

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF KENTUCKY UTILITIES)	
COMPANY FOR APPROVAL OF SPECIAL)	CASE NO.
CONTRACT BETWEEN KENTUCKY UTILITIES)	2023-00123
COMPANY AND BLUEOVAL SK, LLC)	

DIRECT TESTIMONY OF
STUART A. WILSON
DIRECTOR, ENERGY PLANNING, ANALYSIS AND FORECASTING
KENTUCKY UTILITIES COMPANY

Filed: April 14, 2023

1 **INTRODUCTION**

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

3 A. My name is Stuart A. Wilson. I am the Director of Energy Planning, Analysis and
4 Forecasting for Kentucky Utilities Company (“KU”) and Louisville Gas and Electric
5 Company (“LG&E”) (collectively, “Companies”) and an employee of LG&E and KU
6 Services Company, which provides services to KU and LG&E. My business address is
7 220 West Main Street, Louisville, Kentucky 40202. A complete statement of my
8 education and work experience is attached to this testimony as Appendix A.

9 **Q. Have you previously testified before this Commission?**

10 A. Yes. I have testified before the Commission on a number of occasions,¹ including in
11 the Companies’ pending certificate of public convenience and necessity (“CPCN”) and
12 demand-side management and energy efficiency application proceeding, Case No.
13 2022-00402.²

14 **Q. What is the purpose of your testimony?**

15 A. The purpose of my testimony is to demonstrate that the projected demand revenues
16 associated with KU’s proposed special contract with BlueOval SK, LLC (“BlueOval
17 SK”) will likely exceed BlueOval SK’s demand-related marginal cost of service. I
18 show that projected demand revenues from BlueOval SK over the 20-year special

¹ See, e.g., *Electronic Tariff Filing of Kentucky Utilities Company for Approval of an Economic Development Rider Special Contract with Bitiki-KY, LLC*, Case No. 2022-00371, Rebuttal Testimony of Stuart A. Wilson (Feb. 21, 2023); *Electronic 2021 Joint Integrated Resource Plan of Louisville Gas and Electric Company and Kentucky Utilities Company*, Case No. 2021-00393, July 12, 2022 H.V.T. at 17:43:05-18:10:32 and July 13, 2022 H.V.T. at 08:12:49-12:05:40 (Ky. PSC Oct. 7, 2022); *Electronic Application of Kentucky Utilities Company for Approval of Its 2020 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2020-00060, Direct Testimony of Stuart A. Wilson (Mar. 31, 2020); *Electronic Application of Louisville Gas and Electric Company for Approval of Its 2020 Compliance Plan for Recovery by Environmental Surcharge*, Case No. 2020-00060, Direct Testimony of Stuart A. Wilson (Mar. 31, 2020).

² *Electronic Joint Application of Kentucky Utilities Company and Louisville Gas and Electric Company for Certificates of Public Convenience and Necessity and Site Compatibility Certificates and Approval of a Demand Side Management Plan*, Case No. 2022-00402, Direct Testimony of Stuart A. Wilson (Dec. 15, 2022).

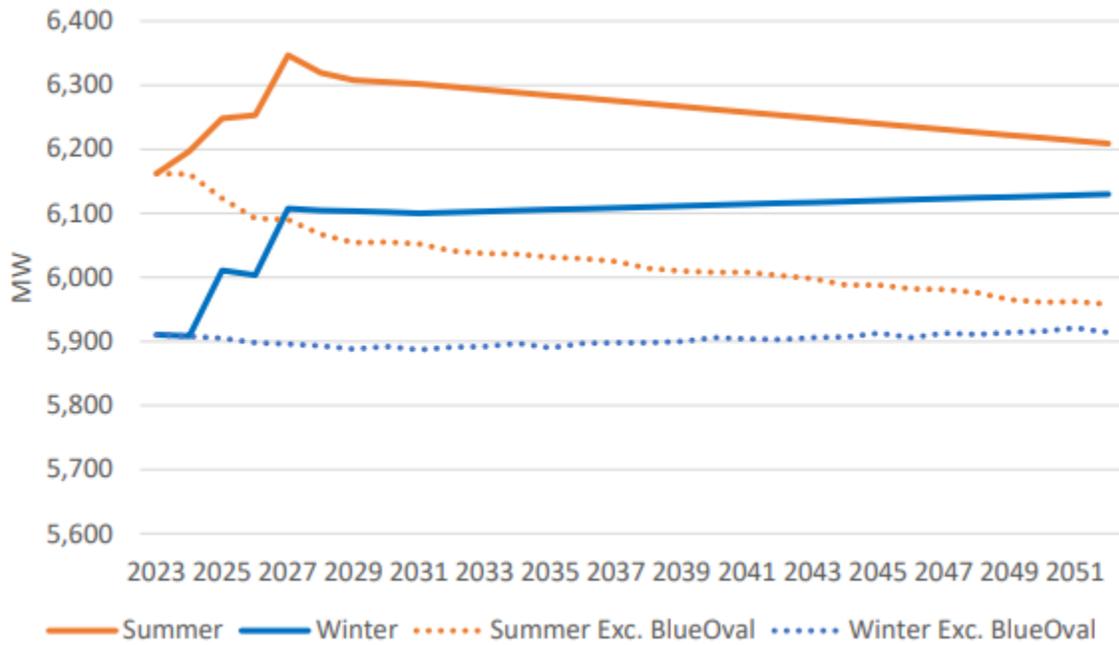
1 contract period exceed BlueOval SK’s production demand-related marginal cost of
2 service by approximately \$100 million on a net present value of revenue requirements
3 basis.

4 **METHODOLOGY FOR CALCULATING BLUEOVAL SK’S**
5 **DEMAND-RELATED MARGINAL COST OF SERVICE**

6 **Q. Please describe the resource planning context in which KU evaluated the demand-**
7 **related marginal cost of service for BlueOval SK.**

8 A. Absent the addition of BlueOval SK load, the Companies are continuing to experience
9 and project flat to slightly declining load on the whole. As shown in Figure 1 below,
10 the Companies project steadily declining summer peak load and a slight increase in
11 winter load over the next thirty years:

12 **Figure 1: Forecasted Seasonal Peaks (Combined Companies)**



13
14 Based on the Companies’ summer and winter peak demands under normal weather
15 conditions and the variability of load due to weather particularly in the winter, the
16 Companies’ current summer and winter minimum reserve margin targets are 17% in

1 the summer and 24% in the winter. As a result, winter demand is the binding constraint
2 for the Companies' resource planning. For example, the Companies currently project
3 that in 2028 they will have a summer peak load of 6,059 MW and a winter peak load
4 of 5,879 MW without BlueOval SK load.³ Thus, to meet the 17% minimum summer
5 reserve margin, the Companies would need to have 7,089 MW of resources available
6 to serve load, whereas the Companies would need 7,290 MW of resources available to
7 serve load to meet their 24% winter minimum reserve margin.⁴ This shows that serving
8 winter load, not summer load, is the binding constraint by about 200 MW. Note that
9 BlueOval SK's summer peak load (260 MW) is just 35 MW higher than its winter peak
10 load (225 MW). Therefore, serving winter load would remain the binding constraint
11 even with the BlueOval SK load.

12 **Q. With that binding constraint, please describe the methodology KU used to**
13 **determine BlueOval SK's production demand-related marginal cost of service**
14 **associated with the 20-year special contract at issue in this proceeding.**

15 A. The Companies currently anticipate that if they add new capacity to their generating
16 fleet, the next generating unit is likely to be a natural gas combined cycle ("NGCC")
17 unit. The Companies recently obtained bids for new NGCC units to be built by 2028,
18 both of which were for units with 621 MW of summer capacity and 641 MW of winter
19 capacity. Solely for the purposes of this marginal cost analysis and to err on the side

³ BlueOval SK load is projected to be 260 MW at summer peak and 225 MW at winter peak.

⁴ It is arguable that the winter reserve margin percentage would be higher without BlueOval SK's load (26% rather than 24%). That is due to the stability of BlueOval SK's projected load, which is anticipated to be a very steady, high-load factor load. That lack of volatility reduces required reserve margins relative to peak demand. Nonetheless, I am using the 24% winter reserve margin here, which assumes that KU will serve BlueOval SK.

1 of caution, KU chose to conduct the marginal cost of service analysis using the higher
2 cost unit of the two bids they received.

3 Because having adequate capacity to serve winter load is the binding constraint
4 for resource planning purposes, KU determined that an appropriate methodology for
5 determining the marginal production demand-related cost of serving BlueOval SK
6 would be to calculate BlueOval SK's winter-demand share (225 MW) of the cost of a
7 641 MW winter capacity NGCC. That results in a BlueOval SK marginal production
8 demand cost of 35.1% of the NGCC's total non-variable revenue requirements (225
9 MW / 641 MW = 35.1%).

10 **Q. How does BlueOval SK's marginal production demand-related cost of service
11 compare to the demand revenues KU projects it will receive from BlueOval SK?**

12 **A.** Table 1 below compares the demand revenues KU projects it will receive from
13 BlueOval SK to the marginal production demand-related cost of service calculated
14 using the methodology I described above. Note that two revenue projections are
15 included: one assumes no increases in the BlueOval SK special contract pricing, and
16 the other assumes a 0.5% annual revenue increase beginning in 2028. The demand
17 billing units are based on BlueOval SK's projected average monthly demands for the
18 base, intermediate, and peak billing intervals. In 2023 net present value of revenue
19 requirements ("NPVRR") terms over the 20-year contract period, KU projects that
20 BlueOval SK's demand revenues under the proposed special contract will exceed its
21 marginal production demand-related cost of service by \$97.1 million without escalating
22 revenues and by \$108.0 million with escalation:

Table 1: Comparison of BlueOval SK’s Special Contract Demand Revenues (with and without Escalation) to BlueOval SK’s Marginal Production Demand Cost of Service

Year	BOSK Demand Revenues (\$M)		BOSK Incremental Capacity Cost (\$M)	BOSK Demand Revenues less BOSK Incremental Capacity Cost (\$M)	
	0.0% Escalation	0.5% Escalation		0.0% Escalation	0.5% Escalation
NPVRR (2023\$)	345.6	356.4	248.5	97.1	108.0
2024	0.0	0.0	0.1	-0.1	-0.1
2025 ⁵	13.0	13.0	2.4	10.6	10.6
2026	34.7	34.7	10.6	24.0	24.0
2027	34.9	34.9	18.5	16.4	16.4
2028	34.9	35.0	31.3	3.5	3.7
2029	34.9	35.2	31.3	3.6	3.9
2030	34.9	35.4	30.6	4.2	4.8
2031	34.9	35.6	30.0	4.9	5.6
2032	34.9	35.7	29.4	5.5	6.4
2033	34.9	35.9	28.8	6.1	7.1
2034	34.9	36.1	28.2	6.6	7.9
2035	34.9	36.3	27.7	7.2	8.6
2036	34.9	36.5	27.1	7.7	9.3
2037	34.9	36.6	26.6	8.3	10.0
2038	34.9	36.8	26.1	8.8	10.8
2039	34.9	37.0	25.5	9.3	11.5
2040	34.9	37.2	25.0	9.9	12.2
2041	34.9	37.4	24.5	10.4	12.9
2042	34.9	37.6	23.9	10.9	13.6
2043	34.9	37.8	23.4	11.4	14.3
2044	34.9	38.0	22.9	12.0	15.1
2045 ⁵	8.7	9.5	5.6	3.1	3.9

Q. Based on your testimony above, will serving BlueOval SK under the proposed special contract be a benefit to existing customers?

A. Yes. BlueOval SK’s projected demand revenues will significantly exceed its marginal production demand cost of service; indeed, those revenues will exceed that marginal

⁵ The BlueOval SK special contract term is expected to begin on or around April 1, 2025, and end on or around March 31, 2045. Therefore, data for 2025 reflects nine months of demand revenues, and data for 2045 reflects three months of demand revenues and incremental capacity costs. The “BOSK Incremental Capacity Cost” column shows marginal production demand cost of 35.1% of the NGCC’s total non-variable revenue requirements for a full 12 months of each year shown except 2045.

1 cost by nearly \$100 million in 2023 NPVRR terms. I would note that the 0.5% annual
2 escalation scenario is conservative compared to almost any plausible inflation
3 expectation, meaning that the \$108.0 million 2023 NPVRR excess of BlueOval SK
4 revenues over BlueOval SK’s marginal production demand cost is likely too low.

5 In addition, that level of excess revenue over marginal cost suggests the
6 proposed BlueOval SK special contract would be net beneficial across a variety of
7 possible future scenarios. If, for example, the Companies do not construct one or more
8 new NGCC units by 2028, other new generation or maintaining of existing generation
9 might have different marginal costs for serving BlueOval SK relative to an NGCC, but
10 it is unlikely to exceed the NPVRR margin shown here. Thus, with that level of revenue
11 in excess of marginal production demand cost, it appears likely that KU’s special
12 contract with BlueOval SK will result in net benefits for all customers.

13 **Q. In your calculations above, you do not include marginal energy cost or projected**
14 **energy revenues. Why is it appropriate to exclude those amounts?**

15 A. The BlueOval SK special contract energy rate is identical to KU’s Rate RTS energy
16 rate.⁶ It is my understanding that the Rate RTS energy charge comprises almost
17 exclusively two cost elements: fuel and variable O&M. The Companies’ projection of
18 the NGCC’s variable O&M cost is \$1.08/MWh, which is lower than the system average
19 variable O&M component of existing Rate RTS energy rates. In addition, KU recovers
20 its full fuel cost through base energy rates and its Fuel Adjustment Clause (“FAC”)
21 mechanism, and it is my understanding that BlueOval SK’s billing will include FAC
22 adjustments. Thus, BlueOval SK’s full energy-charge revenues—including FAC

⁶ See Kentucky Utilities Company, P.S.C. No. 20, Third Revision of Original Sheet No. 25.

1 adjustments—should equal or exceed its marginal energy costs. Because energy-
2 related marginal costs and revenues should net to zero or provide a small contribution
3 to fixed costs by BlueOval SK, I excluded them from the calculations above.

4 **Q. Will BlueOval SK make other contributions to fixed costs not included in your**
5 **calculations above?**

6 A. Yes. It is my understanding that BlueOval SK’s bills will include environmental cost
7 recovery (“ECR”) adjustment clause charges, which include both variable and fixed
8 cost recovery components. Because the marginal generating unit at issue in this
9 proceeding (an NGCC unit) will not have ECR-related cost components, all of the
10 fixed-cost components of BlueOval SK’s ECR adjustment clause billing are
11 contributions to fixed costs that I have not attempted to calculate here.

12 **Q. What do you conclude about the marginal cost of service to BlueOval SK versus**
13 **the revenues KU projects it will receive from BlueOval SK during the EDR**
14 **discount period?**

15 A. I conclude that projected revenues under the BlueOval SK special contract will likely
16 exceed BlueOval SK’s marginal cost of service over the totality of the 20-year contract
17 term on an NPVRR basis.

18 CONCLUSION

19 **Q. What is your recommendation for the Commission?**

20 A. I recommend the Commission find that projected revenues under the BlueOval SK
21 special contract will likely exceed BlueOval SK’s marginal cost of service, which
22 supports approval of the BlueOval SK special contract as beneficial for all KU
23 customers.

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

2 A. Yes.

APPENDIX A

Stuart A. Wilson, CFA

Director, Energy Planning, Analysis and Forecasting
Kentucky Utilities Company
Louisville Gas and Electric Company
220 West Main Street
Louisville, Kentucky 40202
Telephone: (502) 627-4993

Previous Positions (all LG&E-KU)

Manager, Generation Planning & Analysis	October 2009 – April 2016
Manager, Sales Analysis & Forecasting	May 2008 – October 2009
Supervisor, Sales Analysis & Forecasting	Aug 2006 – April 2008
Economic Analyst	Aug 2000 – July 2006
Compensation Analyst	Aug 1999 – July 2000
Business Analyst June	1997 – July 1999

Professional/Trade Memberships

CFA Society of Louisville

Education & Certifications

E.ON Emerging Leaders Program	2004-2006
CFA Charterholder	2003
LG&E Energy Leadership Development Program	1997-2002
Indiana University, Master of Business Administration	1997
University of Louisville, Master of Engineering in Electrical Engineering	1995
University of Louisville, Bachelor of Science in Electrical Engineering	1995

Civic Activities

Big Brothers Big Sisters of Kentuckiana, Board of Directors	2017 – Present
Barren Heights Christian Retreat, Board of Directors	2015 – 2021