflected in base rates (by
17 lowering future revenue requirements) through an amortization in future rate
18 proceedings, as well as similar tracking and amortization of termination/capacity
19 reduction fees. Without this tracker, the entirety of those benefits may not be captured for
20 all customers but instead could accrue to the Company by operation of regulatory lag.
21 Absent the tracker, benefits of these programs would certainly be realized in each rate
22 review, but it is much less likely that *all* of the benefits would accrue to customers.

²¹ Rider RSP-LLC, Rider CCAP, and Rider NEC.

1 **Q. Does this conclude your direct testimony?**

2 A. Yes, it does.

Sworn to me this 14th day of May, 2025.

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 67th Revised SHEET NO. 61CANCELLING MO.P.S.C. SCHEDULE NO. 66th Revised SHEET NO. 61APPLYING TO MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11 (M)LARGE PRIMARY SERVICE RATE*RATE BASED ON MONTHLY METER READINGSSummer Rate (June through September) (1)

Customer Charge - per month	\$412.66
Low-Income Pilot Program Charge - per month	\$ 291.99
Energy Charge - per kWh	4.06¢
Demand Charge - per kW of Billing Demand	\$ 23.90
Reactive Charge - per kVar	44.81¢

Winter Rate (October through May) (1)

Customer Charge - per month	\$412.66
Low-Income Pilot Program Charge - per month	\$ 291.99
Energy Charge - per kWh	3.71¢
Demand Charge - per kW of Billing Demand	\$ 10.63
Reactive Charge - per kVar	44.81¢

Optional Time-of-Day Adjustments

Energy Adjustment - per kWh	On-Peak	Off-Peak
	<u>Hours (2)</u>	<u>Hours (2)</u>
Summer kWh (June-September) (1)	+0.64¢	-0.37¢
Winter kWh (October-May) (1)	+0.29¢	-0.17¢

- (1) Refer to General Rules and Regulations, V. Billing Practices, Section A. Monthly Billing Periods, for specific applicability.
- (2) On-peak and off-peak hours applicable herein shall be as specified within this service classification.

*Indicates Change.

Issued pursuant to the Order of the Mo.P.S.C. in Case No. ER-2024-0319.

DATE OF ISSUE	<u>May 2, 2025</u>	DATE EFFECTIVE	<u>June 1, 2025</u>
ISSUED BY	<u>Mark C. Birk</u>	<u>Chairman & President</u>	<u>St. Louis, Missouri</u>
	NAME OF OFFICER	TITLE	ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 64th Revised SHEET NO. 61.1CANCELLING MO.P.S.C. SCHEDULE NO. 63rd Revised SHEET NO. 61.1APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

RATE BASED ON MONTHLY METER READINGS (Cont'd.)

Fuel and Purchased Power Adjustment (Rider FAC) Applicable to all metered kilowatt-hours (kWh) of energy.

Energy Efficiency Investment Charge (Rider EEIC) Applicable to all metered kilowatt-hours (kWh) of energy excluding kWh of energy supplied to customers that have satisfied the opt-out provisions of Section 393.1075, RSMo.

* Renewable Energy Standard Rate Adjustment Mechanism (Rider RESRAM) Applicable to all metered kilowatt-hours (kWh) of energy except as otherwise provided for in Section 8.

* Payments Bills are due and payable within twenty-one (21) days from date of bill and become delinquent thereafter except as otherwise provided for in Section 8.

* Term of Use One (1) year, terminable thereafter on three (3) days' notice except as otherwise provided for in Section 8.

Tax Adjustment Any license, franchise, gross receipts, occupation or similar charge or tax levied by any taxing authority on the amounts billed hereunder will be so designated and added as a separate item to bills rendered to customers under the jurisdiction of the taxing authority.

* Indicates Change.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 61.2CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 61.2APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

*** 1. RATE APPLICATION**

The rate shall be applicable to all Large Load Customers on the terms provided for in Section 8 and, at customer's request, to all other service at a primary voltage or higher, provided customer agrees to a minimum monthly billing demand of 5,000 kilowatts.

2. CHARACTER OF SERVICE SUPPLIED

Company will specify and supply a standard three-phase alternating current primary service voltage. Where Company supplies service at 34.5 kV or higher, the appropriate adjustments under Rider B will apply.

*** 3. CUMULATION OF SERVICES**

Service provided through multiple meters to the same customer on the same premises and cumulated for billing purposes under this Service Classification may continue to receive such billing under the provisions of Rules and Regulations, Billing Practices, Non-Standard Service. Unless otherwise required for Company's engineering or other reasons, any additional services installed at customer's request and agreed to by Company will not be cumulated or otherwise combined for billing purposes with any other service supplied to customer except under the following conditions:

- A. Where Company provides more than one service to a single premises from a single Company-owned substation located on customer's premises and provides no additional distribution facilities beyond the substation, all service taken directly from the substation may be cumulated, or
- B. Where Company provides more than one service to a single set of customer-owned metal-clad switchgear, the services provided to that switchgear may be cumulated.
- C. Where a Large Load Customer requires multiple points of service to a single premises.

When cumulation occurs under either A or B above, the monthly peak demand will be determined for each service individually and then summed for applying Service Classification No. 11M Large Primary Service rates.

For a Large Load Customer that, in Company's judgment, requires multiple points of service for an individual premises, the individual meters will be combined prior to determining the demand applicable to billing.

4. DEMAND METERS

Company will install demand meters for the measurement of demands.

*Indicates Change.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY	<u>Mark C. Birk</u>	<u>Chairman & President</u>	<u>St. Louis, Missouri</u>
	NAME OF OFFICER	TITLE	ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 61.3CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 61.3APPLYING TO MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)***5. BILLING DEMAND**

The Billing Demand in any month will be the highest demand established during peak hours or 50% of the highest demand established during off-peak hours, whichever is highest during the month, but in no event less than 5,000 kW.

Peak hours and off-peak hours are defined as follows:

Peak hours: 10:00 A.M. to 10:00 P.M., Monday thru Friday.

Off-Peak hours: All other hours including the entire
24 hours of the following days:

New Year's Day	Independence Day	Thanksgiving Friday
Good Friday	Labor Day	Christmas Eve Day
Memorial Day	Thanksgiving Day	Christmas Day

All times stated above apply to the local effective time.

6. REACTIVE CHARGE

The charge specified in this rate shall be applicable to the kilovars by which the customer's average metered kilovars exceed the customer's kilovars at an average power factor of 90% lagging during the billing period. Such average kilovar billing units shall be determined in accordance with the following formula:

$$\text{kVar} = \left(\frac{\text{kVarh}}{\text{kWh}} - 0.4843 \right) (\text{kW})$$

where:

kVar	=	kilovar billing units
kVarh	=	metered kilovar-hours
kWh	=	metered kilowatt-hours
kW	=	metered kilowatts
0.4843	=	kilovar requirement at 90% lagging power factor.

Where in the Company's judgment application of the above formula would not be appropriate to full or partial self-generation customers, an alternative agreement, between Company and customers, for the payment of reactive supply facilities may be substituted for said formula.

*Indicates Reissue.

Issued pursuant to the Order of the Mo.P.S.C. in Case No. ER-2021-0240.

DATE OF ISSUE February 14, 2022 DATE EFFECTIVE February 28, 2022

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 63rd Revised SHEET NO. 61.4CANCELLING MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 61.4APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

7. OPTIONAL TIME-OF-DAY (TOD) SERVICE

Applicable at customer's option for all Large Primary Service usage, subject to the following provisions:

- a. If advanced metering is not present, customer shall be transferred to this TOD rate option effective with TOD meter installation and transferred from this TOD rate option to the applicable non-TOD rate after the meter is removed.
- b. Customer electing this TOD option, shall remain on said option for a minimum period of twelve (12) months, provided however, that customer may discontinue this option within the first ninety (90) days thereunder subject to the continued payment of the TOD customer charge, in lieu of any other customer charge, for the full twelve (12) month term of this option.
- c. Any customer canceling this TOD option cannot thereafter resume billing under said option for a period of one year following the last billing period on the TOD option.

*** 8. LARGE LOAD CUSTOMERS**

- a. Applicability. In addition to all other sections of Service Classification No. 11(M), the provisions of this Section 8 apply to Large Load Customers, which are defined as customers whose monthly maximum connected load as specified in a Large Load Customer ESA (defined below) ("Maximum LLC Capacity") is reasonably expected to be greater than or equal to 100,000 kilowatts ("kW") or whose maximum connected load is reasonably expected to grow to 100,000 kW or greater. Company will only provide service to Large Load Customers at a voltage of 115 KV or greater, provided that premises served at a distribution voltage could be aggregated under subsection j. Other Terms, below. If any provision of this Section 8 is inconsistent with the provisions of any other Section of Service Classification No. 11(M), this Section 8 shall control with respect to service to Large Load Customers until expiration or permitted early termination of the Term (defined below) of the applicable Electric Service Agreement ("ESA"). Large Load Customers may have multiple ESAs applicable to separate Projects (as the term "Project" is defined in a given ESA).

* Indicates Addition.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY	<u>Mark C. Birk</u>	<u>Chairman & President</u>	<u>St. Louis, Missouri</u>
	NAME OF OFFICER	TITLE	ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 61.5CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 61.5APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

* 8. **LARGE LOAD CUSTOMERS (Cont'd.)**

- b. Term. Large Load Customers shall enter into one or more ESAs in the form attached to this Rate Service Classification No. 11(M) as Exhibit A. The Term of an ESA shall commence on the date as of which (A) each of the conditions set forth in Section 2.1 of the applicable ESA have been satisfied and (B) all or any portion of the Project covered by the ESA has received permanent electric service (the "Effective Date"), and shall continue for a period of a number of years equal to the sum of (1) the Ramp Period, as defined below, plus (2) a period of at least twelve (12) years after the end of the Ramp Period, such that the total number of years is at least fifteen (15) years (the "Term"). The Ramp Period shall start on the Effective Date. The Term may include a transitional load period during which the Large Load Customer shall add load prior to achieving the Maximum LLC Capacity (the "Ramp Period") as specified in the Large Load Customer's ESA of no more than five (5) years, provided that in no event will the Term for an individual ESA be less than fifteen (15) years unless terminated earlier as provided for in Section 8.d. below.
- c. Minimum Obligation. Irrespective of the Large Load Customer's actual demand at a Project covered by an ESA in a given month, Large Load Customers are obligated to pay for (A) at least seventy percent (70%) of the Ramp Demand as specified in the applicable ESA during each month of the Ramp Period, and (B) at least seventy percent (70%) of the Maximum LLC Capacity as specified in the applicable ESA during each month of the Term from and after the end of the Ramp Period (collectively, the "Minimum LLC Demand"); provided that a Large Load Customer's obligation to pay for at least 70% of the Maximum LLC Capacity pursuant to clause (B) above shall also apply (as it may have been reduced under subsection d), from and after the end of the Term of an applicable ESA, to continued service under Service Classification No. 11(M) as provided for in subsection j below. Such payment obligation applies to all applicable base charges and credits that apply under the terms of Ameren Missouri Service Classification No. 11(M) or any successor tariff or rate schedule that are billed on a demand basis, except reactive charges which are not billed on a per-kilowatt basis (collectively, "LLC Demand Charges").
- d. Maximum LLC Capacity; Reduction in Maximum LLC Capacity. At any time after the first five (5) years of the Term of the applicable ESA, a Large Load Customer shall have the right to request a one-time reduction of the Maximum LLC Capacity specified in such ESA by up to ten percent (10%) (such percentage, the "Capacity Reduction Percentage") by providing Company with written notice of same not less than twenty-four (24) months prior to the beginning of the calendar year for which the reduction is requested (the "Capacity Reduction Date"), subject to the receipt by

*Indicates Addition.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY	Mark C. Birk	Chairman & President	St. Louis, Missouri
	NAME OF OFFICER	TITLE	ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6OriginalSHEET NO. 61.6

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO _____

MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11(M)LARGE PRIMARY SERVICE RATE (Cont'd.)8. LARGE LOAD CUSTOMERS (Cont'd.)d. Maximum LLC Capacity (Cont'd.)

Company of the Capacity Reduction Fee (as defined in the applicable ESA). Company shall have no obligation to mitigate the amount of any Capacity Reduction Fee. For the avoidance of doubt, from and after the Capacity Reduction Date and subject to Company's receipt of the Capacity Reduction Fee, the "Maximum LLC Capacity" for purposes of the applicable ESA shall mean the Maximum LLC Capacity originally specified in the applicable ESA as reduced by the Capacity Reduction Percentage.

- e. Elective Termination. Notwithstanding Section 8.b above, a Large Load Customer may elect to terminate its service under an ESA, at any time during the Term of that ESA, upon delivery of written notice of such election (a "Termination Notice") to Company not less than twenty-four (24) months prior to the effective date of the termination specified in the Termination Notice (the "Termination Date"). If a Large Load Customer terminates its service under an applicable ESA pursuant to this Section 8.e, the Large Load Customer shall pay to Company a termination fee in an amount equal to the sum of (A) the aggregate Minimum LLC Demand *multiplied* by the LLC Demand Charges as of the Termination Date for each of (i) the remaining term of the Ramp Period (to the extent that the Termination Date is a date prior to the end of the Ramp Period) and (ii) the lesser of (x) a period of five (5) calendar years after the Termination Date or (y) the remaining Term (such lesser period, the "Termination Fee Period"); plus (B) any aggregate amount of the Large Load Customer's payment obligations under any applicable CEA Agreements (as defined in the ESA) as of the Termination Date for each of (i) the remaining term of the Ramp Period (to the extent that the Termination Date is a date prior to the end of the Ramp Period) and (ii) the Termination Fee Period (collectively, the "Termination Fee"). The Large Load Customer shall pay to Company the Termination Fee promptly, and in any event not more than thirty (30) days, after the Termination Date, by wire transfer of immediately available federal funds to an account located in the United States as Company may specify by notice.

Commencing on the date of delivery of the Termination Notice and continuing until the end of the Termination Fee Period (the "Refund Period"), Company shall use commercially reasonable efforts to mitigate the amount of the Termination Fee, which efforts are expressly limited to (i) Company selling wholesale capacity (net of all wholesale market costs to do so), up to the Minimum LLC Demand, in the applicable Midcontinent Independent System Operator markets or via bilateral transactions, at such

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk
NAME OF OFFICERChairman & President
TITLESt. Louis, Missouri
ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.7

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

8. LARGE LOAD CUSTOMERS (Cont'd.)e. Elective Termination. (Cont'd.)

times and in such amounts as Company may determine, and (ii) Company providing bundled retail electric service, up to the Minimum LLC Demand, to one or more other Large Load Customers (if available) pursuant to ESAs with such customers and this Service Classification No. 11(M). For purposes hereof, the "Refund Amount" is the aggregate net amount received by Company in connection with clauses (i) and (ii) in the preceding sentence. Within thirty (30) days after December 31 of each calendar year during the Refund Period, Company shall pay to the Large Load Customer the portion of the Refund Amount received by Company during such calendar year, by wire transfer of immediately available federal funds to an account located in the United States as the Large Load Customer may specify by notice; provided that in no event shall the Refund Amount exceed the Termination Fee.

f. Incorporation of ESA. The terms and conditions of each ESA shall be approved by the Commission and upon approval, incorporated herein by this reference as if fully set out herein. The ESA shall be in the Form of Electric Service Agreement in Section 10, but may include additional terms specific to the agreement between the Company and the customer so long as those terms do not conflict with or supersede the provisions in this tariff or Articles II, III, IV, and V or the definitions from Article I used therein in the form ESA. When Company files executed ESAs for a Large Load Customers under this Section 8, Company will provide evidence that Large Load Customers' rates will reflect a representative share of the cost incurred to serve the Large Load Customers and will prevent other customer classes' rates from reflecting any unjust or unreasonable costs arising from such service to the Large Load Customers. Company's filing will initiate a process during which the Commission will determine the ESA's compliance with this Section 8 and the standard set forth in subsection 7 of Section 393.130. The Commission shall make its determination within ninety (90) days of the ESA's submission. Should the Commission find that the ESA complies with this Section 8 and the statutory standard is satisfied, it shall approve the ESA and applicable CEA Agreements.

g. Interim Capacity. If a Large Load Customer desires service sooner than can be provided by the Company's existing generating system capabilities, Customer may enter into specific agreements with Company to provide the necessary capacity requirements of the Large Load Customer until sufficient system capacity may be supplied by Company. The Large Load Customer and Company must mutually agree on the terms for the interim capacity. The Large Load Customer may, based upon the agreed upon terms, be subject to an additional demand charge.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY	<u>Mark C. Birk</u>	<u>Chairman & President</u>	<u>St. Louis, Missouri</u>
	NAME OF OFFICER	TITLE	ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6 Original SHEET NO. 61.8

CANCELLING MO.P.S.C. SCHEDULE NO. SHEET NO.

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

8. LARGE LOAD CUSTOMERS (Cont'd.)

- h. Financial Security Requirements. On or prior to the date that the Commission has approved the applicable ESA and any applicable CEA Agreements (the "Commission Approval Date"), the Large Load Customer shall provide to Company, and thereafter maintain, financial security for its obligations under the applicable ESA and any applicable CEA Agreements in an amount equal to the sum of (i) fifty percent (50%) of the aggregate applicable Minimum LLC Demand multiplied by the LLC Demand Charges under the Company tariff applicable to service to the Large Load Customer for the remaining Term of the applicable ESA, plus (ii) fifty percent (50%) of the aggregate amount of the Large Load Customer's payment obligations under any applicable CEA Agreements for the remaining terms of such CEA Agreements, in each case, as determined by Company (collectively, the "Large Load Customer Security"); provided, however, that the Large Load Customer shall not be obligated to provide the Large Load Customer Security to Company on or before the Commission Approval Date if the Large Load Customer has, as of the Commission Approval Date, both (a) a credit rating with respect to the Large Load Customer's long-term, senior, unsecured, non-credit-enhanced indebtedness of (i) not lower than "A-" from S&P Global Ratings (or any successor) and (ii) not lower than "A3" from Moody's Investor Services, Inc. (or any successor), and (b) liquidity greater than ten (10) times fifty percent (50%) of the sum of (x) the aggregate Minimum LLC Demand multiplied by the LLC Demand Charges under the Company tariff applicable to service to the Large Load Customer for the Term of the applicable ESA plus (y) the aggregate amount of the Large Load Customer's payment obligations under any applicable CEA Agreements for the terms of such CEA Agreements (collectively, the "Creditworthiness Requirements"), as reasonably determined by Company. In the event that the Large Load Customer was not required to provide the Large Load Customer Security to Company as of the Commission Approval Date pursuant to the preceding sentence and the Large Load Customer ceases to satisfy the Creditworthiness Requirements at any time during the Term of an applicable ESA, the Large Load Customer shall have a period of forty-five (45) days in which to comply with the Creditworthiness Requirements before the Large Load Customer is obligated to provide the Large Load Customer Security to Company. If the Large Load Customer has not achieved compliance with the Creditworthiness Requirements within such forty-five (45) day period, the Large Load Customer shall be obligated to provide to Company, and thereafter maintain, the Large Load Customer Security.

DATE OF ISSUE DATE EFFECTIVE

ISSUED BY	Mark C. Birk	Chairman & President	St. Louis, Missouri
	NAME OF OFFICER	TITLE	ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6OriginalSHEET NO. 61.9

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO _____

MISSOURI SERVICE AREA**SERVICE CLASSIFICATION NO. 11(M)****LARGE PRIMARY SERVICE RATE (Cont'd.)****8. LARGE LOAD CUSTOMERS (Cont'd.)****h. Financial Security Requirements. (Cont'd.)**

The Large Load Customer Security shall be in the form of either (x) a letter of credit issued by a financial institution reasonably satisfactory to Company and in form and substance reasonably satisfactory to Company, (y) a cash deposit to be held by Company or (z) a guaranty from an affiliate of the Large Load Customer (so long as such affiliate initially satisfies, and during the Term of the applicable ESA continues to satisfy, the Creditworthiness Requirements) in form and substance reasonably satisfactory to Company. Any Large Load Customer Security shall be available to Company to satisfy any failure by the Large Load Customer to comply with its obligations under the applicable ESA or any applicable CEA Agreements. The financial security requirements in this subsection 8.h shall be applied to each of a Large Load Customer's ESAs.

Any Large Load Customer Security shall remain outstanding and in full force and effect until the earlier of (i) if the Effective Date of the applicable ESA has not occurred by the "Outside Effective Date" as specified in such ESA, the Outside Effective Date as specified in such ESA, (ii) if the Effective Date has occurred, the end of the Term of the applicable ESA, or (iii) if the Effective Date has occurred, the date upon which Company has received full payment by the Large Load Customer for any Termination Fee in accordance with the applicable ESA (such earlier date, the "Security Termination Date").

Upon the occurrence of the Security Termination Date, (a) in the case of a letter of credit, Company shall, within fifteen (15) days after the Security Termination Date, return the remaining balance of such letter of credit to the Large Load Customer, (b) in the case of a cash deposit, Company shall, within fifteen (15) days after the Security Termination Date, refund the remaining balance of such cash deposit to the Large Load Customer, by wire transfer of immediately available federal funds to an account located in the United States as the Large Load Customer may specify by notice, and (c) in the case of a guaranty from an affiliate of the Large Load Customer, Company shall, within fifteen (15) days after the Security Termination Date, return such guaranty to the Large Load Customer.

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk
NAME OF OFFICERChairman & President
TITLESt. Louis, Missouri
ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.10

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

8. LARGE LOAD CUSTOMERS (Cont'd.)

i. Large Load Customer Riders. In addition to the applicability of Riders FAC, EEIC, SUR, and RESRAM to service provided to Large Load Customers, the following additional Riders shall apply to Large Load Customer's service under an applicable ESA if selected by the Large Load Customer pursuant to such applicable ESA:

1. Renewable Solutions Program - Large Load Customers Program (Rider RSP LLC)
2. Clean Capacity Advancement Program (Rider CCAP)
3. Nuclear Energy Credit Program (Rider NEC)
4. Clean Energy Choice Program (Rider CEC)

Notwithstanding any provisions of Rider RESRAM to the contrary, a Large Load Customer shall not be subject to RESRAM charges if it participates in Rider RSP-LLC or any other voluntary rider offered by Company and thereby receives or is reasonably projected to receive renewable attributes supporting its load at a level that is greater than or equal to the then applicable "RES portfolio requirement" as defined in 20 CSR 4240-20.100(1)(R). For Large Load Customers with such participation agreements, the Large Load Customer's entire load that is supported with renewable attributes it receives or is reasonably projected to receive that are sufficient to cover the applicable "RES portfolio requirement" as defined in 20 CSR 4240-20.100(1)(R) will be subtracted from the calculation of "total retail electric sales" as defined in 20 CSR 4240-20.100(1)(W). RESRAM charges shall still apply to such a Large Load Customer to the extent the renewable attributes it receives or is reasonably projected to receive do not reach the then applicable "RES portfolio requirement". For purposes of this Section 8, "renewable attributes" means Renewable Energy Credits, as defined in 20 CSR 4240-20.100(1)(N), that the Large Load Customer has retired or had retired on its behalf through such programs. Large Load Customers participating in Rider RSP-LLC or other voluntary riders offered by Company for which renewable attributes are produced will be evaluated for this exemption annually or more frequently if a customer's participation to such program(s) changes.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY	Mark C. Birk	Chairman & President	St. Louis, Missouri
	NAME OF OFFICER	TITLE	ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.11

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

8. LARGE LOAD CUSTOMERS (Cont'd.)j. Other Terms.

1. The terms and conditions of service to a Large Load Customer shall apply upon a request for service by an eligible customer, provided that service to a Large Load Customer for a given Project shall not commence until the Commission has approved an ESA for that Project as set out above and Company has sufficient capacity to meet the Large Load Customer's Contract Capacity requirements.
2. Large Load Customer bills are due and payable within thirty (30) days from date of bill and become delinquent thereafter.
3. For the purpose of determining if this Section 8 should be applied to new load, Company may exercise its discretion to aggregate existing loads or proposed new loads at multiple premises based on factors including, but not limited to, multiple premises with common owner(s) or a common parent company, or multiple premises sharing one or more of the following: common ownership, common local electrical infrastructure, physical layout, character of service, end use, and common control.
4. Large Load Customer operations shall comply with Company's End User Connection Procedures - Requirements for the Connection of Customer Load to the Ameren Transmission System (the "End User Requirements"), which are adopted by Company or on its behalf by Ameren Services Company, as such End User Requirements may be revised from time-to-time. Company has no obligation to provide service in excess of a Large Load Customer's Maximum LLC Capacity. Should a Large Load Customer exceed its Maximum LLC Capacity and should in Company's judgment such exceedance threaten system integrity or reliability, the Large Load Customer shall reduce its load to a level that is equal to or less than its Maximum LLC Capacity within fifteen (15) minutes of notice to the Large Load Customer given to Customer's designated contact as required by the End User Requirements.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY	<u>Mark C. Birk</u>	<u>Chairman & President</u>	<u>St. Louis, Missouri</u>
	NAME OF OFFICER	TITLE	ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.12

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

8. LARGE LOAD CUSTOMERS (Cont'd.)**j. Other Terms. (Cont'd.)**

5. From and after the end of the original Term of an applicable ESA (but not in the case where the original Term ends due to an Elective Termination under subsection e above), the applicable Large Load Customer's load previously subject to such an ESA shall be served under the provisions of Service Classification No. 11(M), other than Section 8 hereof, provided that such Large Load Customer shall be obligated to pay all LLC Demand Charges, as defined in such ESA, for at least seventy percent (70%) of the Maximum LLC Capacity that was specified in such ESA (as it may have been reduced under subsection d), during each month of its service post the original Term of such ESA. For the avoidance of doubt, such Large Load Customer shall be obligated to pay for the greater of (x) the actual metered demand for the applicable billing periods and (y) all LLC Demand Charges for seventy percent (70%) of the Maximum LLC Capacity that was specified in such ESA (or the lower percentage of the Maximum LLC Capacity if it has been reduced under subsection d).

*** 9. GENERAL RULES AND REGULATIONS**

In addition to the above specific rules and regulations, all of the Company's General Rules and Regulations shall apply to the supply of service under this rate.

*Indicates Reissue.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.13

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT

**FORM OF
ELECTRIC SERVICE AGREEMENT**

[<insert customer name>]¹

This Electric Service Agreement (this "Agreement") is made and entered into as of [<insert date>] (the "Execution Date"), by and between Union Electric Company d/b/a Ameren Missouri, a Missouri corporation (collectively referred to herein as "Ameren Missouri"), and [<insert customer name>], a [<insert jurisdiction and entity type>]² ("Customer"). Ameren Missouri and Customer may be collectively referred to herein as "Parties" and each individually as a "Party".

RECITALS

WHEREAS, Ameren Missouri provides bundled retail electric service in Missouri under the jurisdiction of the Missouri Public Service Commission ("MoPSC") using the Ameren Missouri Electric System; and

WHEREAS, Customer is in the process of constructing a [<insert customer-specific description of project>] that will be located at [<insert address>] (the "Project")³;

WHEREAS, Customer has requested that Ameren Missouri provide the Project with bundled retail electric service; and

WHEREAS, as of the Effective Date, Ameren Missouri will provide such bundled retail electric service pursuant to tariff sheets comprising Service Classification No. 11(M) (the "11(M) Tariff"), including Section 8 of the 11(M) Tariff; and

WHEREAS, the 11(M) Tariff requires that Customer enter into an electric service agreement with Ameren Missouri, the terms of which, upon receipt of the MoPSC ESA Approval, will be incorporated into the 11(M) Tariff.

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth in this Agreement and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows.

AGREEMENT

**ARTICLE I.
DEFINITIONS**

¹ To be submitted with an appropriate confidentiality designation.

² To be submitted with an appropriate confidentiality designation.

³ To be submitted with an appropriate confidentiality designation.

ACTIVE 709712837v4

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.14

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

1.1 Definitions. In this Agreement, each of the following terms shall have the following meanings:

"11(M) Tariff" shall have the meaning set forth in the recitals to this Agreement.

"Affiliate" of any Person shall mean any other Person directly or indirectly Controlling, directly or indirectly Controlled by or under direct or indirect common Control with such Person.

"Agreement" shall have the meaning set forth in the preamble to this Agreement.

"Ameren Missouri" shall have the meaning set forth in the preamble to this Agreement.

"Ameren Missouri Electric System" shall mean the electric facilities owned, controlled and/or operated by Ameren Missouri for purposes of providing bundled retail electric service to its customers.

"Ameren Missouri Tariff" shall mean Ameren Missouri's Mo. P.S.C. Schedule No. 6 on file with the MoPSC (available at <https://www.ameren.com/missouri/business/rates/electric-rates>), as amended from time to time. Ameren Missouri Tariff is incorporated by reference into this Agreement.

"Applicable Law" shall mean all applicable laws of any Governmental Authority having authority over the Project or the Parties' other business, including the then effective rules and regulations promulgated by the MoPSC.

"Business Day" shall mean any day except Saturday, Sunday or a weekday that banks in the State of Missouri are authorized or obligated to close.

"Capacity Reduction Date" shall have the meaning set forth in Section 4.2.

"Capacity Reduction Fee" shall mean an amount payable by Customer equal to (a) the Capacity Reduction Percentage multiplied by (b) (i) the aggregate Minimum LLC Demand multiplied by (ii) the LLC Demand Charges under the 11(M) Tariff as of the Capacity Reduction Date for the Capacity Reduction Fee Period.

"Capacity Reduction Fee Period" shall mean the lesser of (a) a period of five (5) calendar years after the Capacity Reduction Date or (b) the remaining Term.

"Capacity Reduction Percentage" shall have the meaning set forth in Section 4.2.

"CCAP Agreement" shall mean a written agreement entered into between Ameren Missouri and Customer pursuant to and in accordance with Rider CCAP.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6 Original SHEET NO. 61.15

CANCELLING MO.P.S.C. SCHEDULE NO. SHEET NO.

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

"CEA Agreements" shall mean, collectively, each CCAP Agreement, NEC Agreement and RSP LLC Agreement, as applicable.⁴

"CEA Riders" shall mean, collectively, Rider CCAP, Rider NEC and Rider RSP LLC.

"CEC Agreement" shall mean a written agreement entered into between Ameren Missouri and Customer pursuant to and in accordance with Rider CEC.⁵

"Confidential Information" shall mean any confidential, proprietary or trade secret information of a plan, specification, pattern, procedure, design, device, list, concept, policy or compilation relating to the present or planned business of a Party, which is designated as confidential by the Party supplying the information, whether conveyed orally, electronically, in writing, through inspection, or otherwise. Confidential Information may include, without limitation, all information relating to a Party's technology, research and development, business affairs, and pricing, and any information supplied by either Party to the other Party prior to the Execution Date. Subject to Section 8.3, information provided by either Party, in any form, is assumed to be Confidential Information and this Agreement is Confidential Information.

"Control" of any Person shall mean the possession, directly or indirectly, of the power either to (a) vote fifty percent (50%) or more of the securities or interests having ordinary voting power for the election of directors (or other comparable controlling body) of such Person or (b) direct or cause the direction of management or policies of such Person, whether through the ownership of voting securities or interests, by contract or otherwise, excluding in each case, any secured lender of such Person.

"Creditworthiness Requirements" shall have the meaning set forth in Section 4.5(a).

"Customer" shall have the meaning set forth in the preamble to this Agreement.

"Effective Date" shall have the meaning set forth in Section 2.2.

"Execution Date" shall have the meaning set forth in the preamble to this Agreement.

"Governmental Authority" shall mean, as to any Person, any federal, state, local, or other governmental, regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other governmental authority having jurisdiction over such Person or its property or operations.

"Large Load Customer Security" shall have the meaning set forth in Section 4.5(a).

"LLC Demand Charges" shall have the meaning set forth in Section 4.4.

"Maximum LLC Capacity" shall have the meaning set forth in Section 4.2.

⁴ To be submitted with an appropriate confidentiality designation.

⁵ To be submitted with an appropriate confidentiality designation.

DATE OF ISSUE DATE EFFECTIVE

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6 Original SHEET NO. 61.16

CANCELLING MO.P.S.C. SCHEDULE NO. SHEET NO.

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

"Minimum LLC Demand" shall have the meaning set forth in Section 4.4.

"MISO" shall mean the Midcontinent Independent System Operator, Inc. or its successor.

"MoPSC" shall have the meaning set forth in the recitals to this Agreement.

"MoPSC Approval Date" shall mean the date as of which all of the MoPSC Approvals have been obtained.

"MoPSC Approvals" shall mean, collectively, the MoPSC ESA Approval and the MoPSC CEA Agreement Approval, if applicable.

"MoPSC CEA Agreement Approval" if applicable, shall mean a final order issued by the MoPSC that (a) approves any applicable CEA Agreements, in form and substance reasonably satisfactory to Ameren Missouri and Customer, and which (b) is not the subject of (i) a petition or application for reconsideration or rehearing, (ii) a request for judicial review, or (iii) a petition for a preliminary injunction.

"MoPSC ESA Approval" shall mean a final order issued by the MoPSC that (a) approves this Agreement, in form and substance reasonably satisfactory to Ameren Missouri and Customer, and which (b) is not the subject of (i) a petition or application for reconsideration or rehearing, (ii) a request for judicial review, or (iii) a petition for a preliminary injunction.

"NEC Agreement" shall mean a written agreement entered into between Ameren Missouri and Customer pursuant to and in accordance with Rider NEC.

"Outside Effective Date" shall have the meaning set forth in Section 2.1.

"Party" or "Parties" shall have the meaning set forth in the preamble to this Agreement.

"Person" shall mean any individual, corporation, partnership, joint venture, association, joint stock company, trust, limited liability company, unincorporated organization, Governmental Authority or any other form of entity.

"Project" shall have the meaning set forth in the recitals to this Agreement.

"Ramp Demand" shall have the meaning set forth in Section 4.3.

"Ramp Period" shall have the meaning set forth in Section 3.1.

"Ramp Schedule" shall have the meaning set forth in Section 4.3.

"Refund Amount" shall have the meaning set forth in Section 3.3(b).

"Refund Period" shall have the meaning set forth in Section 3.3(b).

DATE OF ISSUE DATE EFFECTIVE

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.17

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

"Rider CCAP" shall mean Ameren Missouri Rider CCAP (Clean Capacity Advancement Program).

"Rider CEC" shall mean Ameren Missouri Rider CEC (Clean Energy Choice Program).

"Rider NEC" shall mean Ameren Missouri Rider NEC (Nuclear Energy Credit Program).

"Rider RSP LLC" shall mean Ameren Missouri Rider RSP LLC (Renewable Solutions Program LLC).

"RSP LLC Agreement" shall mean a written agreement entered into between Ameren Missouri and Customer pursuant to and in accordance with Rider RSP LLC.

"Security Termination Date" shall have the meaning set forth in Section 4.5(c).

"Term" shall have the meaning set forth in Section 3.1.

"Termination Date" shall have the meaning set forth in Section 3.2.

"Termination Fee" shall have the meaning set forth in Section 3.3(a).

"Termination Fee Period" shall have the meaning set forth in Section 3.3(a).

"Termination Notice" shall have the meaning set forth in Section 3.2.

ARTICLE II.
CONDITIONS TO EFFECTIVENESS; EFFECTIVE DATE

2.1 Conditions to Effectiveness The effectiveness of this Agreement, including the Parties' rights and obligations under this Agreement, is expressly subject to the satisfaction of each of the following conditions:

(a) The MoPSC ESA Approval shall have been obtained and shall be in full force and effect. For the avoidance of doubt, if this Agreement is approved by the MoPSC but such approval includes terms, conditions or modifications that are not reasonably satisfactory to both Ameren Missouri and Customer, the MoPSC ESA Approval shall be deemed not to have been obtained.

(b) If applicable, the MoPSC CEA Agreement Approval shall have been obtained and shall be in full force and effect. For the avoidance of doubt, if each of any applicable CEA Agreements is approved by the MoPSC but such approval includes terms, conditions or modifications to any CEA Agreement that are not reasonably satisfactory to both Ameren Missouri and Customer, the MoPSC CEA Agreement Approval shall be deemed not to have been obtained.

(c) [insert such other conditions as may be necessary for a given Customer].

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
 NAME OF OFFICER TITLE ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6 Original SHEET NO. 61.18

CANCELLING MO.P.S.C. SCHEDULE NO. SHEET NO.

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

For the avoidance of doubt, no aspect of this Agreement, other than this Section 2.1 and, after the MoPSC Approval Date, Section 4.5, shall have any effect unless and until each of the foregoing conditions has been satisfied. If all of the foregoing conditions have not been satisfied by [insert date] (the "Outside Effective Date"), this Agreement shall become void and of no force or effect as if it had not been entered into (subject to the return or refund of any Large Load Customer Security provided by Customer to Ameren Missouri pursuant to and in accordance with Section 4.5).

2.2 Effective Date. For purposes of this Agreement, the "Effective Date" is the date as of which (a) each of the conditions set forth in Section 2.1 has been satisfied and (b) the Project has received permanent electric service from Ameren Missouri under the 11(M) Tariff.

ARTICLE III.
TERM; TERMINATION; TERMINATION FEE

3.1 Term. The term of this Agreement shall commence on the Effective Date and shall continue for a period of [insert number of years equal to the sum of (1) the Ramp Period (which shall not exceed a period of five (5) years after the Effective Date), plus (2) a period of at least twelve (12) years after the end of the Ramp Period, such that the total number of years is at least fifteen (15) years] calendar years after the Effective Date (the "Term"), unless earlier terminated in accordance with this Agreement. The Term is comprised of (a) a transitional load period during which Ramp Demand shall increase prior to achieving the Maximum LLC Capacity (the "Ramp Period") of [insert number of years] calendar years from and after the Effective Date, and (b) a period of [insert number of years] calendar years from and after the end of the Ramp Period.

3.2 Elective Termination by Customer. Customer may elect to terminate this Agreement, at any time during the Term, upon delivery of written notice of such election (a "Termination Notice") to Ameren Missouri not less than twenty-four (24) months prior to the effective date of the termination specified in the Termination Notice (the "Termination Date").

3.3 Termination Fee; Mitigation and Refund of Termination Fee.

(a) Termination Fee. If Customer terminates this Agreement pursuant to Section 3.2, Customer shall pay to Ameren Missouri a termination fee in an amount equal to the sum of (i) the aggregate Minimum LLC Demand *multiplied by* the LLC Demand Charges under the 11(M) Tariff as of the Termination Date for each of (A) the remaining term of the Ramp Period (to the extent that the Termination Date is a date prior to the end of the Ramp Period) and (B) the lesser of (x) a period of five (5) calendar years after the Termination Date or (y) the remaining Term (such lesser period, the "Termination Fee Period"); plus (ii) the aggregate amount of Customer's payment obligations under any applicable CEA Agreements as of the Termination Date for each of (A) the remaining term of the Ramp Period (to the extent that the Termination Date is a date prior to the end of the Ramp Period) and (B) the Termination Fee Period (collectively, the "Termination Fee"). Customer shall pay to Ameren Missouri the Termination Fee promptly, and in any event not more than thirty (30) days, after the Termination Date, by wire transfer of immediately available federal funds to an account located in the United States as Ameren Missouri may specify by notice. An example calculation of the Termination Fee, using hypothetical figures, is set forth in Exhibit A.

DATE OF ISSUE DATE EFFECTIVE

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.19

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

(b) Mitigation and Refund of Termination Fee. Commencing on the date of delivery of the Termination Notice and continuing until the end of the Termination Fee Period (the "Refund Period"), Ameren Missouri shall use commercially reasonable efforts to mitigate the amount of the Termination Fee, which efforts are expressly limited to (i) Ameren Missouri selling wholesale capacity (net of all wholesale market costs to do so), up to the Minimum LLC Demand, in the applicable MISO markets or via bilateral transactions, at such times and in such amounts as Ameren Missouri may determine, and (ii) Ameren Missouri providing bundled retail electric service, up to the Minimum LLC Demand, to one or more customers, if available, pursuant to electric service agreements with such customers and the 11(M) Tariff. For purposes of this Agreement, the "Refund Amount" is the aggregate net amount received by Ameren Missouri in connection with clauses (i) and (ii) in the preceding sentence. Within thirty (30) days after December 31 of each calendar year during the Refund Period, Ameren Missouri shall pay to Customer the portion of the Refund Amount received by Ameren Missouri during such calendar year, by wire transfer of immediately available federal funds to an account located in the United States as Customer may specify by notice; provided that in no event shall the Refund Amount exceed the Termination Fee.

ARTICLE IV.
ELECTRIC SERVICE; CAPACITY AND DEMAND; FINANCIAL SECURITY

4.1 Tariff Service. During the Term, Ameren Missouri shall provide to the Project, and Customer shall pay Ameren Missouri for, bundled retail electric service up to the Maximum LLC Capacity pursuant to and in accordance with the 11(M) Tariff, the CEC Rider (if applicable) and any applicable CEA Riders; provided that if during the Term Ameren Missouri obtains all required consents and approvals, in form and substance satisfactory to Ameren in its sole discretion, with respect to a new tariff and any new riders under which Customer would be eligible to receive bundled retail electric service, (a) Customer shall have the right to request to receive such electric service under such new tariff and new riders, and (b) if Customer so requests, the Parties shall use commercially reasonable efforts to either (i) amend this Agreement, any CEC Agreement and any applicable CEA Agreements to reflect Customer's receipt of such electric service under such new tariff and new riders, on terms and conditions reasonably satisfactory to the Parties, or (ii) enter into applicable new agreements with respect to each of the foregoing, in form and substance reasonably satisfactory to the Parties. For the avoidance of doubt, if the Parties cannot mutually agree on such amendments or new agreements, Customer shall continue to receive bundled retail electric service pursuant to and in accordance with the 11(M) Tariff, the CEC Rider (if applicable) and any applicable CEA Riders.

4.2 Maximum LLC Capacity; Reduction in Maximum LLC Capacity. Customer's highest level of connected load to be served by Ameren Missouri under this Agreement during the Term is [insert load amount]⁶ (the "Maximum LLC Capacity"); provided that, at any time after the first five (5) years of the Term, Customer shall have the right to request a one-time reduction of the Maximum LLC Capacity by up to ten percent (10%) (such percentage, the "Capacity Reduction Percentage") by providing Ameren Missouri with written notice of same not less than twenty-four (24) months prior to the beginning of the calendar year for which the reduction is requested (the "Capacity Reduction Date"), subject to the receipt by Ameren Missouri of the

⁶ To be submitted with an appropriate confidentiality designation.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
 NAME OF OFFICER TITLE ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6OriginalSHEET NO. 61.20

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO _____

MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11 (M)LARGE PRIMARY SERVICE RATE (Cont'd.)10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

Capacity Reduction Fee. Ameren Missouri shall have no obligation to mitigate the amount of any Capacity Reduction Fee. An example calculation of the Capacity Reduction Fee, using hypothetical figures, is set forth in Exhibit B. For the avoidance of doubt, from and after the Capacity Reduction Date and subject to Ameren Missouri's receipt of the Capacity Reduction Fee, the "Maximum LLC Capacity" for purposes of this Agreement shall mean the Maximum LLC Capacity as reduced by the Capacity Reduction Percentage.

4.3 Ramp Schedule and Ramp Demand. Customer's ramp schedule ("Ramp Schedule") identifying the level of Maximum LLC Capacity during each year of the Ramp Period (such annual values, "Ramp Demand") is set forth in Article VI. Ameren Missouri shall use commercially reasonable efforts to energize the Project up to the Ramp Demand set forth in the Ramp Schedule, subject to the terms and conditions of this Agreement.

4.4 Minimum LLC Demand. Irrespective of Customer's actual demand in a given month, Customer is obligated to pay for (A) at least seventy percent (70%) of the Ramp Demand during each month of the Ramp Period, and (B) at least seventy percent (70%) of the Maximum LLC Capacity during each month of the Term from and after the end of the Ramp Period (collectively, the "Minimum LLC Demand"). Such payment obligation applies to all applicable base charges and credits contained in the 11(M) Tariff (or any successor tariff or rate schedule) that are billed on a demand basis, except reactive charges which are not billed on a per-kilowatt basis (collectively, "LLC Demand Charges"). For the avoidance of doubt, Customer is obligated to pay for the greater of (x) the actual metered demand for the applicable billing periods and (y) the Minimum LLC Demand.

4.5 Financial Security.

(a) On or prior to the MoPSC Approval Date, Customer shall provide to Ameren Missouri, and thereafter maintain, financial security for its obligations under this Agreement and any applicable CEA Agreements in an amount equal to the sum of (c) fifty percent (50%) of the aggregate applicable Minimum LLC Demand *multiplied by* the LLC Demand Charges under the 11(M) Tariff for the remaining Term, *plus* (d) fifty percent (50%) of the aggregate amount of Customer's payment obligations under any applicable CEA Agreements for the remaining terms of such CEA Agreements, in each case, as determined by Ameren Missouri (collectively, the "Large Load Customer Security"); *provided, however*, that Customer shall not be obligated to provide the Large Load Customer Security to Ameren Missouri on or before the MoPSC Approval Date if Customer has, as of the MoPSC Approval Date, both (a) a credit rating with respect to Customer's long-term, senior, unsecured, non-credit-enhanced indebtedness of (i) not lower than "A-" from S&P Global Ratings (or any successor) and (ii) not lower than "A3" from Moody's Investor Services, Inc. (or any successor), and (b) liquidity greater than ten (10) times fifty percent (50%) of the sum of (x) the aggregate Minimum LLC Demand *multiplied by* the LLC Demand Charges under the 11(M) Tariff for the Term *plus* (y) the aggregate amount of Customer's payment obligations under any applicable CEA Agreements for the terms of such CEA Agreements (collectively, the "Creditworthiness Requirements"), as reasonably determined by Ameren Missouri. In the event that Customer was not required to provide the Large Load Customer Security to Ameren Missouri as of the MoPSC Approval Date pursuant to the preceding sentence and Customer ceases to satisfy the Creditworthiness Requirements at any time during the Term, Customer shall have a period of forty-five (45) days in which to comply with the

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk
NAME OF OFFICERChairman & President
TITLESt. Louis, Missouri
ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.21

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11 (M)LARGE PRIMARY SERVICE RATE (Cont'd.)10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

Creditworthiness Requirements before Customer is obligated to provide the Large Load Customer Security to Ameren Missouri. If Customer has not achieved compliance with the Creditworthiness Requirements within such forty-five (45) day period, Customer shall be obligated to provide to Ameren Missouri, and thereafter maintain, the Large Load Customer Security.

(b) The Large Load Customer Security shall be in the form of either (x) a letter of credit issued by a financial institution reasonably satisfactory to Ameren Missouri and in form and substance reasonably satisfactory to Ameren Missouri, (y) a cash deposit to be held by Ameren Missouri or (z) a guaranty from an Affiliate of Customer (so long as such Affiliate initially satisfies, and during the Term continues to satisfy, the Creditworthiness Requirements) in form and substance reasonably satisfactory to Ameren Missouri. For the avoidance of doubt, the Parties agree that any Large Load Customer Security shall be available to Ameren Missouri to satisfy any failure by Customer to comply with its obligations under this Agreement or any applicable CEA Agreements.

(c) Any Large Load Customer Security shall remain outstanding and in full force and effect until the earlier of (i) if the Effective Date has not occurred by the Outside Effective Date, the Outside Effective Date, (ii) if the Effective Date has occurred, the end of the Term, or (iii) if the Effective Date has occurred, the date upon which Ameren Missouri has received full payment by Customer for any Termination Fee in accordance with this Agreement (such earlier date, the "Security Termination Date").

(d) Upon the occurrence of the Security Termination Date, (a) in the case of a letter of credit, Ameren Missouri shall, within fifteen (15) days after the Security Termination Date, return the remaining balance of such letter of credit to Customer, (b) in the case of a cash deposit, Ameren Missouri shall, within fifteen (15) days after the Security Termination Date, refund the remaining balance of such cash deposit to Customer, by wire transfer of immediately available federal funds to an account located in the United States as Customer may specify by notice, and (c) in the case of a guaranty from an Affiliate of Customer, Ameren Missouri shall, within fifteen (15) days after the Security Termination Date, return such guaranty to Customer.

**ARTICLE V.
CEA AGREEMENTS**

5.1 CEA Agreements. On or prior to the Effective Date, any applicable CEA Agreements have been approved by the MoPSC pursuant to the MoPSC CEA Agreement Approval. The Parties' respective rights and obligations under such CEA Agreements shall be as set forth in such CEA Agreements.

**ARTICLE VI.
RAMP PERIOD; RAMP SCHEDULE; RAMP DEMAND**

6.1 Ramp Period.⁷ The Ramp Period shall be [<insert number of years>] calendar years.

⁷ To be submitted with an appropriate confidentiality designation.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.22

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11 (M)LARGE PRIMARY SERVICE RATE (Cont'd.)10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

6.2 Ramp Schedule and Ramp Demand. The Ramp Schedule and initial cumulative Ramp Demand during the Ramp Period is as follows:

[Year 1]	[Year 2]	[Year 3]	[Year 4]	[Year 5]
1Q: [] MW	1Q: [] MW	1Q: [] MW	1Q: [] MW	1Q: [] MW
2Q: [] MW	2Q: [] MW	2Q: [] MW	2Q: [] MW	2Q: [] MW
3Q: [] MW	3Q: [] MW	3Q: [] MW	3Q: [] MW	3Q: [] MW
4Q: [] MW	4Q: [] MW	4Q: [] MW	4Q: [] MW	4Q: [] MW

Notwithstanding the Ramp Demand figures set forth in the Ramp Schedule above, Customer shall have the right to request a change to such Ramp Demand figures for any calendar year during the Ramp Period after the first two (2) years of the Ramp Period by providing written notice of same to Ameren Missouri. If the Parties mutually agree to any change to such Ramp Demand figures, the Parties shall amend this Agreement to reflect the revised Ramp Demand figures, and such amendment need not be approved by the MoPSC. For the avoidance of doubt, the Parties agree that Customer shall not have the right to request a change to the Ramp Demand figures during the first two (2) years of the Ramp Period set forth in the Ramp Schedule above.

ARTICLE VII. REPRESENTATIONS AND WARRANTIES OF THE PARTIES

Each Party hereby represents and warrants to the other Party, as of the Execution Date and as of the Effective Date (except as otherwise expressly provided below), as follows:

7.1 Organization; Authority; Binding Obligation. Such Party is duly formed, validly existing and in good standing, as applicable, under the Applicable Laws of the jurisdiction of its formation. Such Party has the requisite entity power and authority to enter into this Agreement, to carry out its obligations under this Agreement, and to complete the transactions contemplated by this Agreement. The execution and delivery by such Party of this Agreement and the performance by such Party of its obligations hereunder have been duly authorized by all requisite entity action on the part of such Party. This Agreement has been duly executed and delivered by such Party and, assuming due authorization, execution, and delivery by the other Party, this Agreement constitutes a legal, valid, and binding obligation of such Party, enforceable against it in accordance with its terms, subject to applicable bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and similar Applicable Laws affecting creditors' rights generally and subject, as to enforceability, to general principles of equity.

7.2 No Conflicts. The execution and delivery of this Agreement by such Party does not, and the performance by such Party of its obligations under this Agreement, shall not:

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President

NAME OF OFFICER

TITLE

St. Louis, Missouri
ADDRESS

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.23

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11 (M)LARGE PRIMARY SERVICE RATE (Cont'd.)10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

(a) conflict with or result in a violation or breach of any of the terms, conditions or provisions of such Party's organizational documents;

(b) result in a material default (or give rise to any right of termination, cancellation or acceleration) under any of the terms, conditions or provisions of any material agreement (with or without notice or lapse of time or both) to which such Party is a party;

(c) conflict with or result in a material violation or breach of any term or provision of any Applicable Law applicable to such Party;

(d) require the consent, authorization or approval of any Person (other than a Governmental Authority), except for such consents, authorizations and approvals as have been obtained as of the Effective Date; or

(e) require any filing with, or permit, consent, authorization or approval of, any Governmental Authority, except for the MoPSC Approvals.

7.3 Legal Proceedings. There is no action, suit or proceeding that is (a) outstanding or pending to which such Party or any of its Affiliates is a party or (b) to such Party's knowledge, threatened in writing against such Party or any of its Affiliates or any of its or their respective assets and properties, in each case, which challenges or seeks to prevent, enjoin, or otherwise delay the transactions contemplated by this Agreement or the performance by such Party of its obligations under this Agreement.

7.4 Compliance with Laws. Such Party is not in violation of or in default under any Applicable Law where the effect of which to such Party, individually or in the aggregate, would reasonably be expected to have a material adverse effect on such Party.

ARTICLE VIII. CERTAIN COVENANTS OF THE PARTIES

8.1 Covenants of Ameren Missouri.

(a) MoPSC Approvals. Following the Execution Date, Ameren Missouri shall use commercially reasonable efforts to obtain the MoPSC Approvals; provided that if any of the MoPSC Approvals are not obtained, Ameren Missouri shall not be obligated to undertake further efforts to obtain any such MoPSC Approvals.

8.2 Covenants of Customer.

(a) No Alternative Provider. During the Term of this Agreement, Customer agrees that Ameren Missouri shall be the sole and exclusive provider of electric service to the Project.

8.3 Confidentiality.

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk
NAME OF OFFICERChairman & President
TITLESt. Louis, Missouri
ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.24

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11 (M)LARGE PRIMARY SERVICE RATE (Cont'd.)10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

(a) Each Party may provide and supply to the other Party in its discretion, Confidential Information in connection with or related to this Agreement. Information provided by either Party, in any form, including this Agreement, is Confidential Information. Each Party agrees that any and all Confidential Information which has been or may be disclosed, directly or indirectly, to it by or on behalf of another Party with respect to this Agreement shall be maintained in strict confidence by it and shall not be disclosed by it to any third person or entity (other than its Affiliates, and its and their directors, officers, employees, agents or consultants including financial and legal advisors having a need to know such Confidential Information and being bound by an obligation to protect such Confidential Information in a manner consistent with the requirements of this Section 8.3) without the disclosing Party's prior express written consent, unless otherwise required by Applicable Law. The Parties each agree that they shall not make any use of any Confidential Information received pursuant to this Agreement except for the limited purposes for which such Confidential Information is given in connection with this Agreement and/or to exercise or enforce rights hereunder, without the express prior written consent of the disclosing Party. In no event shall the Confidential Information be used, directly or indirectly, in any way that would reasonably be expected to operate to the detriment of the disclosing Party (except in the case of a dispute regarding breach of or enforcement of this Agreement, which in such case, the disclosing Party shall have the right to seek an appropriate protective order prior to the receiving Party's use of the Confidential Information).

(b) Notwithstanding anything to the contrary in this Agreement, Customer acknowledges that (i) Ameren Missouri may deem it necessary to file or may be required to file with the MoPSC, or otherwise disclose in connection with any MoPSC proceeding, Confidential Information, and (ii) should Ameren Missouri file or otherwise disclose such Confidential Information, Ameren Missouri shall use commercially reasonable efforts to make such filing or disclosure pursuant to the MoPSC's rules governing confidential and, if applicable, highly confidential information. In the event that Ameren Missouri receives a request or order to disclose or file Confidential Information, or in the event that Ameren Missouri determines that Confidential Information should be disclosed in such a MoPSC proceeding, Ameren Missouri shall notify Customer as soon as reasonably possible after receiving the request or order or after making such determination and will do so prior to the disclosure. Notwithstanding the foregoing, in the event Ameren Missouri makes a disclosure of Confidential Information before informing Customer, it shall make the disclosure at the highest level of confidentiality available in the proceeding and notify Customer promptly following the disclosure. Ameren Missouri and Customer shall consider in good faith whether the Confidential Information, or portions thereof, can be classed as non-confidential, or if confidential, what level of confidentiality the Confidential Information should be disclosed or filed in accordance with the MoPSC rules governing confidential information. In the event that Ameren Missouri and Customer are unable to agree on the level of confidentiality, then Ameren Missouri shall make the disclosure at the highest level of confidentiality available in the proceeding. In the event that Confidential Information may be disclosed in a proceeding to which Customer is not a party, Ameren Missouri shall not oppose Customer's intervention or other participation or filing before the MoPSC to protect the confidentiality of its information.

8.4 Publicity, Public Filings. Except as otherwise provided in this Agreement, the Parties will consult with each other before issuing, and provide each other the reasonable

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6 Original SHEET NO. 61.25

CANCELLING MO.P.S.C. SCHEDULE NO. SHEET NO.

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

opportunity to review, comment upon and concur with, any press release or other public statements with respect to this Agreement or the transactions contemplated hereby, and shall not issue any such press release or make any such public statement prior to such consultation, unless required by Applicable Law, pursuant to the order of a court or administrative body, or required by the rules of a national securities exchange. In the event that a Party concludes that it is required by Applicable Law or relevant securities exchange rules, or the order of a court or administrative body, to make a public statement with respect to this Agreement or the transactions contemplated hereby, or to make any public filing with respect thereto, including any filing with the Securities and Exchange Commission, such Party will promptly provide to the other Party for review a copy of any such press release, statement or filing, and will not issue any such press release, or make any such public statement or filing, prior to such consultation and review unless required by Applicable Law, pursuant to the order of a court or administrative body, or required by the rules of a national securities exchange.

ARTICLE IX.
DISPUTE RESOLUTION; GOVERNING LAW; VENUE

9.1 Dispute Resolution. Any dispute or claim arising under this Agreement which is not resolved in the ordinary course of business shall be referred to a panel consisting of a senior executive (President or a Vice President) of Ameren Missouri and Customer, with authority to decide or resolve the matter in dispute, for review and resolution. Such senior executives shall meet and in good faith attempt to resolve the dispute within thirty (30) days. If the Parties are unable to resolve a dispute pursuant to this Section 9.1, then each Party may exercise any right or remedy available to it under this Agreement or Applicable Law.

9.2 Governing Law. THIS AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES HEREUNDER AND THE TRANSACTIONS CONTEMPLATED HEREBY SHALL BE GOVERNED BY, ENFORCED AND INTERPRETED IN ACCORDANCE WITH THE LAWS OF THE STATE OF MISSOURI WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW THAT WOULD APPLY THE LAWS OF ANOTHER JURISDICTION.

9.3 Venue. Each of the Parties hereby irrevocably and unconditionally submits to the exclusive jurisdiction of the federal and state courts with jurisdictional authority over St. Louis County, Missouri (or if no such court will accept jurisdiction, in any state or federal court of general jurisdiction in the State of Missouri, or if no such court will accept jurisdiction, in any court of competent jurisdiction in the United States) with respect to any proceeding relating to this Agreement. Further, each of the Parties hereby irrevocably and unconditionally waives any objection or defense that it may have based on improper venue or forum non conveniens to the conduct of any such proceeding in any such courts. The Parties agree that either or both of them may file a copy of this paragraph with any court as written evidence of the knowing, voluntary and bargained agreement between the Parties irrevocably to waive any objections to venue or to convenience of forum. Each of the Parties (on behalf of itself and its Affiliates) agrees that a final judgment in any such action or proceeding will be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by Applicable Law.

9.4 Waiver of Trial by Jury. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, EACH OF THE PARTIES HERETO WAIVES ANY RIGHT IT MAY

DATE OF ISSUE DATE EFFECTIVE

ISSUED BY	Mark C. Birk	Chairman & President	St. Louis, Missouri
	NAME OF OFFICER	TITLE	ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.26

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11 (M)LARGE PRIMARY SERVICE RATE (Cont'd.)10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

HAVE TO A TRIAL BY JURY IN RESPECT OF LITIGATION DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. EACH PARTY FURTHER WAIVES ANY RIGHT TO CONSOLIDATE ANY ACTION IN WHICH A JURY TRIAL HAS BEEN WAIVED WITH ANY OTHER ACTION IN WHICH A JURY TRIAL CANNOT BE OR HAS NOT BEEN WAIVED.

**ARTICLE X.
MISCELLANEOUS**

10.1 Notices.

(a) Notice Addresses. Unless this Agreement specifically requires otherwise, any notice, demand or request provided for in this Agreement, or served, given or made in connection with it, shall be in writing and shall be deemed properly served, given or made if delivered in person or sent by fax, by email, by registered or certified mail, postage prepaid, or by a nationally recognized overnight courier service that provides a receipt of delivery, in each case, to a Party at its address specified below:

If to Ameren Missouri, to:

Ameren Services Company
Attn: Rob Dixon, Senior Director Economic Development
1901 Chouteau Avenue
St. Louis, MO 63103
rdixon@ameren.com

with a copy to:

Ameren Services Company
Attn: Director of Commercial Transactions
1901 Chouteau Avenue
St. Louis, MO 63103
Legal Department, MC 1310
LegalTransactions@ameren.com

If to Customer, to:⁸

⁸ To be submitted with an appropriate confidentiality designation.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY	<u>Mark C. Birk</u>	<u>Chairman & President</u>	<u>St. Louis, Missouri</u>
	NAME OF OFFICER	TITLE	ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.27

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

with a copy to:

Each Party may change the Person or place to which notices will be sent or delivered by similar notice sent or delivered in like manner to the other Party.

(b) Effective Time. Notice given by personal delivery, mail or overnight courier pursuant to this Section 10.1(b) shall be effective upon physical receipt. Notice given by fax pursuant to this Section 10.1(b) shall be effective as of (a) the date of confirmed delivery if delivered before 5:00 p.m. local time on any Business Day, or (b) the next succeeding Business Day if confirmed delivery is after 5:00 p.m. local time on any Business Day or during any non-Business Day.

10.2 Limitation of Liability. NOTWITHSTANDING ANY PROVISION OF THIS AGREEMENT TO THE CONTRARY, NO PARTY SHALL, UNDER ANY CIRCUMSTANCES, BE LIABLE FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL, PUNITIVE OR EXEMPLARY DAMAGES, LOST PROFITS OR LOSS OF REVENUE, WHETHER BY STATUTE, IN TORT, COMMON LAW, STRICT LIABILITY OR CONTRACT OR OTHERWISE. THIS PROVISION SHALL SURVIVE ANY TERMINATION OF THIS AGREEMENT.

10.3 Entire Agreement. This Agreement supersedes all prior discussions and agreements between the Parties with respect to the subject matter hereof, and contain the sole and entire agreement between the Parties hereto with respect to the subject matter hereof.

10.4 Expenses. Except as otherwise expressly provided in this Agreement, each Party will pay its own costs and expenses incurred in connection with the negotiation, execution and performance under this Agreement and the transactions contemplated hereby.

10.5 Waivers

(a) Grant of Waivers. Any term or condition of this Agreement may be waived at any time by the Party that is entitled to the benefit thereof, but no such waiver shall be effective unless set forth in a written instrument duly executed by or on behalf of the Party waiving such term or condition. No waiver by any Party of any term or condition of this Agreement, in any one or more instances, shall be deemed to be or construed as a waiver of the same or any other term or condition of this Agreement on any future occasion. All remedies, either under this Agreement or by Applicable Law or otherwise afforded, will be cumulative and not alternative.

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk
NAME OF OFFICERChairman & President
TITLESt. Louis, Missouri
ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.28

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11 (M)LARGE PRIMARY SERVICE RATE (Cont'd.)10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

(b) Exercise of Remedies. No failure or delay of any Party, in any one or more instances, (a) in exercising any power, right or remedy (other than failure or unreasonable delay in giving notice of default) under this Agreement or (b) in insisting upon the strict performance by the other Party of such other Party's covenants, obligations or agreements under this Agreement, shall operate as a waiver, discharge or invalidation thereof, nor shall any single or partial exercise of any such right, power or remedy or insistence on strict performance, or any abandonment or discontinuance of steps to enforce such a right, power or remedy or to enforce strict performance, preclude any other or future exercise thereof or insistence thereupon or the exercise of any other right, power or remedy. The covenants, obligations and agreements of a defaulting Party and the rights and remedies of the other Parties upon a default shall continue and remain in full force and effect with respect to any subsequent breach, act or omission.

10.6 Amendment. This Agreement may be amended, supplemented or modified only by a written instrument duly executed by the Parties.

10.7 Assignment. Neither Party may assign its rights nor delegate its duties under this Agreement, or any part of such rights or duties, without the prior written consent of the other Party, which consent shall not be unreasonably withheld, except in connection with the sale, merger, or transfer of a substantial portion of its properties so long as (x) the assignee in such a sale, merger, or transfer assumes directly all rights, duties and obligations of such party arising under this Agreement, either by operation of law or pursuant to an agreement in form and substance reasonably satisfactory to the other Party, and (y) the Large Load Customer Security (if any) remains in full force and effect in accordance with its terms and without change due to such assignment (or new or replacement Large Load Customer Security is provided by such assignee). Any such assignment or delegation made without such prior written consent would be null and void. Notwithstanding the foregoing provisions, (A) in the case of Customer, Customer shall be permitted to assign this Agreement or any of its rights under this Agreement, or delegate all or any part of its duties under this Agreement, upon prior notice to but without prior consent of Ameren Missouri, to (1) an Affiliate of Customer; (2) any purchaser or lessee of the Project; provided, in the case of clauses (1) and (2), that (x) such Affiliate, purchaser or lessee agrees to assume all of the rights, duties and obligations of Customer arising under this Agreement from and after the date of assignment, either by operation of law or pursuant to an agreement in form and substance reasonably satisfactory to Ameren Missouri, and thereafter Customer shall be, without further action, released from its obligations arising under this Agreement from and after the date of assignment, and (y) the Large Load Customer Security (if any) remains in full force and effect in accordance with its terms and without change due to such assignment (or new or replacement Large Load Customer Security is provided by such assignee); or (3) as a collateral assignment, any party providing equity or debt financing for the Project; and (B) in the case of Ameren Missouri, Ameren Missouri shall be permitted to assign this Agreement to an Affiliate of Ameren Missouri upon prior notice to but without prior consent of Customer, so long as such Affiliate of Ameren Missouri has a credit rating that is equivalent to the credit rating of Ameren Missouri, provided that such Affiliate of Ameren Missouri agrees to assume all of the rights, duties and obligations of Ameren Missouri arising under this Agreement from and after the date of assignment, either by operation of law or pursuant to an agreement in form and substance reasonably satisfactory to Customer, and thereafter Ameren Missouri shall be, without further action, released from its obligations arising under this Agreement from and after the date of assignment. In connection with any assignment or delegation pursuant to clause (A) or (B) above, Customer or Ameren Missouri, as applicable, shall be obligated to provide

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk
NAME OF OFFICERChairman & President
TITLESt. Louis, Missouri
ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.29

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

the other Party with prompt written notice of any such assignment or delegation together with an executed copy of the agreement that memorialized such assignment or delegation.

10.8 No Third Party Beneficiary. The terms and provisions of this Agreement are intended solely for the benefit of each Party hereto and their respective successors or permitted assigns, and it is not the intention of the Parties to confer third-party beneficiary rights upon any other Person.

10.9 Headings. The headings used in this Agreement have been inserted for convenience of reference only and do not define or limit the provisions hereof.

10.10 Recitals. The Recitals set forth above are true and correct and incorporated into this Agreement by reference.

10.11 Conflicts. In the event of a conflict between the body of this Agreement and any attachment, appendix or exhibit hereto, the terms and provisions of the body of this Agreement shall prevail and be deemed to be the final intent of the Parties.

10.12 Binding Effect. This Agreement and the rights and obligations of the Parties contained herein shall be binding upon and shall inure to the benefit of the permitted successors and assigns of the Parties.

10.13 Survival. After the termination of this Agreement, those provisions of this Agreement that expressly provide for survival beyond termination of this Agreement, including Section 10.2, will survive indefinitely or until the expiration of the time period specified elsewhere in this Agreement with respect to the provision in question. All payment obligations and liabilities of a Party incurred before the termination of this Agreement will survive any termination of this Agreement.

10.14 Further Assurances. Each Party will, from time to time, take all such further actions and execute and deliver all such further instruments or documents, as the other Party may reasonably request to carry out the provisions of this Agreement.

10.15 Invalid Provisions. If any provision of this Agreement is held to be illegal, invalid or unenforceable under any present or future Applicable Law, and if the rights or obligations of any Party hereto under this Agreement will not be materially and adversely affected thereby, (a) such provision will be fully severable, (b) this Agreement will be construed and enforced as if such illegal, invalid or unenforceable provision had never comprised a part hereof, (c) the remaining provisions of this Agreement will remain in full force and effect and will not be affected by the illegal, invalid or unenforceable provision or by its severance herefrom, and (d) the Parties shall negotiate an equitable adjustment in the provisions of this Agreement with a view toward effecting the purposes of this Agreement, and the validity and enforceability of the remaining provisions, or portions or applications thereof, shall not be affected thereby.

10.16 Counterparts. This Agreement may be executed in any number of counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument. A validly executed copy of this Agreement delivered by facsimile, email or

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
 NAME OF OFFICER TITLE ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6OriginalSHEET NO. 61.30

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO _____

MISSOURI SERVICE AREASERVICE CLASSIFICATION NO. 11(M)LARGE PRIMARY SERVICE RATE (Cont'd.)10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original validly executed copy of this Agreement.

10.17 Time of the Essence. With regard to all dates and time periods set forth or referred to in this Agreement, time is of the essence.

10.18 MoPSC Jurisdiction. The Parties recognize that certain services by Ameren Missouri, including, but not limited to, services provided under this Agreement and any applicable CEA Agreements, may be subject to the terms and conditions of the Ameren Missouri Tariff on file and in effect with the MoPSC and MoPSC rules and regulations. In the event that Ameren Missouri requests the MoPSC to take any action which could cause a modification in the terms or conditions of this Agreement or any other transaction related to the Project (including but not limited to changes to rates, fees, penalties, or terms of service), Ameren Missouri shall provide written notice to Customer promptly after the time of filing the request with the Commission.

[Signature page follows.]

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk
NAME OF OFFICERChairman & President
TITLESt. Louis, Missouri
ADDRESS

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.31

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11 (M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)

IN WITNESS WHEREOF, this Agreement has been duly executed by the Parties as of
the Execution Date.

AMEREN MISSOURI:

Union Electric Company d/b/a Ameren
Missouri, a Missouri corporation

By: _____

Name: _____

Title: _____

CUSTOMER:

[<insert customer name>],
a [<insert jurisdiction and entity type>]

By: _____

Name: _____

Title: _____

[Signature Page to Electric Service Agreement]

ACTIVE 709712837v4

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk
NAME OF OFFICER

Chairman & President
TITLE

St. Louis, Missouri
ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.32

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

SERVICE CLASSIFICATION NO. 11(M)
LARGE PRIMARY SERVICE RATE (Cont'd.)

10. **LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)**

EXHIBIT A

Example Calculation of Termination Fee

Example Maximum LLC Capacity (MW)	250	Example Ramp Schedule & Ramp Demand (MW)					
Minimum LLC Demand %	70%		2027	2028	2029	2030	2031
Example Minimum LLC Demand (MW)	175	1Q	25	100	150	200	
		2Q	75	125	175	225	
		3Q	75	125	175	225	
		4Q	100	150	200	250	

Note: Cells highlighted yellow are inputs in the ESA

Example 1(LPS) customer charges in effect on the Termination Date

LPS Demand Charge - Summer Months June-Sept. (\$/kW)	\$23.90
LPS Demand Charge - Winter Months Jan-May & Oct.- Dec. (\$/kW)	\$10.63
LPS Rider B Demand Credit (\$/kW)	(\$1.47)

Example 1: When Termination Date Is Post Ramp Period w/ more than 5 years remaining on contract.

Termination Payment = $[(\$23.90 - \$1.47) * 4\text{months} * 175\text{MW Min Demand} * 1000 + (\$10.63 - \$1.47) * 8\text{months} * 175\text{MW Min Demand} * 1000] * 5\text{ Years} = \$142,625,000$

Example 2: When Termination Date Is Post Ramp Period w/ exactly 3 years remaining on contract.

Termination Payment = $[(\$23.90 - \$1.47) * 4\text{months} * 175\text{MW Min Demand} * 1000 + (\$10.63 - \$1.47) * 8\text{months} * 175\text{MW Min Demand} * 1000] * 3\text{ Years} = \$85,575,000$

Example 3: When Termination Date is Before Ramp Period ends; for example: 01/01/2030

Termination Payment =

Q1 2030: $[(\$10.63 - \$1.47) * 3\text{months} * 140\text{MW Min Demand} * 1000] +$

Q2 2030: $[(\$10.63 - \$1.47) * 2\text{months} * 157.5\text{MW Min Demand} * 1000 + (\$23.90 - \$1.47) * 1\text{month} * 157.5\text{MW Min Demand} * 1000] +$

Q3 2030: $[(\$23.90 - \$1.47) * 3\text{months} * 157.5\text{MW Min Demand} * 1000] +$

Q4 2030: $[(\$10.63 - \$1.47) * 3\text{months} * 175\text{MW Min Demand} * 1000] +$

5 Subsequent Years: $[(\$23.90 - \$1.47) * 4\text{months} * 175\text{MW Min Demand} * 1000 + (\$10.63 - \$1.47) * 8\text{months} * 175\text{MW Min Demand} * 1000] * 5\text{ Years} = \$168,297,500$

Exhibit A

-1-

ACTIVE 709712637v4

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 61.33

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO _____

MISSOURI SERVICE AREA**SERVICE CLASSIFICATION NO. 11 (M)**
LARGE PRIMARY SERVICE RATE (Cont'd.)10. **LARGE LOAD CUSTOMERS ELECTRIC SERVICE AGREEMENT (Cont'd.)****EXHIBIT B****Example Calculation of Capacity Reduction Fee**

Example Maximum LLC Capacity (MW)	250
Minimum LLC Demand %	70%
Example Minimum LLC Demand (MW)	175
Example ESA Effective Date	01/01/2027
Example Ramp Period Years	4
Requested Capacity Reduction Percentage	10%

Note: Cells highlighted yellow are inputs in the ESA.

Example 11M (LPS) customer charges in effect on the Capacity Reduction Date

LPS Demand Charge - Summer Months June-Sept. (\$/kW)	\$23.90
LPS Demand Charge - Winter Months Jan-May & Oct.-Dec. (\$/kW)	\$10.83
LPS Rider B Demand Credit (\$/kW)	(\$1.47)

Example 1: When Capacity Reduction Date is more than 5 years before end of contract.

Capacity Reduction Fee = 10% Capacity Reduction * [(\$23.90-\$1.47) * 4months * 175MW Min Demand * 1000 + (\$10.63-\$1.47) * 8months * 175MW Min Demand * 1000] * 5 Years = \$14,262,500

Example 2: When Capacity Reduction Date is exactly 3 years before end of contract.

Capacity Reduction Fee = 10% Capacity Reduction * [(\$23.90-\$1.47) * 4months * 175MW Min Demand * 1000 + (\$10.63-\$1.47) * 8months * 175MW Min Demand * 1000] * 3 Years = \$8,557,500

Exhibit B**-1-**

ACTIVE 709712637v4

DATE OF ISSUE _____

DATE EFFECTIVE _____

ISSUED BY Mark C. Birk
NAME OF OFFICERChairman & President
TITLESt. Louis, Missouri
ADDRESS

Schedule SMW-D1

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 63rd Revised SHEET NO. 74CANCELLING MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 74APPLYING TO MISSOURI SERVICE AREA

*

RIDER CCAPCLEAN CAPACITY ADVANCEMENT PROGRAMPURPOSE/AVAILABILITY

The purpose of the Clean Capacity Advancement Program ("CCAP" or "Program") is to provide Large Load Customers that have elected to participate in the CCAP pursuant to the Large Load Customer's ESA a capacity product that enables storage of clean energy.

DEFINITIONS

CCAP Agreement: An agreement between the Company and the Large Load Customer, as referenced in the subject customer's ESA, setting forth the specific terms of such customer's participation in the Program, including the participating accounts, to be approved by the Commission as provided for in the ESA.

Electric Service Agreement ("ESA"): As defined in Section 8 of Service Classification No. (11M).

ESS Support Charge: The ESS Support Charge shall be calculated monthly as a Large Load Customer's monthly ESS Support Level multiplied by the ESS Support Rate as specified in the CCAP Agreement.

Energy Storage Systems ("ESS"): An asset that stores electrical energy and then releases electrical energy onto the electric grid providing increased reliability and other energy and capacity services.

ESS Support Level (kW): Subject to the terms of applicable CCAP Agreement, the ESS Support Level is calculated as the summation of the total nameplate capacity for any Program Resources supported by the Large Load Customer in question or portion thereof. To the extent that Program Resource capacity supported by a given Large Load Customer is comprised of multiple resources that begin commercial operation at different times, the Large Load Customer's ESS Support Level will be updated as appropriate to reflect the total nameplate capacity supported by the Large Load Customer that are commercially operational at any point in time. The CCAP Agreement will reflect the Large Load ESS Support Level along with projected annual in-service dates for Program Resources from which capacity will be supported by the Large Load Customer as specified in the CCAP Agreement.

ESS Support Rate (\$/kW-mo): Participating Large Load Customers shall pay a dollar per kilowatt- month (\$/kW-mo.) rate as specified in the applicable CCAP Agreement. The rate shall be applied to the participant's ESS Support Level.

Large Load Customers: As defined in Section 8 of Service Classification No. 11(M).

Program Resources: Any new Company-owned commercially operational ESS supported in whole or in part by a Large Load Customer under the Program for a term outlined in the Large Load Customer's CCAP Agreement.

*Indicates Addition.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS

Schedule SMW-D2

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 74.1CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.1APPLYING TO MISSOURI SERVICE AREA

*

RIDER CCAPCLEAN CAPACITY ADVANCEMENT PROGRAM (Cont'd.)MONTHLY BILL

All charges provided for under, and other terms and conditions of, Service Classification No. 11(M) including Section 8 thereof, and the ESA under which the Large Load Customer takes service shall continue to apply and will continue to be based on actual metered energy use during the Large Load Customer's normal billing cycle.

Large Load Customers that participate in the Program will see an additional charge, the ESS Support Charge, added to their bill for the in-service capacity being supported as specified in the CCAP Agreement.

Charges resulting from this Rider CCAP shall not be eligible for any economic development discount(s) that could otherwise apply to Company's Service Classification No. 11(M) customers.

All charges arising from Program participation are subject to any applicable license, franchise, gross receipts, occupation, or similar charge or tax levied by any taxing authority with appropriate jurisdiction.

OTHER PROGRAM PROVISIONS AND TERMS

1. A Large Load Customer's participation in the CCAP is specific to the accounts specified in the applicable CCAP Agreement. If at the time the CCAP Agreement is signed a Large Load Customer does not have an account number established for an account reasonably expected by Company to exist at some point over the Term of the ESA, Company may input a placeholder on the CCAP Agreement which will be updated after said account number is established. A Large Load Customer's participation in the CCAP is specific to the Program Resources specified in the applicable CCAP Agreement. Allocation of Customer's CCAP participation across enrolled accounts will be determined by Company and the Large Load Customer as specified in the applicable CCAP Agreement.
2. If, prior to the end of the term of participation, a Large Load Customer premises that constitutes a separate account is relocated to another location within the Company's service territory, the Large Load Customer's participation shall continue at the Large Load Customer's same ESS Support Level at the new account established at the new location.
3. Failure by a Large Load Customer to pay its bill when due, including that part of the bill reflecting charges for participation in the CCAP, shall constitute a failure to pay a bill due for services in accordance with the Company's General Rules and Regulations.
4. A Large Load Customer's participation in the CCAP is not a security and does not represent an ownership interest in any of the Program Resources.
5. Any Large Load Customer participating in the CCAP or who formerly participated in the CCAP waives all rights to any billing adjustments or other relief arising from a claim that the Large Load Customer's service would be or would have been at a lower cost had the Customer not participated in the CCAP.

*Indicates Addition.

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ISSUED BY	Mark C. Birk	Chairman & President	St. Louis, Missouri
	NAME OF OFFICER	TITLE	ADDRESS

Schedule SMW-D2

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 74.2CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.2APPLYING TO MISSOURI SERVICE AREA

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RIDER CCAPCLEAN CAPACITY ADVANCEMENT PROGRAM (Cont'd.)OTHER PROGRAM PROVISIONS AND TERMS (Cont'd.)

6. Upon the occurrence of any act or event not within the reasonable control of Company (e.g., force majeure event or change in law) that affects capacity supported by the Large Load Customer from a Program Resource, Company shall be excused from performance under the Program and CCAP Agreement to the extent such performance is delayed or prevented by such act or event, and shall resume normal performance within the shortest time reasonably practicable. In the event that such a Program Resource is damaged, or production and/or transmittal of energy produced therefrom is prevented from normal operations for more than six (6) months, Company may remove such affected Program Resource from the Program by giving notice of the removal to affected Large Load Customers. In such event, such ESS Support Levels shall be reduced to the degree necessary to account for the available Program Resource capacity, subject, however, to the Company's right to add additional Program Resource capacity to increase Large Load Customers' ESS Support Level up to the Large Load Customer's ESS Support Level prior to such reduction as additional Program Resource capacity becomes available. The term of a Large Load Customer's participation is unaffected by a force majeure event or a change in the ESS Support Level.
7. The term and termination of a Large Load Customer's subscription under this Rider shall be governed by the Large Load Customer's ESA and CCAP Agreement.

GENERAL RULES AND REGULATIONS

In addition to the above specific rules and regulations, all of Company's General Rules and Regulations shall apply to service supplied under this Program, except as specifically modified herein.

NEW RESOURCES

If a Large Load Customer's CCAP Agreement provides for support of Program Resource capacity that is not yet in commercial operation as of the date the CCAP Agreement is executed by the Large Load Customer and if such Program Resource capacity does not achieve commercial operation by the date specified in the CCAP Agreement, the Company shall use commercially reasonable efforts, subject to any required approvals from the Commission, to make alternative Program Resource capacity available for support by the affected Large Load Customer.

CLEAN PRODUCTION DATA

A participating Large Load Customer may request hourly output data from the Company specific to the Program Resource capacity being supported by the Large Load Customer.

*Indicates Addition.

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Schedule SMW-D2

ELECTRIC SERVICE

1st Revised SHEET NO. 74.3

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APPLYING TO MISSOURI SERVICE AREA

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Schedule SMW-D2

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 74.4CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.4APPLYING TO MISSOURI SERVICE AREA

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RIDER CECCLEAN ENERGY CHOICE PROGRAMPURPOSE/AVAILABILITY

The Clean Energy Choice Rider (the "Program") provides eligible Large Load Customers with a means to influence the Company's generation resource portfolio. Within the Company's Integrated Resource Planning Process ("IRP"), the eligible Large Load Customer may request one or more Clean Energy Resources be deployed in place of or in addition to one or more resources selected in the Company's Preferred Resource Portfolio. If the Company determines that it should include Customer's requested generation as part of a Clean Energy Preferred Resource Plan, the Requesting Customer shall cover costs associated with its specific request for clean resources. The specific terms of the Requesting Customer's obligation must be reflected in a mutually agreed upon Clean Energy Choice Agreement, as contemplated by the Requesting Customer's Electric Service Agreement, and will be subject to Commission approval.

DEFINITIONS

For purposes of this Program, the following definitions apply:

Clean Energy Resource: A resource that does not contribute any net carbon emissions to the atmosphere.

Clean Energy Preferred Resource Plan: A separate resource plan that would call for the addition of one or more generation resources pursuant to a Customer Request. The Company retains all discretion in preparing the Clean Energy Preferred Resource Plan to ensure the Clean Energy Preferred Resource Plan meets the Company's requirements to provide safe and reliable service. The execution of the Clean Energy Preferred Resource Plan shall be subject to approval by the Commission and obtaining all appropriate regulatory approvals, and in a manner deemed satisfactory to the Company in its sole discretion.

Electric Service Agreement ("ESA"): As defined in Section 8 of Service Classification No. 11M).

Integrated Resource Planning Process: The Company's integrated process to consider and analyze demand-side resources, supply-side resources, and renewable energy resources on an equivalent basis, subject to compliance with all legal mandates that may affect the selection of Company electric energy and capacity resources. To meet the IRP's fundamental objective, the Company shall develop a Preferred Resource Plan that uses minimization of the net present value of long-term utility costs as its primary selection criteria, while ensuring the Company can provide its customers with energy services that are safe, reliable, and efficient, at just and reasonable rates, and in a manner that serves the public interest and is consistent with state energy and environmental policies.

Large Load Customers: As defined in Section 8 of Service Classification No. 11(M).

Preferred Resource Plan: This refers to the resource plan selected by the Company as its Preferred Resource Plan as part of its IRP.

*Indicates Addition.

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Schedule SMW-D2

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 74.5CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.5APPLYING TO MISSOURI SERVICE AREA

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RIDER CECCLEAN ENERGY CHOICE PROGRAM (Cont'd.)DEFINITIONS (Cont'd.)

Requesting Customer: An eligible Large Load Customer who requests that one or more clean energy resources be deployed in place of or in addition to the generation resources selected in the Company's Preferred Resource Plan. There may be multiple Requesting Customers who support the same Clean Energy Preferred Resource Plan.

CLEAN ENERGY ATTRIBUTES

If applicable, the Requesting Customer shall receive the clean energy attributes associated with the Clean Energy Resources as contemplated by the Customer's Clean Energy Choice Agreement. The Company shall retire the clean energy attributes to which the Requesting Customer is entitled on their behalf, up to an amount equal to the Requesting Customer's annual energy usage. Any excess clean energy attributes beyond those retired on behalf of customer, will be transferred to Customer. Alternatively, Ameren Missouri may assign or transfer to Customer all rights necessary for Customer to register, hold, and manage the clean energy attributes in Customer's account, in which case Ameren Missouri will provide documentation required by the Registry to verify the transfer of the clean energy attributes associated with generation of the clean energy resource. If the Clean Energy Preferred Resource Plan includes more than one Requesting Customer, the clean energy attributes to which they are collectively entitled will be allocated to the Requesting Customers on the equivalent basis as the cost differential, as applicable and as determined by Company and addressed in the Customer's Clean Energy Choice Agreement.

CLEAN RESOURCE PRODUCTION DATA

A Requesting Customer may request hourly output data from the Company specific to the Clean Energy Resource(s) included in an adopted and executed Clean Energy Preferred Resource Plan.

GENERAL RULES AND REGULATIONS

In addition to the above specific rules and regulations, all of Company's General Rules and Regulations shall apply to service supplied under this Program, unless specifically modified herein.

*Indicates Addition.

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	NAME OF OFFICER	TITLE	ADDRESS

Schedule SMW-D2

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 61st RevisedSHEET NO. 74.6

CANCELLING MO.P.S.C. SCHEDULE NO. 6OriginalSHEET NO. 74.6

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UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.7CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.7APPLYING TO MISSOURI SERVICE AREA

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RIDER NECNUCLEAR ENERGY CREDIT PROGRAMPURPOSE/AVAILABILITY

The purpose of the Nuclear Energy Credit Rider program ("Program") is to allow Large Load Customers that have elected to participate in the Program pursuant to the Large Load Customer's ESA, to subscribe to receive NECs that are associated with Company-owned nuclear energy resources in amounts not to exceed the Large Load Customer's Annual Usage. The Company shall have the NECs annually certified by a third-party. Under the Program, a Large Load Customer may agree to receive NECs for an agreed upon term as specified in the Large Load Customer's NEC Agreement.

DEFINITIONS

For purposes of this Program, the following definitions apply:

Customer's Annual Usage: Large Load Customer's actual metered energy usage over the twelve (12) most recent monthly billing periods for which data is available, or, if deemed more appropriate by the Company, Large Load Customer's expected metered energy usage over twelve (12) monthly billing periods as determined by the Company. Large Load Customer's Annual Usage shall be established at the time the NEC Agreement is executed by Large Load Customer and Company. Large Load Customer's Annual Usage may vary by year depending on Large Load Customer's Ramp Period usage.

Electric Service Agreement ("ESA"): As defined in Section 8 of Service Classification No. 11(M).

Large Load Customer: As defined in Section 8 of Service Classification No. 11(M).

NEC Agreement: A written contract executed by the Company and a Large Load Customer setting forth the specific terms of the Large Load Customer's subscription under this Program including the accounts covered by the subscription. The NEC Agreement shall reflect the quantity of NECs to which the Large Load Customer is subscribing, subject to the terms and conditions set forth in this tariff and the NEC Agreement, to be approved by the Commission as provided for in the ESA.

Nuclear Energy: Electricity that is generated using Company-owned nuclear energy resources.

Nuclear Energy Credits ("NECs"): Attributes from one megawatt-hour (MWh) of electricity generated from a Company-owned nuclear energy resource.

Nuclear Energy Credit Charge ("NEC Charge"): The NEC Charge shall be calculated monthly as a Large Load Customer's monthly quantity of NECs multiplied by the NEC Rate as specified in the NEC Agreement.

Nuclear Energy Credit Rate ("NEC Rate"): A dollar per megawatt hour (\$/MWh) rate applicable to a Large Load Customer's monthly quantity of NECs as specified in the NEC Agreement.

Ramp Period: As specified in the Large Load Customer's ESA.

*Indicates Addition.

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Schedule SMW-D2

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 74.8CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.8APPLYING TO MISSOURI SERVICE AREA

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RIDER NECNUCLEAR ENERGY CREDIT PROGRAM (Cont'd.)MONTHLY BILL

All charges provided for under, and other terms and conditions of, Service Classification No. 11(M) including Section 8 thereof, and the Electric Service Agreement under which the Large Load Customer takes service, shall continue to apply and will continue to be based on actual metered energy use during the Customer's normal billing cycle.

All charges arising from Program participation are subject to any applicable license, franchise, gross receipts, occupation, or similar charge or tax levied by any taxing authority with appropriate jurisdiction.

Charges resulting from this Rider NEC shall not be eligible for any economic development discount(s) that could otherwise apply to Company's Service Classification No. 11(M) customers.

Large Load Customers that participate in the Program will see an additional charge added to their bill for the NECs, the NEC Charge.

OTHER PROGRAM PROVISIONS AND TERMS

1. A Large Load Customer's participation in the NEC is specific to the accounts specified in the applicable NEC Agreement. If at the time the NEC Agreement is signed a Large Load Customer does not have account number established for an account reasonably expected by Company to exist at some point over the Term of the ESA, Company may input a placeholder on the NEC Agreement which will be updated after said account number is established. A Large Load Customer's participation in the NEC is specific to the Program Resources specified in the applicable NEC Agreement. Allocation of Customer's NEC participation across enrolled accounts will be determined by Company and the Large Load Customer as specified in the applicable NEC Agreement.
2. If, prior to the end of the term of a given subscription, a Customer premises that constitutes a separate account is relocated to another location within the Company's service territory, the Customer's subscription shall continue to be enrolled in the Program at the Customer's same NEC quantity at the new account established at the new location.
3. Failure by a Large Load Customer to pay its bill when due, including the NEC Charge, shall constitute a failure to pay a bill due for services in accordance with the Company's General Rules and Regulations.
4. Any Large Load Customer subscribing to NECs or that formerly subscribed to NECs waives all rights to any billing adjustments or other relief arising from a claim that the Large Load Customer's service would be or would have been at a lower cost had the Large Load Customer not participated in the Program.

*Indicates Addition.

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UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 74.9CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.9APPLYING TO MISSOURI SERVICE AREA

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RIDER NECNUCLEAR ENERGY CREDIT PROGRAM (Cont'd.)OTHER PROGRAM PROVISIONS AND TERMS (Cont'd.)

5. If the Nuclear Energy generated by Company-owned nuclear generation is not sufficient to meet the sum of all Large Load Customers' annual NEC subscriptions during a calendar year, the Company shall refund each subscribing Large Load Customer an amount equal to the applicable NEC Rate multiplied by the difference between the number of NEC's subscribed to by the Large Load Customer and the Large Load Customer's pro rata annual share of the NECs that were produced in that calendar year.
6. A Large Load Customer's subscription under this Program is not a security and does not represent an ownership interest in any Company-owned generation.
7. The term and termination of a Large Load Customer's subscription under this Rider shall be governed by the Large Load Customer's ESA and NEC Agreement.

GENERAL RULES AND REGULATIONS

Service hereunder is subject to the Company's General Terms and Conditions as approved by the Missouri Public Service Commission and any modification subsequently approved.

REPORTING

The Company shall calculate and provide the subscribing Large Load Customer with its total annual NECs consistent with the Large Load Customer's subscription, which shall occur in the first quarter of the year following the prior annual year subscription (e.g. in first quarter of 2026 for a 2025 annual subscription).

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UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.10CANCELLING MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 74.10

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UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 74.11CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.11APPLYING TO MISSOURI SERVICE AREA

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RIDER RSP LLCRENEWABLE SOLUTIONS PROGRAM - LARGE LOAD CUSTOMERSPURPOSE/AVAILABILITY

The purpose of the Renewable Solutions Program - Large Load Customers ("RSP LLC" or "Program") is to allow Large Load Customers that have elected to participate in the Program pursuant to the Large Load Customer's ESA, to subscribe to receive renewable energy service ("RE Service") from existing or new renewable wind and/or solar generation resource capacity available to the Large Load Customer under the Program.

DEFINITIONS

Commercial Pricing Node: The point where any transmission-interconnected renewable energy from a Program Resource will be injected into the wholesale energy market.

Electric Service Agreement ("ESA"): As defined in Section 8 of Service Classification No. 11M).

Large Load Customers: As defined in Section 8 of Service Classification No. 11(M).

Large Load Customer's Annual Usage: Large Load Customer's actual metered energy usage over the twelve (12) most recent monthly billing periods for which data is available, or, if deemed more appropriate by the Company, Large Load Customer's expected metered energy usage over twelve (12) monthly billing periods as determined by Company. A Large Load Customer's Annual Usage shall be established at the time the RSP LLC Agreement is executed by the Large Load Customer and Company. A Large Load Customer's Annual Usage may vary by year depending on the Large Load Customer's Ramp Period usage.

Metered RE Production: This is the total energy production of the Program Resources or portion thereof available to the Large Load Customer under the applicable Renewable Solutions Program - LLC Agreement ("RSP LLC Agreement") at a point in time, as measured at the Commercial Pricing Node(s) where the power is injected into the wholesale energy market or by dedicated generation meters at the point of interconnection with the distribution system where resource output offsets power that would have otherwise been procured in the wholesale energy market. This value is expressed as the metered production of energy (measured in kilowatt-hours ("kWh")). Each Program Resource shall be separately metered.

Program Resources: Any new Company-owned commercially operational wind or solar generation resources available in whole or in part to a Large Load Customer participating in the Program. Once commercially operational, new renewable generation facilities or a portion thereof will be available to provide service to the Large Load Customer in question for a term outlined in the Large Load Customer's RSP LLC Agreement.

Ramp Period: As specified in the Large Load Customer's ESA.

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UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.12CANCELLING MO.P.S.C. SCHEDULE NO. 61st Revised SHEET NO. 74.12APPLYING TO MISSOURI SERVICE AREA

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RIDER RSP LLCRENEWABLE SOLUTIONS PROGRAM - LARGE LOAD CUSTOMERS (Cont'd.)DEFINITIONS (Cont'd.)

Renewable Benefits Credit: A credit applied to the monthly bill of a participating Large Load Customer. The Renewable Benefits Credit for a given Large Load Customer will be calculated as the Metered RE Production of the Program Resource capacity to which the Large Load Customer has subscribed for the most recent calendar month for which production data is available at the time the Large Load Customer's monthly bill is rendered multiplied by the applicable Renewable Benefits Rate. To the extent that the production data used to calculate this credit is dependent on market settlement data from a Regional Transmission Organization (RTO), the initial credit shall be based on the settlement data available as of the time the initial credit is given. Any subsequent settlement data that the RTO publishes for the month covered by the bill when the initial credit was given that results in a different amount of production will be reflected in an adjustment to the previously applied credit on subsequent billing statements of the subscriber.

Renewable Benefits Rate: A \$/kWh rate applicable to the Metered RE Production from the Large Load Customer's portion of Program Resource capacity to which the Large Load Customer has subscribed. Over the term of the applicable RSP LLC Agreement, there will be a specified Renewable Benefits Rate for each year of the term applicable to all Program Resource capacity subscribed to by the Large Load Customer in question.

Renewable Resource Charge: A charge applied to the monthly bill of the participating Large Load Customer. The Renewable Resource Charge will be calculated as the Large Load Customer's RE Service Level multiplied by the Renewable Resource Rate, provided that if Company is unable to meet a subscriber's RE Service Level as a result of the occurrence of an act or event described in item 7 of the Other Program Provisions and Terms of this Rider RSP LLC, the RE Service Level shall be reduced to the level Company can supply during the period Company's performance is reduced or delayed.

Renewable Resource Rate: A \$/kW rate applicable to subscribers. Over the term of the applicable RSP LLC Agreement, there will be a specified Renewable Resource Rate for each year and for each technology (i.e., for each of wind and solar) for the term applicable to all Program Resource capacity subscribed to by the Large Load Customer in question.

RE Service Level (kW): The RE Service Level is determined as provided for in the applicable RSP LLC Agreement. Subject to the terms of the Large Load Customer's RSP LLC Agreement, the RE Service Level is calculated as the summation of the total nameplate capacity of Program Resources subscribed to by the Large Load Customer in question or portion thereof available to the Large Load Customer under the applicable RSP LLC Agreement. To the extent that the Program Resource capacity subscribed to by a given Large Load Customer is comprised of multiple resources that begin commercial operation at different times, the Large Load Customer's RE Service Level will be updated as appropriate to reflect the total nameplate capacity subscribed to by the Large Load Customer in question that are generating renewable power at any point in time.

*Indicates Addition.

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UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 611th Revised SHEET NO. 74.13CANCELLING MO.P.S.C. SCHEDULE NO. 610th Revised SHEET NO. 74.13APPLYING TO MISSOURI SERVICE AREA

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RIDER RSP LLCRENEWABLE SOLUTIONS PROGRAM - LARGE LOAD CUSTOMERS (Cont'd.)DEFINITIONS (Cont'd.)

RSP LLC Agreement: A written contract executed by the Large Load Customer and Company setting forth the specific terms of such customer's subscription under the Program, including the accounts covered by the subscription, to be approved by the Commission as provided for in the ESA.

SUBSCRIPTION

An eligible Large Load Customer may subscribe to RE Service associated with Program Resource capacity, where the projected energy production from which is less than or equal to 100% of the Large Load Customer's Annual Usage, subject to the availability of Program Resource capacity and to the terms of the Large Load Customer's RSP LLC Agreement. The RSP LLC Agreement will reflect the Large Load Customer's RE Service Level along with projected annual in-service dates for Program Resources from which capacity will be subscribed by the Large Load Customer as specified in the RSP LLC Agreement.

MONTHLY BILL

All charges provided for under, and other terms and conditions of, Service Classification No. 11(M) including Section 8 thereof, and the ESA under which the Large Load Customer takes service, shall continue to apply and will continue to be based on actual metered energy use during the Large Load Customer's normal billing cycle.

Large Load Customers that participate in the Program will see additional charge(s) and credit(s) (i.e., the Renewable Resource Charge(s) and the Renewable Benefits Credit(s)) added to their bill for in-service capacity subscribed to by them associated with the most recent calendar month as of the time the bill is produced. Renewable Resource Charge(s) and Renewable Benefits Credit(s) reflect the Large Load Customer's procurement of renewable energy from the Company in an amount equal to the Large Load Customer's RE Service Level.

Charges resulting from this Rider RSP-LLC shall not be eligible for any economic development discount(s) that could otherwise apply to Company's Service Classification No. 11(M) customers.

All charges and credits arising from RE Service under the Program are subject to any applicable license, franchise, gross receipts, occupation, or similar charge or tax levied by any taxing authority with appropriate jurisdiction.

*Indicates Addition.

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Schedule SMW-D2

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 6Original SHEET NO. 74.14

CANCELLING MO.P.S.C. SCHEDULE NO. _____

SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

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RIDER RSP LLCRENEWABLE SOLUTIONS PROGRAM - LARGE LOAD CUSTOMERS (Cont'd.)OTHER PROGRAM PROVISIONS AND TERMS

1. The Renewable Energy Credits ("RECs") associated with the generation output of Program Resource capacity shall be retired on behalf of the subscribing Large Load Customers. Alternatively, Ameren Missouri may assign or transfer to Customer all rights necessary for Customer to register, hold, and manage the clean energy attributes in Customer's account, in which case Ameren Missouri will provide documentation required by the Registry to verify the transfer of the clean energy attributes associated with generation of the clean energy resource.
2. A Large Load Customer's subscription for RE Service is specific to the accounts specified in the applicable RSP LLC Agreement. If at the time the RSP LLC Agreement is signed, a Large Load Customer does not have an account number established for an account reasonably expected by Company to exist at some point over the Term of the ESA, Company may input a placeholder on the RSP LLC Agreement which will be updated after said account number is established. A Large Load Customer's subscription for RE Service is specific to the capacity available to the Large Load Customer in its RSP LLC Agreement. Allocation of a Large Load Customer's RE Service across enrolled Large Load Customer's accounts will be proportional to a Large Load Customer's Annual Usage for each account as determined by Company.
3. If, prior to the end of the term of a given subscription, a Large Load Customer's premises that constitutes a separate account is relocated to another location within the Company's service territory, the Large Load Customer's subscription shall continue to be enrolled in the Program at the Large Load Customer's same RE Service Level at the new account established at the new location.
4. Failure by a Large Load Customer to pay its bill when due, including that part of the bill reflecting charges for RE Service, shall constitute a failure to pay a bill due for services in accordance with the Company's General Rules and Regulations.
5. Any Large Load Customer receiving RE Service or who formerly received RE Service waives all rights to any billing adjustments or other relief arising from a claim that the Large Load Customer's service would be or would have been at a lower cost had the Large Load Customer not participated in the Program.
6. A Large Load Customer's RE Service subscription is not a security and does not represent an ownership interest in any of the Program Resources

*Indicates Addition.

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Schedule SMW-D2

UNION ELECTRIC COMPANY**ELECTRIC SERVICE**MO.P.S.C. SCHEDULE NO. 6 Original SHEET NO. 74.15

CANCELLING MO.P.S.C. SCHEDULE NO. _____ SHEET NO. _____

APPLYING TO MISSOURI SERVICE AREA

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RIDER RSP LLC**RENEWABLE SOLUTIONS PROGRAM - LARGE LOAD CUSTOMERS (Cont'd.)****OTHER PROGRAM PROVISIONS AND TERMS (Cont'd.)**

7. Upon the occurrence of any act or event not within the reasonable control of Company (e.g., force majeure event or change in law) that affects capacity subscribed to by the Large Load Customer from a Program Resource, Company shall be excused from performance under the Program and RSP LLC Agreement to the extent such performance is delayed or prevented by such act or event, and shall resume normal performance within the shortest time reasonably practicable. In the event that such a Program Resource is damaged, or production and/or transmittal of energy produced therefrom is prevented from normal operations for more than six (6) months, Company may remove such affected Program Resource capacity from the Program by giving notice of the removal to affected Large Load Customers. In such event, such RE Service Levels shall be reduced to the degree necessary to account for the available Program Resource capacity, subject, however, to the Company's right to add additional Program Resource capacity to increase Large Load Customers' RE Service Levels up to the Large Load Customer's RE Service Level prior to such reduction as additional Program Resource capacity becomes available.
8. The term of a Large Load Customer's subscription is unaffected by a force majeure event or a change in the RE Service Level. The term and termination of a Large Load Customer's subscription under this Rider shall be governed by the Large Load Customer's ESA and RSP-LLC Agreement.

GENERAL RULES AND REGULATIONS

In addition to the above specific rules and regulations, all of Company's General Rules and Regulations shall apply to service supplied under this Program, except as specifically modified herein.

NEW RESOURCES

If a Large Load Customer's RSP LLC Agreement provides for a subscription to Program Resource capacity that is not yet in commercial operation as of the date the RSP LLC Agreement is signed, and if such Program Resource capacity does not achieve commercial operation by the date specified in the RSP LLC Agreement, the Company shall use commercially reasonable efforts, subject to any required approvals from the Commission, to make alternative Program Resource capacity available for subscription to the affected Large Load Customer.

CLEAN PRODUCTION DATA

A subscribing Large Load Customer may request hourly output data from the Company specific to the Program Resource capacity to which the Large Load Customer has subscribed.

*Indicates Addition.

DATE OF ISSUE _____ DATE EFFECTIVE _____

ISSUED BY Mark C. Birk Chairman & President St. Louis, Missouri
NAME OF OFFICER TITLE ADDRESS**Schedule SMW-D2**

UNION ELECTRIC COMPANY

ELECTRIC SERVICE

MO.P.S.C. SCHEDULE NO. 63rd Revised SHEET NO. 72.6CANCELLING MO.P.S.C. SCHEDULE NO. 62nd Revised SHEET NO. 72.6

APPLYING TO

MISSOURI SERVICE AREARIDER FACFUEL AND PURCHASED POWER ADJUSTMENT CLAUSE (Cont'd.)

(Applicable To Service Provided On The Effective Date Of This Tariff Sheet And
Thereafter)

FAR DETERMINATION (Cont'd.)

determined, to specific customers under the Renewable Choice Program tariff or any subsequent renewable subscription program that is approved by the Commission in an order that acknowledges that such program's impacts should be excluded from Factor OSSR, (c) amounts associated with generation assets that began commercial operation after the date BF was determined and that were dedicated to specific customers under the Renewable Choice Program tariff or any subsequent renewable subscription program that is approved by the Commission in an order that acknowledges that such program's impacts should be excluded from Factors FC, PP, and OSSR when it began commercial operation, (d) for Renewable Energy Standard compliance included in Rider RESRAM, (e) amounts associated with energy purchased from the MISO market to serve digital currency mining by the Company, (f) amounts related to wholesale capacity sold as part of the Company's mitigation of a Large Load Customer's Termination Fee as provided for in Section 8 of Service Classification No. 11(M) or amounts related to specific contract agreements between the Company and a Large Load Customer pursuant to said Section 8 and (fg) those amounts specified by Commission Order approving any tariff, rider or program, to be excluded from Rider FAC. Moreover, if a research and development ("R&D") project would impact the amounts for Factors FC, PP, or OSSR in an upcoming FAR filing, the Company shall file, in the docket in which this Rider FAC was approved, a notice outlining what the research and development project consists of, and how it will impact such factors in the upcoming FAR filing. The Company will bear the burden of proof to show that the impacts of the subject project should be included in Factors FC, PP, or OSSR, as the case may be. Such notice shall be filed no fewer than 60 days prior to the date of the subject FAR filing. Parties shall have thirty days after the filing of the notice to challenge the inclusion of the impacts of such project on such Factors in the determination of the FAR by stating the reasons for the challenge. If a party challenges the inclusion of a cost/revenue, the costs/revenue will be removed from the FAR until the Commission makes a determination regarding the inclusion of the cost/revenue. If the Commission orders a challenged cost be included in the FAC, the costs will be refunded or the revenues returned along with interest in the next periodic adjustment. For purposes of this Rider FAC, a "research and development project" is defined the same as "Research, Development, and Demonstration (RD&D)" as defined in 18 CFR Chapter 1, subchapter C, Part 101, Federal Power Act Definition 32.B, provided that if the project at issue consumes electricity only incidentally, it will not constitute a research and development project.

Should FERC require any item covered by factors FC, PP, E or OSSR to be recorded in an account different than the FERC accounts listed in such factors, such items shall nevertheless be included in factor FC, PP, E or OSSR. In the month that the Company begins to record items in a different account, the Company will file with the Commission the previous account number, the new account number and what costs or revenues that flow through this Rider FAC are to be recorded in the account.

DATE OF ISSUE June 28, 2024DATE EFFECTIVE August 3, 2024ISSUED BY Mark C. Birk
NAME OF OFFICERChairman & President
TITLESt. Louis, Missouri
ADDRESS

Schedule SMW-D3