

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

IN THE MATTER OF THE APPLICATION)
OF OKLAHOMA GAS AND ELECTRIC)
COMPANY FOR COMMISSION)
PREAPPROVAL OF NEW GENERATING) CASE NO. PUD 2023-000038
CAPACITY PURSUANT TO)
17. O.S. SECTION 286(C)

RESPONSIVE TESTIMONY OF

SCOTT NORWOOD

ON BEHALF OF

OKLAHOMA INDUSTRIAL ENERGY CONSUMERS

AUGUST 31, 2023

RESPONSIVE TESTIMONY OF SCOTT NORWOOD

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EXHIBITS:

- SN-1 Background and Experience of Scott Norwood
- SN-2 Estimated Final Capital Cost of HL CTs
- SN-3 Confidential - OG&E Forecast of Energy Production and Margins of HL CTs
- SN-4 OG&E's Response to OIEC 1-4

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

A. My name is Scott Norwood. I am President of Norwood Energy Consulting, L.L.C. My business address is P.O. Box 30197, Austin, Texas 78755-3197.

Q. WHAT IS YOUR OCCUPATION?

A. I am an energy consultant specializing in the areas of electric utility regulation, resource planning and energy procurement.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I have over 37 years of experience in the electric utility industry. Since January of 2004 I have served as President and sole proprietor of Norwood Energy Consulting. In this capacity, I have provided electric utility regulatory consulting services to electric consumer and governmental organizations. My consulting practice has been focused primarily on the areas of electric resource planning, power supply system dispatch and operations, transmission planning analyses, and evaluations of electric utility fuel supply and purchased power issues. Before founding Norwood Energy Consulting, I was employed for 18 years as a Principal and Director of the Deregulation Services Department of GDS Associates, Inc., an electric utility consulting firm. From 1984 to 1986 I was employed as Manager of Power Plant Engineering for the Staff of the Public Utility Commission of Texas, where I was responsible for analyzing and presenting testimony addressing resource planning, fuel and purchased power cost issues arising from electric

1 utility regulatory filings with the Commission. From 1980 to 1984 I was employed by
2 Austin Energy as a Power Plant Engineer, in which capacity I directed electrical
3 maintenance and design projects at three gas-fired power plants.¹

4 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?**

5 A. I am testifying on behalf of Oklahoma Industrial Energy Consumers (OIEC).

6 **Q: WHAT IS OIEC?**

7 A: OIEC is an association, consisting of a diverse group of large consumers of energy with
8 facilities located in Oklahoma, which is involved in regulatory and legislative matters
9 primarily involving natural gas and electric power.

10 **Q: WHAT IS OIEC'S INTEREST IN THIS PROCEEDING?**

11 A: OIEC is an association which represents the interests of industrial and other large energy
12 consumers. Electric power costs can constitute a significant percentage of industrial
13 operating costs. Electric power supplies are generally purchased from utilities pursuant to
14 standard tariffs filed at the Commission. Industries served by OG&E often operate in
15 highly competitive business environments and, thus, OIEC is interested in the Commission
16 determining rates for OG&E that will achieve reliable power supply at the lowest
17 reasonable cost. To this end, OIEC is interested in ensuring that OG&E's request for pre-
18 approval and a cost recovery mechanism for the Horseshoe Lake combustion turbine ("HL
19 CTs") is reasonable and necessary, beneficial to customers, not unduly risky, and likely

1 See Exhibit SN-1 for a more detailed summary of my background and experience.

1 to maintain rates at the lowest reasonable level necessary to provide reliable service to
2 OG&E's customers.

3 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE OKLAHOMA**
4 **CORPORATION COMMISSION ("OCC")?**

5 A. Yes. I have filed testimony on behalf of OIEC in numerous regulatory proceedings before
6 the OCC over the last 22 years. Over the last 30 years I have also filed testimony in more
7 than 200 cases before state regulatory commissions in Alaska, Arkansas, Florida, Georgia,
8 Illinois, Iowa, Kentucky, Louisiana, Michigan, Missouri, New Jersey, Ohio, Virginia,
9 Washington, and Wisconsin. I filed testimony on behalf of OIEC in numerous OG&E
10 regulatory proceedings conducted by the Commissions in Oklahoma and Arkansas.
11 Through this past work, I am familiar with the proposals of OG&E and other electric
12 utilities such as PSO and SWEPCO regarding the acquisition of large renewable resource
13 facilities and various issues related to the forecasted costs, operating performance and risks
14 of ownership of such facilities.

15 **Q. HAVE YOUR QUALIFICATIONS BEEN ACCEPTED BY THIS COMMISSION?**

16 A. Yes.

17 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

18 A. My testimony addresses: 1) whether OG&E has a need for capacity that justifies the
19 proposed HL CTs; 2) whether OG&E's request for proposal (RFP), competitive bidding
20 and bid evaluation process was reasonable and compliant with the Commission's rules,
21 and 3) whether the proposed HL CTs are a reasonable choice to supply OG&E's system
22 capacity and energy requirements from a cost effectiveness and operational perspective.

OIEC witness Mr. Mark Garrett addresses OG&E's proposed generating capacity rider (GCR Rider) and the extent to which the HL CTs qualify for pre-approval as requested in this case.

Q. HAVE YOU PREPARED ANY EXHIBITS TO SUPPORT YOUR TESTIMONY?

A. Yes. I have prepared 4 exhibits which are attached to my testimony.

II. SUMMARY OF TESTIMONY

Q. PLEASE SUMMARIZE YOUR TESTIMONY, FINDINGS AND RECOMMENDATIONS.

A. OG&E is requesting approval of and a determination of need for the Company's proposal to construct two General Electric ("G.E.") 7F Class combustion turbines with a rated capacity of 448 MW at the Company's Horseshoe Lake Power Plant ("HL CTs").² The final estimated capital cost of the HL CTs is \$394.3 million (\$880/kW).³ The Company further seeks approval to implement a cost recovery rider, which it refers to as a Generation Capacity Rider ("GCR") to recover costs of the HL CTs after the units are placed in service and providing power to benefit customers.⁴ My major findings and recommendations are as follows:

1) OG&E has a forecasted capacity need of approximately 1,125 MW by 2027. This need is due primarily to the Company's plan to retire 782 MW of existing

² OG&E's Application, page 2.

³ See Exhibit SN-2, OG&E witness Jason Thenmadafil's Direct Testimony workpapers.

⁴ OG&E's Application, page 2.

1 capacity from HL Units 6, 7 and 8, and SPP's decision to raise its planning reserve margin
2 requirement in 2023 from 12% to 15%.⁵ The Company's forecasted capacity need in
3 2027 and beyond are sufficient to justify the 448 MW of new capacity that would be
4 provided from the proposed HL CTs.

5 2) OG&E's 2021 IRP analysis concludes that the lowest reasonable cost
6 options to meet the Company's forecasted capacity needs over the 2022-2027 period was
7 a combination of solar and combustion turbine ("CT") generation resources.⁶ The 2021
8 IRP analysis generally appears to have been reasonable considering the market prices and
9 forecasted costs of resources at the time of the analysis.

10 3) Based on information presented in OG&E's direct testimony and the
11 Independent Evaluator's ("IE") report on the Flexible Resource RFP, the Company's
12 proposed HL CTs generally appear to be a reasonable choice for supplying a portion of
13 OG&E's forecasted capacity needs beginning in 2027. However, more information is
14 needed regarding the specific nature and impacts of OG&E's affiliate communications on
15 the Flexible Resources RFP bidding and bid evaluation process [REDACTED]
16 [REDACTED] in order to fully
17 evaluate OG&E's application.

18 4) OG&E's request to increase the Company's original bid cost of the HL CTs
19 by \$145.3 million conflicts with the Commission's rules governing cost recovery for

5 See Direct Testimony of OG&E witness Kimber Shoop, page 6.

6 See Direct Testimony of OG&E witness Kimber Shoop, page 11.

1 utility self-build generation proposals, and if allowed, would likely discourage third parties
2 from bidding on future OG&E generation projects.

3 5) OG&E forecasts that the HL CTs would have relatively low energy
4 production and energy margin levels, which means the HL CTs will be providing little
5 energy value to OG&E's system.

6 6) I recommend that OG&E and the IE provide additional information
7 regarding the specific nature and impacts of OG&E's affiliate communications on the
8 Flexible Resources RFP bid selection process, [REDACTED]
9 [REDACTED], in order to fully evaluate the Company's
10 filing and request for pre-approval-. In addition, I recommend that the Company and IE
11 be required to provide additional information explaining the reasons for OG&E's failure
12 to negotiate a final deal to purchase capacity from a 1,220 MW combined cycle plant
13 which was offered in the Existing Capacity RFP. Finally, as discussed further by OIEC
14 witness Mark Garrett in his responsive testimony, I recommend that if the Commission
15 approves OG&E's pre-approval request for its proposed HL CTs, that the pre-approval
16 amount be limited to the Company's original \$249 million self-bid proposal and that
17 additional project costs above the \$249 million self-bid amount requested by OG&E be
18 subject to future review by the Commission in a future base rate case after the HL CTs are
19 completed and placed in service.

20 OIEC witness Mark Garrett addresses the level of requested costs of the HL CTs
21 that should be considered for pre-approval and the Company's proposed GCR rider.
22

III. PROPOSED HORSESHOE LAKE COMBUSTION TURBINES

Q. PLEASE DESCRIBE THE PROPOSED HL CTS FOR WHICH OG&E IS SEEKING APPROVAL IN THIS CASE.

A. The proposed HL CTs consist of two General Electric (“GE”) 7F.05 CTs with a combined rated capacity of 448 MW which OG&E plans to locate at the existing Horseshoe Lake Generating Facility on the east side of Oklahoma City.⁷ OG&E expects that the HL CTs will commence commercial operation in late-2026.

Q. WHY IS OG&E PLANNING TO LOCATE THE HL CTS AT THE HORSESHOE LAKE GENERATING FACILITY?

A. The HL Facility currently has three steam turbine generating units (HL Units 6, 7, and 8) which have a combined rated capacity of 782 MW, and two simple cycle gas combustion turbines (HL Units 9 and 10) which have a combined rated capacity of 86 MW.⁸ OG&E plans to retire HL Units 6, 7 and 8 in 2023, 2025 and 2027.⁹ These planned retirements, which OG&E attributes to the advanced age and declining reliability performance of the units,¹⁰ are a primary factor contributing to the need for the new HL CTs. By locating the HL CTs at the HL Facility, OG&E will be able to take advantage of existing plant infrastructure and interconnection rights, thereby lowering the overall cost of the new units.

Q. WHAT IS THE ESTIMATED CAPITAL COST OF THE HL CTS?

⁷ See Direct Testimony of OG&E witness Robert Doupe, page 3.

⁸ See Direct Testimony of OG&E witness Robert Doupe, page 4.

⁹ Ibid.

¹⁰ Ibid.

1 A. The estimated total capital cost of the HL CTs is approximately \$394.3 million
2 (\$880/kW).¹¹

3 **Q. HOW DOES OG&E PLAN TO OPERATE THE HL CTS?**

4 A. The HL CTs will be natural gas-fired combustion turbines (with hydrogen fuel
5 capability) that are capable of being turned off and on quickly in order to supply power
6 during peak times, to serve unscheduled demand, and to supply ancillary services to the
7 SPP grid.¹² The Company's forecasts that the annual capacity factor of the HL CTs
8 will be approximately ■ over the life of the units.¹³

9 **Q. HOW DID OG&E SELECT THE HL CTS FOR SERVING THE COMPANY'S**
10 **FUTURE CAPACITY REQUIREMENTS?**

11 A. OG&E's 2021 IRP Analysis concluded that the Company had a need for approximately
12 942 MW of new generating capacity by the summer peak of 2027, and that a
13 combination of natural gas-fired combustion turbines and solar generating resources
14 were the optimal technologies to serve that need.¹⁴ Based on these conclusions, OG&E
15 issued a Solar Resource RFP in January of 2022 and a Flexible Resource RFP in June of
16 2022 from which the HL CTs proposal was selected, and an Existing Capacity RFP in
17 July of 2022.

18 After evaluating the costs and qualitative factors regarding project risks, OG&E
19 selected the Company's 448 MW HL CTs self-bid proposal, at a bid cost of \$249 million

11 See the Direct Testimony of OG&E witness Jason Thenmadathil, page 4.

12 See Direct Testimony of OG&E witness Robert Doupe, page 3.

13 See Confidential Exhibit SN-3.

14 See the Direct Testimony of OG&E witness Kimber Shoop, page 5.

(\\$556/kW) as the best available option for meeting the flexible resource capacity requirements identified in OG&E's 2021 IRP.

Q. WHAT IS THE ESTIMATED RATE IMPACT OF THE HL CTS ON OG&E'S OKLAHOMA CUSTOMERS?

A. OG&E estimates that the revenue requirement of the proposed HL CTs would be approximately \\$44 million (Total Company) in the first year of service and that this cost would result in a \\$2.21 per month increase in charges to a residential customer that uses 1,100 kWh per month.¹⁵ OIEC witness Mark Garrett addresses the customer rate impacts and OG&E's proposed Generation Capacity Rider ("GCR") for the HL CTs.

IV. NEED FOR CAPACITY

Q. WHAT IS OG&E'S FORECASTED NEED FOR CAPACITY OVER THE NEXT FIVE YEARS?

A. As shown in Table 1 below, OG&E's forecasted need for firm capacity based on the Company's 2021 IRP peak demand forecast and SPP's 15% planning reserve margin requirement increases from a 324 MW in 2023 to 1,125 MW by 2027 when the HL CTs would first be available to supply a portion of OG&E's forecasted capacity requirements.

Table 1
OG&E's Forecasted Capacity Requirements¹⁶

¹⁵ See Direct Testimony of OG&E witness Jason Thenmadathil, page 6.

¹⁶ Source is the Direct Testimony of OG&E witness Kelly Riley page 5, Table 1. Existing capacity for 2023 reflects OG&E's planned short-term capacity purchases of 493 MW per OG&E's response to OIEC 1-4.

Y ear	Net Demand + 15% Reserve	Existing Capacity	Capacity Need
2024	6,945	6,581	364
2025	6,968	6,370	598
2026	7,001	6,306	695
2027	7,028	5,903	1,125
2028	7,053	5,903	1,150
2029	7,071	5,903	1,168
2030	7,056	5,903	1,153

Q. WHAT FACTORS ARE DRIVING THE GROWTH IN OG&E'S CAPACITY NEEDS REFLECTED IN TABLE 2?

A. The forecasted growth in capacity needs in Table 1 is primarily due to: 1) the 782 MW capacity loss due to OG&E's plan to retire Horseshoe Lake Units 6, 7 and 8 in 2023, 2025 and 2027, respectively, and 2) SPP's new 15% planning reserve margin policy which increases OG&E's reserve capacity obligation by approximately 211 MW by 2027.¹⁷

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE NEED FOR CAPACITY WHICH OG&E PROPOSES TO SUPPLY FROM THE HL CTS.

A. OG&E has a forecasted capacity need of approximately 1,125 MW by 2027. This need is due primarily to the Company's plans to retire 782 MW of existing capacity from HL Units 6, 7 and 8, and SPP's decision to raise its planning reserve margin requirement in 2023 from 12% to 15%.¹⁸ The Company's forecasted capacity needs in 2027 and beyond are sufficient to justify the 448 MW of new capacity that would be provided from the proposed HL CTS.

¹⁷ See Direct Testimony of OG&E witness Kimber Shoop, page 5.

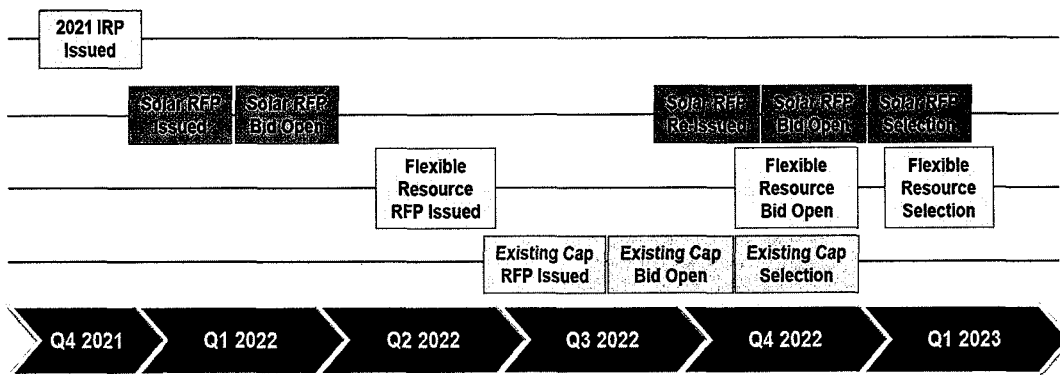
¹⁸ See Direct Testimony of OG&E witness Kimber Shoop, page 6.

V. COMPETITIVE PROCUREMENT PROCESS

Q. PLEASE DESCRIBE THE COMPETITIVE BIDDING PROCESS USED BY OG&E FOR THE SELECTION OF THE HL CTS.

A. OG&E's 2021 IRP determined that the Company had a need for capacity increasing from 145 MW in 2023 up to 942 MW in 2027, and that these needs would best be met by a combination of gas-fired combustion turbines and solar generation resources.¹⁹ Based on these IRP results, OG&E issued a series of Request for Proposals ("RFP") for solar energy, flexible resources and existing capacity purchases as summarized in Figure 1:

**Figure 1
OG&E Competitive Bidding Timeline²⁰**



Q. WHAT WERE THE RESULTS OF THE FLEXIBLE RESOURCES RFP?

A. OG&E received bids for approximately 2,500 MW of capacity including stand-alone energy storage resources and natural gas fired generation resources in response to the

¹⁹ See Direct Testimony of OG&E witness Kimber Shoop, page 5.

²⁰ Source is the Direct Testimony of OG&E witness Kelly Riley, page 8, Figure 1.

1 Flexible Resources RFP.²¹ OG&E determined that there were eight conforming flexible
2 resource bids, including the Company's self-bid for HL CTs and seven battery storage
3 bids, that passed the threshold criteria established in the Flexible Resource RFP. The
4 costs of the seven battery storage bids were far higher than the bid cost of OG&E's
5 proposed HL CTs project, which was selected as the best flexible resource option.

6 **Q. WAS AN INDEPENDENT EVALUATOR RETAINED TO MONITOR OG&E'S**
7 **COMPETITIVE SOLICITATION AND BID EVALUATION PROCESS?**

8 A. Yes. OG&E's RFPs and bid evaluation process was monitored by Guernsey, an electric
9 utility consulting firm that was retained by the Public Utility Division ("PUD") of the
10 Commission and the Attorney General (AG") with approval by the Commission.²²
11 Guernsey prepared reports which describe and present certain findings regarding
12 OG&E's RFPs and bid evaluation process for the Solar Resource, Flexible Resource and
13 Existing Capacity RFPs.

14 **Q. WHAT WERE GUERNSEY'S PRIMARY FINDINGS REGARDING THE**
15 **FLEXIBLE CAPACITY RFP AND OG&E'S SELECTION OF THE**
16 **COMPANY'S SELF-BID PROPOSAL FOR THE HL CTS?**

17 A. The primary findings and conclusions presented in Guernsey's report on OG&E's
18 Flexible Capacity RFP are as follows:

- 19 1) Bids for the RFP were submitted by October 27, 2022, and the Company
20 gave notice to the Commission of its selection of winning bid on January 11,
21 2023. The Company received bids for 13 Projects from five bidders.
22

21 See Direct Testimony of OG&E witness Kelly Riley, page 13.

22 See the Direct Testimony of OG&E witness Kimber Shoop, page 8.

1 2) The winning bid, as determined by the Company, was the affiliate self-build
2 bid for 448 MW of combustion turbine ("CT") generation at the Horseshoe
3 Lake ("HSL") site that would replace existing Company generation after the
4 time of its retirement. The Company selected the winning bid based on a
5 combination of qualitative and quantitative factors.

6
7 3) The IE agrees with the Company's selection of the winning bidder based on a
8 combination of qualitative and quantitative factors. The IE finds that the
9 Company correctly applied the evaluation criteria as defined in its RFP
10 document and followed the procedures described in its RFP document.

11
12 4) [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]

16
17 5) [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]

21
22 6) In addition, the IE finds that the Company did not give any preferential
23 treatment to the affiliate bidder in the Company's evaluation of RFP bids.

24 [REDACTED]
25 [REDACTED]

26
27
28 Q.

[REDACTED]

29 [REDACTED]

30 [REDACTED]

31 [REDACTED]

32 [REDACTED]

33 A.

[REDACTED]

34 [REDACTED]

1 [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 **Q. DID OG&E FULLY ADDRESS THE IE'S FINDINGS REGARDING THE**
9 **COMPANY'S FLEXIBLE CAPACITY RFP IN ITS DIRECT TESTIMONY?**

10 A. No. OG&E's testimony includes only a brief reference to the IE's participation in
11 monitoring the Flexible Capacity RFP which resulted in the selection of the proposed HL
12 CTs. [REDACTED]

13 [REDACTED]

14 **Q.** [REDACTED]

15 [REDACTED]

16 [REDACTED]

17 [REDACTED]

18 A. [REDACTED]

19 [REDACTED]

20 [REDACTED]

21 [REDACTED]

22 [REDACTED]

1 [REDACTED]

2 [REDACTED]

3 [REDACTED]

4 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING OG&E'S**
5 **COMPETITIVE BIDDING AND EVALUATION PROCESS FOR THE HL CTS.**

6 A. Based on information presented in OG&E's direct testimony and the IE's report on the
7 Flexible Resource RFP, the Company's selection of the HL CTS generally appears to be
8 a reasonable choice for supplying a portion of OG&E's forecasted capacity needs
9 beginning in 2027. [REDACTED]

10 [REDACTED]

11 [REDACTED]

12 [REDACTED]

13

14 **VI. COST AND PERFORMANCE OF HL CTS**

15
16 **Q. WHAT INFORMATION HAS OG&E PRESENTED TO DEMONSTRATE THE**
17 **COST-EFFECTIVENESS AND PERFORMANCE BENEFITS OF THE**
18 **PROPOSED HL CTS?**

19 A. OG&E has provided qualitative and quantitative evaluations of the 8 conforming flexible
20 resource bids which indicate that the HL CTS had the lowest cost (on a \$/kW basis) and
21 highest qualitative ranking when compared to the 7 battery storage bids.²³

22 **Q. WHAT WAS THE ORIGINAL BID COST OF THE HL CTS?**

23 See Direct Testimony of OG&E witness Kelly Riley, pages 13-14 and Confidential Exhibit KMR-7, page 4.

1 A. The original self-bid cost for the HL CTs was \$249 million (\$556/kW).

2 **Q. DID THE FINAL COST OF THE HL CTS INCREASE FROM THE ORIGINAL**
3 **SELF-BID AMOUNT OF \$249 MILLION?**

4 A. Yes. As summarized in Table 2 below, after OG&E selected the HL CTs as the winning
5 bid received in the Flexible Resources RFP based on the Company's original bid of \$249
6 million (\$556/kW), the Company increased the capital cost of the HL CTs by \$145.3
7 million (58.4%) to approximately \$394.3 million (\$880/kW).

8
9 **Table 2**
10 **Estimated Cost of HL CTs (Millions)²⁴**
11

Original Self-Bid Cost	\$249.0
<u>Added Costs:</u>	
GE Scope Increase	\$9.0
EPC Scope Increase	\$27.0
Owners Costs	\$26.0
Contingency	\$18.8
AFUDC	\$54.5
Property Taxes	\$4.2
LTSA	\$5.1
Other	<u>\$0.7</u>
	\$145.3
Total Capital Investment	\$394.3

12
13
14
15 **Q. WHAT IS THE CONCERN WITH OG&E'S REQUEST FOR PRE-APPROVAL**
16 **OF AN AMOUNT THAT EXCEEDS THE ORIGINAL SELF-BID AMOUNT**
17 **THAT WAS OFFERED FOR THE PROJECT BY \$145 MILLION?**

18 A. OG&E's request for approval of an amount for the HL CTs that exceeds the original self-
19 bid price by \$145.3 million appears to reflect improper self-dealing which, if allowed, will

24 See Exhibit SN-2, Direct Testimony workpaper of OG&E witness Jason Thenmadathil.

almost certainly discourage third party bidders from responding to future OG&E RFPs for generation resources. Moreover, as discussed further by OIEC witness Mark Garrett, the Commission's rules regarding approval and cost recovery of generation projects provide that utility self-bid proposals for generation projects must be submitted at the same time other bids are requested, may not be modified and the amount the utility shall recover for such projects without additional Commission approval is limited to the total project cost identified in the self-build proposal.

Q. WHAT IS THE FORECASTED ENERGY PRODUCTION LEVEL AND ENERGY MARGINS OF THE HL CTS?

A. The forecasted average energy production from the HL CTS is [REDACTED] MWh/year, which equates to an average capacity factor of [REDACTED].²⁵ The forecasted average energy margin of the HL CTS is approximately [REDACTED].²⁶ These forecasted energy production and margin results indicate that the HL CTS are not expected to provide significant energy value to OG&E's system.

Q. DOES OG&E HAVE ALTERNATIVES TO THE HL CTS THAT COULD SUPPLY THE COMPANY'S FORECASTED CAPACITY NEEDS BY 2027?

A. Yes. OG&E has already contracted for approximately 493 MW²⁷ of short-term purchased capacity outside of the RFP process to meet its capacity need in the summer of 2023 and has issued another RFP for purchased capacity to supply the forecasted capacity needs for the years 2024 through 2027.²⁸ It is possible that additional short-

²⁵ See Confidential Exhibit SN-3.

²⁶ Ibid.

²⁷ See Exhibit SN-4.

²⁸ See Direct Testimony of OG&E witness Kimber Shoop, page 9.

1 term capacity will be available for purchase beyond 2027; however, this option is not
2 guaranteed.

3 In addition, in response to OG&E's Existing Capacity RFP, the Company
4 received a proposal to purchase capacity and energy from a 1,220 MW existing gas-fired
5 combined cycle plant in Oklahoma, beginning in 2023. This amount of capacity would
6 have supplied OG&E's entire forecasted capacity needs through at least 2030, thereby
7 avoiding the need for the Company to purchase additional resources for the next seven
8 years. However, OG&E's testimony indicates that the Company was not able to
9 negotiate a final deal with the bidder.²⁹

10 **Q. HOW DOES THE PROPOSED COST OF CAPACITY AND ENERGY SUPPLIED**
11 **FROM THE HL CTS COMPARE TO THE COMBINED CYCLE RESOURCE BID**
12 **RECEIVED IN RESPONSE TO OG&E'S EXISTING CAPACITY RFP?**

13 A. As summarized in Table 3 below, the capital cost and energy costs of the HL CTs are
14 higher than costs of the proposed existing combined cycle resource costs, while the level
15 of capacity and forecasted energy supplied offered by the existing combined cycle
16 resource proposal are significantly higher than the HL CTs.

29 See Direct Testimony of OG&E witness Kimber Shoop, page 8.

Table 3 (Confidential)
Comparison of Cost and Performance of HL CTs
to Existing Combined Cycle Resource

A large black rectangular box redacting the content of Table 3, which was titled "Comparison of Cost and Performance of HL CTs to Existing Combined Cycle Resource".

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE COST AND PERFORMANCE OF THE HL CTs.

A. OG&E's request for pre-approval of an amount that exceeds the Company's original self-bid cost of the HL CTs by \$145.3 million conflicts with the Commission's rules governing cost recovery for utility self-bid generation proposals, and if allowed, would likely discourage third parties from bidding on future OG&E generation projects. OG&E forecasts that the HL CTs would have relatively low energy production and energy margin levels, which means the HL CTs will providing little energy value to OG&E's system. In contrast, the combined cycle project bid received in response to OG&E's Existing Capacity RFP was forecasted to provide more than ten times the level of energy and much higher energy value to OG&E's system than the HL CTs.

VII. RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS REGARDING OG&E'S REQUEST FOR APPROVAL OF THE HL CTS.

A. OG&E has a forecasted capacity need of approximately 1,125 MW by 2027 which is sufficient to justify the 448 MW of new capacity that would be provided by the proposed HL CTS. The HL CTS appear to be a reasonable choice for supplying a portion of OG&E's forecasted capacity needs beginning in 2027, however more information is needed from OG&E and the IE regarding the specific nature and impacts of OG&E's affiliate communications on the Flexible Resources RFP bid selection process, [REDACTED]. In addition, I recommend that the Company and IE be required to provide additional information explaining the reasons for OG&E's failure to negotiate a final deal to purchase capacity from a combined cycle plant which was offered in the Existing Capacity RFP. I reserve the right to supplement my testimony once additional information is provided regarding the affiliate communications issue and the negotiations surrounding the combined cycle plant bid.

Finally, as discussed further by OIEC witness Mark Garrett, I recommend that if the Commission approves OG&E's proposed HL CTS, that the pre-approval amount be limited to the Company's original \$249 million self-bid proposal and that additional project costs above \$249 million requested by OG&E for recovery be subject to review by

1 the Commission in a future base rate case after the HL CTs are completed and placed in
2 service.

3 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

4 A. Yes.

CERTIFICATE OF MAILING

This is to certify that on this 31st day of August, 2023, a true and correct copy of the above and foregoing was emailed, addressed to:

Mr. Mark Argenbright
Mr. Fairo Mitchell
Oklahoma Corporation Commission
Jim Thorpe Bldg.
2101 N. Lincoln Blvd.
Oklahoma City, OK 73105
mark.argenbright@occ.ok.gov
fairo.mitchell@occ.ok.gov
PUDenergy@occcemail.com

Mr. Jack P. Fite
9520 N. May, Suite 211
Oklahoma City, OK 73120
jfite@wcgflaw.com

Ms. Natasha Scott
Mr. Michael L. Velez
Mr. Michael S. Ryan
Mr. Justin Cullen
Oklahoma Corporation Commission
PO Box 52000
Oklahoma City, OK 73152-2000
Natasha.scott@occ.ok.gov
Michael.Velez@occ.ok.gov
Michael.ryan@occ.ok.gov
Justin.Cullen@occ.ok.gov

Ms. Madison B. Miller
400 N. Walnut Ave.
Oklahoma City, OK 73104
mmiller@ryanwhaley.com

Mr. Jack G. "Chip" Clark, Jr.
3545 NW 58th St., Ste. 400
Oklahoma City, OK 73121
cclark@cswp-law.com

Mr. William L. Humes
P.O. Box 321
Oklahoma City, OK 73101
humeswl@oge.com
burtonhl@oge.com
reginfo@oge.com

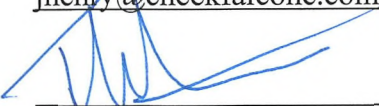
Mr. Chase Snodgrass
Ms. K. Christine Chevis
Office of Oklahoma Attorney General
313 N.E. 21st Street
Oklahoma City, Oklahoma 73105
chase.Snodgrass@oag.ok.gov
christine.chevis@oag.ok.gov
utility.regulation@oag.ok.gov

Ms. Deborah R. Thompson
Mr. Kenneth A. Tillotson
Thompson Tillotson PLLC
P.O. Box 54632
Oklahoma City, OK 73154
deborah@ttfirm.com
kenneth@ttfirm.com

Mr. J. David Jacobson
Jacobson & Laasch
212 E. 2nd St.
Edmond, OK 73034
Jdj8788@aol.com

Mr. Rick Chamberlain
P.O. Box 21866
Oklahoma City, OK 73156-1866
rick@chamberlainlawoffices.com

Mr. Ronald E. Stakem
Cheek & Falcone, PLLC
6301 Waterford Blvd., Ste. 320
Oklahoma City, OK 73118
rstakem@cheekfalcone.com
jhenry@cheekfalcone.com



Thomas P. Schroedter

Exhibit SN-1

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DON SCOTT NORWOOD
Norwood Energy Consulting, L.L.C.

P. O. Box 30197
Austin, Texas 78755-3197
scott@scottnorwood.com
(512) 297-1889

SUMMARY

Scott Norwood is an energy consultant with over 39 years of utility industry experience in the areas of regulatory consulting, resource planning, power plant operations and energy procurement. His clients include government agencies, publicly-owned utilities, public service commissions, municipalities and various electric consumer interests. Over the last 15 years Mr. Norwood has presented expert testimony on electric utility ratemaking, resource planning, and electric utility restructuring issues in over 200 regulatory proceedings in Arkansas, Georgia, Iowa, Illinois, Michigan, Missouri, New Jersey, Oklahoma, South Dakota, Texas, Virginia, Washington and Wisconsin.

Prior to founding Norwood Energy Consulting in January of 2004, Mr. Norwood was employed for 18 years by GDS Associates, Inc., a Marietta, Georgia based energy consulting firm. Mr. Norwood was a Principal of GDS and directed the firm's Deregulated Services Department which provided a range of consulting services including merchant plant due diligence studies, deregulated market price forecasts, power supply planning and procurement projects, electric restructuring policy analyses, and studies of power plant dispatch and production costs.

Before joining GDS, Mr. Norwood was employed by the Public Utility Commission of Texas as Manager of Power Plant Engineering from 1984 through 1986. He began his career in 1980 as Staff Electrical Engineer with the City of Austin's Electric Utility Department where he was in charge of electrical maintenance and design projects at three gas-fired power plants.

Mr. Norwood is a graduate of the college of electrical engineering of the University of Texas.

EXPERIENCE

The following summaries are representative of the range of projects conducted by Mr. Norwood over his 30-year consulting career.

Regulatory Consulting

Oklahoma Industrial Energy Consumers - Assisted client with technical and economic analysis of proposed EPA regulations and compliance plans involving control of air emissions and potential conversion of coal-to-gas conversion options.

Cities Served by Southwestern Electric Power Company – Analyzed and presented testimony regarding the prudence of a \$1.7 billion coal-fired power plant and related settlement agreements with Sierra Club.

New York Public Service Commission - Conducted inter-company statistical benchmarking analysis of Consolidated Edison Company to provide the New York Public Service Commission with guidance in determining areas that should be reviewed in detailed management audit of the company.

Oklahoma Industrial Energy Consumers - Analyzed and presented testimony on affiliate energy trading transactions by AEP in ERCOT.

Virginia Attorney General – Analyzed and presented testimony regarding distribution tap line undergrounding program proposed by Dominion Virginia Power Company.

Cities Served by Southwestern Electric Power Company – Analyzed and presented testimony regarding the prudence of the utility's decision to retire the Welsh Unit 2 coal-fired generating unit in conjunction with a litigation settlement agreement with Sierra Club.

Georgia Public Service Commission - Presented testimony before the Georgia Public Service Commission in Docket 3840-U, providing recommendations on nuclear O&M levels for Hatch and Vogtle and recommending that a nuclear performance standard be implemented in the State of Georgia.

Oklahoma Industrial Energy Consumers - Analyzed and presented testimony addressing power production and coal plant dispatch issues in fuel prudence cases involving Oklahoma Gas and Electric Company.

Georgia Public Service Commission - Analyzed and provided recommendations regarding the reasonableness of nuclear O&M costs, fossil O&M costs and coal inventory levels reported in GPC's 1990 Surveillance Filing.

City of Houston - Analyzed and presented comments on various legislative proposals impacting retail electric and gas utility operations and rates in Texas.

New York Public Service Commission - Conducted inter-company statistical benchmarking analysis of Rochester Gas & Electric Company to provide the New York Public Service Commission with guidance in determining areas which should be reviewed in detailed management audit of the company.

Virginia Attorney General – Analyzed and presented testimony regarding an accelerated vegetation management program and rider proposed by Appalachian Power Company.

Oklahoma Attorney General – Analyzed and presented testimony regarding fuel and purchased power, depreciation and other expense items in Oklahoma Gas & Electric Company's 2001 rate case before the Oklahoma Corporation Commission.

City of Houston - Analyzed and presented testimony regarding fossil plant O&M expense levels in Houston Lighting & Power Company's rate case before the Public Utility Commission of Texas.

City of El Paso - Analyzed and presented testimony regarding regulatory and technical issues related to the Central & Southwest/El Paso Electric Company merger and rate proceedings before the PUCT, including analysis of merger synergy studies, fossil O&M and purchased power margins.

Residential Ratepayer Consortium - Analyzed Fermi 2 replacement power and operating performance issues in fuel reconciliation proceedings for Detroit Edison Company before the Michigan Public Service Commission.

Residential Ratepayer Consortium - Analyzed and prepared testimony addressing coal plant outage rate projections in the Consumer's Power Company fuel proceeding before the Michigan Public Service Commission.

City of El Paso - Analyzed and developed testimony regarding Palo Verde operations and maintenance expenses in El Paso Electric Company's 1991 rate case before the Public Utility Commission of Texas.

City of Houston - Analyzed and developed testimony regarding the operations and maintenance expenses and performance standards for the South Texas Nuclear Project, and operations and maintenance expenses for the Limestone and Parish coal-fired power plants in HL&P's 1991 rate case before the PUCT.

City of El Paso - Analyzed and developed testimony regarding Palo Verde operations and maintenance expenses in El Paso Electric Company's 1990 rate case before the Public Utility Commission of Texas. Recommendations were adopted.

Energy Planning and Procurement Services

Virginia Attorney General – Review and provide comments or testimony regarding annual integrated resource plan filings made by Dominion Virginia Power and Appalachian Power Company.

Dell Computer Corporation – Negotiated retail power supply agreement for Dell's Round Rock, Texas facilities producing annual savings in excess of \$2 million.

Texas Association of School Boards Electric Aggregation Program – Serve as TASB's

consultant in the development, marketing and administration of a retail electric aggregation program consisting of 2,500 Texas schools with a total load of over 300 MW. Program produced annual savings of more than \$30 million in its first year.

Oklahoma Industrial Energy Consumers - Analyzed and drafted comments addressing integrated resource plan filings by Public Service Company of Oklahoma and Oklahoma Gas and Electric Company.

S.C. Johnson - Analyzed and presented testimony addressing Wisconsin Electric Power Company's \$4.1 billion CPCN application to construct three coal-fired generating units in southeast Wisconsin.

Oklahoma Industrial Energy Consumers - Analyzed wind energy project ownership proposals by Oklahoma Gas and Electric Company and presented testimony addressing project economics and operational impacts.

City of Chicago, Illinois Attorney General, Illinois Citizens' Utility Board - Analyzed Commonwealth Edison's proposed divestiture of the Kincaid and State Line power plants to SEI and Dominion Resources.

Georgia Public Service Commission - Analyzed and presented testimony on Georgia Power Company's integrated resource plan in a certification proceeding for an eight unit, 640 MW combustion turbine facility.

South Dakota Public Service Commission - Evaluated integrated resource plan and power plant certification filing of Black Hills Power & Light Company.

Shell Leasing Co. - Evaluated market value of 540 MW western coal-fired power plant.

Community Energy Electric Aggregation Program – Served as Community Energy's consultant in the development, marketing and start-up of a retail electric aggregation program consisting of major charitable organizations and their donors in Texas.

Austin Energy – Conducted competitive solicitation for peaking capacity. Developed request for proposal, administered solicitation and evaluated bids.

Austin Energy - Provided technical assistance in the evaluation of the economic viability of the

City of Austin's ownership interest in the South Texas Project.

Austin Energy - Assisted with regional production cost modeling analysis to assess production cost savings associated with various public power merger and power pool alternatives.

Sam Rayburn G&T Electric Cooperative - Conducted competitive solicitation for peaking capacity. Developed request for proposal, administered solicitation and evaluated bids.

Rio Grande Electric Cooperative, Inc. - Directed preparation of power supply solicitation and conducted economic and technical analysis of offers.

Virginia Attorney General – Review and provide comments or testimony regarding annual demand-side management program programs and rider proposals made by Dominion Virginia Power and Appalachian Power Company.

Austin Energy – Conducted modeling to assess potential costs and benefits of a municipal power pool in Texas.

Electric Restructuring Analyses

Electric Power Research Institute - Evaluated regional resource planning and power market dispatch impacts on rail transportation and coal supply procurement strategies and costs.

Arkansas House of Representatives – Critiqued proposed electric restructuring legislation and identified suggested amendments to provide increased protections for small consumers.

Virginia Legislative Committee on Electric Utility Restructuring – Presented report on status of stranded cost recovery for Virginia's electric utilities.

Georgia Public Service Commission – Developed models and a modeling process for preparing initial estimates of stranded costs for major electric utilities serving the state of Georgia.

City of Houston – Evaluated and recommended adjustments to Reliant Energy's stranded cost proposal before the Public Utility Commission of Texas.

Oklahoma Attorney General – Evaluated and advised the Attorney General on technical, economic and regulatory policy issues arising from various electric restructuring proposals considered by the Oklahoma Electric Restructuring Advisory Committee.

State of Hawaii Department of Business, Economics and Tourism – Evaluated electric restructuring proposals and developed models to assess the potential savings from deregulation of the Oahu power market.

Virginia Attorney General - Served as the Attorney General's consultant and expert witness in the evaluation of electric restructuring legislation, restructuring rulemakings and utility proposals addressing retail pilot programs, stranded costs, rate unbundling, functional

separation plans, and competitive metering.

Western Public Power Producers, Inc. - Evaluated operational, cost and regional competitive impacts of the proposed merger of Southwestern Public Service Company and Public Service Company of Colorado.

Iowa Department of Justice, Consumer Advocate Division - Analyzed stranded investment and fuel recover issues resulting from a market-based pricing proposal submitted by MidAmerican Energy Company.

Cullen Weston Pines & Bach/Citizens' Utility Board - Evaluated estimated costs and benefits of the proposed merger of Wisconsin Energy Corporation and Northern States Power Company (Primergy).

City of El Paso - Evaluated merger synergies and plant valuation issues related to the proposed acquisition and merger of El Paso Electric Company and Central & Southwest Company.

Rio Grande Electric Cooperative, Inc. - Analyzed stranded generation investment issues for Central Power & Light Company.

Power Plant Management

City of Austin Electric Utility Department - Analyzed the 1994 Operating Budget for the South Texas Nuclear Project (STNP) and assisted in the development of long-term performance and expense projections and divestiture strategies for Austin's ownership interest in the STNP.

City of Austin Electric Utility Department - Analyzed and provided recommendations regarding the 1991 capital and O&M budgets for the South Texas Nuclear Project.

Sam Rayburn G&T Electric Cooperative - Developed and conducted operational monitoring program relative to minority owner's interest in Nelson 6 Coal Station operated by Gulf States Utilities.

KAMO Electric Cooperative, City of Brownsville and Oklahoma Municipal Power Agency - Directed an operational audit of the Oklaunion coal-fired power plant.

Sam Rayburn G&T Electric Cooperative - Conducted a management/technical assessment of the Big Cajun II coal-fired power plant in conjunction with ownership feasibility studies for the project.

Kamo Electric Power Cooperative - Developed and conducted operational monitoring program for client's minority interest in GRDA Unit 2 Coal Fired Station.

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Northeast Texas Electric Cooperative - Developed and conducted operational monitoring program concerning NTEC's interest in Pirkey Coal Station operated by Southwestern Electric Power Company and Dolet Hills Station operated by Central Louisiana Electric Company.

Corn Belt Electric Cooperative/Central Iowa Power Cooperative - Perform operational monitoring and budget analysis on behalf of co-owners of the Duane Arnold Energy Center.

PRESENTATIONS

Quantifying Impacts of Electric Restructuring: Dynamic Analysis of Power Markets, 1997 NARUC Winter Meetings, Committee on Finance and Technology.

Quantifying Costs and Benefits of Electric Utility Deregulation: Dynamic Analysis of Regional Power Markets, International Association for Energy Economics, 1996 Annual North American Conference.

Exhibit SN-2

HL CTs Final Capital Cost
Source: Jason Thenmadthil Workpaper
"OK Flex Generation RFP - HSL CTs (2027-2028 RR).xlsx"

Oklahoma Gas & Electric**Capital Investment for Horseshoe Lake Combustion Turbines**

	Total Capital Investment	Depr Rate - Estimate	Depr Exp - Monthly
	2027		
Contract Costs for (2) HSL	330,500,000		
+ AFUDC	54,541,236		
+ Capitalized Ad Valorem	4,180,656		
Total Depreciable Capital	389,221,892		
	44,870,244	2.87%	107,315
	7,856,686	2.78%	18,201
	270,198,068	3.05%	686,753
	32,437,011	2.92%	78,930
	25,948,825	2.86%	61,845
	7,911,059	3.05%	20,107
	389,221,892		
+ Long Term Service Agreement	5,110,260		
Total Capital Investment	394,332,152		973,151

Exhibit SN-3
CONFIDENTIAL

Horseshoe Lake Energy Production and Margins
Source: Kelly Riley Conf Exh WP:
NPVCC FlexRes RFP - Ex10 - Base (Confidential)



Exhibit SN-4

Oklahoma Industrial Energy Consumers

Data Request OIEC 01-04

Docket No. PUD 2023-000038

OIEC 01-04

Please provide documentation supporting OG&E's selection of the 360 MW capacity purchase in 2023, including any solicitation documents, summary of proposals received, the agreements governing the terms and pricing for the purchase, alternatives considered, and economic analysis supporting the transaction.

Response*

To satisfy its Resource Adequacy requirement, OG&E has contracted for a total of 493 MW of capacity purchases for the summer of 2023. The RFP issued for 2023 summer capacity is attached as OIEC 1-4_Att1, along with a list of responses to the RFP, attached as OIEC 1-4_Att2_Conf through Att9_Conf. As OG&E was evaluating the RFP responses, Resource Adequacy policy changes were being developed and approved by SPP, most notably the increase in the Planning Reserve Margin Requirement from 12% to 15% for all of SPP. Some of the documents responsive to this request contains confidential information and will be provided to the parties subject to the terms of the protective order.

Response provided by:	<u>Kelly Riley</u>
Response provided on:	<u>7/10/2023</u>
Contact & Phone No:	<u>Jill Butson -- (405) 553-3285</u>

*By responding to these Data Requests, OG&E is not indicating that the provided information is relevant, or material and OG&E is not waiving any objection as to relevance or materiality or confidentiality of the information or documents provided or the admissibility of such information or documents in this or in any other proceeding.