

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

<b>ELECTRONIC APPLICATION OF</b>	)	
<b>LOUISVILLE GAS AND ELECTRIC COMPANY</b>	)	
<b>FOR AN ADJUSTMENT OF ITS ELECTRIC</b>	)	
<b>AND GAS RATES, A CERTIFICATE OF</b>	)	
<b>PUBLIC CONVENIENCE AND NECESSITY TO</b>	)	<b>CASE NO. 2020-00350</b>
<b>DEPLOY ADVANCED METERING</b>	)	
<b>INFRASTRUCTURE, APPROVAL OF CERTAIN</b>	)	
<b>REGULATORY AND ACCOUNTING</b>	)	
<b>TREATMENTS, AND ESTABLISHMENT OF A</b>	)	
<b>ONE-YEAR SURCREDIT</b>	)	

**RESPONSE OF**  
**LOUISVILLE GAS AND ELECTRIC COMPANY**  
**TO**  
**KENTUCKY SOLAR INDUSTRIES ASSOCIATION, INC.'S**  
**INITIAL REQUESTS FOR INFORMATION**  
**DATED JANUARY 8, 2021**

**FILED: JANUARY 22, 2021**


**VERIFICATION**

**COMMONWEALTH OF KENTUCKY** )  
 )  
**COUNTY OF JEFFERSON** )

The undersigned, **Lonnie E. Bellar**, being duly sworn, deposes and says that he is Chief Operating Officer for Louisville Gas and Electric Company and Kentucky Utilities Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
\_\_\_\_\_  
**Lonnie E. Bellar**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 18<sup>th</sup> day of January 2021.

  
\_\_\_\_\_  
Notary Public  
Notary Public ID No. 603967

My Commission Expires:

**July 11, 2022**



VERIFICATION

COMMONWEALTH OF KENTUCKY )  
 )  
COUNTY OF JEFFERSON )

The undersigned, **Eileen L. Saunders**, being duly sworn, deposes and says that she is Vice President, Customer Services for Louisville Gas and Electric Company and Kentucky Utilities Company and an employee of LG&E and KU Services Company, and that she has personal knowledge of the matters set forth in the responses for which she is identified as the witness, and the answers contained therein are true and correct to the best of her information, knowledge and belief.

  
\_\_\_\_\_  
**Eileen L. Saunders**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 20<sup>th</sup> day of January \_\_\_\_\_ 2021.

  
\_\_\_\_\_  
Notary Public

Notary Public ID No. KYNP 4577

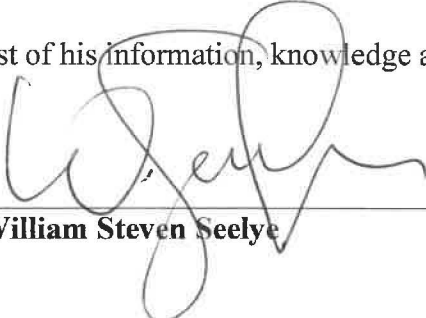
My Commission Expires:

April 1, 2024

VERIFICATION

COMMONWEALTH OF NORTH CAROLINA )  
 )  
COUNTY OF BUNCOMBE )

The undersigned, **William Steven Seelye**, being duly sworn, deposes and states that he is a Principal of The Prime Group, LLC, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
\_\_\_\_\_  
**William Steven Seelye**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 16 day of January 2021.

  
\_\_\_\_\_  
Notary Public (SEAL)

Notary Public ID No. \_\_\_\_\_

My Commission Expires:

9/22/2025

**Ryan Meagher**  
Notary Public  
Henderson County, NC  
My Commission Expires 9/22/25


VERIFICATION

COMMONWEALTH OF KENTUCKY )  
 )  
COUNTY OF JEFFERSON )

• The undersigned, **David S. Sinclair**, being duly sworn, deposes and says that he is Vice President, Energy Supply and Analysis for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
\_\_\_\_\_  
**David S. Sinclair**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 20th day of January 2021.

  
\_\_\_\_\_  
Notary Public  
Notary Public, ID No. 603967

My Commission Expires:

**July 11, 2022**


**VERIFICATION**

**COMMONWEALTH OF KENTUCKY )  
)  
COUNTY OF JEFFERSON )**

The undersigned, **Paul W. Thompson**, being duly sworn, deposes and says that he is Chief Executive Officer and President for Kentucky Utilities Company and Louisville Gas and Electric Company and an employee of LG&E and KU Services Company, and that he has personal knowledge of the matters set forth in the responses for which he is identified as the witness, and the answers contained therein are true and correct to the best of his information, knowledge and belief.

  
\_\_\_\_\_  
**Paul W. Thompson**

Subscribed and sworn to before me, a Notary Public in and before said County and State, this 20th day of January 2021.

  
\_\_\_\_\_  
Notary Public  
Notary Public, ID No. **603967**

My Commission Expires:

**July 11, 2022**

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**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s  
Initial Requests for Information  
Dated January 8, 2021**

**Case No. 2020-00350**

**Question No. 1**

**Responding Witness: Robert M. Conroy**

- Q-1. Reference: Direct Testimony of Company Witness Robert M. Conroy (“Conroy Direct”) at page 26 [PDF 408 of 447], line 10 through 17, discussing the Company’s energy credits rate under Rider NMS-2.
- a. Identify the grandfathering (hereafter, “legacy”) period, if any, that will apply to the dollar denominated bill credit for a customer-generator taking service under NMS-2, if and when the Company subsequently implements changes to the Non-Time-Differentiated SQF rate in the future.
  - b. If there will be no legacy period, explain why not.
  - c. Describe the process by which the Company intends to update the compensation rate for energy credits under NMS-2 in the future and the anticipated frequency of changes to the compensation rate.
- A-1.
- a. Unless otherwise directed by the Commission, there will be no grandfathering period for changes to the NMS-2 tariff or Non-Time-Differentiated SQF rate in the future.
  - b. The Company’s rates and tariffs are subject to change by rate case filings and Commission orders; no other customers or the Company are guaranteed a certain rate structure or level beyond what is included in the Company’s currently approved tariffs. NMS-2 customers are subject to the same treatment and rules.
  - c. To comply with 807 KAR 5:054, Section 5(2)(a), (b), and (c), the Non-Time-Differentiated SQF rate is updated and filed with the Commission every other year. This was last filed and approved by the Commission May 28, 2020 with implementation on June 30, 2020. See the response to AG-KIUC 1-172.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s  
Initial Requests for Information  
Dated January 8, 2021**

**Case No. 2020-00350**

**Question No. 2**

**Responding Witness: Robert M. Conroy**

- Q-2. Reference: Conroy Direct at page 26 [PDF 408 of 447], line 18 through 20, stating “Are the Companies proposing any different rates or rate structures for new net metering customers under KRS 278.466(6)? A. Not at this time, though the Companies may do so in the future.”
- a. Identify the legacy period, if any, that the Company intends to apply to rates or rate structures applicable to a customer-generator taking service under NMS-2, if and when the Company subsequently implements changes to NMS-2 rates or rate design.
  - b. If there will be no legacy period, explain why not.
- A-2.
- a. See the response to Question No. 1.
  - b. See the response to Question No. 1.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s  
Initial Requests for Information  
Dated January 8, 2021**

**Case No. 2020-00350**

**Question No. 3**

**Responding Witness: Robert M. Conroy**

- Q-3. Reference the Company's proposed NMS-1 tariff (NMS-1, Net Metering Service-1, Sheet No. 57) [PDF 103 of 2359]. The NMS-1 tariff states, in pertinent part, "Available for service for any eligible electric generating facility as defined in KRS 278.465(2) owned and operated by a Customer-generator located on Customer's premises that generates electricity using solar, wind, biomass or biogas, or hydro energy in parallel with Company's electric distribution system to provide all or part of Customer's electrical requirements, and for which the Customer has executed Company's written Application for Interconnection and Net Metering before January 1, 2021."
- a. Please clarify whether the Company's NMS-1 tariff will remain open during the pendency of this rate case and did not close to new customers as of January 1, 2021.
- A-3.
- a. NMS-1 tariff will remain open until the Commission's Order in this proceeding approving the tariffs and rates.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s**

**Initial Requests for Information**

**Dated January 8, 2021**

**Case No. 2020-00350**

**Question No. 4**

**Responding Witness: Robert M. Conroy**

- Q-4. Reference the Company's proposed NMS-2 tariff (Standard Rate Rider NMS-2, Net Metering Service-2, Sheet No. 58) [PDF 104 of 2359].
- a. The NMS-2 tariff states, in pertinent part, "The dollar denominated bill credit will be calculated by multiplying the total kWh of production within the billing period by the Non-Time-Differentiated SQF rate within tariff Sheet No. 55."
    - i. Define "total kWh of production" for the purposes of this tariff.
    - ii. Explain how the Company will measure a customer's "total kWh of production" for purposes of this tariff for customers both without a smart meter installed and customers with a smart meter installed.
  - b. The NMS-2 tariff states, in pertinent part, "The generation facility shall be limited to a maximum rated capacity of 45 kilowatts." Describe how the Company will calculate the capacity of an eligible customer-generator's system that comprises both a solar facility and a battery storage facility for purposes of determining whether the system is eligible for Net Metering services under NMS-2.
  - c. Confirm whether the "DATE EFFECTIVE" of the NMS-2 tariff refers to the date by which an eligible customer must submit a completed Net Metering application to the Company in order to be eligible for service under NMS-1, or describe in detail what the effective date of NMS-2 refers to if this is not the case.
- A-4.
- a.
    - i. The reference to "total kWh of production" in this specific sentence is the amount of energy produced by the customer's eligible electric generating facility that flows back onto the grid as noted in KRS 278.466(3).
    - ii. See the response to Question No. 17.
  - b. An "eligible electric generating facility" is defined in KRS 278.465(2) as a facility that (b) generates electricity using, 1. Solar Energy; 2. Wind energy; 3. Biomass or biogas energy; or 4. Hydro energy; and (c) has a rated capacity of not greater than forty-five (45) kilowatts. Battery storage is not listed as a

generating facility; as such, in the scenario presented, the capacity would be defined as the size of the solar facility.

- c. Under KRS 278.466(6), only those net metering customers whose eligible electric generating facilities are in service before the Commission approves Rider NMS-2 in this proceeding may take service under Rider NMS-1; all other net metering customers will take service under Rider NMS-2 regardless of their application date.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s**

**Initial Requests for Information**

**Dated January 8, 2021**

**Case No. 2020-00350**

**Question No. 5**

**Responding Witness: Robert M. Conroy**

- Q-5. Reference: Direct Testimony of Company Witness William Steven Seelye (“Seelye Direct”) at page 41 [PDF 45 of 491], lines 18 through 22, stating, “Eligible electric generating facilities for which the Companies’ written Application for Interconnection and Net Metering have been executed prior to the date new rates take effect will be grandfathered for 25 years under the Companies’ current rate schedule for Net Metering Service, which will be renamed Net Metering Service – 1 (NMS-1).”
- a. Describe how LG&E will identify and track legacy net metering facilities under NMS-1 over the 25-year legacy period, including how the Company will ensure legacy systems will continue to be served under NMS-1 if the customer-generator’s premises are sold or conveyed during the applicable 25-year period.
  - b. Describe how LG&E will apply the legacy period to an existing customer-generator taking service under NMS-1 who subsequently adds additional eligible capacity to the existing net-metered facility prior to the effective date of NMS-2, provided that the expansion of the customer-generator’s existing facility does not increase the total capacity to more than 45 kilowatts.
  - c. Describe how LG&E will apply the legacy period to a customer-generator taking service under NMS-1 who subsequently adds additional eligible capacity to the existing net-metered facility after the effective date of NMS-2, provided that the expansion of the customer-generator’s existing facility does not increase the total capacity to more than 45 kilowatts.
  - d. Describe how LG&E will apply the legacy period to a customer-generator taking service under NMS-1 who subsequently adds additional capacity to the existing net-metered facility after the effective date of NMS-2, provided that the expansion of the customer-generator’s existing facility does increase the total capacity to more than 45 kilowatts.
  - e. Describe how LG&E will apply the legacy period to a customer-generator taking service under NMS-1 who subsequently adds a battery energy storage system to the existing net-metered facility after the effective date of NMS-2.
  - f. Describe how LG&E will apply the legacy period to a customer-generator taking service under NMS-1 who repairs or replaces components, such as a solar panel, of the existing net-metered facility after the effective date of NMS-2.

- g. Explain under what circumstances, if any, an eligible customer-generator submitting an application to LG&E for Net Metering Service prior to the effective date of NMS-2 will be permitted to subsequently amend, supplement, or correct their net metering application after the effective date of NMS-2 without becoming ineligible for service under NMS-1.

A-5.

- a. The existing grandfathered facilities will remain on tariff NMS-1, which will be closed for new entrants after the Commission's Order in this proceeding. The Company will verify grandfathered systems by their premise identity in the Company's billing system.
- b. Tariff Terms and Conditions – Net Metering Service Interconnection Guidelines (Sheet 108.4) provision (9) states:

“Customer agrees that, without the prior written permission from Company, no changes shall be made to the generating facility as initially approved. Increases in net metering generator capacity will require a new “Application for Interconnection and Net Metering” which will be evaluated on the same basis as any other new application. Repair and replacement of existing generating facility components with like components that meet all applicable codes and standards certification requirements, including but not limited to IEEE 1547 and UL 1741, for Level 1 facilities and not resulting in increases in net metering generator capacity is allowed without approval.”

LG&E interprets any changes or modifications to existing system requiring submission of a new “Application for Interconnection and Net Metering.” Therefore, if a net metering customer currently taking service under NMS-1 desires to augment an existing eligible electric generating facility and have that facility served under NMS-1, the customer must do all of the following prior to the Commission's approval of the proposed NMS-2: (1) submit a new application for the augmented system; (2) receive approval from the Company for the augmented system; and (3) place the system in service. Not completing all three steps prior to the Commission's approval of the proposed NMS-2 will result in the entire facility being served under NMS-2.

- c. See the response to part b.
- d. See the response to part b.
- e. See the response to Question No. 4 b.
- f. See the response to part c. Routine maintenance and repairs do not require a new net metering application.

- g. See the response to part b.



**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s  
Initial Requests for Information  
Dated January 8, 2021**

**Case No. 2020-00350**

**Question No. 6**

**Responding Witness: Eileen L. Saunders**

- Q-6. Reference: Rider SSP governing the Companies' Shared Solar Program [PDF 121 of 2359]. Rider SSP provides a guarantee that a customer can participate in the program for 25 years if they elect the one-time solar capacity charge. Please explain the rationale behind providing a 25-year guaranteed enrollment term for these customers.
- A-6. The rationale behind providing a 25-year enrollment term for customers was to meet some customers' desire to have this option for themselves or as a gift to others. Additionally a 25-year guaranteed enrollment term aligns with the depreciation schedule for the solar array.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s  
Initial Requests for Information  
Dated January 8, 2021**

**Case No. 2020-00350**

**Question No. 7**

**Responding Witness: Robert M. Conroy / William Steven Seelye**

- Q-7. Reference: Seelye Direct at page 47 [PDF 51 of 491] lines 1- 5 stating “The Companies are choosing not to develop cost-based rates designed specifically for distributed generation customers at this time, but the Companies plan to continue to evaluate the use of cost-based rate designs, such as four-part rates that include a customer charge, energy charge, peak demand charge, and base demand charge, to serve distributed generation customers.”
- a. For the purposes of this statement, do “distributed generation customers” include customers that participate in the Shared Solar Program Rider under Rider SSP?
  - b. Does the Company believe that the Rider SSP methodology for determining the Solar Energy Credit using 15-minute duration load and production matching methodology (i.e., virtual netting of production and load) provides a subsidy to Rider SSP participants equivalent to any alleged subsidy associated with physical service of on-site load by distributed generation customers?
- A-7.
- a. The Companies have not made such a determination.
  - b. As the Company discusses in response to PSC 2-122, there are two kinds of subsidies to net metering customers under Rider NMS-1: overcompensation to net metering customers for energy produced to the Company’s grid and underpayment by such customers of demand-related costs for the service they receive. Rider SSP participants do not receive the first kind of subsidy: any portion of the Rider SSP participants’ generation from the solar share facility that is above a Rider SSP participants’ consumption is compensated at the Rider SQF rate. This is the same compensation being proposed under Rider NMS-2 for energy from the customer-generator that flows back onto the grid. Rider SSP participants who are not on rate schedules with demand charges do receive the second kind of subsidy described in PSC 2-122.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s  
Initial Requests for Information  
Dated January 8, 2021**

**Case No. 2020-00350**

**Question No. 8**

**Responding Witness: Robert M. Conroy / William Steven Seelye**

- Q-8. Reference: Seelye Direct, page 46 [PDF 50 of 491], lines 1 through 5, stating “The Companies are choosing not to develop cost-based rates designed specifically for distributed generation customers at this time...” and page 47 [PDF 51 of 491], lines 10 through 13, stating “The Companies’ proposal represents a gradual movement toward implementing a cost-based pricing structure for customer-generators that will reduce some of the subsidies [emphasis supplied in the original] provided by non-distributed generation customers to distributed generation customers.”
- a. Identify the cost to serve a distributed generation customer in LG&E’s service territory and provide executable versions of associated workpapers demonstrating how this was calculated.
  - b. Has LG&E estimated the financial impact of net metering service on its non-net metered customers? If yes, identify the cost stated to be a subsidy borne by non-net metering customers, describe how the estimate was developed, and identify all data sources used in developing the estimate.
- A-8.
- a. The cost to serve a residential distributed generation customer in LG&E’s service territory is shown in Exhibit WSS-2 of Mr. Seelye’s Direct Testimony. With a cost-based four-part rate, the Demand-Related costs shown on the exhibit would be recovered through demand charges, and the Energy-Related costs would be recovered through an energy charge. For example, with a cost-based four-part rate design, Production Demand-Related costs would be recovered through a Peak Period Demand Charge; Transmission and Distribution Demand-Related Costs would be recovered through a Base Demand Charge; and Customer-Related costs would be recovered through the Basic Service Charge. Such charges would be similar to those proposed for Residential Time-of-Day Demand Service (RTOD-Demand), or Time-of-Day Secondary (Rate TODS) for larger customers in these proceedings.
  - b. See the response to PSC 2-122.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s**

**Initial Requests for Information**

**Dated January 8, 2021**

**Case No. 2020-00350**

**Question No. 9**

**Responding Witness: William Steven Seelye**

- Q-9. Reference: Seelye Direct, page 53 [PDF 57 of 491], lines 10 through 12, stating “Over the past decade, a small but growing number of utilities have implemented demand rates for all their residential customers, not just new distributed generation customers as in Kansas.”
- a. Please provide copies of all referenced studies, articles, tariffs, or other materials reviewed or relied upon by Mr. Seelye to support his claim.
  - b. Please identify all such utilities that have “implemented demand rates for all their residential customers” and specifically identify which, if any, make such rates mandatory.
  - c. In reference to the rate for “new distributed generation customers as in Kansas”, also referred to at p. 48-49 [PDF 52-53] of Seelye Direct, does Mr. Seelye’s testimony take into consideration In the Matter of Joint Application of Westar Energy and Kansas Gas and Electric Co., 311 Kan. 320, 460 P.3d 821 (2020) and the remand by Supreme Court of Kansas? Fully explain.
- A-9.
- a. See attached.
  - b. See attached.
  - c. No. The proceeding is ongoing. However, it should be noted that in the Kansas Corporation Commission Staff’s Brief filed on January 11, 2021, in the Docket No. 18-WSEE-328-RTS, the Commission Staff states the following:

[T]he Commission found, in part, that a two-part residential rate design was problematic for utilities and residential private DG customers because DG customers consume less energy than non-DG customers. Under a two-part rate, where a portion of fixed costs are recovered through the variable energy component, this reduced energy consumption “results in DG customers not paying the same proportion of fixed costs as non-DG customers.” The Commission ultimately found that DG customers were being subsidized by non-DG customers under the traditional two-part rate

. . . The Supreme Court acknowledged the existence of the subsidy.  
[Id., at pp. 9-10.]

**Electric Utilities with Residential Demand Rates**

#	Utility	Type of Utility	State	Demand Charge (\$/kW/Mo)		Demand Measurement	Mandatory or Voluntary
				Summer	Winter		
1	Alabama Power	Investor Owned	AL	1.50	1.50	All Hours	Voluntary
2	Alaska Electric Light and Power	Investor Owned	AK	6.51	10.76	All Hours	Voluntary
3	Albemarle Electric Membership Corp	Cooperative	NC	13.50	13.50	Peak Hours	Voluntary
4	Arizona Public Service Company	Investor Owned	AZ	8.40	8.40	Peak Hours	Voluntary
5	Arizona Public Service Company	Investor Owned	AZ	17.44	12.24	Peak Hours	Voluntary
6	Black Hills Power (South Dakota)	Investor Owned	SD	8.10	8.10	All Hours	Voluntary
7	Black Hills Power (Wyoming)	Investor Owned	WY	8.25	8.25	All Hours	Voluntary
8	Butler Electric Cooperative	Cooperative	KS	5.10	5.10	Peak Hours	Mandatory
9	Butte Electric Cooperative	Cooperative	NC	9.50	9.50	All Hours	Voluntary
10	Carteret-Craven Electric Cooperative	Cooperative	NC	11.95	9.95	Peak Hours	Voluntary
11	Central Electric Membership Cooperative	Cooperative	NC	8.55	7.50	Peak Hours	Voluntary
12	City of Fort Collins Utilities	Municipal	CO	2.60	2.60	All Hours	Voluntary
13	City of Glasgow	Municipal	KY	11.86	10.87	Peak Hours	Mandatory
14	City of Kinston	Municipal	NC	9.35	9.35	Peak Hours	Voluntary
15	City of Longmont	Municipal	CO	5.75	5.75	All Hours	Voluntary
16	City of Templeton	Municipal	MA	8.00	8.00	All Hours	Mandatory
17	Cobb Electric Membership Corporation	Cooperative	GA	5.55	5.55	Peak Hours	Voluntary
18	Dakota Electric Association	Cooperative	MN	14.70	11.10	All Hours	Voluntary
19	Dominion Energy	Investor Owned	NC	9.76	566.00	Peak Hours	Voluntary
20	Dominion Energy	Investor Owned	VA	5.46	379.00	Peak Hours	Voluntary
21	Duke Energy Carolinas, LLC (North Carolina)	Investor Owned	NC	7.83	3.92	Peak Hours	Voluntary
22	Duke Energy Carolinas, LLC (South Carolina)	Investor Owned	SC	8.15	4.00	Peak Hours	Voluntary
23	Edgecombe-Martin County EMC	Cooperative	NC	8.75	8.00	Peak Hours	Voluntary
24	Energy	Investor Owned	KS	9.00	3.00	Peak Hours	Mandatory*
25	Flathead Electric Cooperative	Cooperative	MO	0.26	0.26	Peak Hours	Mandatory
26	Fort Morgan	Municipal	CO	10.22	10.22	All Hours	Voluntary
27	Georgia Power	Investor Owned	GA	6.64	6.64	All Hours	Voluntary
28	Indianapolis Power and Light	Investor Owned	IA	17.40	11.62	Peak Hours	Voluntary
29	Kentucky Utilities Company	Investor Owned	KY	7.87	7.87	Peak Hours	Voluntary
30	Lakeland Electric	Municipal	FL	5.60	5.60	Peak Hours	Voluntary
31	Lincoln Electric Cooperative	Cooperative	MT	0.75	0.75	All Hours	Voluntary
32	Louisville Gas and Electric Company	Investor Owned	KY	7.68	7.68	Peak Hours	Voluntary
33	Loveland Electric	Municipal	CO	9.80	7.35	All Hours	Voluntary
34	Mid Carolina Electric Cooperative	Cooperative	SC	12.00	12.00	Peak Hours	Mandatory
35	Midwest Energy INC	Cooperative	KS	6.40	6.40	All Hours	Voluntary
36	NV Energy (SPP)	Investor Owned	NV	10.68	10.68	Peak Hours	Voluntary
37	NV Energy (NVP)	Investor Owned	NV	7.93	7.93	Peak Hours	Voluntary
38	Oklahoma Gas and Electric Company	Investor Owned	OK	1.00	1.00	All Hours	Voluntary
39	Otter Tail Power Company (Montana)	Investor Owned	MN	8.00	8.00	All Hours	Voluntary
40	Otter Tail Power Company (South Dakota)	Investor Owned	SD	6.52	2.63	All Hours	Voluntary
41	Otter Tail Power Company (Oregon)	Investor Owned	OR	7.05	5.93	All Hours	Voluntary
42	PacifiCorp	Investor Owned	OR	2.20	2.20	All Hours	Voluntary
43	Pee Dee Electric Membership Cooperative	Cooperative	SC	8.50	7.00	All Hours	Voluntary
44	Platte-Clay Electric Cooperative	Cooperative	MO	2.50	2.50	Peak Hours	Mandatory
45	Progress Energy Carolinas (North Carolina)	Investor Owned	NC	4.88	3.90	Peak Hours	Voluntary
46	Progress Energy Carolinas (North Carolina)	Investor Owned	SC	5.38	4.14	Peak Hours	Voluntary
47	Salt River Project	Power District	AZ	15.71	4.62	Peak Hours	Mandatory*
48	San Luis Valley Electric Cooperative	Cooperative	CO	7.59	7.59	All Hours	Mandatory
49	San Luis Valley Electric Cooperative	Cooperative	CO	5.45	5.45	Peak Hours	Voluntary**
50	Santee Cooper Electric Cooperative	Cooperative	SC	6.00	6.00	Peak Hours	Mandatory*
51	Smithfield	Municipal	NC	5.93	5.93	Peak Hours	Voluntary
52	South Carolina Electric and Gas Company	Investor Owned	SC	12.04	8.60	Peak Hours	Voluntary
53	Sun River Electric Cooperative	Cooperative	MT	5.00	5.00	All Hours	Mandatory
54	Swanton Village Electric Department	Municipal	VT	9.37	9.17	All Hours	Mandatory
55	Tideland Electric Member Coopertive	Cooperative	NC	10.35	9.40	Peak Hours	Voluntary
56	Tri-County Electric Cooperative	Cooperative	FL	7.00	7.00	All Hours	Voluntary
57	Traverse Electric Cooperative, Inc.	Cooperative	MN	18.65	18.65	Peak Hours	Voluntary
58	Tuscon Electric Power	Investor Owned	AZ	8.85	8.85	Peak Hours	Voluntary
59	Tuscon Electric Power	Investor Owned	AZ	8.85	8.85	Peak Hours	Voluntary
60	United Power	Cooperative	CO	1.00	1.00	All Hours	Mandatory
61	Vigilante Electric Cooperative	Cooperative	MT	0.50	0.50	All Hours	Mandatory
62	Wisconsin Power and Light Company	Investor Owned	WI	3.00	3.00	Peak Hours	Voluntary
63	Xcel Energy	Investor Owned	CO	8.79	8.79	All Hours	Voluntary
64	Xcel Energy	Investor Owned	CO	3.57	8.94	All Hours	Voluntary

\* Mandatory for all new customers with distributed generation.

\*\* Generation demand charge of \$5.45/kW/Mo is billed during peak hour and distribution demand charge of \$2.85/kW/Mo is based on demand for all hours.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

**Response to Kentucky Solar Industries Association, Inc.'s  
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**Case No. 2020-00350**

**Question No. 10**

**Responding Witness: William Steven Seelye**

- Q-10. Does LG&E have an 8760-hour load profile representative of its current net metering customers? If yes, provide the profile. If no, explain why not.
- A-10. No. The Companies have interval data for only approximately 100 net metering customers and have assumed that more data would be needed to provide a representative sample given the diversity in consumption and distributed generation facilities for net metering customers overall.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

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**Case No. 2020-00350**

**Question No. 11**

**Responding Witness: Robert M. Conroy**

- Q-11. Reference: LG&E's proposed Terms and Conditions: Net Metering Service Interconnection Guidelines, Sheet No. 108 et seq [starting at PDF 185 of 2359].
- a. Condition 7 states that "Customer agrees to inform Company of any changes it wishes to make to its generating or associated facilities that differ from those initially installed and described to Company in writing to obtain approval from Company." Confirm whether the following types of changes are applicable under Condition 7:
    - i. The customer-generator adds additional capacity to its generating system such that the total system capacity does not exceed 45 kilowatts.
    - ii. The customer-generator replaces an existing solar panel that is part of the net metering facility with a new solar panel that is the same type and capacity rating as the solar panel being replaced.
    - iii. The customer-generator replaces an existing solar panel that is part of the net metering facility with a new solar panel that has a different capacity rating than the solar panel being replaced.
    - iv. The customer-generator adds a dc-coupled battery energy storage system to a net metered solar facility.
    - v. The customer-generator adds an ac-coupled battery energy storage system to a net metered solar facility.
  - b. Under what conditions or circumstances would a customer that notifies LG&E of a change to its generating or associated facilities under Condition 7 forfeit the legacy rights associated with the net metering system as provided under KRS 278.466(6).
  - c. Explain the purpose of and identify how LG&E intends to implement the proposed Condition 10 [PDF 186 of 2359], which states "Customer recognizes that Company may or may not have adequate facilities to serve customer's total load at the time of any partial or full failure of customer's self-generation. Company will work with the customer to serve their load requirements which may be at additional cost to the customer."



A-11.

- a.
  - i. Confirmed. These changes would need to adhere to Condition 7's written notification requirements.
  - ii. Normal repair and maintenance does not need to be communicated to the Company.
  - iii. Confirmed. These changes would need to adhere to Condition 7's written notification requirements.
  - iv. Battery installations are not part of the net metering statutes or tariffs, and therefore are not part of an eligible electric generating facility. Thus, the customer would not need to alert the Company concerning the installation. See the response to Question No. 4b.
  - v. Battery installations are not part of the net metering statutes or tariffs, and therefore are not part of an eligible electric generating facility. Thus, the customer would not need to alert the Company concerning the installation. See the response to Question No. 4b.
- b. See the response to Question No. 5 b.
- c. A rapid shift in energy loads on a circuit may not allow the Company to cover the customer's increased energy needs depending on that circuit's configuration and the size of the customer's self-generation capacity. The Company will work with the customer to understand standby requirements, system configuration, and the cost to support the customer's needs to ensure that there is no impact on the Company's ability to provide safe and reliable service to all customers.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

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**Question No. 12**

**Responding Witness: William Steven Seelye**

Q-12. Please provide workpapers associated with all Figures, Graphs, Tables, and Exhibits associated with the Direct Testimony of Company Witness William S. Seelye in executable spreadsheet format with all formulas and file linkages intact.

A-12. See attachment provided in Excel format.

The attachment is being provided in a separate file in Excel format.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

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**Question No. 13**

**Responding Witness: Robert M. Conroy**

Q-13. Please provide workpapers associated with all Figures, Graphs, Tables, and Exhibits associated with the Direct Testimony of Company Witness Robert M. Conroy in executable spreadsheet format with all formulas and file linkages intact.

A-13. See the response and attachments to PSC 1-56.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

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**Question No. 14**

**Responding Witness: Eileen L. Saunders / David S. Sinclair**

- Q-14. Reference: Conroy Direct at page 25 [PDF 407 of 447] lines 9-10 stating, in pertinent part, "The Companies already serve a number of eligible customer-generators on their existing Rider NMS...".
- a. For LG&E, for each residential and non-residential rate schedule (e.g., RS, RTODEnergy, GS) please identify the number of residential net metering customers that presently take service under NMS-1 and the total generating capacity of NMS-1 systems in kW-DC.
  - b. For each LG&E residential and non-residential rate schedule, identify the corresponding number of net metering customers taking service under the schedule as of the start of the base period.
  - c. For each LG&E residential and non-residential rate schedule, identify the corresponding number of net metering customers taking service under the schedule as of the end of the base period, February 28, 2021 (and update the response as necessary).
  - d. For each LG&E residential and non-residential rate schedule, identify the corresponding number of net metering customers taking service under the schedule and also subject to NMS 1 as of the June 30, 2022, the end of the forecasted test period.
  - e. For each LG&E residential and non-residential rate schedule, identify the corresponding number of net metering customers taking service under the schedule and also subject NMS 2 as of June 30, 2022, the end of the forecasted test period.
  - f. If any projection in sub-parts d and e differs from the projection for the applicable rate schedule and rider as of the same date as in LG&E's business plan, identify the difference and fully explain the reason for the difference.
- A-14.
- a. Number of customers presently taking service under NMS-1 for each residential and non-residential rate schedule:

Rate Schedule	Number of NMS-1 Customers	Total Generating Capacity (kW-DC)
GS	52	846
PS	7	94
RS	581	4,253
RTOD	2	12

- b. Number of customers taking service under NMS-1 as of the start of the base period for each residential and non-residential rate schedule:

Rate Schedule	Number of NMS-1 Customers
GS	48
PS	7
RS	460
RTOD	2

- c. See the response to part a for the number of NMS (grandfathered NMS-1) customers through December 31, 2020. Updates will be provided monthly for new customers taking service on NMS (grandfathered NMS-1) as they become available.

- d.

Rate Schedule	Number of NMS-1 Customers
GS	87
PS	5
RS	835
RTOD	2

- e.

Rate Schedule	Number of NMS-2 Customers
GS	13
PS	1
RS	127
RTOD	0

- f. The projections provided in parts d and e reflect the aggregate net metering forecast that is reflected in LG&E's business plan.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

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**Question No. 15**

**Responding Witness: Robert M. Conroy**

- Q-15. Reference: Conroy Direct at page 26 [408 of 447] lines 4-8 stating “It is important to note that, based on the Companies’ proposal in these proceedings, customer-generators who size their generating systems to align the generation with their own consumption will continue to receive the same value for the energy consumed as other customer generators served under Rider NMS-1.”
- a. Please explain how NMS-2 customers could in practice “size their generating systems” in order to align generation with their own consumption at all times and never export power to the grid.
  - b. Do customers currently have the ability to access interval-metered data necessary to “size their generating systems” so that they never produce exports to the grid. If customers do not have access to this information, please specify when and how this capability will be made available.
  - c. Please identify the number of Louisville Gas and Electric’s existing Rider NMS-1 customers’ that never export power to the grid, differentiated by rate schedule, and identify the size of each such individual system in kW-DC.
- A-15.
- a. See the response to PSC 2-86. The Companies’ point is clear: customers served under Rider NMS-2 who align their energy consumption with their energy production will receive the same value for the energy consumed as other customer generators served under Rider NMS-1. A customer can align production with consumption primarily by selecting a type and size of renewable generating facility that is appropriate for the customer’s consumption pattern. The customer could also add a battery system to store energy during times of excess production for later consumption.
  - b. Customers in the Companies’ AMS Opt-In program currently have access to interval metered data through the MyMeter portal and if the proposed AMI deployment is approved then that capability will extend to all customers that receive an AMI meter. The capability will become available as meters are deployed which generally occurs from 2022 to Q1 2026.

c.

Rate Schedule	Customer	Individual System in kW-DC
GS	1	1.52
GS	2	2.28
GS	3	3.96
GS	4	6.24
GS	5	2.64
GS	6	14.2
PS	7	1.9
PS	8	2.64
PS	9	15.72
PS	10	17.76
PS	11	30
RS	12	1.5
RS	13	0.64
RS	14	1.05
RS	15	1.4
RS	16	2.46
RS	17	0.36
RS	18	7.36
RS	19	0.6
RS	20	1.53
RTOD	21	9.23



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**Question No. 16**

**Responding Witness: Robert M. Conroy**

- Q-16. Reference: Conroy Direct at page 26 [PDF 408 of 447] at lines 16-17 stating “Once the customer’s service is terminated, though, any unused credits will expire.” Please explain why it is appropriate for unused credits to expire at the termination of service by a customer instead of having those credits paid to that customer at the time the customer terminates service.
- A-16. See KRS 278.466(5), which states, “If an eligible customer-generator closes his or her account, no cash refund for accumulated credits shall be paid.”

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**Question No. 17**

**Responding Witness: Robert M. Conroy / William Steven Seelye**

- Q-17. Reference: Rider NMS-2 [PDF 104 of 2359] in the Section entitled Energy Rates and Credits, stating, in pertinent part, “Company will provide a dollar denominated bill credit for each kWh of production” and Seelye Direct at page 43 [PDF 47 of 491] lines 8-10 stating “Under the Companies’ proposed NMS-2 schedule, new customer-generators will be compensated for any net generation they supply to the grid (i.e., generation that exceeds their energy requirements during the month) at the avoided cost rate...” Please clarify the crediting and/or netting practice used in NMS-2 by identifying which of the examples below (a - d) is correct. If the example is incorrect, please explain why it is incorrect.
- a. A customer-generator produces 1,000 kWh in total during a month and consumes a total of 800 kWh. The customer pays the applicable tariff rate for 800 kWh of consumption and is credited for 1,000 kWh of production at the Rider SQF rate.
  - b. A customer-generator produces 1,000 kWh in total during a month and consumes a total of 800 kWh. The customer’s generation in excess of their energy requirements is 200 kWh, therefore the customer does not pay anything in form volumetric charges and is credited for 200 kWh of monthly excess generation at the Rider SQF Rate.
  - c. A customer-generator produces 1,000 kWh in total during a month and consumes a total of 800 kWh. Of the 1,000 kWh of production, 400 kWh is used directly behind the customer meter and 600 kWh is exported. The customer therefore pays for 400 kWh of consumption from the grid (i.e., 800 - 400) at the applicable tariff rate and is credited for 600 kWh of exports (i.e., 1000 - 400) at the Rider SQF Rate.
  - d. If crediting and/or netting is determined through a different practice, please explain using the above basic inputs of 1,000 kWh of total production, 400 kWh used directly on-site behind the customer meter, and 800 kWh of total consumption.
  - e. If subpart (c) of this information request presents the correct netting and crediting methodology, please clarify over what duration net customer exports are measured (i.e., instantaneous, 15-minute intervals, 60-minute intervals).

- A-17. The quoted rider NMS-2 language is not complete. As stated in the Rider NMS-2, “Company will (a) bill Customer for all energy consumed in accordance with Customer’s standard rate and (b) Company will provide a dollar denominated bill credit for each kWh of production.” The Company’s meters for Rider NMS-2 customers are capable of measuring energy flow in both directions (See KRS 278.466(2) - Each retail electric supplier serving a customer with eligible electric generating facilities shall use a standard kilowatt-hour meter capable of registering the flow of electricity in two (2) directions). Thus, over the billing period, the meter will accumulate the amount of energy delivered to the customer (i.e. energy consumed by the customer) and the amount of energy the customer-generator delivers to the Company (i.e. energy put back on to the grid). The customer-generator will pay the standard tariffed rate for energy consumed and will get a bill credit for energy put back onto the grid at the Rider SQF rate.
- a. Not correct. The hypothetical scenario does not indicated the amount of energy consumed and the amount of energy put back onto the grid as measured by the customers’ meter as discussed above.
  - b. Not correct. The hypothetical scenario does not indicated the amount of energy consumed and the amount of energy put back onto the grid as measured by the customers’ meter as discussed above.
  - c. The hypothetical scenario appears to represent the appropriate billing. Under this scenario, it appears that the amount of energy consumed as measured by the customers’ meter would be 400 kWh and the amount of energy put back onto the grid as measured by the customers’ meter would be 600 kWh.
  - d. Not applicable.
  - e. Based on the meter’s ability to measure the flow of electricity in two (2) directions, the measurement interval is instantaneous.

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**Question No. 18**

**Responding Witness: William Steven Seelye**

Q-18. Reference: Seelye Direct, at page 55 [PDF 59 of 491], footnote 20.

- a. Is Mr. Seelye familiar with the CAISO's Preliminary Root Cause Analysis (issued October 7, 2020) in reference to the outage event cited in footnote 20?
- b. If your response to subpart (a) is that Mr. Seelye is familiar with this document:
  - i. Please explain why he chose to cite to a Forbes article as opposed to the CAISO's expert analysis of the event.
  - ii. Does Mr. Seelye believe that footnote 20 provides an accurate and complete characterization of the causes of the referenced event based on the CAISO analysis?

A-18.

- a. Yes. The report had just been released when Mr. Seelye was preparing his testimony. Although he was aware of the report and had read news articles about the report when he was preparing his testimony, he had not reviewed the 198-page document at that time.

Footnote 20 in Mr. Seelye's testimony referenced a statement made by a CAISO spokesperson, who stated, "The peak demand [at the beginning of the rolling blackouts] was steady in late hours, and we had thousands of megawatts of solar reducing their output as the sun set."

The CAISO's Preliminary Root Cause Analysis (issued October 6, 2020) fully supports the comments made by the CAISO spokesperson, as illustrated by the following findings in the CAISO's Preliminary Root Cause Analysis:

California also typically relies on imported power during peak demand times, but because the rest of the Western United States was also experiencing extreme heat, California could rely on fewer imports than usual. Also due to the effects of heat and drought over time, the availability of hydroelectric power in California in 2020 was below normal. *In addition, high clouds from a storm were covering parts of California during the same*

period, reducing available generation from all types of solar generation facilities. (Id., at p. 27.)

In terms of supply, the heat storm negatively impacted conventional generation such as thermal resources, which typically operate less efficiently during temperature extremes. Even for solar generation, high clouds reduced large-scale grid-connected solar and behind-the-meter solar generation on some days, leading to increased variability. (Id., at p. 28. Emphasis supplied)

By approximately 6:30 pm, all demand response had been dispatched. The conditions still had not improved. Though the system peak load occurred at 4:56 pm, throughout this time demand remained high while solar generation was rapidly declining. (Id., at p. 35. Emphasis supplied)

The CAISO was not able to cure the deficiency with generation, because all generation was already online, and solar was rapidly declining while demand remained high. (Id. Emphasis supplied)

Between 2:00 pm and 3:00 pm, solar declined by over 1,900 MW caused by storm clouds while loads were still increasing and contingency reserves were down to minimal WECC requirements. (Id., at 36. Emphasis supplied.)

At 6:28 pm, the CAISO declared a Stage 3 Emergency because it was deficient in meeting its reserves requirement. The CAISO was not able to cure the deficiency with generation, because all generation was already online, and solar was rapidly declining while demand remained high. (Id., at 37. Emphasis supplied.)

Solar generation in particular shifts “utility peaks to a later hour as a significant part of load at traditional peak hours (late afternoon) is served by solar generation, with generation dropping off quickly as the evening hours approach.” Furthermore, as the sun sets, demand previously served by behind-the-meter solar generation is coming back to the CAISO system while load remains high. Consequently, on hot days, load later in the day may still be high, after the gross peak has passed, because of air conditioning demand and other load that was being served by behind-the-meter solar coming back on the system. As a result of declining behind-the-meter and front-of-meter (utility scale) generation in the late afternoon, after the peak demand hour of the day, demand is decreasing at a slower rate than net demand is increasing, which

creates higher risk of shortages around 7 pm, when the net demand reaches its peak (net demand peak). (*Id.* at 48. Emphasis supplied.)

Since 2016, the CAISO has worked with the CEC and the CPUC to examine the impacts of significant renewable penetration on the grid and found that solar generation in particular shifts the peak load to later in the day around 7 pm. This is because solar generation “may shift utility peaks to a later hour as a significant part of load at traditional peak hours (late afternoon) is served by [solar generation], with generation dropping off quickly as the evening hours approach.” On hot days, load later in the day may still be high, after the gross peak has passed, because of air conditioning demand and other load that was being served by behind-the-meter solar comes back on the system. (*Id.* at 79. Emphasis supplied.)

**Solar and wind resources accounted for a significant portion of resource adequacy capacity that was not available in the real-time market during hours of load curtailments.** For August, solar and wind resources, including pseudo-tie resources, had a combined resource adequacy rating of 4,300 MW. Output from these resources averaged about 2,490 MW (57 percent) below this resource adequacy rating during hours 19-20 on August 14-15. (*Id.*, Appendix B, at 2. Emphasis in the original.)

However, during the evening ramping period when net loads are highest, the actual output of solar and wind resources was lower than the net qualified capacity and shown resource adequacy values of these resources. During the hours when load curtailments occurred, the amount of solar and wind that was bid or self-scheduled into the real-time market equaled about 43 percent of the shown resource adequacy capacity of these resources. (*Id.* Appendix B, at 25. Emphasis supplied.)

The availability of solar resources was about 2,800 MW below the shown resource adequacy capacity of these resources during hour ending 20 on these days. This represents the largest amount of unavailable resource adequacy capacity of any fuel category. (*Id.* Appendix B, at 28. Emphasis supplied.)

- b.
  - i. See the response to part (a).
  - ii. Mr. Seelye believes that the statement by the CAISO spokesperson quoted in footnote 20 of Mr. Seelye’s direct testimony is fully

supported by the CAISO's Preliminary Root Cause Analysis. However, a 198 page report cannot be condensed to a single sentence. Therefore, the statement made by the CAISO spokesperson cannot be considered a "complete characterization of the causes of the referenced event".

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**Question No. 19**

**Responding Witness: Robert M. Conroy / William Steven Seelye**

- Q-19. Reference: Seelye Direct at page 45 line 18 through page 46 line 2 [PDF 49 and 50 of 491] referring to alleged subsidies flowing from non-customer-generators to customer-generators, including a statement that “This is particularly problematic in the case of low-income customers who may not be able to afford to install solar panels or other types of distributed generation facilities.” Please confirm that NMS-2 will make installing solar panels or other types of distributed generation facilities even less affordable to low-income customers. If the response is anything other than an unqualified confirmation, please explain in detail why this would not be the result.
- A-19. NMS-2 will not likely affect a low-income customer’s ability to obtain the necessary funds to install solar panels, inverters and other equipment necessary to connect solar generation to the grid. People with low income often have difficulty meeting basic needs and would not likely have the financial resources to install solar generation facilities. People with medium or high incomes would be more likely to have the financial resources to install solar generation or wind generation facilities. Therefore, the introduction of NMS-2 is unlikely to affect a low-income customer’s ability to obtain the funds to install solar panels, inverters, and other equipment necessary to connect distributed generation facilities to the grid.



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**Question No. 20**

**Responding Witness: William Steven Seelye / David S. Sinclair**

Q-20. Reference: Seelye Direct at page 44 [PDF 48 of 491] lines 12-15 stating, in pertinent part, “renewable distributed generating facilities identified in subparagraph (1)(b) of KRS 278.465 cannot be dispatched by the utility and cannot be supplied as firm capacity. Thus, only energy costs are avoided by the utility receiving electric energy from a customer-generator.”

- a. Are LG&E’s utility-owned solar facilities capable of being “dispatched” by the Company?
- b. Did LG&E ascribe a capacity value to any of its utility-owned renewable energy facilities in prior proceedings before the Kentucky Public Service Commission?
- c. Please identify all other utilities, regional transmission organizations (RTO), and independent system operators (ISO) that the Company is aware of that do not ascribe an accredited capacity value to renewable energy facilities. Please provide citations and links to specific documents such as RTO or ISO tariffs, integrated resource plans, or other manuals and guidance in support of your response.

A-20.

- a. The Companies’ solar facilities and other renewable generating resources are dispatchable in the sense that they are under the Companies’ control. This allows the Companies to limit production from those facilities if needed, but more importantly, it allows the Companies to perform necessary maintenance and upgrades to ensure their availability when environmental conditions allow them to generate. This is in contrast with distributed generators, which the Companies do not control and therefore cannot dispatch in any sense.
- b. The Companies assume a capacity value for each of their renewable resources. For solar, the Companies assume a capacity value at the expected time of the summer peak load, but assume no capacity value at the expected time of the winter peak load.

Also, as noted in response to a. above, the Companies control and maintain their renewable generating assets; they can know whether those assets will be available to generate when environmental conditions permit. This is not true of

distributed generators; the Companies have no means of assuring such facilities are in good repair or even remain connected to the Companies' grid, so the Companies have no ground upon which to rely upon such resources and cannot assign a capacity value to them.

Distributed generation contrasts also with power purchase agreements for renewable resources, which customarily include performance guarantees and damages for non-performance. Those contractual commitments help ensure the renewable resources will be available when the right environmental conditions obtain, but there are no such commitments or damage provisions for net metering customers. This too prevents the Companies from assigning distributed generators a capacity value.

- c. The Companies are not aware of any RTO or ISO that does not ascribe an accredited capacity value to renewable energy facilities. But each RTO and ISO has detailed requirements and criteria for determining those values, which include an annual evaluation of actual performance during peak hours for each facility, to ensure a reasonable probability that the ascribed capacity value will eventuate.

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**Question No. 21**

**Responding Witness: Robert M. Conroy / William Steven Seelye**

Q-21. Reference: Seelye Direct at page 41 [PDF 45 of 491] lines 1-9 stating “To ensure that the costs of the Solar Share Program are not shifted to other customers, the Companies have imputed revenues to bring the class rate of return for Solar Share in the Companies’ cost of service studies up to the overall rate of return on rate base proposed by the Companies in these proceedings. The Companies are also making imputed revenue adjustments for their Business Solar Programs. Specifically, for the Solar Share Programs, revenues of \$295,846 are imputed for KU and revenues of \$110,942 are imputed for LG&E. For the Business Solar Programs, revenues of \$9,579 are imputed for KU and revenues of \$9,378 are imputed for LG&E.”

- a. Are these imputed revenues non-cash or paper-only revenues that do not actually exist in the form of money transmitted by retail customers to the Companies?
- b. Is it correct to view these imputed revenues as a subsidy from the Companies’ respective shareholders to those programs in order to hold non-participant customers harmless? Fully explain.

A-21.

- a. The imputed revenues decrease the proposed revenue increase from base rates in these rate case proceedings. The imputed revenues are added to the Companies’ miscellaneous revenues and thus result in a corresponding reduction in the rates charged to customers. The imputed revenues ensure that customers do not subsidize the Solar Share and Business Solar programs. Because the imputed revenues directly result in reduced rates being paid by retail customers, these revenues cannot be characterized as “non-cash” or “paper-only” revenues.
- b. Yes. The imputed revenues ensure that the Companies’ electric customers do not subsidize the Solar Share and Business Solar programs. See the response to AG-KIUC 1-112.

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**Question No. 22**

**Responding Witness: Robert M. Conroy / William Steven Seelye**

- Q-22. Reference: Seelye Direct Exhibit WSS-22 [PDF 247-249 of 491]. Is it correct that the negative rates of return listed in Exhibit WSS-22 indicate that the Kentucky Utilities Solar Shares Program (-1.31% rate of return) and the Louisville Gas and Electric Business Solar Rate (-4.38% rate of return) operated at a financial loss to the Companies during the test year?
- A-22. Yes. However, revenue was imputed to ensure that other customers do not subsidize these programs. See the response to AG-KIUC 1-112.

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**Question No. 23**

**Responding Witness: Robert M. Conroy**

Q-23. Please explain the differences, if any, between how billing and crediting functions for customers that take service under NMS-2, and customers that take service under Rider SQF Rate B and elect to use the small power production facility to offset on-site use and only sell “part of such output of electrical energy” the Companies, as Rider SQF allows.

A-23. For a customer-generator with generation located behind the Company’s electric meter and taking service under Rider NMS-2, as explained in the response to Question No. 17, the customer will be billed the standard rate for the energy consumed. The customer will receive a bill credit for energy put back onto the grid at the Rider SQF Rate B in accordance with the credit provisions in Rider NMS-2. Under Rider NMS-2, the customer-generator is limited to generation from solar, wind, biomass or biogas, or hydro facilities with a maximum rated capacity of 45 kW.

For a customer-generator with generation located behind the Company’s electric meter and taking service under Rider SQF, Rate B, the customer will be billed the standard rate for the energy consumed and the Company will purchase any excess energy put back on the grid in accordance with the provisions in Rider SQF. Under Rider SQF, the customer-generator is limited to generation from qualifying cogeneration or small power production facilities with a capacity of 100kW or less.

See the appropriate tariff sheets contained at Tab 4 of the Filing Requirement for all provision of Rider SQF and Rider NMS-2.

**LOUISVILLE GAS AND ELECTRIC COMPANY**

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**Question No. 24**

**Responding Witness: Paul W. Thompson**

- Q-24. Reference: The Direct Testimony of Company Witness Paul W. Thompson (“Thompson Direct”) at page 3 [PDF 5 of 499], lines 4 and 5 in which Mr. Thompson states, “I am proud of the way we balance all stakeholder interest and deliver safe, reliable, environmentally sound energy to our customers at low costs.”
- a. Does Mr. Thompson agree or disagree that making net metering available to eligible customer-generators has furthered the efforts of the Company in balancing all stakeholder interests. Please fully explain any agreement or disagreement.
  - b. At page 3 of Thompson Direct [PDF 5 of 499], lines 8 through 13, Mr. Thompson identifies “renewable clean energy and societal expectations” as being among the major forces impacting the Companies’ business. Does Mr. Thompson agree or disagree that net metering falls within the scope of “renewable clean energy and societal expectations” as that phrase is used in his testimony? Please fully explain any agreement or disagreement.
  - c. At page 4 of Thompson Direct [PDF 6 of 499], lines 12 through 15, Mr. Thompson states, “We have enhanced the safety, operation and efficiency of our already reliable generation fleet, electric transmission and distribution network, and natural gas distribution network in an environmentally responsible manner at reasonable costs and with exceptions customer service.” Does Mr. Thompson agree or disagree that the addition of solar generation, regardless of which side of the meter that the generation takes place, has assisted the Companies in attaining these enhancements? Please fully explain any agreement or disagreement.
  - d. At page 11 of Thompson Direct [PDF 13 of 499], lines 11 through 14, Mr. Thompson states, “For example, the Companies’ Integrated Resource Planning processes continuously assess generation resources to ensure that customer capacity needs are met at the lowest reasonable cost.” Does Mr. Thompson agree or disagree that minimization of the costs of environmental compliance requirements, including but not limited to costs falling within the scope of costs identified pursuant to KRS 278.183, is part of the Companies’ Integrated Resource Planning process? Please fully explain any agreement or disagreement.
  - e. Have the Companies considered pursuing the acquisition of Solar Renewable

Energy Certificates/environmental attributes from their customers? If yes, identify the efforts to date. If no, explain why not.

- f. At page 18 of Thompson Direct [PDF 20 of 499], lines 22 and 23, Mr. Thompson discusses “stranded assets” and “inter-generational inequities.” Please provide Mr. Thompson’s definition for each of these phrases and explain the considerations necessary to balance all stakeholder interests for each of these topics.

A-24.

- a. Making net metering available to eligible customer-generators has furthered the Companies’ efforts to balance all stakeholder interests in at least two respects: (1) it is in all stakeholders’ interests to obey the law, and offering net metering is required under KRS 278.465 et seq.; and (2) certain customers desire to participate in net metering, and the Companies’ net metering tariff provisions allow this to occur.
- b. Offering net metering is consistent with “renewable clean energy and societal expectations” as used in Mr. Thompson’s testimony.
- c. No, adding solar generation has not contributed to the “enhanced the safety, operation and efficiency of our already reliable generation fleet, electric transmission and distribution network, and natural gas distribution network” described in Mr. Thompson’s testimony. The Companies’ solar generation has increased its portfolio diversity, is environmentally responsible, and has been obtained at a reasonable cost, but it has not provided safety, operational, or efficiency enhancements.
- d. The Companies do consider environmental compliance costs in their generation planning decisions and processes, including their Integrated Resource Planning processes.
- e. No. The Companies do not need renewable energy certificates (“RECs”) to provide safe and reliable service at the lowest reasonable cost; therefore, they are not considering acquiring them from customers or elsewhere. The Companies routinely sell RECs from their own facilities, which helps offset costs to customers.
- f. In this context, the term “stranded assets” means remaining book value of assets at the time of their retirement. The term “inter-generational inequities” means that customers at one period in time are either paying more or less for their service than the actual cost of service would justify and are doing so at the expense of or to the benefit of customers taking service during another time period; essentially, it is cost-shifting between customers across time. Mr. Thompson’s point is that the remaining economic lives of generating units must

be periodically evaluated as circumstances change so that the expense of these facilities is paid by the customers who benefit from the facilities.



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**Question No. 25**

**Responding Witness: Lonnie E. Bellar**

- Q-25. Reference: The Direct Testimony of Company Lonnie E. Bellar (“Bellar Direct”), at Exhibit LEB-3, Appendix D, Page 2 of 10 [PDF 232 of 499]. The first sentence of the “Executive Summary” states, “The continued growth of distributed energy resources and new loads such as electric vehicles are placing increasingly dynamic demands on the distribution grid.” Please identify the limit(s), if any, associated with the growth of new loads such as electric vehicles. For example, is there a statutory cap through which the Company shall have no further obligation of providing service associated with electric vehicles upon reaching the statutory cap?
- A-25. The scope of this question is very broad so the Companies can respond only in summary fashion. Limitations associated with electric vehicle charging include practical, societal, technological, legal, regulatory, engineering, and design considerations. The testimony of Steven Seelye outlines many of the barriers and limitations of more widespread adoption of electric vehicles and electric vehicle charging. Furthermore, the intermittent, high-power nature of some EV charging activity can add strains to the electric distribution system by negatively affecting localized power quality, which can impose constraints during periods of peak demand. The number of currently installed public electric vehicle charging stations (10 in KU’s service territory and 10 in LG&E’s service territory) is constrained by the pilot project approved by the Kentucky Public Service Commission in Case No. 2015-00355. Subject to general capacity constraints, distribution system constraints, and the terms and conditions for electric vehicle charging rates under the Companies’ tariffs, the Companies are not aware of statutory restrictions or limitations on providing service that is used for electric vehicle charging. The Companies further note that in Case No. 2018-00372, the Commission concluded that electric vehicle charging stations that receive electric service from a jurisdictional electric utility or behind the meter source are not “utilities” as defined by KRS 278.010 and are not subject to the Commission’s jurisdiction.

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**Question No. 26**

**Responding Witness: David S. Sinclair**

- Q-26. Reference: The Direct Testimony of David S. Sinclair (“Sinclair Direct”) at page 10 [PDF 259 of 299], lines 4 through 20.
- a. Provide the Company’s single hour peak load during a calendar year, as that metric is used pursuant to KRS 278.466(1) for the period up to and including the first day of the base period.
  - b. Provide the Company’s estimate, projection, or forecast of the single hour peak load during a calendar year, as that metric is used pursuant to KRS 278.466(1) for the period up to and including the last day of the forecasted test period, June 30, 2022.
  - c. Provide the Company’s estimate, projection, or forecast of the single hour peak load during a calendar year, as that metric is used pursuant to KRS 278.466(1) for the period up to and including the last day of the forecasted information contained in the Company’s 2021 Business Plan and identify its location(s) in the Business Plan.
  - d. Does the Company estimate, project, or forecast that the cumulative generating capacity of net metering systems will reach one percent (1%) of the Company’s single hour peak load during a calendar year, as that phrase is used in KRS 278.466(1), before full deployment of the proposed Advanced Metering Infrastructure (“AMI”)?
- A-26.
- a. The 2020 peaks are: Combined Company — 6,069 MW; LG&E — 2,505 MW
  - b. The forecasted single hours peaks during calendar year 2022 are: Combined Company — 6,139 MW; LG&E — 2,719 MW
  - c. The forecasted single hour peaks between 2021 and 2025 are: Combined Company — 6,139 MW; LG&E — 2,719 MW
  - d. No.

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**Question No. 27**

**Responding Witness: Robert M. Conroy / John K. Wolfe**

Q-27. Reference: The Direct Testimony of John K. Wolfe (“Wolfe Direct”), at Exhibit JKW-2, Page 35 of 44 [PDF 394 of 499]. The section, “Individual Electric Vehicle Charging Identification,” includes the following statement, “If successful, customers with EV chargers who did not register their installation with the utility can be identified, planned for, and educated about any rates that would encourage off-peak charging.” Please fully explain why the Company would encourage off-peak charging.

A-27. The Company would encourage off-peak charging to reduce costs for customers. Because off-peak load is typically lower relative to on-peak load, the marginal cost of energy during off-peak periods is typically lower. In addition, shifting summer and winter load from on-peak to off-peak periods defers the need for new generating capacity.

Additionally, the intermittent, high-power nature of some EV charging activity can add strains to the electric distribution system by negatively affecting localized power quality. These strains can be difficult to manage during peak load periods.

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**Question No. 28**

**Responding Witness: William Steven Seelye**

- Q-28. Reference: Seelye Direct at page 2 [PDF 6 of 491], lines 34 through 38. The testimony includes the statement, “The purpose of this structure in the presentation of these rates schedules is to provide more information to customers, stakeholders, and employees about which costs are avoidable through the installation of distributed generation (i.e., the variable cost component) and which costs are less likely to be avoided (i.e., the fixed cost component).” Please define and/or explain costs that are “less likely to be avoided” as Mr. Seelye uses that phrase in his Direct Testimony.
- A-28. Costs that cannot be avoided (or are “less likely to be avoided” as referenced in Mr. Seelye’s testimony) are fixed demand- and customer-related costs. For example, once poles, transformers, conductor, services, meters, etc. are installed, the depreciation and other costs related to these facilities cannot be avoided.