Exhibit No.: _____
Issue(s): Asbury/Winter Storm URI/Wind
Witness/Type of Exhibit: Robinett/Rebuttal
Sponsoring Party: Public Counsel
Case No.: ER-2021-0312

REBUTTAL TESTIMONY

OF

JOHN A. ROBINETT

Submitted on Behalf of the Office of the Public Counsel

THE EMPIRE DISTRICT ELECTRIC COMPANY
D/B/A LIBERTY

FILE NO. ER-2021-0312

*** ***

Denotes Highly Confidential Information that has been Redacted

December 20, 2021

PUBLIC

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Request of The Empire District Electric Company d/b/a Liberty for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in its Missouri Service Area	))))))	Case No. ER-2021-0312

AFFIDAVIT OF JOHN A. ROBINETT

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

John A. Robinett, of lawful age and being first duly sworn, deposes and states:

1. My name is John A. Robinett. I am a Utility Engineering Specialist for the Office of the Public Counsel.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony.

3. I hereby swear and affirm that my statements contained in the attached testimony are true and correct to the best of my knowledge and belief.

John A. Robinett
Utility Engineering Specialist

Subscribed and sworn to me this 20th day of December 2021.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

TIFFANY HILDEBRAND
My Commission Expires
August 8, 2023
Cole County
Commission #15637121

Tiffany Hildebrand
Notary Public

My Commission expires August 8, 2023.

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REBUTTAL TESTIMONY
OF
JOHN A. ROBINETT
LIBERTY UTILITIES EMPIRE DISTRICT ELECTRIC COMPANY
CASE NO. ER-2021-0312

Q. What is your name and what is your business address?

A. John A. Robinett, PO Box 2230, Jefferson City, Missouri 65102.

Q. Are you the same John A. Robinett who filed direct testimony on behalf of the Missouri Office of the Public Counsel ("OPC") in this proceeding?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. I provide a more complete history of Liberty's investments at its Asbury facility than Liberty consultant Mr. Frank C. Graves does in his direct testimony.[1] My source for that history is Liberty's depreciation study from Case No. ER-2016-0023. That history supports OPC witness Dr. Geoff Marke's recommended treatment of Liberty's unrecovered investment balance in its retired Asbury Unit 1 generating plant and associated retired facilities. I provide Liberty's Asbury Unit 1 monthly heat rates based on fuel reports Liberty provided to the Commission. They show the historical efficiency of Asbury Unit 1, and how that efficiency changed as Liberty changed how it operated the unit in 2018. Finally, to help put the magnitude of Liberty's Storm Uri costs in perspective, I suggest what Missouri ratepayers could have received in terms of physical generating assets available to generate electricity for the costs Liberty incurred for electricity during Storm Uri.

[1] To avoid confusion, I use the name "Liberty" to refer to The Empire District Electric Company before and after the company changed its name to Liberty.

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Historical Asbury Investment

Q. Did Liberty present a full history of its investments at Asbury?

A. No.

Q. Is understanding the capital spend at Asbury over its lifetime important?

A. Yes.

Q. Why?

A. The Commission should be aware that there are additions and retirements that occur over the life of a power plant to maintain the operation of the unit which are referred to in the depreciation world as interim additions and retirements. In addition to those investments, there are large infrequent investments such as those Liberty made over the life of Asbury to meet environmental rules and regulations. Each of these environmental investments was accompanied by an extension to the projected retirement date of the power plant.

Q. Does Liberty consultant Mr. Frank C. Graves present a full historical review of Liberty's investment in Asbury Unit 1 in his direct testimony?

A. No, Mr. Graves primarily focuses on Liberty's 2008 Selective Catalytic Reduction ("SCR") installation investment and 2014 Air Quality Control Systems ("AQCS") addition investment in 2014.

Q. Are those the only years where Liberty added to its investment in Asbury?

A. No. These two investments equate to 62%[2] of Liberty's plant-in-service cost for Asbury at the time Liberty retired Asbury. Liberty made routine additions over the course of Asbury operating life which can been seen in the following graphs.

[2] Case No ER-2021-0312 Liberty Direct Testimony of witness Frank C. Graves, Table 1 Page 5.

Q. Why were these investments important?

A. As I previously discussed in my direct testimony, the life extension of Asbury related to the SCR 2008 addition moved the projected Asbury Unit 1 retirement date from 2014 to 2030, a projected retirement date which ultimately was not actually achieved. Additionally, the 2014 AQCS investment further extended the projected life of Asbury from 2030 to 2035, a new retirement date which was also not achieved.

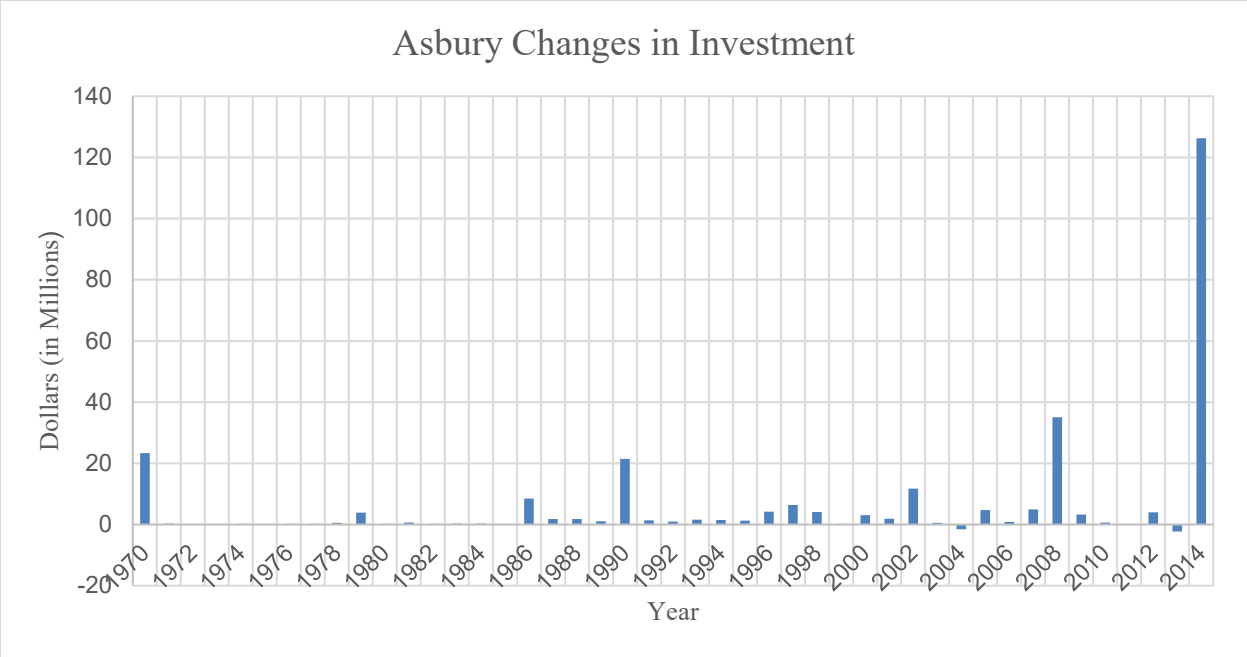
Q. Did Liberty's ratepayers realize the full benefit of Liberty's investment in these environmental upgrades of 2008 and 2014?

A. No. The SCR investment of 2008 was to extend the projected retirement date from 2014 to 2030, but, ultimately, the coal unit ceased generating electricity in December of 2019, still eleven years short of the 2030 projected retirement date. The 2014 installation of the AQCS further extended the projected retirement date from 2030 to 2035. Ultimately, ratepayers only received five years of the projected life and value of the AQCS investment.

Q. What does the immediately following graph labeled, "Asbury Changes in Investment" below show?

A. This graph depicts the scale of Liberty's investments and when it made them over the life of Asbury. This graph shows that Liberty made four very large significant investments in that facility. The first is the original cost to build the facility in 1970. The second is the 1989 conversion of the facility to make it capable of burning western coal. The third is the addition of the SCR in 2008, which increased plant in service by approximately 30% based on the investment number from Mr. Graves' Table 1 on page 5 of his direct testimony. The fourth, final, and most significant investment came in 2014 with the addition of the AQCS,

an investment that doubled Liberty's plant-in-service investment at Asbury. Data for this graph was sourced from the 2016 depreciation study submitted to the Commission in Case No. ER-2016-0023.



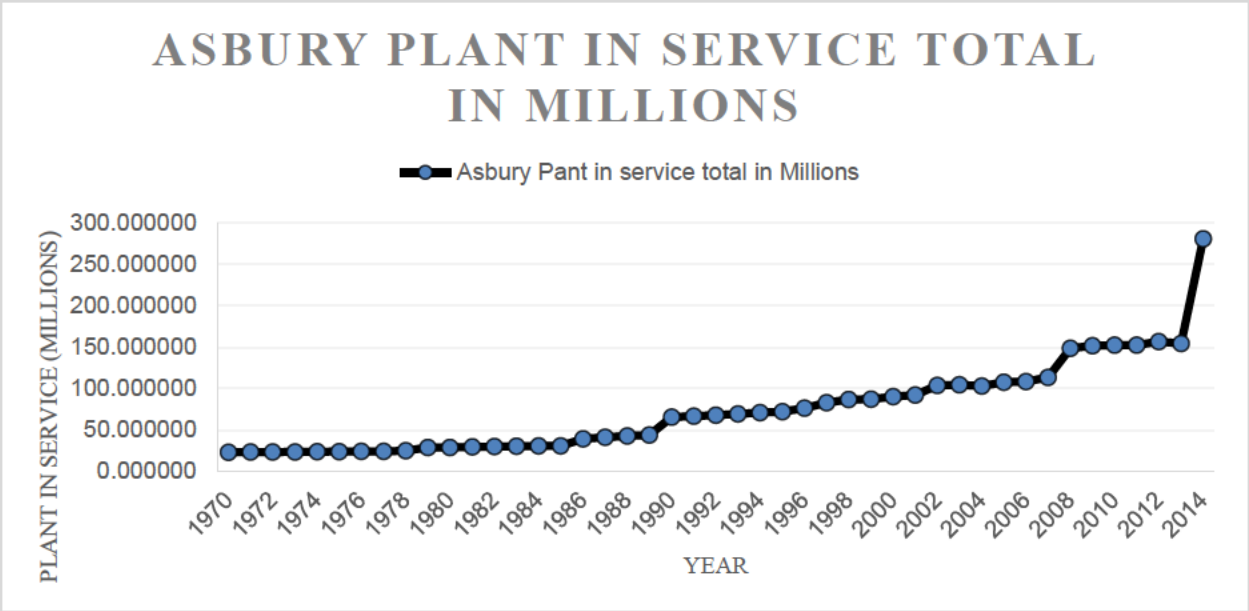
Q. What does the below graph labeled, "Asbury Plant in Service Total in Millions" show?

A. Liberty's investment in Asbury annually over time.

Q. Why did you create this graph?

A. I created this graph to give the Commission a running total of the plant-in-service of Asbury. Data for this graph was pulled from the 2016 depreciation study performed by

Black & Veatch on behalf of Liberty in Case No. ER-2016-0023.



Q. Why is the running total of Liberty's investment in Asbury important?

A. This gives the Commission and others that view this graph an understanding that there is continual investment occurring at the power plants. This also illustrates when the significant investments are made by a drastic upward change in the slope of the line. When reviewing the above graph it becomes apparent that Liberty significantly increased the plant in service balance at Asbury in 2014. The AQCS investment of 2014 doubled the total 1970-2013 investment in Asbury. Table 1 Current Net Book Value at Asbury found at Page 5 of Mr. Graves' testimony presents original cost and estimated accumulated depreciation. The table then calculates an estimated net book value which is original cost less the estimated accumulated depreciation reserves of the AQCS, SCR, and all other Asbury equipment. February 29, 2020, is the day before Liberty booked the retirement for accounting purposes and de-committed Asbury from the Southwest Power Pool Market. As of February 29, 2020, the AQCS investment at Asbury was $142 million of a total

investment of $283 million. As of February 29, 2020, the AQCS estimated accumulated depreciation reserves at Asbury was $20 million of a total estimated accumulated depreciation reserve of $84 million. The estimated net book value for Asbury AQCS was $122 million, Asbury SCR was $23 million out of a total Asbury estimated book value of $199 million.

Q. Why does this graph end with 2014?

A. I do not have data after 2014. Liberty has changed depreciation consultants since the 2016 depreciation study was performed by Black & Veatch. The current consultant's study no longer contains a page that shows the historical additions and retirements by account for each generating unit as the study by Black & Veatch previously did. This historical additions and retirements page also projected future capital investments that would need to be made by account and year for the facility. The new depreciation consultant's study does not include a schedule that projects future expenditures at the generating facility.

Q. What should the Commission understand about Liberty's historical investments at its Asbury facility?

A. The Commission's take away should be that ratepayers were asked to pay for environmental upgrades that were meant to extend the useful life of the facility. However, Asbury did not reach the projected useful life that was to occur based on the environmental additions. Ratepayers are being asked to continue to pay for Asbury when they did not receive the full benefit of the upgrades with the significant life extensions that came with them. OPC witness Dr. Geoff Marke is not recommending that the SCR investment should not be recovered, even though ratepayers did not receive the full benefit promised with that

expenditure. What Dr. Marke is asking is that what Liberty has not recovered for Asbury not be considered as rate base, and that Liberty not earn a return on it. Dr. Marke additionally recommends that Liberty not recover any more through customer rates for the unrecovered AQCS investment in Asbury.

Asbury Efficiency

Q. What is the heat rate of a generating unit?

A. The heat rate is a measure of generating station thermal efficiency, generally expressed in Btu per net kilowatt-hour (Btu/kWh). It is computed by dividing the total Btu content of fuel burned for electric generation by the resulting net kilowatt-hours of electricity generated.

Q. What is the importance of heat rate testing?

A. Staff discussed the importance of minimum equipment performance standards in the fuel adjustment clause (FAC) rulemaking case, File No. EX-2006-0472.[3]

> *Concern: Some stakeholders believe that minimum equipment performance standards are needed in these rules.*
>
> *Staff Response: Staff agrees that equipment performance standards should be a part of these rules and has included in the proposed rules requirements to develop generating unit efficiency testing and monitoring procedures. Staff will, as a result of receiving this data, have the ability to monitor each electric utilities' power plants in terms of their capability to efficiently convert fuel to electricity. Any observed reductions over time may be an indication of the utility's need to implement programs to improve efficiency. Staff views this as a very important and necessary detail since the efficiency of each electric utility's power plants directly relates to each electric utility's fuel and purchased power costs."*

[3] Staff Testimony in Support of and Suggested Changes to 4 CSR 240-3.161 and 4 CSR 240-20.090 EFIS item no. 15 Filed 9/7/2006 Attachment A-9 through A-10

Any intervening party has the ability to monitor the efficiency performance of the plants over time and can identify changes that may exceed normal wear and tear. Parties can then discuss root causes and means to address the underlying issues.

Q. What is the purpose of the requirement of Commission Rule 20 CSR 4240-20.090(2(A)15.[4]that heat rate tests of no more than 24 months prior to the filing of a rate case?

A. Heat rate tests and results are a useful tools for monitoring the generation plant maintenance practices of a utility. While over their lives generating facilities generally become less efficient, sharp changes in the efficiencies may indicate a change in the philosophy followed in maintaining a generating facility, and should draw inquiry of the root causes of those changes. This information is a filing requirement so that the parties can evaluate changes in efficiency output.

Q. Did Liberty change how it operated Asbury in an attempt to improve Asbury's market performance?

A. Yes. However, at Page 13 of Mr. Shaen T. Rooney's direct testimony, he discusses changes made to improve Asbury's market performance and mentions one important factor that would not be part of this effort, that being the efficiency of the unit or its heat rate.[5]

[4] 20 CSR 4240-20.090(2)A.15. A level of efficiency for each of the electric utility's generating units determined by the results of heat rate/efficiency tests or monitoring that were conducted or obtained on each of the electric utility's steam generators, including nuclear steam generators, heat recovery steam generators, steam turbines and combustion turbines within twenty-four (24) months preceding the filing of the general rate increase case.
A. The results should be filed in a table format by generating unit type, rated megawatt (MW) output rating, the numerical value of the latest result and the date of the latest result;
B. The electric utility shall provide documentation of the actual test/monitoring procedures. The electric utility may, in lieu of filing the documentation of these procedures with the commission, provide them to the staff, OPC, and to other parties as part of the workpapers it provides in connection with its direct case filing. If the electric utility submits
the results in workpapers, it will provide a statement in its testimony as to where the results can be found in workpapers;
[5] ER-2021-0312 Liberty Witness Shaen T. Rooney Direct Testimony page 13 line 21 through page 14 line 7.

Q. Did any Liberty witness discuss other concerns about how Liberty was operating its Asbury Unit 1?

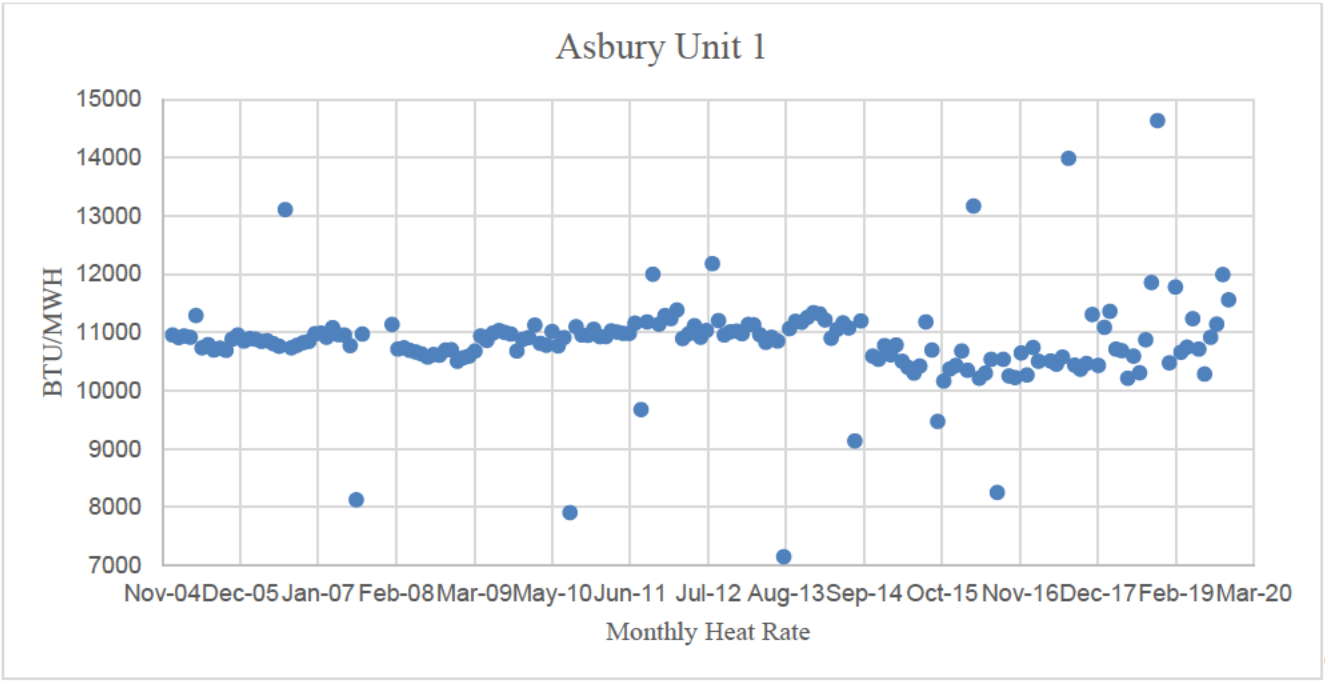
A. Yes. Mr. Shaen T. Rooney discusses at page 14 of his direct testimony that during the final two years of operation of Asbury the unit experienced a record number of starts, and cycling fatigue became a concern.

Q. Does the historical heat rate data you reviewed and compiled support Mr. Rooney's stated cycling fatigue concern?

A. I do not know for certain, but the efficiency of Asbury Unit 1 declined starting in 2018 with the change in how Liberty operated the unit. The Commission has data back to January 2005 that has been submitted to the Commission as a non-case related filing for monthly fuel reports as a requirement to Commission rule 20 CSR 4240-3.190. When that data is plotted for Asbury Unit 1 it becomes evident from the graph that starting in 2018 the Asbury unit's efficiency begins to vary and decrease as its heat rates fluctuated more and increased in value. That graph appears below and is titled, "Asbury Unit 1."

Q. Are there any other conclusions that can be drawn from heat rate data?

A. With the addition in 2014 of the Air Quality Control System ("AQCS") and a turbine upgrade, Asbury Unit 1 became more efficient at creating electricity from coal. The unit remained more efficient than prior to the AQCS addition until the time Liberty decided to operate Asbury differently in an attempt to improve Asbury's market performance.



[6]

Q. How does this heat rate graph compare with the Net Capacity Factor testimony from Liberty witness Mr. Aaron J. Doll?

A. It doesn't really tie to Mr. Dolls' net capacity factor. Review of Asbury heat rates show improved efficiency over the time frame 2014 through 2017, even as the net capacity factor is decreasing. It is only in 2018 when Liberty makes operational changes in how it ran Asbury that the reduced net capacity factor trends down as Asbury's efficiency declines (increase in heat rate value).

[6] December 2019 heat rate data omitted from the graph as number was an extreme outlier (122,121 BTU/KWH) and skewed the scaling of the data dispersion. This heat rate is likely due to scrapping of base mat coal to finish off all usable coal at the facility.

Q. What should the Commission conclude from this observation that Asbury's net capacity factor trended down as it efficiency declined?

A. Asbury was an efficient unit; it only became less efficient as Liberty decided efficiency no longer mattered for the unit. Liberty in 2018 decided efficiency was less of a concern and adjusted how they operated the unit to make it a more quickly dispatchable unit to help follow intermittent generating facilities that drop off or spike in generating as their needed condition goes and comes throughout the day and night. Asbury was not designed to rapidly ramp up and down its generation production. Asbury was not designed to come up to temperature quickly and then rapidly cool back down; it was designed to come on and run for long periods of time and provide stable consistent energy which is what it did prior to 2018.

Unrealized Opportunity

Q. How much are ratepayers being asked to pay for Winter Storm Uri costs in this rate case?

A. Based on the direct testimony of Liberty witness Ms. Charlotte Emery, Liberty is seeking to recover at least $182 million for Winter Storm Uri.[7]

Q. For perspective, what could Liberty have gotten in terms of additional generating capacity had it invested $182 million in generating resources?

A. Based on Staff's direct accounting schedules, Liberty's net investment in the following plants that Liberty currently owns is less than the $182 million Liberty incurred to supply electricity to its customers during Storm Uri—a storm that lasted less than two weeks. As of June 30,

[7] The increase to rate base provided on page 21 in the direct testimony of Liberty witness Emery is $181,692,727 is the amount included in rate base after accounting for the CWC impact.

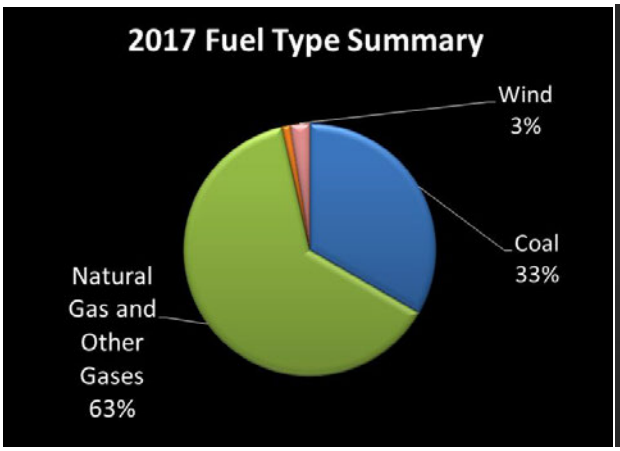
2021, Liberty's plant-in-service for La Russell Energy Center units 1-4 was $118 million. Liberty made a $3 million investment in a spare engine and two spare power turbines for its La Russell Energy Center units 3 and 4; the total investment for units 3 and 4 are $68 million dollars (2003 in service) for 98 MW of capacity. As an additional point of reference Liberty's total investment in Riverton 12 Combined Cycle unit is just shy of $223 million dollars (CT in service 2007 converted to Combined Cycle in 2016) and is 250 MW of capacity.

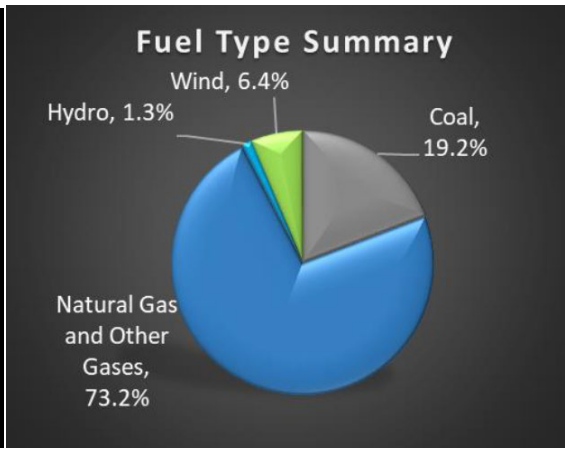
Q. Are you aware of any other generating plant investment that supports your point?

A. Yes. For this information I rely on the direct testimony of Liberty witness Shaen T. Rooney. At page 11 beginning at line 22 Mr. Rooney discusses Liberty's investments in its other generating assets that are to be included in rate base that Liberty has incurred since Liberty's last general electric rate case. Liberty has invested a little over $56 million in the other generating units since that case. Part of that investment, as discussed by Mr. Rooney, was a $3 million investment in a spare engine and two spare power turbines for Liberty's La Russell Energy Center. As discussed above, Energy Center units 3 and 4 have a combined current plant in service value of approximately $68 million. Additionally, Mr. Rooney discusses Liberty's investment of $3.5 million in the Prosperity Solar Farm, which is a 2.2 MW direct current photovoltaic solar energy conversion system. Just using simple math based on Storm Uri costs, Liberty customers could have had at least 50 Prosperity solar facilities which equates to approximately 100MW of solar capacity. This estimate is based on the value of Prosperity, not taking into account whether a system that big could have achieved economies of scale and received a discount on the solar panels needed for the facility. It additionally does not take into account siting a facility that large.

Q. Has anything been done to put Liberty in a better position to respond if another winter storm were to hit this winter?

A. I am not aware of any Liberty actions to mitigate the risk of extreme fuel and purchase power costs experienced during Storm Uri reoccurring, OPC has issued data requests seeking this information but has not received Liberty's responses as of the time of this testimony. Certain fact conditions may actually be worse now than prior to Storm Uri. Natural gas prices are higher now, and the SPP market has continued to see an increase in new wind facilities that provide intermittent power. SPP has likely continued to experience the retirements of historical baseload coal facilities. The conditions are set for a heavy reliance on natural gas supply which became one of the critical factors during Storm Uri. Specifically at Liberty from 2017 to now the utility has become less dependent on coal for generation but has increased its reliance on natural gas as can be seen by the following graphs from the 2017 and 2021 SPP Resource Adequacy Report.





As you can see from these pie charts, Liberty's reliance on natural gas has increased from 63% in 2017 to just over 73% in 2021, while coal has dropped from 33% in 2017 to just over 19% in 2021.

Q. What conclusions should the Commission draw from your testimony?

A. Ratepayers are being asked to pay for Winter Storm Uri costs that largely are the costs of electricity from the SPP market for a week, but where those customers will receive zero long-term benefit from these costs. Liberty could have invested this money in generation facilities that may have been able to reduce the impact winter Storm Uri had on Liberty's customers, or have upgraded a portion of its transmission and/or distribution system to help reduce congestion that exists in Liberty's Missouri service territory.

Missouri Wind Projects

Q. Why did Tenaska execute its right to terminate the partnership on the Missouri Wind Farms?

A. Based on the direct testimony of Liberty witness Todd Mooney at page 15 line 8-12, Tenaska's decision to terminate its role in the projects was related to the Southwest Power Pool not issuing interconnection agreements for the North Fork Ridge and Kings Point Wind Projects in a timely manner, and because the U.S. Army Corps of Engineers did not timely issue the 404 Permits.

Q. What type of experience does Tenaska have developing wind farms?

A. Liberty in Case No EA-2019-0010 laid out the experience of Tenaska managing and constructing wind projects. Below is the Direct Testimony of Todd Mooney from that case beginning at page 7 line 11 through page 12 line 17.

> **Q. PLEASE DESCRIBE TENASKA'S EXPERIENCE DEVELOPING WIND GENERATION.**
>
> A. Tenaska, based in Omaha, Nebraska, is a leading independent power producer in the United States. Ranked by Forbes among the largest private U.S. companies, Tenaska has plant and office locations across the United States and in Canada. The company has developed more than 10,000 megawatts of fossil-fueled and renewables power generation projects, both

in the United States and internationally, and has vast experience owning, operating and managing these types of assets.

Currently, Tenaska has approximately 686 MW of wind projects in mid- to advanced-stage wind development in the United States and in excess of 430 MW of large scale and distributed solar generation projects developed and in operation. Tenaska has successfully developed and now owns and manages operation of two utility-scale solar projects in Southern California – each of which was the largest commercially financed solar project in the United States at the time.

Tenaska's Strategic Development & Acquisitions Group ("SDA") brings the combined resources of Tenaska to bear when working with customers to meet their power generation needs. In addition to providing expertise in siting, transmission interconnection, permitting, financing and construction management, Tenaska can assist customers in fuel acquisition and transport, project operations and energy marketing. The SDA team offers extensive knowledge in structuring and evaluating agreements, including partnerships, revenue contracts and land leases; an in-house environmental and legislative team; and the financial stability that is driven by conservative utilization of debt and tax equity. Development team leaders have been directly responsible for more than 8 gigawatts of renewable power development and purchased power agreement origination, with substantial focus on wind generation.

Q. Do Liberty Utilities Company ("LUCo") or Liberty have the same experience as Tenaska for constructing wind farms when LUCo stepped into Tenaska's role under the wind projects' construction contracts?

A. No. Based on my knowledge Liberty had zero construction experience with wind turbines, in fact Liberty's only experience with wind turbines was two wind purchase power agreements—Elk River and Meridian Way.

Q. Did LUCo pay to assume Tenaska's contractual risks when Tenaska executed its right to terminate its contractual obligations?

A. Yes.

Q. How much did LUCo pay to assume Tenaska's contractual risks?

A. According to Liberty's response to OPC data request number 8050 LUCo payed ***_____ _____ ***

Q. Is LUCo receiving the same compensation that Tenaska was entitled to under the construction contracts?

A. I do not know.

Q. Why should Liberty ratepayers be responsible for Tenaska's contractual exit fees?

A. They should not. Liberty's ratepayers, at a minimum, should not be responsible for *** _____ _____ *** To the extent that LUCo received a development profit it will not retain it per the direct Testimony of Mr. Todd Mooney in this case at page 16 lines 11-17. If profits are returned to Liberty they should be used as accumulated depreciation reserve as an offset to original plant in service, or Liberty could write down the original cost being sought for the Missouri wind farms by this amount. Attached as Schedule JAR-R-1HC is Liberty's response to OPC data request 8050 which details the total purchase sales agreement proceeds or expenses for the Missouri wind projects.

Q. Should Liberty ratepayers be required to pay any development fees that LUCo incurred after it replaced Tenaska in the construction contracts?

A. No. To the extent there are development fees that LUCo wants to shift to Liberty it is inappropriate to saddle ratepayers with them as this is a risk that Liberty customers would not be charged if not for LUCo stepping in for Tenaska.

Q. What is the revenue requirement impact of your recommendation to disallow recovery of Tenaska's contract exit fees?

A. The depreciation rates for Liberty's wind assets are 3.33% which are based on 30-year lives with no net salvage. The revenue requirement impact would be ***_____*** times 3.33% plus a portion for return on the investment. This would equate to a revenue requirement reduction of approximately ***_____ ***.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

Case No. ER-2021-0312

Schedule JAR-R-1 to John A. Robinett's Rebuttal Testimony has been deemed "Highly Confidential" in its entirety