

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

**In the Matter of:**

<b>THE 2018 INTEGRATED RESOURCE</b>	)	
<b>PLAN OF LOUISVILLE GAS AND</b>	)	<b>CASE NO. 2018-00348</b>
<b>ELECTRIC COMPANY AND</b>	)	
<b>KENTUCKY UTILITIES COMPANY</b>	)	

**JOINT COMMENTS OF**  
**LOUISVILLE GAS AND ELECTRIC COMPANY**  
**AND KENTUCKY UTILITIES COMPANY**  
**REGARDING THE STAFF REPORT**

Louisville Gas and Electric Company (“LG&E”) and Kentucky Utilities Company (“KU”) (collectively “Companies”), pursuant to the Commission’s July 20, 2020 order in this proceeding, hereby submit their comments regarding the Staff Report (“Report”) issued July 20, 2020, concerning the Companies’ 2018 Integrated Resource Plan (“IRP”). The Companies appreciate the considerable amount of time and focus the Commission Staff gave to preparing the Report. The following comments and recommendations are submitted to enhance the accuracy of an already well-done report.

**I. The Companies support the Report’s proposed revision to the due date for the Companies’ next Integrated Resource Plan.**

The Report observes: “It must be noted that departures from the filing schedule in 807 KAR 5:058 have caused overlaps of past IRP filings. Staff recommends the Commission require LG&E/KU to file their next IRP on or before October 19, 2021.”<sup>1</sup> The Companies support this recommendation. Additionally, the Companies are subject to filing an annual Regional Transmission Organization (“RTO”) study in Case Nos. 2018-00294 and 2018-00295.<sup>2</sup> The

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<sup>1</sup> Report at 4.

<sup>2</sup> *Electronic Application of Kentucky Utilities Company for an Adjustment of its Electric Rates*, Case No. 2018-00294, Order at 31 (Ky. PSC Apr. 30, 2019); *Electronic Application of Louisville Gas and Electric Company for an Adjustment of its Electric and Gas Rates*, Case No. 2018-00295, Order at 34 (Ky. PSC Apr. 30, 2019).

Companies plan to request relief from this requirement and propose to file the RTO study as part of its next IRP case.<sup>3</sup>

**II. The Report’s implication that the maximum winter peak demand used in the Companies’ reserve margin analysis is unreasonable is based on an incorrect understanding of the Companies’ IRP.**

For purposes of establishing an energy forecast for the 15-year IRP planning period, the Companies developed three energy requirements forecasts: Base, Low, and High.<sup>4</sup> Differences between the forecasts are explained by economic and other factors, not differences in weather assumptions. In every year of each energy forecast, weather is assumed to be average or “normal.”<sup>5</sup> The Companies used 20 years of historical weather data to develop their “normal” weather assumptions.<sup>6</sup> On winter peak days, specifically, weather is assumed to be the average of weather on winter peak days over the past 20 years (i.e., approximately 15 degrees Fahrenheit).

To determine their target reserve margin range, however, the Companies did not focus exclusively on average weather. Instead, the Companies evaluated generation and reliability costs for the Base energy requirements forecast over a distribution of weather scenarios. They did so because they are obligated to serve load under all weather scenarios.

The range of winter peak demands utilized in the reserve margin analysis was developed by forecasting hourly loads for one year of the Base energy requirements forecast (2021) based on weather in each of the last 45 years (i.e., the period of history for which the Companies have hourly weather data).<sup>7</sup> Table 1 below compares the minimum and maximum values from this range to the 2021 winter peak demands in the Base, Low, and High energy requirements forecasts.

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<sup>3</sup> Companies’ motion will be filed in Case Nos. 2018-00294 and 2018-00295 following the Commission’s order closing Case No. 2018-00348.

<sup>4</sup> See 2018 IRP Vol. 1 at 5-32 to 5-33, filed on Oct. 19, 2018.

<sup>5</sup> See 2018 IRP Vol. 1 at 5-26, filed on Oct. 19, 2018.

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

**Table 1 – 2021 Winter Peak Demand Forecast (MW; 2018 IRP)**

Range of Winter Peak Demands from Reserve Margin Analysis	Energy Requirements Forecast		
	Low	Base	High
Min (22 degrees Fahrenheit)		5,085	
Average (15 degrees Fahrenheit)	5,856	5,975	6,082
Max (-8 degrees Fahrenheit)		7,336	

The minimum winter peak demand utilized in the reserve margin analysis (5,085 MW) is a forecast of winter peak demand in 2021 based on the weather experienced in January 1990 where temperatures on the peak day averaged 22 degrees Fahrenheit. The maximum value in the range (7,336 MW) is a forecast of winter peak demand in 2021 based on the weather experienced 35 years ago in January 1985 where temperatures on the peak day averaged -8 degrees Fahrenheit.<sup>8</sup> It is not “based on an actual peak of 7,336 MW from 45 years ago” as the Report at page 14 states.

Due to this misunderstanding, page 14 of the Report inadvertently compares winter peak demands from the High *energy* requirements forecast to the maximum winter peak demand utilized in the reserve margin analysis and implies the latter is unreasonable due to the significant difference in the values. It is mathematically correct that the difference is significant, but both values are reasonable. The variance is explained by the significant difference in underlying weather data and assumptions. The variability in winter peak day weather drives the significant variability in the Companies’ winter peak demands.

**III. The Report requests the Companies incorporate SREA’s modeling recommendations in its next IRP. The Companies agree with this recommendation and have already implemented this modeling.**

On page 42, the Report requests the Companies “incorporate SREA’s modeling recommendations regarding capacity only planning, allowing renewable energy to compete directly against existing generation units, and energy storage resources into the modeling and

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<sup>8</sup> See 2018 IRP Vol. 1 at 5-26 to 5-27, filed on Oct. 19, 2018.

forecast methodology.” Although the IRP has not traditionally included these types of modeling recommendations, the Companies accept this recommendation and have already utilized this approach in evaluating renewable resources.

Last year, prior to Southern Renewable Energy Association’s (“SREA”) proposing their methodology in this case, the Companies specifically used the same methodology in their financial evaluation of the responses to its Renewable Request for Proposals issued in 2019.<sup>9</sup> Based on that analysis, the Companies proposed to enter into a power purchase agreement for solar energy because it would reduce customers’ energy costs in the vast majority of scenarios evaluated.<sup>10</sup>

#### **IV. Miscellaneous recommended corrections, clarifications, and revisions**

The Companies respectfully offer the following recommended corrections, clarifications, and revisions to the Report to provide enhanced accuracy in the record of this proceeding:

- At page 2, the Report states, “The highest annual energy requirements for LG&E was 13.185 GWh in 2010; the highest annual energy requirements for KU was 23.452 GWh in 2010; the highest annual energy requirements for the combined LG&E/KU system was 36.637 GWh in 2010.” The periods in each of the GWh measurements are typos and should be changed to commas so that the statement reads: “The highest annual energy requirements for LG&E was 13,185 GWh in 2010; the highest annual energy requirements for KU was 23,452 GWh in 2010; the highest annual energy requirements for the combined LG&E/KU system was 36,637 GWh in 2010.”
- At page 7, the Report states, “... the maximum output from each of the eight Zorn hydro units has been expanded from 10 MW to 12.6 MW. In addition, the Companies retired two coal units in February 2019 at the E. W. Brown station (272 MW) and plan to retire the Zorn 1 hydro unit (14 MW) in 2021.” The reference to the eight Zorn hydro units should be changed to eight Ohio Falls hydro units.

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<sup>9</sup> See *Electronic Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Approval of a Solar Power Contract and Two Renewable Power Agreements to Satisfy Customer Requests for a Renewable Energy Source Under Green Tariff Option #3*, Case No. 2020-00016, Testimony of David S. Sinclair at 6 and Exhibit DSS-2, filed on Jan. 23, 2020; see also Case No. 2020-00016, Companies’ Response to Commission Staff’s Initial Request for Information, Question No. 7, filed on Feb. 5, 2020.

<sup>10</sup> See Case No. 2020-00016, Testimony of David S. Sinclair at 17, filed on Jan. 23, 2020.

Additionally, the Companies plan to retire the Zorn 1 combustion turbine unit, not the Zorn 1 hydro unit, in 2021.

- At page 14, the Report states, “The Base Case energy and peak demand forecasts are based on a 20-year historical period and the peak winter high demand forecast ranges from 6,355 MW to 6,764 MW by 2033.” The statement should read, “Weather assumptions for the Base, Low, and High energy requirements forecasts were developed based on 20 years of historical weather data. Under average or “normal” weather conditions, winter peak demand in the High energy requirements scenario increases from 6,355 MW in 2018 to 6,764 in 2033.”
- At page 15, the Report states the reason the Companies did not renew the Residential Refrigerator Removal Program was the “program became cost prohibitive due to the lack of vendors to remove and recycle the non-energy efficient appliances.” The Companies wish to clarify that the stated reason for not renewing the program was that the declining age in the removed appliances made the program no longer cost-effective.<sup>11</sup>
- On page 17, the Report states, “An industrial customer may opt out of the program and associated charges if the customer has installed individual meters and implemented cost-effective energy-efficiency measures not subsidized by other rate classes for the loads served by such meters.” An industrial customer may opt out of the program based upon their existing individual meter. But, the customer is not required to install any additional meters.<sup>12</sup>
- At page 20, the Report states that “Renewable Energy Certificates are sold to others with the proceeds being returned to all customers.” The Companies wish to clarify that this statement is not applicable to the Solar Share Program where the renewable energy certificates associated with customer subscriptions are retired, not sold.
- At page 24, the Report states, “Company owned solar also includes a 4 MW shared solar facility in Shelby County, Kentucky.” This statement is accurate if referencing the total planned capacity of the shared solar facility in Shelby County. Each solar array in Shelby County is 0.5 MW. The Companies have recently finished constructing their second solar array, therefore the current actual capacity is 1 MW.
- At page 29, the Report states, “As can be seen from Table 2, the Companies’ planning reserve margin is approximately 24 percent. This is significantly higher as compared to the planning reserve margins of MISO (17 percent), PJM (16 percent), and TVA (15 percent) that were used in the study.” The Companies wish to point out that the Report is referencing the Companies’ **forecasted** annual reserve margin, which is approximately 24%. The Companies’ **planning** or

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<sup>11</sup> See *Electronic Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for Review, Modification, and Continuation of Certain Existing Demand-Side Management and Energy Efficiency Programs*, Case No. 2017-00441, Testimony of Gregory S. Lawson, Table B of Exhibit GSL-1, filed on Dec. 6, 2017.

<sup>12</sup> See Case No. 2017-00441, Testimony of David E. Huff at 26-27, filed on Dec. 6, 2017.

“target” reserve margin is 17% to 25%, which is more in line with the planning reserve margins of MISO (17%), PJM (16%), and TVA (15%) used in the study.<sup>13</sup> The comparison of forecasted reserve margin to RTOs’ planning reserve margins is not an appropriate comparison.

- At page 30, the Report states, “[t]he winter peak exceeded 7,000 MW in both 2014 and 2015 and the maximum winter peak (from 1985) modeled was 7,336 MW.” The maximum winter peak modeled by the Companies is not “from 1985.” Rather, the maximum winter peak demand utilized in the Companies’ reserve margin analysis is a forecast of 2021 winter peak demand under weather conditions experienced in January 1985.

## **V. Conclusion**

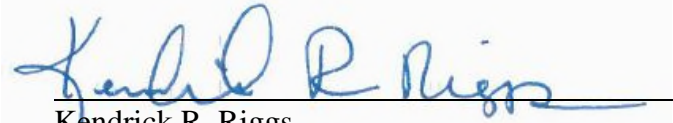
Again, the Companies applaud and appreciate the thorough work by the Commission Staff to complete the Staff Report. Overall, subject to these clarifications, the Report is fair, reasonable, and accurate on the whole.

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<sup>13</sup> Report at 29; See Joint Response of Louisville Gas and Electric Company and Kentucky Utilities Company to the Comments of Sierra Club and Southern Renewable Energy Association (“Joint Response to Comments of Sierra Club and SREA”) at 6-7, filed on Feb. 17, 2020. In the Joint Response to Comments of Sierra Club and SREA, the Companies updated the planning reserve margin numbers of MISO (18%) and TVA (17% in summer and 25% in winter).

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Respectfully submitted,




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**CERTIFICATE OF COMPLIANCE**

This to certify that Louisville Gas and Electric Company and Kentucky Utilities Company's (the "Companies") July 30, 2020 electronic filing of the Joint Comments was transmitted to the Commission on July 30, 2020; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that a version of the electronic filing will be transmitted to the Commission within 30 days of the lifting of the State of Emergency.



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