

This Integrated Resource Plan represents a snapshot of an ongoing resource planning process using current business assumptions. The planning process is constantly evolving and may be revised as conditions change and as new information becomes available. Before embarking on any final strategic decisions or physical actions, the Companies will continue to evaluate alternatives for providing reliable energy while complying with all regulations in a least-cost manner. Such decisions or actions will be supported by specific analyses and will be subject to the appropriate regulatory approval processes.

Recommendations in PSC Staff Report on the Last IRP – Case No. 2011-00140

Load Forecasting

Staff recommends that LG&E/KU report on how new and pending environmental requirements have been incorporated into their load forecasts and related risk analysis in the next IRP.

The load forecasts do not explicitly incorporate new and pending environmental requirements. However, the forecast models as described in Section 5.(2) and Section 7.(7) (c) incorporate price and economic series to take into account the changes in economic conditions resulting from such environmental requirements.

The risk scenarios described in Section 5.(3) show the various impacts of positive or negative changes in economic conditions.

Staff also recommends that the Companies' efforts to further refine and integrate their load forecasting process be continued where appropriate and that they report on these efforts in their next IRP.

As stated in Section 6 (Load Forecast, Reason for Forecast Changes), some minor changes in forecasting methodology were incorporated in the 2014 IRP forecasts to streamline and further integrate the forecasting process while maintaining or enhancing the consistency of data inputs and the quality of the forecast. Please see Section 6 for a complete discussion of those changes.

Staff recommends that LG&E/KU discuss the impact on demand of recent and projected increases in the price of electricity to their customers in the next IRP. The price elasticity of the demand for electricity should be fully examined and a sensitivity analysis performed.

The price elasticity of demand used in the 2014 IRP forecast for residential customers is -0.1 and the price elasticity of demand used in the 2014 IRP forecast for commercial customers is -0.05. The values stated are specific to the Metrix ND statistically adjusted end-use (SAE) model, which is used for residential and commercial forecasting. These models capture additional price responsiveness by accounting for changes in appliance efficiency. Therefore when using -0.1 and -0.05 for residential and commercial elasticity of demand as an input, the SAE model yielded results that were consistent with historical company energy consumption and provided a reasonable forecast.

Demand Side Management

The Staff encourages the Companies to continue to review new possible DSM/EE programs and seek ways to expand the current approved DSM/EE plan.

In an effort to review new possible DSM/EE programming and seek ways to expand current DSM/EE programming, the Companies retained Cadmus Group to analyze the Companies existing DSM/EE program portfolio for possible enhancements, additions, or revisions. Cadmus performed its analysis with input from the Companies and their EE Advisory Group, and drafted the Program Review to provide the results of its analysis to the Companies. Cadmus performed the Program Review contemporaneously with the EE Potential Study, and included a review of the Companies' existing programming, a gap analysis, and recommendations for programming going forward. The objective of the Program Review was to provide options for consideration to improve program efficiency, support program expansion or capture higher energy savings. Many of the recommendations presented in the Program Review have been incorporated in the Proposed DSM/EE Program Plan in Case No. 2014-00003. In addition, the Companies met with their EE Advisory Group to obtain feedback about existing, proposed, and new programming concepts.

The Staff recommends that the Companies continue to educate customers and to promote the availability of and participation in DSM/EE programs. Such participation represents one way in which customers can impact the degree to which ever-increasing energy costs impact their electric bills.

The Companies understand the importance of ongoing customer education. As such, the Companies filed with the Commission in Case No. 2014-00003 its DSM/EE Program Plan which requests extension of its Customer Education and Public Information Program through 2018. The Customer Education and Public Information Program increases customer awareness and encourage utilization of energy efficiency products and services. Both current and potential future consumers learn and understand the cost advantages of addressing electrical system load growth by embracing energy efficiency and demand response programs relative to the higher costs associated with adding generating assets and environmental compliance. The program's continuing efforts will inform consumers that energy efficiency initiatives can provide opportunities for them to maintain their comfort and level of service while reducing energy consumption. The program will also continue to inform that participation in developed energy efficiency programs costs less than construction of new power plants and has less negative impact on utility rates and the environment.

The Staff recommends that the Companies continue to define and improve procedures to evaluate, measure, and verify both actual costs and benefits of energy savings based on the actual dollar savings and energy savings.

The Companies recognize the value of having a continuous improvement model for programming and practice evaluation, measurement, and verification (EM&V) methods. The Companies use an EM&V model that examines program design, delivery, impacts, and return on investment. The ongoing EM&V provides opportunity for continuous review and increasingly beneficial programming. The EM&V conducted by the Companies are further validated by an independent third party evaluation contractor.

Supply-Side Resource Assessment

LG&E/KU should continue to discuss specifically the existence of any cogeneration within their service territories and the consideration given to cogeneration in the resource plan.

LG&E/KU should continue to provide a detailed discussion of the consideration given to distributed generation in the resource plan. The Commission encourages LG&E/KU to increase their exploration of alternatives to their base load generation, and provide an update as to the availability of those alternatives within their system in the filing of the next resource plan.

LG&E/KU should continue to specifically identify and describe the net metering equipment and systems installed on each system. LG&E/KU should continue to provide a detailed discussion of the manner in which such resources were considered in the LG&E/KU resource plan should also be provided.

The Companies have rate schedules that allow for distributed generation to be produced by customers within the service territory as discussed below.

Both KU and LG&E have a net metering rider which provide customers with the option of generating their own electricity using renewable resources. Net metering measures the difference between the energy a customer purchases from the Companies and the amount of energy the customer generates using their own renewable energy source. Any excess power generated is “banked” as a credit to be applied against the customer’s future energy purchases from the Companies. The Companies currently have 206 net metering customers with capacities ranging from 0.35 kW to 30 kW. In 2013, those customers generated 225 MWh in excess of their individual energy consumption. Summaries of the Companies’ net metering customers for which the Companies have detailed data and the associated capacities by source type are shown in the following tables.

	Solar	Wind	N/A	Total
<i>Customers (#)</i>				
Residential	177	2	1	180
Non-Residential	22	2	2	26
Total	199	4	3	206

	Solar	Wind	Total
<i>Capacity (kW)</i>			
Residential	625	5	630
Non-Residential	200	4	204
Total	825	9	834

In addition to the net metering rider which limit customers to 30 kW of generating capacity, the Companies also provide riders for customers with generating capacities greater than 30 kW. These riders allow for cogeneration customers with qualifying facilities to sell all or part of their excess power to the Companies. Successful cogeneration facilities are very site-specific and require an industrial host operating with the appropriate economic factors to make the arrangement cost-effective. Currently, there is one customer on this rate with 50 kW of hydro generation. In 2013, this customer generated zero MWh in excess of their individual energy consumption.

Given the very small impact of net metering customers relative to the size of the Companies' generation needs and the lack of cogeneration customers on the Companies' system, these options have not been explicitly included as resources in the resource plan. While these types of generation sources can be somewhat reliable for producing energy, they offer an uncertain contribution to meet peak demand.

No respondents to the 2012 RFP proposed a cogeneration project. In developing the optimal resource plan, a number of small technologies that could be utilized as distributed generation were considered as supply-side options (see table below). These technologies can be easily scalable and therefore would be suitable for distributed generation and combined heat and power applications.

Technology Option	Operating Characteristics			Costs		
	Fuel Type	Capacity	Heat Rate	Capital	FO&M	VO&M
		MW	Btu/kWh	\$/kW	\$/kW-yr	\$/MWh
Recip Engine - 100 MW	Gas	100	8,470	1,247	11.6	2.4
Microturbine- 1 MW	Gas	1	11,400	2,454	165.0	0.0
Fuel Cell - 10 MW	Gas	11	8,050	6,630	95.0	0.0
Landfill Gas IC Engine	LFG	5	10,500	3,113	180.0	20.0
Anaerobic Digester Gas IC Engine	Sewage	5	10,000	3,396	200.0	20.0
Wind	No Fuel	50	0	2,201	25.0	0.0
Solar Photovoltaic	No Fuel	50	0	2,990	17.0	0.0

The wind and solar photovoltaic options passed the supply-side screening analysis and were evaluated in the detailed expansion planning analysis. Overall, the costs of renewable generation remain higher than fossil generation technologies. However, with tax incentives and Renewable Energy Credits (“RECs”), both solar PV and wind technologies might be cost competitive at some point.

Staff recommends that LG&E/KU provide a complete discussion of compliance actions and plans relating to current and pending environmental regulations within the next resource plan.

The Companies discussed potential action plans associated with proposed GHG regulations in Volume III – *2014 Resource Assessment*.

LG&E/KU should continue to study and analyze their reserve margin. The study provided by LG&E/KU supports the 16 percent reserve margin used in this IRP for planning purposes. In the next IRP, LG&E/KU should consider the comments of the Environmental Groups and explain how those comments were considered in the determination of an appropriate reserve margin for the next IRP.

In what follows, the Companies list the comments of the Environmental Groups and how the Companies consider them in Volume III – *2014 Reserve Margin Study* (“RMS”).

Environmental Groups: LG&E/KU’s RMS incorporates weather uncertainty and economic uncertainty, both based on historical loads. This increases the amount of uncertainty being modeled and raises questions about the possibility of historical uncertainty being duplicated by the multiple methods used in the RMS.

Response: Load uncertainty is not duplicated in the Companies’ RMS. The process used to determine the relationship between weather and hourly loads utilizes five years of historical data. Before weather coefficients are developed, the load data is normalized to remove the impact of economic growth or recession. This way, the uncertainty in economic growth can be modeled separately from the uncertainty due to weather without double-count overall load uncertainty.

Environmental Groups: Some Regional Transmission Organization use a 90/10 load forecast, in which the forecast load has a 10% chance of being exceeded in any one year, for some system planning purposes. But, the 50/50 forecast is still widely used for generation adequacy purposes. In either event, a specific overall confidence level applies to the loads being studied. This compares to the RMS which reflects economic uncertainty such that the worst case load has less than 2.25% chance of being exceeded.

Response: Because the probability distribution for load forecast errors is symmetric, the load forecast in the RMS is 50/50 as well. Please see Figure 5 in the RMS.

Environmental Groups: A second problem with the RMS is that it overestimates the level of reserve margin needed to achieve a loss of load probability (“LOLP”) of 0.1, which is the equivalent of 1 day of lost energy in ten years. The appendix to the reserve margin study contends that a 20% reserve margin is needed to reduce the LOLP to 0.1, and that the LOLP would be at 0.2 with a reserve margin of 16%. But other utilities have found that a far lower margin than 20% is needed to get the LOLP down to 0.1. For example, NERC has reported that the Florida Reliability Coordinating Council found that a 15% reserve margin would achieve a LOLP of 0.1. Similarly, PacificCorp recently determined that a 14.8% reserve margin was sufficient to achieve a 0.1 LOLP.

Response: LOLP is impacted by the size and composition of a generation portfolio, the availability of generating units, the system’s load profile, and the system’s access to market power in neighboring regions. It is not uncommon for systems with different characteristics to have different LOLP values.

Environmental Groups: The RMS is also flawed because it does not appear to give any credit to demand side resources (“DSR”).

A: This is not true. The peak load of 7,199 MW in 2018 used in the RMS is after the reduction of DSR of 423 MW. Please see Table 3 in the 2014 Resource Assessment.

Environmental Groups: The Companies’ RMS appears to omit consideration of the Contingency Reserve Sharing Group (“CRSG”) that the Companies have joined with the Tennessee Valley Authority and East Kentucky Power Company.

A: This is not true. With the CRSG, the Companies only need to carry spinning reserve requirement of 258 MW, which is an input in the RMS. In contrast, without being part of the CRSG, the Companies would have to carry enough spinning reserves to cover the loss of their largest unit (Trimble County 2). If the Companies’ spinning reserve requirement is increased, the optimal reserve margin will be higher.

LG&E/KU should provide timely updates to the Commission related to the consideration of alternatives to the production that would have been gained by the acquisition of the Bluegrass Generation units.

On June 18, 2012, the Companies sent a letter to the Executive Director of the Commission, advising of the Companies' intent to terminate the purchase agreement with Bluegrass Generation. In addition, an Informal Conference was held on June 27, 2012 to discuss this topic.

2014 Reserve Margin Study



PPL companies

**Generation Planning & Analysis
March 2014**

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1 Executive Summary

1.1 Background

The reliable supply of electricity is vital to Kentucky's economy and public safety. As electricity has become a more integral part of daily routines, customers have grown to expect it to be available at all times and in all weather conditions. Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company ("KU") (collectively, "the Companies") carry generating reserves in excess of their expected peak demand in an effort to meet the needs of their customers and the communities they serve. However, customers also demand that energy is affordable, thus the Companies must balance the costs of generating capacity with the reliability benefits provided by that capacity.

The Companies' ability to meet load was tested as a result of the cold temperatures experienced earlier this year on January 6-7. Going into January, the Companies' planning reserve margin, calculated as a function of expected peak demand, was more than 35%.¹ On the evening of January 6, the Companies experienced a new winter peak demand of 7,114 MW. Had the Companies' generating units not performed exceptionally well (only approximately 100 MW of generation was unavailable to serve load), the Companies would have been forced to attempt to purchase power in neighboring regions where – in addition to high loads – other load serving entities were experiencing unit availability issues.

On the morning of January 7, Tennessee Valley Authority ("TVA") issued an Energy Emergency Alert indicating that they were unable to maintain the minimum amount of reserves required by North American Electric Reliability Corporation ("NERC") Reliability Standards. As a result, TVA temporarily withdrew their reserves from the reserve sharing pool, forcing the Companies to provide their own operating reserves. Despite continued exceptional generation unit performance, the Companies had to rely on the market to maintain a minimum amount of reserves. The Companies' load peaked at 7,016 MW the morning of January 7.

The Companies have previously relied on neighboring markets to serve customers' energy needs during extreme weather events. The Companies' all-time peak demand of 7,175 MW was set on August 4, 2010 at 3:00 PM. During this hour, approximately 850 MW of generating capacity was unavailable to serve load.² As a result, the Companies were forced to rely on more than 800 MW of purchases from neighboring markets to serve load.

Over the next few years, there is increasing uncertainty regarding the Companies' ability to rely on neighboring markets to serve load. Approximately 37 GW of capacity is expected to be retired in the Eastern Interconnect between 2012 and 2015 to comply with Environmental Protection Agency ("EPA") regulations. According to a recent NERC report, reserve margins in Midcontinent Independent System Operator ("MISO") and PJM Interconnection ("PJM") are expected to decline "precipitously."³ In MISO, reserve margins are expected to fall from 18% today to 12% in 2015; in PJM, reserve margins are expected to fall from 31% today to 21% in 2018. According to the NERC report, if resources do not come on-line, an increased likelihood of firm load shedding is possible in MISO.

¹ Reserve margin is the amount of reserve capacity the Companies carry in excess of their expected peak demand, calculated as a percentage of the expected peak demand. Planning reserve margins are higher in the winter than the summer due to lower expected winter peak demands.

² Additionally, the reserve margin was lower than planned due to a delay in commissioning Trimble County 2.

³ See NERC's 2013 Long-Term Reliability Assessment at http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/2013_LTRA_FINAL.pdf.

The Companies' ability to import power from neighboring markets is also impacted by the availability of transmission capacity. If transmission capacity is not available, the Companies cannot import power. As loads increase and resources become scarce, the availability of transmission capacity also declines. Over the past three summers, transmission capacity was unavailable in more than 25% of the hours where loads were greater than 6,500 MW. When this is the case, the Companies must rely solely on their own resources to serve load.

1.2 Analysis Framework

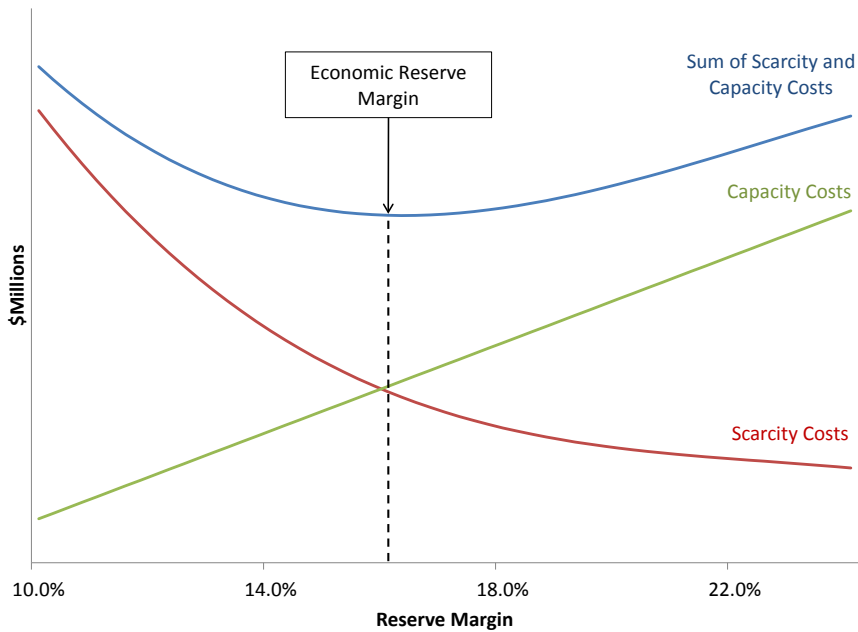
This analysis was prepared to determine the Companies' optimal reserve margin range. At higher reserve margin levels, the Companies' cost of carrying additional generating capacity is greater, but the risk and associated costs of shedding firm load due to generation shortages are lower. In addition, at higher reserve margins, the Companies' reliance on neighboring markets and the need to dispatch higher cost generating resources is reduced. At lower reserve margin levels, costs may be lower but the risk of load shedding is increased.

In this analysis, the cost of the Companies' generating portfolio was evaluated at different reserve margin levels by adding or subtracting simple-cycle combustion turbine ("SCCT") capacity. "Scarcity cost" is defined as the sum of unserved energy costs, the cost of purchased power greater than the marginal cost of a SCCT, and the cost of dispatching other generating resources more expensive than a SCCT. As SCCT capacity is added, scarcity costs will decrease.

The Strategic Energy Risk Valuation Model ("SERVM") from Astrape Consulting was used to estimate scarcity costs as well as the number of loss-of-load events per year over a range of reserve margin levels. Scarcity costs and the likelihood of loss-of-load events are impacted by the uncertainty in weather, unit availability, economic load growth, the ability to import power from neighboring regions, and other factors. To properly capture the cost of high-impact, low-probability events, SERVM evaluates thousands of scenarios that encompass a wide range of the input variables.

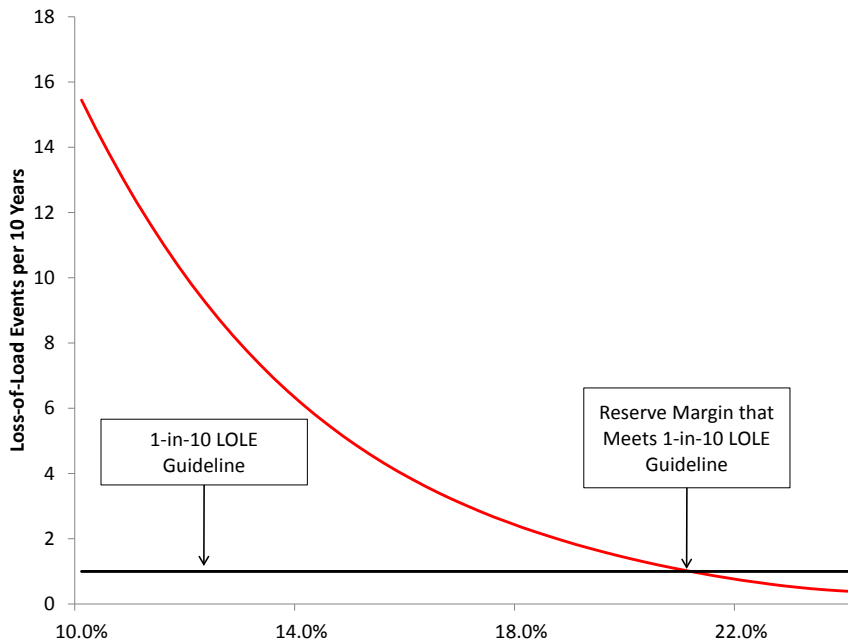
The analysis determined the Companies' economic reserve margin range as well as the reserve margin needed to meet physical reliability standards. To determine the economic reserve margin range, scarcity costs and the cost of carrying SCCT capacity were estimated over a range of reserve margin levels. These costs are illustrated in Figure 1. The economic reserve margin is the reserve margin where the sum of these costs is minimized.

Figure 1 – Economic Reserve Margin (Illustrative)



In North America, the most commonly used physical reliability guideline is the “1-in-10 loss-of-load event” (“1-in-10 LOLE”) guideline. Systems that adhere to this guideline are designed to experience one loss-of-load event in ten years. Figure 2 plots the number of loss-of-load events over a range of reserve margin levels. The reserve margin that meets the 1-in-10 LOLE guideline does not necessarily coincide with the economically optimal reserve margin.

Figure 2 – Reserve Margin Needed to Meet Physical Reliability Guideline



In this analysis, the planning reserve margin range was determined by considering the economic reserve margin range as well as the reserve margin needed to meet physical reliability guidelines.

1.3 Results

The Companies' ability to import power from neighboring markets remains a key uncertainty, considering the declining reserve margins in MISO, PJM, and TVA. With base case inputs, the economic reserve margin is 15.5% to 16.25%. If the Companies cannot import power from neighboring regions, the economic reserve margin is higher, at 18.0% to 18.5%.

At either of these reserve margin levels, the Companies do not meet the 1-in-10 LOLE physical reliability guideline. In the base case, a reserve margin of 21% is needed to meet the 1-in-10 LOLE guideline.

For the 2011 IRP, the Companies utilized a 15% to 17% economic reserve margin range and targeted the midpoint of that range for developing expansion plans. For the 2014 IRP, the Companies will continue to target a minimum reserve margin of 16% for expansion planning. However, there are benefits to customers of maintaining a higher reserve margin to address the uncertainties associated with access to markets, extreme weather events, and unexpected unit performance issues.

2 Introduction and Background

The reliable supply of electricity is vital to Kentucky's economy and public safety. As electricity has become a more integral part of daily routines, customers have grown to expect it to be available at all times and in all weather conditions. Louisville Gas and Electric Company ("LG&E") and Kentucky Utilities Company ("KU") (collectively, "the Companies") carry generating reserves in excess of their expected peak demand in an effort to meet the needs of their customers and the communities they serve. However, customers also demand that energy is affordable, thus the Companies must balance the costs of generating capacity with the reliability benefits provided by that capacity.

The Companies' ability to meet load was tested as a result of the cold temperatures experienced earlier this year on January 6-7. Going into January, the Companies' planning reserve margin, calculated as a function of expected peak demand, was more than 35%.⁴ On the evening of January 6, the Companies experienced a new winter peak demand of 7,114 MW. Had the Companies' generating units not performed exceptionally well (only approximately 100 MW of generation was unavailable to serve load), the Companies would have been forced to attempt to purchase power in neighboring regions where – in addition to high loads – other load serving entities were experiencing unit availability issues.

On the morning of January 7, Tennessee Valley Authority ("TVA") issued an Energy Emergency Alert indicating that they were unable to maintain the minimum amount of reserves required by North American Electric Reliability Corporation ("NERC") Reliability Standards. As a result, TVA temporarily withdrew their reserves from the reserve sharing pool, forcing the Companies to provide their own operating reserves. Despite continued exceptional generation unit performance, the Companies did have to rely on the market to maintain a minimum amount of reserves. The Companies' load peaked at 7,016 MW the morning of January 7.

TVA wasn't the only load serving entity that experienced problems serving customers' load in early January. PJM Interconnection ("PJM") experienced non-firm natural gas curtailments and a 20% Equivalent Forced Outage Rate ("EFOR") during this period. Most notably, South Carolina Electric & Gas was forced to shed firm load due to high load and generating unit outages.

To some extent, the Companies rely on neighboring markets to serve customers' energy needs during extreme weather events. The Companies' all-time peak demand of 7,175 MW was set on August 4, 2010 at 3:00 PM. During this hour, approximately 850 MW of generating capacity was unavailable to serve load.⁵ As a result, the Companies relied on more than 800 MW of purchases from neighboring markets to serve load.

Over the next few years, there is increasing uncertainty regarding the Companies' ability to rely on neighboring markets to serve load. Approximately 37 GW of capacity is expected to be retired in the Eastern Interconnect between 2012 and 2015 to comply with Environmental Protection Agency ("EPA") regulations. According to a recent NERC report, reserve margins in Midcontinent Independent System Operator ("MISO") and PJM are expected to decline "precipitously."⁶ In MISO, reserve margins are

⁴ Reserve margin is the amount of reserve capacity the Companies carry in excess of their expected peak demand, calculated as a percentage of the expected peak demand. Planning reserve margins are lower in the winter than the summer due to lower expected peak demands.

⁵ Additionally, the reserve margin was lower than planned due to a delay in commissioning Trimble County 2.

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expected to fall from 18% today to 12% in 2015; in PJM, reserve margins are expected to fall from 31% today to 21% in 2018. According to the NERC report, if resources do not come on-line, an increased likelihood of firm load shedding events is possible in MISO.

The Companies' ability to import power from neighboring markets is also impacted by the availability of transmission capacity. If transmission capacity is not available, the Companies cannot import power. As loads increase and resources become scarce, the availability of transmission capacity also declines (see Table 8). Over the past three summers, no transmission capacity was available to import power in 25% of the hours where loads were greater than 6,500 MW. When this is the case, the Companies must rely solely on their own resources to serve load.

The following sections summarize the process the Companies used to develop their planning reserve margin range. Section 3 discusses the analysis framework. Section 4 provides a summary of key inputs and uncertainties in the analysis. Finally, Section 5 provides a summary of the analysis results.

3 Analysis Framework

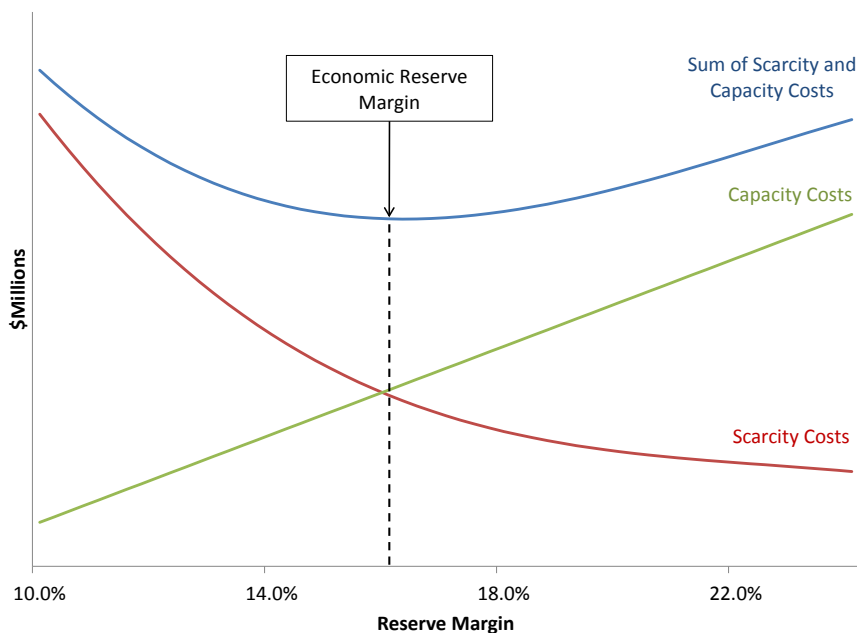
This analysis was prepared to determine the Companies' optimal reserve margin range. At higher reserve margin levels, the Companies' cost of carrying additional generating capacity is greater, but the risk and associated costs of shedding firm load due to generation shortages are lower. In addition, at higher reserve margins, the Companies' reliance on neighboring markets and the need to dispatch higher cost generating resources is reduced. At lower reserve margin levels, costs may be lower but the risk of load shedding is increased.

In this analysis, the cost of the Companies' generating portfolio is evaluated at different reserve margin levels by adding or subtracting simple-cycle combustion turbine ("SCCT") capacity. "Scarcity cost" is defined as the sum of unserved energy costs, the cost of purchased power greater than the marginal cost of a SCCT, and the cost of dispatching other generating resources more expensive than the marginal cost of a SCCT. As SCCT capacity is added, scarcity costs will decrease.

The Strategic Energy Risk Valuation Model ("SERVM") from Astrape Consulting was used to estimate scarcity costs as well as the number of loss-of-load events per year over a range of reserve margin levels. Scarcity costs and the likelihood of loss-of-load events are impacted by the uncertainty in weather, unit availability, economic load growth, the ability to import power from neighboring regions, and other factors. To properly capture the cost of high-impact, low-probability events, SERVM evaluates thousands of scenarios that encompass a wide range of the input variables.

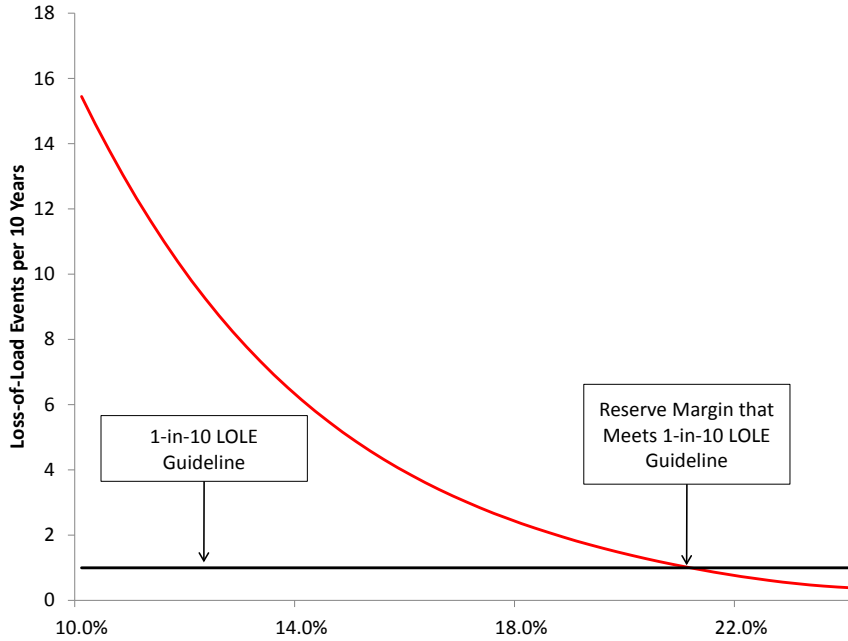
The analysis determined the Companies' economic reserve margin range as well as the reserve margin needed to meet physical reliability standards. To determine the economic reserve margin range, scarcity costs and the cost of carrying SCCT capacity were estimated over a range of reserve margin levels. These costs are illustrated in Figure 3. The economic reserve margin is the reserve margin where the sum of these costs is minimized.

Figure 3 – Economic Reserve Margin (Illustrative)



In North America, the most commonly used physical reliability guideline is the “1-in-10 loss-of-load event” (“1-in-10 LOLE”) guideline. Systems that adhere to this guideline are designed to experience one loss-of-load event in ten years. Figure 4 plots the number of loss-of-load events over a range of reserve margin levels. The economically optimal reserve margin does not necessarily coincide with the reserve margin needed to meet the 1-in-10 LOLE guideline.

Figure 4 – Reserve Margin Needed to Meet Physical Reliability Guidelines



In this analysis, the planning reserve margin range was determined by considering the economic reserve margin range as well as the reserve margin needed to meet physical reliability guidelines.

4 Key Inputs and Uncertainties

Several factors beyond the Companies' control impact the Companies' planning reserve margin and their ability to reliably serve customers' energy needs. The key inputs and uncertainties considered in the Companies' reserve margin analysis are discussed in the following sections.

4.1 Study Year

The study year for this analysis is 2018. This year was chosen because it typically at least five years to develop new generating capacity once a need has been identified. In addition to developing and constructing the generating capacity, this period of time includes the time needed to gain necessary regulatory approvals and environmental permits.

The generation portfolio evaluated in the previous study included one natural gas combined-cycle ("NGCC") facility (Cane Run 7). 2018 was also selected as the study year because the Companies' resource mix in 2018 is proposed to be different than the resource mix evaluated in the previous reserve margin study. By 2018, the Companies have proposed to construct a 10 MW solar facility and an approximately 700 MW NGCC facility. Thus, the generation portfolio evaluated in this study includes two NGCC facilities.

4.2 Neighboring Regions

The vast majority of the Companies' off-system purchase transactions are made with counterparties in MISO, PJM, or TVA. For this reason, SERVM models load and the availability of excess capacity from the portions of the MISO, PJM, and TVA control areas that are adjacent to the Companies' service territory. These portions of MISO, PJM, and TVA are referred to as "neighboring regions." The following neighboring regions are modeled in SERVM:

- MISO-Indiana – includes service territories for all utilities in Indiana as well as Big Rivers Electric Corporation in Kentucky.
- PJM-West – refers to the portion of the PJM-West market region including American Electric Power ("AEP"), Dayton Power & Light, Duke Ohio/Kentucky, and East Kentucky Power Cooperative service territories.
- TVA – TVA service territory.

The Companies' reserve margin study is impacted by the reserve margins in neighboring regions and the available transmission capacity between the Companies' system and neighboring regions' systems. As the ability to import power from neighboring regions decreases, the Companies' economic reserve margin will increase.

Moving forward, more uncertainty exists regarding the Companies' ability to rely on neighboring regions' markets to serve load. Approximately 37 GW of capacity is expected to be retired in the Eastern Interconnect between 2012 and 2015 to comply with EPA regulations. According to a recent NERC report, reserve margins in MISO are expected to fall from 18% today to 12% in 2015. In PJM, reserve margins are expected to fall from 31% today to 21% in 2018.

For the purpose of this analysis, reserve margins in neighboring regions are assumed to be at their target level of 15%.

4.3 Load Modeling

SERVM models the uncertainty in load due to weather in the Companies' service territory and in neighboring regions. In addition, SERVM models the uncertainty in load growth between now and 2018 due to non-weather factors. These inputs are discussed in the following sections.

4.3.1 Weather Uncertainty

In the Companies' service territory and neighboring regions, customer demands typically peak in the summer months. Weather is a key assumption in developing a summer peak demand forecast. For a given month, the Companies' peak demand forecast is based on average weather for the hottest day of the month. Based on the uncertainty and variability in weather, actual peak demands can be much higher than forecasted peak demands.

Table 1 summarizes the peak load forecast for 2018 for the Companies' service territory and neighboring regions. The Companies' 2018 peak load forecast is taken from the 2014 IRP load forecast (see Table 5.(3)-2 in Section 5 of Volume I). The forecasts of peak demands for MISO-Indiana, PJM-West, and TVA were taken from RTOs forecasts and NERC ES&D data. The impact of the Companies' demand-side management programs is reflected in the Companies' peak demands.⁷

Table 1 – Peak Load Forecasts for 2018

	LG&E/KU	MISO-Indiana	PJM-West	TVA
Peak Load	7,199	20,058	36,122	33,263
Target Reserve Margin	N/A	15%	15%	15%

The frequency and duration of severe weather events has a significant impact on load shape and scarcity costs. To model the effects of weather uncertainty on load, 33 hourly load profiles were developed for the Companies' service territory and neighboring regions based on 33 historical weather years. As a result, the model captures the load diversity that exists between the Companies' service territory and neighboring regions. Table 2 lists the range of summer peak demands for the Companies' service territory and the neighboring regions.

⁷ In 2018, peak demand is expected to be more than 400 MW lower than it otherwise would be as a result of the Companies' demand-side management programs.

Table 2 – Summer Peak Demands

LG&E/KU Load Rank	Weather Year	LG&E/KU	Coincident Peak Demand in Neighboring Regions		
			MISO-Indiana	PJM-West	TVA
1	1988	7,586	20,024	37,667	33,593
2	2007	7,547	18,265	34,214	36,323
3	2012	7,521	20,142	34,498	35,176
4	1999	7,492	20,506	36,439	33,345
5	1983	7,447	21,061	38,916	34,187
6	1993	7,400	18,040	33,013	33,367
7	1980	7,384	20,317	37,318	35,450
8	2002	7,378	18,641	35,126	32,256
9	2005	7,367	19,171	35,967	31,428
10	2006	7,343	20,166	36,972	32,564
11	1995	7,312	18,506	34,623	33,268
12	1986	7,303	19,702	36,034	33,353
13	2011	7,302	20,315	34,127	31,458
14	1994	7,290	19,624	34,700	31,677
15	2010	7,273	19,483	38,074	33,282
16	1987	7,263	17,937	30,870	33,133
17	1991	7,238	17,479	32,410	31,921
18	1998	7,224	19,519	35,716	33,089
19	1989	7,217	20,510	35,098	28,118
20	1990	7,188	20,008	36,453	32,475
21	1997	7,094	20,381	30,136	31,819
22	2008	7,054	17,997	33,799	30,426
23	1996	7,052	17,429	32,512	32,368
24	2001	6,990	18,237	31,337	29,966
25	1981	6,984	18,477	35,462	32,013
26	1985	6,953	17,470	34,252	30,442
27	1992	6,951	17,624	33,862	31,534
28	1984	6,946	19,863	29,045	31,905
29	2009	6,944	19,326	34,872	30,650
30	2003	6,926	18,312	30,810	27,320
31	1982	6,915	18,448	28,475	29,675
32	2000	6,866	17,138	30,437	30,394
33	2004	6,821	16,024	31,921	27,571

The forecasted peak demand for the Companies' service territory in 2018 is 7,199 MW. Based on the uncertainty in weather during peak load conditions, peak demand was modeled to be almost 400 MW higher or lower. For the neighboring regions, the variability of summer peak demand is similar. In the reserve margin analysis, each hourly load profile was assumed to be equally likely.

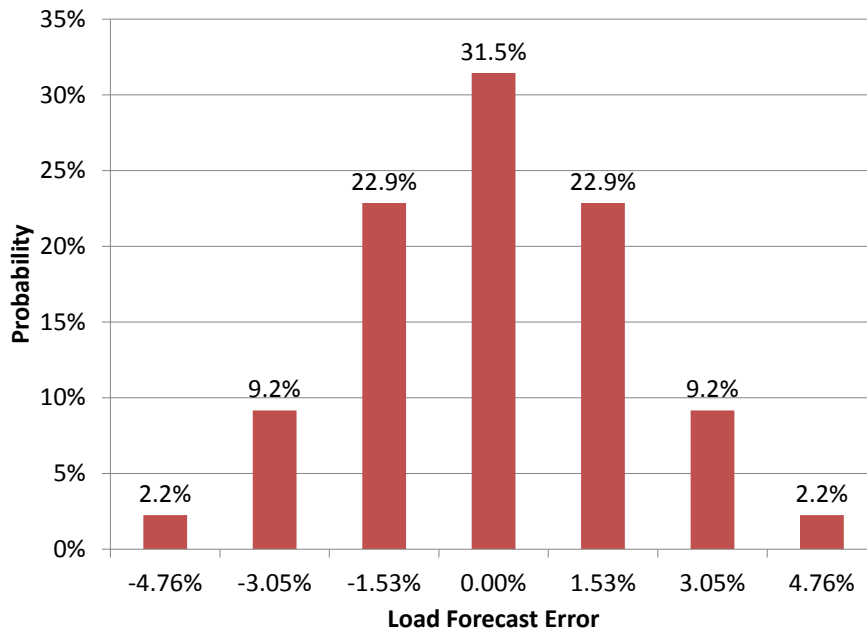
4.3.2 Load Growth Uncertainty

The forecasted peak demand will differ from the actually-realized peak demand due to weather (as discussed above) and due to differences between forecasted and realized non-weather factors. Non-weather factors include population growth, economic growth, efficiency rates, and other factors.

Differences between forecasted peak demands and actually-realized weather-normalized peak demands are “load forecast errors” (“LFE”).

Figure 5 summarizes the distribution of LFE used in this analysis. This analysis considered seven LFE scenarios; LFE is assumed to be normally distributed. In the most extreme cases, peak load was assumed to be 4.76% higher than forecast, but the likelihood of this variation is relatively low (2.2%).

Figure 5 – Load Forecast Errors



4.4 Generation Resources

SERVM models the unit availability and economic dispatch characteristics of all generating units in the Companies’ generating portfolio as well as the generating units in neighboring regions. Table 3 summarizes the modeled capacity in 2018 for the Companies’ generation portfolio and neighboring regions. To develop the generation portfolios for neighboring regions, the current generation portfolios were modified to reflect planned retirements. Then, the portfolios were adjusted to meet the neighboring regions’ 15% target reserve margin by adding or subtracting NGCC capacity.

Table 3 – 2018 Generation Resource Summary (MW)

	LG&E/KU	MISO-Indiana	PJM-West	TVA
Coal	5,121	15,408	24,856	13,120
Interruptible	131	1,000	2,200	1,800
Hydro/Renewable	104	1,022	1,891	3,607
NGCC	1,310	2,794	6,411	5,868
Nuclear	0	0	0	6,937
SCCT	2,074	3,843	7,011	6,985
Total	8,740	24,068	42,369	38,317

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Table 4 provides more detailed information for the Companies' proposed 2018 generating fleet.

Table 4 – Proposed 2018 LG&E/KU Generating Portfolio

Unit	Unit Type	Max Summer Capacity (MW)	Heat Rate at Max Summer Capacity (mmBtu/MWh)	EFOR
Brown 1	Coal	106	10.562	5.6%
Brown 2	Coal	166	10.273	5.6%
Brown 3	Coal	407	10.795	5.6%
Brown 5	SCCT	112	12.340	18.5%
Brown 6	SCCT	146	10.646	6.8%
Brown 7	SCCT	146	10.646	6.8%
Brown 8	SCCT	102	12.755	7.8%
Brown 9	SCCT	102	12.816	7.8%
Brown 10	SCCT	102	12.816	7.8%
Brown 11	SCCT	102	12.755	7.8%
Brown ICE	SCCT	86	N/A	N/A
Brown Solar	Solar	9	N/A	N/A
Cane Run 7	NGCC	640	6.940	5.0%
Cane Run 11	SCCT	14	16.117	50.0%
Ghent 1	Coal	481	10.768	5.6%
Ghent 2	Coal	481	10.601	5.6%
Ghent 3	Coal	471	10.841	5.6%
Ghent 4	Coal	478	10.906	5.6%
Green River 5	NGCC	670	6.940	5.0%
Haefling	SCCT	24	17.000	50.0%
Ohio Falls & Dix Dam	Hydro	94	N/A	N/A
Mill Creek 1	Coal	300	10.487	5.6%
Mill Creek 2	Coal	297	10.421	5.6%
Mill Creek 3	Coal	385	10.528	5.6%
Mill Creek 4	Coal	466	10.728	5.6%
OVEC-KU	Power Purchase	48	N/A	N/A
OVEC-LG&E	Power Purchase	107	N/A	N/A
Paddys Run 11	SCCT	12	15.479	50.0%
Paddys Run 12	SCCT	23	17.005	50.0%
Paddys Run 13	SCCT	147	10.525	12.4%
Trimble County 1	Coal	379	10.474	5.6%
Trimble County 2	Coal	549	9.232	5.1%
Trimble County 5	SCCT	157	10.549	4.6%
Trimble County 6	SCCT	157	10.549	4.6%
Trimble County 7	SCCT	157	10.549	4.6%
Trimble County 8	SCCT	157	10.549	4.6%
Trimble County 9	SCCT	157	10.549	4.6%
Trimble County 10	SCCT	157	10.549	4.6%
Zorn 1	SCCT	14	18.676	50.0%
	Interruptible		N/A	N/A
	Interruptible		N/A	N/A
	Interruptible		N/A	N/A
	Interruptible		N/A	N/A
	Interruptible		N/A	N/A
	Interruptible		N/A	N/A
	Interruptible		N/A	N/A

With the addition of Green River 5 and Brown Solar, the Companies reserve margin in 2018 is expected to be approximately 22%. SCCT capacity is added to or subtracted from the Companies’ generating portfolio to simulate the system at different reserve margin levels. The following sections discuss the cost and operating characteristics of this SCCT capacity as well as unit availability inputs and fuel prices for all units modeled in SERVVM. A discussion of interruptible contracts is also included.

4.4.1 Marginal SCCT Capacity

In this analysis, SCCT capacity is added or subtracted from the Companies’ generating portfolio to simulate the system at different reserve margin levels. SCCT capacity is the least-cost alternative for meeting peak energy needs (see the report titled *2014 Resource Assessment* at page 29; this report is located in Volume III, Technical Appendix). Table 5 summarizes the assumed cost of this SCCT capacity.

Table 5 – SCCT Cost

Input Assumption	Value
Capital Cost (2013 \$/kW)	587
Fixed O&M (2013 \$/kW-yr)	7.3
Firm Gas Transport (2013 \$/kW-yr)	20.66
Escalation Rate	1.8%
Discount Rate	6.52%
Carrying Charge (2018 \$/kW-yr)	88.2

4.4.2 Unit Availability Inputs

A major component of reliability analyses is modeling the availability of supply resources after considering planned and forced outages. Forced outages for conventional generation units are modeled stochastically, with partial and full forced outages occurring probabilistically based on distributions accounting for time-to-fail, time-to-repair, and partial outage derate percentages. Maintenance outages also occur stochastically, but SERVVM accommodates maintenance outages with some flexibility to schedule maintenance during off-peak hours. Planned outages are differentiated from maintenance outages and are assumed to be scheduled such that there is no negative impact on system reliability.

Time-to-fail and time-to-repair distributions for partial and full forced outages were developed from historical Generation Availability Data System (“GADS”) data for units in the Companies’ generating portfolio. Distributions for partial outage derate percentages were also developed based on this data. The EFORs for the Companies’ generating units are summarized in Table 4 (Section 4.4). The availability of units in neighboring regions was assumed to be consistent with the availability of units in the Companies’ generating portfolio.

4.4.3 Fuel Prices

The forecast of natural gas and coal prices used in this analysis are summarized in Table 6. These fuel prices are the fuel prices used in the Companies’ 2014 Resource Assessment for the Integrated Resource Plan. A transportation cost was added to these prices to estimate delivered fuel prices to the Companies’ generating units and to neighboring regions.

Table 6 – 2018 Fuel Prices (\$/mmBtu)

Year	Month	Henry Hub Natural Gas	High Sulfur Coal
2018	1	4.95	
2018	2	4.94	
2018	3	4.87	
2018	4	4.63	
2018	5	4.65	
2018	6	4.67	
2018	7	4.71	
2018	8	4.74	
2018	9	4.74	
2018	10	4.78	
2018	11	4.91	
2018	12	5.14	

4.4.4 Interruptible Contracts

A total of 131 MW of interruptible loads were modeled in SERVM. Per the Companies’ tariffs, these resources are available a limited number of hours per day and year, and only after all other resources have been utilized. SERVM takes into consideration these factors through “hours per day,” “days per week,” and “hours per year” inputs. A dispatch price ensures that the curtailable loads are called upon after all other resources have been utilized. Table 7 summarizes the SERVM inputs for the Companies’ interruptible contracts.

Table 7 – Interruptible Contracts

Interruptible Contracts	Capacity (MW)	Dispatch Constraints			
		Hours Per Year	Hours Per Day	Days Per Week	Dispatch Price \$/MWh
Airgas	7.8	200	14	7	120
Carbide	36.1	100	14	7	120
Cemex	18.0	100	14	7	120
RR Donnelley	6.0	200	14	7	120
Infiltrator	2.0	200	14	7	120
North American Stainless	61.1	100	14	7	120
Old Castle	0.4	150	14	7	120
Total	131.4				

4.5 Available Transmission Capacity

SERVM models available transmission capacity (“ATC”) between the Companies’ system and neighboring regions. ATC determines the amount of power that can be imported to serve the Companies’ load and is a function of the import capability of the Companies’ transmission system as well as the export capability of the system from which the power is purchased. For example, to purchase 50 MW from PJM, the Companies’ transmission system must have at least 50 MW of import capability and PJM must have at least 50 MW of export capability. If PJM only has 25 MW of export capability, total ATC is 25 MW.

The Companies' import capability is negatively correlated with load. Generally, as load increases and resources become scarce, the Companies' import capability decreases. Table 8 summarizes the total import capability for the Companies' system over the past three summers (2011-2013) at different load levels. Over the past three summers, the Companies' load exceeded 6,500 MW in 82 hours. The Companies' import capability was zero in 22 (or 27%) of these hours.

Table 8 – LG&E/KU Import Capability (2011-2013; June-August)

Import Capability Range (MW)	Load Range (MW)									
	< 5,000		5,000 - 5,499		5,500 - 5,999		6,000 - 6,499		> = 6,500	
	Count of Hours	% of Total	Count of Hours	% of Total	Count of Hours	% of Total	Count of Hours	% of Total	Count of Hours	% of Total
0	25	1%	11	2%	10	2%	24	8%	22	27%
1 - 199	1	0%	1	0%	1	0%	2	1%	2	2%
200 - 399	0	0%	4	1%	1	0%	4	1%	0	0%
400 - 599	0	0%	1	0%	2	0%	2	1%	1	1%
600 - 799	1	0%	1	0%	0	0%	2	1%	1	1%
800 - 999	2	0%	1	0%	3	1%	7	2%	2	2%
>= 1,000	2,986	99%	627	97%	480	97%	260	86%	54	66%
Total	3,015		646		497		301		82	

*The values presented in Table 8 are the sum of the import capability from MISO, PJM, and TVA.

As mentioned previously, ATC is a function of the Companies' import capability and the export capability of the region from which power is purchased. For this reason, it is correct to say – based on the import capability data in Table 8 – that ATC is zero *at least* 27% of the time when loads are in excess of 6,500 MW. Because historical hourly export capabilities from neighboring regions are not readily available, it is difficult to estimate hourly ATC.

Table 9 summarizes daily ATC between the Companies' system and neighboring regions on weekdays during the summer months of 2011-2013. Based on the daily ATC data, the Companies' ATC for importing power from neighboring regions is zero 40% of the time. For the purposes of this analysis, ATC is assumed to be zero 33% of the time.

Table 9 – Daily ATC

Daily ATC Range	Count of Days	% of Total
0	67	40%
1 - 199	5	3%
200 - 399	7	4%
400 - 599	7	4%
600 - 799	12	7%
800 - 999	22	13%
>= 1,000	47	28%
Total	167	

4.6 Cost of Unserved Energy (Value of Lost Load)

The impacts of unserved energy on business and residential customers include the loss of productivity, interruption of a manufacturing process, lost product, potential damage to electrical services, and

inconvenience or discomfort due to loss of cooling, heating, or lighting. While the cost of unserved energy is important to understand, the risk of paying expensive market purchases in the marketplace impacts results more than the assumption for the cost of unserved energy.

For this study, unserved energy costs were derived based on information from four publicly available studies. Two of the studies were performed by the Berkeley National Laboratory for the Department of Energy in 2003 and 2009 respectively. All studies split customers into residential, commercial, and industrial classes which is a typical breakdown of customers in the electric industry. After escalating the costs from each study to 2018 dollars and weighting the cost based on LG&E and KU customer class weightings across all four studies, the cost of unserved energy costs was calculated to be \$17.20/kWh. Table 10 shows how the numbers were derived. The range for residential customers varied from \$1.30/kWh to \$3.30/kWh. The range for commercial customers varied from \$23.30/kWh to \$34.50/kWh while industrial customers varied from \$12.10/kWh to \$28.00/kWh. It is expected that commercial and industrial customers would place a much higher value on reliability given the impact of lost production and/or product. The range of system cost across the four studies is approximately \$7.00/kWh.

Table 10 – Cost of Unserved Energy (2018 \$)

	Customer Class Mix	2003 DOE Study \$/kWh	2009 DOE Study \$/kWh	Christian Associates Study \$/kWh	Billinton and Wacker Study \$/kWh
Residential	34%	1.50	1.30	3.30	2.80
Commercial	36%	34.50	31.40	23.30	24.20
Industrial	30%	19.90	28.00	12.10	24.20
System Cost of Unserved Energy		18.90	20.10	13.10	17.00
	Customer Class Mix	Min \$/kWh	Mean \$/kWh	Max \$/kWh	Range \$/kWh
Residential	34%	1.30	2.20	3.30	2.00
Commercial	36%	23.30	28.40	34.50	11.20
Industrial	30%	12.10	21.10	28.00	16.00
Average System Cost of Unserved Energy			17.20		

4.7 Operating Reserves

SERVM models the amount of operating and spinning reserves the Companies carry to reliably serve customers’ energy needs. The Companies must carry 258 MW of spinning reserves to meet their reserve sharing obligation and comply with NERC standards. Within the simulation, it is assumed that the Companies would shed firm load in order to maintain their spinning reserve requirements. In addition to this spinning reserve requirement, the Companies target an additional 500 MW of operating reserves during extreme load conditions so they can respond if a large coal unit is forced offline. If the additional 500 MW of reserves cannot be maintained, the model computes a ‘loss of reserves’ cost (based on what the cost of power would be if power was available). This occurs in hours when, for example, reserves drop below 758 MW and no ATC is available for purchased power. This loss of reserves cost is included in scarcity costs.

4.8 Reserve Margin Accounting

The following formula is used to compute reserve margin:

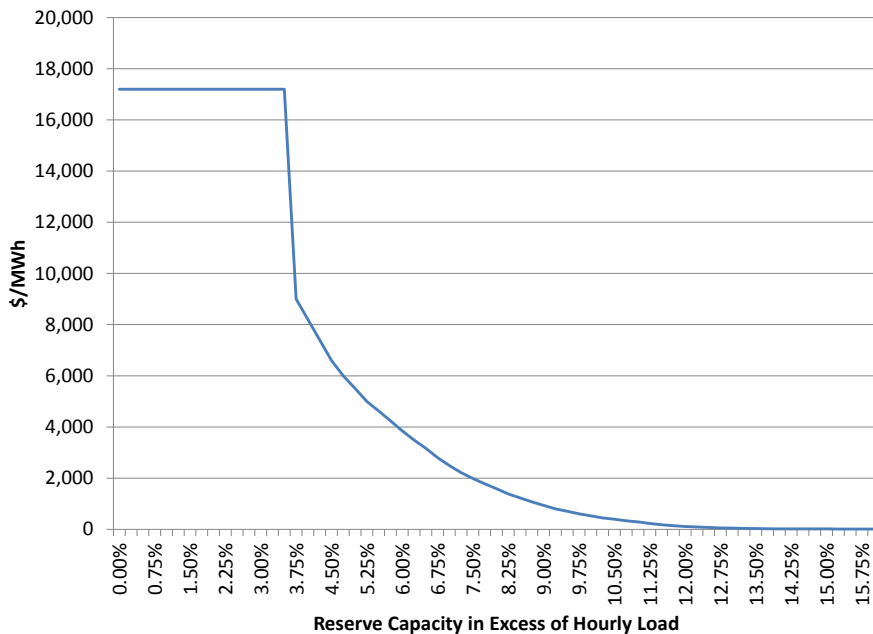
$$\text{Reserve margin} = \text{Total Supply} / \text{Peak Demand Forecast} - 1$$

Total supply includes the Companies generating resources and interruptible contracts. The impact of the Companies DSM programs is reflected in the Companies' peak demand forecast. While the Companies must carry 258 MW of spinning reserves to meet their reserve sharing obligation, this load obligation is not included in the peak demand forecast for the purpose of computing reserve margin.

4.9 Scarcity Pricing

As resources become scarce, the price for market power begins to exceed the marginal cost of supply. Figure 6 plots the scarcity pricing assumptions for this study. The scarcity price is a function of reserve capacity in a given hour and is added to the marginal cost of supply to determine the price of purchased power. The Companies' spinning reserve requirement (258 MW) is approximately 3.5% of the forecasted summer peak demand in 2018 (7,199 MW). At reserve capacities less than 3.5% of the hourly load, the scarcity price is equal to the Companies' value of unserved energy (\$17,200/MWh; see Section 4.6). The remainder of the curve is estimated based on market purchase data.

Figure 6 – Scarcity Price Curve



The scarcity price curve is difficult to specify because reserve margins in neighboring regions have historically been much higher than they are expected to be in the future. For this reason, the analysis considered scarcity price sensitivities.

4.10 Summary of Scenarios

Scarcity and loss-of-load events occur when loads are high and/or when supply is limited. To properly capture the cost of high-impact, low-probability events, SERVM evaluates thousands of scenarios that encompass a wide range of weather, load, and unit availability scenarios. For a given reserve margin

level, this study considered 33 weather years, 7 economic load growth scenarios, and 100 unit availability scenarios for a total of 23,100 scenarios. In each scenario, scarcity costs and the number of loss-of-load events were calculated over a one-year study period (2018).

Each weather and unit availability scenario is considered equally likely. However, the distribution of economic load growth scenarios is assumed to be normally distributed. For this reason, the likelihood of each weather, unit availability, and economic load growth case is not equal.

5 Results

SERVIM was used to evaluate the base case plus multiple sensitivity cases over thousands of weather, unit availability, and economic load growth scenarios. The base case and sensitivity analyses are discussed in the following sections.

5.1 Base Case

Figure 7 plots the distribution of scarcity costs for the base case at 12% and 16% reserve margin levels. Scarcity costs are higher and more volatile at lower reserve margin levels. With a 12% reserve margin, the weighted average scarcity cost is approximately \$20 million higher than scarcity cost at the 16% reserve margin level, and scarcity costs exceed \$86 million in 10% of scenarios (\$86 million is the 90th percentile of the distribution of scarcity costs for the 12% reserve margin case). With a 16% reserve margin, the 90th percentile of the scarcity cost distribution is only \$47 million.

Figure 7 – Cumulative Distribution of Annual Scarcity Costs

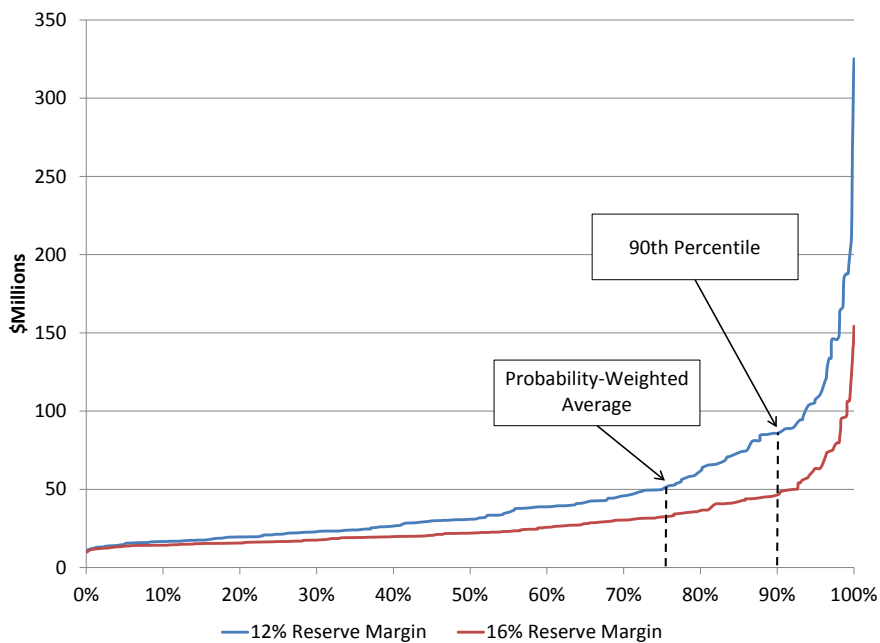


Figure 8 plots the weighted average and 90th percentile scarcity cost as well as the cost of reserve capacity over a range of reserve margin levels. In this analysis, scarcity costs and the cost of SCCT capacity were estimated over a range of reserve margin levels. The economic reserve margin is the reserve margin where the sum of these costs is minimized.

Figure 8 – Scarcity and Capacity Costs

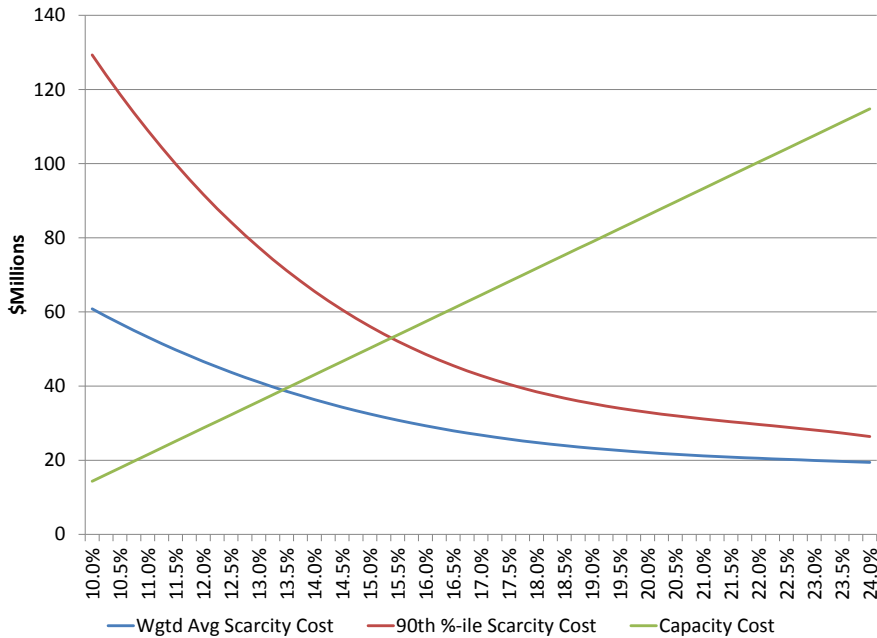
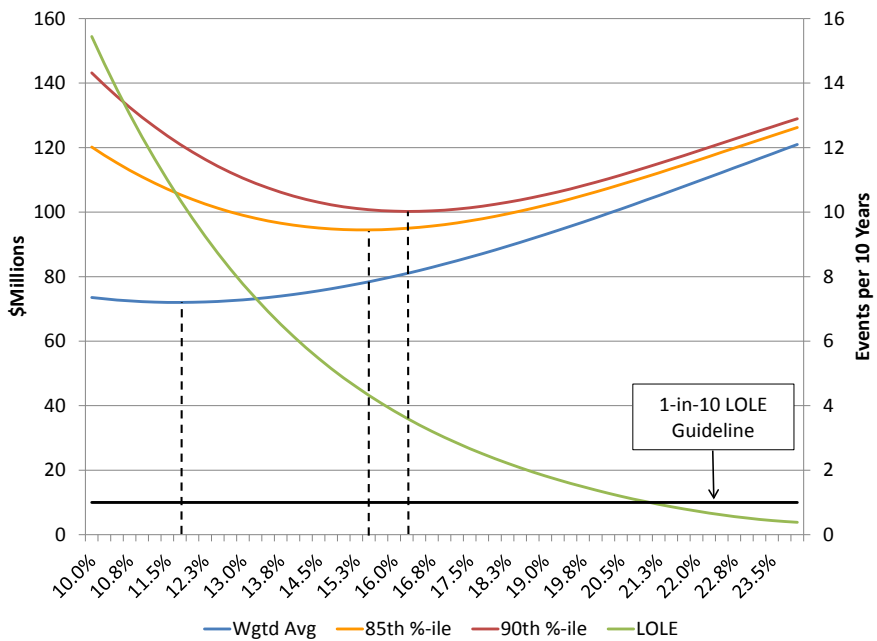


Figure 9 plots the sum of capacity and scarcity costs over a range of reserve margin levels. In the “weighted average” line, scarcity costs are computed as the probability-weighted average of scarcity costs. This is the expected sum of capacity and scarcity costs. For the “85th percentile” and “90th percentile” lines, capacity costs are added to the 85th and 90th percentiles, respectively, of the distribution of scarcity costs. Figure 9 also plots the number of loss-of-load events for the range of reserve margins.

Figure 9 – Sum of Scarcity and Capacity Costs; LOLE



When scarcity costs are computed as the probability-weighted average of scarcity costs, the sum of scarcity and capacity costs is minimized at the 11.75% reserve margin level. However, at this level, the distribution of scarcity costs is very volatile and the number of loss-of-load events is well above the 1-in-10 LOLE guideline. At an 11.75% reserve margin, the expected sum of capacity and scarcity costs is approximately \$72 million per year, but the Companies would expect these costs to be at least \$121 million once in ten years.⁸

When scarcity costs are calculated at the 85th percentile, the sum of capacity and scarcity costs is minimized at the 15.5% reserve margin level. At this level, the expected sum of capacity and scarcity costs (per the weighted average line) is only \$6 million higher, but the one-in-ten year sum of capacity and scarcity costs is \$20 million lower.⁹ In addition, while still not at the 1-in-10 LOLE guideline, the expected number of loss-of-load events is much lower at the 15.5% reserve margin level.

When scarcity costs are calculated at the 90th percentile, the sum of capacity and scarcity costs is minimized at the 16.25% reserve margin level. The volatility of costs is further reduced at this reserve margin level. Compared the 11.75% reserve margin level, expected costs at the 16.25% level are \$9 million higher, but the one-in-ten year costs are \$21 million lower. The expected number of loss-of-load events in ten years is still approximately three times the 1-in-10 LOLE guideline at the 16.25% reserve margin level.

Because of the less volatile cost profile and a more favorable expectation for loss-of-load events, the Companies focus on the 85th and 90th percentiles of the scarcity cost distribution to determine the risk-adjusted economic reserve margin range. This is consistent with the approach used to compute the reserve margin range for the 2011 IRP. With base case inputs, the optimal economic reserve margin range is 15.5% to 16.25%. The reserve margin needed to meet the 1-in-10 LOLE guideline is approximately 21%.

5.2 Sensitivity Cases

The inputs to this analysis are summarized in detail in Section 4. Because several of these inputs are uncertain, the Companies' evaluated several sensitivities to the base case. The results of these sensitivities are summarized in Table 11. A discussion of these sensitivities is included in the following sections.

⁸ At an 11.75% reserve margin, the sum of capacity and scarcity costs (per the 90th Percentile curve) is \$121 million.

⁹ At a 15.5% reserve margin, the sum of capacity and scarcity costs (per the 90th Percentile curve) is \$101 million, \$20 million lower than the sum of capacity and scarcity costs at an 11.75% reserve margin.

Table 11 – Reserve Margin Analysis Results

Case	85 th Percentile	90 th Percentile
Base Case	15.50%	16.25%
Cost of Unserved Energy		
25% Higher Cost of Unserved Energy (\$21,500/MWh)	16.00%	16.75%
25% Lower Cost of Unserved Energy (\$12,900/MWh)	14.50%	15.50%
Cost of SCCT Capacity		
20% Higher Cost of SCCT Capacity (\$94/kW-yr)	14.75%	15.75%
20% Lower Cost of SCCT Capacity (\$60/kW-yr)	16.00%	16.75%
Scarcity Prices		
25% Higher Scarcity Prices	15.50%	16.75%
25% Lower Scarcity Prices	15.50%	16.00%
Unit Availability		
Increase EFOR by 1.5 Points	17.75%	19.00%
Decrease EFOR by 0.5 Points	14.50%	15.75%
Ability to Import Power from Neighboring Regions		
No Access to Neighboring Markets	18.00%	18.50%

5.2.1 Cost of Unserved Energy

According to the studies providing the basis for the assumed cost of unserved energy (see Section 4.6), the cost of unserved energy ranges from less than \$5,000/MWh for residential customers to more than \$20,000/MWh for commercial and industrial customers. The Companies evaluated the following sensitivities related to the cost of unserved energy:

- 25% Higher Cost of Unserved Energy (\$21,500/MWh)
- 25% Lower Cost of Unserved Energy (\$12,900/MWh)

A higher cost of unserved energy results in a higher economic reserve margin range. Based on the sensitivity analysis, a 25% change in the cost of unserved energy results in a 0.5% to 1.0% change in the economic reserve margin range (see Table 11).

5.2.2 Cost of SCCT Capacity

The cost of SCCT capacity includes capital-related costs and fixed O&M costs (see Section 4.4.1). In the sensitivity analysis, capital-related costs were increased and decreased by 20%. As the cost of SCCT capacity decreases, the economic reserve margin range increases. A 20% change in capital-related SCCT costs results in a 0.5% to 0.75% change in the economic reserve margin.

5.2.3 Scarcity Prices

The scarcity price is the amount paid for purchased power in excess of the marginal cost of producing the power. The scarcity price increases as reserves decline. To test the sensitivity of the reserve margin analysis to changing scarcity prices, the Companies evaluated cases where scarcity prices were 25%

higher and 25% lower. Changing scarcity prices has a notable impact on scarcity costs but a relative small impact on the economic reserve margin range.

5.2.4 Unit Availability

As units become less available, the likelihood of experiencing generation shortages during scarcity events increases and the economic reserve margin range increases. Based on benchmarking data, the Companies' generating units rank in the top quartile for unit availability metrics; the risk of poorer performance is greater than the risk of better performance. For this reason, the Companies considered the following unit availability sensitivities:

- Increase EFOR by 1.5 points
- Decrease EFOR by 0.5 points

Compared to other sensitivities, unit availability has a fairly significant impact on the economic reserve margin range. If EFOR increases by 1.5 percentage points, the economic reserve margin range is 2.25% to 2.75% higher. If EFOR decreases by 0.5 percentage points, the economic reserve margin range is 0.5% to 1.0% lower. Based on these results, maintaining top quartile unit availability is very important for the Companies.

5.2.5 Power Import Capability

As mentioned in Section 4.2, reserve margins in neighboring regions are expected to decline precipitously over the next several years with the retirement of coal units. In addition, availability of transmission capacity to import power from neighboring markets is limited. For these reasons, the Companies evaluated a case that assumed the Companies had no ability to import power from neighboring markets.

The impact of this change is fairly significant. If the Companies do not have access to neighboring markets during scarcity events, the economic reserve margin is 18% to 18.5%.

5.3 Final Recommendation

The Companies' ability to import power from neighboring markets remains a key uncertainty, considering the declining reserve margins in MISO, PJM, and TVA. With base case inputs, the economic reserve margin is 15.5% to 16.25%. If the Companies cannot import power from neighboring regions, the economic reserve margin is higher, at 18.0% to 18.5%.

At either of these reserve margin levels, the Companies do not meet the 1-in-10 LOLE physical reliability guideline. In the base case, a reserve margin of 21% is needed to meet the 1-in-10 LOLE guideline.

For the 2011 IRP, the Companies utilized a 15% to 17% economic reserve margin range and targeted the midpoint of that range for developing expansion plans. For the 2014 IRP, the Companies will continue to target a minimum reserve margin of 16% for expansion planning. However, there are benefits to customers of maintaining a higher reserve margin to address the uncertainties associated with access to markets, extreme weather events, and unexpected unit performance issues.

2014 Resource Assessment



PPL companies

**Generation Planning & Analysis
March 2014**

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1 Executive Summary

In 2011, Louisville Gas and Electric Company and Kentucky Utilities Company (collectively, “the Companies”) announced plans to retire approximately 800 MW of coal-fired capacity to comply with the Environmental Protection Agency’s (“EPA’s”) National Ambient Air Quality Standards and Mercury and Air Toxics Standards. In February 2013, the Companies retired Tyrone 3; the IRP assumes the five Cane Run and Green River coal units will be retired in 2015. To offset this loss of energy and capacity, the Companies proposed to construct a 640 MW 2x1 natural gas combined cycle (“NGCC”) unit at their Cane Run site to be online in 2015 (“Cane Run 7” or “CR7”) and purchase the existing LS Power Bluegrass facility in LaGrange, Kentucky (495 MW of simple-cycle combustion turbines (“SCCTs”)).

The construction of Cane Run 7 is underway and on schedule. However, the Companies were unable to purchase the Bluegrass facility after receiving an unfavorable Federal Energy Regulatory Commission (“FERC”) ruling in May 2012. After preparing a new load forecast in the summer of 2012, it was confirmed that without the Bluegrass facility, additional resources would be required as early as 2015 in order to reliably serve customers’ capacity and energy needs.

To meet the long-term need for capacity and energy, the Companies issued a request for proposals (“RFP”) in September 2012. Based on the analysis of RFP responses, self-build alternatives, and DSM programs, the Companies submitted an application for Certificates of Public Convenience and Necessity (“CPCN”) in January 2014 to the Kentucky Public Service Commission for the construction of (a) a solar photovoltaic (“PV”) facility at the E.W. Brown station in 2016 (“Brown Solar” or “BRS”) and (b) a NGCC unit at the Green River station in 2018 (“Green River 5” or “GR5”).¹ The CPCN does not address the Companies’ need for capacity and energy in 2015 through 2017. The Companies plan to address this need by exploring all available options, including (but not limited to) alternatives from parties that provided responses to the September 2012 RFP and extending the life of Green River units 3 and 4.² Cane Run 7, the short-term capacity additions in 2015 through 2017, and the proposed solar PV and NGCC facilities complete the Companies’ expansion plan through 2018. The purpose of this study is to update the Companies’ forecasted expansion plan beyond 2018.

The Companies continually evaluate their resource needs. This study represents a snapshot of this ongoing resource planning process using current business assumptions and assessment of risks. Because the planning process is constantly evolving, the Companies’ least-cost expansion plan may be revised as conditions change and as new information becomes available. Even though the resource assessment represents the Companies’ analysis of the best options to meet customer needs at this given point in time, this plan is reviewed, re-evaluated, and assessed against other market available alternatives prior to commitment and implementation.

The Companies’ Resource Assessment was completed in two parts. First, the Companies performed a screening analysis of more than 50 generation technology options to determine a subset of the most

¹ See Case No. 2014-00002.

² Based on compliance requirements and date in the MATS regulations, Green River units 3 and 4 cannot be operated after April of 2015 without additional emission controls. The regulations do provide for extensions of 1 or 2 years from that date, if granted by the permitting authority. At this time, the Companies have not sought extension of the compliance date, but are analyzing this option.

competitive options. Then, this subset of generation technology options was incorporated into a detailed expansion planning analysis to determine the optimal expansion plans beyond 2018.

Since the 2011 Integrated Resource Plan (“IRP”), resource costs have been generally stable due to the economic slow-down from 2008 through 2012. An abundance of low cost natural gas supply resulting from advancements in natural gas drilling technologies coupled with relatively low capital and operating costs have greatly improved the economics of natural gas combined-cycle technology. Wind capital costs have decreased slightly compared to the 2011 IRP. The capital cost for solar PV has declined more significantly, but this trend is expected to flatten. Overall, the costs of renewable generation remain higher than fossil generation technologies. However, with tax incentives and Renewable Energy Credits (“RECs”), both solar PV and wind technologies can be cost competitive.

In the screening analysis, the levelized cost of the technology options was calculated at various levels of utilization. In addition to the level of utilization (i.e., capacity factor), the levelized cost of each technology option is impacted by the uncertainty in capital cost, fuel cost, unit efficiency, and CO₂ emissions. As a result, the technology options were evaluated over three capital cost scenarios, three heat rate scenarios, three fuel scenarios, two CO₂ scenarios, and ten capacity factors for a total of 540 cases. Given the uncertainty in REC prices and the availability of investment tax credits (“ITC”) for renewable technologies, two iterations of 540 cases were evaluated:

- No ITC or RECs: This iteration did not include an ITC for renewable technologies or wind and solar RECs.
- 10% ITC and RECs: This iteration incorporated a 10% ITC and current REC market prices for solar and wind technologies.

Table 1 lists the technology options that were ranked among the top four least-cost technology options in at least one of the 540 cases. In the “No ITC or RECs” iteration, the “2x1 NGCC G/H-Class” option was least-cost in 440 of the 540 cases and ranked among the top four least-cost options in all 540 cases. The option to install three F-Class SCCTs (“SCCT F-Class – Three Units”) was least-cost in 100 cases. The “2x1 NGCC G/H-Class” option had the lowest levelized cost for capacity factors exceeding 20% and is the best option for meeting intermediate and base load energy needs. The “SCCT F-Class – Three Units” option was least cost for capacity factors below 20% and the best choice for meeting peak energy needs. In the “10% ITC and RECs” iteration, the solar PV and wind technology options were ranked among the top four least-cost technology options in multiple cases.

Table 1 – Screening Results (Technology Options Ranked Among Top Four Least-Cost)

Generation Technology Option	No ITC or RECs					10% ITC and RECs				
	# Occurrences				Total	# Occurrences				Total
1 st	2 nd	3 rd	4 th	1 st		2 nd	3 rd	4 th		
2x1 NGCC G/H-Class	440	14	32	54	540	428	21	37	54	540
2x1 NGCC G/H-Class – DF	0	145	368	27	540	0	131	375	34	540
2x1 NGCC F-Class	0	326	95	42	463	0	326	78	53	457
2x1 NGCC F-Class – DF	0	0	0	288	288	0	0	0	268	268
1x1 NGCC G/H-Class	0	0	27	110	137	0	0	27	110	137
SCCT F-Class – Three Units	100	1	18	5	124	100	1	18	5	124
SCCT F-Class – One Unit	0	54	0	14	68	0	54	0	14	68
Solar Photovoltaic	0	0	0	0	0	11	1	1	1	14
Wind	0	0	0	0	0	1	6	3	1	11
Hydroelectric	0	0	0	0	0	0	0	1	0	1

Table 2 lists the generation technology options that were evaluated in the detailed expansion planning analysis. The two F-Class NGCC options, the 2x1 NGCC G/H-Class option with duct firing (“DF”), and the hydroelectric option in Table 1 were ultimately excluded from the detailed analysis. Potential GHG regulation and uncertainty in gas prices make the added efficiency of the G-Class option more cost-effective than the F-Class option. Additionally, the capital and fixed costs for the G-Class option are lower on a per-kilowatt (“kW”) basis. The 2x1 NGCC G/H-Class option with duct firing was consistently less favorable than the 2x1 NGCC G/H-Class option without duct firing.³ The hydroelectric option was eliminated because it ranked among the top four least-cost options in only one of 540 cases. In addition, the Companies are not aware of any viable sites for new hydroelectric capacity near their service territories.

Table 2 – List of Technology Options Evaluated in Expansion Planning Analysis

2014 IRP Generation Technology Options
2x1 NGCC G/H-Class
1x1 NGCC G/H-Class
SCCT F-Class – Three Units
SCCT F-Class – One Unit
Solar Photovoltaic
Wind

The list of generation technology options in Table 2 is very similar to the list of technology options that passed the screening analysis for the 2011 IRP. Notable exceptions include the 3x1 NGCC technology option and the supercritical pulverized coal (“PC”) technology option. The 3x1 NGCC was excluded from the analysis due to its size; it is difficult for the Companies to recover from the loss of such a large unit given the relatively small size of their generating portfolio. The supercritical PC technology option was not ranked among the least-cost technology options due primarily to its high capital cost and a lower forecast of natural gas prices.⁴ In addition, currently proposed federal New Source Performance

³ In addition, the 2x1 NGCC options with duct firing are not materially different from the 2x1 NGCC options without duct firing. Duct firing serves as a means to adjust the size and flexibility of a NGCC unit.

⁴ Compared to the 2x1 NGCC G/H-Class option, the capital cost for the supercritical PC option is more than five times higher. The price spread between the Mid natural gas price forecast and the coal price forecast is more than 70% lower in the 2014 IRP compared to the 2011 IRP.

Standards (“NSPS”) for Greenhouse Gas (“GHG”) regulations would require coal units to eventually be equipped with large scale, commercially unproven and currently uneconomic CO₂ capture and sequestration technology.

Table 3 details the Companies’ current capacity supply/demand balance for the 15-year planning period in the Base load forecast.⁵ As discussed in the Companies’ 2014 Reserve Margin Study, the Companies target a minimum 16 percent reserve margin (above peak load after adjusting for demand-side management (“DSM”) programs) for the purpose of developing expansion plans. The IRP assumes the Cane Run and Green River coal units will be retired in 2015. To offset this loss of capacity and energy, the Companies are building Cane Run 7 (“CR7”) and have proposed to build Brown Solar and Green River 5 by 2018. Considering these changes to the Companies’ generation portfolio, along with more than 400 MW of demand reduction from DSM programs by 2018 and 131 MW of curtailable load from curtailable service rider customers, the Companies will have a long-term need for capacity beginning in 2025. As mentioned previously, the Companies plan to address the reserve margin shortfall in 2015 through 2017 by exploring all available options, including (but not limited to) alternatives from parties that provided responses to the September 2012 RFP and extending the life of Green River units 3 and 4. Table 3 excludes any capacity additions in these years as these additions have not been identified.

Table 3 – Resource Summary (MW, Summer)

	2014	2015	2016	2017	2018	2020	2025	2028
Forecasted Peak Load	7,278	7,364	7,450	7,536	7,623	7,721	8,003	8,171
DSM	(306)	(336)	(365)	(394)	(423)	(406)	(406)	(406)
Net Peak Load	6,972	7,028	7,085	7,142	7,199	7,315	7,598	7,766
Existing Resources ⁶	7,904	7,152	7,135	7,135	7,135	7,135	7,135	7,135
Planned/Proposed Resources ⁷	0	640	649	649	1,319	1,319	1,319	1,319
Firm Purchases (OVEC)	155	155	155	155	155	155	155	155
Curtailable Load	128	131	131	131	131	131	131	131
Total Supply	8,187	8,078	8,069	8,070	8,740	8,740	8,740	8,740
Reserve Margin (“RM”)	17.4%	14.9%	13.9%	13.0%	21.4%	19.5%	15.0%	12.5%
RM Shortfall (16% RM) *	99	(75)	(149)	(215)	389	255	(73)	(268)

While meeting customers’ energy demand at the peak hour is critical, it is also vital to reliably serve their energy needs at all hours at the lowest reasonable cost. As seen in Table 4, energy requirements are forecasted to grow by 3.6 TWh over the next 15 years even after reductions for DSM.⁸ This translates into a compound annual growth rate of 0.7 percent.

⁵ For purposes of calculating reserve margin, loads subject to the Companies’ curtailable service rider are considered supply-side resources.

⁶ Existing resources include the retirement of Tyrone 3 in February 2013 and the planned retirement of Green River 3-4 in April 2015 and Cane Run 4-6 in May 2015.

⁷ Planned/Proposed Resources include Cane Run 7 in May 2015, as well as Brown Solar in June 2016 and Green River 5 in January 2018.

⁸ Energy requirements represent the amount of generated energy needed to serve customers’ energy needs, inclusive of transmission and distribution losses.

Table 4 – Energy Requirements (TWh, After DSM)

	2014	2015	2016	2017	2018	2020	2025	2028
Energy Requirements	35.7	35.9	36.2	36.4	36.7	37.3	38.5	39.3

In the expansion planning analysis, the Companies developed optimal expansion plans using the technology options in Table 2 over multiple natural gas price, load, and CO₂ scenarios. The cost and unit characteristics for these technology options are summarized in Table 5. The NGCC technology options have higher capital and fixed operating and maintenance (“O&M”) costs, but much better heat rates than simple-cycle combustion turbines (“SCCTs”). The “SCCT F-Class – Three Units” option takes advantage of economies of scale, which results in lower capital costs on a dollar per kilowatt (“\$/kW”) basis. Wind and solar options have much higher capital costs than other options on a \$/kW basis, but no energy costs.

Table 5 – Cost and Unit Characteristics for Generation Technology Options (2013 \$)

Generation Technology Option	2x1 NGCC G/H-Class	1x1 NGCC G/H-Class	SCCT F-Class – One Unit	SCCT F-Class – Three Units	Wind Turbine	Solar PV
Reference Name ⁹	2x1G	1x1G	SCCT	CTx3	Wind	SLPV
Net Capability (MW)						
Summer	737	368	201	602	50	50
Winter	859	429	220	659	50	50
Overnight Installed Cost (\$/kW) ¹⁰	747	945	587	462	2,201	2,990
Total Non-Fuel Variable O&M (\$/MWh) ¹¹	2.93	2.99	11.56	11.56	0.00	0.00
Total Fixed O&M (\$/kW-yr) ¹²	26.5	31.3	28.0	25.3	25.0	17.0
Full Load Heat Rate (mmBtu/MWh)	6.5	6.5	9.9	9.9	N/A	N/A
Unavailability (%) ¹³	5.0%	5.0%	4.6%	4.6%	73.0% ¹⁴	82.6% ¹⁵

The Companies developed expansion plans over multiple load, gas price, and CO₂ scenarios. CO₂ scenarios include: 1) a Zero CO₂ price scenario, where there is never a price on future CO₂ emissions; 2) a Mid CO₂ price scenario, where a price on each ton of CO₂ begins in 2020; and 3) a CO₂ mass emissions cap scenario, where CO₂ emissions are limited to 29.4 million tons per year beginning in 2020. The results of the analysis for the Base load scenarios are summarized in Table 6.

⁹ Reference names are used to more easily compare expansion plans.

¹⁰ Installed cost is based on annual average capacity.

¹¹ Variable O&M for NGCC and SCCT options includes long-term service agreement costs.

¹² Fixed O&M for NGCC and SCCT options includes costs associated with reserving firm gas-line capacity.

¹³ Unavailability for NGCC and SCCT options is the long-term steady-state outage rate expected after initial operation. For wind and solar options, unavailability reflects the expected capacity factor (Unavailability = 1 – Capacity Factor).

¹⁴ Wind turbine capacity factor modeled at 27% with 11% of the capacity counting toward reserve margin.

¹⁵ Solar photovoltaic capacity factor modeled at 17.4% with 90% of the capacity counting toward reserve margin.

Table 6 – Optimal Expansion Plans (Base Load Scenarios)¹⁶

CO ₂	OC	OC	OC	MC	MC	MC	Cap	Cap	Cap
Load	BL	BL	BL	BL	BL	BL	BL	BL	BL
Gas Price	LG	MG	HG	LG	MG	HG	LG	MG	HG
2014									
2015	CR7	CR7	CR7	CR7	CR7	CR7	CR7	CR7	CR7
2016	BRS	BRS	BRS	BRS	BRS	BRS	BRS	BRS	BRS
2017									
2018	GR5	GR5	GR5	GR5	GR5	GR5	GR5	GR5	GR5
2019									
2020				Ret BR1-2 1x1G(1)	Ret BR1-2 1x1G(1)	Ret BR1-2 2x1G(1)	Ret BR1-2 2x1G(1)	Ret BR1-2 2x1G(1)	Ret BR1-2 2x1G(1)
2021									
2022				2x1G(1)	2x1G(1)				
2023									
2024									
2025	2x1G(1)	SCCT(1)	2x1G(1)						
2026									
2027		SCCT(1)							
2028									Wind(4)

CO₂: Zero (OC), Mid (MC), Mass Emissions Cap (Cap) Load: Base (BL) Gas Price: Low (LG), Mid (MG), High (HG)

In the Zero CO₂ price scenarios, the addition of new capacity (in 2025) coincides with the Companies’ need for capacity, as expected. In the Mid CO₂ price and CO₂ mass emissions cap scenarios, new capacity is added in 2020. Two factors drive this result. First, the system benefits from low CO₂-emitting generation in a carbon-constrained world, even when the capacity and energy may not be needed to maintain the target reserve margin; the production cost savings associated with low CO₂-emitting generation more than offsets the increased cost of building new generation sooner. Second, in these scenarios, average capacity factors of Brown 1 and 2 were consistently less than 10 percent; therefore, these two units were assumed to be retired in 2020 in these scenarios.

Because NGCC capacity is added first in eight of the nine scenarios in Table 6, a natural gas unit will likely be included in the Companies’ least cost plan to meet load requirements beyond 2018. In the Zero CO₂ price scenarios, NGCC capacity is added to meet customers’ growing need for energy (as well as capacity). In the Mid CO₂ price and CO₂ mass emissions cap scenarios, NGCC capacity is added to meet the need for low-emitting CO₂ resources (as well as customers’ energy needs). Generally speaking, more NGCC capacity is added sooner in the CO₂ mass emissions cap scenarios compared to the Mid CO₂ price scenarios. Without this additional NGCC capacity, the system cannot economically meet the CO₂ mass emissions cap.

In the High gas, CO₂ emissions cap scenario, wind capacity is added to the Companies’ portfolio in 2028. In the High gas price scenario, gas prices exceed \$8/mmBtu beyond 2025. High gas prices coupled with the CO₂ mass emissions cap makes wind generation competitive in this scenario.

¹⁶ In Table 6, the value in parentheses following the technology option’s reference name indicates the number of units added in a given year.

2 Supply-Side Screening Analysis

2.1 Introduction

The Companies' resource assessment considered 58 generation technology options. A detailed evaluation (using production costing computer models) of all technology options is impractical due to the significant amount of time required for computer simulation. Therefore, the purpose of the supply-side screening analysis is to identify a subset of the most competitive generation technology options that will be modeled in the more detailed expansion planning analysis.

Section 2.2 summarizes the generation technology options considered for meeting future capacity and energy needs. Organized by types, these technology options range from natural gas, coal-fired, waste-to-energy, renewable, energy storage and nuclear technologies. Section 2.3 presents the key uncertainties that were considered in the analysis. Section 2.3.5 describes the methodology used to evaluate and compare the technology options, and Section 2.5 concludes with determining the least cost generation technology options to be used in the expansion planning analysis.

2.2 Generation Technology Options

2.2.1 Technology Options Summary

The list of generation technology options evaluated in the 2014 IRP was developed from the list of technology options evaluated in the 2011 IRP. The 2011 IRP list was reviewed and updated to reflect KPSC inputs, environmental factors, cost dynamics and permitting realities. Once the basic list of resources was determined, the cost and performance characteristics were estimated by Burns & McDonnell, an engineering consulting firm. Table 7 lists all the technology types considered, the generation technology options for each technology type, as well as the representative technology option the study used as a basis for the cost and performance estimates. The list of generation technology types includes natural gas, coal-fired, waste to energy, energy storage, renewable, and nuclear technologies. Each of these technology types is discussed in more detail in the following sections.

Table 7 – Generation Technology Types

Technology Type	Generation Technology Option	Representative Technology Option
Natural Gas	SCCT Aeroderivative – One Unit	Simple-cycle GE LM6000 – One Unit
Natural Gas	SCCT Aeroderivative – Four Units	Simple-cycle GE LM6000 – Four Units
Natural Gas	Intercooled SCCT Aeroderivative – One Unit	Simple-cycle GE LMS100 – One Unit
Natural Gas	Intercooled SCCT Aeroderivative – Two Units	Simple-cycle GE LMS100 – Two Units
Natural Gas	SCCT E-Class – One Unit	Simple-cycle GE 7EA – One Unit
Natural Gas	SCCT E-Class – Three Units	Simple-cycle GE 7EA – Three Units
Natural Gas	SCCT F-Class – One Unit	Simple-cycle GE 7F-5 – One Unit
Natural Gas	SCCT F-Class – Three Units	Simple-cycle GE 7F-5 – Three Units
Natural Gas	Spark Ignition Reciprocating Engine – Six Units	Recip Engine - 100 MW – Six Units
Natural Gas	Spark Ignition Reciprocating Engine – Twelve Units	Recip Engine - 200 MW – Twelve Units
Natural Gas	Simple-cycle Gas Microturbine – Five Units	Microturbine- 1 MW – Five Units
Natural Gas	Simple-cycle Gas Microturbine – Fifteen Units	Microturbine - 3 MW – Fifteen Units
Natural Gas	Molten-Carbonate Fuel Cell – Four Units	Fuel Cell - 10 MW – Four Units
Natural Gas	Molten-Carbonate Fuel Cell – Twelve Units	Fuel Cell - 30 MW – Twelve Units
Natural Gas	1x1 NGCC F-Class	Combined-Cycle 1x1 GE 7F-5
Natural Gas	1x1 NGCC F-Class – DF	Combined-Cycle 1x1 GE 7F-5 - Fired
Natural Gas	1x1 NGCC G/H-Class	Combined-Cycle 1x1 MHI GAC
Natural Gas	1x1 NGCC G/H-Class – DF	Combined-Cycle 1x1 MHI GAC - Fired
Natural Gas	1x1 NGCC J-Class	Combined-Cycle 1x1 MHI JAC
Natural Gas	1x1 NGCC J-Class – DF	Combined-Cycle 1x1 MHI JAC - Fired
Natural Gas	2x1 NGCC F-Class	Combined-Cycle 2x1 GE 7F-5
Natural Gas	2x1 NGCC F-Class – DF	Combined-Cycle 2x1 GE 7F-5 - Fired
Natural Gas	2x1 NGCC G/H-Class	Combined-Cycle 2x1 MHI GAC
Natural Gas	2x1 NGCC G/H-Class – DF	Combined-Cycle 2x1 MHI GAC - Fired
Natural Gas	2x1 NGCC J-Class	Combined-Cycle 2x1 MHI JAC
Natural Gas	2x1 NGCC J-Class – DF	Combined-Cycle 2x1 MHI JAC - Fired
Natural Gas	3x1 NGCC F-Class	Combined-Cycle 3x1 GE 7F-5
Natural Gas	3x1 NGCC F-Class – DF	Combined-Cycle 3x1 GE 7F-5 - Fired
Natural Gas	3x1 NGCC G/H-Class	Combined-Cycle 3x1 MHI GAC
Natural Gas	3x1 NGCC G/H-Class – DF	Combined-Cycle 3x1 MHI GAC - Fired
Natural Gas	3x1 NGCC J-Class	Combined-Cycle 3x1 MHI JAC
Natural Gas	3x1 NGCC J-Class – DF	Combined-Cycle 3x1 MHI JAC - Fired

Technology Type	Generation Technology Option	Representative Technology Option
Coal Fired	Subcritical Pulverized Coal	Subcritical Pulverized Coal
Coal Fired	Subcritical Pulverized Coal with CC	Subcritical Pulverized Coal with CC
Coal Fired	Circulating Fluidized Bed	Circulating Fluidized Bed
Coal Fired	Circulating Fluidized Bed with CC	Circulating Fluidized Bed with CC
Coal Fired	Supercritical Pulverized Coal – 500 MW	Supercritical Pulverized Coal
Coal Fired	Supercritical Pulverized Coal with CC – 425 MW	Supercritical Pulverized Coal with CC
Coal Fired	Supercritical Pulverized Coal – 750 MW	Supercritical Pulverized Coal
Coal Fired	Supercritical Pulverized Coal with CC – 638 MW	Supercritical Pulverized Coal with CC
Coal Fired	2x1 Integrated Gasification	2x1 Integrated Gasification
Coal Fired	2x1 Integrated Gasification with CC	2x1 Integrated Gasification with CC
Waste to Energy	MSW Stoker Fired	MSW Stoker Fired
Waste to Energy	RDF Stoker Fired	RDF Stoker Fired
Waste to Energy	Wood Stoker Fired	Wood Stoker Fired
Waste to Energy	Landfill Gas IC Engine	Landfill Gas IC Engine
Waste to Energy	Anaerobic Digester Gas IC Engine	Anaerobic Digester Gas IC Engine
Waste to Energy	Co-fired Circulating Fluidized Bed	Co-fired Circulating Fluidized Bed
Waste to Energy	Co-fired Circulating Fluidized Bed	Co-fired Circulating Fluidized Bed
Energy Storage	Pumped Hydro Energy Storage	Pumped Hydro Energy Storage
Energy Storage	Adv. Battery Energy Storage	Adv. Battery Energy Storage
Energy Storage	Compressed Air Energy Storage	Compressed Air Energy Storage
Renewable	Wind	Wind
Renewable	Solar Photovoltaic	Solar Photovoltaic
Renewable	Solar Thermal	Solar Thermal
Renewable	Hydro Electric	Hydro Electric
Nuclear	Small Modular Nuclear	Small Modular Nuclear

2.2.1.1 Natural Gas

Because of the Environmental Protection Agency’s (“EPA’s”) proposed New Source Performance Standards (“NSPS”) for GHG, natural gas has become the fuel of choice for new fossil generation. The capital and operating costs of simple and combined-cycle gas turbine plants have remained relatively stable since the last IRP, with a slightly decreasing cost trend due primarily to slow economic growth over the past three years.

Typically, simple-cycle gas turbines (“SCCT”) are used for peaking power due to their fast load ramp rates and relatively low capital costs. The SCCT options include traditional frame machines as well as aero-derivative combustion turbines. Two options from General Electric (“GE”) were evaluated as representative aero-derivative technology options: GE’s LM6000 and LMS100 combustion turbines. Aero-derivative machines are flexible, more efficient than larger frame units, and can be installed with high temperature oxidation catalysts for carbon monoxide control and a selective catalytic reduction (“SCR”) system for nitrogen oxides (“NO_x”) control, which allows them to be located in areas with air emissions concerns. Frame simple-cycle machines, on the other hand, are larger and less expensive on \$/kW basis. This study considered GE models 7EA and 7F-5 as representative technology options for the “E” and “F” turbine classes. The analysis considered building and operating single SCCT and multiple SCCT units to reflect savings from economies of scale.

Other natural gas-fired generation options include internal combustion engines, microturbines, and fuel cells. These options are easily scalable and are well-suited for distributed generation and combined

heat and power applications. For this reason, the supply-side analysis modeled these options as single units and as multiple units. The Wärtsilä 18V50DF reciprocating engine was evaluated in this study as the representative technology option for the reciprocating engine. Reciprocating engines can accommodate both natural gas and fuel oil, and has high efficiency across the ambient range. Reciprocating engines are becoming popular as a means to follow wind turbine generation with their quick start times and operational flexibility. At present, fuel cells hold less promise for large utility scale applications due to high capital and maintenance costs, partly attributable to the lack of production capability and limited development.

Multiple natural gas combined cycle (“NGCC”) configurations were evaluated: 1x1, 2x1, and 3x1 configurations based on “F-Class,” “G/H-Class,” and “J-Class” combustion turbines. The “F-Class” turbine designs tend to be smaller with faster startup times and higher operational flexibility, including peaking power capabilities and reduced load operation for off-peak turn-down. The “G/H-Class” turbine design is better geared for base load operation. Compared to the “F-Class”, it is larger and more efficient, but with less turndown capability. The “J-Class” combustion turbine, which is an even larger and a more advanced design, is now commercially available in the United States, though no orders have been placed to date. The generation technology options table also includes duct firing (“DF”), which is not a stand-alone resource option, but is considered to be an available option for any combined-cycle configuration and represents a low cost option to add peaking capability at relatively high efficiency. Duct firing is also a mechanism to recover lost power generation capability due to high ambient temperatures.

2.2.1.2 Coal Fired

Due to the increasing cost of emission controls, the cost for large coal-fired generation has increased since the previous IRP. However, the uncertainty of both proposed and future carbon regulations as well as the difficulty in obtaining environmental permits for coal based generation have drastically reduced the interest in developing and investing in new pulverized coal technology. Supercritical pulverized coal (“PC”) boilers continue to be the most efficient and cost effective with the smallest overall emission intensity rates among coal-fired technology options. Compared to subcritical PC, supercritical PC have better load following capability, faster ramp rates, and use less water.

The potential requirement for CO₂ capture (“CC”) represents a significant cost for new and, possibly, existing coal resources. Currently proposed federal New Source Performance Standards (“NSPS”) for Greenhouse Gas (“GHG”) regulations would require CC for new coal units to meet the proposed emissions limit. CC has been demonstrated in the field, but not at the scale that would be necessary for utility generation. As the technologies mature, they will likely become more technically and financially feasible, especially if markets emerge for the captured gases. In the meantime, however, early adopters may be subject to significant cost and performance risks. The cost estimate for carbon capture technology has increased by 25% compared to the 2011 IRP.

Circulating fluidized bed (“CFB”) boilers are a mature coal technology option that is well suited to burn fuels with a large variability in constituents. Large CFBs require more than one boiler. This increases capital costs but improves unit availability compared to PC technology options. Like PC technology options, CFB are also subject to NSPS for GHG regulations and would require the same CC technology.

The Integrated Gasification Combined-cycle (“IGCC”) is the third coal-based technology option considered in this study. A significant advantage for IGCC when compared to PC technology options is the fact CO₂ capture with an IGCC is a more proven for utility scale applications. However, IGCC is a technology in continued development and various stages of commercialization. Only a limited number

of IGCC plants have been built and operated around the world. These early plants have significantly exceeded their capital budgets. Compared to the 2011 IRP, the capital cost for IGCC has increased by 50%.

2.2.1.3 Waste to Energy

Waste to energy (“WTE”) generation can be a practical generation option if there is an existing source of waste that can be used as fuel. Waste fuel is a very diverse category that includes: municipal solid waste (“MSW”), refuse derived fuel (“RDF”), wood chips, landfill gas, sewage, and tire derived fuel (“TDF”). Waste to energy fuels will be discussed in more detail in Section 2.3.3.2. Depending on the waste fuel, most traditional technologies can be employed, including stoker boilers, CFB boilers, and reciprocating engines. The greatest challenge to building large WTE plants or retrofitting a coal unit to a large biomass plant is the cost, availability, reliability, and homogeneity of a long-term fuel supply. The transport and handling logistics of large quantities of WTE fuel poses a significant challenge, depending on the size of the facility.

2.2.1.4 Energy Storage

Energy storage technology options provide short term peaking generation and voltage frequency management. Battery energy storage systems have fast response times, allowing flexibility in load management. Compressed air energy storage (“CAES”) and pumped hydro energy storage systems store off-peak power to be released during on-peak demand periods. Energy storage continues to be of interest since the variable nature of some conventional renewable generation alternatives could be enhanced if the energy produced could be stored. However, energy storage technology options are still not cost effective. In addition, land use requirements for pumped hydroelectric facilities make this storage technology option not very suitable in the Companies’ territory.

2.2.1.5 Renewables

The renewable options include solar, wind, and hydro generation. Wind capital costs have decreased slightly compared to the 2011 IRP. The capital cost for solar photovoltaic (“PV”) has declined more significantly, but this trend is expected to flatten.

Due to the historically lower capital cost compared to other renewable options, wind turbines have been more common in the utility industry but do not provide a good source of base-load capacity. The viability of wind generation is dependent on wind speeds. Kentucky has average wind speeds that are less than 12.5 mph. Wind speeds of 14.5 mph are needed for suitable wind generation. In this IRP, the peak contribution of the wind resources is assumed to be 11 percent of the total wind capacity. The assumed annual capacity factor of wind is 27 percent. A variable cost of \$5.40/MWh (in 2013 dollars) was added to capture the cost of additional load-following resources needed to integrate wind into the system.¹⁷

Solar PV is a proven technology option for daytime peaking power and a viable option to pursue renewable goals and reduce emissions. Solar generation is a function of the amount of sunlight (i.e. electromagnetic radiation) incident on a surface per day, measured in kWh/ m²/day. Kentucky receives between 4 and 5.5 kWh/m²/day. Areas in the western United States with high rates of solar development receive over 7.5 kWh/m²/day. In this IRP, the peak contribution of the solar resource is assumed to be 90 percent of the total solar capacity.

¹⁷ The wind integration cost was based on The National Renewable Energy Laboratory’s Eastern Wind Integration and Transmission Study. For the complete report, see: <http://www.nrel.gov/docs/fy11osti/47078.pdf>.

The companies recently finished upgrading the hydro units on Dix Dam and are in the process of upgrading the Ohio Falls Hydro units. The Companies' are not aware of any viable alternatives near their service territories for expanding their portfolio of hydro generation.

The costs of renewable generation remain higher than fossil generation technology options. However, with tax incentives and Renewable Energy Credits ("RECs"), both solar PV and wind technology options can be cost competitive.

2.2.1.6 Nuclear

Included in the generation technology option table is a small modular reactor ("SMR"). Currently, SMRs are considered conceptual in design and are developmental in nature. This emerging nuclear technology option offers a smaller footprint and standardized construction compared to traditional nuclear systems, which reduces overall project costs. However, sociopolitical resistance and regulatory obstacles will continue creating permitting challenges for nuclear.

2.2.2 Technology Option Inputs

Table 8 provides the operating characteristics and costs for each of the technology options considered in the screening analysis. The 2013 LGE-KU Generation Technology Assessment, conducted by Burns & McDonnell, served as the basis for these inputs. The 2013 LGE-KU Generation Technology Assessment report is also provided in Volume 3, Technical Appendix. Each of the key input assumptions are discussed in more detail in the following sections.

Table 8 – Generation Technology Options

Representative Technology Option	Operating Characteristics			Costs (2013 \$)		
	Fuel Type	Capacity MW	Heat Rate Btu/kWh	Capital \$/kW	FO&M \$/kW-yr	VO&M \$/MWh
Simple-cycle GE LM6000 – One Unit	Gas	49				
Simple-cycle GE LM6000 – Four Units	Gas	195				
Simple-cycle GE LMS100 – One Unit	Gas	106				
Simple-cycle GE LMS100 – Two Units	Gas	211				
Simple-cycle GE 7EA – One Unit	Gas	87				
Simple-cycle GE 7EA – Three Units	Gas	260				
Simple-cycle GE 7F-5 – One Unit	Gas	211				
Simple-cycle GE 7F-5 – Three Units	Gas	634				
Recip Engine - 100 MW – Six Units	Gas	100				
Recip Engine - 200 MW – Twelve Units	Gas	200				
Microturbine - 1 MW – Five Units	Gas	1				
Microturbine - 3 MW – Fifteen Units	Gas	3				
Fuel Cell - 10 MW – Four Units	Gas	11				
Fuel Cell - 30 MW – Twelve Units	Gas	34				

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Representative Technology Option	Operating Characteristics			Costs (2013 \$)		
	Fuel Type	Capacity MW	Heat Rate Btu/kWh	Capital \$/kW	FO&M \$/kW-yr	VO&M \$/MWh
Combined-cycle 1x1 GE 7F-5	Gas	315				
Combined-cycle 1x1 GE 7F-5 - Fired	Gas	357				
Combined-cycle 1x1 MHI GAC	Gas	397				
Combined-cycle 1x1 MHI GAC - Fired	Gas	452				
Combined-cycle 1x1 MHI JAC	Gas	441				
Combined-cycle 1x1 MHI JAC - Fired	Gas	503				
Combined-cycle 2x1 GE 7F-5	Gas	638				
Combined-cycle 2x1 GE 7F-5 - Fired	Gas	719				
Combined-cycle 2x1 MHI GAC	Gas	796				
Combined-cycle 2x1 MHI GAC - Fired	Gas	901				
Combined-cycle 2x1 MHI JAC	Gas	884				
Combined-cycle 2x1 MHI JAC - Fired	Gas	1,003				
Combined-cycle 3x1 GE 7F-5	Gas	960				
Combined-cycle 3x1 GE 7F-5 - Fired	Gas	1,082				
Combined-cycle 3x1 MHI GAC	Gas	1,199				
Combined-cycle 3x1 MHI GAC - Fired	Gas	1,356				
Combined-cycle 3x1 MHI JAC	Gas	1,330				
Combined-cycle 3x1 MHI JAC - Fired	Gas	1,509				
Subcritical Pulverized Coal	Coal	500				
Subcritical Pulverized Coal with CC	Coal	425				
Circulating Fluidized Bed	Coal	500				
Circulating Fluidized Bed with CC	Coal	425				
Supercritical Pulverized Coal	Coal	500				
Supercritical Pulverized Coal with CC	Coal	425				
Supercritical Pulverized Coal	Coal	750				
Supercritical Pulverized Coal with CC	Coal	638				
2x1 Integrated Gasification	Coal	618				
2x1 Integrated Gasification with CC	Coal	482				
MSW Stoker Fired	MSW	50				
RDF Stoker Fired	RDF	50				
Wood Stoker Fired	Biomass	50				
Landfill Gas IC Engine	LFG	5				
Anaerobic Digester Gas IC Engine	Sewage	5				
Co-fired Circulating Fluidized Bed	Coal/Biomass	50				
Co-fired Circulating Fluidized Bed	Coal/TDF	50				
Pumped Hydro Energy Storage	Charging	200				
Adv. Battery Energy Storage	Charging	10				
Compressed Air Energy Storage	Gas/Charging	135				
Wind	No Fuel	50				
Solar Photovoltaic	No Fuel	50				
Solar Thermal	No Fuel	50				
Hydro Electric	No Fuel	50				
Small Modular Nuclear	U235	225				

2.2.2.1 Unit capacity

Unit capacity for each technology option is the net full load output in MW at annual average ambient conditions of 59°F and 60% relative humidity at 600 feet of elevation.

2.2.2.2 Heat rate

The heat rate value provided is the full load net heat rate (HHV Btu/kWh) under new and clean operating conditions. The heat rate is based on annual average performance.

2.2.2.3 Capital Cost

The following assumptions were used by Burns & McDonnell in developing the capital cost estimates for the generation technology options:

- All capital cost estimates are stated in 2013 “overnight” dollars.
- All generation technology options are based on a generic Greenfield site in Kentucky.
- Water, natural gas, and transmission are assumed to be available at the site boundary.
- Capital estimate include air quality control equipment based on expected BACT requirements.
- Project indirect costs such as engineering and construction management as well as EPC fees are included. Owner’s costs such as project development and spare parts are also included.
- The following costs were excluded from the capital cost estimates: natural gas supply pipeline, sales and property tax, and transmission upgrades.

2.2.2.4 Fixed and variable O&M:

The following assumptions were used for determining the fixed and variable operating and maintenance costs:

- O&M costs are in 2013 dollars.
- O&M costs are based on operating a Greenfield site.
- Fixed O&M cost estimates include labor, office and administration, building and ground maintenance, communication, and laboratory expenses.
- Variable O&M costs include equipment maintenance, water treatment, ammonia, SCR replacements, and other consumables not including fuel.

2.2.2.5 Gas turbine major maintenance

Gas turbine maintenance was assumed to be covered by a long-term service agreement (“LTSA”). LTSA cost is based on \$/operating hour if hours of operation exceed 30 hours per start. Otherwise, the cost is determined per combustion turbine start.

2.2.2.6 Emission Rates for SO₂, NO_x and CO₂

The emission rates provided for each technology option, when applicable, represent full load emission rates, expressed in lbs/mmBtu. The emissions rates are based on expected BACT requirements.

2.2.3 Other Inputs

2.2.3.1 Investment Tax Credit and Renewable Energy Credits

To qualify for the federal production tax credits, the construction of renewable resources must have started by 12/31/2013. Therefore, only the income tax credit (“ITC”) was evaluated in the supply-side screening analysis for renewable resources. The 30% ITC will be available until the end of 2016 and is assumed to be replaced by a 10% ITC. Uncertainty exists regarding the level and duration of tax credits for renewables.¹⁸ As a result, renewable technology options were evaluated with and without the 10% ITC.

As long as Kentucky does not have a renewable portfolio standard, the Companies would have the option to sell the RECs that are created when either a wind or solar facility produces electricity.¹⁹ Today, the market price in Ohio for solar RECs from Kentucky is \$24-28 per REC and wind RECs from Kentucky is

¹⁸ A tax reform staff discussion draft proposed on Dec. 18, 2013 would extend the PTC through 2016, and offer low- and zero-emission generators placed into service after 2016 a one-time, maximum 20% tax credit.

¹⁹ One REC is created for every MWh that is produced.

\$9.5-11 per REC. While the market price for solar RECs is more than \$100 in New Jersey and Maryland, more than \$200 in Massachusetts, and more than \$400 in Washington D.C., it is the Companies’ understanding that solar RECs from Kentucky cannot currently be sold in these markets.

2.2.3.2 Financial Inputs

Table 9 provides the escalation rates used in the supply-side screening analysis for capital, fixed O&M, and variable O&M along with the revenue requirements discount rate.

Table 9 – Key Financial Inputs

Input	Value
Capital Escalation Rate	1.8%
Fixed O&M Escalation Rate	1.8%
Variable O&M Escalation Rate	1.8%
Revenue Requirements Discount Rate	6.52%

2.2.3.3 Fixed Charge Rates, Book Life and Tax Life Assumptions

Table 10 lists the fixed charge rate (“FCR”), book life and tax life for the main technology types. FCR is used to calculate a levelized cost of capital.

Table 10 – FCR, Book Life and Tax Life

Technology Types	FCR (%)	Book Life (years)	Tax Life (Years)
Coal	8.16	50	20
SCCT	8.90	30	15
NGCC	8.56	40	20
Wind and Solar	9.42	20	5
Hydro	8.15	55	20
Other	8.48	40	20

2.2.3.4 SO₂ and NO_x Emission Prices

The emission price forecasts for SO₂ and NO_x in Table 11 are based on market quotes published by Amerex. These emission prices are assumed to stay constant during the 30 year analysis period.

Table 11 – SO₂ and NO_x Emission Prices

Emission Types	Emission Prices (\$/short ton)
Annual NO _x	
Ozone NO _x	
SO ₂	

2.2.3.5 Firm Gas Transportation

Firm gas transportation costs for SCCT and NGCC technology options are listed in Table 12. Firm gas transportation is based on rates from Texas Gas for winter-no-notice and summer-no-notice service in the LG&E territory. Firm gas is assumed to be available for 16 hours of full load continuous operation for SCCT technology options and 24 hours of full load continuous operation for NGCC technology options.

Table 12 – Firm Gas Transportation Cost

Representative Technology Option	Firm Gas Transportation (2013 \$)
Simple-cycle GE LM6000 – One Unit	\$968,806
Simple-cycle GE LM6000 – Four Units	\$3,875,225
Simple-cycle GE LMS100 – One Unit	\$1,944,884
Simple-cycle GE LMS100 – Two Units	\$3,889,767
Simple-cycle GE 7EA – One Unit	\$2,071,370
Simple-cycle GE 7EA – Three Units	\$6,214,109
Simple-cycle GE 7F-5 – One Unit	\$4,363,915
Simple-cycle GE 7F-5 – Three Units	\$13,091,745
Recip Engine - 100 MW – Six Units	\$1,764,197
Recip Engine - 200 MW – Twelve Units	\$3,528,394
Microturbine- 1 MW – Five Units	\$23,697
Microturbine - 3 MW – Fifteen Units	\$71,092
Fuel Cell - 10 MW – Four Units	\$281,126
Fuel Cell - 30 MW – Twelve Units	\$843,378
Combined-Cycle 1x1 GE 7F-5	\$6,494,371
Combined-Cycle 1x1 GE 7F-5 - Fired	\$7,686,258
Combined-Cycle 1x1 MHI GAC	\$8,079,095
Combined-Cycle 1x1 MHI GAC - Fired	\$9,571,025
Combined-Cycle 1x1 MHI JAC	\$8,527,388
Combined-Cycle 1x1 MHI JAC - Fired	\$10,120,189
Combined-Cycle 2x1 GE 7F-5	\$12,982,213
Combined-Cycle 2x1 GE 7F-5 - Fired	\$15,406,531
Combined-Cycle 2x1 MHI GAC	\$16,159,796
Combined-Cycle 2x1 MHI GAC - Fired	\$19,166,420
Combined-Cycle 2x1 MHI JAC	\$17,054,289
Combined-Cycle 2x1 MHI JAC - Fired	\$20,224,211
Combined-Cycle 3x1 GE 7F-5	\$19,464,926
Combined-Cycle 3x1 GE 7F-5 - Fired	\$23,095,539
Combined-Cycle 3x1 MHI GAC	\$24,221,944
Combined-Cycle 3x1 MHI GAC - Fired	\$28,725,838
Combined-Cycle 3x1 MHI JAC	\$25,594,972
Combined-Cycle 3x1 MHI JAC - Fired	\$30,339,018

2.3 Supply-Side Screening Key Uncertainties

In the screening analysis, the levelized cost for each of the technology options was calculated at various levels of utilization. In addition to the level of utilization (i.e., capacity factor), the levelized cost of each technology option is impacted by the uncertainty in capital cost, fuel cost, unit efficiency, and the cost of CO₂ emissions. As a result, the technology options were evaluated over three capital cost scenarios, three heat rate scenarios, three fuel scenarios, two CO₂ scenarios, and ten capacity factors for a total of 540 cases. Each of these inputs is discussed in the following sections.

2.3.1 Capital Cost

Table 13 lists the capital cost uncertainty range by technology type. These capital cost ranges were used to develop high and low capital cost scenarios for each technology option. The uncertainty in capital cost for a given technology option is a function of the technology's maturity and the extent to which the cost of building a technology option is site-dependent. Generally, the more conventional or commercially mature technology options have a narrower capital cost range, whereas the more developmental or site-dependent technology options have a wider range.

Table 13– Capital Cost Range by Technology Type

Generation Technology Option	Capital Cost Range (%)	
	Low	High
Simple Cycle Combustion Turbine	-10%	20%
Combined Cycle Combustion Turbine	-10%	20%
Subcritical Pulverized Coal	-10%	25%
Subcritical Pulverized Coal with CC	-5%	35%
Circulating Fluidized Bed	-10%	25%
Circulating Fluidized Bed with CC	-5%	35%
Supercritical Pulverized Coal – 500 MW	-10%	25%
Supercritical Pulverized Coal with CC – 425 MW	-5%	35%
Supercritical Pulverized Coal – 750 MW	-10%	25%
Supercritical Pulverized Coal with CC – 638 MW	-5%	35%
2x1 Integrated Gasification	-10%	30%
2x1 Integrated Gasification with CC	-5%	35%
MSW Stoker Fired	-5%	10%
RDF Stoker Fired	-15%	15%
Wood Stoker Fired	-15%	15%
Landfill Gas IC Engine	-15%	15%
Anaerobic Digester Gas IC Engine	-15%	15%
Co-fired Circulating Fluidized Bed	-10%	20%
Co-fired Circulating Fluidized Bed	-10%	25%
Pumped Hydro Energy Storage	-10%	25%
Adv. Battery Energy Storage	-10%	35%
Compressed Air Energy Storage	-10%	25%
Wind	-10%	35%
Solar Photovoltaic	-10%	20%
Solar Thermal	-20%	20%
Hydro Electric	-20%	20%
Small Modular Nuclear	-15%	35%

2.3.2 Unit Efficiency (Heat Rate)

For non-renewable technology options, a technology option's levelized cost decreases as the assumed heat rate improves. In the screening analysis, each non-renewable technology option was evaluated at its expected heat rate and at heat rates 5% above and below the expected heat rate. A 5% decrease in heat rate represents technological advancement, whereas a 5% increase could represent degraded performance, actual unit efficiency falling short of design specification, or a decreased efficiency due to the addition of future environmental controls.

2.3.3 Fuel Prices

The levelized cost for non-renewable technology options was computed over three fuel price scenarios: Low, Mid, and High. The following sections discuss these scenarios for conventional and non-conventional fuels.

2.3.3.1 Natural Gas and Coal

As mentioned previously, natural gas has become the fuel of choice for new fossil generation. An abundance of natural gas supply resulting from advancements in natural gas drilling technologies has put downward pressure on prices and greatly improved the economics of NGCC technology. On the other hand, the impending nationwide retirement of coal units and the shift to NGCC units will increase the demand for natural gas and put upward pressure on prices. Additional upside price risk is associated with the possibility of regulations limiting the extraction of shale gas. The price of natural gas could have a significant impact on the Companies' optimal expansion plan; lower natural gas prices would favor natural gas technology options, while higher natural gas prices would make renewable generation more competitive. To address this long-term natural gas price uncertainty, the supply-side screening analysis considered three natural gas price scenarios.

The delivered Henry Hub natural gas price scenarios considered in the analysis are listed in Table 14 along with the forecast of coal prices. Natural gas prices through 2033 are forecasted by the EIA as shown in their 2013 AEO.²⁰ Beyond 2033, the prices are extrapolated based on the rate of escalation prior to 2033.²¹ For purposes of this study, the three natural gas price scenarios were assumed to be equally likely.

The forecasted mine-mouth coal prices for the Companies' open coal position for Illinois Basin high-sulfur ("ILB-HS") and Powder River basin ("PRB") coal were used to develop the delivered coal prices used in the analysis. The coal prices in Table 14 are based on a 75% blend of ILB-HS coal and 25% PRB coal. Through 2018, these coal prices are based on a combination of the price forecast for coal already under contract and open position price curves which are developed from current market offers and Wood Mackenzie's Spring 2013 Long Term Coal Outlook. Thereafter, coal prices reflect the growth rates in EIA's Annual Energy Outlook 2013 Reference Case 'Coal-Minemouth' price forecast. An average transportation cost adder is escalated throughout the forecast period.

²⁰ The "Mid," "High," and "Low" natural gas price forecasts are based on EIA's AEO 2013 "Reference," "Low Oil and Gas Resource," and "High Oil and Gas Resource" cases, respectively. For the EIA's AEO 2013 data tables, see <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2013&subject=3-AEO2013&table=13-AEO2013®ion=0-0&cases=ref2013-d102312a>.

²¹ The "Mid," "High," and "Low" natural gas price forecasts are escalated at the 2023-2033 compound annual growth rates of 4.0%, 4.3%, and 4.0%, respectively.

Table 14 – Natural Gas and Coal Prices (Nominal \$/mmBtu)

Year	Delivered Natural Gas Prices			Coal Prices Blended (75% ILB-HS, 25% PRB)
	Low	Mid	High	
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				
2026				
2027				
2028				
2029				
2030				
2031				
2032				
2033				
2034				
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2036				
2037				
2038				
2039				
2040				
2041				
2042				
2043				

The level of natural gas prices determines the favorability of renewable technology options; as natural gas prices increase, the value of renewable technology options potentially increases. Furthermore, the relationship or “spread” between natural gas and coal prices is a key factor in comparing the value of existing or proposed natural gas alternatives to existing coal alternatives. With three natural gas price forecasts and one coal price forecast, this analysis considered three spreads between natural gas and coal prices. As a result, it was not necessary to develop more than one coal price forecast.

2.3.3.2 Non-Conventional Fuels

For the waste-to-energy generation technology options, both the fuel costs and fuel cost sensitivities are estimated based on research and data provided by Electric Power Research Institute (“EPRI”) and Burns & McDonnell. Table 15 lists the assumed price for non-conventional fuels in the Low, Mid, and High fuel

price scenarios. These prices were assumed to escalate at 1.8% per year over the 30-year evaluation period. Each of these fuel types are discussed further in the following sections.

Table 15 – Non-Conventional Fuels (2013 Nominal \$/mmBtu)

Fuel Type	Non-Conventional Delivered Fuel Prices Source (EPRI)		
	Low	Mid	High
Municipal Solid Waste			
Refuse Derived Fuel			
Biomass			
Landfill Gas			
Sewage			
Tire Derived Fuel			
Uranium (U235)			

2.3.3.2.1 Municipal Solid Waste

The negative MSW price represents the tipping fee to accept and burn unprocessed solid waste in its as-discarded form with minimal processing. The tipping fee will be dependent on the availability of MSW landfills and their proximities to solid waste sources.

2.3.3.2.2 Refuse Derived Fuel

RDF is MSW that has been sorted to remove non-combustibles and then processed into pellets. The higher end range includes a quality product that has a clean air additive negating the need for more capital intensive equipment.

2.3.3.2.3 Biomass

Biomass refers to using plant-based fuels for energy production. The forecast developed for this analysis is based on wood chips supplied from a 50-mile radius of the plant. The price is highly dependent on the moisture content of the wood, availability in the area, as well as diesel prices.

2.3.3.2.4 Landfill Gas

LFG is a byproduct of the decomposition of waste stored in landfills. LFG is collected from wells at the landfill, filtered, and then compressed. The LFG forecast assumes that the generating unit will be located at the landfill site and the gas has a heating value of 600 Btu/ft³. LFG prices vary greatly with the availability and quality of LFG.

2.3.3.2.5 Sewage

Bio-methane gas is produced from the digestion of sewage sludge or livestock manure. It is similar to LFG with respect to the quality of the fuel and the generation equipment required. The feedstock costs for most currently installed Anaerobic Digesters are zero.

2.3.3.2.6 Tire Derived Fuel

TDF consists of chipped tires with the steel belts removed. The co-firing of up to 10 percent of TDF (by weight) in a fluidized bed boiler can be considered a commercial technology option as there is no significant change in the technology for a dedicated coal unit. However, there is very limited success with mass firing of TDF. While TDF has a low ash and sulfur content as well as a fuel heating value equivalent to or better than coal, the general lack of availability of TDF is a drawback. TDF prices vary significantly with oil prices, the local tire market, and competitive buyers.

2.3.3.2.7 U-235

The small modular nuclear reactor uses uranium enriched in the U-235 isotope for its fuel. Both the price and the range were provided by Burns & McDonnell.

2.3.3.2.8 Charging cost

The energy storage technology options must be charged or recharged by equipment utilizing electricity generated by another source. As such, charging is typically accomplished during periods of low demand by electricity with low generation costs. It is assumed that the energy storage options considered in this analysis are charged using power generated from the Companies’ base load units such as coal and NGCC units. The uncertainty around charging costs depends on conventional fuel prices, actual load requirements, and the availability of base load units. Table 16 lists the charging costs used in the analysis.

Table 16 – Charging Cost (\$/MWh)

Year	Charging Cost (\$/MWh)		
	Low	Mid	High
2014			
2015			
2016			
2017			
2018			
2019			
2020			
2021			
2022			
2023			
2024			
2025			
2026			
2027			
2028			
2029			
2030			
2031			
2032			
2033			
2034			
2035			
2036			
2037			
2038			
2039			
2040			
2041			
2042			
2043			

2.3.4 CO₂ Prices

Expectations for action on climate change are rising, including more stringent regulations for new and existing generating units.^{22,23} Therefore, the Resource Assessment analysis was developed with this risk in mind. The reasonableness of this assumption was confirmed in July 2013 when the President ordered the EPA to develop draft GHG regulations on existing generating units by June 2014.²⁴ To evaluate the impact of future GHG regulations on generation technology options, a price on each ton of CO₂ emitted was modeled. It was decided that a reasonable assumption for future CO₂ prices and the timing for GHG regulation should it occur would be based on the “Mid” price forecast prepared by Synapse Energy Economics, Inc., a consulting firm that does a significant amount of work for various environmental groups such as the Sierra Club and Natural Resources Defense Council. Because future GHG regulations on existing units is by no means assured, a “Zero” CO₂ scenario was analyzed assuming that there is never a price on future CO₂ emissions.

The CO₂ price scenarios considered in this analysis are listed in Table 17. CO₂ prices published by Synapse Energy Economics were used to develop the Mid CO₂ price forecast. Synapse published three forecasts (Low, Mid, High) starting in 2020 at \$10, \$15, and \$25 per short ton in real 2012 dollars.²⁵ According to the Synapse report, the Synapse Mid CO₂ price forecast lies well within the range of “mid-case” forecasts used recently by utilities in resource planning. The Synapse Mid forecast was converted into nominal dollars using an annual inflation rate of 1.8%.²⁶ The Synapse Mid forecast extended through 2040; after 2040, the real price forecast was extrapolated at the growth rate in \$/short ton used throughout the forecast (\$1.50/ton).

²² “Setting the Stage for a Second Term,” Time, December 19, 2012, R. Stengel et al. See <http://poy.time.com/2012/12/19/setting-the-stage-for-a-second-term/>.

²³ “Speech Gives Climate Goals Center Stage,” R. Stevenson and J. Broder, The New York Times, January 21, 2013. See http://www.nytimes.com/2013/01/22/us/politics/climate-change-prominent-in-obamas-inaugural-address.html?_r=0.

²⁴ “Presidential Memorandum -- Power Sector Carbon Pollution Standards,” The White House, Office of the Press Secretary, June 25, 2013. See <http://www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards>.

²⁵ See Synapse’s “2013 Carbon Dioxide Price Forecast,” November 1, 2013 at <http://www.synapse-energy.com/Downloads/SynapseReport.2013-11.0.2013-Carbon-Forecast.13-098.pdf>.

²⁶ Synapse staff commented via email that a 1.8% annual inflation was used to convert future nominal amounts to constant dollars.

Table 17 – CO₂ Price Scenarios (Source: Synapse Energy Economics, Inc.)

Year	CO ₂ Price (Nominal \$/short ton)	
	Zero	Mid
2013	-	-
2014	-	-
2015	-	-
2016	-	-
2017	-	-
2018	-	-
2019	-	-
2020	-	17
2021	-	20
2022	-	23
2023	-	26
2024	-	30
2025	-	33
2026	-	37
2027	-	40
2028	-	44
2029	-	48
2030	-	52
2031	-	56
2032	-	60
2033	-	64
2034	-	69
2035	-	73
2036	-	78
2037	-	83
2038	-	88
2039	-	93
2040	-	99
2041	-	104
2042	-	110
2043	-	116

2.3.5 Capacity Factor

Where applicable, the levelized cost of each technology option was calculated over ten capacity factors (1% and 10-90% in 10% increments).

2.4 Supply-Side Screening Methodology

In the screening analysis, the Companies computed the 30-year levelized cost for the technology options developed by Burns & McDonnell over a range of scenarios. The levelized cost includes the costs associated with building and operating the unit. Where applicable, the following costs were considered in the analysis:

1. Fuel Costs
2. Maintenance Cost: Cost per Start, Hourly Operating Cost, or Cost per energy
3. Variable O&M
4. Capital Costs
5. Fixed O&M
6. Firm Gas Transportation Costs
7. Charging Cost
8. Emission Costs
9. Renewable Energy Credits

With some exceptions, the levelized cost of each technology option (in \$/MWh) was calculated over three capital cost scenarios, three heat rate scenarios, three fuel scenarios, two CO₂ scenarios, and ten capacity factors for a total of 540 cases.²⁷ Technology options that were ranked among the top four least-cost technology options in any case were considered for the more detailed expansion planning analysis.

Several technology options were limited to a maximum capacity factor based on the operating characteristics of the technology option. Capacity factors for wind and solar were limited to 27% and 20%, respectively. The hydroelectric option was limited to a 40% capacity factor based on the Companies' experience with its current hydro assets.

Several technology options were not considered in the screening analysis.

- The 3x1 NGCC options were excluded from the analysis due to their size and the difficulty for the Companies to recover from the loss of such a large unit given the relatively small size of their generating portfolio.
- The "J-Class" combustion turbine was excluded from the analysis due to its nascent design and limited operating history; although it is now commercially available in the United States, no orders have been placed to date.
- The small modular nuclear reactor was also not included due to significant challenges in siting and permitting the unit especially in Kentucky.²⁸
- The MSW stoker fired technology option was excluded from the analysis due to the uncertainty regarding the availability and quality of municipal solid waste fuel.

Given the uncertainty in REC prices and the availability of investment tax credits ("ITC") for renewable technologies, two iterations of 540 cases each were evaluated:

- No ITC or RECs: This iteration did not include an ITC for renewable technologies or wind and solar RECs.

²⁷ Each of these scenarios are discussed in Section 2.3.

²⁸ Since 1984, the Kentucky General Assembly has had a moratorium on any nuclear plant construction without a plan for permanent waste disposal.

- 10% ITC and RECs: This iteration incorporated a 10% ITC and current REC market prices for solar and wind technologies.

2.5 Supply-Side Screening Results

Table 18 lists the technology options that were ranked among the top four least-cost technology options in the “No ITC or RECs” iteration for at least one of the 540 cases. Table 19 contains the same information for the “10% ITC and RECs” iteration.

Table 18 – Frequency of Occurrence of the Generation Technology Option in the Top Four

Generation Technology Option	# Occurrences				Total
	1 st	2 nd	3 rd	4 th	
2x1 NGCC G/H-Class	440	14	32	54	540
2x1 NGCC G/H-Class - DF	0	145	368	27	540
2x1 NGCC F-Class	0	326	95	42	463
2x1 NGCC F-Class - DF	0	0	0	288	288
1x1 NGCC G/H-Class	0	0	27	110	137
SCCT F-Class – Three Units	100	1	18	5	124
SCCT F-Class – One Unit	0	54	0	14	68

Table 19 – Frequency of Occurrence of the Generation Technology Option in the Top Four with ITC & Wind and Solar RECs

Generation Technology Option	# Occurrences				Total
	1 st	2 nd	3 rd	4 th	
2x1 NGCC G/H-Class	428	21	37	54	540
2x1 NGCC G/H-Class - DF	0	131	375	34	540
2x1 NGCC F-Class	0	326	78	53	457
2x1 NGCC F-Class - DF	0	0	0	268	268
1x1 NGCC G/H-Class	0	0	27	110	137
SCCT F-Class – Three Units	100	1	18	5	124
SCCT F-Class – One Unit	0	54	0	14	68
Solar Photovoltaic	11	1	1	1	14
Wind	1	6	3	1	11
Hydro Electric	0	0	1	0	1

The results in both tables are very similar with natural gas technology options dominating as least-cost options. In both iterations, the “2x1 NGCC G/H-Class” option was least-cost in more than 420 of the 540 cases and ranked among the top four least-cost technology options in all 540 cases. The “SCCT F-Class – Three Units” option was least-cost in 100 cases in both iterations. In the “10% ITC and RECs” iteration, the solar PV and wind technology options were ranked among the top four least-cost technology options in multiple cases.

In this analysis, changes in non-conventional fuels are positively correlated with changes in natural gas. When changes in non-conventional fuels are assumed to be negatively correlated with natural gas, the results of the analysis are unchanged.

Table 20 summarizes the range of capacity factors for which the top-ranked technology option is least-cost in each of the 54 capital cost, heat rate, fuel, and CO₂ scenarios for the “No ITC or RECs” iteration. Technology options with higher capital and fixed O&M costs are typically more favorable at higher capacity factors.

Cases Description	Least Cost Generation Technology Option			
	Per Capacity Factor (%)			
	1	10	20	30 – 90
High Capital, Mid HR, Low Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, Mid HR, Mid Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, Mid HR, Mid Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, Mid HR, High Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, Mid HR, High Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, High HR, Low Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, High HR, Low Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, High HR, Mid Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, High HR, Mid Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, High HR, High Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	
High Capital, High HR, High Fuel, Mid CO ₂	SCCT F-Class – Three Units		2x1 NGCC G/H-Class	

The 2x1 NGCC G/H-Class option had the lowest levelized cost for capacity factors exceeding 20% and is the best option for meeting intermediate and base load energy needs. The “SCCT F-Class – Three Units” option was least cost for capacity factors below 20% and the best choice for meeting peak energy needs.

Table 21 lists the generation technology options that were evaluated in the detailed expansion planning analysis. The two F-Class NGCC options, the 2x1 NGCC G/H-Class option with duct firing (“DF”), and the hydroelectric option in Table 18 and Table 19 were ultimately excluded from the detailed analysis. Potential GHG regulation and uncertainty in gas prices make the added efficiency of the G-Class option more cost-effective than the F-Class option. Additionally, the capital and fixed costs for the G-Class option are lower on a per-kilowatt (“kW”) basis. The 2x1 NGCC G/H-Class option with duct firing was consistently less favorable than the 2x1 NGCC G/H-Class option without duct firing.²⁹ The hydroelectric option was eliminated because it ranked among the top four least-cost options in only one of 540 cases. In addition, the Companies are not aware of any viable sites for new hydroelectric capacity near their service territories.

Table 21 – List of Generation Technology Options for the Expansion Plan Analysis

Generation Technology Options
2x1 NGCC G/H-Class
1x1 NGCC G/H-Class
SCCT F-Class – Three Units
SCCT F-Class – One Unit
Solar Photovoltaic
Wind

The list of generation technology options in Table 21 is very similar to the list of technology options that passed the screening analysis for the 2011 IRP. Notable exceptions include the 3x1 NGCC technology option and the supercritical pulverized coal (“PC”) technology option. The 3x1 NGCC was excluded from the analysis due to its size; it is difficult for the Companies to recover from the loss of such a large unit given the relatively small size of their generating portfolio. The supercritical PC technology option was

²⁹ In addition, the 2x1 options with duct firing are not materially different from the 2x1 options without duct firing. Duct firing serves as a means to adjust the size and flexibility of a NGCC unit.

not ranked among the least-cost technology options due primarily to its high capital cost and a lower forecast of natural gas prices.³⁰ In addition, currently proposed federal New Source Performance Standards (“NSPS”) for Greenhouse Gas (“GHG”) regulations would require coal units to eventually be equipped with large scale, commercially unproven and currently uneconomic CO₂ capture and sequestration technology.

³⁰ Compared to the 2x1 NGCC G/H-Class option, the capital cost for the supercritical PC option is more than five times higher. The price spread between the Mid natural gas price forecast and the coal price forecast is more than 70% lower in the 2014 IRP compared to the 2011 IRP.

3 Capacity and Energy Need

In 2011, the Companies announced plans to retire approximately 800 MW of coal-fired capacity to comply with the U.S. EPA's National Ambient Air Quality Standards and Mercury and Air Toxics Standards. In February 2013, the Companies retired Tyrone 3; the IRP assumes the five Cane Run and Green River coal units will be retired in 2015. To offset this loss of energy and capacity, the Companies proposed to construct a 640 MW 2x1 NGCC unit at their Cane Run site ("Cane Run 7" or "CR7") to be online in 2015 and purchase the existing LS Power Bluegrass facility in LaGrange, Kentucky (495 MW of SCCTs).³¹

The construction of Cane Run 7 is underway and on schedule. However, the Companies were unable to purchase the Bluegrass facility after receiving an unfavorable Federal Energy Regulatory Commission ("FERC") ruling in May 2012.³² To acquire the Bluegrass facility, the Companies needed authorization from FERC to complete the transaction under section 203 of the Federal Power Act. Therefore, in November 2011, the Companies and Bluegrass Generation Company, a subsidiary of LS Power, filed an application with FERC requesting authorization to complete the transaction. In its review of the application, FERC found that the proposed transaction resulted in significant screen failures in the horizontal market power analysis. As a result, FERC conditionally authorized the transaction, subject to the Companies proposing adequate mitigation to remedy the identified screen failures.

After reviewing the regulatory, operational, and economic impacts of the mitigation measures, the Companies determined that the mitigation measures were not acceptable because they would have resulted in higher costs to the Companies' customers. Therefore, in June 2012, the Companies terminated their agreement to purchase the Bluegrass facility.³³

After the Companies prepared their 2013 Load Forecast ("2013 LF") in the summer of 2012, it was clear that additional resources would be required as early as 2015 to reliably serve customers' capacity and energy needs. To meet this need for capacity and energy, the Companies issued a request for proposals ("RFP") in September 2012 for capacity and energy. In addition to the RFP responses, the Companies also evaluated new demand-side management programs and self-build alternatives. As a result of this analysis, the Companies applied for Certificates of Public Convenience and Necessity in January 2014 for a 10 MW solar project in 2016 at the E.W. Brown station ("Brown Solar") and a 670 MW 2x1 NGCC unit in 2018 at the Green River station ("Green River 5" or "GR5").

Table 22 details the Companies' current capacity supply/demand balance for the 15-year planning period.³⁴ As discussed in the Companies' 2014 Reserve Margin Study, the Companies target a minimum

³¹ See Case No. 2011-00375, *Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity and Site Compatibility Certificate for the Construction of a Combined-cycle Combustion Turbine at the Cane Run Generating Station and the Purchase of Existing Simple-cycle Combustion Turbine Facilities from Bluegrass Generation Company, LLC in LaGrange, Kentucky* (Kentucky Public Service Commission ("KY PSC") May 3, 2012).

³² Order Conditionally Authorizing Disposition and Acquisition of Jurisdictional Facilities and Acquisition of Generating Facilities, Docket No. EC12-29-000, May 4, 2012, 139 FERC ¶ 61,094. For the Order, see <http://www.ferc.gov/EventCalendar/Files/20120504160345-EC12-29-000.pdf>.

³³ On June 18, 2012, the Companies sent a letter to KY PSC informing them of the decision not to proceed with the Bluegrass acquisition.

³⁴ For purposes of calculating reserve margin, loads subject to the Companies' curtailable service rider are considered supply-side resources.

16 percent reserve margin (above peak load after adjusting for demand-side management (“DSM”) programs) for the purpose of developing expansion plans. With the planned changes to the Companies’ generation portfolio and with 406 MW of demand reduction from DSM programs and 137 MW of curtailable load from curtailable service rider customers, the Companies will have a long-term need for capacity beginning in 2025. The Companies plan to address the reserve margin shortfall in 2015 through 2017 by exploring all available options, including (but not limited to) alternatives from parties that provided responses to the September 2012 RFP and extending the life of Green River units 3 and 4.³⁵ Table 22 excludes any capacity additions in these years as these additions have not been identified.

Table 22 – Resource Summary (MW, Summer)

	2014	2015	2016	2017	2018	2020	2025	2028
Forecasted Peak Load	7,278	7,364	7,450	7,536	7,623	7,721	8,003	8,171
DSM	(306)	(336)	(365)	(394)	(423)	(406)	(406)	(406)
Net Peak Load	6,972	7,028	7,085	7,142	7,199	7,315	7,598	7,766
Existing Resources ³⁶	7,904	7,152	7,135	7,135	7,135	7,135	7,135	7,135
Planned/Proposed Resources ³⁷	0	640	649	649	1,319	1,319	1,319	1,319
Firm Purchases (OVEC)	155	155	155	155	155	155	155	155
Curtailable Load	128	131	131	131	131	131	131	131
Total Supply	8,187	8,078	8,069	8,070	8,740	8,740	8,740	8,740
Reserve Margin (“RM”)	17.4%	14.9%	13.9%	13.0%	21.4%	19.5%	15.0%	12.5%
RM Shortfall (16% RM)*	99	(75)	(149)	(215)	389	255	(73)	(268)

*Negative values reflect reserve margin shortfalls.

While meeting customers’ peak demand is critical, it is also vital to reliably serve their energy needs all year round at the lowest reasonable cost. As seen in Table 22, energy requirements are forecasted to grow by 3.6 TWh over the next 15 years even after reductions for DSM.³⁸ This translates into a compound annual growth rate of 0.7 percent.

Table 23 – Energy Requirements (TWh, After DSM)

	2014	2015	2016	2017	2018	2020	2025	2028
Energy Requirements	35.7	35.9	36.2	36.4	36.7	37.3	38.5	39.3

³⁵ Based on compliance requirements and date in the MATS regulations, Green River units 3 and 4 cannot be operated after April of 2015 without additional emission controls. The regulations do provide for extensions of 1 or 2 years from that date, if granted by the permitting authority. At this time, the Companies have not sought extension of the compliance date, but are analyzing this option.

³⁶ Existing resources include the retirement of Tyrone 3 in February 2013 and the planned retirement of Green River 3-4 in April 2015 and Cane Run 4-6 in May 2015.

³⁷ Planned/Proposed Resources include Cane Run 7 in May 2015, as well as Brown Solar in June 2016 and Green River 5 in January 2018. 90% of the capacity of Brown Solar is assumed to be available at the time of peak.

³⁸ Energy requirements represent the amount of generated energy needed to serve customers’ energy needs, inclusive of transmission and distribution losses.

4 Expansion Planning Analysis

4.1 Key Inputs and Uncertainties

The Companies evaluate long-term resource decisions under a number of possible futures to ensure that customers' energy needs are reliably met at the lowest reasonable cost. While there are a number of uncertainties that could have some impact on the Companies' resource decisions, the uncertainties in native load (demand and energy), natural gas prices, and GHG regulations are the most important to consider when evaluating long-term generating resources. Therefore, the Companies considered these uncertainties in this analysis to understand their impact on the Companies' optimal expansion plan.

4.1.1 Load Forecast

The only reason for the Companies to acquire new supply-side or demand-side resources is to reliably meet customers' future energy needs at the lowest reasonable cost. Therefore, the forecast of future demand and energy has a significant impact on the Companies' optimal expansion plan. The volume of future load (demand and energy) is driven by future economic activity, the adoption rate of new and existing DSM programs, and the development of new electric end-uses (e.g., electric vehicles). The Companies utilized the best information available to develop a reasonable long-term "Base" load forecast. As with any long-term forecast, the uncertainty associated with it tends to grow through time. Therefore, "High" and "Low" load forecasts were also developed, which reflect the statistical uncertainty about the Base load forecast. Table 24 lists the three load forecast scenarios evaluated in this analysis.

Table 24 – Native Load Scenarios

Year	Energy Requirements (GWh)			Peak Demand (MW)		
	Low	Base	High	Low	Base	High
2014	34,053	35,716	37,379	6,651	6,972	7,294
2015	34,164	35,892	37,621	6,694	7,028	7,362
2016	34,371	36,153	37,935	6,741	7,085	7,429
2017	34,535	36,383	38,232	6,784	7,142	7,499
2018	34,765	36,684	38,604	6,828	7,199	7,570
2019	34,992	36,998	39,005	6,869	7,257	7,645
2020	35,151	37,260	39,369	6,907	7,315	7,723
2021	35,263	37,479	39,696	6,944	7,374	7,804
2022	35,381	37,704	40,027	6,982	7,433	7,885
2023	35,495	37,922	40,350	7,015	7,488	7,960
2024	35,705	38,235	40,766	7,050	7,542	8,035
2025	35,833	38,478	41,122	7,081	7,598	8,114
2026	35,972	38,731	41,490	7,114	7,653	8,193
2027	36,115	38,990	41,865	7,147	7,709	8,272
2028	36,285	39,279	42,272	7,180	7,766	8,351

Energy and peak demand grow at similar rates in each of the three load scenarios. The Low load scenario reflects an environment where a significant portion of the Companies' load is lost. Compared to the Base load scenario, peak demand in the Low load scenario is approximately 300 MWs lower in 2014. The High load scenario reflects an environment where a significant amount of load is gained.

Compared to the Base load scenario, peak demand in the High load scenario is approximately 300 MWs higher in 2014.

4.1.2 Natural Gas Prices

The price of natural gas could have a significant impact on the Companies' optimal expansion plan; lower natural gas prices would favor natural gas technology options, while higher natural gas prices would make renewable generation more competitive. To address this long-term natural gas price uncertainty, the expansion planning analysis considered three natural gas price scenarios. The "Low," "Mid," and "High" scenarios are listed in Section 2.3.3.1 in Table 14.

4.1.3 GHG Regulation

As mentioned previously, expectations for action on climate change are rising, including more stringent regulations for new and existing generating units. GHG regulation could have a significant impact on the Companies' optimal expansion plan by making renewable generation more competitive and potentially resulting in the economic retirement of existing units, which would accelerate the need for additional generating resources. Because the exact nature of future GHG regulations, should they occur, remains unknown, the Companies utilized two approaches in the expansion planning analysis to evaluate their potential impact. The first approach puts a price on each ton of CO₂ emitted. The second places a cap on CO₂ emissions.

Two CO₂ price scenarios were considered. A "Mid" CO₂ price scenario, with CO₂ prices beginning in 2020, was evaluated. Because future GHG regulations on existing units is by no means assured, a "Zero" CO₂ price scenario was analyzed assuming that there is never a price on future CO₂ emissions. The two CO₂ price scenarios considered in this analysis are listed in Section 0 in Table 17.

The second approach for evaluating the potential impact of GHG regulations places a cap on annual CO₂ mass emissions. In June 2013, the President released his Climate Action Plan which includes his intention to reduce CO₂ emissions from 2005 levels by 17 percent. For this reason, in the "CO₂ mass emissions cap" scenario, annual CO₂ mass emissions for the Companies are limited to 29.4 million tons of CO₂ per year beginning in 2020.

4.1.4 Summary of Scenarios

The native load, natural gas price, and CO₂ price scenarios were combined to produce 15 scenarios for the expansion planning analysis, listed in Table 25. Because CO₂ prices are likely to decrease the Companies' energy requirements, the combination of High load and Mid CO₂ prices was considered infeasible.

Table 25 – Analysis Scenarios: CO₂ Prices

Scenario	Native Load	Gas Price	CO ₂ Price
1	Low	Low	Zero
2	Low	Low	Mid
3	Low	Mid	Zero
4	Low	Mid	Mid
5	Low	High	Zero
6	Low	High	Mid
7	Base	Low	Zero
8	Base	Low	Mid
9	Base	Mid	Zero
10	Base	Mid	Mid
11	Base	High	Zero
12	Base	High	Mid
13	High	Low	Zero
14	High	Mid	Zero
15	High	High	Zero

Six additional scenarios, listed in Table 26, were developed to evaluate the potential for a CO₂ mass emissions cap.

Table 26 – Analysis Scenarios: CO₂ Mass Emissions Cap

Scenario	Native Load	Gas Price
1	Low	Low
2	Low	Mid
3	Low	High
4	Base	Low
5	Base	Mid
6	Base	High

4.1.5 Other Inputs

4.1.5.1 Supply-Side Screening Analysis Results

Table 27 lists the capital costs and unit characteristics for each of the supply-side options that passed the Supply-Side Screening Analysis. Capital costs for these options were developed by Burns & McDonnell. A summary of Burns & McDonnell’s Generation Technology Study is included in Section 2.2.2 in Table 8. The complete report is also included in Volume III, Technical Appendix.

Table 27 – Cost and Unit Characteristics for Generation Technology Options (2013 \$)

Unit Type	2x1 NGCC	1x1 NGCC	Simple-Cycle CT	3 Simple-Cycle CTs	Wind Turbines	Solar PV
Reference Name ³⁹	2x1G	1x1G	SCCT	CTx3	Wind	SLPV
Net Capability (MW)						
Summer	737	368	201	602	50	50
Winter	859	429	220	659	50	50
Overnight Installed Cost (\$/kW) ⁴⁰						
Total Non-Fuel Variable O&M (\$/MWh) ⁴¹						
Total Fixed O&M (\$/kW-yr) ⁴²						
Full Load Heat Rate (mmBtu/MWh)						
Unavailability (%) ⁴³						

NGCC technology has higher capital costs and fixed O&M, but much better heat rates than simple-cycle CTs. The 3 Simple-Cycle CTs option takes advantage of economies of scale, which results in very low capital costs. Wind and Solar options have much higher capital costs than other options, but no energy costs.

4.1.5.2 Reserve Margin

The Companies target a minimum 16 percent reserve margin for the purpose of developing expansion plans. The derivation of this reserve margin target is discussed in detail in the report titled *2014 Reserve Margin Study* located in Volume III, Technical Appendix.

4.1.5.3 Existing Unit Characteristics

Table 28 lists the summer capacity rating, equivalent unplanned outage rate (“EUOR”), and average full load heat rate for each of the Companies’ existing units. EUOR is approximately the sum of each unit’s equivalent forced outage rate and maintenance outage rate.

³⁹ Reference names are used to more easily compare expansion plans.

⁴⁰ Installed cost is based on annual average capacity.

⁴¹ Variable O&M for NGCC and SCCT options includes long-term service agreement costs.

⁴² Fixed O&M for NGCC and SCCT options includes costs associated with reserving firm gas-line capacity.

⁴³ Unavailability for NGCC and SCCT options is the long-term steady-state outage rate expected after initial operation. For wind and solar options, unavailability reflects the expected capacity factor (Unavailability = 1 – Capacity Factor).

⁴⁴ Wind turbine capacity factor modeled at 27% with 11% of the capacity counting toward reserve margin.

⁴⁵ Solar photovoltaic capacity factor modeled at 17.4% with 90% of the capacity counting toward reserve margin.

Table 28 – Existing Unit Characteristics

Unit	Installed Year	Net Summer Rating (MW)⁴⁶	EUOR (%)	Average Full Load Heat Rate (mmBtu/MWh)
Brown 1	1957	106	8.8%	10.554
Brown 2	1963	166	8.8%	10.283
Brown 3	1971	410	7.9%	10.865
Brown 5	2001	133	18.5%	11.836
Brown 6	1999	146	6.8%	10.551
Brown 7	1999	146	6.8%	10.551
Brown 8	1995	121	7.8%	12.632
Brown 9	1994	121	7.8%	12.462
Brown 10	1995	121	7.8%	12.462
Brown 11	1996	121	7.8%	12.632
Brown Solar	2016	9	N/A	N/A
Cane Run 4	1962	155	11.3%	11.382
Cane Run 5	1966	168	11.3%	10.383
Cane Run 6	1969	240	10.4%	10.064
Cane Run 7	2015	640	5.0%	6.862
Cane Run 11	1968	14	50.0%	16.117
Dix Dam 1-3	1925	24	N/A	N/A
Ghent 1	1974	479	7.9%	10.954
Ghent 2	1977	495	7.9%	10.796
Ghent 3	1981	489	7.9%	11.022
Ghent 4	1984	469	7.9%	11.010
Green River 3	1954	68	11.3%	13.423
Green River 4	1959	93	11.3%	10.645
Green River 5	2018	670	5.0%	6.940
Haefling 1-2	1970	24	50.0%	18.000
Mill Creek 1	1972	303	7.9%	10.598
Mill Creek 2	1974	301	7.9%	10.573
Mill Creek 3	1978	391	7.9%	10.700
Mill Creek 4	1982	477	7.9%	10.816
Ohio Falls 1-8	1928	54	N/A	N/A
Paddy's Run 11	1968	12	50.0%	15.479
Paddy's Run 12	1968	23	50.0%	17.005
Paddy's Run 13	2001	147	12.4%	10.393
Trimble 1 (75%)	1990	383	7.0%	10.333
Trimble 2 (75%)	2011	549	8.1%	9.336
Trimble 5	2002	157	4.6%	10.444
Trimble 6	2002	157	4.6%	10.444
Trimble 7	2004	157	4.6%	10.444
Trimble 8	2004	157	4.6%	10.444
Trimble 9	2004	157	4.6%	10.444
Trimble 10	2004	157	4.6%	10.444
Zorn 1	1969	14	50.0%	18.676

⁴⁶ The ratings for Brown Solar, Dix Dam 1-3, and Ohio Falls 1-8 reflect the assumed output for these facilities during the summer peak demand.

4.1.5.4 Coal Prices

Table 29 lists the delivered coal price forecasts for each of the Companies’ existing coal units.

Table 29 – Coal Prices (\$/mmBtu)

	Brown	Ghent	Green River	Cane Run	Mill Creek	Trimble High SO₂	Trimble PRB
Year	6# SO₂	6# SO₂	4.5# SO₂	6# SO₂	6# SO₂	6# SO₂	0.8# SO₂
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							

4.1.5.5 SO₂ and NO_x Prices

Table 11 in Section 2.2.3.4 lists SO₂ and NO_x price forecasts for the study period.

4.1.5.6 Financial Inputs

Table 30 lists the key financial inputs that were utilized in the expansion planning analysis.

Table 30 – Key Financial Inputs

Input	Value
Return on Equity	10.25%
Cost of Debt	3.51%
Capital Structure	
Debt	46.04%
Equity	53.96%
Tax Rate	38.9%
Revenue Requirement Discount Rate	6.52%

4.2 Phase 1 – Expansion Planning Analysis

4.2.1 Methodology

The Strategist computer model was used to develop optimal expansion plans for each of the scenarios listed in Table 25. Strategist uses the Companies' peak and energy load forecasts and load shapes for multiple years to create typical monthly load shapes for production costing purposes. System dispatch and operation are simulated using a load duration curve production costing technique. Production costs including fuel, incremental O&M, purchase power, and emission costs are calculated based on inputs including generating unit and purchase power characteristics, fuel costs, and unit or fuel specific emissions information. All combinations of potential options are evaluated to produce a list of resource plans, subject to user specified constraints, that satisfy the Companies' minimum reserve margin criterion. The production cost analysis is combined with an analysis of new construction expenditures to suggest an optimal resource plan and sub-optimal resource plans based on minimizing utility cost.

Typically, the Companies configure Strategist to only evaluate new units that are needed to maintain the target reserve margin. However, when burdened by CO₂ regulations, the system may benefit from an additional low or zero CO₂-emitting resource before it is necessary to add capacity to maintain the minimum reserve margin target. For this reason, 2x1 NGCC and wind units were evaluated in the Mid CO₂ price scenarios before the capacity was needed to maintain the target reserve margin.⁴⁷

Capacity factors for existing coal units were averaged over the three gas price scenarios in each load-CO₂ price scenario. For the purpose of this analysis, if an existing coal unit's capacity factor was consistently less than 10 percent in a given load-CO₂ price scenario, the unit was assumed to be retired in the year when its capacity factor consistently dropped below 10 percent.

4.2.2 Results

Table 31 shows optimal expansion plans for nine of the 15 scenarios evaluated.⁴⁸ The number in parentheses following each Reference Name indicates how many units were installed in that year. The Low load scenarios are not included in Table 31. In the "Low load, High gas price, Mid CO₂ price" scenario, two wind units are added in 2028. With the exception of this scenario, no new capacity was installed in the study period in the Low load scenarios.

⁴⁷ 2x1 NGCC and wind units were the most economical options in a CO₂-constrained world.

⁴⁸ See Table 24 in Section 4.1.4 for a complete list of the CO₂ price scenarios.

Table 31 – Optimal Expansion Plans: CO₂ Price Scenarios

CO ₂ Price	OC	OC	OC	OC	OC	OC	MC	MC	MC
Load	BL	BL	BL	HL	HL	HL	BL	BL	BL
Gas Price	LG	MG	HG	LG	MG	HG	LG	MG	HG
2014									
2015	CR7	CR7	CR7	CR7	CR7	CR7	CR7	CR7	CR7
2016	BRS	BRS	BRS	BRS	BRS	BRS	BRS	BRS	BRS
2017									
2018	GR5	GR5	GR5	GR5	GR5	GR5	GR5	GR5	GR5
2019				2x1G(1)	CTx3(1)	CTx3(1)			
2020							Ret BR1-2 1x1G(1)	Ret BR1-2 1x1G(1)	Ret BR1-2 2x1G(1)
2021									
2022							2x1G(1)	2x1G(1)	
2023									
2024									
2025	2x1G(1)	SCCT(1)	2x1G(1)		2x1G(1)	2x1G(1)			
2026				2x1G(1)					
2027		SCCT(1)							
2028									

CO₂ Price: Zero (OC), Mid (MC) Load: Base (BL), High (HL) Gas Price: Low (LG), Mid (MG), High (HG)

The Companies have a long-term need for capacity beginning in 2025 in the Base load scenario and 2019 in the High load scenario.⁴⁹ In the six Zero CO₂ price scenarios, the first new unit is installed in the year capacity is needed (either 2019 or 2025), as expected. In the three Mid CO₂ price scenarios, the first new unit is installed in 2020. This occurs for two reasons. First, the system benefits from low CO₂-emitting generation under Mid CO₂ prices, even when the capacity and energy may not be needed to maintain the target reserve margin. The production cost savings associated with low CO₂-emitting generation more than offsets the increased cost of building new generation sooner. Second, in these scenarios, average capacity factors of Brown 1 and 2 were consistently less than 10 percent; therefore, these two units were assumed to be retired in 2020 in the Mid CO₂ scenarios.⁵⁰

Based on these results, a natural gas unit will likely be included in the Companies' least cost plan to meet load requirements beyond 2018. In six of the nine scenarios, a 1x1 or 2x1 NGCC unit is the first new unit installed. A SCCT is the first new unit installed in the remaining three scenarios.

⁴⁹ The analysis assumed additional capacity cannot be added prior to 2019. For this reason, additional capacity is needed in 2019 in the High load scenario – even with the addition of Green River 5 in 2018.

⁵⁰ As mentioned previously, the Low load scenarios are not included in Table 31. Brown 1-2 were also assumed to be retired in the Low load, Mid CO₂ price scenarios.

4.3 Phase 2 – CO₂ Mass Emissions Cap

4.3.1 Methodology

Action on climate change could be in the form of a mass emissions cap rather than a CO₂ price. To evaluate this possibility, an additional modeling constraint was added to limit CO₂ emissions to 29.4 million tons per year beginning in 2020. The six scenarios evaluated are summarized in Section 4.1.4 in Table 26.

Because the system may benefit from installing a low or no CO₂-emitting resource earlier than necessary to maintain the target reserve margin in a CO₂ emissions constrained world, 2x1 NGCC and wind units could be added before capacity is needed to maintain the minimum reserve margin target.⁵¹

Capacity factors for existing coal units were averaged over the three gas price scenarios in each load scenario. If an existing coal unit's capacity factor was consistently less than 10 percent in a given load scenario, the unit was assumed to be retired in the year when its capacity factor consistently dropped below 10 percent.

4.3.2 Results

Table 32 shows the optimal expansion plans for each of the CO₂ mass emissions cap scenarios along with the three Base load, Mid CO₂ price scenarios presented in Table 31. In all of the CO₂ mass emissions cap scenarios, average capacity factors of Brown 1 and 2 were consistently less than 10 percent beginning in 2020 with the onset of the CO₂ mass emissions cap; therefore, these units were assumed to be retired in 2020 in all of the CO₂ mass emissions cap scenarios.

Table 32 – Optimal Expansion Plans: CO₂ Mass Emissions Cap Scenarios

CO ₂	Cap	Cap	Cap	Cap	Cap	Cap	MC	MC	MC
Load	LL	LL	LL	BL	BL	BL	BL	BL	BL
Gas Price	LG	MG	HG	LG	MG	HG	LG	MG	HG
2014									
2015	CR7	CR7	CR7	CR7	CR7	CR7	CR7	CR7	CR7
2016	BRS	BRS	BRS	BRS	BRS	BRS	BRS	BRS	BRS
2017									
2018	GR5	GR5	GR5	GR5	GR5	GR5	GR5	GR5	GR5
2019									
2020	Ret BR1-2	Ret BR1-2	Ret BR1-2	Ret BR1-2 2x1G(1)	Ret BR1-2 2x1G(1)	Ret BR1-2 2x1G(1)	Ret BR1-2 1x1G(1)	Ret BR1-2 1x1G(1)	Ret BR1-2 2x1G(1)
2021									
2022							2x1G(1)	2x1G(1)	
2023			Wind(1)						
2024									
2025									
2026									
2027			Wind(2)						
2028			Wind(5)			Wind(4)			

CO₂: Mass Emissions Cap (Cap), Mid (MC) Load: Low (LL), Base (BL) Gas Price: Low (LG), Mid (MG), High (HG)

⁵¹ Additional 2x1 NGCC and wind units were allowed because these units are the most economical options in a CO₂-constrained world.

The Mid CO₂ price scenario increases the cost of CO₂-emitting generation, but the CO₂ mass emissions cap scenario imposes a limit on CO₂-emitting generation which cannot be exceeded. In two of the Base load, Mid CO₂ price scenarios, 1x1 NGCC units are added in 2020. With the CO₂ mass emissions cap, 2x1 NGCC units are added in these scenarios to meet the greater need for low-emitting CO₂ resources. Without the additional NGCC capacity, the system cannot economically meet the CO₂ mass emissions cap.

The increased need for low-emitting CO₂ resources is further evidenced by the addition of wind generation in several scenarios. In 2013, natural gas prices averaged approximately \$3.70/mmBtu. In the Mid gas price scenario, gas prices beyond 2025 exceed \$6/mmBtu. In the High gas price scenario, gas prices beyond 2025 exceed \$8/mmBtu. Higher gas prices along with the limit on CO₂ emissions makes wind competitive in this period.

4.4 Summary of Expansion Planning Analysis Results

The Companies developed expansion plans over multiple load, gas price, and CO₂ scenarios. CO₂ scenarios include: 1) a Zero CO₂ price scenario, where there is never a price on future CO₂ emissions; 2) a Mid CO₂ price scenario, where a price on each ton of CO₂ begins in 2020; and 3) a CO₂ mass emissions cap scenario, where CO₂ emissions are limited to 29.4 million tons per year beginning in 2020. The results of the analysis for the Base load scenarios are summarized in Table 33.

Table 33 – Optimal Expansion Plans: All Base Load Scenarios

CO ₂	OC	OC	OC	MC	MC	MC	Cap	Cap	Cap
Load	BL	BL	BL	BL	BL	BL	BL	BL	BL
Gas Price	LG	MG	HG	LG	MG	HG	LG	MG	HG
2014									
2015	CR7	CR7	CR7	CR7	CR7	CR7	CR7	CR7	CR7
2016	BRS	BRS	BRS	BRS	BRS	BRS	BRS	BRS	BRS
2017									
2018	GR5	GR5	GR5	GR5	GR5	GR5	GR5	GR5	GR5
2019									
2020				Ret BR1-2 1x1G(1)	Ret BR1-2 1x1G(1)	Ret BR1-2 2x1G(1)	Ret BR1-2 2x1G(1)	Ret BR1-2 2x1G(1)	Ret BR1-2 2x1G(1)
2021									
2022				2x1G(1)	2x1G(1)				
2023									
2024									
2025	2x1G(1)	SCCT(1)	2x1G(1)						
2026									
2027		SCCT(1)							
2028									Wind(4)

CO₂: Zero (OC), Mid (MC), Mass Emissions Cap (Cap) Load: Base (BL) Gas Price: Low (LG), Mid (MG), High (HG)

In the Zero CO₂ price scenarios, the addition of new capacity (in 2025) coincides with the Companies' need for capacity, as expected. In the Mid CO₂ price and CO₂ mass emissions cap scenarios, new capacity is added in 2020. Two factors drive this result. First, the system benefits from low CO₂-emitting generation in a carbon-constrained world, even when the capacity and energy may not be needed to maintain the target reserve margin; the production cost savings associated with low CO₂-emitting generation more than offsets the increased cost of building new generation sooner. Second, in these scenarios, average capacity factors of Brown 1 and 2 were consistently less than 10 percent; therefore, these two units were assumed to be retired in 2020 in these scenarios.

Because NGCC capacity is added first in eight of the nine scenarios in Table 33, a natural gas unit will likely be included in the Companies' least cost plan to meet load requirements beyond 2018. In the Zero CO₂ price scenarios, NGCC capacity is added to meet customers' growing need for energy (as well as capacity). In the Mid CO₂ price and CO₂ mass emissions cap scenarios, NGCC capacity is added to meet the need for low-emitting CO₂ resources (as well as customers' energy needs). Generally speaking, more NGCC capacity is added sooner in the CO₂ mass emissions cap scenarios compared to the Mid CO₂ price scenarios. Without this additional NGCC capacity, the system cannot economically meet the CO₂ mass emissions cap.

In the High gas, CO₂ emissions cap scenario, wind capacity is added to the Companies' portfolio in 2028. In the High gas price scenario, gas prices exceed \$8/mmBtu beyond 2025. High gas prices coupled with the CO₂ mass emissions cap makes wind generation competitive in this scenario.

Appendix to Sections 8 and 9 – Scenario Data



PPL companies

**Generation Planning & Analysis
March 2014**

Table 8.(3)(b)
KU and LG&E Planned Electric Generation Facilities

Scenario/ Future Units	Unit No.	Location	Status	Operation Date	Facility Type	Net Capacity (MW)		Entitlement		Fuel Type	Fuel Storage Cap/SO ₂ Content	Scheduled Upgrades Derates Requirements
						Winter	Summer	KU	LGE			
Mid Gas-Low Load-Zero Carbon												
None												
Mid Gas-Low Load-Mid Carbon												
None												
Mid Gas-Low Load-Carbon Cap												
None												
Mid Gas-High Load-Zero Carbon												
SCCT F-Class-Three Units	1	Unknown	Proposed	2019	Turbine	659	602	N/A	N/A	Gas	None	None
2x1 NGCC G/H-Class_2	1	Unknown	Proposed	2025	Turbine	859	737	N/A	N/A	Gas	None	None
Mid Gas-Base Load-Zero Carbon												
SCCT F-Class_1	1	Unknown	Proposed	2025	Turbine	220	201	N/A	N/A	Gas	None	None
SCCT F-Class_2	1	Unknown	Proposed	2027	Turbine	220	201	N/A	N/A	Gas	None	None
Mid Gas-Base Load-Mid Carbon												
1x1 NGCC G/H-Class	1	Unknown	Proposed	2020	Turbine	429	368	N/A	N/A	Gas	None	None
2x1 NGCC G/H-Class_2	1	Unknown	Proposed	2022	Turbine	859	737	N/A	N/A	Gas	None	None
Mid Gas-Base Load-Carbon Cap												
2x1 NGCC G/H-Class_1	1	Unknown	Proposed	2020	Turbine	859	737	N/A	N/A	Gas	None	None
Low Gas-Low Load-Zero Carbon												
None												
Low Gas-Low Load-Mid Carbon												
None												
Low Gas-Low Load-Carbon Cap												
None												
Low Gas-High Load-Zero Carbon												
2x1 NGCC G/H-Class_1	1	Unknown	Proposed	2019	Turbine	859	737	N/A	N/A	Gas	None	None
Low Gas-High Load-Mid Carbon												
2x1 NGCC G/H-Class_1	1	Unknown	Proposed	2019	Turbine	859	737	N/A	N/A	Gas	None	None
2x1 NGCC G/H-Class_2	1	Unknown	Proposed	2026	Turbine	859	737	N/A	N/A	Gas	None	None
Low Gas-Base Load-Zero Carbon												
2x1 NGCC G/H-Class_1	1	Unknown	Proposed	2025	Turbine	859	737	N/A	N/A	Gas	None	None
Low Gas-Base Load-Mid Carbon												
1x1 NGCC G/H-Class	1	Unknown	Proposed	2020	Turbine	429	368	N/A	N/A	Gas	None	None
2x1 NGCC G/H-Class_2	1	Unknown	Proposed	2022	Turbine	859	737	N/A	N/A	Gas	None	None
Low Gas-Base Load-Carbon Cap												
2x1 NGCC G/H-Class_1	1	Unknown	Proposed	2020	Turbine	859	737	N/A	N/A	Gas	None	None
High Gas-Low Load-Zero Carbon												
None												
High Gas-Low Load-Mid Carbon												
Wind_1	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None
Wind_2	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None

Table 8.(3)(b)
KU and LG&E Planned Electric Generation Facilities

Scenario/ Future Units	Unit No.	Location	Status	Operation Date	Facility Type	Net Capacity (MW)		Entitlement		Fuel Type	Fuel Storage Cap/SO ₂ Content	Scheduled Upgrades Derates Requirements
						Winter	Summer	KU	LGE			
High Gas-Low Load-Carbon Cap												
Wind_1	1	Unknown	Proposed	2023	Wind	50	50	N/A	N/A	Wind	None	None
Wind_2	1	Unknown	Proposed	2027	Wind	50	50	N/A	N/A	Wind	None	None
Wind_3	1	Unknown	Proposed	2027	Wind	50	50	N/A	N/A	Wind	None	None
Wind_4	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None
Wind_5	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None
Wind_6	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None
Wind_7	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None
Wind_8	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None
High Gas-High Load-Zero Carbon												
SCCT F-Class-Three Units	1	Unknown	Proposed	2019	Turbine	659	602	N/A	N/A	Gas	None	None
2x1 NGCC G/H-Class_2	1	Unknown	Proposed	2025	Turbine	859	737	N/A	N/A	Gas	None	None
High Gas-Base Load-Zero Carbon												
2x1 NGCC G/H-Class_1	1	Unknown	Proposed	2025	Turbine	859	737	N/A	N/A	Gas	None	None
High Gas-Base Load-Mid Carbon												
2x1 NGCC G/H-Class_1	1	Unknown	Proposed	2020	Turbine	859	737	N/A	N/A	Gas	None	None
High Gas-Base Load-Carbon Cap												
2x1 NGCC G/H-Class_1	1	Unknown	Proposed	2020	Turbine	859	737	N/A	N/A	Gas	None	None
Wind_1	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None
Wind_2	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None
Wind_3	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None
Wind_4	1	Unknown	Proposed	2028	Wind	50	50	N/A	N/A	Wind	None	None

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon																
E.W. Brown 1	40.6%	7.0%	6.2%	7.5%	9.0%	3.8%	5.7%	4.1%	5.0%	4.8%	7.4%	8.0%	11.4%	14.6%	15.8%	23.6%
E.W. Brown 10	0.1%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%
E.W. Brown 11	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
E.W. Brown 2	59.9%	14.9%	13.6%	14.0%	12.0%	6.0%	8.0%	5.9%	6.7%	7.7%	18.0%	15.6%	26.8%	35.8%	36.3%	38.3%
E.W. Brown 3	44.1%	32.9%	30.2%	33.0%	34.3%	32.8%	29.5%	32.8%	34.2%	32.9%	34.4%	33.1%	34.5%	29.9%	34.6%	33.5%
E.W. Brown 5	0.3%	0.5%	0.6%	0.6%	0.6%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 6	3.6%	1.1%	1.2%	1.1%	1.2%	0.4%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%	0.7%
E.W. Brown 7	3.1%	1.4%	1.5%	1.4%	1.5%	0.5%	0.6%	0.5%	0.6%	0.6%	0.6%	0.7%	0.7%	0.8%	0.8%	0.9%
E.W. Brown 8	0.3%	0.3%	0.3%	0.3%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%
E.W. Brown 9	0.5%	0.4%	0.4%	0.5%	0.5%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%
Cane Run 11	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Cane Run 4	51.3%	22.5%	10.1%													
Cane Run 5	58.7%	73.7%	37.3%													
Cane Run 6	47.3%	40.6%	23.4%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	73.8%	57.3%	60.0%	61.3%	44.7%	54.8%	46.7%	55.4%	65.3%	75.2%	73.8%	76.4%	74.8%	76.7%	75.6%
Ghent 2	82.5%	87.3%	77.5%	82.4%	84.1%	81.7%	69.7%	80.9%	81.0%	83.9%	82.9%	85.0%	83.4%	75.1%	85.7%	83.5%
Ghent 3	77.5%	47.9%	53.2%	43.0%	45.7%	24.3%	25.4%	25.5%	36.8%	52.1%	64.5%	65.5%	60.4%	67.9%	68.7%	69.0%
Ghent 4	71.6%	55.7%	42.9%	34.3%	29.3%	12.7%	18.5%	12.5%	16.9%	33.7%	54.9%	58.0%	62.6%	65.8%	62.5%	58.0%
Green River 3	51.1%	12.4%	3.6%													
Green River 4	76.4%	88.2%	88.7%													
Haefling 1-2	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	87.5%	70.2%	80.5%	76.2%	79.7%	78.4%	83.2%	72.3%	85.1%	80.6%	85.0%	81.5%	86.6%	80.6%	86.4%
Mill Creek 2	72.2%	83.9%	74.6%	77.1%	84.2%	76.9%	85.9%	76.7%	88.7%	83.6%	89.3%	84.1%	89.5%	84.0%	89.3%	77.2%
Mill Creek 3	64.3%	85.6%	87.2%	49.8%	61.8%	58.0%	57.7%	72.0%	70.9%	77.3%	73.0%	77.4%	73.8%	78.0%	67.8%	79.0%
Mill Creek 4	64.2%	68.3%	61.8%	71.4%	80.0%	69.2%	81.0%	77.5%	84.9%	73.0%	86.9%	81.6%	87.6%	82.3%	88.1%	82.9%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 12	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 13	2.1%	13.6%	12.1%	9.9%	8.6%	3.2%	4.3%	3.4%	3.7%	3.4%	3.4%	3.4%	3.6%	3.8%	3.4%	4.6%
Trimble County CT 10	1.8%	2.6%	2.5%	2.4%	2.8%	0.8%	1.0%	0.8%	0.9%	0.9%	1.0%	0.9%	1.1%	1.2%	1.2%	1.4%
Trimble County CT 5	4.6%	16.1%	13.4%	11.2%	9.2%	3.8%	5.6%	3.5%	4.1%	3.6%	4.8%	3.7%	4.4%	4.7%	4.3%	5.6%
Trimble County CT 6	6.1%	11.9%	9.9%	7.9%	9.3%	2.8%	4.1%	2.7%	2.7%	3.1%	3.7%	2.9%	3.5%	3.7%	3.4%	4.4%
Trimble County CT 7	4.9%	8.5%	7.2%	6.1%	6.8%	1.9%	2.8%	1.9%	2.4%	2.3%	2.6%	2.1%	2.6%	2.8%	2.5%	3.3%
Trimble County CT 8	1.9%	5.7%	5.2%	4.6%	4.6%	1.5%	2.0%	1.4%	1.7%	1.7%	1.9%	1.6%	2.0%	2.0%	2.0%	2.5%
Trimble County CT 9	5.8%	3.9%	3.7%	3.4%	3.7%	1.0%	1.4%	1.1%	1.3%	1.2%	1.4%	1.3%	1.5%	1.6%	1.6%	1.9%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	82.8%	88.4%	83.1%	88.4%	83.1%	88.4%	75.9%	88.4%	83.1%	88.4%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Cane Run 7			63.6%	95.0%	90.6%	91.1%	76.4%	85.5%	75.6%	60.7%	33.2%	35.9%	37.5%	40.1%	33.5%	31.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						65.8%	66.3%	53.3%	45.3%	28.7%	17.4%	13.9%	15.2%	14.5%	12.4%	15.4%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Mid Carbon																
E.W. Brown 1	40.6%	7.0%	6.2%	7.5%	9.0%	3.8%	5.7%									
E.W. Brown 10	0.1%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%
E.W. Brown 11	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 2	59.9%	14.9%	13.6%	14.0%	12.0%	6.0%	8.0%									
E.W. Brown 3	44.1%	32.9%	30.2%	33.0%	34.3%	32.8%	29.5%	32.8%	34.2%	32.8%	34.2%	32.9%	34.3%	31.2%	35.9%	34.6%
E.W. Brown 5	0.3%	0.5%	0.6%	0.6%	0.6%	0.2%	0.2%	0.4%	0.5%	0.5%	0.5%	0.5%	0.7%	0.7%	0.7%	0.9%
E.W. Brown 6	3.6%	1.1%	1.2%	1.1%	1.2%	0.4%	0.4%	0.7%	0.9%	0.9%	1.0%	1.0%	1.1%	1.2%	1.2%	1.4%
E.W. Brown 7	3.1%	1.4%	1.5%	1.4%	1.5%	0.5%	0.6%	1.0%	1.2%	1.2%	1.3%	1.2%	1.5%	1.5%	1.5%	1.9%
E.W. Brown 8	0.3%	0.3%	0.3%	0.3%	0.4%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%
E.W. Brown 9	0.5%	0.4%	0.4%	0.5%	0.5%	0.1%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%	0.5%	0.6%
Cane Run 11	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	22.5%	10.1%													
Cane Run 5	58.7%	73.7%	37.3%													
Cane Run 6	47.3%	40.6%	23.4%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	73.8%	57.3%	60.0%	61.3%	44.7%	54.8%	35.1%	38.5%	33.9%	44.2%	36.5%	42.1%	43.3%	43.1%	45.1%
Ghent 2	82.5%	87.3%	77.5%	82.4%	84.1%	81.7%	69.7%	70.9%	71.3%	71.7%	72.4%	71.5%	72.2%	62.7%	72.8%	72.4%
Ghent 3	77.5%	47.9%	53.2%	43.0%	45.7%	24.3%	25.4%	22.0%	24.1%	25.2%	27.5%	23.9%	23.6%	30.2%	25.8%	27.0%
Ghent 4	71.6%	55.7%	42.9%	34.3%	29.3%	12.7%	18.5%	12.3%	12.3%	13.8%	15.5%	13.2%	15.7%	18.0%	16.3%	19.4%
Green River 3	51.1%	12.4%	3.6%													
Green River 4	76.4%	88.2%	88.7%													
Haefling 1-2	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
Mill Creek 1	55.3%	87.5%	70.2%	80.5%	76.2%	79.7%	78.4%	76.2%	65.7%	76.2%	72.8%	76.3%	72.4%	75.2%	71.1%	76.2%
Mill Creek 2	72.2%	83.9%	74.6%	77.1%	84.2%	76.9%	85.9%	69.3%	81.2%	76.1%	82.0%	76.0%	81.5%	75.3%	80.4%	69.8%
Mill Creek 3	64.3%	85.6%	87.2%	49.8%	61.8%	58.0%	57.7%	52.1%	54.3%	57.3%	59.2%	59.0%	59.8%	62.7%	54.8%	65.1%
Mill Creek 4	64.2%	68.3%	61.8%	71.4%	80.0%	69.2%	81.0%	62.4%	65.5%	55.6%	66.5%	58.9%	65.4%	62.6%	66.6%	65.1%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	13.6%	12.1%	9.9%	8.6%	3.2%	4.3%	5.9%	6.8%	6.7%	7.4%	6.9%	7.9%	8.3%	7.2%	9.8%
Trimble County CT 10	1.8%	2.6%	2.5%	2.4%	2.8%	0.8%	1.0%	1.5%	1.8%	1.7%	2.0%	1.8%	2.2%	2.2%	2.1%	2.7%
Trimble County CT 5	4.6%	16.1%	13.4%	11.2%	9.2%	3.8%	5.6%	6.7%	8.1%	7.0%	9.6%	7.2%	9.2%	9.8%	8.7%	11.5%
Trimble County CT 6	6.1%	11.9%	9.9%	7.9%	9.3%	2.8%	4.1%	5.0%	5.0%	6.0%	7.1%	5.5%	7.0%	7.4%	6.6%	8.7%
Trimble County CT 7	4.9%	8.5%	7.2%	6.1%	6.8%	1.9%	2.8%	3.7%	4.7%	4.4%	5.2%	4.2%	5.2%	5.5%	5.0%	6.5%
Trimble County CT 8	1.9%	5.7%	5.2%	4.6%	4.6%	1.5%	2.0%	2.7%	3.4%	3.2%	3.8%	3.2%	3.9%	4.0%	3.7%	4.9%
Trimble County CT 9	5.8%	3.9%	3.7%	3.4%	3.7%	1.0%	1.4%	2.0%	2.5%	2.4%	2.8%	2.4%	2.9%	3.0%	2.8%	3.6%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	82.8%	86.7%	81.8%	86.8%	82.0%	87.0%	75.0%	87.2%	81.9%	87.4%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			63.6%	95.0%	90.6%	91.1%	76.4%	95.0%	90.8%	95.0%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						65.8%	66.3%	90.6%	90.8%	90.7%	90.9%	90.8%	91.1%	91.1%	91.3%	91.3%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Carbon Cap																
E.W. Brown 1	40.6%	7.0%	6.2%	7.5%	9.0%	3.8%	5.7%									
E.W. Brown 10	0.1%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.2%	0.3%	0.3%	0.4%	0.3%	0.4%	0.4%	0.5%	0.6%
E.W. Brown 11	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 2	59.9%	14.9%	13.6%	14.0%	12.0%	6.0%	8.0%									
E.W. Brown 3	44.1%	32.9%	30.2%	33.0%	34.3%	32.8%	29.5%	32.9%	34.2%	32.9%	35.7%	33.0%	35.8%	31.1%	37.5%	37.4%
E.W. Brown 5	0.3%	0.5%	0.6%	0.6%	0.6%	0.2%	0.2%	0.3%	0.4%	0.4%	0.7%	0.5%	0.8%	0.8%	0.9%	1.0%
E.W. Brown 6	3.6%	1.1%	1.2%	1.1%	1.2%	0.4%	0.4%	0.7%	0.8%	0.8%	1.0%	0.9%	1.1%	1.2%	1.2%	2.2%
E.W. Brown 7	3.1%	1.4%	1.5%	1.4%	1.5%	0.5%	0.6%	0.9%	1.0%	1.0%	1.3%	1.1%	1.4%	1.5%	1.5%	3.0%
E.W. Brown 8	0.3%	0.3%	0.3%	0.3%	0.4%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%
E.W. Brown 9	0.5%	0.4%	0.4%	0.5%	0.5%	0.1%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.5%	0.6%	0.7%
Cane Run 11	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	22.5%	10.1%													
Cane Run 5	58.7%	73.7%	37.3%													
Cane Run 6	47.3%	40.6%	23.4%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	73.8%	57.3%	60.0%	61.3%	44.7%	54.8%	35.0%	38.3%	33.7%	42.5%	36.2%	42.5%	43.3%	41.0%	39.5%
Ghent 2	82.5%	87.3%	77.5%	82.4%	84.1%	81.7%	69.7%	78.5%	75.5%	76.9%	71.8%	74.6%	71.5%	62.5%	72.8%	71.7%
Ghent 3	77.5%	47.9%	53.2%	43.0%	45.7%	24.3%	25.4%	21.3%	23.1%	24.9%	19.7%	23.9%	21.6%	27.0%	18.8%	9.1%
Ghent 4	71.6%	55.7%	42.9%	34.3%	29.3%	12.7%	18.5%	12.5%	12.5%	13.8%	14.7%	13.5%	16.2%	20.7%	11.2%	3.6%
Green River 3	51.1%	12.4%	3.6%													
Green River 4	76.4%	88.2%	88.7%													
Haefling 1-2	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
Mill Creek 1	55.3%	87.5%	70.2%	80.5%	76.2%	79.7%	78.4%	80.7%	69.4%	79.2%	71.5%	77.9%	71.8%	75.1%	70.9%	75.4%
Mill Creek 2	72.2%	83.9%	74.6%	77.1%	84.2%	76.9%	85.9%	73.0%	83.9%	78.5%	80.2%	77.5%	80.0%	74.6%	78.7%	68.1%
Mill Creek 3	64.3%	85.6%	87.2%	49.8%	61.8%	58.0%	57.7%	59.2%	56.6%	59.2%	60.3%	51.9%	60.1%	62.5%	54.4%	63.3%
Mill Creek 4	64.2%	68.3%	61.8%	71.4%	80.0%	69.2%	81.0%	70.5%	74.5%	65.4%	65.8%	66.5%	65.8%	62.8%	64.7%	62.1%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	13.6%	12.1%	9.9%	8.6%	3.2%	4.3%	5.1%	5.8%	5.6%	28.3%	6.1%	11.6%	11.4%	30.2%	39.9%
Trimble County CT 10	1.8%	2.6%	2.5%	2.4%	2.8%	0.8%	1.0%	1.4%	1.6%	1.6%	2.7%	1.6%	2.1%	2.2%	4.4%	11.4%
Trimble County CT 5	4.6%	16.1%	13.4%	11.2%	9.2%	3.8%	5.6%	5.8%	7.0%	5.9%	13.7%	6.4%	9.0%	9.8%	15.7%	36.0%
Trimble County CT 6	6.1%	11.9%	9.9%	7.9%	9.3%	2.8%	4.1%	4.3%	4.2%	5.2%	10.2%	4.9%	6.8%	7.4%	12.3%	29.8%
Trimble County CT 7	4.9%	8.5%	7.2%	6.1%	6.8%	1.9%	2.8%	3.2%	4.0%	3.9%	7.5%	3.7%	5.1%	5.5%	9.6%	24.2%
Trimble County CT 8	1.9%	5.7%	5.2%	4.6%	4.6%	1.5%	2.0%	2.4%	3.0%	2.9%	5.4%	2.9%	3.8%	4.0%	7.4%	19.2%
Trimble County CT 9	5.8%	3.9%	3.7%	3.4%	3.7%	1.0%	1.4%	1.8%	2.2%	2.1%	3.8%	2.2%	2.8%	3.0%	5.7%	14.9%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	82.8%	88.2%	82.4%	87.5%	81.8%	87.2%	74.9%	87.0%	81.9%	87.2%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			63.6%	95.0%	90.6%	91.1%	76.4%	93.4%	90.2%	94.3%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						65.8%	66.3%	73.7%	79.3%	78.2%	91.3%	86.7%	91.3%	91.3%	91.3%	91.4%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-High Load-Zero Carbon																
E.W. Brown 1	40.6%	13.0%	11.3%	14.8%	17.8%	9.2%	13.6%	10.4%	13.4%	12.7%	19.4%	19.6%	18.3%	24.5%	29.2%	47.9%
E.W. Brown 10	0.1%	1.2%	1.2%	1.4%	1.6%	0.6%	0.4%	0.4%	0.5%	0.6%	0.6%	0.7%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 11	0.1%	0.9%	1.0%	1.1%	1.2%	0.4%	0.3%	0.3%	0.3%	0.3%	0.4%	0.5%	0.2%	0.2%	0.2%	0.2%
E.W. Brown 2	59.9%	23.9%	23.3%	25.1%	22.5%	14.2%	17.9%	14.8%	17.1%	20.0%	33.1%	30.6%	41.5%	52.5%	55.3%	61.1%
E.W. Brown 3	44.1%	33.5%	30.6%	33.6%	35.0%	33.1%	29.9%	33.3%	34.8%	33.7%	35.5%	34.4%	34.8%	30.2%	35.0%	34.0%
E.W. Brown 5	0.3%	1.7%	1.9%	1.9%	2.1%	0.8%	0.9%	0.8%	0.7%	0.8%	0.9%	1.0%	0.3%	0.4%	0.4%	0.5%
E.W. Brown 6	3.6%	3.6%	3.6%	3.5%	3.9%	1.5%	1.9%	1.6%	2.0%	2.1%	2.5%	2.4%	1.1%	1.0%	1.1%	1.4%
E.W. Brown 7	3.1%	4.4%	4.4%	4.1%	4.7%	1.7%	2.4%	2.0%	2.4%	2.5%	3.0%	2.9%	1.3%	1.3%	1.4%	1.7%
E.W. Brown 8	0.3%	1.1%	1.2%	1.3%	1.4%	0.5%	0.3%	0.3%	0.4%	0.4%	0.5%	0.5%	0.2%	0.2%	0.2%	0.3%
E.W. Brown 9	0.5%	1.4%	1.5%	1.6%	1.8%	0.7%	0.5%	0.5%	0.6%	0.7%	0.8%	0.9%	0.3%	0.3%	0.4%	0.5%
Cane Run 11	0.1%	0.2%	0.3%	0.3%	0.4%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Cane Run 4	51.3%	35.4%	19.9%													
Cane Run 5	58.7%	79.8%	53.1%													
Cane Run 6	47.3%	54.5%	39.7%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	78.2%	63.3%	68.6%	71.8%	56.8%	66.0%	59.1%	65.5%	68.7%	79.8%	78.2%	80.1%	79.0%	80.9%	80.8%
Ghent 2	82.5%	87.7%	78.5%	83.6%	85.2%	83.7%	71.7%	83.1%	82.9%	85.1%	84.3%	86.5%	84.9%	76.4%	87.2%	85.2%
Ghent 3	77.5%	60.4%	64.3%	58.4%	62.2%	40.1%	41.6%	42.0%	51.6%	63.0%	73.8%	75.7%	68.8%	77.8%	79.4%	80.2%
Ghent 4	71.6%	64.8%	59.1%	51.6%	47.6%	26.4%	35.5%	27.7%	34.3%	50.5%	72.1%	74.4%	77.5%	79.9%	77.8%	71.3%
Green River 3	51.1%	21.1%	8.8%													
Green River 4	76.4%	88.7%	89.7%													
Haefling 1-2	0.1%	0.4%	0.5%	0.5%	0.6%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	88.6%	73.0%	82.7%	78.6%	81.7%	79.9%	84.7%	73.7%	86.0%	81.6%	86.2%	82.6%	88.0%	82.5%	88.2%
Mill Creek 2	72.2%	84.1%	77.0%	79.5%	86.7%	79.6%	87.7%	77.2%	89.4%	84.1%	89.7%	84.4%	89.8%	84.4%	89.8%	77.5%
Mill Creek 3	64.3%	87.4%	87.8%	57.1%	67.6%	65.6%	62.8%	76.0%	74.2%	79.9%	76.0%	80.8%	76.8%	82.3%	71.5%	84.6%
Mill Creek 4	64.2%	69.4%	69.3%	76.1%	83.5%	74.8%	84.1%	80.0%	86.8%	74.6%	88.1%	82.9%	88.9%	83.6%	89.2%	84.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.2%	0.3%	0.3%	0.4%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 12	0.0%	0.2%	0.3%	0.3%	0.3%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 13	2.1%	22.0%	20.0%	17.4%	15.8%	7.0%	9.8%	8.0%	9.2%	8.6%	9.4%	9.0%	4.9%	4.6%	4.6%	6.0%
Trimble County CT 10	1.8%	7.8%	7.1%	6.7%	8.1%	2.9%	3.5%	2.9%	3.7%	3.8%	4.6%	4.1%	2.1%	1.8%	1.9%	2.4%
Trimble County CT 5	4.6%	30.6%	26.8%	23.6%	19.8%	10.7%	14.9%	10.3%	12.6%	11.0%	15.0%	12.2%	7.7%	5.7%	5.6%	7.1%
Trimble County CT 6	6.1%	24.5%	21.3%	17.5%	20.9%	8.2%	11.8%	8.2%	8.3%	10.6%	12.2%	9.9%	6.1%	4.5%	4.5%	5.7%
Trimble County CT 7	4.9%	19.2%	16.7%	14.9%	16.6%	5.6%	8.8%	6.2%	8.2%	8.3%	9.4%	7.9%	4.7%	3.6%	3.6%	4.6%
Trimble County CT 8	1.9%	14.4%	12.9%	11.6%	11.7%	4.9%	6.8%	4.9%	6.3%	6.3%	7.4%	6.4%	3.6%	2.8%	2.9%	3.7%
Trimble County CT 9	5.8%	10.7%	9.7%	9.0%	10.3%	3.6%	5.1%	3.8%	4.9%	5.0%	5.9%	5.2%	2.8%	2.3%	2.4%	3.0%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	82.9%	88.4%	83.1%	88.4%	83.1%	88.4%	75.9%	88.4%	83.1%	88.4%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Cane Run 7			63.6%	95.0%	90.7%	93.9%	78.6%	91.8%	84.9%	78.6%	51.9%	60.7%	62.5%	66.2%	60.9%	47.1%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						76.1%	77.3%	68.9%	61.3%	48.3%	36.3%	31.1%	23.1%	16.5%	15.0%	18.7%
SCCT F-Class-Three Units							0.3%	0.4%	0.5%	0.5%	0.6%	0.7%	0.3%	0.3%	0.3%	0.4%
2x1 NGCC G/H-Class_2													21.2%	28.0%	27.3%	36.2%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Zero Carbon																
E.W. Brown 1	40.6%	9.7%	8.2%	11.2%	13.3%	6.3%	8.7%	7.0%	8.6%	8.4%	12.2%	13.6%	18.2%	22.3%	23.9%	33.1%
E.W. Brown 10	0.1%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.4%	0.5%
E.W. Brown 11	0.1%	0.5%	0.6%	0.6%	0.7%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%	0.3%	0.4%
E.W. Brown 2	59.9%	19.8%	18.1%	19.9%	17.0%	9.7%	11.6%	9.9%	11.5%	13.3%	25.0%	23.8%	35.4%	45.4%	46.6%	48.6%
E.W. Brown 3	44.1%	33.1%	30.4%	33.2%	34.6%	32.9%	29.6%	33.0%	34.4%	33.2%	34.8%	33.6%	35.1%	30.6%	35.4%	34.5%
E.W. Brown 5	0.3%	1.0%	1.1%	1.2%	1.3%	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%	0.7%	0.6%	0.7%	0.5%	0.6%
E.W. Brown 6	3.6%	2.2%	2.1%	2.2%	2.4%	0.8%	0.9%	0.9%	1.0%	1.1%	1.2%	1.2%	1.4%	1.6%	1.6%	1.9%
E.W. Brown 7	3.1%	2.7%	2.6%	2.7%	3.0%	1.0%	1.2%	1.1%	1.3%	1.3%	1.5%	1.6%	1.7%	1.9%	1.9%	2.3%
E.W. Brown 8	0.3%	0.6%	0.7%	0.7%	0.8%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%	0.4%	0.5%	0.4%	0.4%
E.W. Brown 9	0.5%	0.8%	0.9%	1.0%	1.1%	0.3%	0.4%	0.4%	0.5%	0.5%	0.6%	0.6%	0.5%	0.6%	0.5%	0.5%
Cane Run 11	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	28.7%	15.8%													
Cane Run 5	58.7%	76.8%	47.3%													
Cane Run 6	47.3%	46.9%	33.2%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	76.1%	60.9%	63.8%	66.7%	50.3%	60.4%	52.3%	61.4%	67.2%	77.9%	76.2%	78.7%	77.4%	79.4%	78.4%
Ghent 2	82.5%	87.4%	78.2%	83.1%	84.8%	82.8%	70.6%	82.0%	82.0%	84.5%	83.7%	85.7%	84.2%	75.7%	86.7%	84.4%
Ghent 3	77.5%	53.8%	59.2%	50.2%	53.8%	32.6%	34.6%	34.9%	43.8%	57.6%	69.2%	70.7%	65.1%	72.5%	75.1%	74.4%
Ghent 4	71.6%	61.5%	50.7%	43.5%	38.4%	20.2%	25.6%	19.5%	26.8%	43.1%	65.2%	67.9%	72.5%	74.4%	71.7%	66.9%
Green River 3	51.1%	16.8%	6.4%													
Green River 4	76.4%	88.5%	89.4%													
Haefling 1-2	0.1%	0.2%	0.2%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%
Mill Creek 1	55.3%	88.2%	71.7%	81.6%	77.5%	80.7%	79.1%	84.0%	73.0%	85.5%	80.9%	85.5%	81.9%	87.2%	81.5%	87.3%
Mill Creek 2	72.2%	84.0%	75.9%	78.3%	85.6%	78.3%	86.9%	77.0%	89.2%	84.0%	89.6%	84.3%	89.7%	84.3%	89.7%	77.4%
Mill Creek 3	64.3%	86.4%	87.6%	53.8%	64.8%	62.1%	60.8%	74.3%	72.8%	78.5%	74.4%	79.1%	75.6%	79.8%	69.6%	80.9%
Mill Creek 4	64.2%	69.0%	66.2%	73.9%	82.1%	72.1%	82.7%	78.8%	86.0%	73.9%	87.6%	82.3%	88.3%	83.0%	88.8%	83.6%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	18.7%	16.8%	14.3%	12.7%	5.3%	7.2%	5.8%	6.5%	6.1%	6.6%	6.2%	6.8%	7.3%	6.5%	8.9%
Trimble County CT 10	1.8%	4.9%	4.3%	4.3%	5.2%	1.7%	1.8%	1.7%	2.0%	2.1%	2.2%	2.2%	2.6%	2.9%	2.8%	3.4%
Trimble County CT 5	4.6%	23.0%	18.8%	17.4%	14.2%	6.9%	8.9%	6.4%	7.5%	7.1%	8.5%	7.2%	8.5%	9.7%	8.7%	10.9%
Trimble County CT 6	6.1%	17.8%	14.3%	12.9%	14.9%	5.2%	6.8%	5.1%	5.1%	6.2%	6.7%	5.8%	6.9%	7.9%	7.1%	8.9%
Trimble County CT 7	4.9%	13.5%	10.7%	10.3%	11.5%	3.5%	4.9%	3.8%	4.6%	4.8%	5.0%	4.5%	5.4%	6.2%	5.6%	7.0%
Trimble County CT 8	1.9%	9.7%	8.0%	7.9%	8.1%	3.0%	3.7%	2.9%	3.4%	3.5%	3.8%	3.6%	4.2%	4.8%	4.5%	5.6%
Trimble County CT 9	5.8%	6.9%	5.8%	6.0%	6.7%	2.1%	2.6%	2.2%	2.6%	2.7%	3.0%	2.9%	3.4%	3.8%	3.6%	4.4%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	82.9%	88.4%	83.1%	88.4%	83.1%	88.4%	75.9%	88.4%	83.1%	88.4%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			63.6%	95.0%	90.7%	93.1%	78.0%	89.1%	80.5%	69.7%	44.7%	48.2%	50.3%	53.6%	47.4%	45.8%
Brown Solar			10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						70.2%	73.1%	61.2%	52.7%	38.6%	25.5%	21.9%	24.0%	23.9%	21.5%	25.2%
SCCT F-Class_1													0.9%	1.0%	0.7%	0.8%
SCCT F-Class_2															0.9%	1.2%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Mid Carbon																
E.W. Brown 1	40.6%	9.7%	8.2%	11.2%	13.3%	6.3%	8.7%									
E.W. Brown 10	0.1%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%
E.W. Brown 11	0.1%	0.5%	0.6%	0.6%	0.7%	0.2%	0.3%	0.2%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
E.W. Brown 2	59.9%	19.8%	18.1%	19.9%	17.0%	9.7%	11.6%									
E.W. Brown 3	44.1%	33.1%	30.4%	33.2%	34.6%	32.9%	29.6%	32.9%	34.2%	32.7%	34.1%	32.8%	34.1%	30.5%	35.2%	33.9%
E.W. Brown 5	0.3%	1.0%	1.1%	1.2%	1.3%	0.4%	0.5%	0.5%	0.6%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%
E.W. Brown 6	3.6%	2.2%	2.1%	2.2%	2.4%	0.8%	0.9%	0.9%	1.0%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%	0.5%
E.W. Brown 7	3.1%	2.7%	2.6%	2.7%	3.0%	1.0%	1.2%	1.2%	1.3%	0.4%	0.4%	0.5%	0.5%	0.6%	0.6%	0.7%
E.W. Brown 8	0.3%	0.6%	0.7%	0.7%	0.8%	0.3%	0.3%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
E.W. Brown 9	0.5%	0.8%	0.9%	1.0%	1.1%	0.3%	0.4%	0.4%	0.4%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
Cane Run 11	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cane Run 4	51.3%	28.7%	15.8%													
Cane Run 5	58.7%	76.8%	47.3%													
Cane Run 6	47.3%	46.9%	33.2%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	76.1%	60.9%	63.8%	66.7%	50.3%	60.4%	36.9%	33.9%	19.3%	15.9%	14.1%	16.2%	18.8%	17.3%	19.2%
Ghent 2	82.5%	87.4%	78.2%	83.1%	84.8%	82.8%	70.6%	68.9%	67.9%	55.5%	52.5%	47.3%	44.2%	51.9%	51.9%	54.5%
Ghent 3	77.5%	53.8%	59.2%	50.2%	53.8%	32.6%	34.6%	26.1%	21.5%	15.3%	8.7%	8.7%	8.9%	11.6%	9.9%	10.4%
Ghent 4	71.6%	61.5%	50.7%	43.5%	38.4%	20.2%	25.6%	15.0%	11.9%	7.7%	4.8%	4.7%	5.5%	6.1%	5.8%	7.2%
Green River 3	51.1%	16.8%	6.4%													
Green River 4	76.4%	88.5%	89.4%													
Haefling 1-2	0.1%	0.2%	0.2%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	88.2%	71.7%	81.6%	77.5%	80.7%	79.1%	75.6%	64.4%	65.9%	62.5%	61.8%	61.1%	63.2%	60.2%	66.9%
Mill Creek 2	72.2%	84.0%	75.9%	78.3%	85.6%	78.3%	86.9%	67.6%	79.1%	61.4%	66.1%	56.3%	64.8%	59.1%	64.7%	58.5%
Mill Creek 3	64.3%	86.4%	87.6%	53.8%	64.8%	62.1%	60.8%	52.8%	50.4%	40.6%	32.9%	30.9%	32.7%	37.4%	32.6%	39.6%
Mill Creek 4	64.2%	69.0%	66.2%	73.9%	82.1%	72.1%	82.7%	61.7%	59.7%	41.8%	32.6%	29.1%	32.6%	35.6%	34.5%	35.3%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Paddy's Run 12	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Paddy's Run 13	2.1%	18.7%	16.8%	14.3%	12.7%	5.3%	7.2%	6.7%	6.9%	3.1%	2.8%	2.8%	3.1%	3.3%	3.2%	4.0%
Trimble County CT 10	1.8%	4.9%	4.3%	4.3%	5.2%	1.7%	1.8%	1.8%	1.9%	0.7%	0.6%	0.7%	0.8%	0.8%	0.8%	1.0%
Trimble County CT 5	4.6%	23.0%	18.8%	17.4%	14.2%	6.9%	8.9%	8.4%	7.3%	3.8%	2.6%	2.5%	2.9%	3.1%	3.0%	3.6%
Trimble County CT 6	6.1%	17.8%	14.3%	12.9%	14.9%	5.2%	6.8%	6.2%	5.0%	2.8%	1.9%	1.9%	2.2%	2.4%	2.4%	2.8%
Trimble County CT 7	4.9%	13.5%	10.7%	10.3%	11.5%	3.5%	4.9%	4.6%	4.4%	1.9%	1.5%	1.5%	1.7%	1.8%	1.8%	2.2%
Trimble County CT 8	1.9%	9.7%	8.0%	7.9%	8.1%	3.0%	3.7%	3.4%	3.3%	1.4%	1.1%	1.2%	1.3%	1.4%	1.4%	1.7%
Trimble County CT 9	5.8%	6.9%	5.8%	6.0%	6.7%	2.1%	2.6%	2.5%	2.5%	1.0%	0.8%	0.9%	1.0%	1.0%	1.1%	1.3%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	82.9%	86.0%	80.9%	78.1%	73.1%	74.0%	66.9%	76.2%	73.0%	79.0%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.0%	81.9%	79.6%	80.3%	79.3%	79.6%	72.6%	79.9%	80.9%
Zorn 1	0.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cane Run 7			63.6%	95.0%	90.7%	93.1%	78.0%	95.0%	90.8%	95.0%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						70.2%	73.1%	90.5%	90.5%	89.8%	89.4%	89.4%	89.8%	89.9%	90.3%	90.6%
1x1 NGCC G/H-Class								52.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%
2x1 NGCC G/H-Class_2										51.8%	90.9%	90.6%	90.9%	90.8%	91.0%	91.1%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Carbon Cap																
E.W. Brown 1	40.6%	9.7%	8.2%	11.2%	13.3%	6.3%	8.7%									
E.W. Brown 10	0.1%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 11	0.1%	0.5%	0.6%	0.6%	0.7%	0.2%	0.3%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%
E.W. Brown 2	59.9%	19.8%	18.1%	19.9%	17.0%	9.7%	11.6%									
E.W. Brown 3	44.1%	33.1%	30.4%	33.2%	34.6%	32.9%	29.6%	32.8%	34.2%	32.9%	34.2%	32.9%	34.3%	29.7%	34.3%	34.3%
E.W. Brown 5	0.3%	1.0%	1.1%	1.2%	1.3%	0.4%	0.5%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.6%
E.W. Brown 6	3.6%	2.2%	2.1%	2.2%	2.4%	0.8%	0.9%	0.5%	0.4%	0.5%	0.5%	0.6%	0.7%	0.8%	0.8%	1.0%
E.W. Brown 7	3.1%	2.7%	2.6%	2.7%	3.0%	1.0%	1.2%	0.6%	0.6%	0.6%	0.7%	0.8%	0.9%	0.9%	1.0%	1.3%
E.W. Brown 8	0.3%	0.6%	0.7%	0.7%	0.8%	0.3%	0.3%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%
E.W. Brown 9	0.5%	0.8%	0.9%	1.0%	1.1%	0.3%	0.4%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%	0.4%	0.5%
Cane Run 11	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	28.7%	15.8%													
Cane Run 5	58.7%	76.8%	47.3%													
Cane Run 6	47.3%	46.9%	33.2%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	76.1%	60.9%	63.8%	66.7%	50.3%	60.4%	31.0%	28.3%	26.5%	26.1%	24.8%	26.2%	28.7%	27.3%	29.7%
Ghent 2	82.5%	87.4%	78.2%	83.1%	84.8%	82.8%	70.6%	72.6%	77.0%	77.6%	73.4%	75.5%	72.5%	64.2%	66.7%	65.5%
Ghent 3	77.5%	53.8%	59.2%	50.2%	53.8%	32.6%	34.6%	21.3%	12.3%	13.7%	14.7%	14.4%	14.6%	19.4%	17.2%	18.5%
Ghent 4	71.6%	61.5%	50.7%	43.5%	38.4%	20.2%	25.6%	12.4%	7.1%	7.8%	8.5%	8.1%	9.4%	11.1%	9.5%	10.5%
Green River 3	51.1%	16.8%	6.4%													
Green River 4	76.4%	88.5%	89.4%													
Haefling 1-2	0.1%	0.2%	0.2%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	88.2%	71.7%	81.6%	77.5%	80.7%	79.1%	78.9%	69.4%	79.3%	72.9%	77.2%	73.3%	76.8%	68.5%	73.0%
Mill Creek 2	72.2%	84.0%	75.9%	78.3%	85.6%	78.3%	86.9%	70.7%	83.7%	77.7%	82.3%	77.4%	81.7%	76.4%	76.1%	65.9%
Mill Creek 3	64.3%	86.4%	87.6%	53.8%	64.8%	62.1%	60.8%	51.4%	55.6%	57.3%	51.5%	50.4%	50.5%	53.7%	38.0%	52.1%
Mill Creek 4	64.2%	69.0%	66.2%	73.9%	82.1%	72.1%	82.7%	62.5%	72.8%	62.9%	67.4%	64.3%	66.9%	64.0%	54.3%	49.4%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	18.7%	16.8%	14.3%	12.7%	5.3%	7.2%	4.1%	3.5%	3.6%	3.9%	3.9%	4.3%	4.8%	4.8%	6.7%
Trimble County CT 10	1.8%	4.9%	4.3%	4.3%	5.2%	1.7%	1.8%	1.1%	0.9%	0.9%	1.1%	1.1%	1.3%	1.4%	1.4%	1.8%
Trimble County CT 5	4.6%	23.0%	18.8%	17.4%	14.2%	6.9%	8.9%	5.7%	3.4%	3.4%	4.1%	3.7%	4.4%	5.1%	4.9%	6.6%
Trimble County CT 6	6.1%	17.8%	14.3%	12.9%	14.9%	5.2%	6.8%	4.0%	2.4%	2.8%	3.1%	2.9%	3.4%	3.8%	3.9%	5.1%
Trimble County CT 7	4.9%	13.5%	10.7%	10.3%	11.5%	3.5%	4.9%	2.9%	2.0%	2.1%	2.3%	2.3%	2.7%	3.0%	3.0%	4.0%
Trimble County CT 8	1.9%	9.7%	8.0%	7.9%	8.1%	3.0%	3.7%	2.1%	1.6%	1.6%	1.8%	1.8%	2.1%	2.3%	2.4%	3.1%
Trimble County CT 9	5.8%	6.9%	5.8%	6.0%	6.7%	2.1%	2.6%	1.5%	1.2%	1.2%	1.4%	1.4%	1.7%	1.8%	1.9%	2.4%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	82.9%	87.3%	82.7%	87.7%	82.2%	87.4%	74.9%	87.0%	79.4%	84.5%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	81.8%
Zorn 1	0.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			63.6%	95.0%	90.7%	93.1%	78.0%	94.9%	89.8%	93.9%	75.7%	90.3%	87.4%	91.6%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						70.2%	73.1%	72.0%	50.0%	48.0%	65.4%	56.3%	63.9%	64.6%	86.2%	90.1%
2x1 NGCC G/H-Class_1								47.5%	75.5%	78.2%	85.8%	85.0%	89.0%	90.1%	90.9%	91.3%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Zero Carbon																
E.W. Brown 1	40.6%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%
E.W. Brown 10	0.1%	0.4%	0.5%	0.5%	0.6%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 11	0.1%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
E.W. Brown 2	59.9%	1.2%	1.2%	1.4%	1.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%	0.7%	0.8%	0.8%	0.9%
E.W. Brown 3	44.1%	32.8%	30.1%	32.8%	34.1%	32.7%	29.4%	32.7%	34.1%	32.7%	34.1%	32.8%	34.1%	29.4%	34.1%	32.8%
E.W. Brown 5	0.3%	0.8%	0.9%	0.9%	1.0%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%
E.W. Brown 6	3.6%	2.7%	8.7%	2.2%	2.3%	1.9%	2.5%	2.0%	1.9%	2.1%	1.6%	1.1%	1.1%	1.3%	1.2%	1.5%
E.W. Brown 7	3.1%	3.6%	10.7%	2.8%	3.0%	2.1%	3.2%	2.6%	2.5%	2.7%	2.1%	1.4%	1.5%	1.7%	1.5%	2.0%
E.W. Brown 8	0.3%	0.3%	0.4%	0.4%	0.5%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%
E.W. Brown 9	0.5%	0.5%	0.7%	0.6%	0.7%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%
Cane Run 11	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Cane Run 4	51.3%	3.0%	0.2%													
Cane Run 5	58.7%	47.7%	2.5%													
Cane Run 6	47.3%	11.7%	0.6%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	57.9%	21.4%	34.7%	15.1%	6.6%	7.3%	5.7%	7.0%	6.8%	7.7%	7.1%	15.7%	13.3%	14.4%	20.1%
Ghent 2	82.5%	85.7%	63.8%	78.5%	78.3%	69.4%	43.9%	53.0%	60.5%	57.6%	66.2%	64.1%	67.7%	58.9%	68.9%	69.8%
Ghent 3	77.5%	21.2%	10.0%	14.7%	8.3%	3.2%	3.3%	3.2%	3.4%	3.5%	4.0%	4.0%	4.1%	5.0%	4.6%	5.3%
Ghent 4	71.6%	46.0%	55.3%	56.1%	54.0%	46.4%	50.2%	48.0%	39.7%	49.3%	51.4%	50.4%	50.5%	52.1%	50.5%	42.2%
Green River 3	51.1%	0.9%	0.0%													
Green River 4	76.4%	88.1%	61.6%													
Haefling 1-2	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	85.7%	39.1%	71.2%	58.4%	56.0%	62.4%	64.1%	60.3%	66.4%	68.6%	70.3%	69.6%	71.9%	69.1%	73.9%
Mill Creek 2	72.2%	83.7%	53.0%	71.5%	72.5%	52.6%	69.5%	59.7%	70.7%	64.3%	77.3%	72.2%	79.3%	72.1%	79.2%	70.5%
Mill Creek 3	64.3%	81.3%	77.0%	29.9%	23.4%	11.6%	12.9%	11.1%	17.3%	17.2%	33.3%	32.7%	39.8%	40.6%	36.4%	46.3%
Mill Creek 4	64.2%	65.4%	20.3%	53.8%	50.8%	30.1%	32.8%	32.2%	40.4%	34.6%	51.5%	46.4%	59.7%	57.0%	58.9%	59.8%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 12	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 13	2.1%	51.8%	54.2%	48.9%	51.8%	37.6%	51.5%	52.1%	53.7%	50.8%	51.6%	45.1%	41.0%	42.1%	44.2%	44.3%
Trimble County CT 10	1.8%	34.1%	85.7%	31.1%	63.1%	40.0%	39.7%	36.6%	34.1%	32.6%	19.4%	17.1%	11.8%	16.5%	12.8%	15.2%
Trimble County CT 5	4.6%	70.5%	95.1%	54.3%	74.2%	67.7%	79.1%	65.6%	63.9%	50.9%	50.4%	41.1%	31.4%	40.8%	33.8%	38.2%
Trimble County CT 6	6.1%	63.7%	94.8%	44.1%	85.0%	61.7%	73.8%	59.2%	46.3%	55.5%	43.2%	35.4%	26.0%	35.0%	28.2%	32.5%
Trimble County CT 7	4.9%	56.4%	93.7%	45.3%	80.4%	42.6%	67.8%	53.1%	52.6%	49.4%	36.4%	30.1%	21.5%	29.7%	23.3%	27.3%
Trimble County CT 8	1.9%	48.8%	91.6%	40.3%	63.0%	50.1%	61.4%	47.2%	46.1%	43.5%	30.1%	25.3%	17.6%	24.7%	19.1%	22.7%
Trimble County CT 9	5.8%	41.2%	89.2%	35.6%	69.8%	41.0%	54.6%	41.7%	39.9%	37.8%	24.4%	20.9%	14.4%	20.3%	15.7%	18.6%
Trimble County 1 (75%)	77.3%	88.4%	81.8%	88.3%	75.8%	87.1%	80.6%	86.2%	81.7%	86.8%	82.7%	88.0%	75.8%	88.1%	82.7%	88.2%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Cane Run 7			63.6%	95.0%	90.8%	95.0%	79.7%	95.0%	90.8%	95.0%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						91.1%	91.4%	91.4%	91.4%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Mid Carbon																
E.W. Brown 1	40.6%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%									
E.W. Brown 10	0.1%	0.4%	0.5%	0.5%	0.6%	0.2%	0.2%	1.1%	1.7%	3.2%	5.0%	7.8%	8.9%	25.1%	42.8%	54.4%
E.W. Brown 11	0.1%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.6%	0.8%	1.9%	2.4%	4.6%	5.6%	14.2%	27.5%	41.4%
E.W. Brown 2	59.9%	1.2%	1.2%	1.4%	1.4%	0.4%	0.5%									
E.W. Brown 3	44.1%	32.8%	30.1%	32.8%	34.1%	32.7%	29.4%	32.8%	34.1%	32.8%	34.1%	32.8%	34.1%	29.7%	34.4%	33.1%
E.W. Brown 5	0.3%	0.8%	0.9%	0.9%	1.0%	0.3%	0.4%	5.4%	7.5%	19.1%	20.4%	23.2%	24.5%	36.6%	43.9%	53.7%
E.W. Brown 6	3.6%	2.7%	8.7%	2.2%	2.3%	1.9%	2.5%	79.2%	84.1%	84.0%	85.8%	81.3%	82.8%	84.7%	85.7%	86.8%
E.W. Brown 7	3.1%	3.6%	10.7%	2.8%	3.0%	2.1%	3.2%	80.6%	85.8%	85.7%	87.3%	82.8%	84.0%	85.5%	86.5%	87.3%
E.W. Brown 8	0.3%	0.3%	0.4%	0.4%	0.5%	0.1%	0.1%	0.8%	1.1%	2.2%	3.0%	5.7%	6.9%	16.9%	31.3%	45.7%
E.W. Brown 9	0.5%	0.5%	0.7%	0.6%	0.7%	0.2%	0.3%	1.4%	2.2%	4.0%	6.2%	9.5%	10.9%	29.1%	46.8%	58.7%
Cane Run 11	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	3.0%	0.2%													
Cane Run 5	58.7%	47.7%	2.5%													
Cane Run 6	47.3%	11.7%	0.6%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	57.9%	21.4%	34.7%	15.1%	6.6%	7.3%	3.4%	3.7%	3.2%	2.9%	2.1%	2.3%	2.6%	2.5%	2.9%
Ghent 2	82.5%	85.7%	63.8%	78.5%	78.3%	69.4%	43.9%	20.7%	24.4%	20.8%	25.0%	22.0%	24.6%	18.7%	17.3%	17.6%
Ghent 3	77.5%	21.2%	10.0%	14.7%	8.3%	3.2%	3.3%	1.8%	1.8%	0.9%	1.0%	1.1%	1.2%	1.2%	1.2%	1.3%
Ghent 4	71.6%	46.0%	55.3%	56.1%	54.0%	46.4%	50.2%	27.7%	23.5%	24.7%	26.6%	21.6%	20.1%	17.2%	13.9%	9.7%
Green River 3	51.1%	0.9%	0.0%													
Green River 4	76.4%	88.1%	61.6%													
Haefling 1-2	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
Mill Creek 1	55.3%	85.7%	39.1%	71.2%	58.4%	56.0%	62.4%	33.2%	35.8%	39.5%	43.4%	43.0%	45.0%	44.4%	36.9%	39.5%
Mill Creek 2	72.2%	83.7%	53.0%	71.5%	72.5%	52.6%	69.5%	27.2%	35.5%	31.4%	39.8%	35.5%	46.3%	41.2%	36.3%	32.3%
Mill Creek 3	64.3%	81.3%	77.0%	29.9%	23.4%	11.6%	12.9%	10.2%	11.7%	10.9%	13.3%	11.0%	11.8%	12.8%	9.4%	9.7%
Mill Creek 4	64.2%	65.4%	20.3%	53.8%	50.8%	30.1%	32.8%	9.9%	10.8%	8.6%	9.7%	8.4%	8.9%	8.2%	5.9%	5.8%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	51.8%	54.2%	48.9%	51.8%	37.6%	51.5%	51.7%	53.4%	50.9%	53.4%	51.0%	51.4%	50.8%	51.0%	51.1%
Trimble County CT 10	1.8%	34.1%	85.7%	31.1%	63.1%	40.0%	39.7%	92.8%	94.0%	94.5%	94.5%	90.8%	91.0%	90.8%	91.0%	91.2%
Trimble County CT 5	4.6%	70.5%	95.1%	54.3%	74.2%	67.7%	79.1%	95.1%	95.1%	76.4%	95.1%	91.4%	91.5%	91.3%	91.4%	91.5%
Trimble County CT 6	6.1%	63.7%	94.8%	44.1%	85.0%	61.7%	73.8%	95.0%	76.4%	95.0%	95.1%	91.3%	91.4%	91.3%	91.3%	91.4%
Trimble County CT 7	4.9%	56.4%	93.7%	45.3%	80.4%	42.6%	67.8%	94.7%	95.1%	94.9%	95.0%	91.2%	91.4%	91.2%	91.3%	91.4%
Trimble County CT 8	1.9%	48.8%	91.6%	40.3%	63.0%	50.1%	61.4%	94.5%	95.0%	94.8%	95.0%	91.2%	91.4%	91.1%	91.3%	91.4%
Trimble County CT 9	5.8%	41.2%	89.2%	35.6%	69.8%	41.0%	54.6%	94.0%	94.5%	94.7%	94.9%	91.1%	91.3%	91.0%	91.2%	91.2%
Trimble County 1 (75%)	77.3%	88.4%	81.8%	88.3%	75.8%	87.1%	80.6%	57.9%	58.5%	60.7%	59.6%	61.4%	56.0%	62.8%	57.7%	61.4%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	74.3%	75.3%	74.7%	76.1%	75.3%	75.9%	68.0%	74.2%	75.9%
Zorn 1	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			63.6%	95.0%	90.8%	95.0%	79.7%	95.0%	90.8%	95.0%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						91.1%	91.4%	91.1%	91.1%	91.1%	91.1%	91.1%	91.2%	91.1%	91.1%	91.2%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Carbon Cap																
E.W. Brown 1	40.6%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%									
E.W. Brown 10	0.1%	0.4%	0.5%	0.5%	0.6%	0.2%	0.2%	0.3%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%
E.W. Brown 11	0.1%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%
E.W. Brown 2	59.9%	1.2%	1.2%	1.4%	1.4%	0.4%	0.5%									
E.W. Brown 3	44.1%	32.8%	30.1%	32.8%	34.1%	32.7%	29.4%	32.8%	34.1%	32.8%	34.1%	32.8%	34.1%	29.5%	34.2%	32.8%
E.W. Brown 5	0.3%	0.8%	0.9%	0.9%	1.0%	0.3%	0.4%	0.6%	0.6%	0.7%	0.7%	0.7%	0.8%	0.9%	0.9%	1.0%
E.W. Brown 6	3.6%	2.7%	8.7%	2.2%	2.3%	1.9%	2.5%	2.0%	1.9%	2.1%	1.6%	1.1%	1.2%	1.3%	1.2%	1.5%
E.W. Brown 7	3.1%	3.6%	10.7%	2.8%	3.0%	2.1%	3.2%	2.6%	2.5%	2.7%	2.1%	1.4%	1.5%	1.7%	1.5%	2.0%
E.W. Brown 8	0.3%	0.3%	0.4%	0.4%	0.5%	0.1%	0.1%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%	0.5%
E.W. Brown 9	0.5%	0.5%	0.7%	0.6%	0.7%	0.2%	0.3%	0.4%	0.4%	0.4%	0.5%	0.5%	0.6%	0.6%	0.6%	0.7%
Cane Run 11	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	3.0%	0.2%													
Cane Run 5	58.7%	47.7%	2.5%													
Cane Run 6	47.3%	11.7%	0.6%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	57.9%	21.4%	34.7%	15.1%	6.6%	7.3%	5.7%	7.0%	6.8%	7.7%	7.1%	15.7%	13.3%	14.4%	20.1%
Ghent 2	82.5%	85.7%	63.8%	78.5%	78.3%	69.4%	43.9%	53.0%	60.5%	57.6%	66.2%	64.1%	67.7%	58.9%	68.9%	69.8%
Ghent 3	77.5%	21.2%	10.0%	14.7%	8.3%	3.2%	3.3%	3.2%	3.4%	3.5%	4.0%	4.0%	4.1%	4.9%	4.6%	5.3%
Ghent 4	71.6%	46.0%	55.3%	56.1%	54.0%	46.4%	50.2%	48.0%	39.7%	49.3%	51.4%	50.4%	50.5%	52.1%	50.5%	42.2%
Green River 3	51.1%	0.9%	0.0%													
Green River 4	76.4%	88.1%	61.6%													
Haefling 1-2	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
Mill Creek 1	55.3%	85.7%	39.1%	71.2%	58.4%	56.0%	62.4%	64.1%	60.3%	66.4%	68.6%	70.3%	69.6%	71.9%	69.1%	73.9%
Mill Creek 2	72.2%	83.7%	53.0%	71.5%	72.5%	52.6%	69.5%	59.7%	70.7%	64.3%	77.3%	72.2%	79.4%	72.1%	79.2%	70.5%
Mill Creek 3	64.3%	81.3%	77.0%	29.9%	23.4%	11.6%	12.9%	11.1%	17.3%	17.2%	33.3%	32.7%	39.8%	40.6%	36.4%	46.3%
Mill Creek 4	64.2%	65.4%	20.3%	53.8%	50.8%	30.1%	32.8%	32.2%	40.3%	34.6%	51.5%	46.4%	59.7%	57.0%	58.9%	59.8%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	51.8%	54.2%	48.9%	51.8%	37.6%	51.5%	52.1%	53.7%	50.8%	51.6%	45.1%	41.0%	42.1%	44.2%	44.3%
Trimble County CT 10	1.8%	34.1%	85.7%	31.1%	63.1%	40.0%	39.7%	36.6%	34.1%	32.6%	19.4%	17.1%	11.8%	16.5%	12.8%	15.2%
Trimble County CT 5	4.6%	70.5%	95.1%	54.3%	74.2%	67.7%	79.1%	65.6%	63.9%	50.9%	50.4%	41.1%	31.4%	40.8%	33.8%	38.2%
Trimble County CT 6	6.1%	63.7%	94.8%	44.1%	85.0%	61.7%	73.8%	59.2%	46.3%	55.5%	43.2%	35.4%	26.0%	35.0%	28.2%	32.5%
Trimble County CT 7	4.9%	56.4%	93.7%	45.3%	80.4%	42.6%	67.8%	53.1%	52.6%	49.4%	36.4%	30.1%	21.5%	29.7%	23.3%	27.3%
Trimble County CT 8	1.9%	48.8%	91.6%	40.3%	63.0%	50.1%	61.4%	47.2%	46.2%	43.5%	30.1%	25.3%	17.6%	24.7%	19.1%	22.7%
Trimble County CT 9	5.8%	41.2%	89.2%	35.6%	69.8%	41.0%	54.6%	41.7%	40.0%	37.8%	24.4%	20.9%	14.4%	20.3%	15.7%	18.6%
Trimble County 1 (75%)	77.3%	88.4%	81.8%	88.3%	75.8%	87.1%	80.6%	86.2%	81.7%	86.8%	82.7%	88.0%	75.8%	88.1%	82.7%	88.2%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			63.6%	95.0%	90.8%	95.0%	79.7%	95.0%	90.8%	95.0%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						91.1%	91.4%	91.4%	91.4%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-High Load-Zero Carbon																
E.W. Brown 1	40.6%	2.3%	2.2%	2.5%	2.9%	1.1%	0.4%	0.4%	0.4%	0.5%	0.6%	0.7%	0.8%	0.3%	0.3%	0.4%
E.W. Brown 10	0.1%	1.6%	1.7%	1.8%	2.2%	0.8%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.5%	0.2%	0.2%	0.2%
E.W. Brown 11	0.1%	1.0%	1.3%	1.3%	1.6%	0.6%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.2%
E.W. Brown 2	59.9%	3.7%	3.6%	4.2%	3.9%	1.7%	0.7%	0.6%	0.6%	0.7%	0.8%	1.0%	1.2%	0.5%	0.5%	0.5%
E.W. Brown 3	44.1%	33.1%	30.4%	33.2%	34.5%	32.9%	29.4%	32.8%	34.1%	32.8%	34.1%	32.8%	34.2%	29.4%	34.1%	32.8%
E.W. Brown 5	0.3%	2.7%	2.9%	2.9%	3.3%	1.3%	0.5%	0.5%	0.5%	0.6%	0.7%	0.7%	0.9%	0.3%	0.3%	0.4%
E.W. Brown 6	3.6%	8.0%	17.4%	6.1%	6.8%	5.7%	4.5%	2.0%	2.1%	2.4%	2.0%	1.5%	1.7%	0.9%	0.7%	0.8%
E.W. Brown 7	3.1%	9.6%	19.7%	7.2%	8.5%	5.8%	5.2%	2.6%	3.0%	2.5%	1.9%	2.5%	2.1%	1.2%	0.8%	1.0%
E.W. Brown 8	0.3%	1.3%	1.5%	1.6%	1.8%	0.6%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.2%	0.2%	0.2%
E.W. Brown 9	0.5%	2.0%	2.3%	2.2%	2.6%	1.0%	0.4%	0.3%	0.4%	0.4%	0.5%	0.5%	0.6%	0.2%	0.2%	0.3%
Cane Run 11	0.1%	0.2%	0.3%	0.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Cane Run 4	51.3%	8.0%	1.1%													
Cane Run 5	58.7%	59.2%	8.6%													
Cane Run 6	47.3%	20.4%	3.0%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	66.3%	32.8%	47.0%	28.4%	14.4%	9.2%	5.3%	6.4%	6.6%	7.6%	7.4%	14.8%	8.0%	5.4%	7.8%
Ghent 2	82.5%	86.5%	69.3%	80.5%	80.4%	74.4%	42.2%	43.7%	52.7%	50.0%	59.7%	57.3%	62.0%	43.2%	40.9%	45.0%
Ghent 3	77.5%	32.5%	20.7%	26.8%	17.4%	7.8%	4.4%	3.1%	3.5%	3.8%	4.3%	4.6%	4.9%	3.1%	2.4%	2.7%
Ghent 4	71.6%	50.7%	58.5%	60.0%	57.8%	49.1%	51.1%	46.6%	39.2%	48.0%	51.2%	49.7%	50.7%	46.4%	43.8%	36.3%
Green River 3	51.1%	2.9%	0.3%													
Green River 4	76.4%	88.6%	75.9%													
Haefling 1-2	0.1%	0.4%	0.5%	0.5%	0.6%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	86.9%	50.8%	74.2%	64.7%	63.9%	62.5%	58.3%	57.2%	62.0%	65.7%	66.6%	67.2%	60.4%	52.8%	58.6%
Mill Creek 2	72.2%	83.9%	62.3%	74.9%	77.2%	62.1%	69.5%	52.8%	64.1%	58.0%	72.2%	66.9%	74.7%	57.7%	55.3%	53.7%
Mill Creek 3	64.3%	82.8%	80.9%	40.2%	37.8%	22.5%	17.0%	9.5%	14.2%	14.6%	28.9%	28.5%	35.1%	26.8%	16.9%	22.9%
Mill Creek 4	64.2%	67.2%	33.7%	62.6%	63.3%	45.0%	34.7%	25.1%	32.7%	28.7%	44.3%	40.2%	52.4%	41.2%	28.1%	32.7%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.2%	0.3%	0.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Paddy's Run 12	0.0%	0.2%	0.3%	0.3%	0.3%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Paddy's Run 13	2.1%	52.9%	54.2%	51.3%	51.8%	38.8%	50.6%	49.3%	51.7%	47.9%	48.2%	42.1%	37.4%	32.4%	26.4%	28.2%
Trimble County CT 10	1.8%	51.0%	91.4%	42.6%	77.8%	55.1%	38.4%	29.6%	27.4%	27.3%	16.9%	15.6%	12.0%	10.7%	6.2%	7.1%
Trimble County CT 5	4.6%	81.7%	95.4%	67.4%	78.5%	80.2%	77.8%	54.7%	53.2%	44.3%	42.3%	35.9%	28.1%	27.4%	14.6%	17.2%
Trimble County CT 6	6.1%	76.9%	95.3%	53.8%	91.7%	75.8%	73.0%	49.1%	39.3%	47.1%	36.2%	31.0%	23.8%	23.3%	12.3%	14.5%
Trimble County CT 7	4.9%	71.3%	95.0%	57.9%	89.1%	56.7%	67.8%	43.8%	42.9%	41.7%	30.5%	26.5%	20.1%	19.6%	10.4%	12.2%
Trimble County CT 8	1.9%	65.0%	94.6%	52.6%	72.1%	65.6%	62.0%	38.8%	37.4%	36.5%	25.4%	22.4%	16.9%	16.2%	8.8%	10.2%
Trimble County CT 9	5.8%	58.2%	93.2%	47.5%	82.5%	54.2%	56.0%	34.0%	32.2%	31.7%	20.8%	18.8%	14.3%	13.2%	7.4%	8.5%
Trimble County 1 (75%)	77.3%	88.4%	82.4%	88.4%	75.9%	87.9%	80.5%	83.4%	80.0%	84.9%	81.4%	86.5%	74.9%	81.3%	74.1%	81.0%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.0%	81.9%	81.9%	82.0%	82.0%	82.0%	82.0%	72.7%	79.8%	80.6%
Zorn 1	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Cane Run 7			63.6%	95.0%	90.8%	95.0%	79.7%	95.0%	90.8%	95.0%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						91.2%	91.3%	91.1%	91.2%	91.2%	91.2%	91.1%	91.1%	90.7%	90.5%	90.5%
2x1 NGCC G/H-Class_1							52.4%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.1%	91.1%	91.2%
2x1 NGCC G/H-Class_2														52.4%	91.2%	91.3%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Zero Carbon																
E.W. Brown 1	40.6%	1.4%	1.3%	1.6%	1.8%	0.6%	0.7%	0.7%	0.8%	0.9%	1.0%	1.1%	0.4%	0.4%	0.4%	0.5%
E.W. Brown 10	0.1%	0.9%	1.0%	1.1%	1.3%	0.4%	0.5%	0.5%	0.6%	0.6%	0.6%	0.7%	0.2%	0.2%	0.3%	0.3%
E.W. Brown 11	0.1%	0.6%	0.7%	0.8%	0.9%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%	0.2%	0.2%	0.2%	0.2%
E.W. Brown 2	59.9%	2.3%	2.2%	2.7%	2.5%	0.9%	1.0%	1.0%	1.1%	1.2%	1.4%	1.5%	0.6%	0.6%	0.6%	0.7%
E.W. Brown 3	44.1%	32.9%	30.2%	33.0%	34.3%	32.8%	29.4%	32.8%	34.1%	32.8%	34.2%	32.9%	34.1%	29.4%	34.1%	32.8%
E.W. Brown 5	0.3%	1.6%	1.7%	1.8%	2.0%	0.7%	0.8%	0.8%	0.9%	1.0%	1.0%	1.2%	0.4%	0.4%	0.5%	0.5%
E.W. Brown 6	3.6%	5.1%	13.0%	4.0%	4.4%	3.6%	4.9%	4.1%	3.9%	4.4%	3.5%	2.7%	1.0%	0.9%	0.9%	1.1%
E.W. Brown 7	3.1%	6.4%	15.0%	4.8%	5.5%	3.9%	6.1%	5.1%	4.9%	5.4%	4.3%	3.3%	1.2%	1.2%	1.2%	1.4%
E.W. Brown 8	0.3%	0.7%	0.8%	0.9%	1.0%	0.3%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.2%	0.2%	0.2%	0.3%
E.W. Brown 9	0.5%	1.1%	1.3%	1.3%	1.5%	0.5%	0.6%	0.6%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%	0.3%	0.4%
Cane Run 11	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Cane Run 4	51.3%	5.3%	0.5%													
Cane Run 5	58.7%	53.4%	5.5%													
Cane Run 6	47.3%	15.9%	1.6%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	62.9%	26.4%	40.3%	21.5%	10.2%	11.4%	9.1%	11.0%	10.9%	12.1%	11.9%	14.5%	8.3%	9.1%	11.3%
Ghent 2	82.5%	86.1%	67.4%	79.6%	79.3%	72.3%	49.5%	58.9%	65.5%	63.1%	70.9%	69.1%	61.7%	46.9%	55.0%	58.8%
Ghent 3	77.5%	26.6%	14.9%	21.4%	12.7%	5.4%	5.7%	5.4%	5.8%	6.3%	6.8%	7.2%	3.7%	3.5%	3.5%	3.8%
Ghent 4	71.6%	48.7%	57.0%	58.3%	56.1%	47.9%	51.7%	49.5%	41.1%	50.6%	52.9%	52.3%	49.7%	49.3%	48.9%	41.0%
Green River 3	51.1%	1.8%	0.1%													
Green River 4	76.4%	88.4%	71.4%													
Haefling 1-2	0.1%	0.2%	0.2%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	86.4%	45.0%	72.7%	61.9%	60.4%	64.8%	67.2%	62.0%	69.5%	70.8%	73.3%	66.5%	64.3%	62.3%	68.6%
Mill Creek 2	72.2%	83.8%	57.7%	73.0%	75.1%	57.6%	72.9%	62.6%	74.6%	68.2%	79.7%	74.8%	74.7%	61.6%	68.5%	64.2%
Mill Creek 3	64.3%	82.0%	78.8%	35.1%	30.4%	17.0%	19.1%	16.8%	24.7%	24.8%	41.2%	41.6%	38.2%	27.7%	25.6%	32.4%
Mill Creek 4	64.2%	66.6%	27.3%	58.1%	57.3%	37.9%	40.1%	40.7%	49.1%	43.4%	60.4%	55.3%	54.8%	42.7%	41.6%	45.1%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 12	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Paddy's Run 13	2.1%	52.6%	54.2%	50.4%	51.8%	38.4%	51.8%	52.7%	54.1%	51.7%	53.2%	47.4%	36.7%	36.4%	36.3%	37.6%
Trimble County CT 10	1.8%	42.3%	88.9%	37.4%	70.0%	46.6%	45.8%	44.3%	42.9%	41.0%	28.4%	26.0%	11.0%	10.6%	9.0%	10.3%
Trimble County CT 5	4.6%	76.0%	95.3%	60.2%	76.3%	73.9%	84.4%	72.8%	72.0%	58.5%	62.2%	52.0%	30.6%	27.0%	21.7%	25.2%
Trimble County CT 6	6.1%	70.1%	95.1%	49.3%	88.4%	68.4%	79.8%	67.0%	54.1%	64.3%	55.0%	46.2%	25.6%	22.9%	18.3%	21.3%
Trimble County CT 7	4.9%	63.5%	94.8%	51.2%	84.6%	48.8%	74.5%	61.0%	61.2%	58.2%	47.8%	40.7%	21.0%	19.1%	15.3%	17.9%
Trimble County CT 8	1.9%	56.5%	93.6%	46.4%	68.4%	57.0%	68.7%	55.1%	54.9%	52.2%	40.8%	35.4%	17.1%	15.8%	12.8%	15.0%
Trimble County CT 9	5.8%	49.4%	91.4%	41.8%	76.0%	47.9%	62.5%	49.6%	48.8%	46.5%	34.3%	30.5%	13.8%	13.0%	10.7%	12.5%
Trimble County 1 (75%)	77.3%	88.4%	81.5%	88.4%	75.9%	87.6%	81.4%	86.8%	82.1%	87.3%	82.9%	88.3%	74.9%	84.8%	79.7%	86.3%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.0%	74.8%	81.9%	82.0%
Zorn 1	0.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Cane Run 7			63.6%	95.0%	90.8%	95.0%	79.7%	95.0%	90.8%	95.0%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						91.2%	91.4%	91.4%	91.4%	91.4%	91.4%	91.4%	91.2%	90.9%	91.0%	91.1%
2x1 NGCC G/H-Class_1													52.4%	91.3%	91.3%	91.3%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Mid Carbon																
E.W. Brown 1	40.6%	1.4%	1.3%	1.6%	1.8%	0.6%	0.7%									
E.W. Brown 10	0.1%	0.9%	1.0%	1.1%	1.3%	0.4%	0.5%	1.4%	1.8%	1.3%	1.6%	2.5%	2.9%	7.9%	17.8%	24.3%
E.W. Brown 11	0.1%	0.6%	0.7%	0.8%	0.9%	0.3%	0.3%	0.7%	0.9%	0.7%	0.7%	1.6%	1.9%	4.1%	8.9%	15.6%
E.W. Brown 2	59.9%	2.3%	2.2%	2.7%	2.5%	0.9%	1.0%									
E.W. Brown 3	44.1%	32.9%	30.2%	33.0%	34.3%	32.8%	29.4%	32.8%	34.1%	32.7%	34.1%	32.7%	34.1%	29.5%	34.2%	32.9%
E.W. Brown 5	0.3%	1.6%	1.7%	1.8%	2.0%	0.7%	0.8%	5.9%	7.6%	11.6%	10.9%	12.5%	14.2%	20.6%	21.8%	27.7%
E.W. Brown 6	3.6%	5.1%	13.0%	4.0%	4.4%	3.6%	4.9%	77.4%	79.5%	65.1%	56.4%	51.8%	55.1%	62.6%	64.9%	71.0%
E.W. Brown 7	3.1%	6.4%	15.0%	4.8%	5.5%	3.9%	6.1%	78.8%	81.6%	66.9%	58.5%	52.8%	56.2%	65.4%	67.8%	72.9%
E.W. Brown 8	0.3%	0.7%	0.8%	0.9%	1.0%	0.3%	0.4%	1.0%	1.2%	0.9%	0.9%	2.0%	2.3%	5.1%	11.0%	18.2%
E.W. Brown 9	0.5%	1.1%	1.3%	1.3%	1.5%	0.5%	0.6%	1.8%	2.3%	1.6%	2.0%	3.1%	3.5%	9.8%	20.6%	27.9%
Cane Run 11	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cane Run 4	51.3%	5.3%	0.5%													
Cane Run 5	58.7%	53.4%	5.5%													
Cane Run 6	47.3%	15.9%	1.6%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	62.9%	26.4%	40.3%	21.5%	10.2%	11.4%	3.9%	3.8%	1.4%	1.2%	0.9%	1.0%	1.1%	1.1%	1.3%
Ghent 2	82.5%	86.1%	67.4%	79.6%	79.3%	72.3%	49.5%	23.5%	21.4%	11.7%	8.9%	9.2%	9.9%	9.1%	8.7%	7.6%
Ghent 3	77.5%	26.6%	14.9%	21.4%	12.7%	5.4%	5.7%	2.1%	2.0%	0.3%	0.3%	0.4%	0.5%	0.5%	0.5%	0.6%
Ghent 4	71.6%	48.7%	57.0%	58.3%	56.1%	47.9%	51.7%	29.1%	21.3%	15.7%	6.5%	5.0%	4.2%	3.9%	2.8%	2.0%
Green River 3	51.1%	1.8%	0.1%													
Green River 4	76.4%	88.4%	71.4%													
Haefling 1-2	0.1%	0.2%	0.2%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	86.4%	45.0%	72.7%	61.9%	60.4%	64.8%	35.1%	31.7%	25.8%	20.1%	19.6%	21.4%	22.0%	17.6%	18.6%
Mill Creek 2	72.2%	83.8%	57.7%	73.0%	75.1%	57.6%	72.9%	28.3%	30.9%	18.6%	15.2%	15.2%	19.2%	18.5%	15.9%	14.9%
Mill Creek 3	64.3%	82.0%	78.8%	35.1%	30.4%	17.0%	19.1%	11.2%	11.3%	5.9%	5.0%	5.3%	5.6%	5.9%	5.1%	4.1%
Mill Creek 4	64.2%	66.6%	27.3%	58.1%	57.3%	37.9%	40.1%	12.2%	9.6%	4.2%	3.2%	3.5%	3.7%	3.7%	2.8%	2.5%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Paddy's Run 12	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Paddy's Run 13	2.1%	52.6%	54.2%	50.4%	51.8%	38.4%	51.8%	51.6%	53.0%	47.8%	48.8%	45.8%	47.0%	45.8%	46.7%	47.2%
Trimble County CT 10	1.8%	42.3%	88.9%	37.4%	70.0%	46.6%	45.8%	90.6%	92.6%	84.4%	82.6%	76.0%	77.8%	77.7%	78.9%	82.5%
Trimble County CT 5	4.6%	76.0%	95.3%	60.2%	76.3%	73.9%	84.4%	95.0%	94.8%	75.1%	91.3%	86.5%	87.5%	86.7%	87.5%	88.5%
Trimble County CT 6	6.1%	70.1%	95.1%	49.3%	88.4%	68.4%	79.8%	94.8%	76.2%	91.0%	90.5%	85.3%	86.5%	85.6%	86.9%	88.0%
Trimble County CT 7	4.9%	63.5%	94.8%	51.2%	84.6%	48.8%	74.5%	94.3%	94.6%	89.8%	89.2%	83.3%	84.7%	84.1%	85.8%	87.0%
Trimble County CT 8	1.9%	56.5%	93.6%	46.4%	68.4%	57.0%	68.7%	93.5%	94.1%	88.3%	87.8%	81.6%	83.1%	82.4%	83.6%	86.0%
Trimble County CT 9	5.8%	49.4%	91.4%	41.8%	76.0%	47.9%	62.5%	92.1%	93.4%	86.7%	85.4%	79.1%	80.7%	80.1%	81.5%	84.6%
Trimble County 1 (75%)	77.3%	88.4%	81.5%	88.4%	75.9%	87.6%	81.4%	58.7%	53.8%	42.7%	31.6%	31.7%	31.8%	35.7%	33.5%	35.8%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	73.3%	72.6%	60.0%	55.7%	53.3%	54.6%	48.4%	51.4%	55.1%
Zorn 1	0.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cane Run 7			63.6%	95.0%	90.8%	95.0%	79.7%	95.0%	90.8%	95.0%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						91.2%	91.4%	91.1%	91.0%	90.4%	90.1%	90.0%	90.1%	89.9%	90.0%	90.2%
1x1 NGCC G/H-Class								52.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%
2x1 NGCC G/H-Class_2										52.4%	91.2%	90.8%	90.9%	90.6%	91.0%	91.1%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Carbon Cap																
E.W. Brown 1	40.6%	1.4%	1.3%	1.6%	1.8%	0.6%	0.7%									
E.W. Brown 10	0.1%	0.9%	1.0%	1.1%	1.3%	0.4%	0.5%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%
E.W. Brown 11	0.1%	0.6%	0.7%	0.8%	0.9%	0.3%	0.3%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%
E.W. Brown 2	59.9%	2.3%	2.2%	2.7%	2.5%	0.9%	1.0%									
E.W. Brown 3	44.1%	32.9%	30.2%	33.0%	34.3%	32.8%	29.4%	32.7%	34.1%	32.7%	34.1%	32.8%	34.1%	29.4%	34.1%	32.8%
E.W. Brown 5	0.3%	1.6%	1.7%	1.8%	2.0%	0.7%	0.8%	0.4%	0.4%	0.4%	0.5%	0.5%	0.6%	0.6%	0.7%	0.8%
E.W. Brown 6	3.6%	5.1%	13.0%	4.0%	4.4%	3.6%	4.9%	2.0%	1.2%	1.3%	1.0%	0.7%	0.8%	0.9%	0.9%	1.1%
E.W. Brown 7	3.1%	6.4%	15.0%	4.8%	5.5%	3.9%	6.1%	2.5%	1.5%	1.7%	1.3%	0.9%	1.0%	1.2%	1.2%	1.4%
E.W. Brown 8	0.3%	0.7%	0.8%	0.9%	1.0%	0.3%	0.4%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%
E.W. Brown 9	0.5%	1.1%	1.3%	1.3%	1.5%	0.5%	0.6%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%	0.6%
Cane Run 11	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	5.3%	0.5%													
Cane Run 5	58.7%	53.4%	5.5%													
Cane Run 6	47.3%	15.9%	1.6%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	62.9%	26.4%	40.3%	21.5%	10.2%	11.4%	4.5%	4.1%	4.3%	4.5%	4.8%	8.3%	8.3%	9.1%	11.4%
Ghent 2	82.5%	86.1%	67.4%	79.6%	79.3%	72.3%	49.5%	46.1%	44.7%	41.4%	52.4%	48.1%	53.4%	46.9%	55.0%	58.8%
Ghent 3	77.5%	26.6%	14.9%	21.4%	12.7%	5.4%	5.7%	2.3%	2.2%	2.3%	2.5%	2.8%	3.0%	3.5%	3.5%	3.8%
Ghent 4	71.6%	48.7%	57.0%	58.3%	56.1%	47.9%	51.7%	46.6%	37.9%	46.1%	49.7%	47.3%	48.7%	49.3%	48.9%	41.0%
Green River 3	51.1%	1.8%	0.1%													
Green River 4	76.4%	88.4%	71.4%													
Haefling 1-2	0.1%	0.2%	0.2%	0.3%	0.3%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	86.4%	45.0%	72.7%	61.9%	60.4%	64.8%	59.3%	53.8%	57.2%	62.4%	61.4%	63.1%	64.3%	62.3%	68.6%
Mill Creek 2	72.2%	83.8%	57.7%	73.0%	75.1%	57.6%	72.9%	52.2%	58.0%	51.0%	67.1%	59.6%	68.2%	61.6%	68.5%	64.2%
Mill Creek 3	64.3%	82.0%	78.8%	35.1%	30.4%	17.0%	19.1%	10.0%	9.9%	10.0%	21.2%	20.9%	25.9%	27.7%	25.6%	32.4%
Mill Creek 4	64.2%	66.6%	27.3%	58.1%	57.3%	37.9%	40.1%	30.9%	23.4%	21.5%	35.3%	31.4%	40.8%	42.7%	41.6%	45.1%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	52.6%	54.2%	50.4%	51.8%	38.4%	51.8%	49.0%	50.2%	46.2%	45.9%	39.7%	33.4%	36.4%	36.3%	37.6%
Trimble County CT 10	1.8%	42.3%	88.9%	37.4%	70.0%	46.6%	45.8%	33.7%	20.9%	20.9%	10.6%	10.5%	8.1%	10.6%	9.0%	10.3%
Trimble County CT 5	4.6%	76.0%	95.3%	60.2%	76.3%	73.9%	84.4%	58.6%	43.7%	37.8%	30.8%	27.0%	19.9%	27.1%	21.8%	25.2%
Trimble County CT 6	6.1%	70.1%	95.1%	49.3%	88.4%	68.4%	79.8%	53.3%	33.3%	38.0%	25.4%	22.9%	16.7%	22.9%	18.3%	21.3%
Trimble County CT 7	4.9%	63.5%	94.8%	51.2%	84.6%	48.8%	74.5%	47.9%	34.2%	33.2%	20.7%	19.1%	14.0%	19.1%	15.3%	17.9%
Trimble County CT 8	1.9%	56.5%	93.6%	46.4%	68.4%	57.0%	68.7%	42.9%	29.3%	28.7%	16.7%	15.8%	11.7%	15.8%	12.8%	15.0%
Trimble County CT 9	5.8%	49.4%	91.4%	41.8%	76.0%	47.9%	62.5%	38.1%	24.9%	24.6%	13.4%	12.9%	9.7%	13.0%	10.7%	12.5%
Trimble County 1 (75%)	77.3%	88.4%	81.5%	88.4%	75.9%	87.6%	81.4%	82.5%	78.7%	82.2%	80.3%	83.8%	73.9%	84.8%	79.7%	86.3%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	81.8%	81.7%	81.7%	81.8%	81.8%	81.8%	74.8%	81.9%	82.0%
Zorn 1	0.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			63.6%	95.0%	90.8%	95.0%	79.7%	95.0%	90.8%	95.0%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						91.2%	91.4%	91.1%	91.1%	91.0%	91.1%	90.9%	91.0%	90.9%	91.0%	91.1%
2x1 NGCC G/H-Class_1								52.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%	91.3%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Zero Carbon																
E.W. Brown 1	40.6%	9.8%	7.4%	9.9%	14.6%	20.0%	26.0%	23.7%	31.4%	27.5%	30.7%	29.5%	35.9%	34.2%	33.7%	34.4%
E.W. Brown 10	0.1%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%
E.W. Brown 11	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
E.W. Brown 2	59.9%	16.3%	15.3%	20.0%	21.4%	34.3%	36.3%	35.1%	38.5%	41.5%	37.7%	34.0%	44.5%	44.4%	43.9%	44.9%
E.W. Brown 3	44.1%	33.1%	30.3%	33.3%	34.8%	33.1%	30.0%	33.6%	36.0%	35.1%	37.5%	36.4%	40.0%	36.3%	42.2%	42.1%
E.W. Brown 5	0.3%	0.4%	0.5%	0.6%	0.6%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 6	3.6%	1.0%	1.0%	1.0%	1.1%	0.3%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%	0.7%
E.W. Brown 7	3.1%	1.3%	1.4%	1.4%	1.5%	0.4%	0.3%	0.6%	0.6%	0.6%	0.6%	0.6%	0.7%	0.8%	0.8%	0.9%
E.W. Brown 8	0.3%	0.3%	0.3%	0.3%	0.4%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%
E.W. Brown 9	0.5%	0.4%	0.4%	0.5%	0.5%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%
Cane Run 11	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Cane Run 4	51.3%	23.7%	11.7%													
Cane Run 5	58.7%	73.7%	38.1%													
Cane Run 6	47.3%	40.9%	24.4%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	74.4%	57.6%	72.9%	75.9%	72.5%	76.6%	73.9%	75.5%	68.1%	76.9%	75.5%	78.5%	77.0%	78.5%	77.1%
Ghent 2	82.5%	87.3%	77.9%	83.9%	85.7%	85.7%	74.0%	85.9%	84.2%	85.7%	83.8%	85.4%	84.1%	75.3%	85.7%	83.7%
Ghent 3	77.5%	47.9%	53.4%	66.8%	69.1%	63.8%	63.9%	65.6%	68.5%	68.6%	67.8%	68.5%	63.0%	71.1%	70.3%	69.8%
Ghent 4	71.6%	55.7%	42.9%	61.6%	55.7%	58.6%	64.3%	58.3%	53.9%	62.2%	60.3%	58.7%	62.6%	66.4%	62.5%	58.1%
Green River 3	51.1%	13.3%	6.8%													
Green River 4	76.4%	88.2%	88.7%													
Haefling 1-2	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	87.5%	71.6%	82.0%	78.3%	85.0%	81.7%	86.6%	74.9%	86.9%	81.6%	86.7%	82.4%	87.1%	81.1%	86.9%
Mill Creek 2	72.2%	83.9%	75.5%	79.6%	87.4%	82.8%	89.2%	77.1%	89.3%	84.1%	89.3%	84.1%	89.5%	84.0%	89.3%	77.2%
Mill Creek 3	64.3%	85.6%	87.4%	58.8%	69.2%	74.5%	68.3%	79.5%	75.6%	80.8%	75.5%	80.4%	75.8%	80.9%	69.5%	81.3%
Mill Creek 4	64.2%	68.3%	62.8%	76.8%	83.9%	81.7%	87.7%	82.6%	88.0%	75.5%	88.0%	82.6%	88.2%	82.7%	88.1%	82.9%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 12	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 13	2.1%	10.0%	8.6%	7.5%	6.4%	2.5%	3.3%	2.6%	3.2%	3.0%	3.2%	2.9%	3.3%	3.5%	3.1%	4.2%
Trimble County CT 10	1.8%	2.5%	2.3%	2.2%	2.5%	0.7%	0.9%	0.7%	0.8%	0.8%	0.9%	0.9%	1.0%	1.0%	1.0%	1.3%
Trimble County CT 5	4.6%	14.4%	11.7%	9.8%	7.2%	3.4%	4.7%	3.0%	3.5%	3.0%	4.2%	3.3%	3.8%	4.1%	3.7%	4.9%
Trimble County CT 6	6.1%	10.7%	8.6%	6.9%	8.0%	2.3%	3.5%	2.4%	2.1%	2.6%	3.1%	2.5%	3.1%	3.3%	2.9%	4.0%
Trimble County CT 7	4.9%	7.6%	6.2%	5.6%	6.0%	1.6%	2.6%	1.7%	2.0%	2.0%	2.4%	1.9%	2.4%	2.5%	2.2%	3.1%
Trimble County CT 8	1.9%	5.2%	4.6%	4.0%	4.2%	1.3%	1.8%	1.3%	1.5%	1.4%	1.7%	1.5%	1.8%	1.9%	1.7%	2.3%
Trimble County CT 9	5.8%	3.6%	3.3%	3.0%	3.3%	0.9%	1.3%	1.0%	1.1%	1.1%	1.3%	1.1%	1.3%	1.4%	1.3%	1.7%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	83.1%	88.4%	83.1%	88.4%	83.1%	88.4%	75.9%	88.4%	83.1%	88.4%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Cane Run 7			61.9%	34.9%	30.7%	29.8%	25.7%	24.7%	25.7%	26.7%	19.5%	24.2%	25.6%	28.7%	24.2%	23.5%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						9.1%	12.6%	8.2%	9.2%	8.8%	10.2%	8.4%	9.7%	10.3%	9.0%	11.8%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Mid Carbon																
E.W. Brown 1	40.6%	9.8%	7.4%	9.9%	14.6%	20.0%	26.0%									
E.W. Brown 10	0.1%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%
E.W. Brown 11	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%
E.W. Brown 2	59.9%	16.3%	15.3%	20.0%	21.4%	34.3%	36.3%									
E.W. Brown 3	44.1%	33.1%	30.3%	33.3%	34.8%	33.1%	30.0%	33.2%	34.6%	33.3%	34.7%	33.4%	34.9%	31.6%	36.2%	35.8%
E.W. Brown 5	0.3%	0.4%	0.5%	0.6%	0.6%	0.2%	0.2%	0.3%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.6%
E.W. Brown 6	3.6%	1.0%	1.0%	1.0%	1.1%	0.3%	0.4%	0.7%	0.7%	0.7%	0.9%	0.9%	1.0%	1.0%	1.0%	1.2%
E.W. Brown 7	3.1%	1.3%	1.4%	1.4%	1.5%	0.4%	0.6%	0.8%	1.0%	1.0%	1.1%	1.0%	1.2%	1.3%	1.2%	1.5%
E.W. Brown 8	0.3%	0.3%	0.3%	0.3%	0.4%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%
E.W. Brown 9	0.5%	0.4%	0.4%	0.5%	0.5%	0.1%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%
Cane Run 11	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	23.7%	11.7%													
Cane Run 5	58.7%	73.7%	38.1%													
Cane Run 6	47.3%	40.9%	24.4%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	74.4%	57.6%	72.9%	75.9%	72.5%	76.6%	37.8%	43.8%	34.3%	44.4%	36.7%	42.9%	43.6%	43.5%	44.2%
Ghent 2	82.5%	87.3%	77.9%	83.9%	85.7%	85.7%	74.0%	76.5%	75.7%	75.0%	74.5%	74.5%	74.5%	64.6%	74.7%	73.8%
Ghent 3	77.5%	47.9%	53.4%	66.8%	69.1%	63.8%	63.9%	22.7%	24.4%	25.8%	27.8%	24.3%	23.7%	31.1%	26.5%	27.1%
Ghent 4	71.6%	55.7%	42.9%	61.6%	55.7%	58.6%	64.3%	12.5%	12.3%	13.8%	15.7%	13.5%	15.7%	18.4%	16.5%	18.6%
Green River 3	51.1%	13.3%	6.8%													
Green River 4	76.4%	88.2%	88.7%													
Haefling 1-2	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
Mill Creek 1	55.3%	87.5%	71.6%	82.0%	78.3%	85.0%	81.7%	78.9%	68.2%	78.4%	74.0%	77.3%	73.3%	76.5%	72.0%	77.0%
Mill Creek 2	72.2%	83.9%	75.5%	79.6%	87.4%	82.8%	89.2%	72.4%	84.3%	77.8%	83.5%	77.1%	82.3%	76.6%	82.1%	71.3%
Mill Creek 3	64.3%	85.6%	87.4%	58.8%	69.2%	74.5%	68.3%	61.2%	61.0%	63.4%	63.3%	60.7%	60.1%	62.7%	55.1%	64.8%
Mill Creek 4	64.2%	68.3%	62.8%	76.8%	83.9%	81.7%	87.7%	69.6%	72.7%	61.7%	70.6%	62.5%	68.3%	65.7%	68.4%	65.8%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	10.0%	8.6%	7.5%	6.4%	2.5%	3.3%	4.9%	5.4%	5.4%	6.0%	5.7%	6.4%	6.8%	6.1%	7.9%
Trimble County CT 10	1.8%	2.5%	2.3%	2.2%	2.5%	0.7%	0.9%	1.3%	1.5%	1.5%	1.8%	1.6%	1.9%	2.0%	1.9%	2.3%
Trimble County CT 5	4.6%	14.4%	11.7%	9.8%	7.2%	3.4%	4.7%	5.6%	6.6%	5.7%	8.1%	6.2%	8.0%	8.5%	7.6%	9.6%
Trimble County CT 6	6.1%	10.7%	8.6%	6.9%	8.0%	2.3%	3.5%	4.1%	4.1%	5.1%	6.0%	4.7%	5.9%	6.4%	5.8%	7.3%
Trimble County CT 7	4.9%	7.6%	6.2%	5.6%	6.0%	1.6%	2.6%	3.1%	3.8%	3.7%	4.5%	3.5%	4.5%	4.7%	4.4%	5.5%
Trimble County CT 8	1.9%	5.2%	4.6%	4.0%	4.2%	1.3%	1.8%	2.3%	2.8%	2.7%	3.3%	2.7%	3.4%	3.6%	3.4%	4.1%
Trimble County CT 9	5.8%	3.6%	3.3%	3.0%	3.3%	0.9%	1.3%	1.7%	2.1%	2.0%	2.4%	2.1%	2.5%	2.6%	2.5%	3.1%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	83.1%	87.8%	82.6%	87.4%	82.3%	87.2%	75.1%	87.3%	82.0%	87.5%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			61.9%	34.9%	30.7%	29.8%	25.7%	93.7%	89.7%	94.1%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						9.1%	12.6%	72.7%	73.9%	79.8%	83.0%	84.3%	86.8%	86.3%	87.4%	87.4%
Wind_1																27.0%
Wind_2																27.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Carbon Cap																
E.W. Brown 1	40.6%	9.8%	7.4%	9.9%	14.6%	20.0%	26.0%									
E.W. Brown 10	0.1%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.2%	0.3%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%
E.W. Brown 11	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%
E.W. Brown 2	59.9%	16.3%	15.3%	20.0%	21.4%	34.3%	36.3%									
E.W. Brown 3	44.1%	33.1%	30.3%	33.3%	34.8%	33.1%	30.0%	33.2%	34.5%	33.3%	41.6%	33.4%	36.6%	33.7%	40.2%	38.8%
E.W. Brown 5	0.3%	0.4%	0.5%	0.6%	0.6%	0.2%	0.2%	0.3%	0.4%	0.4%	0.7%	0.4%	0.5%	0.5%	0.5%	0.5%
E.W. Brown 6	3.6%	1.0%	1.0%	1.0%	1.1%	0.3%	0.4%	0.7%	0.8%	0.8%	1.0%	0.8%	1.0%	1.1%	1.1%	1.1%
E.W. Brown 7	3.1%	1.3%	1.4%	1.4%	1.5%	0.4%	0.6%	0.8%	1.0%	1.0%	1.4%	1.0%	1.3%	1.3%	1.3%	1.4%
E.W. Brown 8	0.3%	0.3%	0.3%	0.3%	0.4%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 9	0.5%	0.4%	0.4%	0.5%	0.5%	0.1%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%	0.4%	0.5%
Cane Run 11	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	23.7%	11.7%													
Cane Run 5	58.7%	73.7%	38.1%													
Cane Run 6	47.3%	40.9%	24.4%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	74.4%	57.6%	72.9%	75.9%	72.5%	76.6%	35.2%	38.7%	34.2%	43.4%	36.4%	42.2%	42.9%	41.6%	41.0%
Ghent 2	82.5%	87.3%	77.9%	83.9%	85.7%	85.7%	74.0%	76.2%	74.3%	75.0%	70.7%	73.8%	72.5%	63.4%	73.2%	72.2%
Ghent 3	77.5%	47.9%	53.4%	66.8%	69.1%	63.8%	63.9%	22.7%	24.4%	25.8%	23.2%	23.8%	20.1%	27.3%	23.0%	24.1%
Ghent 4	71.6%	55.7%	42.9%	61.6%	55.7%	58.6%	64.3%	12.5%	12.3%	13.8%	16.9%	13.2%	18.4%	21.1%	17.5%	16.3%
Green River 3	51.1%	13.3%	6.8%													
Green River 4	76.4%	88.2%	88.7%													
Haefling 1-2	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	87.5%	71.6%	82.0%	78.3%	85.0%	81.7%	78.9%	67.5%	78.4%	70.0%	76.5%	71.8%	75.3%	70.8%	75.2%
Mill Creek 2	72.2%	83.9%	75.5%	79.6%	87.4%	82.8%	89.2%	72.2%	82.5%	77.8%	77.0%	76.5%	81.3%	75.1%	78.6%	68.0%
Mill Creek 3	64.3%	85.6%	87.4%	58.8%	69.2%	74.5%	68.3%	60.9%	59.3%	64.0%	59.8%	59.2%	59.4%	61.3%	52.4%	61.2%
Mill Creek 4	64.2%	68.3%	62.8%	76.8%	83.9%	81.7%	87.7%	69.6%	70.0%	61.2%	63.3%	59.8%	66.1%	61.6%	63.4%	60.3%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	10.0%	8.6%	7.5%	6.4%	2.5%	3.3%	4.9%	5.6%	5.4%	18.0%	5.8%	7.3%	8.0%	6.8%	8.1%
Trimble County CT 10	1.8%	2.5%	2.3%	2.2%	2.5%	0.7%	0.9%	1.3%	1.5%	1.5%	2.0%	1.6%	2.0%	2.1%	2.0%	2.2%
Trimble County CT 5	4.6%	14.4%	11.7%	9.8%	7.2%	3.4%	4.7%	5.6%	6.8%	5.7%	9.5%	6.1%	8.5%	9.6%	8.1%	9.5%
Trimble County CT 6	6.1%	10.7%	8.6%	6.9%	8.0%	2.3%	3.5%	4.1%	4.2%	5.1%	7.1%	4.6%	6.5%	7.2%	6.2%	7.0%
Trimble County CT 7	4.9%	7.6%	6.2%	5.6%	6.0%	1.6%	2.6%	3.1%	4.0%	3.7%	5.2%	3.5%	4.9%	5.3%	4.7%	5.3%
Trimble County CT 8	1.9%	5.2%	4.6%	4.0%	4.2%	1.3%	1.8%	2.3%	2.9%	2.7%	3.8%	2.7%	3.6%	3.9%	3.5%	4.0%
Trimble County CT 9	5.8%	3.6%	3.3%	3.0%	3.3%	0.9%	1.3%	1.7%	2.1%	2.0%	2.7%	2.0%	2.7%	2.9%	2.6%	3.0%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	83.1%	87.8%	82.2%	87.3%	81.8%	87.0%	75.0%	87.2%	81.9%	87.3%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			61.9%	34.9%	30.7%	29.8%	25.7%	93.7%	90.4%	94.1%	76.0%	95.0%	90.8%	95.0%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						9.1%	12.6%	75.0%	82.1%	79.9%	91.3%	87.2%	88.8%	89.0%	89.8%	89.3%
Wind_1											27.0%	27.0%	27.0%	27.0%	27.0%	27.0%
Wind_2															27.0%	27.0%
Wind_3															27.0%	27.0%
Wind_4																27.0%
Wind_5																27.0%
Wind_6																27.0%
Wind_7																27.0%
Wind_8																27.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-High Load-Zero Carbon																
E.W. Brown 1	40.6%	18.3%	13.7%	19.7%	27.0%	31.9%	41.8%	40.5%	51.8%	46.0%	53.4%	51.6%	60.9%	61.4%	62.4%	62.5%
E.W. Brown 10	0.1%	1.2%	1.2%	1.4%	1.6%	0.6%	0.4%	0.4%	0.5%	0.5%	0.6%	0.7%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 11	0.1%	0.8%	1.0%	1.1%	1.2%	0.4%	0.2%	0.3%	0.3%	0.3%	0.4%	0.5%	0.2%	0.2%	0.2%	0.2%
E.W. Brown 2	59.9%	26.9%	26.7%	33.0%	33.7%	48.8%	52.2%	53.3%	57.3%	61.9%	58.6%	52.9%	67.4%	67.5%	69.2%	69.2%
E.W. Brown 3	44.1%	34.0%	30.9%	34.4%	36.3%	34.1%	31.6%	35.7%	40.2%	40.2%	44.3%	43.7%	57.8%	56.2%	65.4%	64.4%
E.W. Brown 5	0.3%	1.6%	1.7%	1.8%	2.0%	0.7%	0.6%	0.6%	0.7%	0.8%	0.9%	1.0%	0.3%	0.4%	0.4%	0.5%
E.W. Brown 6	3.6%	3.3%	3.3%	3.3%	3.5%	1.3%	1.8%	1.6%	1.9%	2.0%	2.4%	2.4%	1.1%	1.0%	1.1%	1.3%
E.W. Brown 7	3.1%	4.0%	4.0%	3.9%	4.6%	1.6%	2.5%	1.9%	2.4%	2.5%	3.0%	2.9%	1.3%	1.3%	1.4%	1.7%
E.W. Brown 8	0.3%	1.0%	1.2%	1.3%	1.4%	0.5%	0.3%	0.3%	0.4%	0.4%	0.5%	0.5%	0.2%	0.2%	0.2%	0.3%
E.W. Brown 9	0.5%	1.4%	1.5%	1.6%	1.9%	0.7%	0.5%	0.5%	0.6%	0.7%	0.8%	0.9%	0.3%	0.3%	0.4%	0.5%
Cane Run 11	0.1%	0.2%	0.3%	0.3%	0.4%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Cane Run 4	51.3%	37.8%	22.8%													
Cane Run 5	58.7%	79.8%	54.5%													
Cane Run 6	47.3%	54.7%	41.3%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	78.8%	63.9%	76.8%	80.1%	76.7%	81.1%	79.1%	80.7%	72.7%	82.5%	81.1%	83.8%	82.9%	84.1%	83.2%
Ghent 2	82.5%	87.7%	78.7%	84.3%	86.2%	86.1%	75.1%	87.2%	85.4%	87.1%	85.4%	87.0%	85.5%	76.6%	87.2%	85.4%
Ghent 3	77.5%	60.4%	64.5%	77.1%	77.7%	70.9%	72.4%	75.9%	78.3%	78.3%	78.3%	79.9%	71.7%	81.0%	81.6%	80.9%
Ghent 4	71.6%	64.8%	59.1%	72.9%	69.8%	71.3%	76.6%	72.6%	66.5%	76.0%	76.2%	75.0%	77.5%	80.1%	77.8%	71.3%
Green River 3	51.1%	22.4%	14.2%													
Green River 4	76.4%	88.7%	89.7%													
Haefling 1-2	0.1%	0.4%	0.5%	0.5%	0.6%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	88.6%	73.8%	83.5%	79.7%	86.7%	82.9%	88.0%	76.1%	88.4%	83.0%	88.3%	83.6%	88.7%	83.0%	88.8%
Mill Creek 2	72.2%	84.1%	77.4%	80.9%	88.6%	83.8%	89.6%	77.4%	89.7%	84.4%	89.7%	84.4%	89.8%	84.4%	89.8%	77.5%
Mill Creek 3	64.3%	87.4%	87.9%	62.3%	72.9%	78.6%	71.6%	83.5%	79.5%	84.9%	79.7%	84.8%	80.5%	86.3%	74.1%	86.4%
Mill Creek 4	64.2%	69.4%	70.5%	79.0%	85.7%	83.0%	88.8%	83.6%	89.0%	76.6%	89.1%	83.8%	89.2%	83.8%	89.2%	84.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.2%	0.3%	0.3%	0.4%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 12	0.0%	0.2%	0.3%	0.3%	0.3%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 13	2.1%	16.9%	15.1%	13.5%	12.0%	5.6%	7.6%	6.2%	7.7%	7.5%	8.2%	7.8%	4.4%	4.4%	4.2%	5.4%
Trimble County CT 10	1.8%	7.4%	6.5%	6.3%	7.3%	2.7%	3.2%	2.7%	3.3%	3.4%	4.1%	3.8%	1.9%	1.7%	1.7%	2.2%
Trimble County CT 5	4.6%	27.7%	23.8%	20.6%	15.9%	9.4%	12.5%	9.1%	10.6%	9.5%	13.0%	10.8%	7.3%	5.2%	5.0%	6.7%
Trimble County CT 6	6.1%	22.3%	18.8%	15.4%	18.2%	7.0%	10.1%	7.3%	6.9%	8.9%	10.4%	8.9%	5.7%	4.0%	3.9%	5.1%
Trimble County CT 7	4.9%	17.4%	14.7%	13.5%	14.6%	5.0%	8.0%	5.5%	6.9%	7.2%	8.5%	7.1%	4.5%	3.3%	3.3%	4.4%
Trimble County CT 8	1.9%	13.2%	11.5%	10.4%	10.7%	4.4%	6.0%	4.3%	5.6%	5.6%	6.7%	6.0%	3.4%	2.5%	2.6%	3.4%
Trimble County CT 9	5.8%	9.9%	8.7%	8.1%	9.3%	3.2%	4.6%	3.4%	4.3%	4.4%	5.3%	4.5%	2.5%	2.1%	2.2%	2.8%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	83.1%	88.4%	83.1%	88.4%	83.1%	88.4%	75.9%	88.4%	83.1%	88.4%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Cane Run 7			63.0%	52.9%	49.0%	49.6%	42.1%	44.0%	45.5%	48.2%	36.9%	45.9%	37.9%	35.2%	31.0%	31.3%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						20.1%	25.6%	19.0%	21.6%	21.2%	23.4%	20.7%	17.1%	15.3%	14.2%	18.5%
SCCT F-Class-Three Units							0.4%	0.4%	0.5%	0.5%	0.6%	0.7%	0.3%	0.3%	0.3%	0.4%
2x1 NGCC G/H-Class_2													17.3%	26.5%	25.4%	27.5%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Zero Carbon																
E.W. Brown 1	40.6%	13.8%	10.0%	14.8%	20.9%	25.7%	33.1%	31.8%	41.4%	36.4%	41.9%	40.3%	49.4%	50.0%	49.9%	50.3%
E.W. Brown 10	0.1%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%	0.5%	0.2%	0.2%	0.2%	0.2%
E.W. Brown 11	0.1%	0.5%	0.5%	0.6%	0.7%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.1%	0.1%	0.2%	0.2%
E.W. Brown 2	59.9%	22.0%	20.5%	27.1%	27.1%	41.4%	43.9%	44.1%	49.0%	51.9%	48.7%	45.1%	57.3%	58.9%	58.4%	58.8%
E.W. Brown 3	44.1%	33.5%	30.6%	33.8%	35.5%	33.5%	30.6%	34.5%	37.6%	37.2%	39.9%	39.6%	50.8%	49.0%	56.6%	55.9%
E.W. Brown 5	0.3%	0.9%	1.0%	1.1%	1.2%	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%	0.7%	0.2%	0.2%	0.3%	0.3%
E.W. Brown 6	3.6%	2.0%	1.9%	2.0%	2.2%	0.7%	0.9%	0.9%	1.0%	1.0%	1.1%	1.2%	0.4%	0.4%	0.5%	0.5%
E.W. Brown 7	3.1%	2.5%	2.3%	2.5%	2.9%	0.9%	1.2%	1.1%	1.3%	1.3%	1.4%	1.5%	0.6%	0.6%	0.7%	0.7%
E.W. Brown 8	0.3%	0.6%	0.7%	0.7%	0.8%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.5%	0.1%	0.2%	0.2%	0.2%
E.W. Brown 9	0.5%	0.8%	0.9%	1.0%	1.1%	0.3%	0.4%	0.4%	0.5%	0.5%	0.6%	0.6%	0.2%	0.2%	0.2%	0.3%
Cane Run 11	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Cane Run 4	51.3%	30.5%	18.0%													
Cane Run 5	58.7%	76.8%	48.5%													
Cane Run 6	47.3%	47.2%	34.6%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	76.7%	61.3%	74.8%	78.4%	74.6%	79.2%	76.6%	78.4%	70.6%	80.1%	78.5%	81.6%	80.5%	82.1%	80.7%
Ghent 2	82.5%	87.4%	78.4%	84.2%	86.0%	84.5%	74.5%	86.6%	84.9%	86.4%	84.7%	86.2%	85.0%	76.0%	86.7%	84.7%
Ghent 3	77.5%	53.8%	59.3%	72.0%	73.6%	66.9%	69.3%	72.1%	73.8%	73.6%	73.4%	74.4%	68.4%	76.6%	77.4%	75.9%
Ghent 4	71.6%	61.5%	50.7%	66.7%	62.7%	66.9%	71.3%	65.9%	62.4%	70.8%	70.0%	68.6%	72.5%	74.8%	71.7%	67.0%
Green River 3	51.1%	17.8%	11.0%													
Green River 4	76.4%	88.5%	89.4%													
Haefling 1-2	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	88.2%	72.6%	82.8%	79.0%	85.8%	82.2%	87.2%	75.5%	87.5%	82.3%	87.5%	83.0%	87.9%	82.1%	87.9%
Mill Creek 2	72.2%	84.0%	76.4%	80.3%	88.2%	83.4%	89.4%	77.3%	89.6%	84.3%	89.6%	84.3%	89.7%	84.3%	89.7%	77.4%
Mill Creek 3	64.3%	86.4%	87.8%	60.8%	71.1%	76.7%	70.2%	81.6%	77.8%	82.9%	77.6%	82.6%	78.5%	84.2%	72.4%	84.3%
Mill Creek 4	64.2%	69.0%	67.3%	78.1%	84.8%	82.3%	88.3%	83.1%	88.6%	76.2%	88.7%	83.3%	88.8%	83.5%	88.8%	83.6%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Paddy's Run 12	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Paddy's Run 13	2.1%	14.1%	12.4%	11.0%	9.5%	4.2%	5.6%	4.5%	5.5%	5.3%	5.8%	5.4%	2.6%	2.7%	2.6%	3.2%
Trimble County CT 10	1.8%	4.7%	3.9%	4.1%	4.7%	1.5%	1.7%	1.5%	1.7%	1.8%	2.0%	2.1%	0.8%	0.8%	0.8%	0.9%
Trimble County CT 5	4.6%	20.7%	16.6%	15.2%	11.2%	6.1%	7.5%	5.7%	6.2%	5.9%	7.3%	6.4%	3.8%	2.7%	2.5%	3.2%
Trimble County CT 6	6.1%	16.1%	12.5%	11.3%	13.0%	4.4%	5.8%	4.5%	4.2%	5.1%	5.6%	5.2%	2.8%	1.9%	1.9%	2.3%
Trimble County CT 7	4.9%	12.2%	9.4%	9.4%	10.1%	3.1%	4.5%	3.3%	3.8%	4.1%	4.4%	4.0%	2.2%	1.6%	1.6%	2.0%
Trimble County CT 8	1.9%	8.9%	7.2%	7.0%	7.4%	2.7%	3.2%	2.6%	3.1%	3.1%	3.4%	3.3%	1.6%	1.2%	1.2%	1.5%
Trimble County CT 9	5.8%	6.5%	5.3%	5.3%	6.1%	1.9%	2.4%	2.0%	2.3%	2.4%	2.7%	2.5%	1.2%	1.0%	1.1%	1.2%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	83.1%	88.4%	83.1%	88.4%	83.1%	88.4%	75.9%	88.4%	83.1%	88.4%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Cane Run 7			62.6%	44.0%	39.9%	39.5%	35.0%	34.0%	37.2%	37.2%	29.4%	34.6%	26.6%	23.9%	19.8%	21.8%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						14.3%	17.9%	13.2%	14.6%	14.6%	15.8%	14.1%	10.4%	9.2%	8.3%	10.4%
2x1 NGCC G/H-Class_1													13.3%	20.5%	18.9%	20.6%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Mid Carbon																
E.W. Brown 1	40.6%	13.8%	10.0%	14.8%	20.9%	25.7%	33.1%									
E.W. Brown 10	0.1%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 11	0.1%	0.5%	0.5%	0.6%	0.7%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.3%
E.W. Brown 2	59.9%	22.0%	20.5%	27.1%	27.1%	41.4%	43.9%									
E.W. Brown 3	44.1%	33.5%	30.6%	33.8%	35.5%	33.5%	30.6%	33.0%	34.4%	33.1%	34.4%	33.2%	34.6%	31.1%	35.8%	35.1%
E.W. Brown 5	0.3%	0.9%	1.0%	1.1%	1.2%	0.4%	0.5%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%
E.W. Brown 6	3.6%	2.0%	1.9%	2.0%	2.2%	0.7%	0.9%	0.5%	0.4%	0.5%	0.5%	0.6%	0.7%	0.7%	0.8%	0.9%
E.W. Brown 7	3.1%	2.5%	2.3%	2.5%	2.9%	0.9%	1.2%	0.6%	0.6%	0.6%	0.7%	0.7%	0.8%	0.9%	0.9%	1.1%
E.W. Brown 8	0.3%	0.6%	0.7%	0.7%	0.8%	0.2%	0.3%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%
E.W. Brown 9	0.5%	0.8%	0.9%	1.0%	1.1%	0.3%	0.4%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%	0.4%	0.4%
Cane Run 11	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	30.5%	18.0%													
Cane Run 5	58.7%	76.8%	48.5%													
Cane Run 6	47.3%	47.2%	34.6%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	76.7%	61.3%	74.8%	78.4%	74.6%	79.2%	33.5%	26.4%	20.4%	26.3%	22.6%	26.6%	29.1%	27.7%	29.8%
Ghent 2	82.5%	87.4%	78.4%	84.2%	86.0%	84.5%	72.5%	70.8%	66.5%	68.4%	63.8%	65.5%	56.6%	65.0%	65.6%	66.6%
Ghent 3	77.5%	53.8%	59.3%	72.0%	73.6%	66.9%	69.3%	22.6%	13.0%	14.4%	14.9%	14.6%	14.6%	19.7%	16.7%	17.4%
Ghent 4	71.6%	61.5%	50.7%	66.7%	62.7%	66.9%	71.3%	12.3%	7.0%	7.7%	8.5%	8.1%	9.4%	11.2%	10.1%	12.6%
Green River 3	51.1%	17.8%	11.0%													
Green River 4	76.4%	88.5%	89.4%													
Haefling 1-2	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	88.2%	72.6%	82.8%	79.0%	85.8%	82.2%	78.2%	65.6%	74.5%	69.8%	71.8%	68.4%	71.2%	67.3%	73.5%
Mill Creek 2	72.2%	84.0%	76.4%	80.3%	88.2%	83.4%	89.4%	70.9%	80.7%	73.0%	77.6%	70.1%	75.9%	69.4%	75.2%	67.1%
Mill Creek 3	64.3%	86.4%	87.8%	60.8%	71.1%	76.7%	70.2%	55.0%	52.1%	51.4%	50.9%	44.8%	44.9%	48.5%	43.6%	52.3%
Mill Creek 4	64.2%	69.0%	67.3%	78.1%	84.8%	82.3%	88.3%	63.6%	60.5%	51.5%	55.1%	48.4%	50.0%	52.9%	50.2%	50.6%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	14.1%	12.4%	11.0%	9.5%	4.2%	5.6%	3.9%	3.3%	3.5%	3.8%	3.8%	4.3%	4.7%	4.5%	5.7%
Trimble County CT 10	1.8%	4.7%	3.9%	4.1%	4.7%	1.5%	1.7%	1.0%	0.9%	0.9%	1.0%	1.1%	1.2%	1.3%	1.4%	1.7%
Trimble County CT 5	4.6%	20.7%	16.6%	15.2%	11.2%	6.1%	7.5%	5.3%	3.3%	3.2%	3.9%	3.6%	4.4%	5.0%	4.7%	5.8%
Trimble County CT 6	6.1%	16.1%	12.5%	11.3%	13.0%	4.4%	5.8%	3.8%	2.3%	2.7%	3.0%	2.8%	3.4%	3.8%	3.7%	4.6%
Trimble County CT 7	4.9%	12.2%	9.4%	9.4%	10.1%	3.1%	4.5%	2.7%	2.0%	2.1%	2.3%	2.2%	2.6%	2.9%	2.9%	3.5%
Trimble County CT 8	1.9%	8.9%	7.2%	7.0%	7.4%	2.7%	3.2%	2.0%	1.5%	1.6%	1.7%	1.8%	2.1%	2.3%	2.3%	2.7%
Trimble County CT 9	5.8%	6.5%	5.3%	5.3%	6.1%	1.9%	2.4%	1.4%	1.1%	1.2%	1.3%	1.4%	1.6%	1.8%	1.8%	2.1%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	83.1%	87.4%	81.7%	85.4%	80.6%	84.0%	73.1%	84.3%	79.0%	85.0%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			62.6%	44.0%	39.9%	39.5%	35.0%	91.2%	84.1%	90.2%	75.1%	94.8%	90.8%	94.9%	90.8%	79.7%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						14.3%	17.9%	64.9%	57.4%	65.4%	76.3%	77.0%	83.9%	82.2%	86.6%	86.7%
2x1 NGCC G/H-Class_1								52.1%	90.6%	90.9%	91.0%	90.8%	91.0%	91.3%	91.3%	91.3%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-1
Capacity Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Carbon Cap																
E.W. Brown 1	40.6%	13.8%	10.0%	14.8%	20.9%	25.7%	33.1%									
E.W. Brown 10	0.1%	0.7%	0.7%	0.8%	0.9%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%
E.W. Brown 11	0.1%	0.5%	0.5%	0.6%	0.7%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.3%
E.W. Brown 2	59.9%	22.0%	20.5%	27.1%	27.1%	41.4%	43.9%									
E.W. Brown 3	44.1%	33.5%	30.6%	33.8%	35.5%	33.5%	30.6%	33.0%	34.4%	33.1%	34.5%	33.2%	34.8%	30.1%	34.9%	34.7%
E.W. Brown 5	0.3%	0.9%	1.0%	1.1%	1.2%	0.4%	0.5%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.5%
E.W. Brown 6	3.6%	2.0%	1.9%	2.0%	2.2%	0.7%	0.9%	0.5%	0.4%	0.5%	0.5%	0.6%	0.7%	0.7%	0.8%	0.8%
E.W. Brown 7	3.1%	2.5%	2.3%	2.5%	2.9%	0.9%	1.2%	0.6%	0.6%	0.6%	0.7%	0.8%	0.8%	0.9%	1.0%	1.1%
E.W. Brown 8	0.3%	0.6%	0.7%	0.7%	0.8%	0.2%	0.3%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%
E.W. Brown 9	0.5%	0.8%	0.9%	1.0%	1.1%	0.3%	0.4%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%	0.4%	0.4%
Cane Run 11	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Cane Run 4	51.3%	30.5%	18.0%													
Cane Run 5	58.7%	76.8%	48.5%													
Cane Run 6	47.3%	47.2%	34.6%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	79.3%	76.7%	61.3%	74.8%	78.4%	74.6%	79.2%	31.3%	33.7%	28.9%	33.1%	29.2%	31.2%	31.6%	27.8%	28.1%
Ghent 2	82.5%	87.4%	78.4%	84.2%	86.0%	84.2%	74.5%	71.0%	75.6%	76.3%	72.5%	73.3%	71.9%	63.9%	70.1%	68.8%
Ghent 3	77.5%	53.8%	59.3%	72.0%	73.6%	66.9%	69.3%	22.6%	13.0%	14.4%	14.9%	14.6%	14.6%	19.6%	17.3%	17.2%
Ghent 4	71.6%	61.5%	50.7%	66.7%	62.7%	66.9%	71.3%	12.3%	7.0%	7.7%	8.5%	8.1%	9.4%	11.2%	9.4%	10.7%
Green River 3	51.1%	17.8%	11.0%													
Green River 4	76.4%	88.5%	89.4%													
Haefling 1-2	0.1%	0.2%	0.3%	0.3%	0.3%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Mill Creek 1	55.3%	88.2%	72.6%	82.8%	79.0%	85.8%	82.2%	78.1%	67.8%	78.3%	72.9%	76.7%	73.0%	75.7%	69.8%	73.9%
Mill Creek 2	72.2%	84.0%	76.4%	80.3%	88.2%	83.4%	89.4%	69.8%	82.8%	77.3%	81.7%	77.0%	81.6%	76.4%	78.9%	67.4%
Mill Creek 3	64.3%	86.4%	87.8%	60.8%	71.1%	76.7%	70.2%	55.7%	59.3%	62.4%	56.6%	58.9%	57.4%	59.3%	52.3%	57.0%
Mill Creek 4	64.2%	69.0%	67.3%	78.1%	84.8%	82.3%	88.3%	62.6%	69.2%	58.4%	63.2%	56.8%	61.2%	59.6%	59.0%	54.8%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 12	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Paddy's Run 13	2.1%	14.1%	12.4%	11.0%	9.5%	4.2%	5.6%	3.9%	3.2%	3.3%	3.7%	3.6%	4.1%	4.5%	4.4%	5.2%
Trimble County CT 10	1.8%	4.7%	3.9%	4.1%	4.7%	1.5%	1.7%	1.0%	0.8%	0.9%	1.0%	1.0%	1.2%	1.3%	1.4%	1.5%
Trimble County CT 5	4.6%	20.7%	16.6%	15.2%	11.2%	6.1%	7.5%	5.3%	3.3%	3.2%	3.9%	3.6%	4.2%	4.9%	4.5%	5.2%
Trimble County CT 6	6.1%	16.1%	12.5%	11.3%	13.0%	4.4%	5.8%	3.9%	2.3%	2.7%	2.9%	2.7%	3.3%	3.7%	3.5%	4.0%
Trimble County CT 7	4.9%	12.2%	9.4%	9.4%	10.1%	3.1%	4.5%	2.8%	1.9%	2.0%	2.2%	2.2%	2.5%	2.8%	2.7%	3.1%
Trimble County CT 8	1.9%	8.9%	7.2%	7.0%	7.4%	2.7%	3.2%	2.0%	1.5%	1.5%	1.7%	1.7%	2.0%	2.2%	2.2%	2.5%
Trimble County CT 9	5.8%	6.5%	5.3%	5.3%	6.1%	1.9%	2.4%	1.4%	1.2%	1.2%	1.3%	1.4%	1.6%	1.8%	1.8%	2.0%
Trimble County 1 (75%)	77.3%	88.4%	82.9%	88.4%	75.9%	88.4%	83.1%	86.9%	82.5%	87.6%	81.9%	87.0%	74.8%	87.1%	81.1%	86.0%
Trimble County 2 (75%)	64.1%	61.9%	81.6%	82.1%	82.1%	75.0%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	82.1%	75.0%	82.1%	82.1%
Zorn 1	0.1%	0.1%	0.1%	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Cane Run 7			62.6%	44.0%	39.9%	39.5%	35.0%	91.6%	74.7%	80.5%	70.6%	84.8%	85.4%	90.3%	87.7%	78.1%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						14.3%	17.9%	68.3%	45.8%	46.7%	60.3%	54.3%	60.7%	62.8%	71.7%	76.0%
2x1 NGCC G/H-Class_1								52.1%	90.0%	89.9%	90.7%	90.8%	91.0%	91.2%	91.2%	91.3%
Wind_1																27.0%
Wind_2																27.0%
Wind_3																27.0%
Wind_4																27.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%	85.9%	89.4%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%	86.8%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Mid Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Carbon Cap																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-High Load-Zero Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%	85.9%	89.4%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	86.8%	86.8%	86.8%	86.8%	86.8%	86.8%	86.8%	77.9%	88.6%	86.8%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
SCCT F-Class-Three Units						95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
2x1 NGCC G/H-Class_2													95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

Table 8.(3)(b)12(a)-2
Availability Factors

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Zero Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%	85.9%	89.4%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
SCCT F-Class_1													95.5%	95.5%	95.5%	95.5%
SCCT F-Class_2															95.5%	95.5%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Mid Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%	88.6%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
1x1 NGCC G/H-Class								95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_2										95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Carbon Cap																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_1								95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

Table 8.(3)(b)12(a)-2
Availability Factors

Scenario: Low Gas-Low Load-Zero Carbon	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%	85.9%	89.4%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	86.8%	86.8%	86.8%	86.8%	86.8%	86.8%	86.8%	77.9%	88.6%	86.8%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

Table 8.(3)(b)12(a)-2
Availability Factors

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Mid Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Carbon Cap																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-High Load-Zero Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%	85.9%	89.4%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	88.6%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_1						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_2														95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Zero Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%	85.9%	89.4%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_1													95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

Table 8.(3)(b)12(a)-2
Availability Factors

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Mid Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
1x1 NGCC G/H-Class								95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_2										95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Carbon Cap																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_1								95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Zero Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%	85.9%	89.4%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	88.6%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Mid Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Wind_1																27.0%
Wind_2																27.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Carbon Cap																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%	86.8%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Wind_1											27.0%	27.0%	27.0%	27.0%	27.0%	27.0%
Wind_2															27.0%	27.0%
Wind_3															27.0%	27.0%
Wind_4																27.0%
Wind_5																27.0%
Wind_6																27.0%
Wind_7																27.0%
Wind_8																27.0%

Note: 2013 values are actual values.

Table 8.(3)(b)12(a)-2
Availability Factors

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-High Load-Zero Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%	85.9%	89.4%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	86.8%	76.2%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
SCCT F-Class-Three Units						95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
2x1 NGCC G/H-Class_2													95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Zero Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%	85.9%	89.4%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%	89.4%	85.9%	77.2%	89.4%	85.9%	89.4%	85.9%
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	86.8%	76.2%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_1													95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Mid Carbon																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_1								95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

Note: 2013 values are actual values.

**Table 8.(3)(b)12(a)-2
Availability Factors**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Carbon Cap																
E.W. Brown 1	91.0%	85.9%	77.2%	85.9%	89.4%	85.9%	89.4%									
E.W. Brown 10	99.1%	92.2%	78.0%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 11	82.1%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 2	88.8%	84.2%	89.4%	85.9%	77.2%	89.4%	85.9%									
E.W. Brown 3	78.5%	85.0%	79.7%	86.8%	90.3%	86.8%	77.9%	86.8%	90.3%	86.8%	90.3%	86.8%	90.3%	77.9%	90.3%	86.8%
E.W. Brown 5	98.1%	81.5%	79.9%	79.9%	81.5%	81.5%	81.5%	81.5%	69.0%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%	81.5%
E.W. Brown 6	97.3%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 7	97.4%	91.4%	91.4%	91.4%	91.4%	78.8%	91.4%	91.4%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%	93.2%
E.W. Brown 8	95.8%	92.2%	92.2%	92.2%	88.6%	92.2%	92.2%	92.2%	92.2%	78.0%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
E.W. Brown 9	81.9%	92.2%	92.2%	92.2%	90.4%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%	92.2%
Cane Run 11	98.9%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 4	72.9%	85.9%	89.0%													
Cane Run 5	86.6%	87.6%	89.0%													
Cane Run 6	81.9%	85.0%	89.9%													
Dix Dam 1-3	50.7%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%	29.6%	29.6%	29.6%	29.5%
Ghent 1	90.1%	86.8%	77.9%	85.0%	88.6%	85.0%	88.6%	86.8%	86.8%	77.9%	88.6%	86.8%	88.6%	86.8%	88.6%	86.8%
Ghent 2	94.5%	88.6%	81.5%	85.0%	86.8%	86.8%	76.2%	88.6%	86.8%	86.8%	88.6%	86.8%	88.6%	86.8%	77.9%	88.6%
Ghent 3	86.6%	81.5%	83.2%	88.6%	86.8%	77.9%	83.2%	86.8%	86.8%	86.8%	86.8%	88.6%	77.9%	86.8%	88.6%	86.8%
Ghent 4	84.7%	77.9%	92.1%	86.8%	86.8%	85.0%	88.6%	86.8%	77.9%	86.8%	88.6%	86.8%	86.8%	88.6%	86.8%	77.9%
Green River 3	96.6%	84.1%	89.0%													
Green River 4	86.5%	87.6%	89.0%													
Haefling 1-2	84.6%	47.1%	48.1%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Mill Creek 1	70.4%	90.3%	79.7%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%
Mill Creek 2	88.5%	85.0%	79.7%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%
Mill Creek 3	75.4%	88.6%	88.6%	76.2%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%
Mill Creek 4	80.5%	70.8%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%	90.3%	77.9%	90.3%	85.0%	90.3%	85.0%	90.3%	85.0%
Ohio Falls 1-8	51.3%	45.2%	46.3%	45.5%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%	46.5%	46.5%	46.5%	46.4%
Paddy's Run 11	94.5%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 12	95.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Paddy's Run 13	83.3%	84.2%	85.9%	85.9%	85.9%	60.6%	85.9%	85.9%	85.9%	85.9%	85.9%	87.6%	87.6%	87.6%	87.6%	87.6%
Trimble County CT 10	82.4%	95.5%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 5	97.3%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 6	98.1%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	77.1%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 7	98.0%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 8	93.0%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County CT 9	97.8%	95.5%	95.5%	95.5%	95.5%	80.8%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%	95.5%
Trimble County 1 (75%)	85.6%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%	84.1%	89.4%	84.1%	89.4%	76.9%	89.4%	84.1%	89.4%
Trimble County 2 (75%)	66.4%	63.0%	82.3%	82.6%	83.1%	76.0%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	83.1%	76.0%	83.1%	83.1%
Zorn 1	99.7%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Cane Run 7			95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Brown Solar				10.6%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%	17.4%
Green River 5						95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
2x1 NGCC G/H-Class_1								95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Wind_1																27.0%
Wind_2																27.0%
Wind_3																27.0%
Wind_4																27.0%

Note: 2013 values are actual values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon																
E.W. Brown 1	12,033	11,882	11,629	11,395	11,297	11,077	11,103	10,921	10,932	10,838	10,949	11,134	11,169	11,324	11,300	11,170
E.W. Brown 10	38,371	14,180	13,922	14,033	14,047	14,199	14,205	14,086	14,106	14,060	14,144	14,052	14,063	14,015	13,986	14,016
E.W. Brown 11	30,071	13,498	13,339	13,435	13,447	13,604	13,631	13,584	13,590	13,497	13,493	13,468	13,472	13,453	13,441	13,445
E.W. Brown 2	10,729	10,764	10,662	10,548	10,472	10,468	10,524	10,460	10,447	10,463	10,568	10,588	10,548	10,569	10,507	10,468
E.W. Brown 3	11,311	12,191	12,196	12,193	12,192	12,205	12,202	12,202	12,200	12,196	12,187	12,182	12,176	12,169	12,172	12,153
E.W. Brown 5	24,417	14,116	13,504	13,876	13,953	14,318	14,463	14,295	14,324	14,224	14,319	14,136	14,181	14,156	14,106	14,231
E.W. Brown 6	12,536	10,930	10,894	11,034	11,037	11,125	11,134	11,125	11,141	11,211	11,282	11,286	11,303	11,360	11,364	11,377
E.W. Brown 7	12,127	10,910	10,910	11,063	11,064	11,108	11,154	11,140	11,116	11,141	11,168	11,163	11,164	11,159	11,149	11,161
E.W. Brown 8	20,955	13,779	13,588	13,658	13,661	13,800	13,827	13,760	13,735	13,675	13,719	13,722	13,734	13,713	13,696	13,659
E.W. Brown 9	17,677	14,391	14,158	14,215	14,236	14,357	14,409	14,280	14,321	14,263	14,299	14,237	14,259	14,190	14,162	14,218
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,455	11,748													
Cane Run 5	10,858	10,333	10,371													
Cane Run 6	10,868	10,060	10,216													
Dix Dam 1-3																
Ghent 1	10,784	10,849	10,875	10,886	10,896	10,925	10,914	10,919	10,884	10,841	10,838	10,839	10,829	10,832	10,831	10,833
Ghent 2	10,696	10,732	10,692	10,697	10,696	10,681	10,670	10,666	10,676	10,684	10,689	10,691	10,691	10,693	10,695	10,692
Ghent 3	11,080	11,092	11,083	11,098	11,114	11,177	11,219	11,219	11,191	11,138	11,094	11,095	11,078	11,081	11,076	11,069
Ghent 4	11,051	11,045	11,144	11,187	11,220	11,316	11,269	11,313	11,257	11,114	11,102	11,097	11,074	11,066	11,069	11,067
Green River 3	12,992	13,527	13,580													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,554	10,491	10,495	10,500	10,486	10,507	10,507	10,511	10,522	10,527	10,521	10,535	10,535	10,527	10,532
Mill Creek 2	10,671	10,526	10,490	10,494	10,498	10,488	10,505	10,522	10,520	10,521	10,523	10,524	10,524	10,523	10,523	10,525
Mill Creek 3	10,500	10,667	10,688	10,607	10,592	10,592	10,595	10,589	10,594	10,596	10,599	10,598	10,602	10,600	10,602	10,606
Mill Creek 4	10,827	10,707	10,720	10,706	10,702	10,699	10,702	10,701	10,703	10,701	10,707	10,705	10,711	10,711	10,714	10,712
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,620	10,578	10,793	10,793	10,903	11,002	10,984	11,098	11,330	11,533	11,659	11,749	11,886	11,806	11,957
Trimble County CT 10	12,513	10,803	10,779	10,901	10,914	10,943	10,969	10,991	11,035	11,042	11,122	11,141	11,138	11,226	11,174	11,207
Trimble County CT 5	13,020	10,678	10,692	10,906	10,860	11,091	11,110	11,154	11,179	11,222	11,428	11,479	11,543	11,702	11,639	11,757
Trimble County CT 6	12,796	10,711	10,717	10,912	10,927	11,051	11,097	11,116	11,161	11,239	11,358	11,456	11,460	11,597	11,538	11,623
Trimble County CT 7	12,849	10,742	10,739	10,926	10,938	11,017	11,095	11,106	11,147	11,179	11,279	11,297	11,309	11,435	11,339	11,477
Trimble County CT 8	12,590	10,770	10,758	10,923	10,932	10,981	11,065	11,043	11,110	11,153	11,205	11,231	11,218	11,336	11,259	11,382
Trimble County CT 9	12,752	10,790	10,771	10,914	10,932	10,951	11,044	11,025	11,058	11,084	11,196	11,203	11,196	11,272	11,218	11,280
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,248	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,853	6,875	6,875	6,902	6,924	6,994	7,059	7,092	7,076	7,073	7,097	7,076
Brown Solar																
Green River 5						6,944	6,950	6,994	6,999	7,071	7,137	7,151	7,177	7,274	7,223	7,260

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Mid Carbon																
E.W. Brown 1	12,033	11,882	11,629	11,395	11,297	11,077	11,103									
E.W. Brown 10	38,371	14,180	13,922	14,033	14,047	14,199	14,205	13,834	13,855	13,883	13,944	13,843	13,882	13,864	13,784	13,768
E.W. Brown 11	30,071	13,498	13,339	13,435	13,447	13,604	13,631	13,261	13,256	13,248	13,334	13,265	13,288	13,260	13,241	13,227
E.W. Brown 2	10,729	10,764	10,662	10,548	10,472	10,468	10,524									
E.W. Brown 3	11,311	12,191	12,196	12,193	12,192	12,205	12,202	12,202	12,201	12,200	12,199	12,196	12,192	12,047	12,067	12,056
E.W. Brown 5	24,417	14,116	13,504	13,876	13,953	14,318	14,463	13,133	13,072	13,127	13,241	13,115	12,889	12,911	12,617	12,592
E.W. Brown 6	12,536	10,930	10,894	11,034	11,037	11,125	11,134	10,816	10,774	10,775	10,792	10,767	10,756	10,760	10,751	10,732
E.W. Brown 7	12,127	10,910	10,910	11,063	11,064	11,108	11,154	10,779	10,762	10,768	10,766	10,769	10,741	10,721	10,694	10,669
E.W. Brown 8	20,955	13,779	13,588	13,658	13,661	13,800	13,827	13,482	13,472	13,456	13,512	13,431	13,426	13,419	13,370	13,358
E.W. Brown 9	17,677	14,391	14,158	14,215	14,236	14,357	14,409	14,026	14,057	14,070	14,122	14,008	14,058	14,031	14,002	13,977
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,455	11,748													
Cane Run 5	10,858	10,333	10,371													
Cane Run 6	10,868	10,060	10,216													
Dix Dam 1-3																
Ghent 1	10,784	10,849	10,875	10,886	10,896	10,925	10,914	11,000	10,983	10,983	10,956	10,985	10,974	10,953	10,964	10,952
Ghent 2	10,696	10,732	10,692	10,697	10,696	10,681	10,670	10,667	10,666	10,666	10,659	10,666	10,659	10,663	10,659	10,654
Ghent 3	11,080	11,092	11,083	11,098	11,114	11,177	11,219	11,184	11,182	11,185	11,163	11,177	11,158	11,182	11,165	11,165
Ghent 4	11,051	11,045	11,144	11,187	11,220	11,316	11,269	11,312	11,293	11,299	11,275	11,286	11,274	11,271	11,272	11,246
Green River 3	12,992	13,527	13,580													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,554	10,491	10,495	10,500	10,486	10,507	10,464	10,462	10,466	10,466	10,462	10,462	10,451	10,454	10,453
Mill Creek 2	10,671	10,526	10,490	10,494	10,498	10,488	10,505	10,498	10,492	10,497	10,494	10,494	10,491	10,488	10,486	10,489
Mill Creek 3	10,500	10,667	10,688	10,607	10,592	10,592	10,595	10,609	10,598	10,600	10,596	10,600	10,601	10,599	10,600	10,598
Mill Creek 4	10,827	10,707	10,720	10,706	10,702	10,699	10,702	10,714	10,714	10,710	10,714	10,714	10,712	10,711	10,713	10,710
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,620	10,578	10,793	10,793	10,903	11,002	10,610	10,607	10,601	10,600	10,599	10,588	10,585	10,593	10,576
Trimble County CT 10	12,513	10,803	10,779	10,901	10,914	10,943	10,969	10,754	10,758	10,753	10,752	10,734	10,735	10,742	10,732	10,730
Trimble County CT 5	13,020	10,678	10,692	10,906	10,860	11,091	11,110	10,700	10,691	10,677	10,669	10,677	10,663	10,667	10,665	10,650
Trimble County CT 6	12,796	10,711	10,717	10,912	10,927	11,051	11,097	10,716	10,688	10,708	10,690	10,693	10,681	10,687	10,682	10,670
Trimble County CT 7	12,849	10,742	10,739	10,926	10,938	11,017	11,095	10,729	10,723	10,723	10,709	10,706	10,698	10,705	10,698	10,688
Trimble County CT 8	12,590	10,770	10,758	10,923	10,932	10,981	11,065	10,739	10,737	10,735	10,726	10,717	10,712	10,720	10,711	10,704
Trimble County CT 9	12,752	10,790	10,771	10,914	10,932	10,951	11,044	10,747	10,749	10,745	10,740	10,726	10,725	10,732	10,723	10,718
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,248	10,249	10,250	10,250	10,249	10,249	10,249	10,249	10,250	10,249
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,853	6,875	6,875	6,850	6,850	6,850	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,944	6,950	6,918	6,922	6,920	6,923	6,922	6,927	6,927	6,930	6,930

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Carbon Cap																
E.W. Brown 1	12,033	11,882	11,629	11,395	11,297	11,077	11,103									
E.W. Brown 10	38,371	14,180	13,922	14,033	14,047	14,199	14,205	14,040	14,071	14,016	13,427	13,956	13,739	13,737	13,239	13,165
E.W. Brown 11	30,071	13,498	13,339	13,435	13,447	13,604	13,631	13,513	13,519	13,517	13,079	13,467	13,112	13,194	13,023	13,007
E.W. Brown 2	10,729	10,764	10,662	10,548	10,472	10,468	10,524									
E.W. Brown 3	11,311	12,191	12,196	12,193	12,192	12,205	12,202	12,197	12,196	12,194	12,081	12,191	12,069	12,048	11,949	11,860
E.W. Brown 5	24,417	14,116	13,504	13,876	13,953	14,318	14,463	14,086	14,103	14,172	12,250	14,052	12,373	12,416	12,157	12,173
E.W. Brown 6	12,536	10,930	10,894	11,034	11,037	11,125	11,134	11,084	11,083	11,078	10,731	11,009	10,726	10,731	10,725	10,678
E.W. Brown 7	12,127	10,910	10,910	11,063	11,064	11,108	11,154	11,066	11,061	11,068	10,681	11,031	10,683	10,688	10,685	10,619
E.W. Brown 8	20,955	13,779	13,588	13,658	13,661	13,800	13,827	13,697	13,711	13,670	13,158	13,632	13,239	13,331	13,136	13,074
E.W. Brown 9	17,677	14,391	14,158	14,215	14,236	14,357	14,409	14,201	14,244	14,185	13,569	14,136	13,880	13,883	13,321	13,243
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,455	11,748													
Cane Run 5	10,858	10,333	10,371													
Cane Run 6	10,868	10,060	10,216													
Dix Dam 1-3																
Ghent 1	10,784	10,849	10,875	10,886	10,896	10,925	10,914	11,002	10,987	10,989	10,960	10,989	10,971	10,953	10,969	10,965
Ghent 2	10,696	10,732	10,692	10,697	10,696	10,681	10,670	10,667	10,670	10,668	10,655	10,674	10,656	10,664	10,659	10,655
Ghent 3	11,080	11,092	11,083	11,098	11,114	11,177	11,219	11,216	11,208	11,195	11,153	11,180	11,157	11,178	11,142	11,166
Ghent 4	11,051	11,045	11,144	11,187	11,220	11,316	11,269	11,314	11,293	11,300	11,249	11,286	11,268	11,261	11,288	11,375
Green River 3	12,992	13,527	13,580													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,554	10,491	10,495	10,500	10,486	10,507	10,495	10,491	10,483	10,454	10,476	10,456	10,451	10,453	10,451
Mill Creek 2	10,671	10,526	10,490	10,494	10,498	10,488	10,505	10,499	10,498	10,498	10,484	10,502	10,483	10,486	10,474	10,476
Mill Creek 3	10,500	10,667	10,688	10,607	10,592	10,592	10,595	10,597	10,597	10,601	10,599	10,614	10,601	10,598	10,598	10,594
Mill Creek 4	10,827	10,707	10,720	10,706	10,702	10,699	10,702	10,704	10,706	10,700	10,713	10,712	10,714	10,709	10,707	10,705
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,620	10,578	10,793	10,793	10,903	11,002	11,008	10,985	11,005	10,514	10,861	10,561	10,552	10,506	10,465
Trimble County CT 10	12,513	10,803	10,779	10,901	10,914	10,943	10,969	10,917	10,931	10,924	10,760	10,889	10,738	10,742	10,706	10,652
Trimble County CT 5	13,020	10,678	10,692	10,906	10,860	11,091	11,110	11,093	11,048	11,044	10,659	10,957	10,664	10,667	10,640	10,526
Trimble County CT 6	12,796	10,711	10,717	10,912	10,927	11,051	11,097	11,057	11,011	11,041	10,684	10,962	10,683	10,687	10,657	10,551
Trimble County CT 7	12,849	10,742	10,739	10,926	10,938	11,017	11,095	11,029	11,014	11,013	10,707	10,918	10,699	10,705	10,672	10,577
Trimble County CT 8	12,590	10,770	10,758	10,923	10,932	10,981	11,065	11,002	11,002	10,995	10,728	10,911	10,714	10,720	10,685	10,602
Trimble County CT 9	12,752	10,790	10,771	10,914	10,932	10,951	11,044	10,945	10,955	10,949	10,746	10,902	10,727	10,732	10,696	10,628
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,248	10,248	10,248	10,249	10,250	10,249	10,250	10,249	10,250	10,249
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,853	6,875	6,875	6,864	6,855	6,855	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,944	6,950	6,935	6,913	6,916	6,931	6,872	6,931	6,930	6,931	6,931

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-High Load-Zero Carbon																
E.W. Brown 1	12,033	11,737	11,556	11,307	11,220	11,046	11,046	10,908	10,898	10,815	10,869	10,990	11,058	11,019	10,983	10,782
E.W. Brown 10	38,371	14,043	13,699	13,832	13,860	13,943	12,907	12,755	12,765	12,753	12,678	12,673	12,678	12,689	12,685	12,671
E.W. Brown 11	30,071	13,393	13,221	13,293	13,323	13,420	12,841	12,769	12,772	12,797	12,802	12,798	12,810	12,814	12,810	12,795
E.W. Brown 2	10,729	10,707	10,641	10,515	10,457	10,458	10,499	10,449	10,425	10,441	10,479	10,495	10,467	10,454	10,425	10,347
E.W. Brown 3	11,311	12,152	12,163	12,151	12,145	12,184	12,166	12,170	12,160	12,145	12,111	12,097	12,154	12,144	12,146	12,118
E.W. Brown 5	24,417	13,905	13,304	13,584	13,695	13,958	13,602	13,100	12,251	12,270	12,239	12,212	12,156	12,144	12,136	12,137
E.W. Brown 6	12,536	10,873	10,839	10,980	10,978	11,060	11,056	11,016	11,013	11,063	11,124	11,116	11,217	11,192	11,189	11,195
E.W. Brown 7	12,127	10,854	10,860	11,001	10,995	11,037	11,071	11,034	11,016	11,031	11,051	11,036	11,072	11,052	11,040	11,044
E.W. Brown 8	20,955	13,650	13,433	13,490	13,493	13,596	12,884	12,776	12,778	12,799	12,801	12,800	12,809	12,818	12,814	12,797
E.W. Brown 9	17,677	14,255	13,952	14,014	14,046	14,107	12,955	12,771	12,780	12,775	12,671	12,668	12,669	12,685	12,681	12,666
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,409	11,674													
Cane Run 5	10,858	10,323	10,340													
Cane Run 6	10,868	10,036	10,125													
Dix Dam 1-3																
Ghent 1	10,784	10,843	10,849	10,856	10,857	10,888	10,869	10,885	10,864	10,829	10,824	10,823	10,821	10,820	10,821	10,822
Ghent 2	10,696	10,734	10,695	10,703	10,703	10,693	10,684	10,679	10,688	10,691	10,697	10,699	10,701	10,702	10,704	10,702
Ghent 3	11,080	11,056	11,051	11,062	11,066	11,114	11,152	11,151	11,128	11,097	11,054	11,054	11,037	11,036	11,034	11,025
Ghent 4	11,051	11,005	11,076	11,098	11,123	11,216	11,168	11,211	11,143	11,053	11,025	11,019	11,003	11,000	11,000	10,998
Green River 3	12,992	13,523	13,581													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,563	10,500	10,506	10,514	10,498	10,521	10,519	10,525	10,529	10,536	10,531	10,545	10,547	10,544	10,549
Mill Creek 2	10,671	10,526	10,500	10,501	10,510	10,500	10,515	10,525	10,523	10,524	10,525	10,526	10,525	10,525	10,526	10,527
Mill Creek 3	10,500	10,677	10,692	10,605	10,595	10,596	10,600	10,599	10,606	10,607	10,613	10,611	10,615	10,624	10,626	10,642
Mill Creek 4	10,827	10,708	10,711	10,706	10,706	10,703	10,706	10,705	10,709	10,706	10,711	10,710	10,715	10,715	10,717	10,716
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,572	10,542	10,752	10,747	10,843	10,941	10,935	11,026	11,232	11,401	11,512	11,684	11,735	11,699	11,806
Trimble County CT 10	12,513	10,717	10,715	10,827	10,830	10,877	10,876	10,897	10,918	10,938	10,975	11,012	11,057	11,112	11,070	11,090
Trimble County CT 5	13,020	10,583	10,604	10,803	10,763	10,983	10,988	11,032	11,045	11,112	11,255	11,323	11,484	11,548	11,470	11,552
Trimble County CT 6	12,796	10,614	10,631	10,814	10,816	10,955	10,981	11,003	11,037	11,127	11,194	11,296	11,418	11,439	11,373	11,443
Trimble County CT 7	12,849	10,644	10,656	10,833	10,832	10,921	10,979	10,996	11,018	11,078	11,129	11,166	11,254	11,323	11,249	11,347
Trimble County CT 8	12,590	10,673	10,679	10,836	10,834	10,910	10,961	10,950	10,987	11,046	11,061	11,096	11,141	11,225	11,168	11,254
Trimble County CT 9	12,752	10,697	10,699	10,834	10,842	10,884	10,941	10,934	10,946	10,989	11,044	11,073	11,118	11,184	11,128	11,161
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,851	6,858	6,861	6,871	6,883	6,924	6,967	6,988	6,969	6,962	6,973	6,977
Brown Solar																
Green River 5						6,915	6,911	6,942	6,955	7,002	7,059	7,086	7,138	7,102	7,101	7,092
SCCT F-Class-Three Units							9,940	9,940	9,940	9,940	9,940	9,940	9,940	9,940	9,940	9,940
2x1 NGCC G/H-Class_2													6,816	6,936	6,900	6,882

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Zero Carbon																
E.W. Brown 1	12,033	11,799	11,557	11,335	11,255	11,053	11,081	10,906	10,902	10,821	10,914	11,060	11,064	11,139	11,139	11,064
E.W. Brown 10	38,371	14,109	13,798	13,928	13,945	14,069	14,060	13,940	13,945	13,907	13,960	13,876	13,721	13,685	13,520	13,489
E.W. Brown 11	30,071	13,446	13,251	13,364	13,381	13,509	13,521	13,480	13,475	13,396	13,376	13,353	13,212	13,193	13,036	13,009
E.W. Brown 2	10,729	10,727	10,629	10,529	10,464	10,464	10,524	10,454	10,436	10,456	10,531	10,538	10,503	10,507	10,471	10,431
E.W. Brown 3	11,311	12,175	12,182	12,174	12,172	12,197	12,190	12,190	12,185	12,176	12,159	12,146	12,134	12,115	12,119	12,082
E.W. Brown 5	24,417	14,005	13,301	13,715	13,803	14,126	14,222	14,056	14,065	13,983	14,011	13,856	13,684	13,659	13,348	13,373
E.W. Brown 6	12,536	10,904	10,857	11,006	11,009	11,093	11,106	11,086	11,098	11,164	11,221	11,217	11,289	11,336	11,370	11,379
E.W. Brown 7	12,127	10,883	10,866	11,031	11,029	11,072	11,117	11,101	11,074	11,103	11,121	11,119	11,138	11,141	11,142	11,148
E.W. Brown 8	20,955	13,715	13,466	13,572	13,569	13,696	13,705	13,642	13,609	13,557	13,580	13,583	13,421	13,392	13,232	13,200
E.W. Brown 9	17,677	14,321	14,011	14,109	14,137	14,229	14,251	14,128	14,155	14,106	14,112	14,053	13,900	13,857	13,687	13,660
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,427	11,707													
Cane Run 5	10,858	10,326	10,351													
Cane Run 6	10,868	10,048	10,158													
Dix Dam 1-3																
Ghent 1	10,784	10,846	10,863	10,872	10,876	10,901	10,891	10,899	10,871	10,836	10,828	10,828	10,825	10,829	10,822	10,831
Ghent 2	10,696	10,733	10,694	10,701	10,700	10,688	10,677	10,672	10,682	10,687	10,693	10,695	10,696	10,698	10,701	10,697
Ghent 3	11,080	11,076	11,068	11,078	11,088	11,136	11,180	11,178	11,154	11,120	11,073	11,072	11,054	11,059	11,051	11,045
Ghent 4	11,051	11,017	11,114	11,127	11,163	11,260	11,236	11,257	11,188	11,075	11,053	11,049	11,028	11,024	11,028	11,021
Green River 3	12,992	13,525	13,581													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,560	10,495	10,500	10,507	10,491	10,513	10,514	10,518	10,525	10,529	10,525	10,538	10,540	10,535	10,540
Mill Creek 2	10,671	10,526	10,495	10,496	10,505	10,494	10,511	10,524	10,522	10,523	10,524	10,525	10,528	10,524	10,525	10,526
Mill Creek 3	10,500	10,671	10,691	10,606	10,593	10,594	10,597	10,593	10,599	10,600	10,604	10,604	10,609	10,609	10,611	10,615
Mill Creek 4	10,827	10,708	10,717	10,706	10,704	10,701	10,704	10,703	10,706	10,704	10,710	10,708	10,713	10,713	10,716	10,714
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,590	10,556	10,771	10,768	10,871	10,969	10,956	11,060	11,274	11,460	11,580	11,628	11,776	11,684	11,837
Trimble County CT 10	12,513	10,756	10,742	10,864	10,873	10,906	10,911	10,940	10,976	10,988	11,050	11,072	11,087	11,189	11,109	11,148
Trimble County CT 5	13,020	10,619	10,648	10,847	10,801	11,033	11,061	11,089	11,099	11,169	11,348	11,391	11,445	11,615	11,540	11,647
Trimble County CT 6	12,796	10,651	10,673	10,861	10,867	10,998	11,047	11,053	11,095	11,168	11,275	11,370	11,373	11,525	11,447	11,506
Trimble County CT 7	12,849	10,682	10,696	10,876	10,881	10,962	11,041	11,044	11,066	11,114	11,193	11,230	11,231	11,390	11,275	11,370
Trimble County CT 8	12,590	10,712	10,716	10,877	10,885	10,941	11,009	10,989	11,043	11,088	11,122	11,162	11,139	11,303	11,204	11,285
Trimble County CT 9	12,752	10,737	10,731	10,871	10,885	10,918	10,985	10,971	10,998	11,029	11,112	11,131	11,129	11,236	11,160	11,211
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,248	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,851	6,863	6,865	6,886	6,903	6,956	7,002	7,034	7,023	7,006	7,030	7,007
Brown Solar																
Green River 5						6,930	6,930	6,969	6,977	7,026	7,107	7,109	7,138	7,214	7,179	7,201
SCCT F-Class_1													9,940	9,940	9,940	9,940
SCCT F-Class_2															9,940	9,940

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Mid Carbon																
E.W. Brown 1	12,033	11,799	11,557	11,335	11,255	11,053	11,081									
E.W. Brown 10	38,371	14,109	13,798	13,928	13,945	14,069	14,060	13,801	13,767	13,969	13,959	13,898	13,904	13,883	13,811	13,774
E.W. Brown 11	30,071	13,446	13,251	13,364	13,381	13,509	13,521	13,232	13,218	13,285	13,369	13,299	13,318	13,276	13,263	13,246
E.W. Brown 2	10,729	10,727	10,629	10,529	10,464	10,464	10,524									
E.W. Brown 3	11,311	12,175	12,182	12,174	12,172	12,197	12,190	12,200	12,198	12,207	12,206	12,205	12,201	12,107	12,118	12,109
E.W. Brown 5	24,417	14,005	13,301	13,715	13,803	14,126	14,222	13,100	13,010	13,222	13,259	13,187	12,915	12,920	12,626	12,575
E.W. Brown 6	12,536	10,904	10,857	11,006	11,009	11,093	11,106	10,800	10,766	10,781	10,814	10,783	10,776	10,776	10,769	10,759
E.W. Brown 7	12,127	10,883	10,866	11,031	11,029	11,072	11,117	10,768	10,761	10,781	10,797	10,787	10,769	10,736	10,708	10,699
E.W. Brown 8	20,955	13,715	13,466	13,572	13,569	13,696	13,705	13,443	13,422	13,513	13,543	13,474	13,460	13,442	13,399	13,381
E.W. Brown 9	17,677	14,321	14,011	14,109	14,137	14,229	14,251	13,993	13,953	14,170	14,119	14,067	14,076	14,038	14,035	13,970
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,427	11,707													
Cane Run 5	10,858	10,326	10,351													
Cane Run 6	10,868	10,048	10,158													
Dix Dam 1-3																
Ghent 1	10,784	10,846	10,863	10,872	10,876	10,901	10,891	10,967	10,988	11,009	11,066	11,046	11,056	11,038	11,039	11,034
Ghent 2	10,696	10,733	10,694	10,701	10,700	10,688	10,677	10,670	10,672	10,687	10,714	10,725	10,715	10,714	10,710	10,709
Ghent 3	11,080	11,076	11,068	11,078	11,088	11,136	11,180	11,171	11,171	11,219	11,182	11,180	11,162	11,209	11,169	11,174
Ghent 4	11,051	11,017	11,114	11,127	11,163	11,260	11,236	11,282	11,280	11,344	11,319	11,311	11,309	11,324	11,298	11,299
Green River 3	12,992	13,525	13,581													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,560	10,495	10,500	10,507	10,491	10,513	10,473	10,460	10,470	10,461	10,465	10,466	10,461	10,460	10,459
Mill Creek 2	10,671	10,526	10,495	10,496	10,505	10,494	10,511	10,500	10,491	10,493	10,495	10,501	10,495	10,499	10,493	10,491
Mill Creek 3	10,500	10,671	10,691	10,606	10,593	10,594	10,597	10,602	10,600	10,603	10,623	10,625	10,624	10,622	10,620	10,619
Mill Creek 4	10,827	10,708	10,717	10,706	10,704	10,701	10,704	10,708	10,718	10,719	10,746	10,748	10,745	10,748	10,743	10,741
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,590	10,556	10,771	10,768	10,871	10,969	10,599	10,601	10,620	10,627	10,622	10,615	10,616	10,613	10,605
Trimble County CT 10	12,513	10,756	10,742	10,864	10,873	10,906	10,911	10,743	10,739	10,775	10,760	10,745	10,744	10,745	10,738	10,735
Trimble County CT 5	13,020	10,619	10,648	10,847	10,801	11,033	11,061	10,669	10,684	10,700	10,722	10,709	10,705	10,709	10,700	10,696
Trimble County CT 6	12,796	10,651	10,673	10,861	10,867	10,998	11,047	10,689	10,687	10,723	10,731	10,717	10,715	10,719	10,709	10,705
Trimble County CT 7	12,849	10,682	10,696	10,876	10,881	10,962	11,041	10,706	10,710	10,740	10,739	10,724	10,723	10,726	10,717	10,714
Trimble County CT 8	12,590	10,712	10,716	10,877	10,885	10,941	11,009	10,721	10,722	10,754	10,746	10,731	10,730	10,733	10,724	10,721
Trimble County CT 9	12,752	10,737	10,731	10,871	10,885	10,918	10,985	10,733	10,731	10,765	10,753	10,739	10,737	10,739	10,731	10,728
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,248	10,253	10,253	10,275	10,275	10,290	10,273	10,283	10,277	10,273
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,262	9,282	9,274	9,286	9,282	9,285	9,280	9,273
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,851	6,863	6,865	6,850	6,850	6,850	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,930	6,930	6,917	6,918	6,906	6,901	6,900	6,906	6,907	6,915	6,919
1x1 NGCC G/H-Class								6,612	6,591	6,591	6,591	6,591	6,591	6,591	6,591	6,591
2x1 NGCC G/H-Class_2										6,565	6,550	6,551	6,549	6,550	6,549	6,548

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Carbon Cap																
E.W. Brown 1	12,033	11,799	11,557	11,335	11,255	11,053	11,081									
E.W. Brown 10	38,371	14,109	13,798	13,928	13,945	14,069	14,060	14,138	14,031	13,973	13,973	13,940	13,929	13,908	13,877	13,765
E.W. Brown 11	30,071	13,446	13,251	13,364	13,381	13,509	13,521	13,551	13,529	13,508	13,502	13,464	13,452	13,389	13,420	13,277
E.W. Brown 2	10,729	10,727	10,629	10,529	10,464	10,464	10,524									
E.W. Brown 3	11,311	12,175	12,182	12,174	12,172	12,197	12,190	12,203	12,200	12,198	12,197	12,193	12,188	12,185	12,188	12,080
E.W. Brown 5	24,417	14,005	13,301	13,715	13,803	14,126	14,222	14,115	14,177	14,151	14,149	14,022	13,986	13,944	13,930	13,171
E.W. Brown 6	12,536	10,904	10,857	11,006	11,009	11,093	11,106	11,104	11,086	11,111	11,039	11,029	11,031	11,039	10,987	10,757
E.W. Brown 7	12,127	10,883	10,866	11,031	11,029	11,072	11,117	11,044	11,066	11,072	11,079	11,071	11,069	11,073	11,018	10,754
E.W. Brown 8	20,955	13,715	13,466	13,572	13,569	13,696	13,705	13,757	13,689	13,635	13,603	13,590	13,580	13,573	13,543	13,444
E.W. Brown 9	17,677	14,321	14,011	14,109	14,137	14,229	14,251	14,323	14,193	14,189	14,156	14,096	14,089	14,068	14,033	13,989
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,427	11,707													
Cane Run 5	10,858	10,326	10,351													
Cane Run 6	10,868	10,048	10,158													
Dix Dam 1-3																
Ghent 1	10,784	10,846	10,863	10,872	10,876	10,901	10,891	10,976	11,001	10,989	11,028	11,003	11,020	10,998	11,008	10,998
Ghent 2	10,696	10,733	10,694	10,701	10,700	10,688	10,677	10,669	10,657	10,659	10,664	10,663	10,667	10,671	10,687	10,675
Ghent 3	11,080	11,076	11,068	11,078	11,088	11,136	11,180	11,215	11,213	11,209	11,179	11,179	11,162	11,189	11,163	11,175
Ghent 4	11,051	11,017	11,114	11,127	11,163	11,260	11,236	11,300	11,301	11,308	11,299	11,295	11,288	11,294	11,278	11,272
Green River 3	12,992	13,525	13,581													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,560	10,495	10,500	10,507	10,491	10,513	10,486	10,488	10,482	10,471	10,469	10,472	10,465	10,472	10,455
Mill Creek 2	10,671	10,526	10,495	10,496	10,505	10,494	10,511	10,490	10,495	10,492	10,490	10,486	10,487	10,483	10,496	10,489
Mill Creek 3	10,500	10,671	10,691	10,606	10,593	10,594	10,597	10,596	10,589	10,592	10,594	10,598	10,597	10,601	10,617	10,608
Mill Creek 4	10,827	10,708	10,717	10,706	10,704	10,701	10,704	10,700	10,702	10,696	10,703	10,700	10,704	10,705	10,729	10,724
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,590	10,556	10,771	10,768	10,871	10,969	10,989	11,024	11,048	11,015	11,009	11,030	11,024	10,816	10,586
Trimble County CT 10	12,513	10,756	10,742	10,864	10,873	10,906	10,911	10,926	10,947	10,983	10,921	10,934	10,902	10,929	10,880	10,719
Trimble County CT 5	13,020	10,619	10,648	10,847	10,801	11,033	11,061	10,999	11,114	11,134	11,081	11,092	11,056	11,099	10,948	10,668
Trimble County CT 6	12,796	10,651	10,673	10,861	10,867	10,998	11,047	11,002	11,071	11,122	11,052	11,077	11,051	11,090	10,948	10,681
Trimble County CT 7	12,849	10,682	10,696	10,876	10,881	10,962	11,041	10,994	11,056	11,086	11,025	11,041	11,003	11,044	10,903	10,693
Trimble County CT 8	12,590	10,712	10,716	10,877	10,885	10,941	11,009	10,993	11,031	11,065	10,999	11,022	10,992	11,027	10,894	10,703
Trimble County CT 9	12,752	10,737	10,731	10,871	10,885	10,918	10,985	10,945	10,975	11,003	10,938	10,973	10,927	10,955	10,890	10,712
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,248	10,247	10,249	10,248	10,248	10,248	10,247	10,248	10,254	10,256
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,264
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,851	6,863	6,865	6,851	6,861	6,861	6,857	6,876	6,870	6,869	6,850	6,852
Brown Solar																
Green River 5						6,930	6,930	6,924	6,974	6,985	6,952	6,958	6,948	6,943	6,875	6,912
2x1 NGCC G/H-Class_1								6,595	6,601	6,596	6,571	6,574	6,557	6,554	6,550	6,547

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Zero Carbon																
E.W. Brown 1	12,033	11,252	11,158	11,043	11,066	11,076	11,245	11,165	11,165	11,010	10,998	10,954	10,955	10,953	10,944	10,959
E.W. Brown 10	38,371	13,067	12,870	13,124	12,950	12,985	12,923	12,913	12,911	12,906	12,999	13,018	13,037	13,023	13,011	13,014
E.W. Brown 11	30,071	12,948	12,851	12,899	12,859	12,883	12,862	12,855	12,852	12,847	12,867	12,855	12,912	12,859	12,881	12,891
E.W. Brown 2	10,729	10,612	10,490	10,472	10,416	10,475	10,509	10,465	10,469	10,444	10,434	10,420	10,433	10,420	10,408	10,416
E.W. Brown 3	11,311	12,199	12,202	12,203	12,203	12,208	12,208	12,208	12,207	12,207	12,207	12,207	12,203	12,205	12,205	12,205
E.W. Brown 5	24,417	12,261	12,204	12,184	12,201	12,208	12,232	12,183	12,177	12,182	12,198	12,165	12,191	12,173	12,161	12,172
E.W. Brown 6	12,536	10,692	10,614	10,727	10,713	10,723	10,705	10,719	10,723	10,713	10,727	10,726	10,725	10,717	10,725	10,709
E.W. Brown 7	12,127	10,643	10,567	10,680	10,667	10,679	10,640	10,664	10,674	10,665	10,678	10,679	10,679	10,668	10,684	10,660
E.W. Brown 8	20,955	13,054	12,893	13,021	12,887	12,916	12,914	12,907	12,902	12,897	12,915	12,910	12,998	12,934	12,962	12,975
E.W. Brown 9	17,677	13,200	12,902	13,222	12,989	13,035	12,997	12,992	13,010	12,989	13,126	13,125	13,168	13,131	13,117	13,126
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,593	11,834													
Cane Run 5	10,858	10,338	10,486													
Cane Run 6	10,868	10,081	10,458													
Dix Dam 1-3																
Ghent 1	10,784	10,889	11,037	10,952	11,090	11,133	11,173	11,120	11,144	11,127	11,135	11,112	11,079	11,089	11,076	11,049
Ghent 2	10,696	10,723	10,689	10,683	10,666	10,677	10,713	10,711	10,688	10,698	10,679	10,694	10,678	10,682	10,678	10,672
Ghent 3	11,080	11,147	11,232	11,188	11,182	11,209	11,251	11,223	11,233	11,235	11,239	11,217	11,210	11,252	11,214	11,231
Ghent 4	11,051	10,960	10,959	10,950	10,950	10,954	10,967	10,962	10,948	10,936	10,938	10,941	10,942	10,948	10,943	10,947
Green River 3	12,992	13,429	13,548													
Green River 4	11,155	10,502	10,448													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,537	10,467	10,444	10,441	10,447	10,441	10,450	10,444	10,460	10,452	10,458	10,453	10,451	10,451	10,451
Mill Creek 2	10,671	10,524	10,498	10,483	10,475	10,486	10,482	10,482	10,483	10,485	10,481	10,492	10,490	10,493	10,490	10,499
Mill Creek 3	10,500	10,641	10,668	10,612	10,635	10,646	10,654	10,651	10,640	10,642	10,611	10,622	10,616	10,617	10,615	10,611
Mill Creek 4	10,827	10,699	10,810	10,711	10,724	10,758	10,761	10,739	10,729	10,727	10,722	10,731	10,726	10,729	10,725	10,723
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,438	10,430	10,450	10,432	10,469	10,437	10,442	10,436	10,446	10,441	10,453	10,465	10,464	10,460	10,457
Trimble County CT 10	12,513	10,591	10,404	10,583	10,491	10,534	10,546	10,557	10,581	10,576	10,637	10,622	10,659	10,636	10,655	10,644
Trimble County CT 5	13,020	10,461	10,363	10,511	10,400	10,458	10,440	10,476	10,483	10,475	10,515	10,523	10,585	10,537	10,578	10,555
Trimble County CT 6	12,796	10,485	10,364	10,514	10,413	10,473	10,462	10,496	10,494	10,503	10,539	10,542	10,604	10,558	10,597	10,575
Trimble County CT 7	12,849	10,510	10,379	10,537	10,431	10,510	10,479	10,511	10,519	10,521	10,564	10,561	10,621	10,578	10,615	10,594
Trimble County CT 8	12,590	10,537	10,379	10,551	10,445	10,505	10,500	10,526	10,540	10,539	10,589	10,581	10,635	10,598	10,630	10,613
Trimble County CT 9	12,752	10,564	10,392	10,567	10,471	10,508	10,523	10,541	10,560	10,558	10,613	10,601	10,648	10,618	10,644	10,629
Trimble County 1 (75%)	10,762	10,258	10,250	10,248	10,249	10,248	10,255	10,251	10,250	10,251	10,249	10,249	10,248	10,249	10,249	10,248
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,850	6,850	6,852	6,850	6,850	6,850	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,926	6,931	6,931	6,931	6,931	6,931	6,930	6,930	6,930	6,931	6,930

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Mid Carbon																
E.W. Brown 1	12,033	11,252	11,158	11,043	11,066	11,076	11,245									
E.W. Brown 10	38,371	13,067	12,870	13,124	12,950	12,985	12,923	12,633	12,590	12,604	12,549	12,499	12,446	12,231	12,244	12,263
E.W. Brown 11	30,071	12,948	12,851	12,899	12,859	12,883	12,862	12,731	12,648	12,663	12,666	12,607	12,560	12,402	12,238	12,303
E.W. Brown 2	10,729	10,612	10,490	10,472	10,416	10,475	10,509									
E.W. Brown 3	11,311	12,199	12,202	12,203	12,203	12,208	12,208	12,206	12,205	12,205	12,205	12,203	12,199	12,183	12,186	12,182
E.W. Brown 5	24,417	12,261	12,204	12,184	12,201	12,208	12,232	12,103	12,067	12,043	12,048	12,045	12,041	12,111	12,106	12,099
E.W. Brown 6	12,536	10,692	10,614	10,727	10,713	10,723	10,705	10,452	10,441	10,442	10,433	10,437	10,432	10,448	10,441	10,437
E.W. Brown 7	12,127	10,643	10,567	10,680	10,667	10,679	10,640	10,457	10,443	10,441	10,432	10,438	10,433	10,448	10,440	10,434
E.W. Brown 8	20,955	13,054	12,893	13,021	12,887	12,916	12,914	12,724	12,634	12,655	12,650	12,592	12,540	12,384	12,238	12,304
E.W. Brown 9	17,677	13,200	12,902	13,222	12,989	13,035	12,997	12,620	12,568	12,587	12,532	12,477	12,423	12,215	12,248	12,259
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,593	11,834													
Cane Run 5	10,858	10,338	10,486													
Cane Run 6	10,868	10,081	10,458													
Dix Dam 1-3																
Ghent 1	10,784	10,889	11,037	10,952	11,090	11,133	11,173	11,125	11,134	11,107	11,123	11,146	11,147	11,157	11,139	11,155
Ghent 2	10,696	10,723	10,689	10,683	10,666	10,677	10,713	10,816	10,810	10,814	10,797	10,805	10,801	10,802	10,807	10,818
Ghent 3	11,080	11,147	11,232	11,188	11,182	11,209	11,251	11,205	11,202	11,241	11,241	11,227	11,221	11,238	11,223	11,226
Ghent 4	11,051	10,960	10,959	10,950	10,950	10,954	10,967	11,273	11,234	11,210	11,137	11,200	11,207	11,266	11,253	11,331
Green River 3	12,992	13,429	13,548													
Green River 4	11,155	10,502	10,448													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,537	10,467	10,444	10,441	10,447	10,441	10,547	10,518	10,544	10,525	10,533	10,510	10,540	10,519	10,531
Mill Creek 2	10,671	10,524	10,498	10,483	10,475	10,486	10,482	10,551	10,551	10,540	10,539	10,529	10,524	10,548	10,529	10,517
Mill Creek 3	10,500	10,641	10,668	10,612	10,635	10,646	10,654	10,636	10,642	10,643	10,641	10,639	10,637	10,643	10,631	10,649
Mill Creek 4	10,827	10,699	10,810	10,711	10,724	10,758	10,761	10,800	10,787	10,781	10,784	10,780	10,784	10,784	10,782	10,791
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,438	10,430	10,450	10,432	10,469	10,437	10,464	10,454	10,466	10,456	10,462	10,452	10,473	10,464	10,458
Trimble County CT 10	12,513	10,591	10,404	10,583	10,491	10,534	10,546	10,384	10,374	10,377	10,377	10,377	10,373	10,380	10,376	10,374
Trimble County CT 5	13,020	10,461	10,363	10,511	10,400	10,458	10,440	10,366	10,366	10,360	10,366	10,368	10,365	10,369	10,368	10,365
Trimble County CT 6	12,796	10,485	10,364	10,514	10,413	10,473	10,462	10,369	10,359	10,369	10,367	10,370	10,368	10,370	10,368	10,366
Trimble County CT 7	12,849	10,510	10,379	10,537	10,431	10,510	10,479	10,373	10,368	10,371	10,368	10,372	10,368	10,372	10,369	10,367
Trimble County CT 8	12,590	10,537	10,379	10,551	10,445	10,505	10,500	10,375	10,369	10,372	10,369	10,373	10,369	10,373	10,370	10,368
Trimble County CT 9	12,752	10,564	10,392	10,567	10,471	10,508	10,523	10,377	10,372	10,375	10,372	10,375	10,370	10,378	10,372	10,371
Trimble County 1 (75%)	10,762	10,258	10,250	10,248	10,249	10,248	10,255	10,383	10,355	10,360	10,332	10,351	10,323	10,345	10,367	10,392
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,328	9,321	9,329	9,313	9,320	9,315	9,313	9,322	9,311
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,850	6,850	6,852	6,850	6,850	6,850	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,926	6,931	6,927	6,928	6,927	6,928	6,928	6,928	6,927	6,928	6,929

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Carbon Cap																
E.W. Brown 1	12,033	11,252	11,158	11,043	11,066	11,076	11,245									
E.W. Brown 10	38,371	13,067	12,870	13,124	12,950	12,985	12,923	13,089	13,105	13,096	13,134	13,184	13,149	13,199	13,182	13,143
E.W. Brown 11	30,071	12,948	12,851	12,899	12,859	12,883	12,862	12,889	12,875	12,871	12,880	12,867	12,900	12,874	12,880	12,880
E.W. Brown 2	10,729	10,612	10,490	10,472	10,416	10,475	10,509									
E.W. Brown 3	11,311	12,199	12,202	12,203	12,203	12,208	12,208	12,206	12,205	12,205	12,204	12,204	12,200	12,201	12,202	12,201
E.W. Brown 5	24,417	12,261	12,204	12,184	12,201	12,208	12,232	12,174	12,165	12,173	12,229	12,197	12,299	12,221	12,200	12,261
E.W. Brown 6	12,536	10,692	10,614	10,727	10,713	10,723	10,705	10,719	10,723	10,713	10,727	10,726	10,725	10,717	10,725	10,708
E.W. Brown 7	12,127	10,643	10,567	10,680	10,667	10,679	10,640	10,664	10,674	10,665	10,678	10,679	10,679	10,668	10,684	10,659
E.W. Brown 8	20,955	13,054	12,893	13,021	12,887	12,916	12,914	12,994	12,985	12,980	12,992	12,979	13,014	12,983	12,988	12,981
E.W. Brown 9	17,677	13,200	12,902	13,222	12,989	13,035	12,997	13,174	13,172	13,163	13,239	13,303	13,355	13,323	13,301	13,315
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,593	11,834													
Cane Run 5	10,858	10,338	10,486													
Cane Run 6	10,868	10,081	10,458													
Dix Dam 1-3																
Ghent 1	10,784	10,889	11,037	10,952	11,090	11,133	11,173	11,121	11,144	11,128	11,135	11,113	11,080	11,090	11,076	11,049
Ghent 2	10,696	10,723	10,689	10,683	10,666	10,677	10,713	10,711	10,688	10,698	10,679	10,694	10,678	10,682	10,678	10,672
Ghent 3	11,080	11,147	11,232	11,188	11,182	11,209	11,251	11,225	11,236	11,237	11,241	11,219	11,210	11,253	11,215	11,232
Ghent 4	11,051	10,960	10,959	10,950	10,950	10,954	10,967	10,962	10,948	10,936	10,938	10,941	10,942	10,948	10,943	10,947
Green River 3	12,992	13,429	13,548													
Green River 4	11,155	10,502	10,448													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,537	10,467	10,444	10,441	10,447	10,441	10,450	10,444	10,460	10,452	10,458	10,452	10,451	10,451	10,451
Mill Creek 2	10,671	10,524	10,498	10,483	10,475	10,486	10,482	10,482	10,483	10,485	10,481	10,492	10,490	10,493	10,490	10,499
Mill Creek 3	10,500	10,641	10,668	10,612	10,635	10,646	10,654	10,651	10,640	10,642	10,611	10,622	10,616	10,617	10,615	10,611
Mill Creek 4	10,827	10,699	10,810	10,711	10,724	10,758	10,761	10,739	10,729	10,727	10,722	10,731	10,726	10,729	10,725	10,723
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,438	10,430	10,450	10,432	10,469	10,437	10,442	10,436	10,446	10,441	10,453	10,465	10,464	10,460	10,457
Trimble County CT 10	12,513	10,591	10,404	10,583	10,491	10,534	10,546	10,557	10,581	10,576	10,637	10,622	10,659	10,636	10,655	10,644
Trimble County CT 5	13,020	10,461	10,363	10,511	10,400	10,458	10,440	10,476	10,483	10,475	10,515	10,523	10,585	10,537	10,578	10,555
Trimble County CT 6	12,796	10,485	10,364	10,514	10,413	10,473	10,462	10,496	10,494	10,503	10,539	10,542	10,604	10,558	10,597	10,575
Trimble County CT 7	12,849	10,510	10,379	10,537	10,431	10,510	10,479	10,511	10,519	10,521	10,564	10,561	10,621	10,578	10,615	10,594
Trimble County CT 8	12,590	10,537	10,379	10,551	10,445	10,505	10,500	10,526	10,540	10,539	10,589	10,581	10,635	10,598	10,630	10,613
Trimble County CT 9	12,752	10,564	10,392	10,567	10,471	10,508	10,523	10,541	10,560	10,558	10,613	10,601	10,648	10,618	10,644	10,629
Trimble County 1 (75%)	10,762	10,258	10,250	10,248	10,249	10,248	10,255	10,251	10,250	10,251	10,249	10,249	10,248	10,249	10,249	10,248
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,850	6,850	6,852	6,850	6,850	6,850	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,926	6,931	6,931	6,931	6,931	6,931	6,930	6,930	6,930	6,931	6,930

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-High Load-Zero Carbon																
E.W. Brown 1	12,033	11,181	11,105	10,988	11,039	11,016	11,274	11,093	11,083	10,950	10,930	10,892	10,888	10,966	10,902	10,897
E.W. Brown 10	38,371	12,977	12,780	13,006	12,848	12,887	12,893	12,876	12,869	12,861	12,935	12,947	12,956	13,010	12,981	12,979
E.W. Brown 11	30,071	12,871	12,792	12,832	12,791	12,820	12,835	12,829	12,821	12,816	12,830	12,819	12,860	12,847	12,864	12,873
E.W. Brown 2	10,729	10,603	10,512	10,478	10,414	10,464	10,587	10,446	10,447	10,424	10,412	10,400	10,408	10,440	10,392	10,392
E.W. Brown 3	11,311	12,179	12,181	12,180	12,179	12,199	12,207	12,207	12,206	12,205	12,204	12,202	12,198	12,206	12,206	12,206
E.W. Brown 5	24,417	12,244	12,181	12,166	12,186	12,175	12,254	12,155	12,148	12,149	12,157	12,132	12,150	12,189	12,141	12,139
E.W. Brown 6	12,536	10,624	10,575	10,673	10,649	10,671	10,637	10,713	10,713	10,703	10,712	10,710	10,707	10,685	10,732	10,722
E.W. Brown 7	12,127	10,592	10,545	10,635	10,614	10,642	10,580	10,668	10,672	10,662	10,671	10,672	10,669	10,637	10,694	10,682
E.W. Brown 8	20,955	12,950	12,822	12,926	12,811	12,847	12,877	12,874	12,866	12,859	12,872	12,867	12,932	12,920	12,939	12,951
E.W. Brown 9	17,677	13,088	12,811	13,097	12,884	12,933	12,967	12,948	12,959	12,935	13,048	13,041	13,069	13,112	13,081	13,091
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,543	11,770													
Cane Run 5	10,858	10,333	10,441													
Cane Run 6	10,868	10,082	10,346													
Dix Dam 1-3																
Ghent 1	10,784	10,860	10,970	10,898	11,020	11,066	11,145	11,090	11,106	11,090	11,095	11,073	11,055	11,086	11,098	11,097
Ghent 2	10,696	10,728	10,690	10,688	10,676	10,673	10,705	10,732	10,709	10,714	10,696	10,710	10,691	10,708	10,743	10,732
Ghent 3	11,080	11,119	11,173	11,138	11,149	11,175	11,290	11,197	11,201	11,200	11,201	11,182	11,174	11,271	11,195	11,196
Ghent 4	11,051	10,976	10,964	10,964	10,964	10,951	10,950	10,990	10,968	10,957	10,950	10,959	10,954	10,962	10,994	11,000
Green River 3	12,992	13,433	13,532													
Green River 4	11,155	10,502	10,443													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,548	10,462	10,452	10,448	10,445	10,440	10,453	10,448	10,467	10,454	10,462	10,454	10,452	10,457	10,460
Mill Creek 2	10,671	10,526	10,492	10,486	10,481	10,482	10,481	10,490	10,488	10,490	10,488	10,497	10,496	10,497	10,508	10,507
Mill Creek 3	10,500	10,648	10,674	10,601	10,618	10,631	10,643	10,646	10,640	10,641	10,613	10,622	10,617	10,621	10,628	10,626
Mill Creek 4	10,827	10,701	10,776	10,705	10,713	10,733	10,750	10,748	10,738	10,736	10,728	10,735	10,732	10,744	10,755	10,750
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,434	10,430	10,446	10,432	10,467	10,436	10,447	10,440	10,451	10,453	10,457	10,473	10,469	10,509	10,498
Trimble County CT 10	12,513	10,521	10,378	10,541	10,436	10,488	10,513	10,574	10,591	10,584	10,629	10,616	10,637	10,630	10,662	10,659
Trimble County CT 5	13,020	10,416	10,360	10,471	10,369	10,413	10,422	10,498	10,506	10,493	10,530	10,530	10,577	10,542	10,623	10,611
Trimble County CT 6	12,796	10,435	10,361	10,479	10,381	10,426	10,437	10,514	10,514	10,519	10,551	10,548	10,592	10,559	10,632	10,623
Trimble County CT 7	12,849	10,453	10,363	10,500	10,398	10,449	10,451	10,529	10,540	10,535	10,571	10,565	10,606	10,577	10,641	10,633
Trimble County CT 8	12,590	10,474	10,365	10,514	10,401	10,456	10,470	10,544	10,557	10,552	10,591	10,583	10,617	10,595	10,649	10,643
Trimble County CT 9	12,752	10,497	10,380	10,528	10,419	10,469	10,486	10,559	10,575	10,568	10,611	10,600	10,628	10,612	10,656	10,651
Trimble County 1 (75%)	10,762	10,258	10,250	10,249	10,249	10,249	10,254	10,257	10,253	10,254	10,251	10,252	10,250	10,257	10,263	10,262
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,263	9,262	9,262	9,262	9,261	9,261	9,274	9,275	9,270
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,850	6,850	6,852	6,850	6,850	6,850	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,929	6,930	6,928	6,929	6,929	6,929	6,927	6,928	6,921	6,917	6,918
2x1 NGCC G/H-Class_1							6,558	6,547	6,547	6,547	6,547	6,547	6,547	6,548	6,548	6,548
2x1 NGCC G/H-Class_2														6,559	6,547	6,547

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Zero Carbon																
E.W. Brown 1	12,033	11,212	11,088	11,009	11,044	11,038	11,178	11,097	11,091	10,961	10,945	10,904	10,963	10,930	10,920	10,918
E.W. Brown 10	38,371	13,027	12,825	13,065	12,901	12,940	12,883	12,871	12,863	12,857	12,930	12,946	13,015	13,010	12,998	12,997
E.W. Brown 11	30,071	12,913	12,818	12,867	12,827	12,852	12,833	12,829	12,819	12,815	12,830	12,820	12,896	12,852	12,873	12,885
E.W. Brown 2	10,729	10,609	10,468	10,474	10,409	10,467	10,496	10,451	10,453	10,434	10,419	10,408	10,451	10,407	10,399	10,400
E.W. Brown 3	11,311	12,191	12,194	12,194	12,193	12,205	12,204	12,204	12,203	12,201	12,201	12,198	12,204	12,205	12,206	12,205
E.W. Brown 5	24,417	12,249	12,171	12,171	12,188	12,186	12,199	12,155	12,147	12,154	12,159	12,136	12,191	12,158	12,150	12,147
E.W. Brown 6	12,536	10,654	10,591	10,701	10,682	10,698	10,675	10,690	10,696	10,685	10,698	10,691	10,685	10,728	10,730	10,721
E.W. Brown 7	12,127	10,617	10,555	10,659	10,642	10,661	10,619	10,641	10,653	10,643	10,659	10,653	10,658	10,683	10,692	10,678
E.W. Brown 8	20,955	13,004	12,853	12,974	12,851	12,882	12,878	12,872	12,861	12,858	12,872	12,868	12,975	12,924	12,952	12,965
E.W. Brown 9	17,677	13,150	12,846	13,158	12,941	12,986	12,953	12,938	12,946	12,927	13,038	13,037	13,135	13,117	13,101	13,112
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,562	11,800													
Cane Run 5	10,858	10,340	10,461													
Cane Run 6	10,868	10,082	10,398													
Dix Dam 1-3																
Ghent 1	10,784	10,874	10,997	10,920	11,047	11,089	11,121	11,079	11,093	11,074	11,088	11,064	11,051	11,099	11,088	11,103
Ghent 2	10,696	10,725	10,689	10,684	10,670	10,672	10,702	10,697	10,679	10,688	10,669	10,682	10,685	10,713	10,709	10,703
Ghent 3	11,080	11,125	11,190	11,154	11,158	11,182	11,230	11,194	11,197	11,203	11,196	11,185	11,244	11,228	11,201	11,202
Ghent 4	11,051	10,971	10,961	10,959	10,959	10,949	10,961	10,958	10,953	10,943	10,945	10,951	10,942	10,963	10,960	10,958
Green River 3	12,992	13,430	13,540													
Green River 4	11,155	10,502	10,444													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,544	10,466	10,447	10,445	10,445	10,445	10,454	10,450	10,460	10,458	10,461	10,451	10,455	10,450	10,451
Mill Creek 2	10,671	10,525	10,497	10,484	10,477	10,484	10,481	10,484	10,484	10,486	10,483	10,494	10,491	10,503	10,496	10,499
Mill Creek 3	10,500	10,644	10,672	10,607	10,625	10,637	10,645	10,646	10,628	10,628	10,605	10,613	10,608	10,624	10,624	10,622
Mill Creek 4	10,827	10,700	10,787	10,708	10,717	10,741	10,747	10,725	10,720	10,714	10,713	10,718	10,720	10,750	10,742	10,739
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,435	10,430	10,447	10,432	10,458	10,433	10,432	10,430	10,434	10,435	10,446	10,464	10,472	10,483	10,472
Trimble County CT 10	12,513	10,549	10,390	10,554	10,461	10,509	10,513	10,525	10,541	10,537	10,589	10,569	10,648	10,654	10,656	10,651
Trimble County CT 5	13,020	10,440	10,361	10,490	10,379	10,433	10,415	10,446	10,452	10,443	10,475	10,478	10,553	10,575	10,604	10,588
Trimble County CT 6	12,796	10,457	10,362	10,494	10,403	10,453	10,436	10,463	10,459	10,470	10,497	10,496	10,574	10,592	10,617	10,602
Trimble County CT 7	12,849	10,478	10,364	10,513	10,410	10,478	10,453	10,480	10,485	10,487	10,520	10,513	10,594	10,609	10,628	10,616
Trimble County CT 8	12,590	10,501	10,380	10,526	10,417	10,481	10,470	10,496	10,503	10,504	10,543	10,532	10,614	10,625	10,639	10,629
Trimble County CT 9	12,752	10,525	10,379	10,540	10,441	10,485	10,490	10,511	10,522	10,521	10,566	10,550	10,632	10,640	10,648	10,640
Trimble County 1 (75%)	10,762	10,258	10,252	10,249	10,249	10,248	10,252	10,250	10,250	10,250	10,249	10,249	10,251	10,256	10,253	10,250
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,262	9,262	9,262	9,262
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,850	6,850	6,852	6,850	6,850	6,850	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,928	6,931	6,931	6,931	6,931	6,931	6,931	6,928	6,924	6,926	6,927
2x1 NGCC G/H-Class_1													6,558	6,547	6,547	6,547

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Mid Carbon																
E.W. Brown 1	12,033	11,212	11,088	11,009	11,044	11,038	11,178									
E.W. Brown 10	38,371	13,027	12,825	13,065	12,901	12,940	12,883	12,615	12,596	12,615	12,618	12,599	12,565	12,349	12,334	12,352
E.W. Brown 11	30,071	12,913	12,818	12,867	12,827	12,852	12,833	12,710	12,656	12,675	12,724	12,675	12,655	12,529	12,335	12,403
E.W. Brown 2	10,729	10,609	10,468	10,474	10,409	10,467	10,496									
E.W. Brown 3	11,311	12,191	12,194	12,194	12,193	12,205	12,204	12,205	12,204	12,208	12,208	12,208	12,204	12,198	12,199	12,197
E.W. Brown 5	24,417	12,249	12,171	12,171	12,188	12,186	12,199	12,114	12,059	12,088	12,046	12,045	12,040	12,145	12,091	12,125
E.W. Brown 6	12,536	10,654	10,591	10,701	10,682	10,698	10,675	10,444	10,452	10,462	10,498	10,509	10,489	10,571	10,561	10,549
E.W. Brown 7	12,127	10,617	10,555	10,659	10,642	10,661	10,619	10,452	10,456	10,463	10,504	10,520	10,502	10,560	10,550	10,551
E.W. Brown 8	20,955	13,004	12,853	12,974	12,851	12,882	12,878	12,700	12,644	12,660	12,717	12,665	12,642	12,511	12,326	12,402
E.W. Brown 9	17,677	13,150	12,846	13,158	12,941	12,986	12,953	12,598	12,575	12,595	12,606	12,584	12,546	12,329	12,330	12,342
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,562	11,800													
Cane Run 5	10,858	10,340	10,461													
Cane Run 6	10,868	10,082	10,398													
Dix Dam 1-3																
Ghent 1	10,784	10,874	10,997	10,920	11,047	11,089	11,121	11,120	11,100	11,149	11,142	11,175	11,168	11,166	11,154	11,150
Ghent 2	10,696	10,725	10,689	10,684	10,670	10,672	10,702	10,798	10,807	10,834	10,829	10,813	10,816	10,803	10,803	10,818
Ghent 3	11,080	11,125	11,190	11,154	11,158	11,182	11,230	11,198	11,184	11,270	11,259	11,250	11,243	11,244	11,236	11,229
Ghent 4	11,051	10,971	10,961	10,959	10,959	10,949	10,961	11,198	11,253	11,271	11,316	11,389	11,384	11,493	11,426	11,467
Green River 3	12,992	13,430	13,540													
Green River 4	11,155	10,502	10,444													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,544	10,466	10,447	10,445	10,445	10,445	10,533	10,527	10,577	10,580	10,576	10,566	10,600	10,553	10,557
Mill Creek 2	10,671	10,525	10,497	10,484	10,477	10,484	10,481	10,543	10,556	10,549	10,559	10,544	10,552	10,589	10,553	10,536
Mill Creek 3	10,500	10,644	10,672	10,607	10,625	10,637	10,645	10,638	10,639	10,651	10,643	10,638	10,638	10,637	10,633	10,648
Mill Creek 4	10,827	10,700	10,787	10,708	10,717	10,741	10,747	10,800	10,783	10,791	10,787	10,782	10,782	10,776	10,779	10,786
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,435	10,430	10,447	10,432	10,458	10,433	10,468	10,469	10,594	10,643	10,698	10,638	10,704	10,655	10,630
Trimble County CT 10	12,513	10,549	10,390	10,554	10,461	10,509	10,513	10,383	10,381	10,432	10,459	10,481	10,456	10,481	10,457	10,451
Trimble County CT 5	13,020	10,440	10,361	10,490	10,379	10,433	10,415	10,369	10,372	10,389	10,442	10,481	10,461	10,491	10,464	10,440
Trimble County CT 6	12,796	10,457	10,362	10,494	10,403	10,453	10,436	10,370	10,365	10,437	10,447	10,486	10,467	10,487	10,466	10,443
Trimble County CT 7	12,849	10,478	10,364	10,513	10,410	10,478	10,453	10,380	10,379	10,436	10,453	10,486	10,467	10,488	10,477	10,452
Trimble County CT 8	12,590	10,501	10,380	10,526	10,417	10,481	10,470	10,379	10,380	10,437	10,459	10,487	10,463	10,485	10,463	10,452
Trimble County CT 9	12,752	10,525	10,379	10,540	10,441	10,485	10,490	10,381	10,383	10,428	10,455	10,485	10,462	10,488	10,465	10,459
Trimble County 1 (75%)	10,762	10,258	10,252	10,249	10,249	10,248	10,252	10,356	10,376	10,407	10,465	10,479	10,449	10,498	10,501	10,550
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,334	9,346	9,411	9,470	9,475	9,467	9,436	9,438	9,431
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,850	6,850	6,852	6,850	6,850	6,850	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,928	6,931	6,927	6,926	6,916	6,912	6,909	6,912	6,909	6,910	6,912
1x1 NGCC G/H-Class								6,612	6,591	6,591	6,591	6,591	6,591	6,591	6,591	6,591
2x1 NGCC G/H-Class_2										6,559	6,547	6,550	6,549	6,551	6,549	6,549

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Carbon Cap																
E.W. Brown 1	12,033	11,212	11,088	11,009	11,044	11,038	11,178									
E.W. Brown 10	38,371	13,027	12,825	13,065	12,901	12,940	12,883	13,080	13,115	13,101	13,138	13,183	13,131	13,179	13,162	13,117
E.W. Brown 11	30,071	12,913	12,818	12,867	12,827	12,852	12,833	12,888	12,877	12,871	12,878	12,865	12,898	12,865	12,873	12,875
E.W. Brown 2	10,729	10,609	10,468	10,474	10,409	10,467	10,496									
E.W. Brown 3	11,311	12,191	12,194	12,194	12,193	12,205	12,204	12,208	12,207	12,206	12,206	12,205	12,201	12,202	12,203	12,202
E.W. Brown 5	24,417	12,249	12,171	12,171	12,188	12,186	12,199	12,200	12,166	12,165	12,202	12,191	12,278	12,197	12,182	12,232
E.W. Brown 6	12,536	10,654	10,591	10,701	10,682	10,698	10,675	10,683	10,734	10,725	10,738	10,735	10,734	10,728	10,730	10,720
E.W. Brown 7	12,127	10,617	10,555	10,659	10,642	10,661	10,619	10,620	10,689	10,680	10,695	10,691	10,692	10,683	10,692	10,678
E.W. Brown 8	20,955	13,004	12,853	12,974	12,851	12,882	12,878	12,989	12,990	12,983	12,994	12,976	13,011	12,973	12,977	12,976
E.W. Brown 9	17,677	13,150	12,846	13,158	12,941	12,986	12,953	13,160	13,185	13,171	13,244	13,303	13,335	13,299	13,277	13,283
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,562	11,800													
Cane Run 5	10,858	10,340	10,461													
Cane Run 6	10,868	10,082	10,398													
Dix Dam 1-3																
Ghent 1	10,784	10,874	10,997	10,920	11,047	11,089	11,121	11,150	11,134	11,123	11,124	11,105	11,112	11,100	11,088	11,104
Ghent 2	10,696	10,725	10,689	10,684	10,670	10,672	10,702	10,707	10,734	10,735	10,717	10,732	10,714	10,713	10,709	10,703
Ghent 3	11,080	11,125	11,190	11,154	11,158	11,182	11,230	11,265	11,226	11,226	11,223	11,211	11,203	11,229	11,202	11,202
Ghent 4	11,051	10,971	10,961	10,959	10,959	10,949	10,961	10,965	10,971	10,968	10,952	10,969	10,954	10,963	10,960	10,958
Green River 3	12,992	13,430	13,540													
Green River 4	11,155	10,502	10,444													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,544	10,466	10,447	10,445	10,445	10,445	10,452	10,446	10,472	10,451	10,463	10,450	10,455	10,450	10,451
Mill Creek 2	10,671	10,525	10,497	10,484	10,477	10,484	10,481	10,486	10,491	10,494	10,490	10,501	10,497	10,503	10,496	10,499
Mill Creek 3	10,500	10,644	10,672	10,607	10,625	10,637	10,645	10,655	10,649	10,648	10,624	10,626	10,626	10,624	10,624	10,622
Mill Creek 4	10,827	10,700	10,787	10,708	10,717	10,741	10,747	10,732	10,753	10,748	10,740	10,746	10,746	10,750	10,742	10,739
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,435	10,430	10,447	10,432	10,458	10,433	10,447	10,452	10,457	10,462	10,463	10,485	10,472	10,483	10,472
Trimble County CT 10	12,513	10,549	10,390	10,554	10,461	10,509	10,513	10,534	10,618	10,609	10,667	10,652	10,662	10,654	10,656	10,651
Trimble County CT 5	13,020	10,440	10,361	10,490	10,379	10,433	10,415	10,464	10,534	10,521	10,576	10,562	10,610	10,575	10,604	10,588
Trimble County CT 6	12,796	10,457	10,362	10,494	10,403	10,453	10,436	10,478	10,541	10,545	10,596	10,581	10,623	10,592	10,617	10,602
Trimble County CT 7	12,849	10,478	10,364	10,513	10,410	10,478	10,453	10,494	10,567	10,562	10,616	10,600	10,635	10,609	10,628	10,616
Trimble County CT 8	12,590	10,501	10,380	10,526	10,417	10,481	10,470	10,507	10,584	10,578	10,635	10,618	10,645	10,625	10,639	10,629
Trimble County CT 9	12,752	10,525	10,379	10,540	10,441	10,485	10,490	10,521	10,601	10,594	10,652	10,636	10,654	10,640	10,648	10,640
Trimble County 1 (75%)	10,762	10,258	10,252	10,249	10,249	10,248	10,252	10,258	10,257	10,261	10,253	10,257	10,251	10,256	10,253	10,250
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,264	9,264	9,264	9,263	9,263	9,263	9,262	9,262	9,262
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,860	6,850	6,850	6,850	6,852	6,850	6,850	6,850	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						6,928	6,931	6,927	6,927	6,926	6,927	6,924	6,925	6,924	6,926	6,927
2x1 NGCC G/H-Class_1								6,558	6,547	6,547	6,547	6,547	6,547	6,547	6,547	6,547

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Zero Carbon																
E.W. Brown 1	12,033	11,379	11,384	11,002	11,149	11,410	11,205	11,049	10,900	10,840	10,858	10,863	10,809	10,858	10,835	10,818
E.W. Brown 10	38,371	14,212	14,048	14,029	14,050	14,196	14,222	14,109	14,138	14,084	14,115	14,047	14,060	14,034	14,010	14,039
E.W. Brown 11	30,071	13,540	13,496	13,477	13,488	13,576	13,556	13,496	13,506	13,478	13,491	13,468	13,471	13,453	13,441	13,445
E.W. Brown 2	10,729	10,665	10,568	10,591	10,531	10,527	10,518	10,469	10,421	10,423	10,415	10,417	10,384	10,401	10,381	10,372
E.W. Brown 3	11,311	12,177	12,188	12,169	12,159	12,179	12,155	12,148	12,075	12,041	11,981	11,962	11,847	11,748	11,745	11,680
E.W. Brown 5	24,417	14,490	14,240	14,175	14,233	14,394	14,503	14,270	14,256	14,223	14,285	14,144	14,186	14,144	14,095	14,184
E.W. Brown 6	12,536	11,225	11,158	11,323	11,388	11,481	11,468	11,414	11,419	11,399	11,416	11,377	11,390	11,380	11,366	11,380
E.W. Brown 7	12,127	11,197	11,139	11,185	11,180	11,194	11,219	11,177	11,172	11,161	11,172	11,156	11,164	11,160	11,150	11,163
E.W. Brown 8	20,955	13,783	13,763	13,661	13,699	13,779	13,800	13,721	13,716	13,674	13,701	13,674	13,682	13,662	13,645	13,659
E.W. Brown 9	17,677	14,429	14,284	14,217	14,254	14,373	14,409	14,274	14,316	14,253	14,291	14,207	14,229	14,200	14,174	14,213
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,436	11,696													
Cane Run 5	10,858	10,333	10,361													
Cane Run 6	10,868	10,057	10,177													
Dix Dam 1-3																
Ghent 1	10,784	10,851	10,877	10,839	10,839	10,842	10,840	10,845	10,848	10,848	10,848	10,850	10,841	10,844	10,842	10,843
Ghent 2	10,696	10,732	10,691	10,705	10,706	10,705	10,700	10,697	10,697	10,695	10,695	10,693	10,696	10,695	10,695	10,693
Ghent 3	11,080	11,092	11,082	11,050	11,053	11,052	11,085	11,081	11,069	11,075	11,074	11,075	11,061	11,060	11,066	11,064
Ghent 4	11,051	11,045	11,144	11,066	11,099	11,083	11,065	11,088	11,081	11,073	11,087	11,086	11,074	11,058	11,069	11,067
Green River 3	12,992	13,508	13,566													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,554	10,490	10,497	10,505	10,521	10,537	10,535	10,538	10,538	10,536	10,536	10,543	10,539	10,532	10,537
Mill Creek 2	10,671	10,526	10,489	10,499	10,513	10,516	10,522	10,524	10,523	10,524	10,523	10,524	10,524	10,523	10,523	10,525
Mill Creek 3	10,500	10,667	10,690	10,593	10,591	10,593	10,613	10,615	10,621	10,621	10,618	10,619	10,621	10,622	10,620	10,624
Mill Creek 4	10,827	10,707	10,723	10,701	10,702	10,709	10,712	10,711	10,713	10,710	10,713	10,712	10,714	10,712	10,714	10,712
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,930	10,923	11,718	11,830	11,914	12,180	12,174	12,350	12,319	12,335	12,305	12,318	12,322	12,271	12,329
Trimble County CT 10	12,513	10,980	10,948	11,157	11,215	11,279	11,361	11,416	11,617	11,619	11,668	11,589	11,643	11,676	11,632	11,685
Trimble County CT 5	13,020	10,926	10,972	11,444	11,509	11,881	12,079	12,058	12,241	12,238	12,250	12,377	12,386	12,460	12,446	12,402
Trimble County CT 6	12,796	10,951	10,951	11,353	11,596	11,704	11,904	11,902	12,045	12,156	12,164	12,227	12,330	12,344	12,318	12,292
Trimble County CT 7	12,849	10,974	10,956	11,300	11,522	11,516	11,796	11,786	11,987	12,081	12,094	12,084	12,191	12,235	12,194	12,192
Trimble County CT 8	12,590	10,985	10,961	11,256	11,381	11,446	11,611	11,649	11,832	11,860	11,919	11,980	12,077	12,138	12,080	12,109
Trimble County CT 9	12,752	10,992	10,955	11,202	11,288	11,338	11,541	11,526	11,768	11,753	11,799	11,728	11,909	11,963	11,928	11,951
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,875	7,100	7,115	7,159	7,243	7,328	7,382	7,421	7,409	7,477	7,465	7,540	7,557	7,550
Brown Solar																
Green River 5						7,373	7,437	7,440	7,506	7,551	7,579	7,608	7,663	7,694	7,669	7,685

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Mid Carbon																
E.W. Brown 1	12,033	11,379	11,384	11,002	11,149	11,410	11,205									
E.W. Brown 10	38,371	14,212	14,048	14,029	14,050	14,196	14,222	14,058	14,087	14,038	14,083	13,967	13,998	13,974	13,944	13,978
E.W. Brown 11	30,071	13,540	13,496	13,477	13,488	13,576	13,556	13,464	13,474	13,449	13,471	13,436	13,446	13,431	13,416	13,426
E.W. Brown 2	10,729	10,665	10,568	10,591	10,531	10,527	10,518									
E.W. Brown 3	11,311	12,177	12,188	12,169	12,159	12,179	12,155	12,176	12,168	12,166	12,164	12,153	12,146	12,019	12,045	11,975
E.W. Brown 5	24,417	14,490	14,240	14,175	14,233	14,394	14,503	14,151	14,176	14,150	14,207	14,020	14,090	14,056	13,994	14,090
E.W. Brown 6	12,536	11,225	11,158	11,323	11,388	11,481	11,468	11,131	11,205	11,175	11,116	11,085	11,096	11,139	11,082	11,087
E.W. Brown 7	12,127	11,197	11,139	11,185	11,180	11,194	11,219	11,114	11,127	11,116	11,123	11,091	11,101	11,105	11,089	11,102
E.W. Brown 8	20,955	13,783	13,763	13,661	13,699	13,779	13,800	13,718	13,698	13,658	13,735	13,657	13,672	13,664	13,635	13,649
E.W. Brown 9	17,677	14,429	14,284	14,217	14,254	14,373	14,409	14,223	14,266	14,208	14,252	14,130	14,168	14,163	14,108	14,152
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,436	11,696													
Cane Run 5	10,858	10,333	10,361													
Cane Run 6	10,868	10,057	10,177													
Dix Dam 1-3																
Ghent 1	10,784	10,851	10,877	10,839	10,839	10,842	10,840	10,982	10,952	10,984	10,956	10,982	10,970	10,951	10,962	10,957
Ghent 2	10,696	10,732	10,691	10,705	10,706	10,705	10,700	10,663	10,664	10,668	10,666	10,671	10,668	10,666	10,662	10,659
Ghent 3	11,080	11,092	11,082	11,050	11,053	11,052	11,085	11,180	11,176	11,173	11,157	11,174	11,157	11,166	11,152	11,147
Ghent 4	11,051	11,045	11,144	11,066	11,099	11,083	11,065	11,313	11,294	11,300	11,275	11,286	11,276	11,269	11,271	11,249
Green River 3	12,992	13,508	13,566													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,554	10,490	10,497	10,505	10,521	10,537	10,478	10,477	10,479	10,476	10,470	10,470	10,460	10,461	10,460
Mill Creek 2	10,671	10,526	10,489	10,499	10,513	10,516	10,522	10,497	10,497	10,496	10,501	10,500	10,494	10,495	10,496	10,498
Mill Creek 3	10,500	10,667	10,690	10,593	10,591	10,593	10,613	10,597	10,591	10,594	10,595	10,602	10,604	10,602	10,603	10,602
Mill Creek 4	10,827	10,707	10,723	10,701	10,702	10,709	10,712	10,702	10,705	10,701	10,711	10,711	10,717	10,709	10,718	10,717
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,930	10,923	11,718	11,830	11,914	12,180	11,062	11,170	11,092	11,102	11,075	11,060	11,091	11,032	11,031
Trimble County CT 10	12,513	10,980	10,948	11,157	11,215	11,279	11,361	11,084	11,097	11,077	11,030	10,998	11,003	11,050	10,977	10,962
Trimble County CT 5	13,020	10,926	10,972	11,444	11,509	11,881	12,079	11,211	11,211	11,183	11,083	11,057	11,038	11,111	11,029	11,012
Trimble County CT 6	12,796	10,951	10,951	11,353	11,596	11,704	11,904	11,182	11,175	11,173	11,093	11,075	11,056	11,107	11,047	11,030
Trimble County CT 7	12,849	10,974	10,956	11,300	11,522	11,516	11,796	11,178	11,195	11,168	11,078	11,053	11,046	11,099	11,029	11,014
Trimble County CT 8	12,590	10,985	10,961	11,256	11,381	11,446	11,611	11,155	11,147	11,137	11,079	11,063	11,060	11,091	11,037	11,018
Trimble County CT 9	12,752	10,992	10,955	11,202	11,288	11,338	11,541	11,134	11,144	11,126	11,042	11,014	11,018	11,084	10,993	10,978
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,249	10,248	10,248	10,248	10,249	10,249	10,249	10,249	10,250	10,249
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,875	7,100	7,115	7,159	7,243	6,860	6,859	6,857	6,854	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						7,373	7,437	6,935	6,926	6,908	6,888	6,883	6,871	6,874	6,867	6,867
Wind_1																
Wind_2																

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Carbon Cap																
E.W. Brown 1	12,033	11,379	11,384	11,002	11,149	11,410	11,205									
E.W. Brown 10	38,371	14,212	14,048	14,029	14,050	14,196	14,222	14,058	14,092	14,038	13,504	13,968	14,029	13,988	13,945	13,979
E.W. Brown 11	30,071	13,540	13,496	13,477	13,488	13,576	13,556	13,464	13,477	13,450	13,144	13,435	13,434	13,421	13,405	13,410
E.W. Brown 2	10,729	10,665	10,568	10,591	10,531	10,527	10,518									
E.W. Brown 3	11,311	12,177	12,188	12,169	12,159	12,179	12,155	12,176	12,174	12,166	11,707	12,158	12,014	11,851	11,787	11,773
E.W. Brown 5	24,417	14,490	14,240	14,175	14,233	14,394	14,503	14,151	14,148	14,136	12,294	14,021	13,941	13,872	13,770	13,847
E.W. Brown 6	12,536	11,225	11,158	11,323	11,388	11,481	11,468	11,131	11,138	11,145	10,731	11,083	10,888	10,881	10,873	10,870
E.W. Brown 7	12,127	11,197	11,139	11,185	11,180	11,194	11,219	11,114	11,117	11,115	10,683	11,086	10,893	10,889	10,835	10,862
E.W. Brown 8	20,955	13,783	13,763	13,661	13,699	13,779	13,800	13,718	13,736	13,680	13,248	13,650	13,626	13,610	13,596	13,602
E.W. Brown 9	17,677	14,429	14,284	14,217	14,254	14,373	14,409	14,223	14,266	14,208	13,647	14,131	14,168	14,147	14,098	14,145
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,436	11,696													
Cane Run 5	10,858	10,333	10,361													
Cane Run 6	10,868	10,057	10,177													
Dix Dam 1-3																
Ghent 1	10,784	10,851	10,877	10,839	10,839	10,842	10,840	11,001	10,982	10,984	10,960	10,982	10,972	10,953	10,969	10,969
Ghent 2	10,696	10,732	10,691	10,705	10,706	10,705	10,700	10,664	10,670	10,668	10,657	10,673	10,656	10,662	10,660	10,656
Ghent 3	11,080	11,092	11,082	11,050	11,053	11,052	11,085	11,180	11,176	11,173	11,149	11,175	11,144	11,161	11,151	11,153
Ghent 4	11,051	11,045	11,144	11,066	11,099	11,083	11,065	11,313	11,294	11,300	11,264	11,288	11,263	11,260	11,268	11,262
Green River 3	12,992	13,508	13,566													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,554	10,490	10,497	10,505	10,521	10,537	10,478	10,476	10,479	10,448	10,464	10,454	10,451	10,452	10,451
Mill Creek 2	10,671	10,526	10,489	10,499	10,513	10,516	10,522	10,496	10,497	10,496	10,461	10,497	10,487	10,486	10,475	10,478
Mill Creek 3	10,500	10,667	10,690	10,593	10,591	10,593	10,613	10,596	10,595	10,594	10,593	10,605	10,601	10,596	10,595	10,599
Mill Creek 4	10,827	10,707	10,723	10,701	10,702	10,709	10,712	10,702	10,709	10,701	10,706	10,720	10,715	10,706	10,709	10,709
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,930	10,923	11,718	11,830	11,914	12,180	11,062	11,050	11,089	10,547	11,004	10,637	10,617	10,610	10,630
Trimble County CT 10	12,513	10,980	10,948	11,157	11,215	11,279	11,361	11,084	11,036	11,053	10,753	10,982	10,822	10,751	10,736	10,741
Trimble County CT 5	13,020	10,926	10,972	11,444	11,509	11,881	12,079	11,211	11,118	11,162	10,669	11,047	10,758	10,692	10,681	10,687
Trimble County CT 6	12,796	10,951	10,951	11,353	11,596	11,704	11,904	11,182	11,107	11,159	10,690	11,064	10,778	10,709	10,696	10,703
Trimble County CT 7	12,849	10,974	10,956	11,300	11,522	11,516	11,796	11,178	11,094	11,143	10,709	11,048	10,799	10,723	10,709	10,715
Trimble County CT 8	12,590	10,985	10,961	11,256	11,381	11,446	11,611	11,155	11,106	11,119	10,727	11,050	10,811	10,735	10,720	10,726
Trimble County CT 9	12,752	10,992	10,955	11,202	11,288	11,338	11,541	11,134	11,054	11,090	10,741	10,998	10,821	10,745	10,729	10,735
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,249	10,248	10,249	10,248	10,250	10,249	10,250	10,249	10,250	10,250
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,875	7,100	7,115	7,159	7,243	6,860	6,854	6,857	6,853	6,850	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						7,373	7,437	6,930	6,893	6,907	6,931	6,868	6,890	6,894	6,906	6,898
Wind_1																
Wind_2																
Wind_3																
Wind_4																
Wind_5																
Wind_6																
Wind_7																
Wind_8																

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-High Load-Zero Carbon																
E.W. Brown 1	12,033	11,231	11,291	10,920	10,995	11,208	10,978	10,871	10,744	10,714	10,715	10,717	10,660	10,634	10,640	10,631
E.W. Brown 10	38,371	14,074	13,832	13,829	13,862	13,942	12,903	12,696	12,684	12,683	12,678	12,673	12,678	12,689	12,685	12,671
E.W. Brown 11	30,071	13,437	13,372	13,330	13,350	13,394	12,914	12,822	12,809	12,809	12,803	12,799	12,810	12,815	12,811	12,798
E.W. Brown 2	10,729	10,581	10,520	10,521	10,474	10,462	10,424	10,393	10,352	10,349	10,344	10,346	10,315	10,304	10,302	10,297
E.W. Brown 3	11,311	12,116	12,142	12,095	12,061	12,112	12,038	12,007	11,834	11,758	11,648	11,603	11,246	11,123	11,118	11,089
E.W. Brown 5	24,417	14,262	13,940	13,852	13,958	14,032	12,499	12,151	12,143	12,146	12,159	12,128	12,156	12,144	12,136	12,137
E.W. Brown 6	12,536	11,166	11,093	11,241	11,311	11,387	11,301	11,230	11,241	11,222	11,227	11,185	11,288	11,206	11,189	11,190
E.W. Brown 7	12,127	11,145	11,076	11,134	11,129	11,132	11,118	11,060	11,064	11,052	11,054	11,028	11,074	11,054	11,040	11,046
E.W. Brown 8	20,955	13,664	13,602	13,502	13,531	13,580	12,957	12,826	12,810	12,812	12,803	12,802	12,810	12,819	12,815	12,801
E.W. Brown 9	17,677	14,288	14,086	14,018	14,060	14,124	12,948	12,691	12,676	12,675	12,671	12,668	12,669	12,685	12,681	12,666
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,389	11,592													
Cane Run 5	10,858	10,323	10,331													
Cane Run 6	10,868	10,033	10,095													
Dix Dam 1-3																
Ghent 1	10,784	10,846	10,852	10,833	10,831	10,829	10,829	10,833	10,838	10,840	10,837	10,837	10,840	10,841	10,839	10,838
Ghent 2	10,696	10,734	10,696	10,708	10,708	10,708	10,706	10,703	10,704	10,703	10,703	10,702	10,704	10,703	10,704	10,703
Ghent 3	11,080	11,056	11,049	11,027	11,028	11,023	11,045	11,038	11,029	11,033	11,031	11,032	11,022	11,020	11,024	11,021
Ghent 4	11,051	11,005	11,076	11,018	11,034	11,026	11,013	11,021	11,018	11,010	11,013	11,013	11,003	10,997	11,000	10,998
Green River 3	12,992	13,499	13,566													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,563	10,500	10,510	10,519	10,536	10,547	10,546	10,549	10,550	10,549	10,549	10,553	10,552	10,549	10,553
Mill Creek 2	10,671	10,526	10,500	10,505	10,519	10,522	10,525	10,526	10,525	10,526	10,525	10,526	10,525	10,525	10,526	10,527
Mill Creek 3	10,500	10,677	10,693	10,600	10,607	10,609	10,632	10,635	10,643	10,644	10,643	10,643	10,648	10,655	10,652	10,655
Mill Creek 4	10,827	10,708	10,716	10,704	10,707	10,713	10,716	10,714	10,716	10,713	10,717	10,715	10,717	10,716	10,717	10,716
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,854	10,876	11,562	11,648	11,709	12,003	11,986	12,166	12,121	12,125	12,084	12,244	12,200	12,138	12,181
Trimble County CT 10	12,513	10,877	10,872	11,058	11,109	11,190	11,223	11,265	11,461	11,491	11,498	11,430	11,566	11,498	11,454	11,484
Trimble County CT 5	13,020	10,809	10,854	11,292	11,350	11,765	11,878	11,865	11,978	11,965	11,976	12,042	11,999	12,197	12,155	12,140
Trimble County CT 6	12,796	10,833	10,849	11,220	11,405	11,603	11,746	11,752	11,818	11,929	11,896	11,926	11,886	12,098	12,051	12,043
Trimble County CT 7	12,849	10,857	10,862	11,188	11,352	11,410	11,648	11,682	11,805	11,860	11,829	11,810	11,818	12,073	12,028	12,017
Trimble County CT 8	12,590	10,869	10,873	11,148	11,249	11,372	11,487	11,523	11,666	11,710	11,716	11,714	11,729	11,890	11,841	11,851
Trimble County CT 9	12,752	10,882	10,874	11,100	11,175	11,257	11,408	11,394	11,610	11,613	11,625	11,587	11,741	11,810	11,773	11,762
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,869	7,018	7,022	7,053	7,122	7,196	7,214	7,234	7,235	7,282	7,211	7,071	7,076	7,054
Brown Solar																
Green River 5						7,296	7,325	7,372	7,415	7,465	7,465	7,516	7,340	7,108	7,100	7,092
SCCT F-Class-Three Units							9,940	9,940	9,940	9,940	9,940	9,940	9,940	9,940	9,940	9,940
2x1 NGCC G/H-Class_2													7,303	7,432	7,453	7,401

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Zero Carbon																
E.W. Brown 1	12,033	11,284	11,293	10,950	11,065	11,301	11,104	10,953	10,824	10,774	10,781	10,782	10,718	10,683	10,695	10,681
E.W. Brown 10	38,371	14,141	13,929	13,925	13,947	14,067	14,072	13,961	13,973	13,928	13,932	13,870	14,075	13,975	13,949	13,939
E.W. Brown 11	30,071	13,488	13,406	13,404	13,415	13,481	13,454	13,399	13,397	13,377	13,373	13,353	13,470	13,421	13,406	13,390
E.W. Brown 2	10,729	10,616	10,530	10,554	10,499	10,495	10,474	10,430	10,384	10,383	10,377	10,376	10,345	10,329	10,329	10,321
E.W. Brown 3	11,311	12,150	12,168	12,134	12,113	12,149	12,109	12,083	11,974	11,911	11,848	11,786	11,433	11,300	11,304	11,269
E.W. Brown 5	24,417	14,363	14,006	13,999	14,073	14,201	14,254	14,032	13,999	13,978	13,975	13,859	14,124	14,046	14,000	14,006
E.W. Brown 6	12,536	11,198	11,096	11,281	11,350	11,433	11,402	11,356	11,355	11,341	11,342	11,306	11,416	11,347	11,333	11,329
E.W. Brown 7	12,127	11,172	11,092	11,158	11,154	11,162	11,184	11,143	11,133	11,125	11,125	11,112	11,161	11,142	11,133	11,133
E.W. Brown 8	20,955	13,722	13,647	13,579	13,608	13,675	13,680	13,606	13,592	13,556	13,561	13,540	13,688	13,620	13,601	13,588
E.W. Brown 9	17,677	14,357	14,142	14,112	14,153	14,245	14,254	14,122	14,144	14,096	14,100	14,025	14,255	14,132	14,104	14,098
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,408	11,637													
Cane Run 5	10,858	10,326	10,341													
Cane Run 6	10,868	10,044	10,125													
Dix Dam 1-3																
Ghent 1	10,784	10,849	10,865	10,838	10,834	10,837	10,831	10,840	10,841	10,845	10,841	10,841	10,840	10,845	10,837	10,844
Ghent 2	10,696	10,733	10,695	10,707	10,707	10,707	10,703	10,700	10,701	10,699	10,699	10,698	10,701	10,700	10,701	10,699
Ghent 3	11,080	11,076	11,067	11,040	11,039	11,038	11,058	11,053	11,047	11,051	11,049	11,050	11,036	11,036	11,039	11,038
Ghent 4	11,051	11,017	11,114	11,038	11,065	11,044	11,037	11,053	11,037	11,030	11,039	11,040	11,028	11,018	11,028	11,020
Green River 3	12,992	13,505	13,567													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,560	10,495	10,504	10,512	10,527	10,541	10,540	10,543	10,543	10,542	10,542	10,548	10,546	10,541	10,546
Mill Creek 2	10,671	10,526	10,494	10,502	10,517	10,520	10,524	10,526	10,524	10,525	10,524	10,525	10,525	10,524	10,525	10,526
Mill Creek 3	10,500	10,671	10,692	10,596	10,598	10,601	10,624	10,625	10,632	10,632	10,630	10,631	10,636	10,642	10,640	10,642
Mill Creek 4	10,827	10,708	10,721	10,702	10,704	10,711	10,714	10,713	10,715	10,712	10,715	10,714	10,716	10,714	10,716	10,714
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,887	10,898	11,637	11,734	11,808	12,089	12,074	12,253	12,215	12,224	12,189	12,336	12,308	12,269	12,300
Trimble County CT 10	12,513	10,927	10,892	11,103	11,159	11,228	11,273	11,346	11,508	11,536	11,528	11,492	11,631	11,593	11,556	11,562
Trimble County CT 5	13,020	10,857	10,894	11,356	11,406	11,817	11,972	11,933	12,079	12,087	12,088	12,190	12,087	12,387	12,361	12,331
Trimble County CT 6	12,796	10,881	10,885	11,284	11,489	11,646	11,831	11,812	11,913	12,023	12,002	12,057	11,953	12,276	12,243	12,219
Trimble County CT 7	12,849	10,905	10,896	11,235	11,434	11,450	11,700	11,719	11,851	11,949	11,924	11,927	11,890	12,265	12,234	12,207
Trimble County CT 8	12,590	10,920	10,902	11,196	11,319	11,406	11,553	11,578	11,713	11,765	11,760	11,828	11,804	12,065	12,027	12,016
Trimble County CT 9	12,752	10,932	10,898	11,144	11,228	11,299	11,476	11,459	11,655	11,675	11,678	11,636	11,811	11,976	11,947	11,924
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249	10,249
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,870	7,048	7,057	7,100	7,177	7,258	7,305	7,319	7,314	7,375	7,305	7,122	7,123	7,105
Brown Solar																
Green River 5						7,329	7,397	7,403	7,454	7,500	7,518	7,551	7,382	7,139	7,120	7,127
2x1 NGCC G/H-Class_1													7,414	7,555	7,596	7,548

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Mid Carbon																
E.W. Brown 1	12,033	11,284	11,293	10,950	11,065	11,301	11,104									
E.W. Brown 10	38,371	14,141	13,929	13,925	13,947	14,067	14,072	14,145	14,050	14,011	14,006	13,937	13,927	13,906	13,875	13,869
E.W. Brown 11	30,071	13,488	13,406	13,404	13,415	13,481	13,454	13,511	13,456	13,433	13,428	13,421	13,410	13,395	13,377	13,366
E.W. Brown 2	10,729	10,616	10,530	10,554	10,499	10,495	10,474									
E.W. Brown 3	11,311	12,150	12,168	12,134	12,113	12,149	12,109	12,187	12,183	12,180	12,179	12,168	12,163	12,053	12,074	12,020
E.W. Brown 5	24,417	14,363	14,006	13,999	14,073	14,201	14,254	14,256	14,164	14,107	14,076	13,981	13,976	13,947	13,890	13,902
E.W. Brown 6	12,536	11,198	11,096	11,281	11,350	11,433	11,402	11,156	11,201	11,169	11,091	11,074	11,074	11,114	11,060	11,057
E.W. Brown 7	12,127	11,172	11,092	11,158	11,154	11,162	11,184	11,129	11,115	11,107	11,101	11,084	11,084	11,086	11,072	11,074
E.W. Brown 8	20,955	13,722	13,647	13,579	13,608	13,675	13,680	13,775	13,675	13,645	13,689	13,636	13,626	13,617	13,587	13,576
E.W. Brown 9	17,677	14,357	14,142	14,112	14,153	14,245	14,254	14,325	14,216	14,175	14,167	14,096	14,088	14,085	14,031	14,029
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,408	11,637													
Cane Run 5	10,858	10,326	10,341													
Cane Run 6	10,868	10,044	10,125													
Dix Dam 1-3																
Ghent 1	10,784	10,849	10,865	10,838	10,834	10,837	10,831	10,969	11,006	11,020	11,023	11,011	11,015	10,991	11,003	10,997
Ghent 2	10,696	10,733	10,695	10,707	10,707	10,707	10,703	10,667	10,668	10,682	10,676	10,688	10,685	10,681	10,683	10,678
Ghent 3	11,080	11,076	11,067	11,040	11,039	11,038	11,058	11,179	11,178	11,180	11,172	11,174	11,157	11,180	11,154	11,153
Ghent 4	11,051	11,017	11,114	11,038	11,065	11,044	11,037	11,301	11,302	11,310	11,299	11,295	11,288	11,291	11,273	11,263
Green River 3	12,992	13,505	13,567													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,560	10,495	10,504	10,512	10,527	10,541	10,476	10,463	10,466	10,464	10,461	10,461	10,456	10,459	10,455
Mill Creek 2	10,671	10,526	10,494	10,502	10,517	10,520	10,524	10,490	10,484	10,486	10,491	10,494	10,490	10,493	10,492	10,490
Mill Creek 3	10,500	10,671	10,692	10,596	10,598	10,601	10,624	10,594	10,592	10,598	10,606	10,614	10,615	10,612	10,612	10,611
Mill Creek 4	10,827	10,708	10,721	10,702	10,704	10,711	10,714	10,699	10,702	10,697	10,713	10,715	10,727	10,718	10,732	10,730
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,887	10,898	11,637	11,734	11,808	12,089	11,139	11,148	11,080	11,084	11,055	11,044	11,069	11,010	11,002
Trimble County CT 10	12,513	10,927	10,892	11,103	11,159	11,228	11,273	11,089	11,098	11,075	11,016	10,990	10,989	11,037	10,959	10,933
Trimble County CT 5	13,020	10,857	10,894	11,356	11,406	11,817	11,972	11,195	11,226	11,205	11,119	11,082	11,065	11,135	11,044	11,023
Trimble County CT 6	12,796	10,881	10,885	11,284	11,489	11,646	11,831	11,174	11,196	11,187	11,123	11,092	11,078	11,123	11,056	11,035
Trimble County CT 7	12,849	10,905	10,896	11,235	11,434	11,450	11,700	11,180	11,200	11,177	11,091	11,060	11,053	11,111	11,026	11,005
Trimble County CT 8	12,590	10,920	10,902	11,196	11,319	11,406	11,553	11,148	11,159	11,143	11,088	11,066	11,063	11,094	11,032	11,004
Trimble County CT 9	12,752	10,932	10,898	11,144	11,228	11,299	11,476	11,137	11,155	11,128	11,034	11,009	11,007	11,079	10,977	10,951
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,249	10,247	10,248	10,249	10,251	10,252	10,253	10,256	10,257	10,254
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,870	7,048	7,057	7,100	7,177	6,876	6,892	6,878	6,860	6,851	6,850	6,850	6,850	6,852
Brown Solar																
Green River 5						7,329	7,397	6,932	6,957	6,943	6,904	6,907	6,886	6,899	6,875	6,875
2x1 NGCC G/H-Class_1								6,560	6,551	6,549	6,549	6,550	6,549	6,547	6,547	6,547

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(b)
Anticipated Annual Average Heat Rates (Btu/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Carbon Cap																
E.W. Brown 1	12,033	11,284	11,293	10,950	11,065	11,301	11,104									
E.W. Brown 10	38,371	14,141	13,929	13,925	13,947	14,067	14,072	14,145	14,069	14,033	14,023	13,958	13,946	13,924	13,895	13,889
E.W. Brown 11	30,071	13,488	13,406	13,404	13,415	13,481	13,454	13,517	13,455	13,426	13,423	13,410	13,399	13,384	13,366	13,357
E.W. Brown 2	10,729	10,616	10,530	10,554	10,499	10,495	10,474									
E.W. Brown 3	11,311	12,150	12,168	12,134	12,113	12,149	12,109	12,189	12,180	12,176	12,175	12,172	12,155	12,145	12,145	12,055
E.W. Brown 5	24,417	14,363	14,006	13,999	14,073	14,201	14,254	14,256	14,154	14,109	14,096	13,988	13,991	13,957	13,911	13,923
E.W. Brown 6	12,536	11,198	11,096	11,281	11,350	11,433	11,402	11,159	11,209	11,196	11,194	11,188	11,184	11,186	11,088	11,082
E.W. Brown 7	12,127	11,172	11,092	11,158	11,154	11,162	11,184	11,126	11,133	11,128	11,123	11,124	11,115	11,114	11,111	11,103
E.W. Brown 8	20,955	13,722	13,647	13,579	13,608	13,675	13,680	13,750	13,669	13,638	13,635	13,633	13,622	13,606	13,583	13,576
E.W. Brown 9	17,677	14,357	14,142	14,112	14,153	14,245	14,254	14,325	14,235	14,197	14,191	14,118	14,111	14,088	14,055	14,052
Cane Run 11	42,874	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117	16,117
Cane Run 4	11,557	11,408	11,637													
Cane Run 5	10,858	10,326	10,341													
Cane Run 6	10,868	10,044	10,125													
Dix Dam 1-3																
Ghent 1	10,784	10,849	10,865	10,838	10,834	10,837	10,831	10,973	10,951	10,960	10,987	10,982	10,991	10,979	11,004	11,003
Ghent 2	10,696	10,733	10,695	10,707	10,707	10,707	10,703	10,670	10,658	10,661	10,664	10,664	10,666	10,670	10,677	10,669
Ghent 3	11,080	11,076	11,067	11,040	11,039	11,038	11,058	11,179	11,178	11,180	11,172	11,174	11,157	11,181	11,157	11,161
Ghent 4	11,051	11,017	11,114	11,038	11,065	11,044	11,037	11,300	11,302	11,310	11,299	11,295	11,288	11,291	11,277	11,268
Green River 3	12,992	13,505	13,567													
Green River 4	11,155	10,502	10,442													
Haefling 1-2	29,259	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
Mill Creek 1	10,658	10,560	10,495	10,504	10,512	10,527	10,541	10,477	10,473	10,476	10,471	10,467	10,469	10,457	10,459	10,460
Mill Creek 2	10,671	10,526	10,494	10,502	10,517	10,520	10,524	10,490	10,490	10,488	10,489	10,487	10,486	10,484	10,486	10,496
Mill Creek 3	10,500	10,671	10,692	10,596	10,598	10,601	10,624	10,591	10,590	10,589	10,592	10,591	10,590	10,596	10,596	10,606
Mill Creek 4	10,827	10,708	10,721	10,702	10,704	10,711	10,714	10,699	10,700	10,695	10,702	10,700	10,707	10,704	10,706	10,709
Ohio Falls 1-8																
Paddy's Run 11		15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
Paddy's Run 12		17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005	17,005
Paddy's Run 13	11,326	10,887	10,898	11,637	11,734	11,808	12,089	11,089	11,266	11,242	11,216	11,192	11,221	11,200	11,091	11,104
Trimble County CT 10	12,513	10,927	10,892	11,103	11,159	11,228	11,273	11,054	11,130	11,129	11,122	11,100	11,100	11,109	11,084	11,055
Trimble County CT 5	13,020	10,857	10,894	11,356	11,406	11,817	11,972	11,174	11,250	11,252	11,230	11,215	11,198	11,222	11,189	11,138
Trimble County CT 6	12,796	10,881	10,885	11,284	11,489	11,646	11,831	11,150	11,232	11,236	11,211	11,216	11,203	11,224	11,192	11,136
Trimble County CT 7	12,849	10,905	10,896	11,235	11,434	11,450	11,700	11,150	11,226	11,229	11,209	11,197	11,180	11,202	11,168	11,129
Trimble County CT 8	12,590	10,920	10,902	11,196	11,319	11,406	11,553	11,112	11,195	11,196	11,185	11,173	11,160	11,180	11,159	11,114
Trimble County CT 9	12,752	10,932	10,898	11,144	11,228	11,299	11,476	11,089	11,184	11,184	11,175	11,153	11,144	11,159	11,133	11,104
Trimble County 1 (75%)	10,762	10,258	10,249	10,249	10,249	10,249	10,249	10,247	10,249	10,248	10,248	10,248	10,247	10,248	10,250	10,251
Trimble County 2 (75%)	9,368	9,252	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261	9,261
Zorn 1	25,887	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676	18,676
Cane Run 7			6,870	7,048	7,057	7,100	7,177	6,874	6,923	6,919	6,892	6,906	6,886	6,881	6,869	6,864
Brown Solar																
Green River 5						7,329	7,397	6,926	6,994	6,993	6,954	6,953	6,947	6,944	6,931	6,907
2x1 NGCC G/H-Class_1								6,560	6,555	6,555	6,551	6,550	6,549	6,548	6,548	6,547
Wind_1																
Wind_2																
Wind_3																
Wind_4																

Note: 2013 values are actual values. For units that are minimally operated, the average heat rate calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Mid Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Carbon Cap																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-High Load-Zero Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
SCCT F-Class-Three Units																
2x1 NGCC G/H-Class_2																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Zero Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
SCCT F-Class_1																
SCCT F-Class_2																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Mid Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
1x1 NGCC G/H-Class																
2x1 NGCC G/H-Class_2																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Carbon Cap																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Zero Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Mid Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Carbon Cap																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-High Load-Zero Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
2x1 NGCC G/H-Class_2																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Zero Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Mid Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
1x1 NGCC G/H-Class																
2x1 NGCC G/H-Class_2																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Carbon Cap																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Zero Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Mid Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
Wind_1																
Wind_2																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Carbon Cap																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
Wind_1																
Wind_2																
Wind_3																
Wind_4																
Wind_5																
Wind_6																
Wind_7																
Wind_8																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-High Load-Zero Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
SCCT F-Class-Three Units																
2x1 NGCC G/H-Class_2																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Zero Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Mid Carbon																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(c)
Cost of Fuel (\$/MBTU)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Carbon Cap																
E.W. Brown 1	3.16															
E.W. Brown 10	3.75															
E.W. Brown 11	5.22															
E.W. Brown 2	3.11															
E.W. Brown 3	3.11															
E.W. Brown 5	4.06															
E.W. Brown 6	4.12															
E.W. Brown 7	4.09															
E.W. Brown 8	3.87															
E.W. Brown 9	4.40															
Cane Run 11	15.61															
Cane Run 4	2.32															
Cane Run 5	2.28															
Cane Run 6	2.28															
Dix Dam 1-3																
Ghent 1	2.19															
Ghent 2	2.19															
Ghent 3	2.22															
Ghent 4	2.25															
Green River 3	2.56															
Green River 4	2.55															
Haefling 1-2	6.89															
Mill Creek 1	2.44															
Mill Creek 2	2.43															
Mill Creek 3	2.48															
Mill Creek 4	2.47															
Ohio Falls 1-8																
Paddy's Run 11	62.95															
Paddy's Run 12	62.95															
Paddy's Run 13	6.48															
Trimble County CT 10	7.65															
Trimble County CT 5	8.07															
Trimble County CT 6	7.91															
Trimble County CT 7	7.55															
Trimble County CT 8	7.70															
Trimble County CT 9	7.91															
Trimble County 1 (75%)	2.42															
Trimble County 2 (75%)	2.53															
Zorn 1	4.32															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Wind_1																
Wind_2																
Wind_3																
Wind_4																

Note: 2013 values are actual values. For units that are minimally operated, the average fuel cost calculation can produce high values.

Table 8.(3)(b)12(e)
Variable and Fixed Operating and Maintenance Costs (\$000)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
Scenario: Mid Gas-Low Load-Mid Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
Scenario: Mid Gas-Low Load-Carbon Cap																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
Scenario: Mid Gas-High Load-Zero Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
SCCT F-Class-Three Units	0															
2x1 NGCC G/H-Class_2	0															
Scenario: Mid Gas-Base Load-Zero Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
SCCT F-Class_1	0															
SCCT F-Class_2	0															

Note: 2013 values are actual values. Fixed O&M for planned natural gas units includes firm gas transportation.

Table 8.(3)(b)12(e)
Variable and Fixed Operating and Maintenance Costs (\$000)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Mid Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
1x1 NGCC G/H-Class	0															
2x1 NGCC G/H-Class_2	0															
Scenario: Mid Gas-Base Load-Carbon Cap																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
2x1 NGCC G/H-Class_1	0															
Scenario: Low Gas-Low Load-Zero Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
Scenario: Low Gas-Low Load-Mid Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
Scenario: Low Gas-Low Load-Carbon Cap																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															

Note: 2013 values are actual values. Fixed O&M for planned natural gas units includes firm gas transportation.

Table 8.(3)(b)12(e)
Variable and Fixed Operating and Maintenance Costs (\$000)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-High Load-Zero Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
2x1 NGCC G/H-Class_1	0															
2x1 NGCC G/H-Class_2	0															
Scenario: Low Gas-Base Load-Zero Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
2x1 NGCC G/H-Class_1	0															
Scenario: Low Gas-Base Load-Mid Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
1x1 NGCC G/H-Class	0															
2x1 NGCC G/H-Class_2	0															
Scenario: Low Gas-Base Load-Carbon Cap																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
2x1 NGCC G/H-Class_1	0															

Note: 2013 values are actual values. Fixed O&M for planned natural gas units includes firm gas transportation.

Table 8.(3)(b)12(e)
Variable and Fixed Operating and Maintenance Costs (\$000)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Zero Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
Scenario: High Gas-Low Load-Mid Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
Wind_1	0															
Wind_2	0															
Scenario: High Gas-Low Load-Carbon Cap																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
Wind_1	0															
Wind_2	0															
Wind_3	0															
Wind_4	0															
Wind_5	0															
Wind_6	0															
Wind_7	0															
Wind_8	0															

Note: 2013 values are actual values. Fixed O&M for planned natural gas units includes firm gas transportation.

Table 8.(3)(b)12(e)
Variable and Fixed Operating and Maintenance Costs (\$000)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-High Load-Zero Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
SCCT F-Class-Three Units	0															
2x1 NGCC G/H-Class_2	0															
Scenario: High Gas-Base Load-Zero Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
2x1 NGCC G/H-Class_1	0															
Scenario: High Gas-Base Load-Mid Carbon																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
2x1 NGCC G/H-Class_1	0															
Scenario: High Gas-Base Load-Carbon Cap																
Existing Units	219,305															
Cane Run 7	0															
Brown Solar	0															
Green River 5	0															
2x1 NGCC G/H-Class_1	0															
Wind_1	0															
Wind_2	0															
Wind_3	0															
Wind_4	0															

Note: 2013 values are actual values. Fixed O&M for planned natural gas units includes firm gas transportation.

Table 8.(3)(b)12(g)-1
Average Variable Production Costs (cents/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Mid Gas-Low Load-Mid Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Mid Gas-Low Load-Carbon Cap																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Mid Gas-High Load-Zero Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
SCCT F-Class-Three Units																
2x1 NGCC G/H-Class_2																
Scenario: Mid Gas-Base Load-Zero Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
SCCT F-Class_1																
SCCT F-Class_2																

Note: 2013 values are actual values.

Table 8.(3)(b)12(g)-1
Average Variable Production Costs (cents/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Mid Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
1x1 NGCC G/H-Class																
2x1 NGCC G/H-Class_2																
Scenario: Mid Gas-Base Load-Carbon Cap																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Scenario: Low Gas-Low Load-Zero Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Low Gas-Low Load-Mid Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Low Gas-Low Load-Carbon Cap																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																

Note: 2013 values are actual values.

Table 8.(3)(b)12(g)-1
Average Variable Production Costs (cents/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-High Load-Zero Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
2x1 NGCC G/H-Class_2																
Scenario: Low Gas-Base Load-Zero Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Scenario: Low Gas-Base Load-Mid Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
1x1 NGCC G/H-Class																
2x1 NGCC G/H-Class_2																
Scenario: Low Gas-Base Load-Carbon Cap																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																

Note: 2013 values are actual values.

**Table 8.(3)(b)12(g)-1
Average Variable Production Costs (cents/kWh)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Zero Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: High Gas-Low Load-Mid Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
Wind_1																
Wind_2																
Scenario: High Gas-Low Load-Carbon Cap																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
Wind_1																
Wind_2																
Wind_3																
Wind_4																
Wind_5																
Wind_6																
Wind_7																
Wind_8																

Note: 2013 values are actual values.

Table 8.(3)(b)12(g)-1
Average Variable Production Costs (cents/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-High Load-Zero Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
SCCT F-Class-Three Units																
2x1 NGCC G/H-Class_2																
Scenario: High Gas-Base Load-Zero Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Scenario: High Gas-Base Load-Mid Carbon																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Scenario: High Gas-Base Load-Carbon Cap																
Existing Units	2.64															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Wind_1																
Wind_2																
Wind_3																
Wind_4																

Note: 2013 values are actual values.

Table 8.(3)(b)12(g)-2
Total Electricity Production Costs (cents/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Mid Gas-Low Load-Mid Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Mid Gas-Low Load-Carbon Cap																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Mid Gas-High Load-Zero Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
SCCT F-Class-Three Units																
2x1 NGCC G/H-Class_2																
Scenario: Mid Gas-Base Load-Zero Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
SCCT F-Class_1																
SCCT F-Class_2																

Note: 2013 values are actual values. Production costs for planned natural gas units reflect the cost of firm gas transportation.

Table 8.(3)(b)12(g)-2
Total Electricity Production Costs (cents/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Mid Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
1x1 NGCC G/H-Class																
2x1 NGCC G/H-Class_2																
Scenario: Mid Gas-Base Load-Carbon Cap																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Scenario: Low Gas-Low Load-Zero Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Low Gas-Low Load-Mid Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: Low Gas-Low Load-Carbon Cap																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																

Note: 2013 values are actual values. Productions costs for planned natural gas units reflect the cost of firm gas transportation.

Table 8.(3)(b)12(g)-2
Total Electricity Production Costs (cents/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-High Load-Zero Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
2x1 NGCC G/H-Class_2																
Scenario: Low Gas-Base Load-Zero Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Scenario: Low Gas-Base Load-Mid Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
1x1 NGCC G/H-Class																
2x1 NGCC G/H-Class_2																
Scenario: Low Gas-Base Load-Carbon Cap																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																

Note: 2013 values are actual values. Productions costs for planned natural gas units reflect the cost of firm gas transportation.

Table 8.(3)(b)12(g)-2
Total Electricity Production Costs (cents/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Zero Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
Scenario: High Gas-Low Load-Mid Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
Wind_1																
Wind_2																
Scenario: High Gas-Low Load-Carbon Cap																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
Wind_1																
Wind_2																
Wind_3																
Wind_4																
Wind_5																
Wind_6																
Wind_7																
Wind_8																

Note: 2013 values are actual values. Productions costs for planned natural gas units reflect the cost of firm gas transportation.

Table 8.(3)(b)12(g)-2
Total Electricity Production Costs (cents/kWh)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-High Load-Zero Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
SCCT F-Class-Three Units																
2x1 NGCC G/H-Class_2																
Scenario: High Gas-Base Load-Zero Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Scenario: High Gas-Base Load-Mid Carbon																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Scenario: High Gas-Base Load-Carbon Cap																
Existing Units	3.37															
Cane Run 7																
Brown Solar																
Green River 5																
2x1 NGCC G/H-Class_1																
Wind_1																
Wind_2																
Wind_3																
Wind_4																

Note: 2013 values are actual values. Production costs for planned natural gas units reflect the cost of firm gas transportation.

Table 8.(4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon															
Total Energy Requirements*	34,053	34,164	34,371	34,535	34,765	34,992	35,151	35,263	35,381	35,495	35,705	35,833	35,972	36,115	36,285
Energy Requirements by Fuel Type															
Coal	32,111	28,032	26,495	26,906	23,717	24,676	25,130	26,271	28,227	30,524	30,822	30,755	30,765	31,429	31,434
Gas	935	4,476	6,174	5,902	9,304	8,579	8,272	7,248	5,409	3,226	3,134	3,333	3,462	2,941	3,102
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	699	1,333	1,357	1,372	1,390	1,383	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtable Service Rider	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1
Scenario: Mid Gas-Low Load-Mid Carbon															
Total Energy Requirements*	34,053	34,164	34,371	34,535	34,765	34,992	35,151	35,263	35,381	35,495	35,705	35,833	35,972	36,115	36,285
Energy Requirements by Fuel Type															
Coal	32,111	28,032	26,495	26,906	23,717	24,676	22,202	22,506	22,398	23,491	22,680	22,956	22,824	23,253	23,845
Gas	935	4,476	6,174	5,902	9,304	8,579	11,200	11,012	11,238	10,258	11,275	11,130	11,402	11,116	10,689
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	699	1,333	1,357	1,372	1,390	1,383	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtable Service Rider	1	1	1	1	0	0	1	1	1	1	1	1	1	2	2

*Total energy requirements reflect the impact of DSM programs.

Table 8.4(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Carbon Cap															
Total Energy Requirements*	34,053	34,164	34,371	34,535	34,765	34,992	35,151	35,263	35,381	35,495	35,705	35,833	35,972	36,115	36,285
Energy Requirements by Fuel Type															
Coal	32,111	28,032	26,495	26,906	23,717	24,676	23,335	23,278	23,230	23,005	22,971	22,906	22,770	22,566	22,002
Gas	935	4,476	6,174	5,902	9,304	8,579	10,067	10,239	10,406	10,745	10,984	11,181	11,455	11,802	12,533
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	699	1,333	1,357	1,372	1,390	1,383	1,394	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1
Purchases from Non-Utility Sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	1	1	1	1	0	0	1	1	1	1	1	1	1	2	2
Scenario: Mid Gas-High Load-Zero Carbon															
Total Energy Requirements*	37,379	37,621	37,935	38,232	38,604	39,005	39,369	39,696	40,027	40,350	40,766	41,122	41,490	41,865	42,272
Energy Requirements by Fuel Type															
Coal	34,183	30,453	29,101	29,584	26,333	27,264	27,575	28,625	30,062	32,449	32,769	32,438	32,597	33,407	33,630
Gas	2,020	5,473	7,095	6,894	10,523	9,999	10,045	9,325	8,218	6,155	6,246	6,939	7,148	6,713	6,893
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	861	1,363	1,382	1,385	1,391	1,388	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	4	6	8	9	1	0	0	0	1	1	1	0	0	0	0
Purchases from Non-Utility Sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	4	5	6	7	2	1	1	1	1	1	2	1	1	1	1

*Total energy requirements reflect the impact of DSM programs.

Table 8.4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Zero Carbon															
Total Energy Requirements*	35,716	35,892	36,153	36,383	36,684	36,998	37,260	37,479	37,704	37,922	38,235	38,478	38,731	38,990	39,279
Energy Requirements by Fuel Type															
Coal	33,186	29,340	27,804	28,263	25,058	25,953	26,357	27,531	29,182	31,548	31,888	31,818	31,810	32,613	32,596
Gas	1,448	4,878	6,628	6,379	9,880	9,304	9,153	8,202	6,776	4,627	4,595	4,913	5,174	4,630	4,932
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	772	1,348	1,372	1,381	1,391	1,387	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	1	2	3	3	0	0	1	1	1	1	2	1	1	1	1
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	2	3	3	3	1	1	1	1	2	2	2	2	2	2	2
Scenario: Mid Gas-Base Load-Mid Carbon															
Total Energy Requirements*	35,716	35,892	36,153	36,383	36,684	36,998	37,260	37,479	37,704	37,922	38,235	38,478	38,731	38,990	39,279
Energy Requirements by Fuel Type															
Coal	33,186	29,340	27,804	28,263	25,058	25,953	22,386	21,551	18,228	16,866	16,048	16,522	16,523	16,978	17,780
Gas	1,448	4,878	6,628	6,379	9,880	9,304	13,124	14,182	17,731	19,312	20,439	20,211	20,464	20,267	19,750
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	772	1,348	1,372	1,381	1,391	1,387	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	1	2	3	3	0	0	0	0	0	0	0	0	0	0	0
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	2	3	3	3	1	1	1	1	0	0	0	0	1	1	1

*Total energy requirements reflect the impact of DSM programs.

Table 8.(4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Carbon Cap															
Total Energy Requirements*	35,716	35,892	36,153	36,383	36,684	36,998	37,260	37,479	37,704	37,922	38,235	38,478	38,731	38,990	39,279
Energy Requirements by Fuel Type															
Coal	33,186	29,340	27,804	28,263	25,058	25,953	22,181	22,140	22,052	21,735	21,747	21,432	21,294	20,283	20,777
Gas	1,448	4,878	6,628	6,379	9,880	9,304	13,331	13,594	13,907	14,442	14,739	15,300	15,691	16,961	16,752
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	772	1,348	1,372	1,381	1,391	1,387	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	1	2	3	3	0	0	0	0	0	0	0	0	1	1	1
Purchases from Non-Utility Sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtaillable Service Rider	2	3	3	3	1	1	0	1	1	1	1	1	1	1	2
Scenario: Low Gas-Low Load-Zero Carbon															
Total Energy Requirements*	34,053	34,164	34,371	34,535	34,765	34,992	35,151	35,263	35,381	35,495	35,705	35,833	35,972	36,115	36,285
Energy Requirements by Fuel Type															
Coal	27,920	20,349	22,934	20,649	17,514	17,391	17,676	18,293	18,438	20,506	20,214	21,282	20,590	21,366	21,802
Gas	5,350	12,640	9,852	12,314	15,721	16,128	15,984	15,420	15,436	13,390	13,922	12,904	13,811	13,098	12,825
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	474	852	1,240	1,216	1,176	1,119	1,137	1,196	1,153	1,245	1,214	1,293	1,217	1,297	1,303
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Purchases from Non-Utility Sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtaillable Service Rider	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1

*Total energy requirements reflect the impact of DSM programs.

Table 8.(4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Mid Carbon															
Total Energy Requirements*	34,053	34,164	34,371	34,535	34,765	34,992	35,151	35,263	35,381	35,495	35,705	35,833	35,972	36,115	36,285
Energy Requirements by Fuel Type															
Coal	27,920	20,349	22,934	20,649	17,514	17,391	11,359	11,799	11,519	12,286	11,677	11,986	11,156	10,724	10,749
Gas	5,350	12,640	9,852	12,314	15,721	16,128	22,045	21,719	22,118	21,463	22,278	22,101	23,070	23,644	23,785
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	474	852	1,240	1,216	1,176	1,119	1,393	1,390	1,389	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1
Purchases from Non-Utility Sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtaillable Service Rider	1	1	1	1	0	0	1	1	1	1	1	1	1	2	2
Scenario: Low Gas-Low Load-Carbon Cap															
Total Energy Requirements*	34,053	34,164	34,371	34,535	34,765	34,992	35,151	35,263	35,381	35,495	35,705	35,833	35,972	36,115	36,285
Energy Requirements by Fuel Type															
Coal	27,920	20,349	22,934	20,649	17,514	17,391	17,668	18,284	18,428	20,495	20,203	21,270	20,576	21,352	21,786
Gas	5,350	12,640	9,852	12,314	15,721	16,128	15,992	15,428	15,445	13,400	13,932	12,915	13,823	13,110	12,840
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	474	852	1,240	1,216	1,176	1,119	1,137	1,196	1,153	1,245	1,214	1,293	1,217	1,297	1,303
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1
Purchases from Non-Utility Sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtaillable Service Rider	1	1	1	1	0	0	1	1	1	1	1	1	1	2	2

*Total energy requirements reflect the impact of DSM programs.

Table 8.(4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-High Load-Zero Carbon															
Total Energy Requirements*	37,379	37,621	37,935	38,232	38,604	39,005	39,369	39,696	40,027	40,350	40,766	41,122	41,490	41,865	42,272
Energy Requirements by Fuel Type															
Coal	29,648	23,075	25,165	23,206	19,854	17,701	16,418	17,186	17,402	19,534	19,258	20,385	17,248	16,045	16,795
Gas	6,892	13,179	11,112	13,361	17,115	19,821	21,570	21,051	21,202	19,288	20,016	19,161	22,854	24,494	24,112
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	525	1,034	1,301	1,296	1,278	1,129	1,028	1,105	1,067	1,173	1,137	1,220	1,034	972	1,010
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	4	6	8	9	1	0	0	0	0	0	1	1	0	0	0
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider															
	4	5	6	7	2	1	1	1	1	1	2	2	1	1	1
Scenario: Low Gas-Base Load-Zero Carbon															
Total Energy Requirements*	35,716	35,892	36,153	36,383	36,684	36,998	37,260	37,479	37,704	37,922	38,235	38,478	38,731	38,990	39,279
Energy Requirements by Fuel Type															
Coal	28,824	21,696	24,056	21,933	18,717	18,674	18,969	19,627	19,862	21,848	21,699	20,431	18,077	18,792	19,391
Gas	6,088	12,923	10,480	12,825	16,375	16,793	16,747	16,246	16,280	14,427	14,915	16,449	19,238	18,703	18,354
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	493	947	1,268	1,266	1,237	1,176	1,188	1,250	1,205	1,290	1,264	1,243	1,062	1,141	1,179
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	1	2	3	3	0	0	1	1	1	1	2	0	0	0	0
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider															
	2	3	3	3	1	1	1	1	2	2	2	1	1	1	1

*Total energy requirements reflect the impact of DSM programs.

Table 8.(4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Mid Carbon															
Total Energy Requirements*	35,716	35,892	36,153	36,383	36,684	36,998	37,260	37,479	37,704	37,922	38,235	38,478	38,731	38,990	39,279
Energy Requirements by Fuel Type															
Coal	28,824	21,696	24,056	21,933	18,717	18,674	11,753	11,022	8,291	6,939	6,743	7,015	6,639	6,569	6,683
Gas	6,088	12,923	10,480	12,825	16,375	16,793	23,758	24,716	27,699	29,260	29,765	29,719	30,347	30,676	30,847
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	493	947	1,268	1,266	1,237	1,176	1,394	1,386	1,360	1,369	1,373	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	1	2	3	3	0	0	0	0	0	0	0	0	0	0	0
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	2	3	3	3	1	1	1	1	0	0	0	0	1	1	1
Scenario: Low Gas-Base Load-Carbon Cap															
Total Energy Requirements*	35,716	35,892	36,153	36,383	36,684	36,998	37,260	37,479	37,704	37,922	38,235	38,478	38,731	38,990	39,279
Energy Requirements by Fuel Type															
Coal	28,824	21,696	24,056	21,933	18,717	18,674	16,676	15,790	15,907	18,044	17,512	18,448	18,067	18,781	19,379
Gas	6,088	12,923	10,480	12,825	16,375	16,793	19,174	20,316	20,470	18,423	19,332	18,551	19,247	18,712	18,365
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	493	947	1,268	1,266	1,237	1,176	1,055	1,018	973	1,101	1,036	1,123	1,062	1,141	1,179
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	1	2	3	3	0	0	0	0	0	0	0	0	1	1	1
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	2	3	3	3	1	1	0	1	1	1	1	1	1	1	2

*Total energy requirements reflect the impact of DSM programs.

Table 8.(4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Zero Carbon															
Total Energy Requirements*	34,053	34,164	34,371	34,535	34,765	34,992	35,151	35,263	35,381	35,495	35,705	35,833	35,972	36,115	36,285
Energy Requirements by Fuel Type															
Coal	32,213	28,248	30,010	30,428	30,574	30,756	31,302	31,280	31,375	31,774	31,846	31,788	31,694	32,196	32,150
Gas	819	4,250	2,621	2,361	2,446	2,491	2,100	2,238	2,261	1,976	2,111	2,300	2,533	2,173	2,385
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	713	1,343	1,395	1,390	1,391	1,391	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1
Scenario: High Gas-Low Load-Mid Carbon															
Total Energy Requirements*	34,053	34,164	34,371	34,535	34,765	34,992	35,151	35,263	35,381	35,495	35,705	35,833	35,972	36,115	36,285
Energy Requirements by Fuel Type															
Coal	32,213	28,248	30,010	30,428	30,574	30,756	23,393	23,640	23,163	24,042	23,128	23,294	23,189	23,549	23,961
Gas	819	4,250	2,621	2,361	2,446	2,491	10,009	9,877	10,472	9,708	10,827	10,792	11,036	10,819	10,336
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	237
Purchases from Other Utilities															
OVEC	713	1,343	1,395	1,390	1,391	1,391	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	1	1	1	1	0	0	1	1	1	1	1	1	1	2	2

*Total energy requirements reflect the impact of DSM programs.

Table 8.(4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Carbon Cap															
Total Energy Requirements*	34,053	34,164	34,371	34,535	34,765	34,992	35,151	35,263	35,381	35,495	35,705	35,833	35,972	36,115	36,285
Energy Requirements by Fuel Type															
Coal	32,213	28,248	30,010	30,428	30,574	30,756	23,258	23,114	23,160	23,208	22,847	23,019	22,846	23,026	23,159
Gas	819	4,250	2,621	2,361	2,446	2,491	10,144	10,403	10,476	10,423	10,990	10,950	11,262	10,988	10,429
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	118	118	118	118	355	946
Purchases from Other Utilities															
OVEC	713	1,343	1,395	1,390	1,391	1,391	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	0	0	1	1	0	0	0	0	0	0	1	1	1	1	1
Purchases from Non-Utility Sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtable Service Rider	1	1	1	1	0	0	1	1	1	1	1	1	1	1	1
Scenario: High Gas-High Load-Zero Carbon															
Total Energy Requirements*	37,379	37,621	37,935	38,232	38,604	39,005	39,369	39,696	40,027	40,350	40,766	41,122	41,490	41,865	42,272
Energy Requirements by Fuel Type															
Coal	34,366	30,715	31,701	32,195	32,225	32,499	33,330	33,320	33,492	34,173	34,304	34,505	34,577	35,340	35,195
Gas	1,812	5,205	4,482	4,277	4,631	4,760	4,290	4,631	4,788	4,431	4,711	4,873	5,168	4,780	5,328
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	887	1,368	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	4	6	8	9	1	0	0	0	1	1	1	0	0	0	0
Purchases from Non-Utility Sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtable Service Rider	4	5	6	7	2	1	1	1	1	1	2	1	1	1	1

*Total energy requirements reflect the impact of DSM programs.

Table 8.(4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Zero Carbon															
Total Energy Requirements*	35,716	35,892	36,153	36,383	36,684	36,998	37,260	37,479	37,704	37,922	38,235	38,478	38,731	38,990	39,279
Energy Requirements by Fuel Type															
Coal	33,329	29,559	30,860	31,334	31,461	31,714	32,392	32,437	32,516	33,059	33,183	33,430	33,446	34,113	33,985
Gas	1,283	4,653	3,550	3,298	3,478	3,538	3,118	3,296	3,441	3,116	3,300	3,303	3,540	3,132	3,545
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	793	1,355	1,395	1,390	1,391	1,391	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	1	2	3	3	0	0	1	1	1	1	2	0	0	0	0
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	2	3	3	3	1	1	1	1	2	2	2	1	1	1	1
Scenario: High Gas-Base Load-Mid Carbon															
Total Energy Requirements*	35,716	35,892	36,153	36,383	36,684	36,998	37,260	37,479	37,704	37,922	38,235	38,478	38,731	38,990	39,279
Energy Requirements by Fuel Type															
Coal	33,329	29,559	30,860	31,334	31,461	31,714	22,493	20,992	20,360	20,769	19,882	19,941	20,003	20,240	21,034
Gas	1,283	4,653	3,550	3,298	3,478	3,538	13,018	14,742	15,599	15,408	16,603	16,791	16,982	17,003	16,494
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Purchases from Other Utilities															
OVEC	793	1,355	1,395	1,390	1,391	1,391	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	1	2	3	3	0	0	0	0	0	0	0	0	1	1	1
Purchases from Non-Utility Sources															
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtailable Service Rider	2	3	3	3	1	1	0	1	1	1	1	1	1	1	2

*Total energy requirements reflect the impact of DSM programs.

Table 8.(4)(b)
Summary of Energy Requirements (GWh)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Carbon Cap															
Total Energy Requirements*	35,716	35,892	36,153	36,383	36,684	36,998	37,260	37,479	37,704	37,922	38,235	38,478	38,731	38,990	39,279
Energy Requirements by Fuel Type															
Coal	33,329	29,559	30,860	31,334	31,461	31,714	22,272	22,252	22,081	21,989	21,791	21,619	21,414	21,311	21,329
Gas	1,283	4,653	3,550	3,298	3,478	3,538	13,239	13,482	13,878	14,188	14,695	15,113	15,571	15,933	15,726
Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hydro	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind	0	0	0	0	0	0	0	0	0	0	0	0	0	0	473
Purchases from Other Utilities															
OVEC	793	1,355	1,395	1,390	1,391	1,391	1,395	1,391	1,391	1,391	1,395	1,391	1,391	1,391	1,395
Economy Purchases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emergency Purchases	1	2	3	3	0	0	0	0	0	0	0	0	1	1	1
Purchases from Non-Utility Sources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Curtable Service Rider	2	3	3	3	1	1	0	1	1	1	1	1	1	1	2

*Total energy requirements reflect the impact of DSM programs.

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon															
Coal															
Energy (GWh)	32,111	28,032	26,495	26,906	23,717	24,676	25,130	26,271	28,227	30,524	30,822	30,755	30,765	31,429	31,434
Total (000 Tons)	15,140	13,192	12,492	12,718	11,165	11,614	11,822	12,388	13,332	14,459	14,597	14,571	14,578	14,897	14,888
(GBtu) Consumed	340,471	295,713	279,042	283,672	249,004	258,958	263,662	276,367	297,475	322,769	325,847	325,316	325,654	332,567	332,347
Gas															
Energy (GWh)	935	4,476	6,174	5,902	9,304	8,579	8,272	7,248	5,409	3,226	3,134	3,333	3,462	2,941	3,102
Total (000 Tons)	9,842	33,136	44,145	42,334	63,628	59,184	56,956	50,259	38,117	23,587	22,840	24,399	25,465	21,756	23,291
(GBtu) Consumed	10,073	33,944	45,224	43,366	65,212	60,657	58,372	51,508	39,061	24,167	23,399	24,996	26,087	22,284	23,856
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Scenario: Mid Gas-Low Load-Mid Carbon															
Coal															
Energy (GWh)	32,111	28,032	26,495	26,906	23,717	24,676	22,202	22,506	22,398	23,491	22,680	22,956	22,824	23,253	23,845
Total (000 Tons)	15,140	13,192	12,492	12,718	11,165	11,614	10,437	10,588	10,530	11,058	10,661	10,803	10,739	10,942	11,218
(GBtu) Consumed	340,471	295,713	279,042	283,672	249,004	258,958	232,366	235,787	234,455	246,380	237,423	240,680	239,433	243,734	249,946
Gas															
Energy (GWh)	935	4,476	6,174	5,902	9,304	8,579	11,200	11,012	11,238	10,258	11,275	11,130	11,402	11,116	10,689
Total (000 Tons)	9,842	33,136	44,145	42,334	63,628	59,184	76,887	75,914	77,378	71,229	77,652	77,129	79,052	76,958	74,786
(GBtu) Consumed	10,073	33,944	45,224	43,366	65,212	60,657	78,795	77,797	79,296	72,992	79,570	79,033	81,002	78,853	76,623
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Carbon Cap															
Coal															
Energy (GWh)	32,111	28,032	26,495	26,906	23,717	24,676	23,335	23,278	23,230	23,005	22,971	22,906	22,770	22,566	22,002
Total (000 Tons)	15,140	13,192	12,492	12,718	11,165	11,614	10,970	10,952	10,921	10,812	10,804	10,774	10,713	10,597	10,299
(GBtu) Consumed	340,471	295,713	279,042	283,672	249,004	258,958	244,435	244,056	243,328	240,861	240,644	240,017	238,845	235,998	229,337
Gas															
Energy (GWh)	935	4,476	6,174	5,902	9,304	8,579	10,067	10,239	10,406	10,745	10,984	11,181	11,455	11,802	12,533
Total (000 Tons)	9,842	33,136	44,145	42,334	63,628	59,184	69,294	70,568	71,659	76,182	75,355	77,607	79,573	84,021	93,680
(GBtu) Consumed	10,073	33,944	45,224	43,366	65,212	60,657	71,012	72,317	73,434	78,069	77,216	79,522	81,535	86,093	95,990
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Scenario: Mid Gas-High Load-Zero Carbon															
Coal															
Energy (GWh)	34,183	30,453	29,101	29,584	26,333	27,264	27,575	28,625	30,062	32,449	32,769	32,438	32,597	33,407	33,630
Total (000 Tons)	16,136	14,350	13,745	14,011	12,434	12,871	13,016	13,533	14,219	15,380	15,529	15,376	15,451	15,842	15,931
(GBtu) Consumed	362,873	321,777	307,225	312,687	277,508	287,167	290,417	302,049	317,369	343,431	346,726	343,349	345,230	353,744	355,759
Gas															
Energy (GWh)	2,020	5,473	7,095	6,894	10,523	9,999	10,045	9,325	8,218	6,155	6,246	6,939	7,148	6,713	6,893
Total (000 Tons)	21,263	43,671	54,065	52,989	73,535	71,109	70,590	66,431	59,389	46,404	46,673	49,401	50,484	47,500	49,194
(GBtu) Consumed	21,722	44,667	55,305	54,190	75,334	72,873	72,338	68,072	60,850	47,536	47,804	50,625	51,733	48,672	50,406
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Zero Carbon															
Coal															
Energy (GWh)	33,186	29,340	27,804	28,263	25,058	25,953	26,357	27,531	29,182	31,548	31,888	31,818	31,810	32,613	32,596
Total (000 Tons)	15,657	13,818	13,121	13,374	11,816	12,236	12,422	13,001	13,794	14,949	15,108	15,080	15,076	15,464	15,443
(GBtu) Consumed	352,099	309,809	293,191	298,394	263,631	272,916	277,104	290,122	307,843	333,769	337,292	336,711	336,824	345,259	344,785
Gas															
Energy (GWh)	1,448	4,878	6,628	6,379	9,880	9,304	9,153	8,202	6,776	4,627	4,595	4,913	5,174	4,630	4,932
Total (000 Tons)	15,234	37,387	49,026	47,441	68,229	64,932	63,662	57,601	48,357	34,243	33,975	36,511	38,775	34,766	37,613
(GBtu) Consumed	15,578	38,273	50,194	48,565	69,918	66,536	65,230	59,015	49,536	35,066	34,782	37,392	39,707	35,608	38,522
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Scenario: Mid Gas-Base Load-Mid Carbon															
Coal															
Energy (GWh)	33,186	29,340	27,804	28,263	25,058	25,953	22,386	21,551	18,228	16,866	16,048	16,522	16,523	16,978	17,780
Total (000 Tons)	15,657	13,818	13,121	13,374	11,816	12,236	10,532	10,133	8,559	7,910	7,526	7,754	7,752	7,965	8,337
(GBtu) Consumed	352,099	309,809	293,191	298,394	263,631	272,916	234,474	225,541	190,111	175,466	166,823	171,985	172,203	176,724	185,058
Gas															
Energy (GWh)	1,448	4,878	6,628	6,379	9,880	9,304	13,124	14,182	17,731	19,312	20,439	20,211	20,464	20,267	19,750
Total (000 Tons)	15,234	37,387	49,026	47,441	68,229	64,932	89,681	96,257	117,825	127,342	134,882	133,484	135,240	133,971	130,699
(GBtu) Consumed	15,578	38,273	50,194	48,565	69,918	66,536	91,904	98,642	120,766	130,520	138,247	136,812	138,611	137,309	133,953
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Carbon Cap															
Coal															
Energy (GWh)	33,186	29,340	27,804	28,263	25,058	25,953	22,181	22,140	22,052	21,735	21,747	21,432	21,294	20,283	20,777
Total (000 Tons)	15,657	13,818	13,121	13,374	11,816	12,236	10,420	10,385	10,336	10,196	10,193	10,057	9,993	9,530	9,754
(GBtu) Consumed	352,099	309,809	293,191	298,394	263,631	272,916	232,007	231,333	230,201	227,068	226,951	223,951	222,714	211,922	216,973
Gas															
Energy (GWh)	1,448	4,878	6,628	6,379	9,880	9,304	13,331	13,594	13,907	14,442	14,739	15,300	15,691	16,961	16,752
Total (000 Tons)	15,234	37,387	49,026	47,441	68,229	64,932	89,936	90,981	93,066	96,475	98,548	102,290	105,016	113,119	112,260
(GBtu) Consumed	15,578	38,273	50,194	48,565	69,918	66,536	92,176	93,245	95,381	98,873	100,995	104,828	107,618	115,922	115,037
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Scenario: Low Gas-Low Load-Zero Carbon															
Coal															
Energy (GWh)	27,920	20,349	22,934	20,649	17,514	17,391	17,676	18,293	18,438	20,506	20,214	21,282	20,590	21,366	21,802
Total (000 Tons)	13,110	9,530	10,779	9,715	8,231	8,153	8,292	8,579	8,649	9,623	9,483	9,998	9,665	10,035	10,234
(GBtu) Consumed	294,847	212,906	240,284	215,899	182,563	180,740	183,808	190,368	191,880	213,968	210,771	222,481	215,203	223,275	227,752
Gas															
Energy (GWh)	5,350	12,640	9,852	12,314	15,721	16,128	15,984	15,420	15,436	13,390	13,922	12,904	13,811	13,098	12,825
Total (000 Tons)	54,919	115,644	81,676	107,294	123,092	130,292	125,713	120,938	120,248	103,271	104,709	95,318	103,735	97,312	96,689
(GBtu) Consumed	56,277	118,515	83,693	109,951	126,163	133,543	128,848	123,954	123,245	105,843	107,315	97,688	106,313	99,729	99,088
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Mid Carbon															
Coal															
Energy (GWh)	27,920	20,349	22,934	20,649	17,514	17,391	11,359	11,799	11,519	12,286	11,677	11,986	11,156	10,724	10,749
Total (000 Tons)	13,110	9,530	10,779	9,715	8,231	8,153	5,376	5,573	5,437	5,791	5,501	5,642	5,248	5,049	5,052
(GBtu) Consumed	294,847	212,906	240,284	215,899	182,563	180,740	118,333	122,780	119,731	127,705	121,172	124,400	115,802	111,065	111,067
Gas															
Energy (GWh)	5,350	12,640	9,852	12,314	15,721	16,128	22,045	21,719	22,118	21,463	22,278	22,101	23,070	23,644	23,785
Total (000 Tons)	54,919	115,644	81,676	107,294	123,092	130,292	186,835	184,482	188,055	185,293	190,016	189,217	199,546	207,503	212,285
(GBtu) Consumed	56,277	118,515	83,693	109,951	126,163	133,543	191,492	189,079	192,740	189,907	194,743	193,923	204,507	212,662	217,560
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Scenario: Low Gas-Low Load-Carbon Cap															
Coal															
Energy (GWh)	27,920	20,349	22,934	20,649	17,514	17,391	17,668	18,284	18,428	20,495	20,203	21,270	20,576	21,352	21,786
Total (000 Tons)	13,110	9,530	10,779	9,715	8,231	8,153	8,288	8,575	8,644	9,618	9,478	9,992	9,659	10,029	10,226
(GBtu) Consumed	294,847	212,906	240,284	215,899	182,563	180,740	183,717	190,268	191,775	213,851	210,651	222,345	215,062	223,131	227,580
Gas															
Energy (GWh)	5,350	12,640	9,852	12,314	15,721	16,128	15,992	15,428	15,445	13,400	13,932	12,915	13,823	13,110	12,840
Total (000 Tons)	54,919	115,644	81,676	107,294	123,092	130,292	125,819	121,055	120,370	103,407	104,850	95,477	103,900	97,480	96,889
(GBtu) Consumed	56,277	118,515	83,693	109,951	126,163	133,543	128,950	124,066	123,362	105,974	107,449	97,839	106,471	99,888	99,279
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-High Load-Zero Carbon															
Coal															
Energy (GWh)	29,648	23,075	25,165	23,206	19,854	17,701	16,418	17,186	17,402	19,534	19,258	20,385	17,248	16,045	16,795
Total (000 Tons)	13,941	10,825	11,846	10,940	9,339	8,299	7,706	8,063	8,167	9,171	9,039	9,581	8,098	7,542	7,883
(GBtu) Consumed	313,537	242,222	264,374	243,522	207,630	184,049	170,572	178,695	180,984	203,746	200,720	213,024	179,900	167,037	174,712
Gas															
Energy (GWh)	6,892	13,179	11,112	13,361	17,115	19,821	21,570	21,051	21,202	19,288	20,016	19,161	22,854	24,494	24,112
Total (000 Tons)	70,645	121,293	94,719	118,007	137,213	153,896	158,307	154,067	154,747	139,085	142,472	134,815	157,665	164,858	162,955
(GBtu) Consumed	72,339	124,230	96,975	120,834	140,603	157,733	162,251	157,903	158,597	142,541	146,005	138,152	161,596	168,967	167,015
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Scenario: Low Gas-Base Load-Zero Carbon															
Coal															
Energy (GWh)	28,824	21,696	24,056	21,933	18,717	18,674	18,969	19,627	19,862	21,848	21,699	20,431	18,077	18,792	19,391
Total (000 Tons)	13,545	10,169	11,316	10,330	8,799	8,762	8,905	9,212	9,324	10,261	10,188	9,596	8,486	8,827	9,098
(GBtu) Consumed	304,627	227,393	252,407	229,760	195,422	194,491	197,643	204,667	207,128	228,364	226,689	213,403	188,556	195,966	202,093
Gas															
Energy (GWh)	6,088	12,923	10,480	12,825	16,375	16,793	16,747	16,246	16,280	14,427	14,915	16,449	19,238	18,703	18,354
Total (000 Tons)	62,429	118,560	88,145	112,483	129,703	136,986	133,442	129,326	128,828	113,873	114,865	117,487	134,698	130,073	128,600
(GBtu) Consumed	63,953	121,475	90,290	115,233	132,929	140,391	136,754	132,533	132,019	116,687	117,694	120,414	138,053	133,310	131,798
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Mid Carbon															
Coal															
Energy (GWh)	28,824	21,696	24,056	21,933	18,717	18,674	11,753	11,022	8,291	6,939	6,743	7,015	6,639	6,569	6,683
Total (000 Tons)	13,545	10,169	11,316	10,330	8,799	8,762	5,560	5,216	3,944	3,315	3,221	3,346	3,163	3,137	3,184
(GBtu) Consumed	304,627	227,393	252,407	229,760	195,422	194,491	122,511	114,821	86,596	72,612	70,573	73,378	69,471	68,752	69,668
Gas															
Energy (GWh)	6,088	12,923	10,480	12,825	16,375	16,793	23,758	24,716	27,699	29,260	29,765	29,719	30,347	30,676	30,847
Total (000 Tons)	62,429	118,560	88,145	112,483	129,703	136,986	197,491	203,164	219,387	229,045	230,674	231,070	237,509	242,047	246,371
(GBtu) Consumed	63,953	121,475	90,290	115,233	132,929	140,391	202,409	208,222	224,866	234,766	236,433	236,838	243,436	248,087	252,517
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Scenario: Low Gas-Base Load-Carbon Cap															
Coal															
Energy (GWh)	28,824	21,696	24,056	21,933	18,717	18,674	16,676	15,790	15,907	18,044	17,512	18,448	18,067	18,781	19,379
Total (000 Tons)	13,545	10,169	11,316	10,330	8,799	8,762	7,823	7,406	7,464	8,469	8,218	8,665	8,481	8,822	9,092
(GBtu) Consumed	304,627	227,393	252,407	229,760	195,422	194,491	173,247	163,864	165,143	187,884	182,187	192,360	188,450	195,853	201,964
Gas															
Energy (GWh)	6,088	12,923	10,480	12,825	16,375	16,793	19,174	20,316	20,470	18,423	19,332	18,551	19,247	18,712	18,365
Total (000 Tons)	62,429	118,560	88,145	112,483	129,703	136,986	144,250	146,588	147,288	130,232	135,477	128,540	134,822	130,204	128,751
(GBtu) Consumed	63,953	121,475	90,290	115,233	132,929	140,391	147,847	150,243	150,958	133,475	138,847	131,734	138,170	133,434	131,940
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Zero Carbon															
Coal															
Energy (GWh)	32,213	28,248	30,010	30,428	30,574	30,756	31,302	31,280	31,375	31,774	31,846	31,788	31,694	32,196	32,150
Total (000 Tons)	15,188	13,293	14,183	14,419	14,489	14,568	14,829	14,819	14,857	15,054	15,081	15,055	15,008	15,250	15,215
(GBtu) Consumed	341,544	297,997	317,037	321,826	323,627	325,193	331,025	330,832	331,665	336,132	336,708	336,162	335,317	340,477	339,688
Gas															
Energy (GWh)	819	4,250	2,621	2,361	2,446	2,491	2,100	2,238	2,261	1,976	2,111	2,300	2,533	2,173	2,385
Total (000 Tons)	8,827	31,381	20,806	19,044	18,101	19,024	15,976	17,226	17,455	15,616	16,512	18,114	20,044	17,291	19,249
(GBtu) Consumed	9,033	32,145	21,302	19,494	18,548	19,493	16,368	17,649	17,882	15,997	16,912	18,554	20,530	17,707	19,712
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Scenario: High Gas-Low Load-Mid Carbon															
Coal															
Energy (GWh)	32,213	28,248	30,010	30,428	30,574	30,756	23,393	23,640	23,163	24,042	23,128	23,294	23,189	23,549	23,961
Total (000 Tons)	15,188	13,293	14,183	14,419	14,489	14,568	10,995	11,121	10,888	11,318	10,873	10,965	10,913	11,084	11,272
(GBtu) Consumed	341,544	297,997	317,037	321,826	323,627	325,193	244,990	247,830	242,569	252,265	242,220	244,330	243,360	246,944	251,162
Gas															
Energy (GWh)	819	4,250	2,621	2,361	2,446	2,491	10,009	9,877	10,472	9,708	10,827	10,792	11,036	10,819	10,336
Total (000 Tons)	8,827	31,381	20,806	19,044	18,101	19,024	68,868	68,177	72,066	67,217	74,320	74,430	76,222	74,551	71,845
(GBtu) Consumed	9,033	32,145	21,302	19,494	18,548	19,493	70,575	69,866	73,850	68,879	76,156	76,266	78,100	76,386	73,610
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind															
Energy (GWh)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	237

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Carbon Cap															
Coal															
Energy (GWh)	32,213	28,248	30,010	30,428	30,574	30,756	23,258	23,114	23,160	23,208	22,847	23,019	22,846	23,026	23,159
Total (000 Tons)	15,188	13,293	14,183	14,419	14,489	14,568	10,931	10,874	10,886	10,903	10,741	10,827	10,743	10,824	10,879
(GBtu) Consumed	341,544	297,997	317,037	321,826	323,627	325,193	243,545	242,266	242,529	242,856	239,228	241,199	239,507	241,048	242,291
Gas															
Energy (GWh)	819	4,250	2,621	2,361	2,446	2,491	10,144	10,403	10,476	10,423	10,990	10,950	11,262	10,988	10,429
Total (000 Tons)	8,827	31,381	20,806	19,044	18,101	19,024	69,760	71,560	72,089	72,860	75,315	75,597	77,879	75,828	72,363
(GBtu) Consumed	9,033	32,145	21,302	19,494	18,548	19,493	71,490	73,334	73,874	74,664	77,175	77,463	79,799	77,697	74,144
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind															
Energy (GWh)	0	0	0	0	0	0	0	0	0	118	118	118	118	355	946
Scenario: High Gas-High Load-Zero Carbon															
Coal															
Energy (GWh)	34,366	30,715	31,701	32,195	32,225	32,499	33,330	33,320	33,492	34,173	34,304	34,505	34,577	35,340	35,195
Total (000 Tons)	16,221	14,473	14,991	15,265	15,277	15,397	15,794	15,785	15,860	16,189	16,244	16,326	16,357	16,720	16,639
(GBtu) Consumed	364,763	324,556	335,208	340,807	341,318	343,786	352,667	352,497	354,135	361,564	362,798	364,654	365,561	373,442	371,614
Gas															
Energy (GWh)	1,812	5,205	4,482	4,277	4,631	4,760	4,290	4,631	4,788	4,431	4,711	4,873	5,168	4,780	5,328
Total (000 Tons)	19,487	41,414	36,936	35,811	34,911	37,140	33,123	36,218	37,563	35,792	37,497	36,710	38,207	35,533	39,786
(GBtu) Consumed	19,901	42,353	37,747	36,583	35,744	38,054	33,934	37,103	38,478	36,660	38,398	37,617	39,150	36,407	40,762
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Zero Carbon															
Coal															
Energy (GWh)	33,329	29,559	30,860	31,334	31,461	31,714	32,392	32,437	32,516	33,059	33,183	33,430	33,446	34,113	33,985
Total (000 Tons)	15,724	13,921	14,589	14,854	14,913	15,025	15,349	15,368	15,399	15,664	15,715	15,825	15,828	16,147	16,074
(GBtu) Consumed	353,596	312,141	326,168	331,573	333,141	335,444	342,691	343,155	343,801	349,807	350,921	353,414	353,692	360,596	358,956
Gas															
Energy (GWh)	1,283	4,653	3,550	3,298	3,478	3,538	3,118	3,296	3,441	3,116	3,300	3,303	3,540	3,132	3,545
Total (000 Tons)	13,809	35,521	28,817	27,193	25,999	27,222	23,962	25,628	26,826	24,775	26,123	24,792	26,187	23,343	26,394
(GBtu) Consumed	14,118	36,360	29,480	27,810	26,632	27,883	24,538	26,242	27,467	25,361	26,733	25,401	26,829	23,913	27,037
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Scenario: High Gas-Base Load-Mid Carbon															
Coal															
Energy (GWh)	33,329	29,559	30,860	31,334	31,461	31,714	22,493	20,992	20,360	20,769	19,882	19,941	20,003	20,240	21,034
Total (000 Tons)	15,724	13,921	14,589	14,854	14,913	15,025	10,567	9,843	9,539	9,747	9,322	9,364	9,390	9,505	9,875
(GBtu) Consumed	353,596	312,141	326,168	331,573	333,141	335,444	235,311	219,064	212,207	216,873	207,260	208,223	209,051	211,356	219,676
Gas															
Energy (GWh)	1,283	4,653	3,550	3,298	3,478	3,538	13,018	14,742	15,599	15,408	16,603	16,791	16,982	17,003	16,494
Total (000 Tons)	13,809	35,521	28,817	27,193	25,999	27,222	87,747	98,219	103,920	102,550	110,521	111,873	113,355	113,357	110,266
(GBtu) Consumed	14,118	36,360	29,480	27,810	26,632	27,883	89,932	100,664	106,506	105,101	113,267	114,650	116,166	116,165	112,994
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15

Table 8.(4)(c)
Total Energy Input and Total Generation by Primary Fuel Type

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Carbon Cap															
Coal															
Energy (GWh)	33,329	29,559	30,860	31,334	31,461	31,714	22,272	22,252	22,081	21,989	21,791	21,619	21,414	21,311	21,329
Total (000 Tons)	15,724	13,921	14,589	14,854	14,913	15,025	10,461	10,437	10,348	10,318	10,214	10,146	10,048	10,002	10,007
(GBtu) Consumed	353,596	312,141	326,168	331,573	333,141	335,444	232,946	232,481	230,457	229,796	227,419	225,922	223,944	222,628	222,688
Gas															
Energy (GWh)	1,283	4,653	3,550	3,298	3,478	3,538	13,239	13,482	13,878	14,188	14,695	15,113	15,571	15,933	15,726
Total (000 Tons)	13,809	35,521	28,817	27,193	25,999	27,222	89,209	89,964	92,678	94,657	98,095	100,986	104,187	106,497	105,184
(GBtu) Consumed	14,118	36,360	29,480	27,810	26,632	27,883	91,430	92,204	94,984	97,010	100,531	103,491	106,769	109,135	107,786
Hydro															
Energy (GWh)	307	321	334	338	338	338	338	338	338	338	338	338	338	338	338
Solar															
Energy (GWh)	0	0	9	15	15	15	15	15	15	15	15	15	15	15	15
Wind															
Energy (GWh)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	473

Table 9.(1)
Financial Information

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Low Load-Zero Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Mid Gas-Low Load-Mid Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Mid Gas-Low Load-Carbon Cap															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Mid Gas-High Load-Zero Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														

Notes:

1. Present Value and Real Value Revenue Requirements are in 2013\$.
2. Present Value is nominal value discounted at the discount rate. Real value is the nominal valued discounted at the inflation rate.
3. Average Rate is Nominal Value of Revenue Requirements divided by total Energy Requirements from Table 8.(4)(b).

Table 9.(1)
Financial Information

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Mid Gas-Base Load-Zero Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Mid Gas-Base Load-Mid Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Mid Gas-Base Load-Carbon Cap															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Low Gas-Low Load-Zero Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														

Notes:

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Table 9.(1)
Financial Information

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Low Load-Mid Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Low Gas-Low Load-Carbon Cap															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Low Gas-High Load-Zero Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Low Gas-Base Load-Zero Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														

Notes:

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Table 9.(1)
Financial Information

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: Low Gas-Base Load-Mid Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: Low Gas-Base Load-Carbon Cap															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: High Gas-Low Load-Zero Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: High Gas-Low Load-Mid Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														

Notes:

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Table 9.(1)
Financial Information

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Low Load-Carbon Cap															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: High Gas-High Load-Zero Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: High Gas-Base Load-Zero Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														
Scenario: High Gas-Base Load-Mid Carbon															
Present Value of Revenue Requirements (\$ million) ¹	[REDACTED]														
Real Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Nominal Value of Revenue Requirement (\$ million) ²	[REDACTED]														
Average Rate (Cents/kWh) ³	[REDACTED]														

Notes:

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3. Average Rate is Nominal Value of Revenue Requirements divided by total Energy Requirements from Table 8.(4)(b).

**Table 9.(1)
Financial Information**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Scenario: High Gas-Base Load-Carbon Cap															
Present Value of Revenue Requirements (\$ million) ¹															
Real Value of Revenue Requirement (\$ million) ²															
Nominal Value of Revenue Requirement (\$ million) ²															
Average Rate (Cents/kWh) ³															

Notes:

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**Kentucky Utilities Company/Louisville Gas and
Electric Company
Transmission Construction Projects**

Project No.	Description	In-Service Date
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CONFIDENTIAL INFORMATION REDACTED

Transmission System Map

CONFIDENTIAL INFORMATION REDACTED