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December 17, 2021

Mr. Tony Matthews
Public Utilities Commission of Ohio
180 East Broad Street, 3rd Floor
Columbus, Ohio 43215-3793

Re: Duke Energy Ohio, Inc.
Management and Performance Audit of
Gas Purchasing Practices and Policies
Case No. 21-218-GA-GCR

Dear Mr. Matthews:

Enclosed are confidential and public versions of Exeter's report (one bound and one unbound of each version) on the management and performance audit of Duke Energy Ohio's gas procurement practices and policies for the audit period September 2018 through August 2021. An electronic copy of each version of the report is also provided in the enclosed computer flash drive. The report consists of six chapters addressing various aspects of our audit. Our conclusions and recommendations are provided in separate sections at the end of each chapter and are also presented in the Executive Summary at the front of the report. Our workpapers are provided, as required.

We appreciate the opportunity to have conducted this audit and to be of service to the Commission Staff.

Very truly yours,



Jerome D. Mierzwa
Vice President

JDM/cc
Enclosures

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**REPORT TO THE
PUBLIC UTILITIES COMMISSION OF OHIO
on the
MANAGEMENT AND PERFORMANCE AUDIT
OF GAS PURCHASING PRACTICES AND POLICIES OF**



DUKE ENERGY OHIO, INC.

CASE NO. 21-218-GA-GCR

December 2021

Prepared by:

EXETER

ASSOCIATES, INC.
10480 Little Patuxent Parkway, Suite 300
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Executive Summary

Exeter Associates, Inc. (Exeter) was selected by the Public Utilities Commission of Ohio (PUCO or Commission) through a request for proposal (RFP) to perform a management performance audit of the gas purchasing practices and policies of Duke Energy Ohio, Inc. (DE-Ohio or Company) for the period September 2018 through August 2021 (audit period). The conclusions and recommendations from Exeter's audit are summarized below. Exeter has also conducted management performance audits of DE-Ohio for the Gas Cost Recovery (GCR) periods September 2012 through August 2015 in PUCO Case No. 15-218-GA-GCR (2015 management performance audit), and September 2015 through August 2018 in PUCO Case No. 18-218-GA-GCR (2018 management performance audit).

1. Rate Comparison

The State of Ohio is served by three major natural gas utilities in addition to DE-Ohio—Columbia Gas of Ohio (COH), Dominion Energy Ohio (Dominion), and CenterPoint Energy Ohio (CenterPoint). COH, Dominion, and CenterPoint are no longer subject to the GCR mechanism, and recover their gas costs through a Standard Service Offer (SSO) rate. The storage portfolios of DE-Ohio, COH, and CenterPoint primarily consist of interstate pipeline services, while Dominion's portfolio primarily consists of on-system storage. In Ohio, the costs associated with interstate pipeline storage service are recovered by natural gas utilities through gas cost rates, while the costs associated with owning and operating on-system storage are generally recovered through base rates. This recovery difference would tend to result in lower gas cost rates for natural gas utilities with on-system storage. Dominion also has greater access to lower-cost Marcellus Shale production region supplies than DE-Ohio, COH, and CenterPoint. Due to these two advantages, the audit period SSO rates of Dominion were lower than the GCR and SSO rates of DE-Ohio, COH, and CenterPoint. When compared to the SSO rates of COH and VEDO, which maintain storage portfolios similar to that of DE-Ohio, the GCR rates of DE-Ohio were slightly less, averaging \$0.18/Mcf less than the SSO rates of COH and CenterPoint.

2. Storage Inventory Carrying Charges

DE-Ohio currently purchases storage service from both Columbia Gas Transmission (Columbia Gas) and Texas Gas Transmission (Texas Gas). Under the storage service purchased from Texas Gas, DE-Ohio is advanced gas during the winter (November – March) and returns the advanced gas during the subsequent summer (April – October). Under the storage service purchased from Columbia Gas, DE-Ohio injects into storage gas purchased during the summer and withdraws that gas during the winter. The costs associated with gas purchased during the summer and injected into Columbia Gas storage are not recovered by DE-Ohio under the GCR mechanism until that gas is withdrawn from storage during the subsequent winter. As such, DE-Ohio incurs carrying costs on the gas it purchases and injects into storage during the summer. In addition to recovering interstate pipeline charges and gas supply commodity costs through its GCR rates, DE-Ohio is permitted to recover its storage inventory carrying

charge (SICC) costs through its GCR rates. During the 2018 management performance audit, Exeter noted that DE-Ohio calculated the SICC costs to include in its monthly GCR rate based on 100% of the balance in its Columbia Gas storage inventory. Exeter's audit noted that suppliers purchasing its Enhanced Firm Balancing Service (EFBS) from DE-Ohio purchased and paid for a portion of the gas injected into Columbia Gas storage inventory. Exeter found that it was inappropriate for DE-Ohio to assess GCR customers SICC costs on gas injected into Columbia Gas storage that was paid for by suppliers and is subsequently used to serve firm transportation customers. Exeter recommended that DE-Ohio be required to recalculate the SICC costs included in its GCR rates during the prior audit period and issue refunds, inclusive of interest, to GCR rate customers through the refund and reconciliation adjustment provision of its GCR.

The Stipulation and Recommendation approved by the Commission in the 2018 management performance audit (2018 Settlement) required the Company to change the calculation of SICC costs to remove gas stored by EFBS suppliers beginning March 2019. DE-Ohio was also required to refund an over-collection of SICC costs of \$2,692,241 that occurred from September 2015 through February 2019 over 12 months through the refund adjustment component of the GCR. The 2018 Settlement specified that the General Audit Requirements of the current audit are to verify that the Company refunded the SICC cost over-collection that occurred from September 2015 through February 2019 totaling \$2,692,241 through the refund adjustment of the GCR, and to verify that DE-Ohio changed its SICC cost calculation to remove gas stored by EFBS suppliers.

Exeter's audit has verified that DE-Ohio refunded the SICC cost over-collection of \$2,692,241, plus \$148,073 in interest, through the refund adjustment components of the GCR. Exeter's audit has also verified that the Company changed the calculation of SICC costs to remove gas stored by EFBS suppliers beginning March 2019.

3. Organizational Structure

Exeter's audit revealed no concerns with respect to the organizational structure of DE-Ohio or Duke Energy that would interfere with the purchase of reliable supplies of gas at minimum prices.

4. Participation in Federal Energy Regulatory Commission Proceedings

DE-Ohio's Federal Energy Regulatory Commission (FERC) proceeding intervention policy is consistent with a reasonable level of participation at a reasonable resource effort. Audit period participation in FERC proceedings was appropriately based on DE-Ohio's intervention policy.

5. Interstate Pipeline Capacity Entitlement Changes and Asset Management Agreements

DE-Ohio extended its firm transportation contracts with Columbia Gulf and Tennessee Gas Pipeline (Tennessee Gas) during the audit period and increased its Texas Gas short-term firm

transportation capacity entitlements under a new contract when the then-existing contract expired. DE-Ohio was able to maintain discounted rates under each of these arrangements which provide a significant benefit to GCR customers. DE-Ohio also entered into a new firm transportation agreement with Rockies Express Pipeline (REX). Exeter's audit found that DE-Ohio reasonably evaluated and assessed its capacity options during the audit period and adequately documented its analysis of those options. DE-Ohio's audit period Asset Management Agreements (AMAs) were selected through a reasonable RFP process and provided value to GCR customers.

6. Design Day Forecasting Model

Accurate forecasting of design day demands may be the most critical component to providing adequate and reliable service at minimum prices. The design day model currently utilized by DE-Ohio is statistically invalid, does not reasonably project demand under peak day conditions, and consistently over-forecasts demands. Despite these concerns with DE-Ohio's design day forecasting model, there appear not to have been adverse consequences resulting from utilization of the model for capacity planning purposes during the audit period. Exeter recommends that DE-Ohio prioritize development of a statistically valid design day forecasting model that reasonably projects demands under peak day conditions.

Exeter's 2018 management performance audit in Case No. 18-218-GA-GCR noted that day of the week, wind speed, and prior-day heating degree days (HDD) generally impact daily customer requirements. Exeter's audit recommended that the Company explore the inclusion of these independent variables in its design day forecast model. A General Audit Requirement for the current audit is to determine whether DE-Ohio has explored independent variable such as wind speed, day of the week, and prior-day HDD in developing its design day forecast model and verify whether any changes to the model were made during the audit period. DE-Ohio did not explore the inclusion of other independent variables in its design day forecast models prepared for the audit period, but indicated that it is currently exploring these other variables while preparing its design day forecast for the winter of 2021-2022. In developing a statistically valid design day forecasting model, DE-Ohio should evaluate the inclusion of wind speed, prior-day HDDs, and weekend/holiday independent variables, and DE-Ohio's evaluation of the inclusions of these additional independent variables should be evaluated in the Company's next management performance audit.

7. Winter Season Requirements Forecast

DE-Ohio develops its winter season requirements forecast by developing daily winter season firm load forecasts utilizing the total daily firm demands forecasted by the regression analysis develop to support its design day forecasts utilizing daily temperature data from the winter of 1995-1996. This winter was 20% colder than normal. The Company utilizes its Gas Transportation Management System (GTMS) to determine the GCR and firm transportation customer components of forecasted firm winter requirements. The projected requirements of GCR customers under design colder-than-normal winter weather conditions were estimated

to be 20,327,000 Dth for the 2020-2021 winter season. DE-Ohio's 2020-2021 winter season firm citygate capacity entitlements for GCR customers were approximately 20,850,000 Dth. Thus, based on the Company's projected winter requirements of GCR customers, the winter requirements of GCR customers, and the winter season capacity resources maintained by the Company to meet those requirements were in reasonable balance. However, DE-Ohio utilizes the same regression analysis prepared for its design day forecasts to prepare its winter requirements forecasts. The design day regression analysis developed by DE-Ohio over-forecasts expected demands. Based on actual GCR sales for calendar year 2020, the annual requirements of GCR customers in a winter that is 20% colder than normal would be approximately 17,850,000 Dth. DE-Ohio's capacity resource portfolio is largely determined by its design day requirements and, therefore, Exeter found no adverse consequences for GCR customers due to the over-forecasting of winter season capacity requirements. DE-Ohio obtains value for its unutilized winter capacity resources by releasing that capacity under AMAs. Exeter's recommendation concerning DE-Ohio's design day forecasting model will address the over-forecasting of winter GCR requirements since the winter requirement forecast also utilizes the Company's design day forecast model.

8. Annual Requirements Forecast

The Company develops its projections of annual firm customer requirements by extending the approach utilized to develop its 151-day winter season projections to 365 days. The projected requirements of GCR customers under design colder-than-normal annual weather conditions were estimated to be 37,000,987 Dth for the period November 2020 through October 2021. This compares to actual GCR sales of approximately 17,000,000 Mcf in calendar years 2019 and 2020, both of which were slightly colder than normal. Therefore, Exeter finds DE-Ohio's annual GCR sales projection to be unreasonable and brings into question management oversight of DE-Ohio's forecasting process. Although Exeter found that no adverse impact was experienced by GCR customers due to the significant overestimate of projected annual GCR sales, Exeter recommends that DE-Ohio's management develop procedures to ensure appropriate oversight and scrutiny of the Company's forecasts.

9. Load Duration Curve

DE-Ohio utilizes a load duration curve which compares daily GCR customer requirements and the capacity resources currently reserved by the Company to evaluate whether additional resources are needed to meet those requirements. Exeter's review of the load duration curve developed for the winter of 2020-2021 revealed that it was not developed using the Company's historic practice and standard industry practices. As a result, the load duration curve overstated DE-Ohio's capacity resource deficiency for the winter of 2020-2021. Based on the deficiency indicated by the load duration curve, DE-Ohio entered into a contract with [REDACTED] for [REDACTED] Dth/day of citygate-delivered peaking service. [REDACTED]

[REDACTED] DE-Ohio's failure to use its historic and standard industry practice to develop its load duration curve did not adversely affect GCR customers. However, DE-Ohio should revise the development of future load

duration curves to reflect its historic and standard industry practices to avoid the potential for incurring unnecessary charges for GCR customers.

10. KO Transmission Capacity Entitlements

Exeter's 2018 management performance audit noted that with completion of the Central Corridor Project and the retirement of DE-Ohio's propane facilities, as much as 60% of DE-Ohio's gas supplies could come from the north, which might enable the Company to reduce its southern KO Transmission capacity entitlements. Exeter's 2018 management performance audit recommended that if the Central Corridor Project is completed and the propane facilities are retired, the Company should again evaluate its KO Transmission capacity entitlements. The PUCO's Opinion and Order in the 2018 management performance audit required DE-Ohio to complete this evaluation, and the General Audit Requirements of this audit directed the auditor to review DE-Ohio's reevaluation of its KO Transmission capacity entitlements. Exeter's audit noted that recent on-system improvements and resulting operational parameters resulted in an increased percentage of northern supply being received during the 2020/2021 winter season versus period winter periods. As a result, the Company is updating its system planning models and design day forecasts in order to evaluate its firm transportation requirements, including KO Transmission firm transportation when the Central Corridor Project is completed, and the propane-air plants are retired. The Company anticipates completing this evaluation prior to the 2021/2022 winter season. The evaluation of DE-Ohio's KO Transmission capacity entitlements should be reviewed in the Company's next management performance audit.

11. Audit Period Purchases

DE-Ohio's gas procurement strategy is to, within operating and contractual constraints, maximize deliveries from its lowest-cost source of supply. The Company's audit period gas supply purchases were generally consistent with this strategy.

12. Winter Storm Uri Citygate Peaking Purchases

Winter Storm Uri brought record-low temperatures to portions of the Gulf Coast and Mid-Continent natural gas production areas of the States of Texas, Louisiana, and Oklahoma during the period February 13-17, 2021. During this period, DE-Ohio purchased relatively high-cost, delivered-to-citygate supplies under its peaking service contract with [REDACTED]. These supplies were purchased to maintain operating pressures and service reliability in the northern portion of DE-Ohio's system. As such, these purchases benefited both GCR and firm transportation customers. Therefore, Exeter finds that both GCR and Choice customers should bear responsibility for the incremental costs of the [REDACTED] purchases, similar to the cost recovery procedures currently utilized for penalty charges assessed to DE-Ohio and the propane costs associated with maintaining system pressures. The incremental costs associated with these purchases totaled [REDACTED], and Exeter recommends that the incremental costs associated with these purchases be included under the Company's Contract Commitment Cost Recovery Rider (Rider CCCR) and recovered over a one-year period.

13. Other Daily, Delivered-to-Citygate Purchases

Under its audit period AMAs, DE-Ohio was required to place its daily delivery nominations with the Asset Manager by 9 AM prior to the (gas) day of delivery. This is a standard provision under an AMA and enables the Asset Manager to optimize the value of the capacity released to it by DE-Ohio during the normal gas trading and nomination cycle. That is, it enables the Asset Manager to utilize the capacity released to it by DE-Ohio to serve other markets when the capacity is not required to serve DE-Ohio.

In addition to purchasing delivered to citygate peaking services under its firm gas supply contracts, DE-Ohio also purchased other Texas Gas delivered-to-citygate supplies in the daily market. On the days these daily Texas Gas delivered purchases were made, DE-Ohio's Texas Gas firm transportation capacity was not fully utilized. That is, there was open Texas Gas capacity available. The cost of these other daily Texas Gas delivered supplies was higher than if those supplies were delivered under DE-Ohio's Texas Gas firm transportation capacity. The Company indicated that the other daily citygate delivered Texas Gas purchases were made to alleviate low-pressure conditions experienced in the northern portion of its service territory. The need to alleviate the low-pressure conditions with additional purchases was not determined by DE-Ohio's Gas Control Department until the 9 AM Asset Manager nomination deadline time had passed. Therefore, the additional Texas Gas supplies could not be delivered under the Texas Gas firm transportation capacity that was released under the AMAs. The Company's purchase of other daily Texas Gas supplies to alleviate the low-pressure conditions benefited both GCR and firm transportation customers.

The need to purchase other daily, delivered-to-citygate supplies arose because DE-Ohio operated under AMAs. DE-Ohio receives fees under its AMAs, which are shared with GCR and Choice (firm transportation) customers. The other daily, delivered-citygate-supplies are generally priced higher than if open Texas Gas capacity was used to deliver these supplies. Under the current AMA fee sharing procedures, only GCR customers bear responsibility for the incremental costs associated with other daily, delivered-to-citygate purchases. Exeter finds this inappropriate and recommends that the incremental costs associated with the other daily, delivered-to-citygate supplies be recovered by reducing the AMA fees that are subject to sharing. DE-Ohio should be required to track the incremental costs of other daily, delivered-to-citygate supplies.

14. Lost-and-Unaccounted-for Gas

DE-Ohio's LUFG has averaged 1.1% over the last five years. This compares favorably with the experience of other gas utilities.

15. Choice Suppliers Capacity Assignment

Choice suppliers are assigned a portion of DE-Ohio's interstate pipeline capacity effective each April 1 and November 1. The amount of capacity assigned to each supplier is determined based on the percentage of pipeline firm transportation capacity that is utilized to meet GCR

customers' design day demands. KO Transmission firm transportation capacity is required to deliver Columbia Gulf- and Tennessee-sourced supplies to DE-Ohio's citygate.

Under DE-Ohio's current capacity assignment procedures, suppliers are assigned KO Transmission capacity sufficient to provide for the delivery of Columbia Gas- and Tennessee-sourced supplies. The maximum daily quantity (MDQ) of Columbia Gulf Contract No. 34688 is seasonally sculpted with an MDQ of 49,000 Dth during the winter months and 31,500 Dth during the summer months. The MDQ of DE-Ohio's KO Transmission contract is not seasonally sculpted. Because the MDQ under Columbia Gulf Contract No. 34688 is seasonally sculpted and capacity is assigned on a percentage basis, during the summer months, the amount of the capacity assigned to Choice suppliers and the amount of KO Transmission capacity assigned to Choice suppliers are reduced. However, because the MDQ of DE-Ohio's KO Transmission firm transportation contract is not seasonally sculpted, the costs associated with the reduction in the assignment of KO Transmission capacity due to the sculpting of the MDQ under Columbia Gulf Contract No. 34688 becomes the responsibility of GCR customers. Exeter finds this unreasonable and recommends that DE-Ohio's capacity assignment procedures be modified to provide for the assignment of KO Transmission capacity based on the winter MDQ of Columbia Gulf Contract No. 34688.

16. Choice Imbalances

DE-Ohio's current procedures and methods for projecting the daily requirements of the firm transportation customers served by Choice suppliers sufficiently minimized imbalances between the quantity of gas delivered to DE-Ohio by Choice suppliers and the consumption of firm transportation customers during the audit period.

17. Firm Balancing Service, Enhanced Firm Balancing Service, and Interruptible Monthly Balancing Service Charges

The Stipulation and Recommendation approved by the Commission in DE-Ohio's 2018 management performance audit directed the parties to hold a collaborative meeting to address the rates and charges for Firm Balancing Service (FBS) and EFBS. DE-Ohio convened a collaborative to discuss these issues, and the collaborative eventually reached a consensus regarding reasonable changes to the methodology for calculating FBS and EFBS rates. On April 28, 2020, DE-Ohio filed an application reflecting the collaborative's consensus (Case No. 20-794-GA-RDR). The Commission approved DE-Ohio's application in Case No. 20-794-GA-RDR on September 23, 2020, and new FBS and EFBS rates became effective October 1, 2020.

On July 31, 2020 Columbia Gas file a rate case with the FERC under Section 4 of the Natural Gas Act to increase its rates effective February 1, 2021 (Docket No. RP20-1060). On August 31, 2020 the FERC approved Columbia Gas' proposed increase in rates effective February 1, 2021, subject to refund, and established hearing procedures to evaluate the reasonableness of the proposed increase in rates. On March 1, 2021, DE-Ohio filed an application to revise its FBS, EFBS, and Interruptible Monthly Balancing Service (IMBS) rates to reflect the increase in Columbia Gas' rates (Case No. 21-180-GA-RDR). On August 25, 2021, the Commission

issued a Finding and Order approving DE-Ohio's proposed increases in its FBS, EFBS, and IMBS charges. The Finding and Order approved the rate increases on the condition that the Company file a new application to revise its balancing charges in the event that Columbia Gas' rates, as ultimately determined the FERC in Docket No. RP20-1060, are lower than the rates that were approved by the FERC subject to refund effective February 1, 2021.

A General Audit Requirement of this audit is to verify that the methodology changes that occurred as a result of DE-Ohio's application in Case No. 20-794-RDR have not caused an increase in rates for GCR customers. In Case No. 20-794-RDR, DE-Ohio filed to establish FBS and EFBS rates based on the consensus of the collaborative convened by Order of the Commission approving the Stipulation in the 2018 management performance audit. The FBS and EFBS rates filed by DE-Ohio in Case No. 20-794-RDR were designed on a methodology that utilized the Columbia Gas FSS/SST and Texas Gas NNS costs incurred by DE-Ohio to provide FBS and EFBS service. Therefore, as long as DE-Ohio's FBS and EFBS costs are based on the costs associated with providing Columbia Gas FSS/SST and Texas Gas NNS, Exeter finds that the methodology adopted in Case No. 20-794-RDR did not cause an increase in rates for GCR customers.

However, as previously noted, Columbia Gas filed to increase its rates on July 31, 2020, with a proposed effective date of February 1, 2021. The FERC approved Columbia Gas' increased rates effective February 1, 2021, subject to refund. DE-Ohio did not file to increase its FBS, EFBS, or IMBS charges until March 1, 2021 to reflect the increase in Columbia Gas' rates. The Commission did not approve the increase in the Company's FBS, EFBS, and IMBS rates until August 25, 2021, and the increase in rates did not go into effect until September 1, 2021. Therefore, for the period February through August 2021, DE-Ohio's FBS, EFBS, and IMBS rates were not cost-based and under-recovered the costs associated with providing these balancing services.

GCR customers are responsible for the costs associated with the provision of FBS, EFBS, and IMBS that are not recovered through the applicable balancing charges. Therefore, because DE-Ohio did not file to increase its balancing charges for seven months after Columbia Gas filed its Section 4 FERC rate case, GCR customers were assigned costs that were the responsibility of suppliers utilizing DE-Ohio's balancing services until September 1, 2021. The Finding and Order issued in Case No. 21-180-GA-RDR requires DE-Ohio to file to reduce its balancing charges within 15 days in the event that the FERC ultimately approves rates for Columbia Gas that are less than those utilized to design the balancing charges proposed by DE-Ohio. DE-Ohio has indicated that it will not issue refunds to suppliers utilizing FBS, EFBS, or IMBS in the event that the Columbia Gas rates ultimately approved by the FERC result in suppliers paying higher-than-cost-based rates for balancing services during particular months.

On October 29, 2021, Columbia Gas filed an uncontested Stipulation and Agreement of Settlement (Stipulation) in FERC Docket No. RP20-1060. The rates reflected in the Stipulation are lower than those reflected in Columbia Gas' initial Section 4 base rate application. Also on

October 29, 2021, Columbia Gas filed an unopposed motion to place the Stipulation rates into effect December 1, 2021, in advance of and pending final FERC approval of the Stipulation in Docket No. RP20-1060.

On November 16, 2021, the Chief Administrative Law Judge (ALJ) in Columbia Gas' FERC proceeding issued an Order authorizing Columbia Gas' request to place the Stipulation rates into effect December 1, 2021. It is uncertain as to the date the FERC may ultimately approve the Stipulation. Pursuant to the Commission's August 25, 2021 Finding and Order in Case No. 21-180-GA-RDR, DE-Ohio is required to reduce its balancing charges within 15 days in the event that the FERC approves the Stipulation. On November 19, 2021 in Case No. 21-1155-GA-RDR, DE-Ohio filed for approval to modify its FBS and EFBS balancing charges to reflect the Columbia Gas Stipulation rates authorized by the Chief ALJ, and in Case No. 21-1156-GA-ATA, DE-Ohio similarly filed for approval to modify its IMBS balancing charges. Assuming an effective date of December 1, 2021 of DE-Ohio's filings to reduce its balancing charges, Exeter estimates that GCR customers will have been overcharged by \$1,342,000 due to DE-Ohio's failure to file to increase its balancing charges on a timely basis. Columbia Gas filed its Section 4 base rate application on July 31, 2020, and the FERC approved the rates included in Columbia Gas' application on August 31, 2020, effective February 1, 2021, subject to refund. Pursuant to DE-Ohio's discounted rate arrangement, Columbia Gas' SST rates, which are included in DE-Ohio's calculation of balancing charges, were scheduled to increase February 1, 2021. DE-Ohio did not file to increase its balancing charges until March 1, 2021. The \$1,342,000 overcharge estimate is based on the actual use of balancing services by suppliers and firm transportation customers for the period February through August 2021, and the projected use of balancing services by suppliers and firm transportation customers for the period September through November 2021.

Exeter recommends that, at the scheduled February 17, 2022 hearing in this proceeding, DE-Ohio provide a revised calculation of GCR overcharges, and that the overcharges be refunded to GCR customers over a one-year period after the revised calculation is reviewed and approved by the Commission. Recovery through DE-Ohio's balancing charges of the amount to be refunded would be at the Commission's discretion. Exeter recommends that DE-Ohio develop procedures for Commission approval to address the timely recovery of the costs associated with the provision of balancing services when the interstate pipeline rates supporting the services utilized by DE-Ohio to provide balancing service change, and the reconciliation of the costs incurred and the costs recovered due to timing differences.

Another General Audit Requirement of this audit is to determine whether DE-Ohio has established procedures to monitor supplier EFBS activity to ensure that the GCR does not incur costs to cover for EFBS suppliers and to review the established procedures. DE-Ohio utilizes its Columbia Gas FSS/SST and Texas Gas NNS arrangements to provide EFBS. Columbia Gas FSS/SST service represents approximately 80% of DE-Ohio's interstate pipeline storage capacity, and Texas Gas NNS represents the remaining 20%. Each pipeline has established injection, withdrawal, and seasonal storage inventory limitations for these services. DE-Ohio has adopted the limitations imposed by Columbia Gas for EFBS. Exeter's

audit revealed that DE-Ohio has established procedures and reports to monitor and track daily supplier EFBS activity in addition to its existing monthly tracking procedures to ensure suppliers adhere to Columbia Gas' limitations and that costs are not imposed on GCR customers for violating those limitations. Exeter's review of daily and monthly EFBS activity indicated insignificant violations of Columbia Gas limitations; however, no costs or penalties were imposed on DE-Ohio or GCR customers for those violations during the audit period.

18. Contract Commitment Cost Recovery Rider

During the 2015 management performance audit period in Case No. 15-218-GA-GCR, DE-Ohio's capacity assignment procedures provided for the assignment of capacity effective each November 1 and April 1, based on the aggregate demands of the customers served by a supplier at the end of the previous September and February, respectively. Exeter's audit for the 2015 management performance audit period found that the City of Cincinnati switched to firm transportation service in October 2012. As a result, the supplier serving the City of Cincinnati was able to avoid an assignment of capacity effective November 1, 2012, and DE-Ohio was left with unneeded capacity. The costs associated with the unneeded capacity were recovered entirely from GCR customers. DE-Ohio's Rider CCCR was designed to recover a portion of the costs associated with unneeded interstate pipeline capacity incurred to serve GCR customers that have elected to switch to transportation service. Exeter's 2015 management performance audit found that a portion of the costs associated with the unneeded capacity should have been recovered under Rider CCCR from firm transportation customers rather than through the GCR. Exeter's audit recommended that \$237,245 of the costs associated with the unneeded capacity be removed from the GCR and recovered under Rider CCCR. Exeter also recommended that DE-Ohio investigate modifying its tariff to address the potential for a supplier to avoid the assignment of capacity. The Stipulation and Recommendation approved in Case No. 15-218-GA-GCR adopted Exeter's recommendations and required DE-Ohio to include \$237,245 in its Rider CCCR calculations and to file a report concerning tariff modifications to address the potential avoidance of capacity assignment.

A General Audit Requirement for the 2018 management performance audit in Case No. 18-218-GA-GCR required the auditor to verify that the Company included \$237,245 for recovery under Rider CCCR for the costs associated with the avoided assignment of capacity when the City of Cincinnati elected to participate in the Choice program. The General Audit Requirement also required the auditor to examine DE-Ohio's efforts to modify its tariff to address the potential for suppliers to avoid the assignment of capacity. Exeter's 2018 management performance audit found that DE-Ohio included \$237,245 in avoided capacity assignment costs in its December 2016, March 2017, June 2017, and September 2017 Rider CCCR calculations.

Exeter's 2018 management performance audit noted that to address the potential for suppliers to avoid an assignment of capacity in the future, the Company had proposed adding the following sentence to the capacity assignment provision of its tariff:

For purposes for determining the amount of capacity to be released, the MDQ will be adjusted for known changes to the suppliers' pool expected for the following season.

However, DE-Ohio had not modified its tariff to reflect the proposed language. The Stipulation and Recommendation approved in Case No. 18-218-GA-GCR required the Company to file an application to change its tariff to prevent the avoidance of capacity assignment due to timing differences. DE-Ohio's application in Case No. 20-384-GA-ATA included the proposed tariff language.

Exeter's 2018 management performance audit in Case No. 18-218-GA-GCR recommended, and the subsequently approved Stipulation and Recommendation required, that the Company begin including the incremental cost of propane utilized for system integrity for recovery under Rider CCCR. A General Audit Requirement of the current audit is to verify that DE-Ohio has included the incremental cost of propane utilized for system integrity in Rider CCCR. Exeter's audit and the subsequently approved Stipulation and Recommendation also provided for the Company to begin including interstate pipeline overrun and penalty charges associated with maintaining system integrity in Rider CCCR. A General Audit Requirement of the current audit is to verify that DE-Ohio has included overrun and penalty charges associated with maintaining system integrity in Rider CCCR.

Exeter's audit found that DE-Ohio began including the incremental propane costs associated with maintaining system integrity in Rider CCCR effective October 1, 2020. All incremental propane costs incurred by DE-Ohio after October 1, 2020 were included in Rider CCCR. These incremental propane costs totaled \$143,145. The Company began including penalty and overrun charges in Rider CCCR effective December 18, 2019, the date on which the Commission approved the Stipulation and Recommendation in Case No. 18-218-GA-GCR. The penalty and overrun charges incurred by DE-Ohio totaled \$777,339 during the audit period. Those charges incurred beginning December 18, 2019, and included in Rider CCR totaled \$652,774.

1. Introduction

The Public Utilities Commission of Ohio (PUCO or Commission), by journalized entry dated March 10, 2021, ordered a management performance audit of the gas purchasing practices and policies of Duke Energy Ohio, Inc. (DE-Ohio or Company). Management performance audits ordered by the Commission are designed to review a local gas distribution company's (LDC's) management policies, organizational structures, and operational procedures, and to determine the LDC's effectiveness in providing an adequate and reliable supply of natural gas at minimum prices. Exeter Associates, Inc. (Exeter) was selected by the Commission through a request for proposal (RFP) to perform the management performance audit of DE-Ohio for the Gas Cost Recovery (GCR) rate period September 2018 through August 2021 (audit period).¹ Exeter has also conducted management performance audits of DE-Ohio for the GCR periods September 2012 through August 2015 in PUCO Case No. 15-218-GA-GCR (2015 management performance audit), and September 2015 through August 2018 in Case No. 18-218-GA-GCR (2018 management performance audit). In performing this audit, Exeter conducted extensive discovery, held discussions with Company personnel, and reviewed the applicable testimony and workpapers from the 2018 management performance audit and other relevant proceedings.

Section 1.1 of this Introduction provides an overview of the Company and its relationships with its corporate affiliates. Section 1.2 provides a brief description of the structure of Exeter's audit report.

1.1. Corporate Affiliations and Ownership

DE-Ohio is a wholly-owned subsidiary of Cinergy Corporation, which is a wholly-owned subsidiary of Duke Energy Corporation (Duke Energy). Duke Energy is an energy company headquartered in Charlotte, North Carolina, and is subject to regulation by the Federal Energy Regulatory Commission (FERC). Duke Energy operates in the United States primarily through its direct and indirect subsidiaries that include Duke Energy Carolina, LLC; Progress Energy, Inc; Duke Energy Progress, LLC; Duke Energy Florida, LLC; Duke Energy Indiana, LLC; Piedmont Natural Gas Company (Piedmont); and DE-Ohio. Duke Energy's business structure includes three reportable operating segments: Electric Utilities and Infrastructure, Gas Utilities and Infrastructure, and Commercial Renewables. The Electric Utilities and Infrastructure segment includes Duke Energy's regulated electric utilities in North Carolina, South Carolina, Florida, and the Midwest. Electric Utilities and Infrastructure also includes Duke Energy's commercial electric transmission infrastructure investments. The Gas Utilities and Infrastructure segment includes Duke Energy's regulated natural gas distribution utilities and midstream pipeline investments. Duke Energy's regulated natural gas distribution utilities include Piedmont, which provides service in the Carolinas and Tennessee; and DE-Ohio, which

¹ DE-Ohio provided retail electric and retail natural gas service in Ohio during the audit period. This audit examines the purchasing practices and policies associated with the provision of retail natural gas service. DE-Ohio no longer operates natural gas-fired electric generation facilities in Ohio and, therefore, no longer purchases natural gas to support electric operations in Ohio.

provides service in Ohio and Kentucky. The Commercial Renewables segment is primarily comprised of non-regulated, utility-scale wind and solar generation assets located throughout the U.S.

DE-Ohio is a regulated public utility primarily engaged in the transmission and distribution of electricity in portions of Ohio and Kentucky, the sale of electricity in portions of Kentucky, and the distribution and sale of natural gas in portions of Ohio and Kentucky. Operations in Kentucky are conducted through DE-Ohio's wholly-owned subsidiary, Duke Energy Kentucky, Inc. (DE-Kentucky). DE-Ohio's service area covers approximately 3,000 square miles. The Company supplies electric service to approximately 880,000 residential, commercial, and industrial customers, and provides natural gas distribution service to approximately 545,000 customers. DE-Ohio's two reportable operating segments are Electric Utilities and Infrastructure and Gas Utilities and Infrastructure.

1.2. Structure of Audit Report

This audit report, which is divided into five additional sections, analyzes, evaluates, and presents specific findings and recommendations with respect to the structure, policies, and procedures of DE-Ohio's gas supply procurement and management functions. With the exception of this introductory section, Exeter's conclusions and recommendations are presented at the end of each section and are summarized in the Executive Summary that precedes this Introduction.

Section 2 of the audit report, "Background and Overview," provides a description of the DE-Ohio system and the natural gas markets it serves. This section includes statistical data identifying the number of customers served, usage by customer class, and other operating information. Also included in Section 2 is a comparison of DE-Ohio's audit period GCR rates with the gas supply commodity sales rates of the other major LDCs operating in Ohio. Section 3, "Management and Organization," describes the organization and management of the gas procurement and planning functions at DE-Ohio. Section 3 also discusses the Company's intervention activities at the FERC.

DE-Ohio's gas supply planning is discussed and evaluated in Section 4, "Gas Supply Planning." This section provides a detailed discussion of the Company's capacity and gas supply arrangements, identifies the changes in those arrangements that occurred during the audit period, and examines the balance between DE-Ohio's capacity and gas supply resources and its firm customers' requirements. Section 4 also addresses DE-Ohio's audit period Asset Management Agreements (AMAs), the diversification of capacity and gas supply resources, and the Company's plans with respect to the continuation of the merchant function.

A discussion and evaluation of DE-Ohio's capacity utilization and gas supply procurement activity during the audit period are presented in Section 5, "Audit Period Capacity Utilization and Procurement Activity." This discussion focuses on how DE-Ohio used its procurement options to meet the requirements of its customers. The Company's management of gas price

volatility and lost and unaccounted-for gas (LUFG) and company-use gas is also addressed in Section 5.

Finally, Section 6 of the audit report, "Transportation Service," discusses and evaluates DE-Ohio's firm and interruptible end-user transportation programs. Included in this discussion are the terms and conditions of the various balancing services offered by DE-Ohio.

2. Background and Overview

The physical and operational characteristics of DE-Ohio's system and the Ohio natural gas markets that it serves are identified in this section. This material serves as a framework for the evaluation of DE-Ohio's natural gas procurement policies and practices as well as its marketing functions. Section 2 also presents a comparison of DE-Ohio's GCR rates with the gas supply commodity sales rates of the other major gas utilities operating in Ohio and addresses the recovery of storage inventory carrying charge (SICC) costs through DE-Ohio's GCR rates.

2.1. Duke Energy Ohio

The service territory of DE-Ohio is located in heavily populated southwestern Ohio. The Company's distribution system serves all or portions of Adams, Brown, Butler, Clermont, Clinton, Hamilton, Montgomery, and Warren Counties. Included within this service territory are the municipalities of Cincinnati and Middletown. DE-Ohio's distribution system is physically integrated with that of its subsidiary, DE-Kentucky, which provides natural gas distribution service in Kentucky.

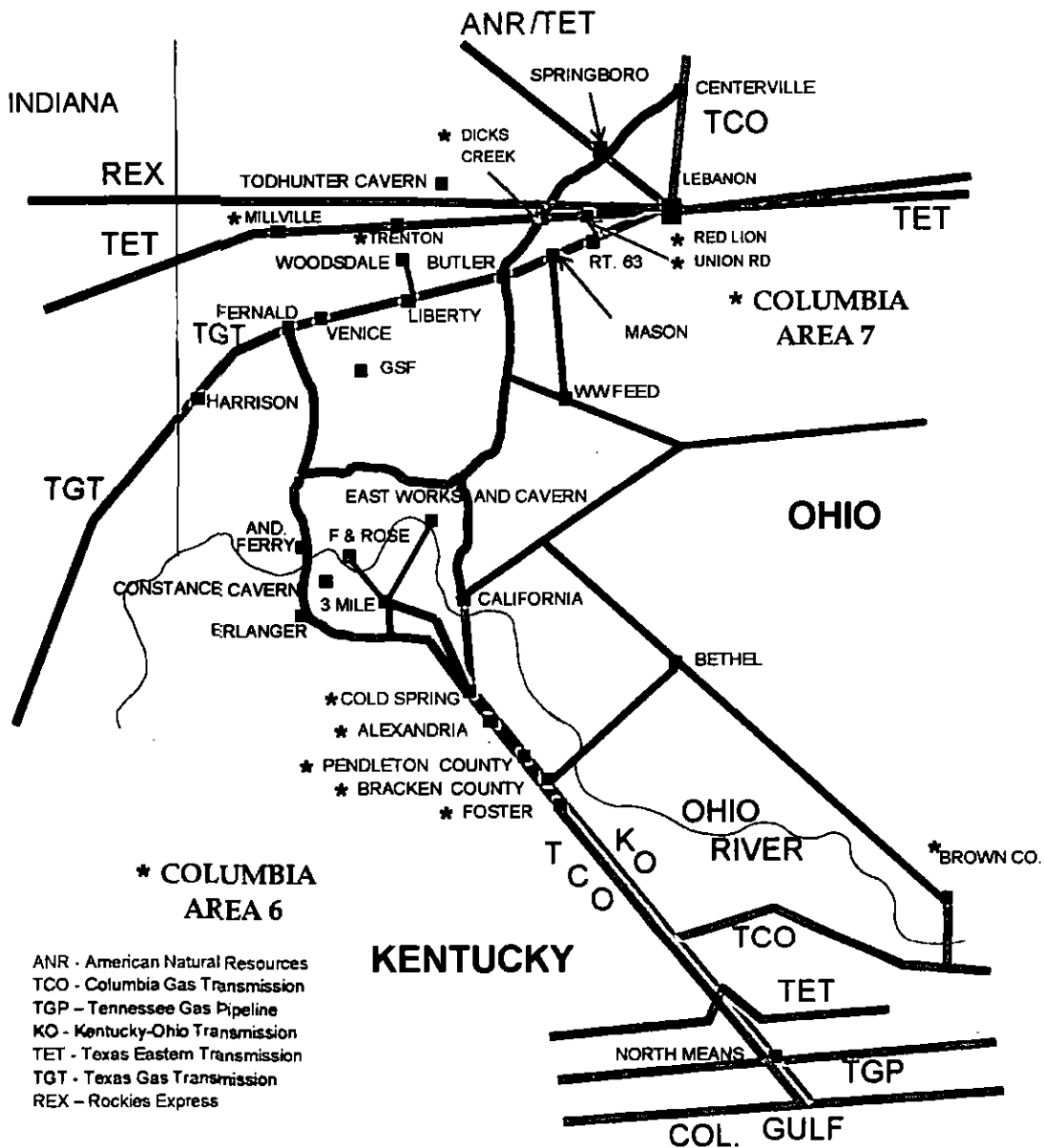
DE-Ohio is centrally located along the major pipeline facilities that link the traditional Gulf Coast natural gas production region with the northern and northeastern U.S. markets. Several of these pipelines also access the Marcellus Shale production region in the Appalachian Basin, which has become the largest gas-producing area in the United States.² DE-Ohio has access to a number of interstate pipelines, which gives the Company flexibility and diversity in meeting its system requirements. DE-Ohio is interconnected with five interstate pipelines, with an additional interconnect with the Rockies Express Pipeline (REX) planned for December 2021. The Company has interconnects on the northern portion of its system with ANR Pipeline (ANR), Columbia Gas Transmission (Columbia Gas or TCO), Texas Eastern Transmission (Texas Eastern or TETCO), and Texas Gas Transmission (Texas Gas). The REX interconnect will also serve the northern portion of DE-Ohio's system. On the southern portion of its system, DE-Ohio has interconnects with Columbia Gas and KO Transmission. DE-Ohio's current pipeline interconnects are identified on the system map presented in Figure 1.

² The Marcellus Shale production region stretches across Appalachia, primarily in western Pennsylvania, West Virginia, and eastern Ohio.

Figure 1. Duke Energy Ohio System Map



GAS SUPPLY SYSTEM



On the northern portion of its system, DE-Ohio is interconnected with ANR at the Springboro Station. The Springboro Station is located on the Lebanon Lateral, a 114-mile pipeline that extends from Gas City, Indiana to Lebanon, Ohio. The western segment of the Lebanon Lateral is 100% owned and operated by Texas Eastern and extends from an interconnect with Panhandle Eastern Pipe Line (Panhandle) in Gas City, Indiana to Glen Karn, Ohio. The eastern segment of the Lebanon Lateral extends from Glen Karn to Lebanon.

The eastern segment of the Lebanon Lateral is also operated by Texas Eastern and is owned 50% by ANR and 50% by Texas Eastern. Because the eastern segment of the Lebanon Lateral is jointly owned by ANR and Texas Eastern, DE-Ohio is also interconnected with Texas Eastern at the Springboro Station. The quantity of gas that DE-Ohio is able to accept through the Springboro Station is limited due to downstream operational limits.

DE-Ohio has interconnects with Texas Eastern at four additional stations on the northern portion of its system—the Millville, Trenton, Dicks Creek, and Union Road Stations. Gas that is delivered to DE-Ohio through the Texas Eastern pipeline that interconnects with DE-Ohio's system at the Millville, Trenton, and Union Road Stations is delivered on behalf of Columbia Gas. Texas Eastern does not currently deliver gas to DE-Ohio on its own account at these stations. Columbia Gas has a separate arrangement with Texas Eastern for the delivery of gas to DE-Ohio at these stations. DE-Ohio owns two of the three meters located at the Dicks Creek Station. This allows DE-Ohio to take deliveries directly from Texas Eastern at the Dicks Creek Station in addition to those deliveries made on behalf of Columbia Gas. DE-Ohio's new interconnect with REX will be at the Dicks Creek Station and will alleviate operational and reliability concerns experienced by DE-Ohio on the northern portion of its system during the audit period due to deliveries by Texas Eastern at the Dicks Creek Station being made at low pressures.

DE-Ohio's interconnect with Columbia Gas at the Centerville Station on the northern portion of its system is not typically utilized to deliver gas to the DE-Ohio system. Gas is delivered by Columbia Gas to DE-Ohio at Columbia Gas' Red Lion and Springboro Stations, which both serve separate, isolated sections of DE-Ohio's system.

DE-Ohio receives gas from Texas Gas at eight stations. Seven of these stations are shown above in Figure 1—Harrison, Fernald, Venice, Butler, Mason, Route 63, and Liberty. The eighth station, Dry Fork, is located near the Harrison Station. The interconnect at the Liberty Station was previously used exclusively to serve DE-Kentucky's Woodsdale electric generating facility. The Liberty Station was recently recommissioned by DE-Ohio and Texas Gas and placed in service in September 2021 to provide for the delivery of gas to DE-Ohio's gas distribution system.

On the southern portion of its system, with the exception of the Brown County Station interconnect with Columbia Gas, which serves an isolated section of DE-Ohio's system, DE-Ohio is physically interconnected only with KO Transmission. KO Transmission was formed in June 1996 when, through a FERC rate case settlement, DE-Ohio acquired a 32.67% interest in a 90-mile Columbia Gas system transmission pipeline (referred to as the E-Line). The E-Line

extends from the interconnect of KO Transmission and Columbia Gulf Transmission (Columbia Gulf) at Means, Kentucky to the distribution systems of DE-Ohio and DE-Kentucky. KO Transmission currently owns 48.77% of the transmission pipeline facilities that extend from Means to the Foster Station, and 100% of the E-Line transmission facilities that extend from the Foster Station to the distribution systems of DE-Ohio and DE-Kentucky. Columbia Gas owns the remaining 51.23% of the transmission facilities that extend from South Means to the Foster Station. Columbia Gas operates and maintains the KO Transmission pipeline system. KO Transmission is interconnected with Columbia Gas, Columbia Gulf, and Tennessee Gas Pipeline (Tennessee Gas), providing DE-Ohio upstream access to these pipelines. DE-Ohio is physically interconnected with KO Transmission at two points of delivery—the California and Bracken County Stations. The Bracken County interconnect serves the Bethel, Ohio area.

DE-Ohio also takes delivery of gas on the southern portion of its system through three points of interconnection with DE-Kentucky (Anderson Ferry, Front & Rose, and Eastern Avenue Stations) under a FERC-approved tariff. These gas supplies are delivered to DE-Kentucky by KO Transmission. In return, DE-Ohio provides DE-Kentucky access to gas supplies delivered by Texas Gas, ANR, and Texas Eastern under a FERC-approved tariff. Deliveries of gas by DE-Ohio to DE-Kentucky are accomplished by displacement.

Difficulties are not encountered in delivering gas to firm customers, provided that gas is delivered to DE-Ohio's system. DE-Ohio does not require or maintain compression to effectuate the delivery of gas on its distribution system.

Deliveries from interstate pipelines serving both the northern and southern portions of the system are required to meet system requirements. During the audit period, approximately 45% to 55% of DE-Ohio's system gas supply requirements were required to be delivered to the northern portion of its system, while 45% to 55% of supplies were required to be delivered to the southern portion of its system to satisfy system operational requirements during the winter. For summers during most of the audit period, 40% to 50% of supplies were required to be delivered to the northern portion of the Company's system, and 50% to 60% of supplies were required to be delivered to the southern portion of its system. As a result of on-system improvements which increased operating pressures in the northern portion of DE-Ohio's system, for the summer of 2021, a *minimum* of 50% of supplies were required to be delivered to the northern portion of the Company's system, and a *maximum* of 50% of supplies could be delivered to the southern portion of its system.

DE-Ohio does not own or operate underground natural gas storage facilities. The Company historically owned and operated two propane-air peaking facilities (Eastern Avenue Plant and Dicks Creek Plant) and has access to gas stored in a propane facility owned by DE-Kentucky (Erlanger Plant). However, the Dicks Creek Plant is no longer in service. Propane for the Dicks Creek Plant was stored at the underground Todhunter Propane Cavern, which was operated by Enterprise TE Products Pipeline Company (Enterprise). On December 13, 2013, due to a geological failure at the Todhunter Propane Cavern, Enterprise declared *force majeure* and is no longer able to provide propane for the Dicks Creek Plant.

On September 13, 2016, DE-Ohio filed an Application for a Certificate of Environmental Compatibility and Public Need (Initial Application) with the Ohio Power Siting Board (OPSB) to construct the C314-V Central Corridor Pipeline Extension Project (Central Corridor Project) (Case No. 16-253-GA-BTX). The Central Corridor Project is an integral part of DE-Ohio's long-term plan to retire its propane-air peaking facilities, balance system supply from north to south, and support the replacement of aging infrastructure. In its Initial Application with the OPSB, DE-Ohio indicated that retirement of its propane-air peaking facilities was necessary because the facilities utilize outdated technology that is expensive to maintain and impractical to permanently repair. The Company also indicated that the loss of supply from the propane-air facilities on a peak day would result in widespread service outages.

The application requirements for an OPSB Certificate require an applicant to evaluate all practicable alternatives within the applicant's defined study area and ultimately select Preferred and Alternate Routes for OPSB's review. Consistent with this requirement, the Company's Initial Application included a Preferred and an Alternate Route for the Central Corridor Project.

Following several public information meetings addressing the Central Corridor Project, DE-Ohio filed an Amended Application for a Certificate of Environmental Compatibility and Public Need for the Central Corridor Project on January 20, 2017 (Amended Application). The Amended Application incorporated several adjustments to the routes proposed in the Company's Initial Application, with the majority of the route adjustments affecting the Preferred Route. These route adjustments were largely in response to affected property owners' requests to reduce Central Corridor Project construction interference with business operations. On April 13, 2017, a procedural schedule was established by the Administrative Law Judge (ALJ) assigned to Case No. 16-253-GA-BTX. The procedural schedule included the due date for timely petitions to intervene and provided for the commencement of hearings on July 12, 2017. On May 11, 2017, DE-Ohio filed supplemental information for the Central Corridor Project reflecting a number of engineering adjustments to the Preferred Route identified in the Company's Amended Application. On May 31, 2017, in accordance with Ohio Revised Code 4906.07(c) and the rules of the OPSB, PUCO Staff issued a Staff Report of Investigation addressing the proposed Central Corridor Project that recommended that the Alternative Route be approved.

On June 21, 2017, in response to the requests for continuance of several intervening parties, the hearing date was delayed until September 11, 2017. On August 23, 2017, DE-Ohio filed a motion to suspend the procedural schedule to allow the Company to address and investigate certain information of which it had become aware related to potential concerns with construction activity along the Alternate Route in the vicinity of property on which environmental remediation had occurred. The ALJ subsequently granted the Company's request to suspend the procedural schedule.

Further investigation of the Alternate Route by DE-Ohio revealed no site-specific environmental issues that would require further Alternate Route modifications. However, as

a result of additional meetings with municipalities, businesses, and property owners, several modifications were made to the Alternate Route to reduce the impact of construction activity. These Alternate Route modifications were reflected in a Supplement to DE-Ohio's Amended Application that was filed on April 13, 2018. On the same date, DE-Ohio filed a motion for reestablishment of the procedural schedule in Case No. 16-253-GA-BTX. On June 29, 2018, OPSB Staff requested that any procedural schedule adopted in the proceeding provide sufficient time to complete a thorough review of the Supplement to DE-Ohio's Amended Application. On July 26, 2018, DE-Ohio filed two additional reports with the OPSB concerning the potential environmental impact of the Central Corridor Project. On December 18, 2018, the ALJ issued an entry finding that the supplemental information should be deemed an amendment of the pending application and issued a revised procedural schedule which provided for hearings to commence on April 9, 2019. On March 5, 2019, PUCO Staff issued an Amended Staff Report of Investigation which superseded the report filed on May 31, 2017. As in the earlier report, PUCO Staff recommended that the Central Corridor Project be installed on DE-Ohio's proposed Alternate Route. The hearing commenced on April 9, 2019 and concluded on April 11, 2019.

By Opinion, Order, and Certificate dated November 21, 2019, the OPSB issued a Certificate of Environmental Compatibility and Public Need to DE-Ohio for the construction, operation, and maintenance of the Central Corridor Project along the Alternate Route, subject to 41 conditions set forth by the OPSB. Pursuant to Ohio Revised Code, any order of the OPSB applies as if the OPSB were the Commission. On December 23, 2019, applications for rehearing of the November 21, 2019 Opinion, Order, and Certificate were filed by several parties to the proceeding. On January 21, 2020, the ALJ granted the applications for rehearing. By an Entry on Rehearing dated February 20, 2020, the OPSB denied the applications for rehearing. On April 15, 2020, four parties filed a joint notice of appeal to the Supreme Court of Ohio. The following day, three of those appellants filed a joint motion for a stay pending appeal, which was denied on June 17, 2020. Oral arguments were held on March 31, 2021. On September 22, 2021, the appeal was denied by the Supreme Court of Ohio.

Construction of the Central Corridor Project began on March 1, 2021, and the Project is expected to be placed in service during the first quarter of 2022. The Central Corridor Project approved by the OPSB follows a revised Alternate Route in Hamilton County, and is a 13-mile, 20-inch pipeline between DE-Ohio's Highpoint Park Station near the intersection of Butler, Warren, and Hamilton Counties and DE-Ohio's Norwood Station.

Retirement of the propane-air peaking facilities will require DE-Ohio to acquire interstate pipeline capacity to replace the capacity provided by the propane-air facilities. It is anticipated that both the Eastern and Erlanger facilities will be retired during the 2022/2023 time frame. DE-Ohio is currently evaluating interstate pipeline capacity replacement options for the propane-air facilities to be retired.

2.2. Markets Served by Duke Energy Ohio

Firm bundled utility sales service is available under DE-Ohio rate schedules Residential Service (Rate RS), General Service – Small (Rate GS-S) for non-residential customers using 400 thousand cubic feet (Mcf) per year or less, and General Service – Large (Rate GS-L) for non-residential customers using more than 400 Mcf/year. DE-Ohio provides firm and interruptible transportation service from its citygate to end-user facilities for those customers that acquire both their own gas supplies and separately arrange for the delivery of those supplies to DE-Ohio's distribution system. DE-Ohio provides firm transportation service to residential customers under Rate RFT, to low-income residential customers under Rate RFTLI, and to small non-residential customers using less than 400 Mcf/year under Rate FT-S. Firm transportation service to non-residential customers using more than 400 Mcf/year is provided under Rate FT-L, and interruptible transportation service is provided under Rate Interruptible Transportation. DE-Ohio's firm transportation customers are also commonly referred to as Rate RFT/FT or Choice customers. Additional terms and conditions of DE-Ohio's transportation service offerings are discussed further in Section 6 of the audit report.

DE-Ohio provided natural gas sales and transportation services to approximately 400,000 residential customers and 37,000 commercial, industrial, and public authority customers during 2020. The number of customers served by DE-Ohio has increased slightly over the past five years. System throughput, that is, total sales and transportation service volumes, totaled 76,540,605 Mcf during 2020. Table 1 shows throughput by customer class during 2020.

Table 1. Summary of System Throughput, by Customer Class: (2020)		
	Throughput^[1] (Mcf)	Percent
<u>Sales Service</u>		
Residential	11,911,467	16.7%
Commercial	4,080,225	5.7
Industrial	526,060	0.7
Public Authority/Other	360,633	0.5
Subtotal:	16,878,385	23.7%
<u>Transportation Service</u>		
Residential	16,130,896	22.6%
Commercial	12,717,835	17.9
Industrial	4,640,416	6.5
Public Authority/Other	1,611,162	2.3
Interruptible	19,264,417	27.0
Subtotal:	54,364,727	76.3%
Total:	71,243,112	100.0%

^[1] Includes unbilled volumes.

Additional selected throughput, customer, and consumption statistics for the period 2016 through 2020 are presented in Table 2. Total throughput has fluctuated over the period due to variations in weather. DE-Ohio arranges for firm capacity and gas supplies sufficient to meet the design peak day requirements of its firm retail GCR customers, the balancing requirements of firm transportation customers, and, pursuant to the Stipulation and Recommendation approved in Case No. 05-732-EL-MER, a portion of the increase in the design day requirements of firm transportation customers beyond that which existed on April 1, 2007.³ The firm capacity maintained by DE-Ohio to meet the design day requirements of firm transportation customers is discussed in greater detail in Section 6.1.3 of the audit report.

³ A design day is an extremely cold day that a gas utility selects and utilizes for capacity planning purposes. A peak day is the day of greatest total throughput during a given period. A gas utility's annual peak day generally occurs on the coldest day of the year. The design day is a day much colder than an average annual peak day and would be expected to occur less frequently than once per year. The design day and peak day are further discussed in Section 4 of the audit report.

Table 2. Annual Throughput, Customer, and Consumption Statistics					
Throughput (Mcf)	2016	2017	2018	2019	2020
<u>Sales Service</u>					
Residential	12,823,297	11,557,100	11,801,858	11,952,129	11,911,467
Commercial	4,324,847	4,093,011	4,632,110	4,642,925	4,080,225
Industrial	643,577	621,944	654,615	619,256	526,060
Public Authority/Other	408,082	350,300	371,829	335,314	360,633
Subtotal:	18,199,802	16,622,335	17,460,412	17,549,622	16,878,385
<u>Transportation Service</u>					
Residential Firm	14,070,603	14,631,899	18,973,683	17,705,232	16,130,896
Commercial Firm	11,407,766	11,900,561	13,708,525	13,603,675	12,717,835
Industrial Firm	4,463,099	4,304,982	4,818,095	4,520,927	4,640,416
Public Authority/Other	1,606,974	1,642,337	1,867,319	1,815,096	1,611,162
Interruptible	19,701,780	19,604,124	19,712,571	19,747,376	19,264,417
Subtotal:	51,250,222	52,083,902	59,080,193	57,392,306	54,364,727
Total Throughput:	69,450,024	68,706,257	76,540,605	74,941,928	71,243,112
Number of Customers	2016	2017	2018	2019	2020
<u>Sales Service</u>					
Residential	194,500	174,928	164,962	168,345	177,497
Commercial	12,976	12,386	12,053	12,570	12,915
Industrial	497	453	439	439	454
Public Authority/Other	408	358	329	316	320
Subtotal:	208,381	188,125	177,782	181,670	191,186
<u>Transportation Service</u>					
Residential Firm	193,239	215,981	229,433	229,150	224,589
Commercial Firm	21,244	21,950	22,426	21,948	21,581
Industrial Firm	868	884	909	893	870
Public Authority/Other Firm	947	987	1,008	1,015	1,009
Interruptible	113	110	107	104	103
Subtotal:	216,411	239,913	253,883	253,110	248,152
Total Customers:	424,793	428,037	431,666	434,779	439,337
Average Consumption Per Customer (Mcf/year)	2016	2017	2018	2019	2020
<u>Sales Service</u>					
Residential	66	66	72	71	67
Commercial	333	330	384	369	316
Industrial	1,295	1,373	1,491	1,411	1,159
Public Authority/Other	1,000	978	1,130	1,061	1,127
Total Sales Service:	87	88	98	97	88
<u>Transportation Service</u>					
Residential Firm	73	68	83	77	72
Commercial Firm	537	542	611	620	589
Industrial Firm	5,142	4,870	5,300	5,063	5,334
Public Authority/Other Firm	1,697	1,664	1,852	1,788	1,597
Interruptible	174,352	178,219	184,230	189,879	187,033
Total Transportation Service:	237	217	233	227	219

A history of DE-Ohio's actual peak day and annual load characteristics and associated weather data is presented in Table 3. During the past five years, DE-Ohio's actual firm peak day loads, including service to sales and firm transportation customers, have ranged from a low of 529,163 dekatherms (Dth) in the winter of 2019-2020 to a high of 712,384 Dth in the winter of 2018-2019. These variations are largely attributable to differences in peak day temperatures.

Table 3. Operating and Weather Statistics

Operating Statistics	Winter Season				
	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
Peak Day Firm Demand (Dth)	585,015	625,764	712,384	529,163	571,169
Peak Day Temperature (Average)	8°F	6°F	-1°F	17°F	14°F
Annual Load Factor	23%	21%	22%	29%	25%
Weather Statistics	Calendar Year				
	2016	2017	2018	2019	2020
Number of Heating Degree Days (HDD)	4,488	4,305	5,055	4,902	4,704
Warmer/(Colder) Than Normal (4,823 HDD)	6.9%	10.7%	(4.8%)	(1.6%)	(2.5%)

Annual system load factor is also an important characteristic of the gas markets that DE-Ohio serves. Load factor reflects, in percentage terms, the ratio of the average daily amount of gas required over a given period compared to the amount of gas that would have been required if maximum design day demands were experienced each day over that same period. Since 2016, DE-Ohio's total annual firm system load factor has averaged approximately 25%.

2.3. GCR Rate Comparison

Ohio's three other major natural gas utilities—Columbia Gas of Ohio (COH), Dominion Energy Ohio (Dominion), and CenterPoint Energy Ohio (formerly known as Vectren Energy Delivery of Ohio) (CenterPoint)—are no longer subject to the GCR mechanism. Instead, each has a Standard Service Offer (SSO) rate under which it continues to provide natural gas commodity service to its sales customers at the cost of acquiring supplies. The other Ohio utilities' costs of acquiring supplies are established through an auction process in which suppliers bid fixed adjustments to the New York Mercantile Exchange (NYMEX) monthly settlement price. Table 4 presents a comparison of DE-Ohio's average audit period GCR rates and the SSO rates of the other major Ohio utilities. The SSO rates of Dominion have been significantly lower than the SSO or GCR rates of the other major Ohio natural gas utilities due to Dominion's direct access to the lower-cost Marcellus Shale supply production region, and Dominion's extensive on-system storage facilities.⁴ The costs associated with Dominion's on-system storage

⁴ A Marcellus Shale production region pricing location at which Dominion purchases a significant portion of its gas supplies is Dominion South Point. Monthly index prices for this location, as reported by S&P Global Market

facilities are recovered through base rates, while gas utilities such as DE-Ohio, COH, and CenterPoint without extensive on-system storage must purchase storage from interstate pipelines and recover the associated costs through their GCR or SSO. As shown in Table 4, DE-Ohio's GCR rates have generally been slightly lower than the SSO rates of COH and CenterPoint. The SSO rates of COH and CenterPoint averaged \$3.9047/Mcf and \$3.7090/Mcf, respectively, during the audit period, while the GCR rate of DE-Ohio averaged \$3.6284/Mcf.

Table 4. Comparison of DE-Ohio GCR and the SSO Rates of Other Major Ohio Utilities (\$/Mcf)

Company	12 Months Ended August			Average
	2019	2020	2021	
Columbia Gas of Ohio	\$4.2512	\$3.1819	\$4.2809	\$3.9047
Dominion Energy Ohio	\$3.1876	\$2.3979	\$3.0528	\$2.8794
CenterPoint Energy Ohio	\$4.0832	\$3.0432	\$4.0007	\$3.7090
<i>Other Ohio Utility Average:</i>	<i>\$3.8407</i>	<i>\$2.8743</i>	<i>\$3.7781</i>	<i>\$3.4977</i>
Duke Energy Ohio	\$3.7812	\$2.9937	\$4.1104	\$3.6284
Difference Above/(Below):	(\$0.0595)	\$0.1194	(\$0.3323)	\$0.1307

2.4. Conclusions and Recommendations

2.4.1. Rate Comparison

COH, Dominion, and CenterPoint are no longer subject to the GCR mechanism, and recover their gas costs through an SSO rate. The storage portfolios of DE-Ohio, COH, and CenterPoint primarily consist of interstate pipeline services, while Dominion's portfolio primarily consists of on-system storage. In Ohio, the costs associated with interstate pipeline storage service are recovered by natural gas utilities through gas cost rates, while the costs associated with owning and operating on-system storage are generally recovered through base rates. This recovery difference would tend to result in lower gas cost rates for natural gas utilities with on-system storage. Dominion also has greater access to lower-cost Marcellus Shale production region supplies than DE-Ohio, COH, and CenterPoint. Due to these two advantages, the audit period SSO rates of Dominion were lower than the GCR and SSO rates of DE-Ohio, COH, and CenterPoint. When compared to the SSO rates of COH and VEDO, which maintain storage portfolios similar to that of DE-Ohio, the GCR rates of DE-Ohio were slightly less, averaging \$0.18/Mcf less than the SSO rates of COH and CenterPoint.

2.4.2. Storage Inventory Carrying Charges

DE-Ohio currently purchases storage service from both Columbia Gas and Texas Gas. Under the storage service purchased from Texas Gas, DE-Ohio is advanced gas during the winter

Intelligence, averaged \$0.68/Dth less during the winter of 2020-2021 than monthly prices for Columbia Gulf-sourced gas supplies in the Gulf Coast production region to which DE-Ohio had access during the same period.

(November – March) and returns the advanced gas during the subsequent summer (April – October). Under the storage service purchased from Columbia Gas, DE-Ohio injects into storage gas purchased during the summer and withdraws that gas during the winter. The costs associated with gas purchased during the summer and injected into Columbia Gas storage are not recovered by DE-Ohio under the GCR mechanism until that gas is withdrawn from storage during the subsequent winter. As such, DE-Ohio incurs carrying costs on the gas it purchases and injects into storage during the summer. In addition to recovering interstate pipeline charges and gas supply commodity costs through its GCR rates, DE-Ohio is permitted to recover its SICC costs through its GCR rates. During the 2018 management performance audit, Exeter noted that DE-Ohio calculated the SICC costs to include in its monthly GCR rate based on 100% of the balance in its Columbia Gas storage inventory. Exeter's audit noted that suppliers purchasing its Enhanced Firm Balancing Service (EFBS) from DE-Ohio purchased and paid for a portion of the gas injected into Columbia Gas storage inventory.⁵ Exeter found that it was inappropriate for DE-Ohio to assess GCR customers SICC costs on gas injected into Columbia Gas storage that was paid for by suppliers and is subsequently used to serve firm transportation customers. Exeter recommended that DE-Ohio be required to recalculate the SICC costs included in its GCR rates during the prior audit period and issue refunds, inclusive of interest, to GCR rate customers through the refund and reconciliation adjustment provision of its GCR.

The Stipulation and Recommendation approved by the Commission in the 2018 management performance audit (2018 Settlement) required the Company to change the calculation of SICC costs to remove gas stored by EFBS suppliers beginning March 2019. DE-Ohio was also required to refund an over-collection of SICC costs of \$2,692,241 that occurred from September 2015 through February 2019 over 12 months through the refund adjustment component of the GCR. The 2018 Settlement specified that the General Audit Requirements of the current audit are to verify that the Company refunded the SICC cost over-collection that occurred from September 2015 through February 2019 totaling \$2,692,241 through the refund adjustment of the GCR, and to verify that DE-Ohio changed its SICC cost calculation to remove gas stored by EFBS suppliers.

Exeter's audit has verified that DE-Ohio refunded the SICC cost over-collection of \$2,692,241, plus \$148,073 in interest, through the refund adjustment components of the GCR. Exeter's audit has also verified that the Company changed the calculation of SICC costs to remove gas stored by EFBS suppliers beginning March 2019.

⁵ EFBS is discussed in greater detail in Section 6.1.5 of the audit report.

3. Management and Organization

This section of the audit report discusses Duke Energy Ohio's organizational structure as it relates to the Company's natural gas procurement and supply management functions. Section 3.1 discusses the organizational entities with primary responsibility for the gas procurement function at DE-Ohio during the audit period. This is followed by a discussion of gas supply planning committees and groups in Section 3.2. Section 3.3 discusses the sale of natural gas in Ohio by affiliates of DE-Ohio. FERC-related activities are addressed Section 3.4. The final section presents Exeter's conclusions and recommendations concerning DE-Ohio's management and organization of the gas procurement and supply management functions.

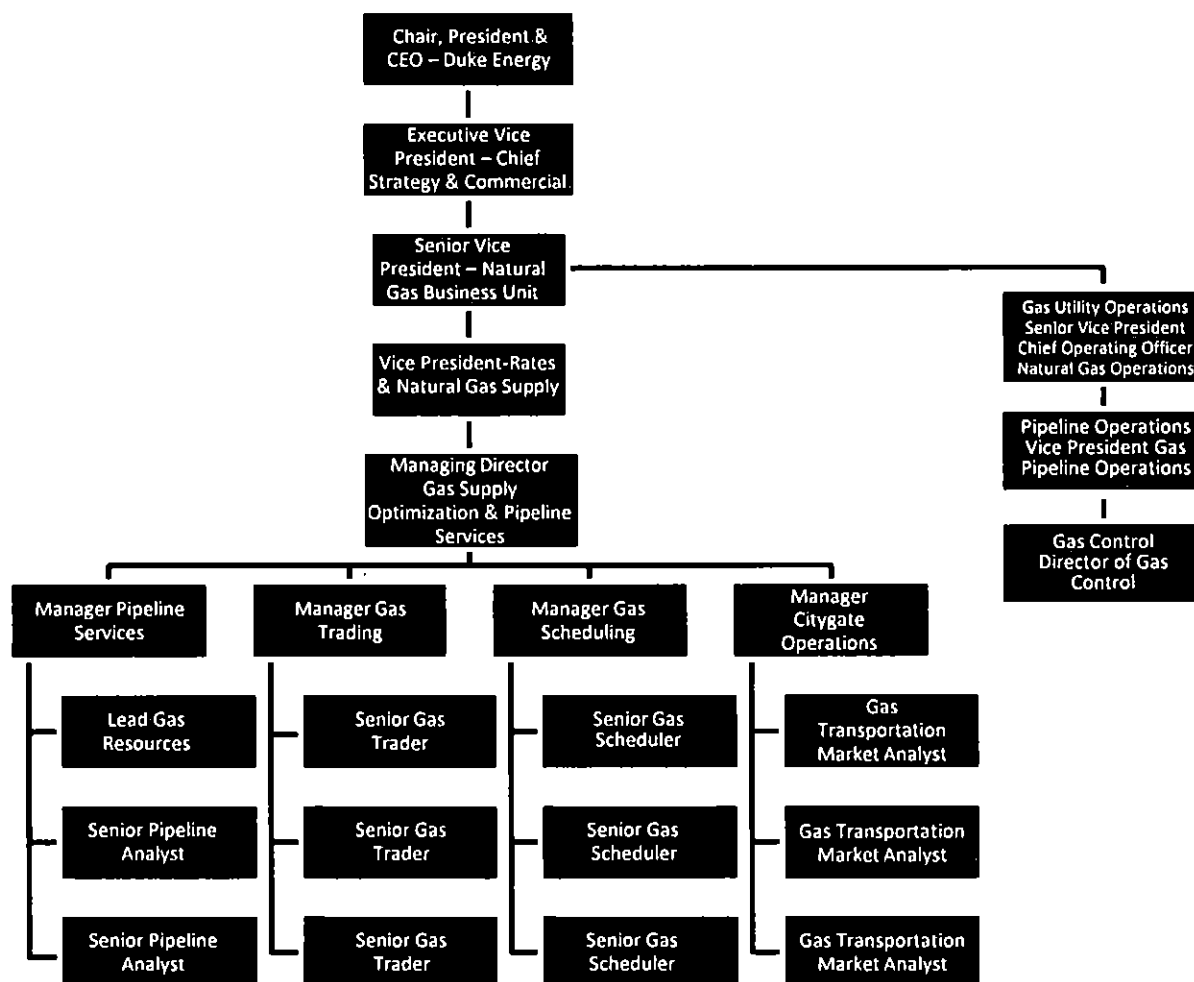
3.1. Procurement Function

Duke Energy acquired Piedmont Natural Gas Company in October 2016. Piedmont provides natural gas distribution service to over 1.1 million customers in Tennessee and the Carolinas. Like Duke Energy, Piedmont is also headquartered in Charlotte, North Carolina. With the acquisition of Piedmont, responsibility for the gas procurement and supply management functions at DE-Ohio has been integrated with those functions at Piedmont.

The gas procurement and supply management functions of DE-Ohio, DE-Kentucky, and Piedmont are performed by the Gas Supply, Optimization, and Pipeline Services (GSOP) group within the Duke Energy Natural Gas Business Unit (NGBU). The NGBU is responsible for all of the operations of Duke Energy's local gas distribution companies—DE-Ohio, DE-Kentucky, and Piedmont. The NGBU is under the direction of a Senior Vice President (VP-NGBU), who reports to an Executive Vice President (EVP-Chief Strategy & Commercial), who in turn reports directly to the Chair, President, and Chief Executive Officer of Duke Energy.

GSOP is headed by a Managing Director who reports directly to the Vice President of Rates & Natural Gas Supply. Reporting to the Managing Director of GSOP is the Manager of Pipeline Services, the Manager of Gas Trading, the Manager of Gas Scheduling, and the Manager of Citygate Operations. All of the personnel involved in the gas procurement and supply management functions of DE-Ohio are located in Charlotte, and most of the Citygate Operations personnel are located in Cincinnati. The organizational structure of the gas procurement and supply management functions within the NGBU is presented in Figure 2. Departments and/or groups that report to the VP-NGBU within the Natural Gas Business Unit but are not involved in the gas procurement and supply management functions have been omitted from Figure 2.

Figure 2. Organizational Structure of Gas Procurement and Gas Supply Management Functions



Pipeline Services is responsible for selecting and negotiating DE-Ohio's gas supply and interstate pipeline transportation and storage portfolios, preparing the Company's design day and seasonal load forecasts, and preparing daily GCR sales and Choice load forecasts and supply plans. Pipeline Services also leads the NGBU's FERC monitoring and intervention activities. Gas Trading is responsible for the daily procurement of gas supplies. Gas Scheduling is responsible for the daily scheduling of gas supply purchases and sales. Citygate Operations is responsible for the management of the Company's transportation programs. Gas Operations are performed by Gas Control which is also located in Charlotte. Gas Control is led by the Senior Vice President, Chief Operating Officer of Gas Utility Operations. The development of rates for Ohio and Kentucky is performed by the Rates of Regulatory Strategy Department located in Cincinnati. Responsibility for the management of KO Transmission, once managed by groups performing the gas procurement and supply management functions at DE-Ohio before the acquisition of Piedmont by Duke Energy, is now performed by personnel in Gas Midstream Development and Venture and Gas Business Development, who report to the

Executive Vice President – Chief Strategy and Commercial. Other departments and/or groups that assist GSOP with the gas procurement and planning function include Legal and Information Technology.

3.2. Gas Supply Planning Committees and Groups

Personnel involved in the gas procurement and supply management functions at DE-Ohio met during the audit period on a regular basis. Semi-annual meetings were held to discuss seasonal and long-term interstate pipeline capacity and firm supply planning. The Gas Supply & Scheduling teams met weekly to review system anomalies with measurement and scheduled volumes as well as to review storage balances. The Gas Market Risk Committee (GMRC) met at least quarterly to discuss current market conditions in conjunction with the execution of the Company's natural gas hedging plans. The specific personnel attending the various meetings are identified in Table 5.

Table 5. Personnel Participating in Gas Procurement & Planning Meetings

Semi-Annual Meeting

- | | |
|--|--|
| • Director of Gas Control & SCADA Controls | • GM of Gas Asset Management & Engineering |
| • Manager of Gas Control | • Director of Natural Gas Operational Excellence |
| • Manager of Propane Operations | • Director of Gas Sales & Delivery Services |
| • Director of Supplemental Gas | • VP – Gas Major Projects |
| • Manager of Gas System Operations | • Gas Major Accounts Manager |
| • VP – Gas Pipeline Operations | • Corrective Action Program Manager |
| • Manager of System Planning | • Supervisor of Compression |
| • Director of Gas Engineering & Asset Planning | • Project Director |
| • Manager of Gas Scheduling | • Project Director |
| • Managing Director of Gas Supply Optimization & Pipeline Services | • Director of Project Controls |
| • Director of Gas Technical Field Operations | • Manager of NGMP Implementation |
| • SVP – Chief Operational Officer Natural Gas | • Manager of Gas System Operations |
| • SVP – Natural Gas Business | • Director of Transmission Integrity |
| • Director of Compression, GMC, & Construction | • Director of Gas Asset Risk Management |

Weekly Meeting

- | | |
|--|-----------------------------------|
| • VP – Rates & Natural Gas Supply | • Manager of Gas Trading |
| • Managing Director of Gas Supply Optimization & Pipeline Services | • Gas Trading |
| • Director of Gas Control & SCADA Controls | • Manager of City Gate Operations |
| • Manager of Gas Control | • City Gate Operations |
| • Manager of Pipeline Services | • Major Accounts Manager |
| • Pipeline Services | • Major Account Manager |
| • Manager of Middle Office | • Power Municipal Account Manager |
| • Middle Office | • Supervisor of Sales |
| | • Senior Engineer |

Gas Market Risk Committee Meeting

- | | |
|--|---|
| • SVP – Natural Gas Business Unit | • Director of Gas Risk Management |
| • VP – Rates & Natural Gas Supply | • Director of Gas Utilities & Infrastructure |
| • VP – Rates & Regulatory Strategy OH/KY | • Director of Gas Credit Management |
| • Managing Director of Gas Supply Optimization & Pipeline Services | • Deputy General Counsel |
| • Manager of Pipeline Services | • Manager of Middle Office |
| • Manager of Gas Trading | • Middle Office |
| • Gas Trading | • Risk Principal |
| • Manager of Gas Scheduling | • Director of Gas Rates & Regulatory Strategy |
| • Managing Director of Gas Rates & Regulatory | • VP – Global Risk Management & Insurance |
| • Utility Strategy Director | • Chief Risk Officer |

3.3. Affiliates Engaged in the Sale of Gas in Ohio

Prior to October 2012, Duke Energy Retail Sales (DE-Retail), an unregulated entity within DE-Ohio, was a supplier to a small number of customers participating in DE-Ohio's firm transportation program and also served several interruptible transportation customers. In October 2012, DE-Retail was awarded the governmental aggregation contract to be the supplier for the City of Cincinnati. DE-Retail was sold to Dynegy, Inc. in April 2015. Therefore, there were no DE-Ohio affiliates engaged in the sale of natural gas in Ohio during the audit

period. Dynegy Marketing and Trade, a subsidiary of Dynegy, Inc., is currently an active supplier in DE-Ohio's firm transportation program.

3.4. FERC Participation

To protect its interests and the interests of its customers, it may be necessary for DE-Ohio to intervene and participate in proceedings before the FERC. The Company utilizes the services of an outside legal firm, McGuireWoods, LLP, to monitor the FERC filings made by certain interstate pipelines. Several times per week, McGuireWoods provides the Company a summary of the FERC filings made by the pipelines that are of interest. Pipelines of interest include those on which DE-Ohio is currently a shipper, those with which DE-Ohio is interconnected, and those in close proximity to DE-Ohio. DE-Ohio currently monitors the FERC filings of the following pipelines:

- ANR Pipeline
- Columbia Gulf Transmission Company
- Columbia Gas Transmission
- Midwestern Gas Transmission
- Texas Gas Transmission
- Tennessee Gas Pipeline
- Rockies Express Pipeline
- Texas Eastern Transmission
- Panhandle Eastern Pipeline
- KO Transmission

Each of the summaries provided by McGuireWoods includes a recommendation as to whether the Company should intervene in a proceeding, and whether comments or a protest are warranted. The Managing Director of GSOP, in consultation with in-house attorneys, determines whether to intervene in a particular proceeding, and if any additional action is warranted. Factors considered by DE-Ohio in making the determination to intervene in a proceeding include:

- Impact on the rates paid by DE-Ohio to interstate pipelines;
- Potential precedent that could affect future proceedings;
- Changes to reporting requirements for DE-Ohio; and
- Changes to the calculation or application of pipeline fuel charges.

DE-Ohio typically filed a "Plain Vanilla Intervention" in those proceedings in which it chose to intervene during the audit period. DE-Ohio monitored and filed interventions in approximately 120 FERC proceedings during the audit period.

In addition to monitoring pipeline-specific FERC proceedings, the Company also monitors proceedings that have industry-wide implications such as a Notice of Inquiry (NOI), Notice of Proposed Rulemaking (NOPR), and Policy Statements (PL). However, the Company did not participate in any NOI, NOPR, or PL proceedings during the audit period.

The FERC proceeding with the most significant potential impact on DE-Ohio during the audit period was the base rate proceeding of Columbia Gas, which was filed pursuant to Section 4 of the Natural Gas Act on July 31, 2020 (Docket No. RP20-1060). In that proceeding, Columbia Gas filed to increase its rates, which could increase DE-Ohio's purchased gas costs by approximately \$8.5 million. In that proceeding, DE-Ohio, DE-Kentucky, and Piedmont filed a joint "Motion for Leave to Intervene, Full Summary Rejection, or in the Alternative, Request for Initial Summary Rejection, Protest, Maximum Suppression, Technical Confidence, and Hearing." DE-Ohio, DE-Kentucky, and Piedmont also joined a motion to intervene filed by the Columbia Distribution Customers (CDC) which was formed to allow its members to jointly pursue issues in the proceeding. CDC consists of approximately 25 gas distribution customers of Columbia Gas. Settlement negotiations in the proceeding resulted in a Stipulation and Agreement of Settlement which was filed with the FERC on October 29, 2021. Columbia Gas has indicated that it is not aware of any party to the proceeding that opposes the Stipulation and Agreement of Settlement. Personnel at Exeter participated in a number of the settlement negotiations held in the Columbia Gas proceeding on behalf of the Pennsylvania Office of Consumer Advocate and the Maryland Office of People's Counsel. The activities and positions of the parties in those settlement negotiations are privileged and confidential.

KO Transmission made five filings at the FERC during the audit period. On August 24, 2018, in Docket No. CP18-542, KO Transmission filed to amend a Certificate of Public Convenience and Necessity that was issued on April 22, 1998, in Docket No. CP97-720, in order to properly reflect the capacity acquired in that proceeding and to amend KO Transmission's certificated capacity north of the Foster Station to reflect its current operating capacity. The filing was made to correct an inaccurate representation of KO Transmission's capacity north of the Foster Station included in Docket No. CP97-720. DE-Ohio filed to intervene in that proceeding on September 11, 2018, as did several other parties. No protests or adverse comments were filed in the proceeding, and the FERC subsequently issued an Order Amending Certificate on January 16, 2019, finding that KO Transmission's customers would see no change in service as a result of the requested amendment. In Docket Nos. RP19-788, RP20-636, and RP21-589, KO Transmission filed to adjust its fuel retention charge. DE-Ohio intervened in each of these proceedings and the FERC approved the requested changes. Filings to change fuel retention charges are made annually by most interstate pipelines and are generally noncontroversial. In Docket No. RP19-1084, KO Transmission submitted its FERC Order No. 587-Y compliance filing which revised the FERC's existing regulations designed to standardize the business practice and communication methodologies of interstate pipelines. KO Transmission's Order No. 587-Y compliance filing was approved by the FERC by letter order dated February 18, 2020. DE-Ohio intervened in that proceeding, and the proceeding was non-controversial.

3.5. Conclusions and Recommendations

3.5.1. Organizational Structure

Exeter's audit revealed no concerns with respect to the organizational structure of DE-Ohio or Duke Energy that would interfere with the purchase of reliable supplies of gas at minimum prices.

3.5.2. FERC Participation

DE-Ohio's FERC intervention policy is consistent with a reasonable level of participation at a reasonable resource effort. Audit period participation in FERC proceedings was appropriately based on DE-Ohio's intervention policy.

4. Gas Supply Planning

The basic objective of gas supply planning is to develop and secure portfolios of capacity resources and gas supplies to effectuate the delivery of gas to the local gas distribution company's system to serve the projected sales service requirements of a company's customers as economically as possible, consistent with the provision of reliable service to all customers. Selection of the capacity resources and gas supply portfolios involves an evaluation of feasible options available to meet a company's design day, winter season, and annual requirements. During the audit period, DE-Ohio's options included no-notice service, firm and interruptible transportation services, and storage and peaking service (collectively, "capacity resources");⁶ and base load and daily swing gas supplies (collectively, "gas supply resources"). The factors upon which the assessment of these options is based—option prioritization and retention or exclusion, the impact of uncertainty, and the ultimate selection of options—are all important aspects of the gas supply planning process.

An overview of the capacity and gas supply resources available to DE-Ohio and a summary of the Company's audit period contract entitlements are presented in Section 4.1. These resources are discussed in greater detail in Section 4.2. Changes to the Company's capacity and gas supply arrangements that occurred during the audit period are also discussed in Section 4.2. Section 4.3 discusses the audit period gas supply arrangements of Percentage of Income Payment Plan (PIPP) customers. Section 4.4 analyzes the balance between DE-Ohio's capacity and gas supply resources and its firm customers' requirements. The diversification of the Company's capacity and gas supply resources is addressed in Section 4.5. Discussed in Section 4.6 are DE-Ohio's plans with respect to the continued provision of the merchant function. Finally, Section 4.7 contains Exeter's conclusions and recommendations concerning the Company's gas supply planning procedures.

4.1. Overview and Summary of Audit Period Capacity and Gas Supply Resources

The primary capacity and gas supply resources available to DE-Ohio to meet the natural gas requirements of its customers and to provide reliable service during the audit period are discussed below.

Transportation Service. Transportation service provides pipeline capacity to move gas supplies on behalf of a customer, or shipper, such as DE-Ohio, from a point of receipt to a point of delivery. A receipt point is the location at which gas enters the pipeline's transmission facilities, typically in a production region, but can also include an interconnection with another interstate pipeline or a pipeline storage facility. Delivery points would include a gas utility's citygate or a pipeline storage facility. Takes, or consumption at a delivery point, must balance, within certain minimal tolerances,

⁶ Although peaking service is a bundled capacity and gas supply resource, it is categorized as a capacity resource throughout the audit report.

amounts nominated by a shipper. Failure to adhere to these balancing requirements may result in the assessment of penalty charges or the curtailment of deliveries by the interstate pipeline. Transportation service is available on either a firm or interruptible basis.

No-Notice Service. No-notice service is a firm delivery or transportation service that permits a shipper to take certain volumes that differ from nominated quantities without penalty. No-notice service is required by most gas distribution companies to accommodate variability in daily demands.

No-notice service may be a standalone service permitting a gas distribution company to take delivery of an amount of gas that differs from nominated quantities, with the requirement that any differences (imbalances) between its nominations and actual consumption be corrected in subsequent periods. No-notice service may also be achieved by rebundling interstate pipeline firm transportation and storage service. Under the rebundled approach, imbalances between a gas distribution company's daily nominations and the actual quantities consumed are assumed to be accommodated by gas injected or withdrawn from interstate pipeline storage capacity reserved by the gas distribution company.

Storage Service. Storage service provides both a peak day and a winter season gas supply resource, as well as seasonal and daily load management capabilities. Seasonal load management capabilities include the ability to store gas purchased during the summer season, when gas is typically less expensive, and to withdraw the stored gas during the winter season, when gas is traditionally more expensive. Storage enables a company to increase its purchased gas load factor. This is accomplished by increasing the ability to purchase gas during the off-peak summer months and by decreasing purchases during the peak winter months. Daily load management capabilities include the ability to accommodate unforeseen changes in gas supply requirements through storage withdrawals or injections.

Daily storage deliverability refers to the maximum daily quantity of gas that can be withdrawn from storage under a particular arrangement. Seasonal storage capacity refers to the quantity of storage space available to accommodate seasonal requirements, or the maximum seasonal quantity of gas that can be withdrawn from storage. Contract storage service available from interstate pipelines is generally provided on an unbundled basis. Thus, a separate transportation arrangement is required to deliver gas to storage for injection, and to deliver gas withdrawn from storage to the citygate. On-system storage refers to storage directly connected to a gas utility's distribution system, which does not require transportation by an interstate pipeline at the time of withdrawal.

Gas Supply Arrangements. Gas supply arrangements typically provide for a supply of gas at a specific receipt point into an interstate pipeline. Transportation service is

required to effectuate delivery of the gas. Gas supplies may also be purchased on a delivered-to-citygate basis.

Peaking Service. Peaking service is a gas supply arrangement that typically provides for the delivery of gas supplies directly to a gas utility's citygate during periods of extreme demands. The number of days for which service is available under a peaking arrangement is typically limited. A gas utility can also rely on on-system propane or liquefied natural gas (LNG) facilities for peaking service.

The natural gas supplies acquired by DE-Ohio to meet its customers' requirements are procured from unregulated, non-pipeline merchant suppliers. Gas supplies were delivered to DE-Ohio during the audit period under firm transportation arrangements with Columbia Gas, Columbia Gulf, KO Transmission, Tennessee Gas, and Texas Gas. DE-Ohio's firm transportation arrangements with Columbia Gas, KO Transmission, and Texas Gas provided for the delivery of gas directly to DE-Ohio. The Company's firm transportation arrangements with Columbia Gulf and Tennessee Gas provided for the upstream delivery of gas to KO Transmission.

DE-Ohio's transportation arrangements with Columbia Gulf, Tennessee Gas, and Texas Gas provide firm access to gas supplies produced in the Gulf Coast region (primarily southern Louisiana). Columbia Gas provides access to gas produced in the Appalachian Region. KO Transmission does not directly access any major production areas. The majority of the gas supplies purchased by DE-Ohio during the audit period were Gulf Coast supplies. However, a significant portion of the gas supplies physically delivered to DE-Ohio were Marcellus Shale supplies, with the delivery of Gulf Coast purchased supplies to DE-Ohio accomplished by displacement.⁷ The delivery of Gulf Coast supplies by Columbia Gulf, Tennessee Gas, and Texas Gas by displacement is necessary because each pipeline is now bi-directional, with Marcellus Shale supplies flowing north to south and Gulf Coast supplies flowing south to north. These southward-flowing Marcellus Shale supplies and northward-flowing Gulf Coast supplies meet at null points. The Columbia Gulf, Tennessee Gas, and Texas Gas null points are currently well south of DE-Ohio's system.

A portion of the gas purchased by DE-Ohio is utilized to satisfy current customer requirements at the time the gas is purchased. These are typically referred to as "flowing gas supplies." DE-Ohio also arranges for a portion of the gas supplies it purchases to be injected into storage during the off-peak summer months and withdrawn from storage to meet elevated winter demands and unanticipated swings in demand. DE-Ohio purchased contract storage services from Columbia Gas and Texas Gas during the audit period. The Company does not own or operate on-system gas supply storage facilities other than its propane facilities.

⁷ To accomplish the delivery of Gulf Coast-purchased supplies by backhaul, a third party located south of DE-Ohio would purchase Marcellus Shale supplies. The Gulf Coast supplies purchased by DE-Ohio would then be delivered to the third party, and the Marcellus Shale supplies purchased by the third party would be delivered to DE-Ohio.

DE-Ohio operated under Portfolio Management Agreements, or Asset Management Agreements (AMAs), during the entire audit period. The AMA service provider, or Asset Manager, under each arrangement was United Energy Trading, LLC (United Energy). The AMAs generally provided for the assignment of DE-Ohio's interstate pipeline transportation and storage capacity contracts to the Asset Manager and for the Asset Manager to administer the Company's capacity contracts. With several minor exceptions, all of the Company's audit period gas supplies were provided by the Asset Manager under the AMAs. The exceptions to this included gas supplies purchased to support the Company's hedging program which is discussed in Section 5.3 of the audit report, upstream and citygate peaking service, and other gas supplies which are discussed in Sections 4.2.2, 5.4, and 5.5 of the audit report. Under the terms of the AMAs, DE-Ohio determined the daily quantity of gas that it would purchase from the Asset Manager, the delivering interstate pipeline transportation path, and the Company's storage injection and withdrawal activity as if it continued to manage the assigned capacity and purchase its own gas supplies. This determination is referred to as "virtual dispatch." DE-Ohio's gas costs under the AMAs were based on virtual dispatch. The Asset Manager was entitled to utilize DE-Ohio's capacity contracts to meet DE-Ohio's daily gas supply requirements or use other capacity resources it had available. When the capacity contracts assigned to the Asset Manager were not required to meet DE-Ohio's gas supply requirements, the Asset Manager was entitled to use those contracts to further its own business interests provided that the Asset Manager met the Company's gas supply requirements. The Asset Manager's actual use of capacity contracts to meet DE-Ohio's requirements is referred to as "physical dispatch." DE-Ohio was paid a monthly management fee under each AMA. The management fee and other aspects of each AMA are confidential. Additional details concerning DE-Ohio's AMAs are discussed in Section 4.2.5 of the audit report.

DE-Ohio's firm capacity resources for the winter of 2020-2021 are summarized in Table 6 identifies each capacity resource and the maximum entitlements available under each capacity resource on a daily, seasonal, and annual basis, along with the contract expiration date. Changes to the Company's capacity resources and entitlements that occurred during the audit period are summarized in Table 7. The capacity resource descriptions provided in the following sections and in the remainder of the audit report are based on DE-Ohio's virtual dispatch instructions and may not be consistent with the actual use of DE-Ohio's capacity resources by the Asset Manager.

Table 6. Summary of Firm Capacity Resource Contracts (2020-2021 Winter Season)

Pipeline – Service	Contract No.	MDQ (Dth)		Quantity (Dth)		Contract Expiration
		Winter	Summer	Winter	Annual	
<u>Columbia Gas Transmission</u>						
Storage Service (FSS)	79969	216,514	0	9,244,079	9,244,079	03/31/2022
Storage Transportation (SST)	79971	216,514	108,257	9,244,079	9,244,079	03/31/2022
<u>Columbia Gulf Transmission</u>						
Transportation (FTS-1)	34688	49,000	31,500	7,399,000	14,140,000	10/31/2024
Transportation Backhaul (FTS-1 BH)	154403	21,000	21,000	3,171,000	7,665,000	10/31/2024
<u>KO Transmission</u>						
Transportation (FT)	001	184,000	184,000	27,784,000	67,160,000	05/01/2022
<u>Tennessee Gas Pipeline</u>						
Transportation (FT-A)	321248	24,000	24,000	3,624,000	8,760,000	10/31/2021
<u>Texas Gas Transmission</u>						
No-Notice Nominated (NNS)	N29907	6,250	10,982	943,750	3,293,898	10/31/2023
No-Notice Unnominated (NNS)	N29907	25,000	0	2,350,000	2,350,000	10/31/2023
Transportation (STF)	37259	92,000	23,000	13,892,000	18,814,000	10/31/2021
<u>Citygate</u>						
						03/01/2021
Propane	--	135,940	0	680,000	680,000	--
Total:[1]	--	637,215	110,084	42,929,990	66,487,981	--

MDQ = maximum daily quantity.

^[1] Excludes KO Transmission FT service; Columbia Gas FSS service, which is delivered under Rate Schedule SST; and Columbia Gas summer SST service, which is used to deliver gas to Columbia Gas FSS storage. Totals reflect adjustments to Columbia Gulf and Tennessee Gas contract quantities to reflect KO Transmission fuel retention.

Table 7. Summary of Firm Maximum Daily Quantity Contract Changes (Dth)

Pipeline – Service	Winter Season		
	2018-2019	2019-2020	2020-2021
<u>Columbia Gas Transmission</u>			
Storage Service (FSS)	216,514	216,514	216,514
Storage Transportation (SST)	216,514	216,514	216,514
<u>Columbia Gulf Transmission</u>			
Transportation (FTS-1)	49,000	49,000	49,000
Transportation Backhaul (FTS-1 BH)	21,000	21,000	21,000
<u>KO Transmission</u>			
Transportation (FT)	184,000	184,000	184,000
<u>Tennessee Gas Pipeline</u>			
Transportation (FT-A)	24,000	24,000	24,000
<u>Texas Gas Transmission</u>			
No-Notice Nominated (NNS)	6,250	6,250	6,250
No-Notice Unnominated (NNS)	25,000	25,000	25,000
Transportation (STF)	92,000	92,000	92,000
<u>Citygate & Peaking</u>			
Citygate Peaking Service			
Propane	135,940	135,940	135,940

4.2. Detail of Audit Period Capacity and Gas Supply Arrangements

4.2.1. Firm Transportation Service

DE-Ohio reserved KO Transmission and Texas Gas firm transportation capacity during the audit period which provided for delivery of gas supplies directly to DE-Ohio's citygates. The Company reserved firm transportation capacity on Columbia Gulf and Tennessee Gas which provided for the upstream delivery of gas supplies to KO Transmission. Columbia Gas firm transportation capacity provided for the delivery of gas directly to DE-Ohio's citygate and to KO Transmission. DE-Ohio also utilized KO Transmission interruptible transportation service to meet a portion of its gas supply requirements during the audit period. Rates applicable under the Company's firm interstate pipeline transportation arrangements include a monthly reservation charge applicable to the maximum daily quantity (MDQ), a variable charge applicable to volumes delivered, and a fuel retention charge. In addition to its transportation arrangements with interstate pipelines, DE-Ohio also utilized firm transportation service provided by DE-Kentucky. The Company's audit period firm transportation arrangements are discussed in greater detail below.

A. Columbia Gas Transmission

Storage Service Transportation (SST). DE-Ohio purchased storage transportation service from Columbia Gas during the audit period under Rate Schedule SST. DE-Ohio purchased storage service from Columbia Gas under Rate Schedule FSS. Storage transportation service under Rate Schedule SST is primarily utilized to transport gas to and from the storage facilities of Columbia Gas. Gulf Coast gas supplies delivered to Columbia Gas by Columbia Gulf were generally purchased for injection into storage during the audit period. Under the Company's SST arrangement, the primary receipt point is Columbia Gas storage, and the primary delivery points are DE-Ohio's citygate and KO Transmission. Secondary SST receipt and delivery points may be selected anywhere on the Columbia Gas system.⁸ SST transportation service and FSS storage service provide DE-Ohio with no-notice balancing service under which daily differences between actual takes at DE-Ohio's citygate and quantities scheduled to DE-Ohio's citygate by the Company and on behalf of the Company's transportation customers are treated as injections or withdrawals under Rate Schedules FSS and SST.

DE-Ohio purchased SST service from Columbia Gas under Contract No. 79971 during the audit period. The MDQ under Contract No. 79971 during the months of October through March is 216,514 Dth, and 108,257 Dth during the months of April through September. SST Contract No. 79971 was initially scheduled to expire on March 31, 2015. However, DE-Ohio renegotiated its SST contract effective July 1, 2013, and extended the term of the contract through March 31, 2020. The term was extended a second time effective September 1, 2016 through March 31, 2022. Contract No. 79971 provides DE-Ohio with the ability to transport nearly 60,000,000 Dth annually. However, because this capacity is primarily utilized to deliver gas to and from storage, actual annual utilization of SST capacity was significantly less during the audit period. DE-Ohio's seasonal storage capacity quantity under companion FSS Contract No. 79969 is 9,244,079 Dth. The Company received SST service at a discounted rate from Columbia Gas' maximum FERC-approved rates through the initial March 31, 2015 term of Contract No. 79971. For the first contract extension period, DE-Ohio negotiated a rate for SST service that consisted of two components: a fixed-rate component that reflected a discount to Columbia Gas' maximum FERC-approved base rate, and the capital cost recovery mechanism (CCRM) surcharge that would vary throughout the term of the contract. For the second contract extension, DE-Ohio negotiated a rate for SST service that was once again a single, fixed, discounted rate effective February 1, 2019 which increased by a set amount on February 1, 2020 and February 1, 2021. On March 28, 2019, these fixed discounted rates were reset to preserve DE-Ohio's discount after Columbia Gas changed base rates and the CCRM due to the federal tax reforms of 2018. Columbia Gas' CCRM provides for the recovery of the costs associated with a number of specific facility rehabilitation and modernization projects. The CCRM was included in a settlement agreement that was approved by the FERC in Columbia Gas Docket No. RP12-1021. DE-Ohio's SST rate discounts were not affected by

⁸ A shipper such as DE-Ohio has a firm entitlement to capacity at primary receipt and delivery points. Capacity at secondary receipt and delivery points is available on an interruptible basis.

the increase in Columbia Gas' rates which occurred effective February 1, 2021 as a result of Columbia Gas' Section 4 FERC base rate proceeding in Docket No. RP20-1060.

B. Columbia Gulf Transmission

Firm Transportation Service (FTS-1). DE-Ohio maintained a firm transportation service agreement with Columbia Gulf under Rate Schedule FTS-1 during the audit period that provided capacity for the firm delivery of gas supplies from the Gulf Coast production region to Columbia Gulf's interconnect with KO Transmission and Columbia Gas at Means, Kentucky (Contract No. 34688). Gas delivered to KO Transmission is subsequently redelivered to DE-Ohio's citygate. Deliveries that exceed DE-Ohio's immediate requirements are subsequently accounted for as deliveries to storage under the Company's SST arrangement with Columbia Gas.

The MDQ under Contract No. 34688 was 49,000 Dth during the winter period (November through March) and 31,500 Dth during the summer period (April through October). Contract No. 34688 provides the Company with the ability to transport 14,140,000 Dth annually. Contract No. 34688 was initially scheduled to expire on October 31, 2019, but was subsequently extended by DE-Ohio through October 31, 2024.

In addition to purchasing FTS-1 service from Columbia Gulf under Contract No. 34688 that provided for the delivery of gas from the Gulf Coast production region to KO Transmission at Means, Kentucky, DE-Ohio purchased FTS-1 backhaul (BH) service that provided for the delivery of gas supplies on a primary basis from the interconnect of Columbia Gas and Columbia Gulf at Leach, Kentucky to KO Transmission at Means, Kentucky. DE-Ohio purchased FTS-1 BH service from Columbia Gulf under Contract No. 154403 during the audit period. This contract has an MDQ of 21,000 Dth throughout the year. Contract No. 154403 was also initially scheduled to expire on October 31, 2019, but was subsequently extended by DE-Ohio through October 31, 2024. DE-Ohio's FTS-1 BH service can also be used on a secondary basis to deliver gas from the Gulf Coast production region to Columbia Gas or KO Transmission. Columbia Gulf backhaul purchases are typically priced based on the Columbia Gas Appalachia Gas Daily index, plus an adder, to represent a market price since there is no published index price applicable to purchases at Leach. In addition, Leach is not a very liquid trading location and DE-Ohio reported it difficult to receive reliable supply at Leach during the winter. Therefore, DE-Ohio did not generally use Contract No. 154403 to deliver Columbia Gas-sourced supplies during the audit period, and DE-Ohio used its FTS-1 BH arrangement to deliver Gulf Coast-sourced supplies. DE-Ohio paid negotiated discounted rates under each Columbia Gulf firm transportation arrangement maintained during the audit period.

C. KO Transmission

Firm Transportation Service (FT). DE-Ohio purchased firm transportation service from KO Transmission under Rate Schedule FT during the audit period (Contract No. 001). KO Transmission transportation capacity is utilized to deliver upstream gas supplies flowing on Columbia Gulf and Tennessee Gas to the citygates located on the southern portion of

DE-Ohio's system. A significant percentage of the gas withdrawn from Columbia Gas FSS storage is also delivered to DE-Ohio by KO Transmission. Gas supplies are delivered by KO Transmission directly to the Company's system at the California and Bracken County Stations, and indirectly through DE-Kentucky. The MDQ under Contract No. 001 is 184,000 Dth. This provides DE-Ohio with the ability to transport 67,160,000 Dth annually. DE-Ohio's current contract with KO Transmission expires May 1, 2022.

Exeter's 2015 management performance audit noted that the rates of KO Transmission would increase significantly as a result of an anticipated filing of a base rate case at the FERC. The 2015 management performance audit recommended that, in light of this increase in rates, DE-Ohio should reevaluate whether its current KO Transmission capacity entitlements were reasonable, and adjust those entitlements as appropriate. The PUCO's Opinion and Order in the 2015 management performance audit required DE-Ohio to complete this evaluation, and the Company complied with this requirement. In the 2018 management performance audit, Exeter's review and DE-Ohio's evaluation of its KO Transmission capacity entitlements concluded that, based on cost and reliability considerations, the Company's current entitlements should not be reduced. Exeter's 2018 management performance audit concurred with DE-Ohio's evaluation. However, Exeter's 2018 management performance audit noted that with completion of the Central Corridor Project and the retirement of DE-Ohio's propane facilities, as much as 60% of DE-Ohio's gas supplies could come from the north, which might enable the Company to reduce its southern KO Transmission capacity entitlements. Exeter's 2018 management performance audit recommended that if the Central Corridor Project is completed and the propane facilities are retired, the Company should again evaluate its KO Transmission capacity entitlements. The PUCO's Opinion and Order in the 2018 management performance audit required DE-Ohio to complete this evaluation, and the General Audit Requirements of this audit directed the auditor to review DE-Ohio's reevaluation of its KO Transmission capacity entitlements.

Exeter's audit noted that recent on-system improvements and resulting operational parameters resulted in an increased percentage of northern supply received during the 2020/2021 winter season versus prior winter periods. As result, the Company is updating its system planning models and design day forecasts in order to evaluate its firm transportation requirements, including KO Transmission firm transportation, when the Central Corridor Project is completed and the propane-air plants are retired. The Company anticipates completing this evaluation prior to the 2021/2022 winter season.

D. Tennessee Gas Pipeline

Firm Transportation Service (FT-A). Effective November 1, 2016, DE-Ohio entered into a discounted rate firm transportation arrangement with Tennessee Gas under Rate Schedule FT-A (Contract No. 321248). This arrangement has an MDQ of 24,000 Dth and provides for the delivery of Gulf Coast gas supplies on Tennessee Gas' 800 Leg in Zone L in the Gulf Coast production region to the interconnect of Tennessee Gas and Columbia Gas and KO Transmission at North Means, Kentucky. Contract No. 321248 provides DE-Ohio the ability to

transport 8,760,000 Dth annually and was initially scheduled to expire on March 31, 2019. DE-Ohio extended the term of this contract through March 31, 2022, and has subsequently extended the term of this contract through March 31, 2025.

E. Texas Gas Transmission

Short-Term Firm Transportation Service (STF). DE-Ohio initially purchased short-term firm transportation service from Texas Gas under Rate Schedule STF during the audit period (Contract No. 36389). Under Rate Schedule STF, shippers like DE-Ohio are able to purchase firm transportation service for periods of less than one year, or the MDQ may vary by month or season over the term of an agreement one year or longer in length. STF Contract No. 36389 was an annual arrangement with an MDQ of 65,000 Dth during the winter period and 17,000 Dth during the summer period. Contract No. 36389 provided the Company with the ability to transport 13,453,000 Dth annually. DE-Ohio received service under Contract No. 36389 at a discounted rate. Contract No. 36389 expired on October 31, 2018.

Upon expiration of Contract No. 36389, DE-Ohio entered into a new discounted Rate Schedule STF agreement with Texas Gas under Contract No. 37259. This agreement had an MDQ of 92,000 Dth during the winter period and 23,000 Dth during the summer period, providing DE-Ohio the ability to transport 18,814,000 Dth annually. The initial term of Contract No. 37259 was November 1, 2018 through October 31, 2021. However, the agreement provides for the automatic extension of the contract for a term of one year unless either party provides a one-year written notice to terminate the contract. Neither Texas Gas nor DE-Ohio have provided such notice. Unlike the other interstate pipelines that serve DE-Ohio, Texas Gas' demand charges are daily rather than monthly rates.

No-Notice Transportation Service (NNS). DE-Ohio purchases no-notice transportation service from Texas Gas under Rate Schedule NNS (Contract No. N29907). No-notice service provides the Company with the flexibility to take delivery of quantities not nominated for delivery. The MDQ under Contract No. N29907 is comprised of unnominated and nominated components.

The unnominated component of NNS is a bundled firm transportation and storage arrangement. During the winter period, daily actual takes at DE-Ohio's citygate in excess of the nominated quantities scheduled to DE-Ohio's citygate by the Company and on behalf of the Company's transportation customers under any Texas Gas firm transportation rate schedule are considered no-notice volumes that are withdrawn from storage. Under NNS, Texas Gas advances gas to DE-Ohio during the winter period and the Company returns the advanced gas supplies the following summer period. The gas advanced to DE-Ohio is included in the GCR at the anticipated replacement cost. Differences between the actual and anticipated replacement cost are later reconciled. Prior to the summer of 2019, DE-Ohio typically hedged the cost of the replacement gas to minimize reconciliation adjustments. The unnominated component of no-notice service cannot be used to deliver nominated supplies.

The nominated component of NNS functions as a standard firm transportation arrangement that is generally used to fill no-notice storage in the summer period and provide citygate

delivery service in the winter period. During the summer period, nominated deliveries to DE-Ohio's citygate in excess of actual takes are considered storage injections.

During the audit period, the MDQ for the unnominated component of NNS was 25,000 Dth during the period November through March. The MDQ was reduced to 15,625 Dth in April and 20,268 Dth in October. The MDQ was zero for all other months. The maximum net seasonal withdrawal quantity under Contract No. N29907 is 2,350,000 Dth. The MDQ associated with the nominated component of NNS is 6,250 Dth during the winter period and 10,982 Dth during the summer period.

F. Duke Energy Kentucky

DE-Ohio maintained a firm transportation arrangement with DE-Kentucky during the audit period that provided for the delivery of gas supplies from KO Transmission at the Cold Spring Station to DE-Ohio's Front & Rose, Eastern Avenue, and Anderson Ferry Stations (Contract No. 001). The MDQ under Contract No. 001 is 180,000 Dth/day. Contract No. 001 is effective under evergreen provisions of the contract on a year-to-year basis, subject to termination with 30 days' notice. The transportation service provided by DE-Kentucky is FERC-jurisdictional. During the audit period, DE-Ohio paid a monthly demand charge of \$50,292 to DE-Kentucky. A portion of these demand charges is assessed to firm transportation customers through the Company's Contract Commitment Cost Recovery Rider (Rider CCCR), which is discussed in greater detail in Section 6.1.8 of the audit report.

DE-Ohio provides a transportation service to DE-Kentucky. Under this arrangement, gas supplies delivered to the northern portion of the Company's system are delivered to DE-Kentucky by displacement. This service is also FERC-regulated. DE-Kentucky was assessed a charge of 4.58¢/Mcf for this service.

4.2.2. Citygate Peaking Services

DE-Ohio purchased upstream and citygate peaking services from [REDACTED] during the audit period. Except as noted below, DE-Ohio paid a monthly reservation charge under each of its citygate peaking service arrangements. Commodity charges were based on published index prices. The Company's audit period citygate peaking service arrangements are discussed in greater detail below.

A. [REDACTED]

DE-Ohio purchased peaking service from [REDACTED] under four separate agreements during the audit period. Under an agreement effective December 2018 through February 2019, the Company was entitled to purchase up to [REDACTED] Dth/day. This agreement provided for the delivery of gas to the interconnect of KO Transmission and Tennessee at North Means. Under an agreement also effective December 2018 through February 2019, the Company was

entitled to purchase up to [REDACTED] Dth/day from [REDACTED]. This peaking service arrangement provided for the delivery of gas to DE-Ohio's Texas Gas citygates. Under an agreement effective December 2019 through February 2020, DE-Ohio was entitled to purchase [REDACTED] Dth/day on up to [REDACTED] days during the contract period. Contract quantities were delivered to the Company's Springboro Station which is interconnected to both ANR and Texas Eastern. DE-Ohio was entitled to purchase [REDACTED] Dth/day on up to [REDACTED] days under a peaking service arrangement with [REDACTED] that was in effect for the period December 2019 through February 2020. This arrangement provided for the delivery of gas to DE-Ohio's Texas Gas citygates.

B. [REDACTED]

DE-Ohio maintained two peaking service arrangements with [REDACTED] during the audit period. Both arrangements were effective for the period December 2019 through February 2020. One arrangement provided for the delivery of up to [REDACTED] Dth/day on up to [REDACTED] days during the contract period. Contract quantities were delivered by ANR to the Company's Springboro Station. [REDACTED]. The other arrangement with [REDACTED] provided for the delivery of up to [REDACTED] Dth/day on up to [REDACTED] days during the contract period. This arrangement provided for the delivery of gas to DE-Ohio's Texas Gas citygates.

C. [REDACTED]

DE-Ohio purchased peaking service from [REDACTED] under an agreement effective December 2019 through February 2020. The Company was entitled to purchase up to [REDACTED] Dth/day on up to [REDACTED] days during the contract period. Contract quantities under the agreement were deliverable to DE-Ohio's Texas Gas citygates.

D. [REDACTED]

DE-Ohio's peaking service arrangement with [REDACTED] was effective for the period December 2020 through February 2021. DE-Ohio was entitled to purchase up to [REDACTED] Dth/day on up to [REDACTED] days during the contract period. Contract quantities were deliverable to DE-Ohio's Texas Gas citygates. [REDACTED].

4.2.3. Propane-Air Facilities

Historically, DE-Ohio owned and operated two propane-air facilities for peak-shaving purposes as well as to maintain pressure in its distribution system on extremely cold days—the Dicks Creek Plant and the Eastern Avenue Plant. DE-Ohio also currently has access to 64% of the deliverability from the Erlanger Plant propane-air facility, which is owned by DE-Kentucky. As previously explained in Section 2.1 of the audit report, in December 2013, a *force majeure* was declared at the Todhunter Propane Cavern, which supplied propane to the Dicks Creek Plant, and the Dicks Creek Plant is no longer operational. This reduced the MDQ from the

Company's propane facilities to 135,940 Dth. The current seasonal design capacity of the Company's propane facilities is approximately 680,000 Dth. As discussed in greater detail in Section 6.1.3 of the audit report, an allocated share of DE-Ohio's propane facilities was available to the suppliers of firm transportation customers during a portion of the audit period and, therefore, was not available to serve GCR customers. As discussed in Section 2.1 of the audit report, DE-Ohio is pursuing the Central Corridor Project, which will enable the Company to retire its propane facilities.

4.2.4. Storage Service

DE-Ohio subscribed to unbundled firm contract storage service provided by Columbia Gas during the audit period. As previously described, the no-notice service DE-Ohio purchases from Texas Gas also includes a storage component. DE-Ohio pays the maximum FERC-approved rates for the storage services provided by Columbia Gas and Texas Gas.

A. Columbia Gas Transmission

Firm Storage Service (FSS). DE-Ohio purchased firm storage service from Columbia Gas under Rate Schedule FSS during the audit period. FSS storage service, in combination with Columbia Gas transportation capacity under Rate Schedule SST, provides DE-Ohio with no-notice balancing service. Daily differences between actual takes at DE-Ohio's citygate and the quantities scheduled to the Company's citygate by DE-Ohio and its transportation customers become no-notice injections or withdrawals under Rate Schedules FSS and SST. In addition to accommodating daily imbalances between actual takes at its citygate and nominated deliveries, DE-Ohio utilizes FSS service for seasonal load management purposes and to capture seasonal gas price differences.

DE-Ohio purchased FSS service from Columbia Gas under Contract No. 79969 during the audit period. The maximum daily storage withdrawal quantity (MDWQ) under DE-Ohio's FSS contract was 216,514 Dth. The seasonal contract storage quantity (SCQ) was 9,244,079 Dth. This provided the Company with 43 days of maximum withdrawal capabilities.

The FSS rate schedule provides for maximum daily and monthly injection volumes. Generally, as storage is filled, the volumes permitted for injection, both daily and monthly, are reduced. Conversely, as storage volumes are withdrawn, daily and monthly injection quantities increase. The maximum daily and monthly injection quantities under Rate Schedule FSS are specified in Columbia Gas' FERC-approved tariff. The maximum monthly injection quantities (MMIQ) are a specified percentage of the SCQ. The maximum daily injection quantities (MDIQ) are determined by dividing the MMIQ by a daily injection factor. The current percentages and factors, and DE-Ohio's maximum daily injection rights under its Columbia Gas FSS contract, are as follows:

Month	MMIQ % of SCQ	MMIQ (Dth)	Daily Injection Factor	MDIQ (Dth)
November	5%	462,204	30	15,407
December	10%	924,408	30	30,814
January – March	10%	924,408	25	36,976
April	15%	1,386,612	25	55,464
May – July	20%	1,848,816	25	73,953
August	18%	1,663,934	25	66,557
September	13%	1,201,730	25	48,069
October	9%	831,967	25	33,279

The maximum daily withdrawal quantities are also a function of the amount of gas in storage. The MDWQ declines as the amount of gas in storage inventory declines by the following ratchets:

Storage Inventory	MDWQ (Dth)
100-30%	216,514
30-20%	173,211
20-10%	140,734
10-0%	108,257

In addition, maximum and minimum net monthly withdrawal quantity restrictions are imposed by Columbia Gas during the winter season as follows:

Month	Withdrawal Quantities (Dth)	
	Maximum	Minimum
November	3,697,632	0
December	3,697,632	0
January	3,697,632	0
February	2,773,224	924,408
March	1,848,816	924,408

Finally, storage inventory levels are limited to 65% of the SCQ on February 1; 25% of the SCQ on April 1; 60% of the SCQ on June 30; and 85% of the SCQ on August 31. Failure to adhere to Columbia Gas' storage injection and withdrawal and inventory restrictions may result in the assessment of penalty charges. Monthly charges for FSS service include a deliverability charge applicable to the maximum daily withdrawal quantity, a capacity charge applicable to injection and withdrawal quantities, and a charge for storage losses.

B. Texas Gas Transmission

No-Notice Service (NNS). Texas Gas NNS has a storage component which, in combination with the nominated transportation component of NNS, provides DE-Ohio with no-notice

service. Daily differences between actual takes at DE-Ohio's citygate and the quantities scheduled to the Company's citygate by DE-Ohio and its transportation customers become no-notice storage injections or withdrawals. DE-Ohio's NNS contract entitlements were identified in Section 4.2.1 (E) of the audit report.

Rate Schedule NNS provides for maximum daily injection and withdrawal quantities. Winter-period injections and summer-period withdrawals are provided on a "best effort" interruptible basis. The maximum daily injection and withdrawal quantities are a function of the amount of gas in storage. The MDIQ declines as the amount of gas in storage inventory increases by the following ratchets:

Storage Inventory	MDIQ (Dth)
0-65%	30,550
65-90%	25,850
90-100%	14,100

The MDWQ declines as the amount of gas in storage inventory declines by the following ratchets:

Storage Inventory	MDWQ (Dth)
100-25%	25,000
25-20%	22,500
20-15%	21,250
15-10%	20,000
10-0%	18,750

Storage inventory is limited to 53% of the SCQ, or 1,245,000 Dth, on April 1.

4.2.5. Asset Management Agreements

DE-Ohio maintained three AMAs with United Energy Trading ("Asset Manager") during the audit period. Each agreement had a two-year term with effective dates beginning November 1, 2016, November 1, 2018, and November 1, 2020. Each AMA was awarded through an RFP process.

Under the AMAs, with the exception of the capacity assigned to the suppliers of firm transportation customers, which is discussed in greater detail in Section 6.1.3 of the audit report, all of DE-Ohio's interstate pipeline capacity contracts were assigned to the Asset Manager, and the Company was paid a management fee. The fees received by the Company from AMAs during the audit period are confidential. DE-Ohio was entitled to retain 20% of the AMA management fees, and the remainder of the fees were allocated between GCR and firm transportation customers based on the interstate pipeline demand charges paid to DE-Ohio. GCR customers pay interstate pipeline demand charges to DE-Ohio through the GCR rate, and

firm transportation customers pay demand charges to DE-Ohio through balancing charges. The AMA fees allocated to firm transportation customers are included as a credit under Rider CCCR.

4.2.6. Gas Supply Arrangements

With several minor exceptions, all of the Company's audit period gas supplies were provided by the Asset Manager under the AMAs. The exceptions to this were gas supplies purchased to support the Company's hedging program which is discussed in Section 5.3 of the audit report, upstream and citygate firm peaking service gas supplies which are discussed in Sections 4.2.2 and 5.4 of the audit report, and other delivered-to-citygate supplies which are discussed in Section 5.5 of the audit report. For the months of September and October 2018, DE-Ohio also had a contract with [REDACTED] that provided for the delivery of [REDACTED] Dth/day to the Springboro Station. The Company utilized an RFP process to select its audit period upstream and citygate peaking service gas suppliers. Monthly baseload gas supplies provided under the AMAs were priced based on the applicable Platts' *Inside FERC's Gas Market Report (Inside FERC)* index price, and daily swing purchases were priced based on the applicable Platts' *Gas Daily* index price. [REDACTED]

4.2.7. Local Ohio Production

DE-Ohio's ability to purchase local, Ohio-produced gas delivered directly to its system is limited because the Company's territory is not conducive to natural gas formation. Most of Ohio's proven gas reserves are located in the northeast region of the state. DE-Ohio may purchase Ohio-produced gas that is produced in other regions of the state and delivered to the Company by interstate pipelines.

DE-Ohio purchased, from a third party, methane gas recovered from the [REDACTED] operated by [REDACTED] located in Colerain Township, Hamilton County, Ohio during the audit period. These supplies are delivered directly to DE-Ohio's system. Audit period purchases totaled 4,821,800 Dth. The gas recovered from the [REDACTED] was initially purchased under a contract with [REDACTED]. The purchases from [REDACTED] were based on Columbia Gas monthly index prices. The contract with [REDACTED] initially provided for a maximum average daily volume in any month of 4,800 Dth and extended through June 30, 2021. Due to increased landfill deliveries, the contract with [REDACTED] was subsequently amended to increase the maximum average daily volume to 5,200 Dth for November and December 2019. Effective January 1, 2000, DE-Ohio entered into a contract directly with [REDACTED] for an additional 1,000 Dth/day. The price for these purchases was also based on Columbia Gas monthly index prices. DE-Ohio subsequently entered into a new contract with [REDACTED] for a maximum average daily volume in any month of 6,000 Dth for the period July 1, 2021 through March 31, 2022 with the purchase price based on Columbia Gas monthly index prices.

4.3. Percentage of Income Payment Plan Customers

PIPP is a payment plan for income-eligible customers. PIPP customers pay a percentage of their income regardless of usage. In January 2017, DE-Ohio issued an RFP soliciting gas supplies for PIPP customers for a one- to three-year period beginning April 2017. The RFP was awarded to Utility Gas & Power for a three-year term, April 2017 through March 2020, at a price based on the NYMEX closing price each month plus \$0.56/Dth. This price is then converted to an Mcf price utilizing the Company's loss factor and the 12-month weighted Dth-to-Mcf conversion factor. Another RFP for PIPP gas supplies was issued in February 2020, and Utility Gas & Power was again selected to supply PIPP customers under a three-year arrangement for the period April 2020 through March 2023. The price under the second arrangement is based on the NYMEX closing price each month plus \$0.63/Dth. Table 8 provides a comparison of audit period PIPP and GCR rates and delivered quantities.

Table 8. Comparison of GCR and PIPP Customer Rates

Month	GCR (\$/Mcf)	PIPP (\$/Mcf)	Difference (\$/Mcf)	Delivered (Mcf)
September 2018	\$5.021	\$3.657	(\$1.364)	25,859.0
October	4.117	3.737	(0.380)	89,161.3
November	4.081	3.873	(0.208)	169,248.8
December	3.995	4.049	0.054	184,800.0
January 2019	4.270	5.703	1.433	201,500.6
February	3.584	4.540	0.956	171,377.1
March	3.485	3.787	0.302	105,581.2
April	3.353	3.684	0.331	46,882.9
May	3.280	3.534	0.254	23,658.9
June	3.516	3.375	(0.141)	17,563.8
July	3.308	3.447	0.139	14,102.7
August	3.364	3.078	(0.286)	14,770.6
September 2019	\$3.126	\$2.916	(\$0.210)	20,015.6
October	3.243	3.033	(0.210)	77,234.1
November	3.231	3.224	(0.007)	152,507.6
December	3.639	3.407	(0.232)	150,385.7
January 2020	3.587	3.281	(0.306)	153,156.5
February	3.381	2.943	(0.438)	132,515.0
March	2.975	2.638	(0.337)	78,463.6
April	2.349	2.655	0.306	62,838.4
May	2.337	2.455	0.118	27,873.8
June	2.731	2.630	(0.101)	13,270.8
July	2.598	2.552	(0.046)	12,089.3
August	2.727	2.293	(0.434)	13,080.9
September 2020	\$3.212	\$2.697	(\$0.515)	23,516.7
October	3.334	3.484	0.150	56,808.2
November	3.380	2.964	(0.416)	118,479.1
December	3.440	3.937	0.497	165,589.6
January 2021	3.293	3.830	0.537	162,209.0
February	3.294	3.367	0.073	147,897.0
March	3.895	3.689	(0.206)	74,877.9
April	3.944	3.793	(0.151)	49,608.4
May	3.748	3.500	(0.248)	25,121.5
June	5.565	3.869	(1.696)	15,321.9
July	5.786	3.932	(1.854)	12,416.8
August	6.433	4.621	(1.812)	13,738.8
Average/Total:	\$3.628	\$3.449	(\$0.179)	2,823,523.1

4.4. Balance of Capacity Resources and Requirements

DE-Ohio's capacity requirements can be affected by customer conversions from sales to transportation service and vice versa, customer conservation efforts, increases and decreases

in the number of customers served, and other factors. Maintaining capacity in excess of the Company's customers' requirements would be inconsistent with the minimization of gas costs, while failing to maintain sufficient capacity may compromise service reliability.

4.4.1. Design Day Capacity Resources and Requirements

For purposes of determining design day requirements, gas utilities typically use a current day with a mean temperature that has a 3% to 10% probability of occurrence. Probability of occurrence is frequently determined based on the actual number of occurrences over a specific historical period. The current-day temperature utilized by DE-Ohio to forecast design day requirements for the audit period was -14°F. This reflects the lowest mean daily temperature experienced in DE-Ohio's service territory over the last 30 years (January 19, 1994). DE-Ohio has experienced mean daily temperatures of -14°F or lower on three occasions over the last 75 years, since the winter of 1947-1948. Based on the frequency of occurrence within this sample, this implies an annual probability of occurrence of 4%, which would be consistent with the probability of occurrence used by other gas utilities.

DE-Ohio's design day forecasts are prepared by the Pipeline Services Department. For the winter of 2018-2019, Pipeline Services evaluated two alternative design day forecast models. Both alternatives utilized linear regression analysis of historical daily firm system sendout (total system sendout less usage by interruptible transportation customers) for those days with more than 10 heating degree days (HDD) (as utilized by Pipeline Services, HDD is based on 65°F) during the months of December, January, and February over the period December 2013 through February 2018. One alternative utilized HDD based on effective daily temperature and the other utilized HDD based on actual daily mean temperature. Effective HDD had been used by DE-Ohio for daily sendout load forecasting and calculation of the Target Supply Quantity required to be delivered by suppliers serving Choice customers. Effective HDD attempts to combine, into one variable, the effect of the following on customer natural gas requirements: current- and prior-day temperature, the spread of current-day temperature, sun, and wind speed. DE-Ohio then compared the design day firm sendout forecasts resulting from the regression equations of each alternative model based on actual HDD (79 HDD) and effective HDD (83 HDD) experienced on January 19, 1994, the coldest day observed over the last 30 years in the Company's service territory. The design day demand projected by the actual temperature model was slightly higher than the demand projected by the effective HDD model and, therefore, to be conservative and consistent with the approach that had been adopted by Piedmont, DE-Ohio elected to use the results of the actual temperature model for the winter of 2018-2019.⁹ DE-Ohio's interruptible transportation customers also contract for firm transportation service, which is referred to as "FT for IT." Forecasted FT for IT was added to the initial actual temperature model design day projection. Finally, a load growth adjustment of approximately 1.0% was also added to arrive at the

⁹ The difference between the two alternatives was 14,628 Dth, or 1.8%.

Company's total design day firm sendout projection of 837,143 Dth for the winter of 2018-2019.

For the winters of 2019-2020 and 2020-2021, DE-Ohio adopted the design day forecasting modeling approach utilized by Piedmont. Under this approach, the design day forecast is based on an analysis of daily firm sales and transportation sendout for the winter period (November – March) for the last five years. Through this analysis, baseload usage and usage-per-HDD factors were developed to determine forecasted firm design day demands at 79 HDDs. Baseload usage was determined through a regression analysis of usage on days with ten or fewer HDDs. The usage-per-HDD factor was determined through a regression analysis of usage on days with greater than ten HDDs. For the winters of 2019-2020 and 2020-2021, like the design day forecast prepared for the winter of 2018-2019, the forecast initially developed by DE-Ohio's model was subsequently adjusted for forecasted FT for IT and load growth.

The projected design day requirements of DE-Ohio's GCR sales customers, firm transportation customers, and the capacity resources available to meet those requirements just prior to each audit period winter season are summarized in Table 9. As explained in greater detail in Sections 6.1.3 and 6.1.5 of the audit report, the capacity resources shown in Table 9 have been adjusted to reflect a *pro rata* share of propane made available to the suppliers of firm transportation customers, the assignment of capacity to suppliers of firm transportation customers, and the storage utilized by firm suppliers in conjunction with EFBS.¹⁰ For the winter of 2020-2021, the citygate peaking service contract with Eco-Energy is not reflected as a capacity resource in Table 9, as this contract was executed to meet projected gas supply requirements rather than design day capacity requirements. As previously indicated in Section 4.2.2, there were no demand charges associated with the Eco-Energy contract. As shown in Table 9, the projected design day capacity requirements of GCR customers and the resources available to serve GCR customers were in close balance for the winters of 2018-2019 and 2019-2020. For the winter of 2020-2021, all propane capacity was assigned to the GCR, resulting in total GCR resources slightly exceeding requirements by 22,256 Dth.

¹⁰ Suppliers of firm transportation customers were assigned a *pro rata* share of propane for the winters of 2018-2019 and 2019-2020. As discussed in Section 6.1.3 of the audit report, effective October 1, 2020, all propane capacity was assigned to the GCR.

Table 9. Design Day Requirements and Capacity Resources (Dth)

	Winter Season		
	2018-2019	2019-2020	2020-2021
<u>GCR Requirements</u>			
Firm Customer Requirements	837,143	896,509	899,209
Less: RFT/FT Requirements	562,422	573,937	592,770
Total GCR Requirements:	274,721	322,572	306,439
<u>GCR Resources</u>			
DE-Ohio Capacity Resources	612,415	640,415	569,215
Less: RFT/FT Capacity Assignment	100,368	91,255	93,100
Less: EFBS	146,160	139,200	147,420
Less: RFT/FT Propane	91,329	87,028	0
Total GCR Resources:	274,558	322,932	328,695
Excess/(Deficiency):	(163)	360	22,256

The predictive capability of DE-Ohio's design day forecast models can be evaluated by comparing forecasted model results with actual experience on peak, or near design, days. Table 10 illustrates the predictive capability of the forecasting models developed by Pipeline Services during the audit period. The projected demands reflected in Table 10 are for firm customers (GCR and firm transportation) utilizing the design day model and actual observed peak day temperature data for each winter session. As shown in Table 10, the forecast model developed for the winter of 2018-2019 proved to be reasonably accurate, while the forecast model developed for the winter of 2019-2020 over-forecasted expected demands on the peak day by 6.2%. For the winter of 2020-2021, the forecast model developed by Pipeline Services appears to have been reasonably accurate; however, the peak day during this winter season was Christmas Day, and actual demands on a holiday can vary significantly from demands on a day that is not a holiday.

Table 10. Comparison of Projected and Actual Firm Peak Day Demands Utilizing Design Day Forecasting Models (Dth)

Date	Actual	Projected	Variation	Percent Variation	Temperature	
					Current-day	Prior-day
January 30, 2019	712,384	721,049	8,665	1.2%	-1°F	13°F
January 19, 2020	529,163	561,872	32,709	6.2%	17°F	36°F
December 25, 2020	571,169	582,056	10,887	1.9%	14°F	20°F

Exeter notes that the use of separate regression analyses to determine baseload usage and the usage-per-HDD factors, as was done in the models developed by the Company for the winters of 2019-2020 and 2020-2021, is statistically invalid. Exeter's evaluation of these two models also found that they generally over-forecasted actual demands on colder days. A backcast of projected sendout utilizing the design day model developed for the winter of 2020-2021 for the 25 coldest days since the winter of 2015-2016 revealed that the model over-

forecasted projected sendout on 24 of the 25 days, by an average of 8.3%. Exeter notes that many gas utilities incorporate a reserve margin in their design day forecasts. For example, Piedmont utilizes a reserve margin of 5% in its design day forecast which Exeter, in its audits of Piedmont's gas purchasing practices, found not to be unreasonable. Incorporating a 5% reserve margin in Exeter's backcast reduces the average daily over-forecast to 3.8%, which Exeter finds not to be unreasonable.

Exeter's audit in Case No. 18-218-GA-GCR noted that day of the week, wind speed, and prior day HDD generally impact daily customer requirements. Exeter's audit recommended that the Company explore the inclusion of these independent variables in its design day forecast model. A General Audit Requirement for the current audit is to determine whether DE-Ohio has explored other factors such as wind speed, day of the week, and prior-day HDD factors in developing its design day forecast model, and verify whether any changes were made to the model during the audit period. DE-Ohio did not explore the inclusion of other independent variables in its design day forecast models prepared for the audit period, the Company indicated that it is currently exploring these other variables while preparing its design day forecast for the winter of 2021-2022.

Accurate forecasting of design day demands may be the most critical component to providing adequate and reliable service at minimum prices. The design day model currently utilized by DE-Ohio is statistically invalid and does not reasonably project demand under peak day conditions. Despite these concerns with DE-Ohio's design day forecasting model, there appear not to have been adverse consequences resulting from utilization of the model for capacity planning purposes during the audit period. Exeter recommends that DE-Ohio prioritize the development of a statistically valid design day forecasting model that reasonably projects demand under peak day conditions. This would include evaluating wind speed, prior-day HDDs, and weekend/holiday independent variables in the model.

4.4.2. Winter Season Capacity Resources and Requirements

DE-Ohio utilizes weather data from the winter of 1995-1996 for winter season capacity planning purposes. This winter was approximately 20% colder than normal.¹¹ Temperature variances from normal, along with normal winter temperatures, are used by the Company in selecting and determining the use of its capacity resources. DE-Ohio develops daily winter season firm load forecasts utilizing the total daily firm demands forecasted by the baseload and usage-per-HDD regression analyses developed to support the Company's design day forecasts utilizing daily weather data from the winter of 1995-1996. The Company utilizes its Gas Transportation Management System (GTMS) to determine the GCR and firm transportation customer components of forecasted firm winter requirements. DE-Ohio's GTMS is discussed in greater detail in Sections 5.2 and 6.1.8 of the audit report. The projected requirements of GCR customers under design colder-than-normal winter weather conditions were estimated to be 20,327,000 Dth for the 2020-2021 winter season. DE-Ohio's 2020-2021

¹¹ Normal winter HDD are 4,158. The winter of 1995-1996 had 4,837 HDD.

winter season firm citygate capacity entitlements for GCR customers were approximately 20,850,000 Dth. Thus, based on the Company's projected winter requirements of GCR customers, the winter requirements of GCR customers and the winter season capacity resources maintained by the Company to meet those requirements were in reasonable balance. However, DE-Ohio utilizes the same regression analysis prepared for its design day forecasts to prepare its winter requirements forecasts. As explained in Section 4.4.1, the design day regression analysis developed by DE-Ohio over-forecasts expected demands. Based on actual GCR sales for calendar year 2020, the annual requirements of GCR customers in a winter that was 20% colder than normal would be approximately 17,850,000 Dth. DE-Ohio's capacity resource portfolio is largely determined by its design day requirements and, therefore, Exeter found no adverse consequences for GCR customers due to the over-forecasting of winter season capacity requirements. DE-Ohio obtains value for its unutilized winter capacity resources by releasing that capacity under AMAs. Exeter's recommendation concerning DE-Ohio's design day forecasting model will address the over-forecasting of winter GCR requirements since the winter requirement forecast also utilizes the Company's design day forecast model.

4.4.3. Annual Capacity Resources and Requirements

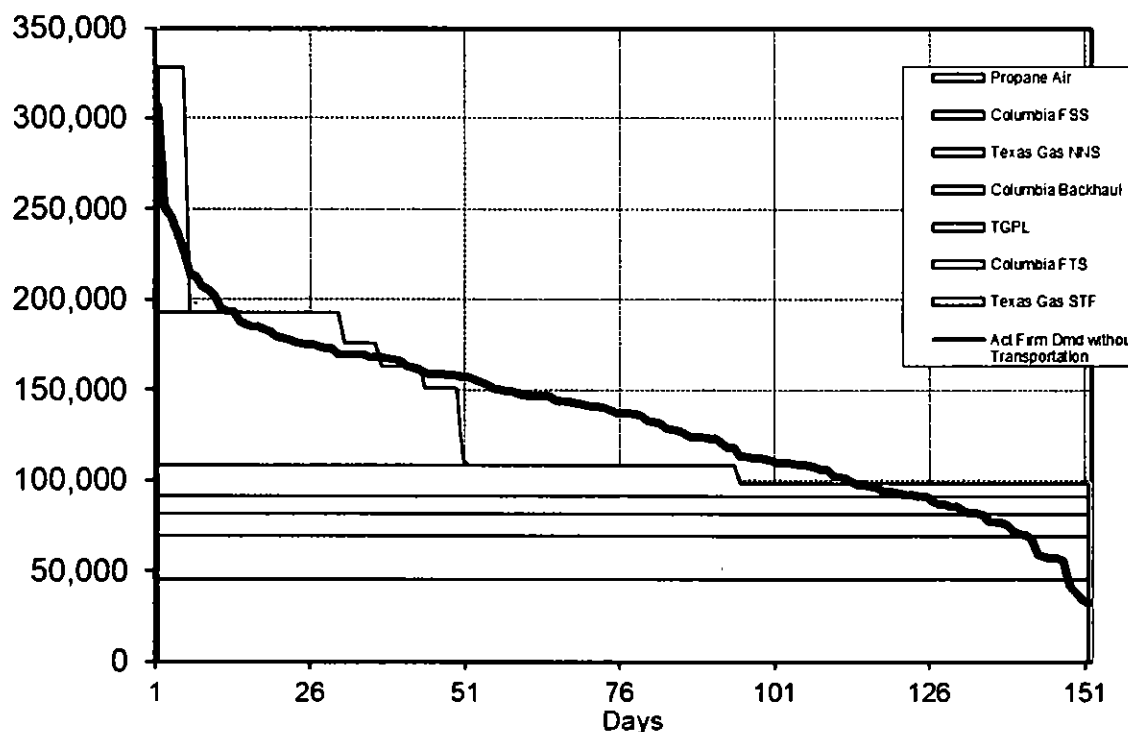
The Company develops its projections of annual firm customer requirements by extending the approach utilized to develop its 151-day winter season projections discussed in Section 4.4.2 of the audit report to 365 days. That is, DE-Ohio develops daily annual firm forecasts using the total daily firm demands forecasted by the baseload and usage-per-HDD regression analyses developed to support the Company's design day forecasts utilizing daily weather data for the period November 1995 through October 1996. The projected requirements of GCR customers under design colder-than-normal annual weather conditions were estimated to be 37,000,987 Dth for the period November 2020 through October 2021. This compares to actual GCR sales for approximately 17,000,000 Mcf in calendar years 2019 and 2020, both of which were slightly colder than normal (see Table 2 and Table 3 in Section 2.2 of the audit report). Therefore, Exeter finds this annual GCR sales projection to be unreasonable and brings into question the management oversight of DE-Ohio's forecasting process. Although Exeter found that no adverse impact was experienced by GCR customers due to the significant overestimate of projected annual GCR sales, Exeter recommends that DE-Ohio's management develop procedures to ensure appropriate oversight and scrutiny of the Company's forecasts.

4.4.4. Load Duration Curve

The load duration curve presented in Figure 3 compares DE-Ohio's projected daily GCR customer requirements with the capacity resources initially reserved by the Company when it was evaluating the resources available and needed to meet those requirements for the winter of 2020-2021. As indicated by the load duration curve in Figure 3, DE-Ohio's initial evaluation indicated a resource deficiency for approximately Day 51 through Day 101. Exeter's review of DE-Ohio's load duration curve revealed that it was not developed using the Company's historic practice and standard industry practices. As shown in Figure 3, from

approximately Day 26 through Day 51, the curve indicates excess Columbia Gas FSS storage which should have been utilized to partially offset the deficiency indicated for Days 51 through Day 101. To address this deficiency, DE-Ohio entered into a contract with Eco-Energy for 68,000 Dth/day of citygate-delivered peaking supply. As previously indicated, there were no demand charges associated with the Eco-Energy contract and, therefore, DE-Ohio's failure to use its historic and standard industry practices to develop its load duration curve did not adversely affect GCR customers. DE-Ohio should revise the development of future load duration curves to reflect its historic and standard industry practices.

Figure 3. Design Winter 2020-2021 Load Duration Curve



4.5. Diversification of Capacity and Gas Supply Resources

Diversification of pipeline capacity and gas supply resources can reduce the risk of service disruptions attributable to either the interruption of gas production in a particular supply region accessed by a pipeline, or to pipeline delivery disruptions. Such disruptions can significantly increase the price of gas in the affected production region, or the price of gas delivered to specific pipelines within a supply region. For example, during the period February 13-17, 2021, a winter storm, unofficially referred to as Winter Storm Uri, brought record-low temperatures to the Gulf Coast and Mid-Continent natural gas production areas of the states of Texas, Louisiana, and Oklahoma. The record-cold weather led to natural gas equipment freeze-offs, which forced many wells to be shutdown. Texas generates a significant portion of its electricity utilizing natural gas, and the natural gas well shutdowns led to major generation outages which contributed to additional natural gas pipeline delivery failures. As a result,

natural gas prices at certain delivery points in the affected production regions reached \$1,250/Dth during Winter Storm Uri. Although the supply disruptions from Winter Storm Uri did not have a significant impact on DE-Ohio's supply, the disruptions highlight DE-Ohio's heavy dependence on supplies from the Gulf Coast region, particularly southern Louisiana. During the period February 13-17, 2021, DE-Ohio did purchase relatively high-cost delivered-to-citygate supplies under its contract with [REDACTED]. These purchases are discussed further in Section 5.4 of the audit report.

As initially discussed in Section 4.1 of the audit report, although the majority of the interstate gas currently purchased by DE-Ohio is Gulf Coast supplies, all of the interstate gas supplies physically received by DE-Ohio are sourced from the Marcellus Shale production region. This is unlikely to change in the near future due to the prolific level of production in the Marcellus Shale region that is causing pipelines that access this region and serve DE-Ohio to flow gas supplies north to south. For the foreseeable future, DE-Ohio will remain physically dependent on Marcellus Shale supplies with no opportunities for physical diversification. DE-Ohio's new interconnect with REX will provide for the direct purchase of Marcellus Shale supplies.

4.6. Continuation of Merchant Function

DE-Ohio retains the supplier of last resort responsibility (SOLR) for the merchant function. Customers may voluntarily, on a self-selection basis, seek gas supply service from an alternate supplier, but DE-Ohio presently provides service to customers who do not "shop" their gas requirements. This SOLR extends both to customers who do not convert to an alternate gas supply provider and to customers who leave the alternate supplier market and return to DE-Ohio's merchant GCR service.

Ohio's other major natural gas utilities—COH, Dominion, and CenterPoint—are no longer subject to the GCR mechanism. Instead, as previously explained in Section 2.3 of the audit report, each has an SSO rate under which it continues to provide natural gas commodity service to its sales customers at the cost of acquiring supplies. The cost of acquiring supplies for the other Ohio utilities is established through an auction process in which suppliers bid fixed adjustments to the NYMEX monthly settlement price.

On May 15, 2007, DE-Ohio filed an Application to increase rates in Case No. 07-589-GA-AIR, *et al.* On February 28, 2008, DE-Ohio reached a settlement with the Parties to that proceeding and submitted a Stipulation and Recommendation to the PUCO. On May 28, 2008, the Commission approved the Stipulation and Recommendation in its entirety. One element of the Stipulation and Recommendation was DE-Ohio's commitment to convene a working group or collaborative process, open to interested stakeholders, to explore implementing an auction and adopting an SSO for its natural gas customers. DE-Ohio agreed to report the findings of the working group to the PUCO within one year. On May 27, 2009, DE-Ohio filed its report with the Commission. DE-Ohio's report concluded that maintaining the current GCR mechanism would result in lower rates for its customers than would an auction process.

More recently, DE-Ohio prepared an analysis evaluating its GCR rates and the rates charged by suppliers participating in its Choice program for those suppliers that elect to have DE-Ohio bill their customers. Choice suppliers may bill their customers directly. DE-Ohio's evaluation, conducted for 2018 and 2019, indicated GCR savings of \$27 million. As of June 4, 2021, the Company indicated that it had no current plans to exit the merchant function. However, a stipulation and recommendation under consideration in other proceedings would result in the Company filing an application to do so.

4.7. Conclusions and Recommendations

4.7.1. Interstate Pipeline Capacity Entitlement Changes and Asset Management Agreements

DE-Ohio extended its firm transportation contracts with Columbia Gulf and Tennessee during the audit period and increased its Texas Gas short-term firm transportation capacity entitlements under a new contract when the then-existing contract expired. DE-Ohio was able to maintain discounted rates under each of these arrangements which provide a significant benefit to GCR customers. DE-Ohio also entered into a new firm transportation agreement with REX. Exeter's audit found that DE-Ohio reasonably evaluated and assessed its capacity options during the audit period and adequately documented its analysis of those options. DE-Ohio's audit period AMAs were selected through a reasonable RFP process and provided value to GCR customers.

4.7.2. Design Day Forecasting Model

Accurate forecasting of design day demands may be the most critical component to providing adequate and reliable service at minimum prices. The design day model currently utilized by DE-Ohio is statistically invalid, does not reasonably project demand under peak day conditions, and consistently over-forecasts demands. Despite these concerns with DE-Ohio's design day forecasting model, there appear not to have been adverse consequences resulting from utilization of the model for capacity planning purposes during the audit period. Exeter recommends that DE-Ohio prioritize development of a statistically valid design day forecasting model that reasonably projects demands under peak day conditions.

Exeter's 2018 management performance audit in Case No. 18-218-GA-GCR noted that day of the week, wind speed, and prior-day HDD generally impact daily customer requirements. Exeter's audit recommended that the Company explore the inclusion of these independent variables in its design day forecast model. A General Audit Requirement for the current audit is to determine whether DE-Ohio has explored independent variable such as wind speed, day of the week, and prior-day HDD in developing its design day forecast model and verify whether any changes to the model were made during the audit period. DE-Ohio did not explore the inclusion of other independent variables in its design day forecast models prepared for the audit period, but indicated that it is currently exploring these other variables while preparing its design day forecast for the winter of 2021-2022. In developing a statistically valid design

day forecasting model, DE-Ohio should evaluate the inclusion of wind speed, prior-day HDDs, and weekend/holiday independent variables.

4.7.3. Winter Season Requirements Forecast

DE-Ohio develops its winter season requirements forecast by developing daily winter season firm load forecasts utilizing the total daily firm demands forecasted by the baseload and usage-per-HDD regression analysis developed to support its design day forecasts utilizing daily temperature data from the winter of 1995-1996. This winter was 20% colder than normal. The Company utilizes its Gas Transportation Management System (GTMS) to determine the GCR and firm transportation customer components of forecasted firm winter requirements. The projected requirements of GCR customers under design colder-than-normal winter weather conditions were estimated to be 20,327,000 Dth for the 2020-2021 winter season. DE-Ohio's 2020-2021 winter season firm citygate capacity entitlements for GCR customers were approximately 20,850,000 Dth. Thus, based on the Company's projected winter requirements of GCR customers, the winter requirements of GCR customers, and the winter season capacity resources maintained by the Company to meet those requirements were in reasonable balance. However, DE-Ohio utilizes the same regression analysis prepared for its design day forecasts to prepare its winter requirements forecasts. The design day regression analysis developed by DE-Ohio over-forecasts expected demands. Based on actual GCR sales for calendar year 2020, the annual requirements of GCR customers in a winter that is 20% colder than normal would be approximately 17,850,000 Dth. DE-Ohio's capacity resource portfolio is largely determined by its design day requirements and, therefore, Exeter found no adverse consequences for GCR customers due to the over-forecasting of winter season capacity requirements. DE-Ohio obtains value for its unutilized winter capacity resources by releasing that capacity under AMAs. Exeter's recommendation concerning DE-Ohio's design day forecasting model will address the over-forecasting of winter GCR requirements since the winter requirement forecast also utilizes the Company's design day forecast model.

4.7.4. Annual Requirements Forecast

The Company develops its projections of annual firm customer requirements by extending the approach utilized to develop its 151-day winter season projections discussed in Section 4.4.2 of the audit report to 365 days. That is, DE-Ohio develops daily annual firm forecasts using the total daily firm demands forecasted by the baseload and usage-per-HDD regression analyses developed to support the Company's design day forecasts utilizing daily weather data for the period November 1995 through October 1996. The projected requirements of GCR customers under design colder-than-normal annual weather conditions were estimated to be 37,000,987 Dth for the period November 2020 through October 2021. This compares to actual GCR sales of approximately 17,000,000 Mcf in calendar years 2019 and 2020, both of which were slightly colder than normal (see Table 2 and Table 3 in Section 2.2 of the audit report). Therefore, Exeter finds this annual GCR sales projection to be unreasonable and brings into question management oversight of DE-Ohio's forecasting process. Although Exeter found that no adverse impact was experienced by GCR customers due to the significant

overestimate of projected annual GCR sales, Exeter recommends that DE-Ohio's management develop procedures to ensure appropriate oversight and scrutiny of the Company's forecasts.

4.7.5. Load Duration Curve

DE-Ohio utilizes a load duration curve which compares daily GCR customer requirements and the capacity resources currently reserved by the Company to evaluate whether additional resources are needed to meet those requirements. Exeter's review of the load duration curve developed for the winter of 2020-2021 revealed that it was not developed using the Company's historic practice and standard industry practices. As a result, the load duration curve overstated DE-Ohio's capacity resource deficiency for the winter of 2020-2021. Based on the deficiency indicated by the load duration curve, DE-Ohio entered into a contract with [REDACTED] for [REDACTED] Dth/day of citygate-delivered peaking service. [REDACTED], therefore, DE-Ohio's failure to use its historic and standard industry practices to develop its load duration curve did not adversely affect GCR customers. However, DE-Ohio should revise the development of future load duration curves to reflect its historic and standard industry practices to avoid the potential for incurring unnecessary charges for GCR customers.

4.7.6. KO Transmission Capacity Entitlements

Exeter's 2018 management performance audit noted that with completion of the Central Corridor Project and the retirement of DE-Ohio's propane facilities, as much as 60% of DE-Ohio's gas supplies could come from the north, which might enable the Company to reduce its southern KO Transmission capacity entitlements. Exeter's 2018 management performance audit recommended that if the Central Corridor Project is completed and the propane facilities are retired, the Company should again evaluate its KO Transmission capacity entitlements. The PUCO's Opinion and Order in the 2018 management performance audit required DE-Ohio to complete this evaluation, and the General Audit Requirements of this audit directed the auditor to review DE-Ohio's reevaluation of its KO Transmission capacity entitlements. Exeter's audit noted that recent on-system improvements and resulting operational parameters resulted in an increased percentage of northern supply being received during the 2020/2021 winter season versus period winter periods. As a result, the Company is updating its system planning models and design day forecasts in order to evaluate its firm transportation requirements, including KO Transmission firm transportation when the Central Corridor Project is completed, and the propane-air plants are retired. The Company anticipates completing this evaluation prior to the 2021/2022 winter season. The evaluation of DE-Ohio's KO Transmission capacity entitlements should be reviewed in the Company's next management performance audit.

5. Audit Period Capacity Utilization and Procurement Activity

DE-Ohio's utilization of capacity resources and gas supply procurement activity is evaluated in this section. Section 5.1 summarizes the Company's audit period gas supply purchases. Section 5.2 discusses the Company's use of capacity resources to procure gas supplies as well as the Company's gas supply procurement planning process. A detailed discussion of DE-Ohio's efforts to minimize price volatility is presented in Section 5.3. Storage and propane-air operations and the Company's purchases under its firm citygate peaking service arrangements are discussed in Section 5.4. Section 5.5 discusses the Company's purchase of other daily citygate-delivered supplies. The Company's capacity release and off-system sales activities are discussed in Section 5.6. Discussed in Section 5.7 are locational differences in gas prices. Section 5.8 addresses lost-and-unaccounted-for and company-use gas. The final section presents Exeter's conclusions and recommendations.

5.1. Audit Period Gas Supply Purchases

DE-Ohio purchased nearly 58,300,000 Dth of natural gas during the audit period. Gas supplies purchased by DE-Ohio may be utilized to meet current GCR customer requirements or may be injected into storage. Table 11 summarizes the Company's audit period gas supply purchases by source, or point of initial receipt at which DE-Ohio first takes title to the gas. As shown in Table 11, the majority of the gas supplies purchased by DE-Ohio during the audit period were sourced on Texas Gas. Columbia Gulf-sourced supplies are either subsequently delivered to the Company by KO Transmission or injected into Columbia Gas storage and subsequently delivered to DE-Ohio by Columbia Gas or KO Transmission.

Table 11: Summary of Audit Period Purchases, by Source

Source	Quantity (Dth)	Percent
Columbia Gulf	15,612,003	26.8%
Texas Gas	25,427,609	43.6
Tennessee Gas	4,557,219	7.8
Landfill	4,821,799	8.3
Delivered Citygate	5,262,810	9.0
Citygate Peaking	2,509,330	4.3
Propane (Mcf)	76,105	0.1
Total:	58,266,875	100.0%

5.2. Capacity Utilization and Gas Supply Procurement Strategy

Appendix A of the audit report summarizes DE-Ohio's actual capacity entitlements and utilization of capacity resources for each month of the audit period, inclusive of capacity release activity. Appendix A also identifies the Company's monthly gas supply purchases by the source of initial receipt.

As initially explained in Section 2.1 of the audit report, for most of the audit period, approximately 45% to 55% of DE-Ohio's gas supply requirements needed to be delivered into the northern portion of its system, and 45% to 55% needed to be delivered into the southern portion of its system during the winter. For summers during most of the audit period, 40% to 50% of supplies were required to be delivered to the northern portion of the Company's system, and 50% to 60% of supplies were required to be delivered to the southern portion of its system. As a result of on-system improvements that increased operating pressures in the northern portion of DE-Ohio's system, for the summer of 2021, a minimum of 50% of supplies were required to be delivered to the northern portion of the Company's system, and a maximum of 50% of supplies could be delivered to the southern portion of its system. DE-Ohio acquires firm interstate pipeline capacity to minimize overall gas procurement costs (gas commodity and capacity) within these system operational delivery constraints.

DE-Ohio utilizes its firm transportation capacity to meet both current requirements and to fill storage. The utilization of firm transportation capacity by DE-Ohio during each year of the audit period, exclusive of the no-notice services that the Company purchases from Columbia Gas (FSS/SST) and Texas Gas (NNS Unnominated), and net of capacity release activity, is summarized in Table 12. Utilization of DE-Ohio's Columbia Gulf FTS-1 and FTS-1 BH capacity has been combined in Table 12 because the Company primarily used its FTS-1 BH capacity to acquire Gulf Coast-sourced supplies rather than Columbia Gas-sourced backhaul supplies.

Table 12. Utilization of Firm Transportation Capacity Annual Load Factors				
Arrangement	12 Months Ended August 31			Average
	2019	2020	2021	
Columbia Gulf FTS-1	60%	49%	44%	51%
KO Transmission FT	17%	19%	12%	16%
Tennessee Gas	38%	31%	20%	30%
Texas Gas NNS Nominated	51%	56%	38%	48%
Texas Gas STF	25%	29%	33%	29%

The resources utilized to accommodate the peak day requirements of DE-Ohio's sales and transportation customers during each winter season of the audit period are identified in Table 13.

Table 13. Summary of Actual Peak Day Requirements and Supplies (Dth)

Description Requirements	Audit Period Peak Day		
	Jan. 30, 2019	Jan. 19, 2020	Dec. 25, 2020
GCR Sales	245,317	254,447	205,056
Firm Transportation	355,895	330,568	420,708
Interruptible Transportation	85,989	84,329	74,390
<i>Subtotal Requirements:</i>	<i>687,201</i>	<i>669,344</i>	<i>700,154</i>
<u>GCR System Supply</u>			
<u>Gas Supply</u>			
Texas Gas NNS Nominated	6,250	6,250	6,250
Texas Gas STF	36,623	48,622	45,546
Columbia Gulf FTS	25,860	32,237	6,734
Tennessee Gas FT-A	16,659	13,427	6,824
Springboro City Gate Deliveries - ANR/TETCO	0	30,000	0
Dicks Creek City Gate Deliveries - TETCO/TCO	46,000	0	0
Peaking Service - Texas Gas	18,000	41,000	51,000
Peaking Service - KO/Tennessee Gas	24,917	0	0
<u>Storage Withdrawal</u>			
Texas Gas NNS Unnominated	53,349	18,067	32,780
Columbia Gas FSS	185,623	145,027	130,218
<u>Other</u>			
Landfill	1,689	3,462	841
Propane	22,974	0	0
ANR/Texas Eastern Imbalance	1,296	17,384	(76)
Less EFBS Withdrawals	(135,878)	(121,111)	(88,697)
Interruptible Transportation Imbalance	43,128	(8,098)	13,652
<i>Subtotal GCR System Supply:</i>	<i>346,490</i>	<i>226,267</i>	<i>205,072</i>
<u>Customer Choice Supply (FT/RFT)</u>			
Texas Gas ^[1]	201,062	121,764	132,480
Columbia Gas ^[1]	171,444	123,722	185,676
ANR ^[1]	12,777	24,521	13,430
Texas Eastern ^[1]	9,222	10,000	13,500
Dicks Creek City Gate Deliveries - TETCO/TCO	11,936	0	0
EFBS Withdrawals	135,878	121,111	88,697
Less Interruptible Transportation Nominations	(55,963)	(67,970)	(72,390)
FT for IT ^[2]	1,646	1,600	1,603
<i>Subtotal Customer Choice Supply (FT/RFT):</i>	<i>488,002</i>	<i>334,748</i>	<i>362,996</i>
<u>Interruptible Transportation (IT)</u>			
IT Nominations	55,963	67,970	72,390
IT Imbalance	(43,128)	8,098	(13,652)
Less FT for IT ^[2]	1,646	(1,600)	(1,603)
<i>Subtotal Interruptible Transportation (IT):</i>	<i>14,481</i>	<i>74,468</i>	<i>57,135</i>
Total Throughput:	847,327	635,483	625,203
Peak Day Temperature:	-1°F	17°F	14°F

^[1] Nominations on pipelines include IT. IT nominations are subtracted to determine total nominations for Choice FT/RFT.

^[2] IT customers may also utilize FT. The FT amount is the first through the meter and is included in the meter reads for IT customers, thus it is subtracted from the IT usage and added to Choice Firm Transportation supply.

DE-Ohio prepares a number of planning documents as part of its capacity and gas supply procurement process. As initially discussed in Section 4.4.1 of the audit report, on an annual basis, design day forecasts are prepared for the upcoming winter and subsequent nine years. As explained in greater detail in Section 4.4.2 of the audit report, DE-Ohio also prepares a design winter load forecast based on the weather experienced during the winter of 1995-1996 for winter season capacity planning purposes.

A monthly Gas Supply Plan is prepared approximately two weeks prior to the operating month to determine how the capacity and gas supply resources secured by the Company will be used to meet customer requirements. The monthly Gas Supply Plan identifies the average expected usage and potential range of usage for DE-Ohio's various capacity and gas supply resources. The baseload gas supplies identified in the monthly Gas Supply Plan are submitted to DE-Ohio's Asset Manager several days prior to the operating month.

DE-Ohio prepares five-day forecasts of total system requirements (GCR, firm, and interruptible transportation customers), or sendout. These five-day forecasts are prepared by Pipeline Services. The day-ahead forecast included in the five-day forecast is utilized to determine swing gas purchase requirements for the following gas day, which begins at 10 AM. As discussed in Section 6.1.7 of the audit report, the Company Gas Transportation Management system is used to separately determine the requirements of GCR and firm transportation customers.

Suppliers serving firm transportation customers are notified of the projected next-day demands of their customers and are required to deliver these quantities to DE-Ohio. The Company initially assumes that interruptible transportation customers will deliver, on the next gas day, the quantity of gas being delivered on the current gas day. These deliveries are then adjusted to recognize that certain suppliers serve both firm and interruptible transportation customers, and these suppliers may nominate a portion of the current day's interruptible transportation deliveries as firm transportation deliveries on the next gas day. This occurs because interruptible transportation customers are not generally required to deliver specific quantities of gas on a daily basis. Firm and interruptible transportation customer balancing requirements are discussed in detail in Section 6 of the audit report. DE-Ohio generally arranges for the purchase of swing supplies sufficient to meet the requirements of all its customers not already met by baseload supplies and storage withdrawals. In addition to customer requirements projections, north and south delivery point requirements, the current price of gas, the cost of gas in storage, storage withdrawal requirements, and storage inventory balances all affect the Company's daily swing gas purchase decisions.

5.3. Gas Price Volatility Mitigation – Hedging Plan

DE-Ohio has operated under various hedging plans to mitigate the volatility of its GCR rates since 2001. Under the plan initially in place during the audit period, the Company hedged between 10% and 25% of its estimated total normal winter system supply requirements. Combined with gas withdrawn from storage, approximately 40% to 50% of the Company's

winter gas supplies were insulated from price volatility. DE-Ohio hedged 10% to 50% of its summer system supply, including purchases for refilling storage. The hedging plan specified a range for the quantities of gas that the Company would acquire each month, up to 36 months into the future. The hedging plan purchase percentage limits under which DE-Ohio operated for most of the audit period are identified in Table 14. Effective June 2020, the minimum hedging limits for the winter and summer season for all periods were reduced to 0%.

Table 14. Hedging Plan Purchase Percentages			
Winter Season			
October X	Nov X – Mar X+1 (1-12 months)	Nov X+1 – Mar X+2 (13-24 months)	Nov X+2 – Mar X+3 (25-36 months)
Minimum	10%	5%	0%
Maximum	25%	10%	5%
Summer Season			
March X	Apr X – Oct X (1-12 months)	Apr X+1 – Oct X+1 (13-24 months)	Apr X+2 – Oct X+2 (25-36 months)
Minimum	10%	5%	0%
Maximum	50%	25%	10%

Note: For example, as of October 2019, DE-Ohio would have hedged a minimum of 10% of its supplies for the winter of 2019-2020 and a maximum of 25%, and would have hedged a minimum of 0% of its supplies for the winter of 2021-2022 and a maximum of 5%.

DE-Ohio's hedging plan provides for the use of forward, fixed-price contracts; price caps; and no-cost collars for the physical delivery of natural gas. The use of financial instruments was not permitted under the hedging program. DE-Ohio's fixed-price contracts provide for the delivery of gas at a known price. A price cap is a form of option contract that establishes a maximum price for gas deliveries during a specified month. The Company is assessed a charge by the supplier for this option. An upper price ceiling and a lower price limit are established under a no-cost collar. DE-Ohio is charged the market price of gas under collar arrangements, unless the market price was above the ceiling, in which case DE-Ohio is charged the ceiling price. If the market price was below the no-cost collar lower price limit, DE-Ohio is charged the lower price limit.

Purchases under the Company's hedging are guided by price- and time-driven parameters. DE-Ohio's hedging activities are performed by the Natural Gas Trading & Optimization group in the Gas Supply & Wholesale Marketing Department, and are overseen by the Gas Market Risk Committee. Hedging purchases are determined by obtaining bids from suppliers, and selecting the lowest-cost offer(s).

Price-dependent hedging purchases under DE-Ohio's hedging program are determined as follows: DE-Ohio will make fixed-price, costless collars, or price caps purchases any time the futures price for any month in the 36-month, forward-hedging horizon reaches specific seasonal threshold levels compared with historical prices. The Company uses a matrix created by Stone X (formerly INTL FCStone and previously Risk Management Incorporated), an

external party, which collects historical daily, prompt-month settlement prices over the most recent four years classified into winter and summer seasons; applies an inflation adjustment; and weighs data for the most recent 12 months more heavily. This adjusted historical price database is then segmented into deciles, which are presented in a matrix. Current NYMEX futures prices are compared against the matrix by season when making hedging decisions. DE-Ohio has established the first hedging threshold level at the point when futures prices for any month on the hedging horizon close at or below the 50th seasonal decile price point of the matrix. When this occurs, the Company will hedge between 10% and 25% for winter season system supply or between 10% and 50% for summer season system supply, depending on the prompt season. A sample matrix for April 2021 is presented below:

If all of the price-dependent hedging thresholds are not reached during the planning horizon, DE-Ohio may purchase hedges under the time-dependent component of its hedging program. These time-dependent purchases are made until DE-Ohio's hedging volume target is reached, as long as prices are at or below the 50th decile price point, as indicated by the minimum and maximum percentage ranges reflected in Table 14 presented earlier. Under the time-dependent component of the hedging program, if NYMEX futures prices for a contract month in the forward-hedging horizon remain at or below the 50th decile price point, DE-Ohio will purchase the percentage range of its seasonal hedging volume target when the date reaches five months before the start of the season.

DE-Ohio relied on forward, fixed-price purchases under its hedging programs, executing contracts for 9,191,474 Dth during the audit period.¹² The Company did not use price caps or no-cost collars during the audit period. DE-Ohio's hedging activities resulted in an increase of \$2.33 million, or approximately \$0.03/Mcf, in purchased gas costs from those that would have been incurred without a hedging program. DE-Ohio's audit period hedging activities achieved

¹² Identified quantity is the period April 2018 through March 2021.

an average reduction of 34% in the standard deviation of the monthly average commodity cost of gas. A summary of DE-Ohio's audit period hedging activity is presented in Table 15. Hedged quantities for the summer of 2000 and winter of 2020-2021 were lower than those for prior seasons due to reduced price-dependent hedging thresholds being met.

Table 15. Summary of Audit Period Hedging Activity				
Season	Total Hedge Quantity (Dth)	Percent Hedged	Gas Impact Cost (\$/Mcf)	Standard Deviation Change^[1]
Summer 2018	2,479,600	40.9%	\$0.0785	
Winter 2018-2019	1,762,636	15.1	0.0497	-39.0%
Summer 2019	1,935,650	31.5	0.0143	
Winter 2019-2020	1,749,288	9.4	(0.0015)	-55.0
Summer 2020	386,200	6.0	0.0064	
Winter 2020-2021	878,100	7.7	0.0087	-9.0
Total/Average:	9,191,474	18.4%	\$0.0260	-34.3%

^[1] Calculated based on the 12-month period ended March 31.

Each year, DE-Ohio prepares an Annual Report on Hedging Activity (Annual Hedging Report) that provides a detailed description of the market conditions that existed at the time the Company entered into each of its hedging transactions, and summarizes the decisions made with respect to future hedging transactions.

5.4. Storage, Peaking, and Propane Operations

During the audit period, DE-Ohio purchased contract storage service from Columbia Gas under Rate Schedule FSS and, effectively, through no-notice service, storage service from Texas Gas under Rate NNS. These storage arrangements provide the Company with a maximum daily deliverability of 241,514 Dth, and a maximum winter season deliverability of 11,594,079 Dth. DE-Ohio used its Columbia Gas and Texas Gas storage arrangements to serve GCR customers and provide EFBS to Choice suppliers. DE-Ohio maintained peaking service arrangements with ██████████ during the 2018-2019 winter season; ██████████ during the winter of 2019-2020; and ██████████ during the 2020-2021 winter season. In addition, DE-Ohio had access to propane supplies with a current total daily deliverability of 135,940 Dth and a seasonal capacity of 680,000 Dth. As discussed in Section 6 of the audit report, a portion of DE-Ohio's propane capacity was made available to suppliers of firm transportation customers during the audit period.

DE-Ohio attempts to fill its Columbia Gas FSS storage and the storage associated with no-notice service from Texas Gas to 95-98% of capacity prior to the commencement of the

heating season on November 1.¹³ The unfilled capacity enables DE-Ohio to inject gas into storage during November if warmer-than-normal conditions are experienced. Targeted, beginning-of-month storage inventory levels for Columbia Gas FSS and Texas Gas NNS storage capacity were as follows for the winter of 2020-2021:

Date	Inventory Target	
	Columbia Gas FSS	Texas Gas NNS
November 1	95-98%	95-98%
December 1	83-94%	84-93%
January 1	67-80%	70-78%
February 1	42-58%	49-60%
March 1	26-46%	32-49%
April 1	0-25%	0-31%

These inventory targets are designed to prevent the triggering of storage deliverability reduction ratchets too early during the winter season when the potential for the occurrence of design day conditions is highest, and to comply with maximum storage inventory requirements by April 1. Storage levels must be lower than 25% of capacity for Columbia and lower than 48% for Texas Gas by April of each year. DE-Ohio fills its propane facilities as needed to meet winter season requirements.

Table 16 identifies DE-Ohio's actual monthly utilization of storage during the audit period to serve GCR customers. That is, it excludes EFBS storage activity. DE-Ohio generally filled and depleted its GCR Columbia Gas FSS and Texas Gas NNS storage inventory consistent with its targeted planning criteria during the audit period. DE-Ohio purchased 698,000 Dth of gas under its peaking service arrangements during the 2018-2019 winter season; 636,000 Dth during the 2019-2020 winter season; and 1,175,330 Dth during the 2020-2021 winter season. All peaking service providers met their delivery obligations during the audit period. DE-Ohio utilized the equivalent of 76,000 Mcf of propane at an average cost of \$13.08/Mcf to meet the requirements of GCR and Choice customers during the audit period.

¹³ Under the storage associated with no-notice service from Texas Gas, gas is advanced to DE-Ohio during the winter period. The Company returns the advanced gas during the subsequent summer period. References to injecting or filling Texas Gas storage indicate a return of advanced gas. Withdrawals refer to gas advanced to the Company.

Table 16. Summary of GCR Audit Period Storage Activity (Dth)

Month	Columbia Gas FSS					Texas Gas No-Notice					Pipeline Total		
	MDQ	SCQ	Injection	With- drawal	% Capacity	MDQ	SCQ	Injection	With- drawal	% Capacity	Injection	With- drawal	Balance
September 2018	91,646	3,912,841	178,919	0	4,148,235	106.0%	10,375	975,278	167,513	0	875,092	89.7%	346,432
October	87,839	3,750,303	178,919	0	3,953,617	105.4%	9,929	933,366	197,049	0	1,072,141	114.9%	197,049
Seasonal Total:			178,919	192,618				364,562	0			543,481	192,618
November 2018	87,839	3,750,303	0	470,424	3,483,193	92.9%	9,929	933,366	0	87,504	984,637	105.5%	0
December	83,271	3,555,258	0	981,055	2,502,138	70.4%	9,394	883,071	0	222,989	761,648	86.2%	0
January 2019	84,032	3,587,765	0	1,241,187	1,260,951	35.1%	9,484	891,454	0	24,092	737,556	82.7%	0
February	87,078	3,711,796	0	203,870	1,057,081	28.4%	9,840	924,984	0	99,680	637,876	69.0%	0
March	88,601	3,782,811	51,395	0	1,108,476	29.3%	10,019	941,748	0	382,671	255,205	27.1%	51,395
Seasonal Total:			51,395	2,896,536				0	876,936			57,395	3,713,472
April 2019	89,362	3,815,318	92,532	0	1,201,008	31.5%	10,108	950,131	0	124,189	131,016	13.8%	92,532
May	90,885	3,880,333	770,180	0	1,971,188	50.8%	10,286	968,896	54,952	0	185,968	19.2%	825,132
June	93,169	3,977,856	333,717	0	2,304,905	57.9%	10,554	992,043	118,011	0	303,979	30.6%	451,728
July	96,215	4,107,886	467,868	0	2,772,773	67.5%	10,910	1,025,573	142,907	0	446,886	43.6%	610,775
August	94,692	4,042,871	560,252	0	3,333,026	82.4%	10,732	1,008,808	140,358	0	587,243	58.2%	700,610
September	92,408	3,945,348	371,122	0	3,704,147	93.9%	10,484	983,661	186,458	0	773,702	78.7%	557,580
October	87,839	3,750,303	0	1,157	3,702,990	98.7%	9,929	933,366	85,098	0	858,800	92.0%	85,098
Seasonal Total:			2,595,672	1,157				727,784	124,189			3,323,455	125,346
November 2019	87,839	3,750,303	0	755,050	2,947,941	78.6%	9,929	933,366	0	13,394	845,406	90.6%	0
December	99,549	4,250,247	356,754	0	3,304,695	77.8%	11,301	1,062,282	0	96,738	748,667	70.5%	356,754
January 2020	93,169	3,977,856	0	1,095,270	2,209,424	55.5%	10,554	992,043	0	133,379	615,339	62.0%	0
February	93,169	3,977,856	0	377,334	1,832,091	46.1%	10,554	992,043	0	195,373	419,965	42.3%	0
March	91,751	3,917,325	0	741,577	1,090,514	27.8%	10,388	976,434	0	403,627	16,338	1.7%	0
Seasonal Total:			356,754	2,969,231				0	842,462			356,754	3,811,692
April 2020	88,916	3,796,262	137,180	0	1,227,694	32.3%	10,056	945,217	2,654	0	18,992	2.0%	137,180
May	87,498	3,735,731	409,308	0	1,637,002	43.8%	9,889	929,608	0	112,856	(93,864)	-10.1%	409,308
June	88,207	3,765,996	461,067	0	2,098,069	55.7%	9,972	937,413	0	5,403	(99,267)	-10.6%	461,067
July	94,587	4,038,387	494,406	0	2,592,476	64.2%	10,720	1,007,652	197,735	0	98,467	9.8%	692,141
August	94,587	4,038,387	845,584	0	3,438,060	85.1%	10,720	1,007,652	252,133	0	350,600	34.8%	1,097,717
September	94,587	4,038,387	261,223	0	3,699,283	91.6%	10,720	1,007,652	350,431	0	701,031	69.6%	611,654
October	91,751	3,917,325	175,765	0	3,875,049	98.9%	10,388	976,434	69,212	0	770,243	78.9%	244,977
Seasonal Total:			2,784,534	0				872,164	118,259			3,656,698	118,259
November 2020	91,042	3,887,059	21,339	0	3,896,388	100.2%	10,305	968,630	0	110,050	660,193	68.2%	21,339
December	97,422	4,159,450	0	425,626	3,470,762	89.3%	10,305	968,630	645,648	0	1,305,841	134.8%	645,648
January 2021	87,498	3,735,731	0	1,028,931	2,441,830	65.4%	9,889	929,608	0	533,778	772,063	83.1%	0
February	87,498	3,735,731	0	607,842	1,833,989	49.1%	9,889	929,608	77,164	0	849,228	91.4%	77,164
March	90,333	3,856,793	0	571,408	1,262,581	32.7%	10,222	960,826	0	690,222	159,004	16.5%	0
Seasonal Total:			21,339	2,633,807				722,812	1,334,050			744,151	3,967,857
April 2021	88,916	3,796,262	0	171,180	1,091,401	28.7%	10,056	945,217	38,231	0	197,235	20.9%	38,231
May	97,422	4,159,450	0	229,553	861,849	20.7%	11,032	1,038,869	436,174	0	633,408	61.0%	436,174
June	99,549	4,250,247	842,338	0	1,704,186	40.1%	11,301	1,062,282	84,071	0	717,480	67.5%	928,409
July	95,296	4,068,653	1,116,338	0	2,820,524	69.3%	10,803	1,015,456	0	26,393	691,087	68.1%	1,116,338
August	93,878	4,008,122	634,842	0	3,456,366	86.2%	10,637	999,847	27,193	0	718,280	71.8%	662,035
Seasonal Total:			2,593,517	400,732				585,669	26,393			3,179,186	427,125

As previously indicated in Section 4.5, Winter Storm Uri brought record cold temperatures to portions of the Gulf Coast and Mid-Continent natural gas production areas of Texas, Louisiana, and Oklahoma during the period February 13-17, 2021. During this period, DE-Ohio purchased relatively high-cost delivered-to-citygate supplies under its peaking service contract with [REDACTED]. These supplies were purchased to maintain operating pressures and service reliability on the northern portion of DE-Ohio's system. As such, these purchases benefited both GCR and firm transportation customers. Therefore, Exeter finds that both GCR and Choice customers should bear responsibility for the incremental costs of the [REDACTED] purchases similar to the cost recovery procedures currently utilized for penalty charges assessed to DE-Ohio and the propane costs associated with maintaining system pressures. The incremental costs of these purchases are identified in Table 17, and Exeter recommends that the incremental costs associated with these purchases be included in Rider CCCR and recovered over a one-year period. Rider CCCR is discussed in greater detail in Section 6.1.8 of the audit report.

Table 17. Incremental Costs Associated with Eco-Energy Purchases (February 13-17, 2021)					
Date	Quantity (Dth)	Eco-Energy Price (\$/Dth)	Base Price (\$/Dth)	Incremental Price (\$/Dth)	Cost
February 13, 2021	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
February 14, 2021	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
February 15, 2021	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
February 16, 2021	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
February 17, 2021	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total:	[REDACTED]				[REDACTED]

5.5. Other Daily, Delivered-to-Citygate Purchases

Shippers on interstate pipelines such as DE-Ohio must place nominations with a pipeline to schedule service. There are currently five nomination opportunities (cycles) for each gas day. The standard time for the gas day is 9 AM to 9 AM Central Clock Time (CCT) (10 AM to 10 AM Eastern Time). The current nomination cycle timelines for the gas day are as follows:

Nomination Cycle Timelines (CCT)		
Cycle	Nomination Deadline	Start of Gas Flow
Timely	1 PM prior to gas day	9 AM on gas day
Evening	6 PM prior to gas day	9 AM on gas day
Intraday 1	10 AM on gas day	2 PM on gas day
Intraday 2	2:30 PM on gas day	6 PM on gas day
Intraday 3	7 PM on gas day	10 PM on gas day

Most of the next-day trading for the purchase of daily gas supplies typically takes place between 7 AM and 11 AM CCT with nominations made for the timely cycle. This is the normal gas trading and nomination cycle followed in the natural gas industry. Very little trading occurs after the timely nomination cycle deadline. Trading for weekends and holidays generally occurs on a ratable basis. For example, the quantity of gas purchased from a supplier for the Saturday gas day would also be purchased for the following Sunday and Monday gas days. If Monday is a holiday, the same quantity purchased for the Saturday gas day would also be purchased for the Tuesday after the Monday holiday.

Under its audit period AMAs, DE-Ohio was required to place its daily delivery nominations with the Asset Manager by 9 AM prior to the (gas) day of delivery. This is a standard provision under an AMA and enables the Asset Manager to optimize the value of the capacity released to it by DE-Ohio during the normal gas trading and nomination cycle. That is, it enables the Asset Manager to utilize the capacity released to it by DE-Ohio to serve other markets when the capacity is not required to serve DE-Ohio.

In addition to purchasing delivered-to-citygate peaking services under the firm gas supply contracts discussed in Sections 4.2.2 and 5.4 of the audit report, DE-Ohio also purchased other Texas Gas delivered-to-citygate supplies in the daily market. On the days these daily Texas Gas delivered purchases were made, DE-Ohio's Texas Gas firm transportation capacity was not fully utilized. That is, there was open Texas Gas capacity available. The cost of these other daily Texas Gas delivered supplies was higher than if those supplies were delivered under DE-Ohio's Texas Gas firm transportation capacity. The Company indicated that the other daily citygate-delivered Texas Gas purchases were made to alleviate low-pressure conditions experienced in the northern portion of its service territory. The need to alleviate the low-pressure conditions with additional purchases was not determined by DE-Ohio's Gas Control Department until the 9 AM Asset Manager nomination time had passed. Therefore, the additional Texas Gas supplies could not be delivered under the Texas Gas firm transportation capacity that was released under the AMAs.

The Company's purchase of other daily Texas Gas delivered supplies to alleviate the low-pressure conditions benefited both GCR and firm transportation customers. The need to purchase other daily, delivered-to-citygate supplies arose because DE-Ohio operated under AMAs. DE-Ohio receives fees under its AMAs, which are shared with GCR and Choice customers. The other daily, delivered-to-citygate supplies are generally priced higher than if open Texas Gas capacity was used to deliver these supplies. Under the current AMA fee-sharing procedures, only GCR customers bear responsibility for the incremental costs associated with other daily, delivered-to-citygate purchases. Exeter finds this inappropriate and recommends that the incremental costs associated with the other daily, delivered-to-citygate supplies be recovered by reducing the AMA fees that are subject to sharing. DE-Ohio should be required to track the incremental costs of other daily, delivered-to-citygate supplies. For example, on April 1, 2021, DE-Ohio purchased 39,400 Dth of other delivered-to-citygate supplies at a price of \$2.7150/Dth. On this day, DE-Ohio purchased supplies delivered under its Texas Gas STF transportation contract at a delivered cost of \$2.4883/Dth, and open Texas

Eastern STF capacity was available which could have been utilized to deliver additional supplies, reducing the need to purchase the other daily, delivered-to-citygate supplies. Based on these prices, the incremental costs associated with DE-Ohio's other delivered-to-citygate supplies on this one day was \$8,932 (39,400 Dth x (\$2.7150/Dth - \$2.4883/Dth)).

5.6. Capacity Release and Off-System Sales Activities

Twice each year, DE-Ohio releases a portion of its interstate pipeline firm transportation capacity to suppliers serving firm transportation customers pursuant to the procedures discussed in Section 6.1.3 of the audit report. Under DE-Ohio's AMAs, the Company releases its remaining capacity to the Asset Manager. Therefore, DE-Ohio is not generally active in the capacity release or off-system sales markets. All releases to suppliers of firm transportation customers are made at the same rate DE-Ohio paid for the capacity. A complete history of the Company's audit period interstate pipeline firm transportation capacity release activity to suppliers is included in Appendix A of the audit report.

Although DE-Ohio did not generally engage in off-system sales activity during the audit period, the Company made off-system sales to its Asset Manager in September 2018 and March 2021. These sales were made at market prices. In September 2018, DE-Ohio sold 210,000 Dth off-system due to maintenance being conducted at its Springboro Station. The cost of the gas sold in September 2018 exceeded the revenues realized from the off-system sales by \$12,600, and the difference was included in the GCR. In March 2021, DE-Ohio sold 350,000 Dth off-system to ensure that its Columbia Gas FSS storage inventory balance did not exceed the maximum 25% of storage capacity allowed by Columbia Gas' FSS FERC tariff as of April 1, 2021. The cost of the gas sold in March 2021 exceeded the revenues realized from the off-system sales by \$74,368, and the difference was included in the GCR. Exeter finds that GCR customers were not adversely affected by the off-system sales because the GCR would have been eventually charged for the gas sold off-system if those supplies were not sold off-system.

5.7. Gas Price Locational Differentials

Table 18 identifies first-of-the-month index prices for baseload purchases during the audit period for the receipt point locations available under DE-Ohio's firm transportation contracts. Also identified are the pipeline variable and fuel charges that would be applicable for supplies delivered from each receipt point location to DE-Ohio's citygate. The Columbia Gulf Mainline index prices in Table 18 reflect average market prices applicable for Gulf Coast production-area purchases delivered under the Company's Columbia Gulf FTS-1 capacity. The Texas Gas Zone 1 index prices reflect average market prices applicable for purchases delivered under the Company's Texas Gas NNS and STF capacity. The Tennessee Gas Zone 0/1 index prices reflect average market prices applicable for purchases delivered under the Company's Tennessee Gas FT-A capacity. Table 18 reveals that prices for gas available for purchase by the Company varied little by location during the audit period, with Texas Gas supplies being slightly less expensive than Columbia Gulf and Tennessee delivered supplies.

Table 18. Comparison of First-of-the-Month Published Index Prices and Delivered Costs (\$/Dth)

Month	Columbia Gulf Mainline	Tennessee Zone 0/1	Texas Gas Zone 1
September 2018			
October			
November			
December			
January 2019			
February			
March			
April			
May			
June			
July			
August			
Year Average:			
September 2019			
October			
November			
December			
January 2020			
February			
March			
April			
May			
June			
July			
August			
Year Average:			
September 2020			
October			
November			
December			
January 2021			
February			
March			
April			
May			
June			
July			
August			
Year Average:			
Audit Period Average:			
Pipeline Variable:	\$0.01	\$0.03	\$0.03
Pipeline Fuel:	4.3445%	2.6154%	0.8800%
Delivered Cost:			

Source: S&P Global Market Intelligence.

5.8. Lost-and-Unaccounted-for and Company-Use Gas

One of the objectives of the management and performance audit of DE-Ohio's gas supply policies and practices is to identify and evaluate the Company's programs to minimize lost-and-unaccounted-for gas. LUFG and gas used in company operations, or company-use gas, represent the difference between the volume of gas purchased from suppliers and the volume of gas sold to customers. LUFG and company-use gas are important when considering the ability of Ohio gas distribution companies to provide reliable gas supplies at a minimum cost because of the treatment they receive. The GCR is determined by dividing the cost of all volumes purchased to serve GCR customers by the volume of gas sold to GCR customers. As a result, the costs of unaccounted-for gas and company-use gas are passed through to customers through the GCR mechanism.

Lost-and-unaccounted-for gas is the difference between the measured volume of total gas supply or gas purchased and the measured volume of gas disposition. Gas disposition includes both gas billed to customers and company-use gas. There are a variety of reasons why some gas is unaccounted for. Some LUFG is due to problems in the measurement of gas supply and disposition. The volume of a given quantity (i.e., weight or heating value) of natural gas depends upon temperature and pressure conditions, and these may vary. Another measurement factor that can affect LUFG is cycle billing, which causes a mismatch between the timing of gas supply measurements and recorded gas sales volumes. A final measurement factor is meter inaccuracies. In addition to these measurement problems, some gas is lost through leakage in pipelines and other facilities, and through meter tampering or other kinds of theft.

DE-Ohio utilizes 12-month periods ending August 31 to measure and compare LUFG. By using 12-month ended information beginning and ending in a low-gas usage month, the imbalances caused by cycle billing are reduced. The Company's LUFG for the past five years is shown below:

Lost-and- Unaccounted-for Gas	
Year Ended	
<u>August 31</u>	<u>Percent</u>
2016	0.52%
2017	1.11%
2018	1.26%
2019	1.79%
2020	0.87%
Average:	1.11%

Company-use gas is the gas that DE-Ohio itself utilizes in operating its system. The uses of this gas include heating Company buildings and stations. During calendar year 2020, company-use gas totaled 26,569 Mcf. This represented approximately 0.039% of total gas

delivered to DE-Ohio in 2020. Shown below are company-use gas volumes for the past five years:

Company-Use Gas	
Year	Mcf
2016	36,847
2017	29,314
2018	31,563
2019	33,603
2020	26,569

DE-Ohio transportation customers are charged for LUFG and company-use gas through a fuel retention charge. DE-Ohio adjusts its fuel retention charge each December 1 to reflect the Company's actual 36-month period ended August 31 LUFG and company-use gas experience. For the period September 2018 through November 2019, DE-Ohio's fuel retention charge was 1.0%, and 1.4% for the period December 2019 through August 2021.

5.9. Conclusions and Recommendations

5.9.1. Audit Period Purchases

DE-Ohio's gas procurement strategy is to, within operating and contractual constraints, maximize deliveries from its lowest-cost source of supply. The Company's audit period gas supply purchases were generally consistent with this strategy.

5.9.2. Winter Storm Uri Citygate Peaking Purchases

Winter Storm Uri brought record-low temperatures to portions of the Gulf Coast and Mid-Continent natural gas production areas of the States of Texas, Louisiana, and Oklahoma during the period February 13-17, 2021. During this period, DE-Ohio purchased relatively high-cost, delivered-to-citygate supplies under its peaking service contract with [REDACTED]. These supplies were purchased to maintain operating pressures and service reliability in the northern portion of DE-Ohio's system. As such, these purchases benefited both GCR and firm transportation customers. Therefore, Exeter finds that both GCR and Choice customers should bear responsibility for the incremental costs of the [REDACTED] purchases, similar to the cost recovery procedures currently utilized for penalty charges assessed to DE-Ohio and the propane costs associated with maintaining system pressures. The incremental costs associated with these purchases totaled [REDACTED], and Exeter recommends that the incremental costs associated with these purchases be included under Rider CCCR and recovered over a one-year period.

5.9.3. Other Daily, Delivered-to-Citygate Purchases

Under its audit period AMAs, DE-Ohio was required to place its daily delivery nominations with the Asset Manager by 9 AM prior to the (gas) day of delivery. This is a standard provision

under an AMA and enables the Asset Manager to optimize the value of the capacity released to it by DE-Ohio during the normal gas trading and nomination cycle. That is, it enables the Asset Manager to utilize the capacity released to it by DE-Ohio to serve other markets when the capacity is not required to serve DE-Ohio.

In addition to purchasing delivered to citygate peaking services under its firm gas supply contracts, DE-Ohio also purchased other Texas Gas delivered-to-citygate supplies in the daily market. On the days these daily Texas Gas delivered purchases were made, DE-Ohio's Texas Gas firm transportation capacity was not fully utilized. That is, there was open Texas Gas capacity available. The cost of these other daily Texas Gas delivered supplies was higher than if those supplies were delivered under DE-Ohio's Texas Gas firm transportation capacity. The Company indicated that the other daily citygate delivered Texas Gas purchases were made to alleviate low-pressure conditions experienced in the northern portion of its service territory. The need to alleviate the low-pressure conditions with additional purchases was not determined by DE-Ohio's Gas Control Department until the 9 AM Asset Manager nomination deadline time had passed. Therefore, the additional Texas Gas supplies could not be delivered under the Texas Gas firm transportation capacity that was released under the AMAs.

The Company's purchase of other daily Texas Gas supplies to alleviate the low-pressure conditions benefited both GCR and firm transportation customers.

The Company's purchase of other daily Texas Gas delivered supplies to alleviate the low-pressure conditions benefited both GCR and firm transportation customers.

The need to purchase other daily, delivered-to-citygate supplies arose because DE-Ohio operated under AMAs. DE-Ohio receives fees under its AMAs, which are shared with GCR and Choice customers. The other daily, delivered-citygate-supplies are generally priced higher than if open Texas Gas capacity was used to deliver these supplies. Under the current AMA fee sharing procedures, only GCR customers bear responsibility for the incremental costs associated with other daily, delivered-to-citygate purchases. Exeter finds this inappropriate and recommends that the incremental costs associated with the other daily, delivered-to-citygate supplies be recovered by reducing the AMA fees that are subject to sharing. DE-Ohio should be required to track the incremental costs of other daily, delivered-to-citygate supplies.

5.9.4. Lost-and-Unaccounted-for Gas

DE-Ohio's LUFG has averaged 1.1% over the last five years. This compares favorably with the experience of other gas utilities.

6. Transportation Service

Duke Energy Ohio provides transportation service to customers who acquire their own natural gas supplies separate from the purchase of the Company's system supply. DE-Ohio transports approximately 55,000,000 Mcf of gas annually for its residential, commercial, and industrial transportation customers. This represents 75% of the Company's total combined annual sales and transportation volumes of approximately 70,000,000 Mcf. DE-Ohio began offering its residential and small commercial customers a practical opportunity to utilize transportation service under the Company's Choice program in September 1997. In addition to residential and small commercial customers, the term "Choice" has been extended to include all DE-Ohio customers utilizing firm transportation service, including those utilizing transportation service prior to September 1997. Table 19 identifies deliveries of gas to DE-Ohio by transportation customers by pipeline during the audit period.

Section 6.1 discusses DE-Ohio's firm transportation program, including the assignment of capacity resources to suppliers participating in DE-Ohio's Choice program. Section 6.2 discusses interruptible transportation service. The audit period imbalances between deliveries to DE-Ohio on behalf of transportation customers and the consumption of transportation customers are examined in Section 6.3. The final section presents Exeter's conclusions and recommendations concerning DE-Ohio's transportation service offerings.

6.1. Firm Transportation Service

6.1.1. Background and Participation

Firm transportation service is available to DE-Ohio's residential customers under Rate RFT (Residential Firm Transportation Service) and Rate RFTLI (Residential Firm Transportation Service – Low Income); to non-residential customers using 400 Mcf or less per year under Rate FT-S (Firm Transportation Service – Small); and to non-residential customers using more than 400 Mcf per year under Rate FT-L (Firm Transportation Service – Large). With the exception of Percentage of Income Payment Program customers, all customers in DE-Ohio's service territory are eligible to choose an alternative provider of natural gas supply service. The customer participation rate in DE-Ohio's firm transportation program during the audit period ranged from 45% to 60%. In 2020, firm transportation service represented approximately 70% of total firm throughput, and 60% of residential customer throughput. Customers may enroll in DE-Ohio's firm transportation program at any time.

Table 19. Summary of Deliveries by Transportation Customers by Source (Dth)

Month	KO Transmission	Texas Gas	ANR	Texas Eastern	Columbia Gas	Total Deliveries
September 2018	2,210,567	1,592,013	132	0	0	3,802,712
October	2,426,550	1,733,056	186,460	122,226	25,257	4,493,549
November	2,940,374	2,777,532	168,250	415,500	9,750	6,311,406
December	3,284,224	3,297,408	191,296	698,058	61,200	7,532,186
January 2019	3,522,235	3,934,558	202,066	888,905	87,297	8,635,061
February	2,587,762	2,516,163	613,995	684,588	33,200	6,435,708
March	3,362,620	2,712,465	428,050	699,589	38,750	7,241,474
April	2,343,950	1,476,178	305,020	391,830	0	4,516,978
May	2,155,493	1,496,863	251,673	209,689	39,900	4,153,618
June	1,916,150	1,383,615	206,444	75,050	28,800	3,610,059
July	1,724,345	1,068,895	373,551	343,976	37,500	3,548,267
August	1,806,164	1,193,888	0	409,639	80,175	3,489,866
September 2019	1,780,534	835,450	399,450	217,674	36,250	3,269,358
October	2,182,986	994,315	0	716,024	98,845	3,992,170
November	3,509,920	2,181,091	336,889	477,992	112,723	6,618,615
December	3,724,645	2,669,539	266,869	300,000	106,773	7,067,826
January 2020	3,128,841	2,599,097	535,900	338,399	89,975	6,692,212
February	2,995,509	2,399,520	412,578	290,000	100,750	6,198,357
March	2,766,637	1,703,746	690,588	284,263	73,650	5,518,884
April	2,523,759	1,538,252	614,132	0	99,200	4,775,343
May	2,715,218	1,517,704	513,996	0	92,770	4,839,688
June	2,312,306	1,366,883	0	0	78,358	3,757,547
July	1,978,712	961,459	182,854	78,590	0	3,201,615
August	1,772,128	1,407,532	0	78,665	0	3,258,325
September 2020	2,069,401	873,543	267,900	81,072	0	3,291,916
October	2,580,458	1,212,527	710,570	101,720	0	4,605,275
November	3,033,899	1,549,070	235,491	140,036	292,348	5,250,844
December	3,918,597	2,734,127	393,907	418,500	122,308	7,587,439
January 2021	4,361,780	2,836,586	836,654	310,000	131,745	8,476,765
February	4,183,981	2,890,234	943,840	99,929	140,573	8,258,557
March	2,587,317	1,422,844	681,763	217,000	44,425	4,953,349
April	2,292,900	1,355,955	360,531	240,000	37,936	4,287,322
May	2,271,085	1,511,609	569,237	0	14,202	4,366,133
June	1,591,756	1,735,905	104	1,555	45,000	3,374,320
July	1,593,206	1,484,478	0	243,288	42,950	3,363,922
August	1,528,785	1,581,735	0	0	26,800	3,137,320
Total Audit Period:	93,684,794	66,545,835	11,880,190	9,573,757	2,229,410	183,913,986
Percent:	50.9%	36.2%	6.5%	5.2%	1.2%	100.0%

Note: KO Transmission deliveries are generally initially sourced on Columbia Gulf or Tennessee Gas.

Supplier participation in DE-Ohio's firm transportation program ranged from 65 to 69 suppliers during the audit period. Of the 69 suppliers participating in DE-Ohio's firm transportation program at the conclusion of the audit period, nearly 60 serve residential customers, and approximately 45% of firm transportation customers were served by one supplier.

6.1.2. Rate Schedules

DE-Ohio's firm transportation program features four transportation services—Rate RFT, Rate RFTLI, Rate FT-S, and Rate FT-L. All customers participating in the Company's firm transportation program must enter into an agreement with a supplier who meets the requirements for participation in the Company's pooling program under Rate FRAS (Full Requirements Aggregation Service). Suppliers must enter into a Gas Supply Aggregation/Customer Pooling Agreement, which has a minimum term of two years. Aggregation service allows suppliers to schedule and nominate, and to balance, deliveries to DE-Ohio with usage on a total customer rather than individual customer basis. That is, a supplier need only arrange for delivery to DE-Ohio the total quantity of gas required to service its customers and not designate the amount specifically delivered for each customer.

6.1.3. Capacity Assignment

Pursuant to the Stipulation and Recommendation approved in Case No. 05-732-EL-MER, DE-Ohio revised its FRAS tariff to include the mandatory assignment of firm interstate pipeline capacity to suppliers, as their customer base and associated capacity requirements increased beyond that which existed on April 1, 2007. The change to the assignment of firm pipeline capacity was implemented to mitigate the risk of DE-Ohio incurring stranded capacity costs as customers migrate to alternative suppliers, and provides for the availability of capacity as customers return to DE-Ohio's system supply portfolio. Supplier capacity assignment is based on the increase in the MDQ of the supplier's customers from that which existed on April 1, 2007. Assignments are made effective each April 1 and November 1 and are not made unless the MDQ of the supplier's customers exceeds 6,000 Dth, and the incremental amount of the increase above the April 1, 2007 MDQ is 3,000 Dth. Only DE-Ohio's firm transportation capacity is assigned. Storage and no-notice service is not assigned. The amount of capacity to be released to each supplier is determined based on the percentage of pipeline firm transportation capacity that is utilized to meet GCR customer design day demands after the allocation. This calculation is circular since the amount of pipeline firm transportation capacity available for GCR customers is dependent upon the amount of capacity that is released to Choice suppliers. DE-Ohio's FRAS tariff provides that pipeline capacity is to be released in proportionate shares unless both parties agreed to a different allocation. Relatively minor adjustments to proportionate share allocations were agreed to by the parties during the audit period. The pipeline capacity assignments to Choice suppliers during the audit period are summarized in Table 20. At the conclusion of the audit period, 12 Choice suppliers were assigned interstate pipeline capacity.

Table 20. Summary of Capacity Assignments to Choice Suppliers (Dth)

MONTH	Columbia Gulf FTS-1			Columbia Gulf Backhaul			Tennessee FT-A			Texas Gas STF			KO Transmission		
	Total	Assigned	Percent	Total	Assigned	Percent	Total	Assigned	Percent	Total	Assigned	Percent	Total	Assigned	Percent
Sep 2018	31,500	17,542	55.7%	21,000	11,705	55.7%	24,000	13,368	55.7%	17,000	9,456	55.6%	184,000	42,474	23.1%
Oct	31,500	17,542	55.7%	21,000	11,705	55.7%	24,000	13,368	55.7%	17,000	9,456	55.6%	184,000	42,474	23.1%
Nov	49,000	29,422	60.0%	21,000	14,632	69.7%	24,000	7,285	30.4%	92,000	45,509	49.5%	184,000	51,168	27.8%
Dec	49,000	29,422	60.0%	21,000	14,632	69.7%	24,000	7,285	30.4%	92,000	45,509	49.5%	184,000	51,168	27.8%
Jan 2019	49,000	29,422	60.0%	21,000	14,632	69.7%	24,000	7,285	30.4%	92,000	45,509	49.5%	184,000	51,168	27.8%
Feb	49,000	29,422	60.0%	21,000	14,632	69.7%	24,000	7,285	30.4%	92,000	45,509	49.5%	184,000	51,168	27.8%
Mar	49,000	29,422	60.0%	21,000	14,632	69.7%	24,000	7,285	30.4%	92,000	45,509	49.5%	184,000	51,168	27.8%
Apr	31,500	16,628	52.8%	21,000	11,097	52.8%	24,000	12,649	52.7%	23,000	12,125	52.7%	184,000	40,175	21.8%
May	31,500	16,628	52.8%	21,000	11,097	52.8%	24,000	12,649	52.7%	23,000	12,125	52.7%	184,000	40,175	21.8%
Jun	31,500	16,628	52.8%	21,000	11,097	52.8%	24,000	12,649	52.7%	23,000	12,125	52.7%	184,000	40,175	21.8%
Jul	31,500	16,628	52.8%	21,000	11,097	52.8%	24,000	12,649	52.7%	23,000	12,125	52.7%	184,000	40,175	21.8%
Aug	31,500	16,628	52.8%	21,000	11,097	52.8%	24,000	12,649	52.7%	23,000	12,125	52.7%	184,000	40,175	21.8%
Sep 2019	31,500	16,628	52.8%	21,000	11,097	52.8%	24,000	12,649	52.7%	23,000	12,125	52.7%	184,000	40,175	21.8%
Oct	31,500	16,628	52.8%	21,000	11,097	52.8%	24,000	12,649	52.7%	23,000	12,125	52.7%	184,000	40,175	21.8%
Nov	49,000	25,993	53.0%	21,000	11,610	55.3%	24,000	10,506	43.8%	92,000	43,378	47.2%	184,000	47,873	26.0%
Dec	49,000	25,993	53.0%	21,000	11,610	55.3%	24,000	10,506	43.8%	92,000	43,378	47.2%	184,000	47,873	26.0%
Jan 2020	49,000	25,993	53.0%	21,000	11,610	55.3%	24,000	10,506	43.8%	92,000	43,378	47.2%	184,000	47,873	26.0%
Feb	49,000	25,993	53.0%	21,000	11,610	55.3%	24,000	10,506	43.8%	92,000	43,378	47.2%	184,000	47,873	26.0%
Mar	49,000	25,993	53.0%	21,000	11,610	55.3%	24,000	10,506	43.8%	92,000	43,378	47.2%	184,000	47,873	26.0%
Apr	31,500	15,107	48.0%	21,000	11,735	55.9%	24,000	9,640	40.2%	23,000	13,986	60.8%	184,000	47,873	26.0%
May	31,500	15,107	48.0%	21,000	11,735	55.9%	24,000	9,640	40.2%	23,000	13,986	60.8%	184,000	47,873	26.0%
Jun	31,500	15,107	48.0%	21,000	11,735	55.9%	24,000	9,640	40.2%	23,000	13,986	60.8%	184,000	47,873	26.0%
Jul	31,500	15,107	48.0%	21,000	11,735	55.9%	24,000	9,640	40.2%	23,000	13,986	60.8%	184,000	47,873	26.0%
Aug	31,500	15,107	48.0%	21,000	11,735	55.9%	24,000	9,640	40.2%	23,000	13,986	60.8%	184,000	47,873	26.0%
Sep 2020	31,500	15,107	48.0%	21,000	11,735	55.9%	24,000	9,640	40.2%	23,000	13,986	60.8%	184,000	47,873	26.0%
Oct	31,500	15,107	48.0%	21,000	11,735	55.9%	24,000	9,640	40.2%	23,000	13,986	60.8%	184,000	47,873	26.0%
Nov	49,000	27,307	55.7%	21,000	12,133	57.8%	24,000	9,907	41.3%	92,000	46,453	50.5%	184,000	49,091	26.7%
Dec	49,000	27,307	55.7%	21,000	12,133	57.8%	24,000	9,907	41.3%	92,000	46,453	50.5%	184,000	49,091	26.7%
Jan 2021	49,000	27,307	55.7%	21,000	12,133	57.8%	24,000	9,907	41.3%	92,000	46,453	50.5%	184,000	49,091	26.7%
Feb	49,000	27,307	55.7%	21,000	12,133	57.8%	24,000	9,907	41.3%	95,286	46,453	48.8%	184,000	49,091	26.7%
Mar	49,000	27,307	55.7%	21,000	12,133	57.8%	24,000	9,907	41.3%	92,000	46,453	50.5%	184,000	49,091	26.7%
Apr	31,500	12,044	38.2%	21,000	8,037	38.3%	24,000	9,168	38.2%	23,000	8,781	38.2%	184,000	29,168	15.9%
May	31,500	12,044	38.2%	21,000	8,037	38.3%	24,000	9,168	38.2%	23,000	8,781	38.2%	184,000	29,168	15.9%
Jun	31,500	12,044	38.2%	21,000	8,037	38.3%	24,000	9,168	38.2%	23,000	8,781	38.2%	184,000	29,168	15.9%
Jul	31,500	12,044	38.2%	21,000	8,037	38.3%	24,000	9,168	38.2%	23,000	8,781	38.2%	184,000	29,168	15.9%
Aug	31,500	12,044	38.2%	21,000	8,037	38.3%	24,000	9,168	38.2%	23,000	8,781	38.2%	184,000	29,168	15.9%

DE-Ohio's system is designed to use propane for maintaining system pressures during peak periods. Propane is also used for peak shaving. At the beginning of the audit period, propane was made available to suppliers serving firm transportation customers. Suppliers were allocated propane capacity based on the product of the projected design day requirements (MDQ) of each supplier's customers and the percentage of the Company's total firm system design day requirements to be met by propane. The deliverability of DE-Ohio's propane facilities is 135,940 Dth/day, and is available to meet 16% of DE-Ohio's design day requirements. The MDQ of a supplier's customers, less the supplier's allocated share of propane, was referred to as the "Adjusted MDQ."

In DE-Ohio's 2018 management performance audit proceeding in Case No. 18-218-GA-GCR, the Commission approved and adopted a Stipulation and Recommendation in December 2019 that required, among other things, the Company to file an application to require Choice suppliers to deliver 100% of their Adjusted Target Supply Quantity (Adjusted TSQ, discussed in Section 6.1.4). DE-Ohio filed an application in Case No. 20-384-GA-ATA to implement several of the provisions of the Stipulation and Recommendation in Case No. 18-218-GA-GCR, including modifying its FRAS tariff to eliminate the assignment of propane capacity to Choice suppliers. This tariff revision was approved and became effective October 1, 2020. Therefore, all propane capacity is currently assigned to GCR customers and is available to meet GCR design day requirements.

At times, due to the migration of sales customers to transportation service, DE-Ohio could maintain unneeded pipeline capacity. The costs associated with any unneeded pipeline capacity are recovered from all firm sales and transportation customers. The unneeded capacity costs are recovered from sales customers through GCR rates, and from firm transportation customers through Rider CCCR. Also recovered through Rider CCCR is a proportional share of the transportation charges associated with the transportation service provided by DE-Kentucky to DE-Ohio. The AMA fees allocated to firm transportation customers are reflected as a credit under Rider CCCR. Rider CCCR is discussed in greater detail in Section 6.1.8 of the audit report.

6.1.4. Deliveries by Suppliers

Each morning, by 9:00 AM, the Company posts on its electronic bulletin board (EBB) an Adjusted Target Supply Quantity (Adjusted TSQ) that a supplier is required to deliver to DE-Ohio on the following gas day.¹⁴ The Adjusted TSQ is defined as the Target Supply Quantity (TSQ), plus or minus any adjustments that a supplier may be required to make to its daily deliveries to correct for previous imbalances that may have existed. The TSQ reflects DE-Ohio's estimate of the amount of gas to be consumed by a supplier's customers. The TSQ is based on the usage history of a supplier's pool of customers and forecasted weather. Prior to October 1, 2020, if the Adjusted TSQ exceeded the Adjusted MDQ, a supplier had two options with respect to the incremental volume difference between the Adjusted TSQ and the

¹⁴ A gas day begins at 10:00 a.m. and ends the following day at 10:00 a.m.

Adjusted MDQ. A supplier could deliver the incremental volumes, or could rely on deliveries from the Company's propane facilities or from other Company peaking supplies. The costs associated with the propane or other peaking supplies used by the supplier would then be billed to the supplier. With the approval of DE-Ohio's application in Case No. 20-384-GA-ATA effective October 1, 2020, suppliers are now required to deliver 100% of the Adjusted TSQ. Due to the physical configuration of the Company's system, DE-Ohio may require suppliers to deliver specific percentages of required daily deliveries through those receipt points located on the northern and southern portions of its system.

If a supplier fails to deliver gas in accordance with the requirements of the Company's Gas Supply Aggregation/Customer Pooling Agreement or otherwise fails to comply with the provisions of the tariff, the Company has the discretion to temporarily suspend or terminate the supplier from the firm transportation program. If the supplier is suspended or terminated from further participation in the Company's firm transportation program, the supplier's customers are returned to sales service unless and until the customers elect another supplier. No suppliers were terminated from DE-Ohio's firm transportation program during the audit period.

6.1.5. Firm Balancing Services and Charges

DE-Ohio provides firm balancing service to accommodate differences between the quantity of gas delivered to the Company by a supplier and the actual consumption of the supplier's customers. DE-Ohio offered two firm balancing service options during the audit period—Firm Balancing Service and Enhanced Firm Balancing Service. In January 2015, the Company filed an application to modify the terms of election for EFBS to make EFBS mandatory for all firm suppliers whose customers' MDQ exceeded 20,000 Dth/day (Case No. 15-50-GA-RDR). Prior to this time, suppliers whose customers' MDQ exceeded 1,000 Dth/day were required to purchase, at their option, either FBS or EFBS on an annual basis, effective each April 1, and suppliers whose customers' MDQ was less than 1,000 Dth/day were required to receive FBS. DE-Ohio filed to make EFBS mandatory due to growth in the Company's Choice program and a decline in the number of Choice suppliers electing EFBS, which resulted in insufficient firm transportation capacity being available in relation to storage to serve GCR customers. In an Opinion and Order issued January 6, 2016, the Commission made EFBS mandatory for suppliers serving customers with an MDQ that exceeded 6,000 Dth effective April 1, 2017. Suppliers whose customers' MDQ was greater than 1,000 Dth/day but less than 6,000 Dth/day continued to have the option of selecting FBS or EFBS.

Under FBS, a supplier is required to deliver the Adjusted TSQ, and DE-Ohio will accommodate the difference between the Adjusted TSQ and the actual consumption of the supplier's customers. For those suppliers electing FBS, a balancing charge is assessed on the consumption of the supplier's customers. The FBS charge at the beginning of the audit period was 21.0¢/Mcf, and was based on the costs associated with the no-notice service that DE-Ohio purchased from Columbia Gas under Rate Schedules FSS and SST.

Under EFBS, suppliers are provided greater flexibility in managing their gas supplies. Suppliers served under EFBS are assigned a Maximum Daily Delivery Quantity (MDDQ) equal to the proportion of the Company's no-notice daily balancing services (Columbia Gas FSS/SST and Texas Gas NNS) to the Company's total daily firm system design day, multiplied by the design day demand of the supplier's customers. Assignments are based on MDDQ increments of 3,000 Dth. A Maximum Daily Bank Quantity (MDBQ) is also established for the supplier, equal to a proportional share of the Company's total seasonal no-notice storage capacity.

The TSQ that a supplier is required to deliver each day, absent any prior or current period adjustments, is based on forecasted temperature. Under EFBS, on a daily basis, a supplier's EFBS BCQ account, or bank, is increased or decreased by the daily difference between the actual volumes received by the Company at its citygate from the supplier's back-casted TSQ (i.e., TSQ based on the actual temperature), adjusted for fuel retainage as follows:

- If the supplier delivers more natural gas than the back-casted TSQ, the supplier's EFBS bank is increased by the amount of the over-delivery, calculated at the burner tip.
- If the supplier delivers less natural gas than the back-casted TSQ, the supplier's EFBS bank is decreased by the amount of the under-delivery, calculated at the burner tip.

On a day when a supplier's TSQ is greater than or equal to the MDQ of its customers, a supplier has full access to the total MDDQ. The supplier is not required to make total deliveries, including the back-casted MDDQ, above the MDQ.

EFBS assignments are adjusted monthly, based on 3,000-Dth increments. Maximum and minimum monthly bank inventory quantities and maximum and minimum monthly injection and withdrawal quantity restrictions are imposed under EFBS consistent with those imposed by Columbia Gas under Rate FSS. Suppliers are assessed a demand cost based on their MDDQ, and a commodity charge is assessed on all monthly consumption of the supplier's customers. EFBS charges are recalculated when Columbia Gas' FSS/SST or Texas Gas' NNS rates are revised. At the beginning of the audit period, the EFBS demand charge was \$7.07/Dth per month and the commodity charge was 2.7¢/Mcf. At the conclusion of the audit period, 14 of the 69 suppliers on DE-Ohio's system utilized EFBS.

The Stipulation and Recommendation approved by the Commission in DE-Ohio's 2018 management performance audit included the following provisions:

The parties agree to hold a collaborative meeting to discuss the following:

- a. The rates and charges paid by competitive retail natural gas suppliers for Firm Balancing Service ("FBS") and Enhanced Firm Balancing Service ("EFBS");

- b. Whether it is appropriate and reasonable to continue the availability of FBS, and any changes that should be made to EFBS to the extent that the service becomes mandatory for all CRNG (competitive retail natural gas) suppliers; and
- c. Whether the formula for pricing FBS should be modified.

The collaborative shall meet within 60 days of the Order approving this stipulation. Duke shall propose in its next EFBS/FBS tariff filing any changes agreed to in the collaborative process. Any party is free to take any position in response to Duke's filing. To the extent that parties do not agree to specific changes to EFBS/FBS, this agreement does not limit Duke's ability to unilaterally propose changes to either service.

Pursuant to the terms of the Stipulation and Recommendation, DE-Ohio convened a collaborative to discuss these issues, beginning discussions on February 13, 2020. The collaborative eventually reached a consensus regarding reasonable changes to the methodology for calculating FBS and EFBS rates. On April 28, 2020, DE-Ohio filed an application reflecting the collaborative's consensus (Case No. 20-794-GA-RDR). The Commission approved DE-Ohio's application in Case No. 20-794-GA-RDR on September 23, 2020, and new FBS and EFBS rates became effective October 1, 2020. Under the revised methodology, the FBS rate is based on DE-Ohio's Columbia Gas FSS/SST and Texas Gas NNS services, and reflects a summer/winter period pricing differential adjustment. Under the prior method, the FBS rate was based solely on costs associated with Columbia Gas FSS/SST service. Under the revised method, the FBS rate increased from 19.2¢/Mcf to 36.3¢/Mcf on October 1, 2020.

Under the application filed by the Company in Case No. 20-794-GA-RDR, the EFBS rates were designed based on the costs associated with Columbia Gas FSS/SST and Texas Gas NNS services. This was consistent with the prior method. The EFBS rate changes in Case No. 20-794-GA-RDR were attributable to an update to Columbia Gas' SST rates and an increase in total system throughput, which is used in the EFBS rate calculation. As a result of Case No. 20-794-GA-RDR, the EFBS demand charge was increased to \$7.34/Dth-month and the commodity charge was increased to 3.8¢/Mcf.

On July 31, 2020, Columbia Gas file a rate case with the FERC under Section 4 of the Natural Gas Act to increase its rates effective February 1, 2021 (Docket No. RP20-1060). On August 31, 2020, the FERC approved Columbia Gas' proposed increase in rates effective February 1, 2021, subject to refund, and established hearing procedures to evaluate the reasonableness of the proposed increase in rates. On March 1, 2021, DE-Ohio filed an application to revise its FBS and EFBS rates to reflect the increase in Columbia Gas' rates (Case No. 21-180-GA-RDR). In the application, DE-Ohio proposed to increase its FBS rate from 36.3¢/Mcf to 61.4¢/Mcf, increase the EFBS demand charge to \$11.06/Dth per month, and increase the EFBS commodity charge to \$0.045/Mcf. The application also proposed to increase DE-Ohio's rates for Interruptible Monthly Balancing Service under Rate IMBS from 8.8¢/Mcf to 12.22¢/Mcf.

Rate IMBS is discussed in greater detail in Section 6.2.2. On August 25, 2021, the Commission issued a Finding and Order approving DE-Ohio's proposed increases in its FBS, EFBS, and IMBS charges. The Finding and Order approved the rate increases on the condition that the Company file a new application to revise its balancing charges in the event that Columbia Gas' rates, as ultimately determined by the FERC in Docket No. RP20-1060, are lower than the rates that were approved by FERC subject to refund effective February 1, 2021.

A General Audit Requirement of this audit is to verify that the methodology changes that occurred as a result of DE-Ohio's application in Case No. 20-794-RDR have not caused an increase in rates for GCR customers. In Case No. 20-794-RDR, DE-Ohio filed to establish FBS and EFBS rates based on the consensus of the collaborative convened by order of the Commission approving the Stipulation and Recommendation in the 2018 management performance audit. The FBS and EFBS rates filed by DE-Ohio in Case No. 20-794-RDR were designed on a methodology that utilized the Columbia Gas FSS/SST and Texas Gas NNS costs incurred by DE-Ohio to provide FBS and EFBS service. Therefore, as long as DE-Ohio's FBS and EFBS costs are based on the costs associated with providing Columbia Gas FSS/SST and Texas Gas NNS, Exeter finds that the methodology adopted in Case No. 20-794-RDR did not cause an increase in rates for GCR customers.

However, as previously noted in this section of the audit report, Columbia Gas filed to increase its rates on July 31, 2020, with a proposed effective date of February 1, 2021. The FERC approved Columbia Gas' increased rates effective February 1, 2021, subject to refund, on August 31, 2020. DE-Ohio did not file to increase its FBS, EFBS, or IMBS charges until March 1, 2021 to reflect the increase in Columbia Gas' rates; the Commission did not approve the increase in FBS, EFBS, and IMBS rates until August 25, 2021; and the increase in rates did not go into effect until September 1, 2021. Therefore, for the period February through August 2021, DE-Ohio's FBS, EFBS, and IMBS rates were not cost-based and under-recovered the costs associated with providing these balancing services. GCR customers are responsible for the costs associated with the provision of FBS, EFBS, and IMBS that are not recovered through the applicable balancing charges. Therefore, because DE-Ohio did not file to increase its balancing charges for seven months after Columbia Gas filed its Section 4 FERC rate case, GCR customers were assigned costs that were the responsibility of suppliers utilizing DE-Ohio's balancing services until September 1, 2021.

The Finding and Order issued in Case No. 21-180-GA-RDR requires DE-Ohio to file to reduce its balancing charges within 15 days in the event that the FERC ultimately approves rates for Columbia Gas that are less than those utilized to design the balancing charges proposed by DE-Ohio. DE-Ohio has indicated that it will not issue refunds to suppliers utilizing FBS, EFBS, or IMBS in the event that the Columbia Gas rates ultimately approved by the FERC result in suppliers paying higher than cost-based rates for balancing services during particular months.

On October 29, 2021, Columbia Gas filed an uncontested Stipulation and Agreement of Settlement (Stipulation) in FERC Docket No. RP20-1060. The rates reflected in the Stipulation are lower than those reflected in Columbia Gas' initial Section 4 base rate application. Also on

October 29, 2021, Columbia Gas filed an unopposed motion to place the Stipulation rates into effect December 1, 2021, in advance of and pending final FERC approval of the Stipulation in Docket No. RP20-1060. On November 16, 2021, the Chief Administrative Law Judge (ALJ) in Columbia Gas' FERC proceeding issued an Order authorizing Columbia Gas' request to place the Stipulation rates into effect December 1, 2021. It is uncertain as to the date the FERC may ultimately approve the Stipulation.

Pursuant to the Commission's August 25, 2021 Finding and Order in Case No. 21-180-GA-RDR, DE-Ohio is required to reduce its balancing charges within 15 days in the event that the FERC approves the Stipulation. On November 19, 2021 in Case No. 21-1155-GA-RDR, DE-Ohio filed for approval to modify its FBS and EFBS balancing charges to reflect the Columbia Gas Stipulation rates authorized by the Chief ALJ, and in Case No. 21-1156-GA-ATA, DE-Ohio similarly filed for approval to modify its IMBS balancing charges. Assuming an effective date of December 1, 2021 of DE-Ohio's filings to reduce its balancing charges, Exeter estimates that GCR customers will have been overcharged by \$1,342,000 due to DE-Ohio's failure to file to increase its balancing charges on a timely basis. Columbia Gas filed its Section 4 base rate application on July 31, 2020, and the FERC approved the rates included in Columbia Gas' application on August 31, 2020, effective February 1, 2021, subject to refund. Pursuant to DE-Ohio's discounted rate arrangement, Columbia Gas' SST rates, which are included in DE-Ohio's calculation of balancing charges, were scheduled to increase February 1, 2021. DE-Ohio did not file to increase its balancing charges until March 1, 2021. The \$1,342,000 overcharge estimate is based on the actual use of balancing services by suppliers and firm transportation customers for the period February through August 2021, and the projected use of balancing services by suppliers and firm transportation customers for the period September through November 2021.

Exeter recommends that, at the scheduled February 17, 2022 hearing in this proceeding, DE-Ohio provide a revised calculation of GCR overcharges, and that the overcharges be refunded to GCR customers over a one-year period after the revised calculation is reviewed and approved by the Commission. Recovery through DE-Ohio's balancing charges of the amount to be refunded would be at the Commission's discretion. Exeter recommends that DE-Ohio develop procedures for Commission approval to address the timely recovery of the costs associated with the provision of balancing services when the interstate pipeline rates supporting the services utilized by DE-Ohio to provide balancing service change, and the reconciliation of the costs incurred and the cost recovered due to timing differences.

Another General Audit Requirement of this audit is to determine whether DE-Ohio has established procedures to monitor supplier EFBS activity to ensure that the GCR does not incur costs to cover for EFBS suppliers and to review the established procedures. As previously indicated, DE-Ohio utilizes its Columbia Gas FSS/SST and Texas Gas NNS arrangements to provide EFBS. Columbia Gas FSS/SST service represents approximately 80% of DE-Ohio's interstate pipeline storage capacity and Texas Gas NNS represents the remaining 20%. Each pipeline has established injection, withdrawal, and seasonal storage inventory limitations for these services. DE-Ohio has adopted the limitations imposed by Columbia Gas for EFBS.

Exeter's audit revealed that DE-Ohio has established procedures and reports to monitor and track daily supplier EFBS activity in addition to its existing monthly tracking procedures to ensure suppliers adhere to Columbia Gas' limitations and that costs are not imposed on GCR customers for violating those limitations. Exeter's review of daily and monthly EFBS activity indicated insignificant violations of Columbia Gas limitations; however, no costs or penalties were imposed on DE-Ohio or GCR customers for those violations during the audit period.

6.1.6. Operational Flow Orders

Suppliers are subject to the issuance of warm and cold weather operational flow orders (OFOs) that will direct each supplier to adjust delivered volumes to match the estimated usage of its customers. For suppliers that have elected EFBS as their balancing option, the difference between scheduled deliveries from interstate pipelines and estimated usage will be met by EFBS. In the event that the Company's storage service provider has restricted excess storage withdrawals/injections and a supplier exceeds the EFBS MDDQ or MDBQ, the excess quantities will be considered a failure to comply with the OFO. Failure of the supplier to deliver volumes of gas equal to the Adjusted TSQ with both its flowing supply and MDDQ may result in suspension or termination from further participation in the Company's firm transportation program.

Failure to comply with an OFO results in the following charges that are applicable to the difference between the daily OFO quantity and the actual volume delivered:

Cold Weather OFO Underdelivery

1. The payment of a gas cost equal to the highest incremental cost paid by the Company on the date of non-compliance;
2. One month of DE-Ohio's demand charges from its interstate pipelines on the OFO's shortfall. This charge is not imposed more frequently than once in any 30-day period; and
3. The payment of all other charges incurred by the Company, including interstate pipeline penalty charges on the date of the OFO shortfall.

Warm Weather OFO Overdelivery

1. Any overdelivery by a supplier will be confiscated by DE-Ohio and used for the Company's general supply requirements, without compensation to the supplier; and
2. The supplier will pay any penalty charges that the Company incurs from the interstate pipelines for such excess deliveries, provided such penalties can be attributed to the supplier's overdelivery.

DE-Ohio issued OFOs on several occasions during the audit period. Warm-weather OFOs were in effect for 13 days during the audit period, and cold-weather OFOs were in effect for 27

days during the audit period. There were no additional pipeline or supplier costs incurred by the Company due to supplier OFO violations.

6.1.7. Gas Transportation Management System and Monitoring of Consumption Imbalances

DE-Ohio utilizes its Gas Transportation Management System (GTMS) to split projected firm day-ahead sendout between GCR sales and firm transportation customers, and to develop daily TSQs for each supplier. To develop these projections, the GTMS uses algorithms developed based on a sample of actual daily usage over a one-year period by DE-Ohio's customers, and estimated average customer use by class based on the forecasted day-ahead effective temperature. TSQs for each supplier are developed based on the ratio of the supplier's customers' actual historical monthly usage compared to the average monthly usage for each customer class as determined by the GTMS. The TSQ of all suppliers is subsequently adjusted to match the firm day-ahead sendout estimate. Shown below are the consumption imbalances for each 12-month reconciliation period ended June 30 during the audit period. As shown, consumption imbalances averaged less than 1% during the audit period.

Audit Period Consumption Imbalances (Dth)				
12 Months Ended June 30	Usage	Deliveries	Imbalance	
			Quantity	Percent
2019	41,329,138	41,548,751	219,613	0.53%
2020	38,139,830	37,715,210	(424,620)	1.11%
2021	38,195,604	39,328,072	1,132,460	2.96%
Average:	39,221,524	39,530,678	309,154	0.79%

6.1.8. Contract Commitment Cost Recovery Rider

In Case No. 95-656-GA-AIR, the PUCO approved customer Choice firm transportation tariffs that provided for the establishment of a Contract Commitment Cost Recovery Rider. Rider CCCR provided a mechanism for the Company to fully recover the costs of upstream pipeline contract commitments, propane costs, and other costs that were incurred to supply gas to firm sales service customers that have subsequently elected to switch to transportation service. DE-Ohio files to adjust Rider CCCR on a quarterly basis.

During the 2015 management performance audit period in Case No. 15-218-GA-GCR, DE-Ohio's capacity assignment procedures provided for the assignment of capacity effective each November 1 and April 1, based on the aggregate demands of the customers served by a supplier at the end of the previous September and February, respectively. Exeter's audit for the 2015 management performance audit period found that the City of Cincinnati switched to firm transportation service in October 2012. As a result, the supplier serving the City of Cincinnati was able to avoid an assignment of capacity effective November 1, 2012, and DE-Ohio was left with unneeded capacity. The costs associated with the unneeded capacity were recovered entirely from GCR customers. DE-Ohio's Rider CCCR was designed to recover

a portion of the costs associated with unneeded interstate pipeline capacity incurred to serve GCR customers that have elected to switch to transportation service. Exeter's 2015 management performance audit found that a portion of the costs associated with the unneeded capacity should have been recovered under Rider CCCR rather than through the GCR. Exeter's audit recommended that \$237,245 of the costs associated with the unneeded capacity be removed from the GCR and recovered under Rider CCCR. Exeter also recommended that DE-Ohio investigate modifying its tariff to address the potential for a supplier to avoid the assignment of capacity. The Stipulation and Recommendation approved in Case No. 15-218-GA-GCR adopted Exeter's recommendations and required DE-Ohio to include \$237,245 in its Rider CCCR calculations and to file a report concerning tariff modifications to address the potential avoidance of capacity assignment.

A General Audit Requirement for the 2018 management performance audit in Case No. 18-218-GA-GCR required the auditor to verify that the Company included \$237,245 for recovery under Rider CCCR for the costs associated with the avoided assignment of capacity when the City of Cincinnati elected to participate in the Choice program. The General Audit Requirement also required the auditor to examine DE-Ohio's efforts to modify its tariff to address the potential for suppliers to avoid the assignment of capacity. Exeter's 2018 management performance audit found that DE-Ohio included \$237,245 in avoided capacity assignment costs in its December 2016, March 2017, June 2017, and September 2017 Rider CCCR calculations.

Exeter's 2018 management performance audit noted that to address the potential for suppliers to avoid an assignment of capacity in the future, the Company had proposed adding the following sentence to the capacity assignment provision of its tariff:

For purposes for determining the amount of capacity to be released, the MDQ will be adjusted for known changes to the suppliers' pool expected for the following season.

However, DE-Ohio had not modified its tariff to reflect the proposed language. The Stipulation and Recommendation approved in Case No. 18-218-GA-GCR required the Company to file an application to change its tariff to prevent the avoidance of capacity assignment due to timing differences. DE-Ohio's application in Case No. 20-384-GA-ATA included the proposed tariff language.

Exeter's 2018 management performance audit in Case No. 18-218-GA-GCR recommended, and the subsequently approved Stipulation and Recommendation required, that the Company begin to include the incremental cost of propane utilized for system integrity for recovery under Rider CCCR. A General Audit Requirement of the current audit is to verify that DE-Ohio has included the incremental cost of propane utilized for system integrity in Rider CCCR. Exeter's audit and the subsequently approved Stipulation and Recommendation also provided for the Company to begin including interstate pipeline overrun and penalty charges associated with maintaining system integrity in Rider CCCR. A General Audit Requirement of the current

audit is to verify that DE-Ohio has included overrun and penalty charges associated with maintaining system integrity in Rider CCCR.

Exeter's audit found that DE-Ohio began including the incremental propane costs associated with maintaining system integrity in Rider CCCR effective October 1, 2020. All incremental propane costs incurred by DE-Ohio after October 1, 2020 were included in Rider CCCR. These incremental propane costs totaled \$143,145. The Company began including penalty and overrun charges in Rider CCCR effective December 18, 2019, the date on which the Commission approved the Stipulation and Recommendation in Case No. 18-218-GA-GCR. The penalty and overrun charges incurred by DE-Ohio totaled \$777,339 during the audit period. Those charges incurred beginning December 18, 2019, and included in Rider CCCR, totaled \$652,774.

6.2. Interruptible Transportation Service

6.2.1. Background

DE-Ohio provides interruptible transportation service pursuant to Rate IT. Service under Rate IT is available to any customer who: (1) signs a contract with the Company for service under Rate IT; (2) utilizes a minimum of 1,000 Mcf per month during the seven consecutive billing periods commencing with the customer's first meter reading taken on or after April 1; (3) has arranged for the delivery of gas into the Company's system for that customer's sole use at one point of delivery where distribution mains are adjacent to the premises to be served; and (4) has become a member of a pool under Rate AS (Aggregation Service) and elects Interruptible Monthly Balancing Service Under Rate IMBS. Service under Rate IT may be provided by displacement and on a "best efforts" basis. The Company reserves the right to decline requests to initiate or continue service whenever, in the Company's judgment, rendering the service would be detrimental to the operation of the Company's system or its ability to supply gas to customers receiving firm service.

The rates for interruptible transportation service are reflected in DE-Ohio's tariff, but the Company may negotiate a lower, discounted rate on an individual basis. Presently, four interruptible transportation customers receive service at discounted rates. The Company reviews the eligibility and economics of discounted rate contracts prior to renewal.

In order to administer the provisions of the tariff for interruptible transportation service and monitor daily usage, DE-Ohio installs remote metering equipment on the customer's meter site. The customer is responsible for payment of the costs associated with the equipment. The customer is also responsible for providing the Company with access to telephone service at the customer's metering site, or other equipment that may be necessary, and the monthly charges for telephone service or other necessary equipment.

In the event that a customer fails to interrupt transportation deliveries at the Company's request, any excess deliveries through the customer's meter will be considered unauthorized deliveries that are subject to the flow-through of pipeline penalty charges to the extent that

they are incurred by the Company. In addition, any customer accepting unauthorized deliveries will be billed an amount reflective of the otherwise applicable general service sales rate, or the Company's highest-cost gas, plus one month of demand charges on the volume difference (this charge is not imposed more frequently than once in any 30-day period) and/or the cost of operating the Company's propane peak-shaving facilities. DE-Ohio may physically discontinue service to a customer if the customer refuses to interrupt service when requested to do so by the Company.

Pooling service for customers receiving service under Rate IT is provided under Rate AS – Pooling Service for Interruptible Transportation. Rate IT customers must elect whether they, acting on their own behalf, will function as a pool operator and manage their own gas supplies or choose a pool operator. Pool operators are responsible for meeting the aggregated daily and monthly requirements of those customers that comprise their pool.

6.2.2. Balancing Requirements and Rates

Interruptible transportation customers and/or their suppliers (pool operators) determine the quantity of gas to deliver to DE-Ohio on a daily basis. Balancing service is available to interruptible transportation customers under Rate IMBS – Interruptible Monthly Balancing Service. The service provided under Rate IMBS is a "best efforts," interruptible, monthly gas balancing service that requires only a general obligation to balance daily pool usage with pool deliveries and provides that no daily imbalance charges or penalties will be levied on the pool operators, except on those days when operational flow orders have been issued. However, pool operators are under a continuing obligation to work with the Company in a good faith manner to respond to both formal and informal system management requests, and to strive to maintain relative daily balancing on the system throughout the course of the month. Initially during the audit period, interruptible transportation customers that purchased service under Rate IMBS selected monthly imbalance carryover tolerance levels from among the following options, with charges applicable as follows:

Option	Allowed Monthly Underrun	Monthly Carryover Tolerance		Charge on All Throughput (\$/Mcf)
		May – November	December – April	
1	0%	5%	7%	\$0.015
2	0%	6%	8%	\$0.020
3	0%	8%	10%	\$0.025

For the entire audit period, imbalances under Rate IT in excess of the carryover tolerance were cashed out by the Company on a monthly basis pursuant to the same procedures applicable for firm transportation delivery imbalances. The Company may issue an OFO that directs pool operators to deliver gas at specified citygate receipt points.

DE-Ohio's IMBS rates that were in effect at the beginning of the audit period were approved by the PUCO in a Supplemental Opinion and Order in Case No. 95-656-GA-AIR entered July

2, 1997. The Supplemental Opinion and Order included language providing that if the Company or any intervenor reasonably believed that IMBS was not operating as intended (including imposing undue costs on the Company's GCR customers), the parties would agree to discuss and consider modifications to the appropriate tariffs. Exeter's 2018 management performance audit in Case No. 18-218-GA-GCR noted that the Company conducted an evaluation and study of IMBS charges, and found that the revenue contribution of interruptible transportation customers through the IMBS charges had not been commensurate with the cost of providing service and, therefore, IMBS was imposing undue costs on GCR customers. Exeter's audit agreed with the Company's finding. The Stipulation and Recommendation approved in Case 18-218-GA-GCR required the Company to file an application to change its IMBS rates to reflect the results of the study performed by the Company. DE-Ohio's application in Case No. 20-384-GA-ATA adjusted IMBS rates to reflect the results of the Company's study. The IMBS rates approved in Case No. 20-384-GA-ATA were as follows:

Allowed Seasonal Monthly Overrun				
	Allowed Monthly Underrun %	May - November	December - April	Charge On All Throughput (\$/Mcf)
All Pools:	0%	8%	10%	\$0.0848/Mcf

As previously discussed in Section 6.1.5, the IMBS charge was subsequently increased to 12.22¢/Mcf pursuant to the Finding and Order in Case No. 21-180-GA-RDR.

6.2.3. Interruptible Transportation Service Curtailment

DE-Ohio's interruptible transportation customers are subject to curtailment on the coldest days. The Company has an automated system in place that calls its interruptible transportation customers in the event a curtailment is required. The Company may initiate a curtailment when, in its judgment, service to firm customers may be jeopardized. DE-Ohio initiated two interruptible transportation service curtailments during the audit period.¹⁵ Prior to these curtailments, there were 108 customers taking service under Rate IT. Exeter's audit indicates that these curtailments did not result in the switching of interruptible transportation customers to firm transportation service, as was observed in Exeter's 2015 management performance audit when 22 interruptible transportation customers returned to firm transportation service due to curtailments initiated during the winter of 2014-2015.

6.3. Audit Period Imbalances

In order to minimize their balancing service requirements, suppliers serving DE-Ohio's transportation customers are encouraged to utilize the Company's interpool imbalance trading services. DE-Ohio operates an EBB through which suppliers may post offers to purchase or sell gas supplies or trade imbalances. This trading service is provided under Rate GTS – Gas

¹⁵ Curtailments were imposed January 21, 2019, and January 30-31, 2019.

Trading Service. A charge of \$5.00 per transaction is applicable under Rate GTS. Daily imbalance trades must be made within four business days from the date of the imbalance. Monthly imbalance trades must be completed within four business days following the end of the month. If a pool operator is receiving EFBS, daily imbalance trades or transfers must be made within three days from the date that the pool operator is notified of the back-casted TSQ.

6.3.1. Firm Transportation Imbalances

The performance of suppliers serving firm transportation customers in delivering the Adjusted TSQ determined by DE-Ohio is summarized in Table 21. As indicated in the "Imbalance" column under "Daily Delivery Imbalances," suppliers participating in the firm transportation program, with limited exceptions, delivered the Adjusted TSQ determined by DE-Ohio during the audit period. In addition to the charges reflected in Table 21, DE-Ohio assessed firm transportation customers a total of \$373,120 for cold weather OFO violations of 29,292 Dth in January, March, and November 2019; December 2020; and February 2021. Table 21 also shows that during the audit period, firm customers paid FBS balancing charges of \$3.4 million and EFBS balancing charges of \$41.8 million, both of which were credited to GCR customers.

6.3.2. Interruptible Transportation Imbalances

Interruptible transportation customer imbalances during the audit period are summarized in Table 22. Monthly imbalances between deliveries and consumption were generally less than 5% of consumption, averaging 4.4% during the audit period. IMBS charges totaled \$2.2 million during the audit period. In addition to the charges reflected in Table 22, DE-Ohio assessed interruptible transportation customers \$145,831 for unauthorized curtailment usage of 8,229 Mcf in January 2019. DE-Ohio also assessed interruptible transportation customers a total of \$30,907 for warm weather OFO violations of 10,038 Mcf in September and October 2018, and a total of \$282,946 for cold weather OFO violations of 15,049 Mcf in January, March, and November 2019; February and December 2020; and February 2021.

Table 21. Summary of Firm Transportation Customer Balancing Activity

Month	Deliveries				Daily Delivery Imbalances (Dth)		Underdelivery		Overdelivery		Monthly Consumption Imbalances (Dth)		FBS		EFBS	
	Required	Actual	Authorized	Imbalance	Quantity	Revenue	Quantity	Revenue	Quantity	Revenue	Deliveries	Usage	Imbalance	Percent	Balancing Revenues	Balancing Revenues
Sep 2018	1,895,634	2,205,658	310,821	(797)	1,267	(3,721)			(2,064)	6,359	1,085,287	1,064,288	999	0.09%	\$27,171	\$1,088,645
Oct	3,101,476	2,813,868	(288,070)	(19,536)	2,979	(9,357)			(22,517)	74,195	1,254,559	1,374,123	(119,564)	-8.70%	\$34,081	\$1,128,776
Nov	5,447,118	4,474,783	(934,310)	(38,025)	6,776	(32,017)			(44,801)	222,034	4,118,817	3,384,464	734,353	21.70%	\$68,125	\$1,180,446
Dec	6,458,000	5,492,636	(965,349)	(15)	20,814	(74,015)			(20,829)	77,692	6,017,611	6,364,140	(346,529)	-5.45%	\$121,498	\$1,295,672
Jan 2019	8,651,179	6,507,856	(2,133,314)	(10,009)	18,352	(52,597)			(28,361)	204,966	6,202,241	6,739,778	(537,537)	-7.98%	\$141,855	\$1,296,949
Feb	6,472,532	4,571,121	(1,931,637)	30,226	45,630	(126,578)			(15,404)	44,826	7,999,958	7,326,747	673,212	9.19%	\$169,106	\$1,284,159
Mar	6,395,314	5,159,889	(1,238,801)	3,376	27,302	(71,586)			(23,926)	46,923	5,952,020	6,160,852	(208,833)	-3.39%	\$139,460	\$1,242,494
Apr	2,799,583	2,899,439	91,361	8,495	20,821	(51,117)			(12,326)	134,780	3,759,039	3,653,821	105,218	2.88%	\$76,725	\$1,162,486
May	2,053,466	2,534,903	475,712	5,725	10,068	(24,819)			(4,343)	11,227	1,884,685	1,849,745	34,940	1.89%	\$39,544	\$1,107,508
Jun	1,538,760	2,007,548	467,465	1,323	2,122	(4,518)			(799)	1,785	1,207,805	1,279,054	(71,249)	-5.57%	\$28,188	\$1,074,786
Jul	1,632,632	1,888,280	253,556	2,092	2,697	(5,348)			(605)	1,258	1,036,923	1,135,171	(98,248)	-8.65%	\$24,674	\$1,045,699
Aug	1,470,082	1,840,724	370,411	231	1,358	(2,830)			(1,127)	2,464	1,017,207	1,048,116	(30,909)	-2.95%	\$26,631	\$1,056,050
Subtotal:	47,915,776	42,396,705	(5,502,155)	(16,916)	160,186	(458,502)			(177,102)	828,509	41,516,151	41,380,298	135,853	0.33%	\$897,056	13,963,669
Sep 2019	1,500,376	1,681,590	183,519	(2,305)	1,666	(3,591)			(3,971)	8,978	1,007,009	1,101,157	(94,148)	-8.55%	\$21,456	\$1,077,516
Oct	2,451,745	2,366,807	(89,967)	(14,971)	2,554	(6,155)			(17,325)	44,288	1,221,623	1,279,533	(57,910)	-4.53%	\$30,242	\$1,119,707
Nov	5,650,990	4,712,755	(913,446)	(24,789)	8,874	(20,934)			(33,663)	81,472	3,826,837	3,209,290	617,547	19.24%	\$68,477	\$1,164,974
Dec	6,220,916	4,948,444	(1,312,524)	40,052	49,097	(100,354)			(9,045)	21,481	5,141,910	5,772,134	(630,224)	-10.92%	\$125,473	\$1,124,999
Jan 2020	6,878,192	4,646,268	(2,252,087)	20,163	34,681	(62,044)			(14,518)	27,251	5,152,112	5,927,383	(775,271)	-13.08%	\$137,487	\$1,181,461
Feb	6,866,391	4,199,282	(2,665,932)	(1,177)	17,732	(30,464)			(18,909)	34,074	6,945,228	6,180,786	764,442	12.37%	\$142,858	\$1,187,353
Mar	4,400,293	3,673,601	(855,817)	39,125	45,234	(66,675)			(6,109)	9,445	4,967,107	5,312,102	(344,995)	-6.49%	\$122,617	\$1,179,413
Apr	3,406,444	3,100,123	(288,742)	(17,579)	5,616	(9,620)			(23,195)	41,682	3,182,491	3,175,855	6,636	0.21%	\$68,874	\$1,154,843
May	2,522,975	3,179,503	647,048	9,480	17,183	(27,682)			(7,703)	13,018	2,534,793	2,510,007	24,787	0.99%	\$53,984	\$1,151,429
Jun	1,565,073	2,172,566	606,160	1,333	4,461	(6,186)			(3,128)	4,551	1,681,969	1,488,296	193,673	13.01%	\$37,319	\$1,121,007
Jul	1,592,129	1,528,941	(62,408)	(780)	61	(110)			(841)	1,587	522,562	1,090,591	(568,029)	-52.08%	\$27,944	\$1,057,843
Aug	1,709,038	1,663,605	(46,630)	1,197	1,655	(4,167)			(458)	1,210	1,075,329	1,087,409	(12,080)	-1.11%	\$34,056	\$1,056,882
Subtotal:	44,854,562	37,873,485	(7,030,826)	49,749	188,814	(337,983)			(139,065)	289,036	37,258,971	38,134,542	(875,572)	-2.30%	\$870,766	13,577,428
Sep 2020	1,682,333	1,752,214	66,998	2,883	3,506	(6,658)			(623)	1,241	1,032,967	1,094,021	(61,054)	-5.58%	\$28,801	\$1,057,787
Oct	2,984,616	2,914,545	(42,598)	(7,472)	6,248	(18,063)			(13,720)	41,604	1,251,808	1,450,832	(199,024)	-13.72%	\$74,068	\$1,143,979
Nov	4,196,811	3,482,855	(702,090)	(11,866)	11,992	(33,266)			(23,858)	69,418	2,977,248	2,650,208	327,040	12.34%	\$124,379	\$1,189,728
Dec	7,295,675	5,440,662	(1,832,543)	(22,470)	16,059	(39,576)			(38,529)	111,545	5,272,758	5,099,938	172,820	3.39%	\$219,274	\$1,271,259
Jan 2021	8,028,941	6,361,133	(1,679,934)	12,126	24,351	(68,065)			(12,225)	35,841	7,217,545	6,868,050	349,495	5.09%	\$308,394	\$1,358,880
Feb	7,945,185	6,172,312	(1,799,851)	16,978	29,596	(86,442)			(12,818)	84,988	8,558,434	6,927,876	1,630,558	23.54%	\$291,975	\$1,362,595
Mar	4,504,461	3,001,849	(1,515,654)	13,042	29,157	(73,339)			(16,115)	42,517	5,293,244	5,666,524	(373,280)	-6.59%	\$247,008	\$1,298,153
Apr	2,924,203	2,570,369	(350,669)	(3,165)	6,735	(19,231)			(9,900)	29,651	2,831,571	3,009,841	(178,270)	-5.92%	\$120,180	\$1,222,100
May	2,139,708	2,643,336	498,520	5,108	9,428	(27,630)			(4,320)	13,279	2,111,366	1,912,124	199,262	10.42%	\$73,371	\$1,111,258
Jun	1,492,230	1,711,966	215,178	4,558	5,060	(17,928)			(502)	1,866	1,179,620	1,338,191	(158,571)	-11.85%	\$63,474	1,072,030
Jul	1,545,939	1,557,256	10,151	1,166	2,708	(10,235)			(1,542)	6,113	939,645	1,082,036	(142,391)	-13.16%	\$55,995	1,100,847
Aug	1,331,344	1,404,612	66,951	6,317	5,943	(24,972)			(1,321)	5,922	974,102	1,021,008	(52,906)	-5.15%	\$54,199	1,111,456
Subtotal:	46,051,446	39,013,109	(7,055,542)	17,205	150,683	(425,405)			(135,273)	443,965	39,640,328	38,126,648	1,513,680	3.97%	\$1,661,119	14,297,070
Total:	138,821,784	119,283,299	(19,588,523)	50,038	499,683	(1,221,890)			(451,440)	1,561,530	118,415,450	117,641,488	773,962	0.66%	3,428,943	41,838,168

Table 22. Summary of Interruptible Transportation Customer Balancing Activity (Mcf)

Month	Imbalance Carryover	Deliveries	Usage	Monthly Imbalance	Percent	IMBS Charges	Quantity	Underdelivery Price	Revenues	Quantity	Overdelivery Price	Revenues
September 2018	24,336	1,475,252	1,480,209	19,379	1.3%	\$24,816	1,158	\$3,177	\$(3,679)	(194)	\$3,332	\$647
October	16,524	1,551,621	1,524,754	43,391	2.8	25,701	983	3,398	(3,342)	(304)	3,564	1,084
November	34,565	1,697,719	1,709,641	22,643	1.3	29,146	1,105	5,112	(5,649)	(7,095)	5,362	38,043
December	28,633	1,887,061	1,829,252	86,442	4.7	31,173	7,294	3,843	(28,032)	0	0	0
January 2019	79,148	1,968,163	1,909,389	137,922	7.2	32,750	15,339	3,097	(47,504)	0	0	0
February	128,661	1,728,103	1,799,906	56,858	3.2	30,630	9,632	2,993	(28,828)	0	0	0
March	47,226	1,919,659	1,865,195	100,237	5.4	31,780	25,538	2,829	(72,247)	0	0	0
April	79,205	1,488,476	1,524,270	43,411	2.8	25,734	2,275	2,651	(6,030)	0	0	0
May	41,136	1,498,068	1,477,772	61,433	4.2	24,785	8,739	2,662	(23,262)	(1,661)	2,792	4,637
June	54,355	1,483,067	1,473,080	64,341	4.4	24,641	11,393	2,299	(26,192)	(1,998)	2,411	4,819
July	54,946	1,536,367	1,529,221	62,112	4.1	25,448	7,462	2,140	(15,968)	(765)	2,245	1,718
August	55,416	1,516,233	1,522,792	48,857	3.2	25,598	7,013	2,251	(15,785)	(1,121)	2,361	2,647
Subtotal:	644,148	19,749,810	19,645,482	747,023	3.8%	\$332,204	97,930	\$2,824	\$(276,519)	(13,138)	\$4,079	\$53,593
September 2019	29,254	1,469,413	1,487,771	24,608	1.7%	\$25,108	-	\$-	\$-	(4,646)	\$2,441	\$11,340
October	68,575	1,505,635	1,439,633	95,256	6.6	24,578	26,681	2,599	(69,344)	0	0	0
November	78,409	1,764,036	1,738,945	93,666	5.4	29,919	16,140	2,544	(41,059)	0	0	0
December	109,881	1,956,658	1,917,840	117,227	6.1	32,798	7,456	2,213	(16,500)	(109)	2,321	254
January 2020	77,193	1,888,860	1,919,245	79,496	4.1	33,026	2,302	1,938	(4,462)	0	0	0
February	49,099	1,845,588	1,869,985	52,796	2.8	32,066	4,160	1,861	(7,742)	0	0	0
March	59,602	1,703,603	1,692,643	60,059	3.5	28,919	1,081	1,596	(1,725)	(624)	1,674	1,045
April	69,180	1,544,138	1,528,669	75,071	4.9	26,215	5,891	1,857	(10,940)	0	0	0
May	53,104	1,528,839	1,544,788	53,231	3.4	26,254	130	1,748	(227)	(3)	1,833	6
June	52,013	1,460,035	1,472,155	40,984	2.8	24,855	1,049	1,505	(1,579)	(373)	1,579	588
July	43,129	1,628,783	1,599,529	72,383	4.5	23,707	20,894	1,799	(37,588)	(1,400)	1,718	2,406
August	52,889	1,553,537	1,540,539	65,887	4.3	22,878	8,272	2,518	(20,829)	(426)	1,671	712
Subtotal:	742,328	19,849,125	19,751,741	830,665	4.2%	\$330,324	94,057	\$2,254	\$(211,996)	(7,581)	\$2,157	\$16,349
September 2020	58,041	1,512,592	1,506,067	64,536	4.3	\$22,465	15,537	\$1,899	\$(29,505)	(728)	\$1,641	\$1,194
October	49,727	1,619,477	1,602,106	67,098	4.2	126,651	3,631	2,891	(10,497)	(1,528)	2,715	4,148
November	64,995	1,694,634	1,653,096	108,533	6.4	130,221	14,819	2,774	(41,108)	(1,314)	2,910	3,823
December	93,028	2,037,050	2,007,564	122,514	6.1	158,038	559	2,464	(1,378)	(6,836)	2,585	17,671
January 2021	129,182	1,998,453	2,028,668	98,987	4.9	158,646	6,152	2,795	(17,196)	0	0	0
February	92,815	1,968,731	1,940,467	121,079	6.2	153,356	8,578	2,921	(25,054)	(15,118)	3,064	46,315
March	131,800	1,833,966	1,896,547	69,219	3.6	149,744	1,704	2,515	(4,286)	(47,922)	2,638	126,434
April	115,437	1,651,676	1,646,001	121,112	7.4	129,980	18,582	2,855	(53,059)	(9,804)	2,929	29,363
May	112,335	1,662,925	1,687,981	87,278	5.2	133,296	1,229	2,931	(3,602)	(16,701)	3,074	51,337
June	102,750	1,597,128	1,622,934	76,944	4.7	128,182	895	3,543	(3,171)	(3,051)	3,716	11,339
July	79,100	1,759,896	1,754,097	84,899	4.8	138,526	2,916	3,779	(11,021)	(192)	3,964	761
August	82,175	1,688,189	1,686,092	84,272	5.0	133,153	1,159	4,274	(4,953)	(3,945)	4,483	17,685
Subtotal:	1,053,344	19,512,125	19,525,553	1,039,915	5.3%	\$1,539,771	75,761	\$2,314	\$(175,324)	(107,139)	\$2,883	\$308,876
Total:	2,439,820	59,111,060	58,922,776	2,617,602	4.4%	\$2,202,299	267,747	\$2,479	\$(663,839)	(127,858)	\$2,963	\$378,819

6.4. Conclusions and Recommendations

6.4.1. Choice Suppliers Capacity Assignment

Choice suppliers are assigned a portion of DE-Ohio's interstate pipeline capacity effective each April 1 and November 1. The amount of capacity assigned to each supplier is determined based on the percentage of pipeline firm transportation capacity that is utilized to meet GCR customers' design day demands after the allocation. KO Transmission firm transportation capacity is required to deliver Columbia Gulf- and Tennessee-sourced supplies to DE-Ohio's citygate.

Under DE-Ohio's current capacity assignment procedures, suppliers are assigned KO Transmission capacity sufficient to provide for the delivery of Columbia Gas- and Tennessee-sourced supplies. The MDQ of Columbia Gulf Contract No. 34688 is seasonally sculpted with an MDQ of 49,000 Dth during the winter months and 31,500 Dth during the summer months. The MDQ of DE-Ohio's KO Transmission contract is not seasonally sculpted. Because the MDQ under Columbia Gulf Contract No. 34688 is seasonally sculpted and capacity is assigned on a percentage basis, during the summer months, the amount of the capacity assigned to Choice suppliers and the amount of KO Transmission capacity assigned to Choice suppliers are reduced. However, because the MDQ of DE-Ohio's KO Transmission firm transportation contract is not seasonally sculpted, the costs associated with the reduction in the assignment of KO Transmission capacity due to the sculpting of the MDQ under Columbia Gulf Contract No. 34688 becomes the responsibility of GCR customers. Exeter finds this unreasonable and recommends that DE-Ohio's capacity assignment procedures be modified to provide for the assignment of KO Transmission capacity based on the winter MDQ of Columbia Gulf Contract No. 34688.

6.4.2. Choice Imbalances

DE-Ohio's current procedures and methods for projecting the daily requirements of the firm transportation customers served by Choice suppliers sufficiently minimized imbalances between the quantity of gas delivered to DE-Ohio by Choice suppliers and the consumption of firm transportation customers during the audit period.

6.4.3. Firm Balancing Service, Enhanced Firm Balancing Service, and Interruptible Monthly Balancing Service Charges

The Stipulation and Recommendation approved by the Commission in DE-Ohio's 2018 management performance audit directed the parties to hold a collaborative meeting to address the rates and charges for FBS and EFBS. DE-Ohio convened a collaborative to discuss these issues, and the collaborative eventually reached a consensus regarding reasonable changes to the methodology for calculating FBS and EFBS rates. On April 28, 2020, DE-Ohio filed an application reflecting the collaborative's consensus (Case No. 20-794-GA-RDR). The Commission approved DE-Ohio's application in Case No. 20-794-GA-RDR on September 23, 2020, and new FBS and EFBS rates became effective October 1, 2020.

On July 31, 2020 Columbia Gas file a rate case with the FERC under Section 4 of the Natural Gas Act to increase its rates effective February 1, 2021 (Docket No. RP20-1060). On August 31, 2020 the FERC approved Columbia Gas' proposed increase in rates effective February 1, 2021, subject to refund, and established hearing procedures to evaluate the reasonableness of the proposed increase in rates. On March 1, 2021, DE-Ohio filed an application to revise its FBS, EFBS, and IMBS rates to reflect the increase in Columbia Gas' rates (Case No. 21-180-GA-RDR). On August 25, 2021, the Commission issued a Finding and Order approving DE-Ohio's proposed increases in its FBS, EFBS, and IMBS charges. The Finding and Order approved the rate increases on the condition that the Company file a new application to revise its balancing charges in the event that Columbia Gas' rates, as ultimately determined the FERC in Docket No. RP20-1060, are lower than the rates that were approved by the FERC subject to refund effective February 1, 2021.

A General Audit Requirement of this audit is to verify that the methodology changes that occurred as a result of DE-Ohio's application in Case No. 20-794-RDR have not caused an increase in rates for GCR customers. In Case No. 20-794-RDR, DE-Ohio filed to establish FBS and EFBS rates based on the consensus of the collaborative convened by Order of the Commission approving the Stipulation in the 2018 management performance audit. The FBS and EFBS rates filed by DE-Ohio in Case No. 20-794-RDR were designed on a methodology that utilized the Columbia Gas FSS/SST and Texas Gas NNS costs incurred by DE-Ohio to provide FBS and EFBS service. Therefore, as long as DE-Ohio's FBS and EFBS costs are based on the costs associated with providing Columbia Gas FSS/SST and Texas Gas NNS, Exeter finds that the methodology adopted in Case No. 20-794-RDR did not cause an increase in rates for GCR customers.

However, as previously noted, Columbia Gas filed to increase its rates on July 31, 2020, with a proposed effective date of February 1, 2021. The FERC approved Columbia Gas' increased rates effective February 1, 2021, subject to refund. DE-Ohio did not file to increase its FBS, EFBS, or IMBS charges until March 1, 2021 to reflect the increase in Columbia Gas' rates. The Commission did not approve the increase in the Company's FBS, EFBS, and IMBS rates until August 25, 2021, and the increase in rates did not go into effect until September 1, 2021. Therefore, for the period February through August 2021, DE-Ohio's FBS, EFBS, and IMBS rates were not cost-based and under-recovered the costs associated with providing these balancing services.

GCR customers are responsible for the costs associated with the provision of FBS, EFBS, and IMBS that are not recovered through the applicable balancing charges. Therefore, because DE-Ohio did not file to increase its balancing charges for seven months after Columbia Gas filed its Section 4 FERC rate case, GCR customers were assigned costs that were the responsibility of suppliers utilizing DE-Ohio's balancing services until September 1, 2021. The Finding and Order issued in Case No. 21-180-GA-RDR requires DE-Ohio to file to reduce its balancing charges within 15 days in the event that the FERC ultimately approves rates for Columbia Gas that are less than those utilized to design the balancing charges proposed by DE-Ohio. DE-Ohio has indicated that it will not issue refunds to suppliers utilizing FBS, EFBS,

or IMBS in the event that the Columbia Gas rates ultimately approved by the FERC result in suppliers paying higher-than-cost-based rates for balancing services during particular months.

On October 29, 2021, Columbia Gas filed an uncontested Stipulation and Agreement of Settlement (Stipulation) in FERC Docket No. RP20-1060. The rates reflected in the Stipulation are lower than those reflected in Columbia Gas' initial Section 4 base rate application. Also on October 29, 2021, Columbia Gas filed an unopposed motion to place the Stipulation rates into effect December 1, 2021, in advance of and pending final FERC approval of the Stipulation in Docket No. RP20-1060.

On November 16, 2021, the Chief Administrative Law Judge (ALJ) in Columbia Gas' FERC proceeding issued an Order authorizing Columbia Gas' request to place the Stipulation rates into effect December 1, 2021. It is uncertain as to the date the FERC may ultimately approve the Stipulation. Pursuant to the Commission's August 25, 2021 Finding and Order in Case No. 21-180-GA-RDR, DE-Ohio is required to reduce its balancing charges within 15 days in the event that the FERC approves the Stipulation. On November 19, 2021 in Case No. 21-1155-GA-RDR, DE-Ohio filed for approval to modify its FBS and EFBS balancing charges to reflect the Columbia Gas Stipulation rates authorized by the Chief ALJ, and in Case No. 21-1156-GA-ATA, DE-Ohio similarly filed for approval to modify its IMBS balancing charges. Assuming an effective date of December 1, 2021 of DE-Ohio's filings to reduce its balancing charges, Exeter estimates that GCR customers will have been overcharged by \$1,342,000 due to DE-Ohio's failure to file to increase its balancing charges on a timely basis. Columbia Gas filed its Section 4 base rate application on July 31, 2020, and the FERC approved the rates included in Columbia Gas' application on August 31, 2020, effective February 1, 2021, subject to refund. Pursuant to DE-Ohio's discounted rate arrangement, Columbia Gas' SST rates, which are included in DE-Ohio's calculation of balancing charges, were scheduled to increase February 1, 2021. DE-Ohio did not file to increase its balancing charges until March 1, 2021. The \$1,342,000 overcharge estimate is based on the actual use of balancing services by suppliers and firm transportation customers for the period February through August 2021, and the projected use of balancing services by suppliers and firm transportation customers for the period September through November 2021.

Exeter recommends that, at the scheduled February 17, 2022 hearing in this proceeding, DE-Ohio provide a revised calculation of GCR overcharges, and that the overcharges be refunded to GCR customers over a one-year period after the revised calculation is reviewed and approved by the Commission. Recovery through DE-Ohio's balancing charges of the amount to be refunded would be at the Commission's discretion. Exeter recommends that DE-Ohio develop procedures for Commission approval to address the timely recovery of the costs associated with the provision of balancing services when the interstate pipeline rates supporting the services utilized by DE-Ohio to provide balancing service change, and the reconciliation of the costs incurred and the costs recovered due to timing differences.

Another General Audit Requirement of this audit is to determine whether DE-Ohio has established procedures to monitor supplier EFBS activity to ensure that the GCR does not incur costs to cover for EFBS suppliers and to review the established procedures. DE-Ohio utilizes its Columbia Gas FSS/SST and Texas Gas NNS arrangements to provide EFBS. Columbia Gas FSS/SST service represents approximately 80% of DE-Ohio's interstate pipeline storage capacity, and Texas Gas NNS represents the remaining 20%. Each pipeline has established injection, withdrawal, and seasonal storage inventory limitations for these services. DE-Ohio has adopted the limitations imposed by Columbia Gas for EFBS. Exeter's audit revealed that DE-Ohio has established procedures and reports to monitor and track daily supplier EFBS activity in addition to its existing monthly tracking procedures to ensure suppliers adhere to Columbia Gas' limitations and that costs are not imposed on GCR customers for violating those limitations. Exeter's review of daily and monthly EFBS activity indicated insignificant violations of Columbia Gas limitations; however, no costs or penalties were imposed on DE-Ohio or GCR customers for those violations during the audit period.

6.4.4. Contract Commitment Cost Recovery Rider

During the 2015 management performance audit period in Case No. 15-218-GA-GCR, DE-Ohio's capacity assignment procedures provided for the assignment of capacity effective each November 1 and April 1, based on the aggregate demands of the customers served by a supplier at the end of the previous September and February, respectively. Exeter's audit for the 2015 management performance audit period found that the City of Cincinnati switched to firm transportation service in October 2012. As a result, the supplier serving the City of Cincinnati was able to avoid an assignment of capacity effective November 1, 2012, and DE-Ohio was left with unneeded capacity. The costs associated with the unneeded capacity were recovered entirely from GCR customers. DE-Ohio's Rider CCCR was designed to recover a portion of the costs associated with unneeded interstate pipeline capacity incurred to serve GCR customers that have elected to switch to transportation service. Exeter's 2015 management performance audit found that a portion of the costs associated with the unneeded capacity should have been recovered under Rider CCCR from firm transportation customers rather than through the GCR. Exeter's audit recommended that \$237,245 of the costs associated with the unneeded capacity be removed from the GCR and recovered under Rider CCCR. Exeter also recommended that DE-Ohio investigate modifying its tariff to address the potential for a supplier to avoid the assignment of capacity. The Stipulation and Recommendation approved in Case No. 15-218-GA-GCR adopted Exeter's recommendations and required DE-Ohio to include \$237,245 in its Rider CCCR calculations and to file a report concerning tariff modifications to address the potential avoidance of capacity assignment.

A General Audit Requirement for the 2018 management performance audit in Case No. 18-218-GA-GCR required the auditor to verify that the Company included \$237,245 for recovery under Rider CCCR for the costs associated with the avoided assignment of capacity when the City of Cincinnati elected to participate in the Choice program. The General Audit Requirement also required the auditor to examine DE-Ohio's efforts to modify its tariff to address the potential for suppliers to avoid the assignment of capacity. Exeter's 2018 management

performance audit found that DE-Ohio included \$237,245 in avoided capacity assignment costs in its December 2016, March 2017, June 2017, and September 2017 Rider CCCR calculations.

Exeter's 2018 management performance audit noted that to address the potential for suppliers to avoid an assignment of capacity in the future, the Company had proposed adding the following sentence to the capacity assignment provision of its tariff:

For purposes for determining the amount of capacity to be released, the MDQ will be adjusted for known changes to the suppliers' pool expected for the following season.

However, DE-Ohio had not modified its tariff to reflect the proposed language. The Stipulation and Recommendation approved in Case No. 18-218-GA-GCR required the Company to file an application to change its tariff to prevent the avoidance of capacity assignment due to timing differences. DE-Ohio's application in Case No. 20-384-GA-ATA included the proposed tariff language.

Exeter's 2018 management performance audit in Case No. 18-218-GA-GCR recommended, and the subsequently approved Stipulation and Recommendation required, that the Company begin including the incremental cost of propane utilized for system integrity for recovery under Rider CCCR. A General Audit Requirement of the current audit is to verify that DE-Ohio has included the incremental cost of propane utilized for system integrity in Rider CCCR. Exeter's audit and the subsequently approved Stipulation and Recommendation also provided for the Company to begin including interstate pipeline overrun and penalty charges associated with maintaining system integrity in Rider CCCR. A General Audit Requirement of the current audit is to verify that DE-Ohio has included overrun and penalty charges associated with maintaining system integrity in Rider CCCR.

Exeter's audit found that DE-Ohio began including the incremental propane costs associated with maintaining system integrity in Rider CCCR effective October 1, 2020. All incremental propane costs incurred by DE-Ohio after October 1, 2020 were included in Rider CCCR. These incremental propane costs totaled \$143,145. The Company began including penalty and overrun charges in Rider CCCR effective December 18, 2019, the date on which the Commission approved the Stipulation and Recommendation in Case No. 18-218-GA-GCR. The penalty and overrun charges incurred by DE-Ohio totaled \$777,339 during the audit period. Those charges incurred beginning December 18, 2019, and included in Rider CCCR totaled \$652,774.

APPENDIX A – CONFIDENTIAL and REDACTED

Audit Period Purchased Gas Activity

APPENDIX B

Scope of Work – Company-Specific Audit Requirements

<u>General Audit Requirements</u>	<u>Audit Report Section</u>
1. Review Duke's gas purchasing practices and policies for the period September 1, 2018 through August 31, 2021.	1.0
2. Read all applicable testimony and work papers.	1.0
3. Verify that Duke changed the calculation of SICC to remove gas banked by EFBS suppliers which began in March 2019.	2.4.2
4. Verify that Duke refunded the SICC over-collection from September 2015 through February 2019 in the amount of \$2,692,241, through the refund adjustment component of the GCR.	2.4.2
5. Determine if Duke has explored other factors such as wind speed, day of the week, and lag factors in determining the design peak day and verify if any changes have been made during the audit period.	4.4.1
6. Verify if Duke has reevaluated the amount of KO Transmission firm transportation capacity under contract, due to the completion of the Central Corridor and the retirement of propane-air plants.	4.2.1 (C)
7. Determine if Duke has established procedures to monitor its EFBS to ensure that the GCR does not incur costs to cover for EFBS suppliers and review the established procedures.	6.1.5
8. Verify that Duke has included the incremental cost of propane utilized for system integrity in the CCCR Rider.	6.1.8
9. Verify that Duke has included overrun and penalty charges associated with maintaining the system in the CCCR Rider.	6.1.8
10. Verify that the methodology changes that occurred as a result of Duke's application in Case No. 20-794-GA-RDR have not caused an increase in rates for GCR customers.	6.1.5