

BEFORE

THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Duke)
Energy Ohio, Inc. for Approval to Modify) Case No. 15-50-GA-RDR
Rider FBS, Rider EFBS, and Rider FRAS.)

DIRECT TESTIMONY OF

JEFF L. KERN

ON BEHALF OF

DUKE ENERGY OHIO, INC.

July 14, 2015

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I. INTRODUCTION

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Jeff L. Kern, and my business address is 139 East Fourth Street, Cincinnati,
3 Ohio, 45202.

4 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

5 A. I am employed by Duke Energy Business Services LLC, an affiliate of Duke Energy
6 Ohio, Inc. (Duke Energy Ohio or Company), as Manager, Gas Resources.

7 **Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL**
8 **EXPERIENCE.**

9 A. I have a Bachelor's Degree in Quantitative Analysis from the University of Cincinnati. I
10 began my career with the Cincinnati Gas & Electric Company (CG&E) as a rate analyst
11 in 1988. I was employed by New York State Electric & Gas Company between 1993 and
12 1997, returning to CG&E in 1997 as a Senior Rate Analyst. In 1998, I became an
13 administrator in Gas Operations. Since that time, I have held positions of increasing
14 responsibility in Gas Operations. At present, my title is Manager, Gas Resources. I have
15 responsibility for gas supply, city gate operations, and gas control. My responsibilities
16 include assuring adequate supply of gas for both retail sales and transportation customers
17 and managing pressures within the distribution system.

18 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITIES**
19 **COMMISSION OF OHIO (COMMISSION)?**

20 A. No.

1 Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS
2 PROCEEDING?

3 A. The purpose of my direct testimony is to provide information about the background and
4 the present status of Duke Energy Ohio's balancing services offered under the
5 Company's current Firm Balancing Service (FBS) and Enhanced Firm Balancing Service
6 (EFBS) tariffs.

7 Q. WHAT ARE THE ATTACHMENTS FOR WHICH YOU ARE RESPONSIBLE?

8 A. I have provided six attachments that are included with my testimony as Attachments
9 JLK-1 through JLK-6, to assist in illustrating some of the concepts on which I am
10 providing testimony.

II. SUMMARY OF THE PROBLEMS INHERENT IN MANAGING GAS
STORAGE AND POSSIBLE SOLUTIONS

11 Q. PLEASE EXPLAIN WHAT BALANCING SERVICE IS.

12 A. Natural gas is purchased from suppliers and nominated for flow on interstate pipelines on
13 a day-ahead basis. However, since it is not possible to predict customer's natural gas
14 usage exactly, some sort of daily balancing is required to match daily deliveries with
15 daily usage. Duke Energy Ohio manages daily balancing through contracts with
16 interstate pipelines for no-notice storage agreements where, once the gas day is over, the
17 amount of gas that flowed through meters is compared to the amount of gas that was
18 nominated for delivery to determine the amount of storage withdrawals or injections for
19 that day. In this way, the amount of gas delivered to Duke Energy Ohio's city gate
20 exactly matches the amount of gas used by all of its customers.

1 **Q. PLEASE EXPLAIN THE DUKE ENERGY OHIO FBS AND EFBS SERVICES.**

2 **A. FBS is a service that has been provided by Duke Energy Ohio since November 1, 1997.**
3 Under this approved tariff service, suppliers or aggregators are required to deliver the
4 Target Supply Quantity (TSQ) of natural gas on a daily basis. Since the TSQ is based on
5 forecasted weather, the actual usage will be different from the TSQ. The difference is
6 either withdrawn or injected into storage. Since customers subject to Rider Gas Cost
7 Recovery (GCR) pay for the storage, Rider FBS is designed to recover the estimated
8 portion of storage costs associated with daily balancing from suppliers/aggregators and to
9 credit Rider GCR. The current Rider FBS became effective April 1, 2015, as approved in
10 the Finding and Order issued March 25, 2015, in this case.

11 Rider EFBS has been offered by Duke Energy Ohio since April 1, 2007, and
12 provides an alternative wherein suppliers/aggregators can have more flexibility. This
13 Rider allows the supplier to deliver more or less than the TSQ on a daily basis and to
14 manage a bank on Duke Energy Ohio's system similar to pipeline no-notice storage
15 service. Current Rider EFBS also became effective with the Finding and Order issued
16 March 25, 2015, in this case. Rider EFBS allows suppliers/aggregators to deliver more
17 or less natural gas than the TSQ at their own discretion. At the end of the gas day, actual
18 weather data is used to calculate a Backcast Supply Quantity (BSQ) which is compared to
19 the amount that the supplier/aggregator delivered. The difference will increase or
20 decrease the amount of natural gas held in a bank for the supplier/aggregators. Rider
21 EFBS places limits on how much a bank can increase or decrease on a daily basis. Since
22 this closely imitates storage, suppliers/aggregators choosing Rider EFBS pay the full
23 value of Duke Energy Ohio's equivalent storage costs rather than an estimate of the

1 portion used only for daily balancing. Suppliers/aggregators that choose EFBS are
2 charged demand and volumetric rates that are higher than FBS. However, EFBS
3 suppliers/aggregators have the ability to purchase more gas when prices are low and less
4 when prices are higher and therefore mitigate or potentially eliminate the price
5 differential between the two Riders, with effective management of the
6 supplier/aggregator's bank. Revenue received from Rider EFBS is also credited to the
7 GCR.

8 Pursuant to both tariffs, supplier/aggregators much elect between FBS or EFBS
9 by January 15 each year and remain on that tariff through the following April 1 through
10 March 31 period.

11 **Q. PLEASE EXPLAIN HOW THE COMPANY MANAGES STORAGE TO**
12 **PROVIDE BALANCING SERVICES.**

13 A. Duke Energy Ohio provides balancing service through storage contracts with interstate
14 pipelines (Texas Gas Transmission and Columbia Gas Transmission). These pipeline
15 entities have requirements for managing storage balances embedded in their respective
16 Federal Energy Regulatory commission approved tariffs, such as minimums and
17 maximums that can be withdrawn or injected in particular months, and storage balance
18 maximums at certain points during the year. As a result, storage balances throughout the
19 year must remain within a band determined by tariff limitations and the necessity of
20 having enough storage to get through colder than normal periods. In order to manage
21 storage within these limitations, Duke Energy Ohio must deliver more or less to the city
22 gate than its forecasted load to ensure either injections or withdraws. Due to the

1 inaccuracy of weather forecasting, the actual amount injected or withdrawn for any day
2 can be very different from the forecasted amount.

3 **Q. PLEASE DESCRIBE AND EXPLAIN ATTACHMENT JLK-1.**

4 A. Attachment JLK-1 shows actual storage activity since September 2012 with the range of
5 acceptable balances shown as grey shading. Attachment JLK-1 demonstrates that the
6 Company must carefully manage storage balances to remain within the acceptable range
7 or risk pipeline penalties or running out of storage before the end of the winter.

8 **Q. PLEASE DESCRIBE AND EXPLAIN ATTACHMENT JLK-2.**

9 A. Attachment JLK-2 shows the contractual limits of injections and withdrawals as dashed
10 lines. The targeted storage activity is show as the solid black stepped line and the actual
11 storage activity based on the winter of November 2013 through March 2014 appears as a
12 grey line. Attachment JLK-2 is provided to show that the Company requires more storage
13 rights than just what is required for daily balancing in order to target a certain level of
14 withdraws. JLK-2 also demonstrates that reducing the amount of storage rights increases
15 the risk of pipeline penalties, based on how close the Company came to exceeding the
16 contractual limits on certain days during that winter.

17 **Q. PLEASE EXPLAIN WHAT CHANGES HAVE OCCURRED IN RECENT YEARS**
18 **THAT CAUSED THE COMPANY TO FILE AN APPLICATION TO CHANGE**
19 **THE RIDERS.**

20 A. In 2007, the Company's capacity portfolio was made up of approximately 33% Firm
21 Transportation, 35% Storage, and 32% Peaking Service and Propane. For the 2014/2015
22 winter, due to the increase in the Customer Choice Program and the decrease in the
23 number of suppliers/aggregators choosing EFBS, the capacity portfolio was only 15%

1 Firm Transportation, 59% Storage, and 26% Peaking Service and Propane. This resulted
2 in insufficient Firm Transportation in relation to Storage to effectively manage storage
3 balances. Therefore, the Company had to purchase approximately 2 million dekatherms
4 (dth) of spot gas during the winter of 2014/2015 in order to keep storage from being
5 withdrawn too quickly. Without these purchases, storage would have run out in mid-
6 March. Since storage rights decrease as the balance is drawn down, penalties would have
7 occurred throughout February and March due to abnormally low storage levels. Had the
8 winter been warmer than normal, gas would have been sold into the market at a potential
9 loss to keep balances under the maximums set by the interstate pipeline tariffs. If no
10 suppliers/aggregators choose EFBS, the situation would become much worse with only
11 6% Firm Transportation and 68% Storage.

12 **Q. PLEASE DESCRIBE ATTACHMENT JLK-3.**

13 A. Attachment JLK-3 shows the capacity portfolio since the 2006/2007 winter and
14 demonstrates that in recent years, the portfolio has been made up of much more storage
15 than firm transportation. It also shows that the Company would have very little firm
16 transportation if no supplier chooses EFBS.

17 **Q. HOW IS THE RELATIVE AMOUNT OF FIRM TRANSPORTATION AND**
18 **STORAGE SERVICES AFFECTED BY THE NUMBER OF SUPPLIERS**
19 **CHOOSING EFBS?**

20 A. Although Duke Energy Ohio's storage contracts are not released to suppliers choosing
21 EFBS, a portion of the withdrawal rights are required to meet the obligation of providing
22 this service. Since these withdrawal rights are no longer available to provide service to
23 GCR customers, additional firm transportation must be purchased to assure that the

1 Company can still meet the design peak day. So if more suppliers choose EFBS, there is
2 less storage and more firm transportation to meet the needs of GCR customers. If fewer,
3 or no suppliers choose EFBS, then the capacity portfolio for meeting GCR requirements
4 consists of more storage and less firm transportation.

5 **Q. PLEASE EXPLAIN HOW THE RELATIVE AMOUNT OF FIRM**
6 **TRANSPORTATION AND STORAGE SERVICE AFFECTS THE COMPANY'S**
7 **ABILITY TO MANAGE STORAGE BALANCES.**

8 A. In order to withdrawal gas from storage, the Company delivers less supply than the
9 forecasted requirements for that day. To inject, the Company would deliver more than
10 the forecast. If the Company needs to withdraw 100,000 dth, it needs to under deliver by
11 that amount. However, if the Company's portfolio is made up of mostly storage, with
12 only 20,000 dth of firm transportation it is not possible to under deliver 100,000 dth.
13 Without the ability to over or under deliver gas to the city gate, the amount of storage
14 withdrawn or injected becomes a function of weather only, and the Company has no way
15 to manage the storage balances without buying or selling gas in the spot market.

16 **Q. WHAT HAS DUKE ENERGY OHIO DONE TO CORRECT THIS SITUATION?**

17 A. The Company filed this Application in order to bring the problem to the attention of the
18 Commission and to assist the Commission in finding a solution.

19 **Q. PLEASE DISCUSS SOME OF THE ALTERNATIVE SOLUTIONS TO THE**
20 **PROBLEM.**

21 A. The Company has studied a number of different possible solutions and finds that all but
22 one fall short. The Company considered purchasing excess firm transportation, de-
23 contracting storage services, managing storage balances through manipulating the TSQ,

1 revising the rates for FBS, and making EFBS mandatory for suppliers with a Maximum
2 Daily Quantity (MDQ) over a certain level.

3 **Q. PLEASE EXPLAIN WHETHER PURCHASING EXCESS FIRM**
4 **TRANSPORTATION WOULD RESOLVE THE PROBLEM.**

5 **A.** Purchasing excess capacity, in order to manage storage, could help in colder than normal
6 winters; however, the excess capacity would result in additional costs that would be
7 passed on to customers. In addition, this alternative would not help in warmer than
8 normal winters and could result in gas being sold into the market at a potential loss. It
9 could also result in the gas being confiscated by the storage provider.

10 **Q. PLEASE DESCRIBE AND EXPLAIN ATTACHMENT JLK-4.**

11 **A.** Attachment JLK-4 is provided to show the storage activity in Columbia Gulf Firm
12 Storage Service during a warmer than normal winter (2011/2012) if no supplier had
13 chosen EFBS. Attachment JLK-4 demonstrates that the Company would not be able to
14 draw the storage down to the level required by Columbia's tariff. This could have
15 resulted in approximately 1 million dth of excess gas in storage by the end of the winter
16 that would need to be sold, "parked" or confiscated, with potential costs ranging from
17 \$0.2 million to \$4.0 million.

18 **Q. WOULD DECONTRACTING STORAGE SERVICES WITH INTERSTATE**
19 **PIPELINES BE A VIABLE ALTERNATIVE?**

20 **A.** The Company's current contract with Texas Gas Transmission will not expire until 2018
21 and its contracts with Columbia Gas will not expire until 2020. However, even if the
22 Company could terminate those contracts early through agreements with the pipelines or
23 capacity release, the current levels of storage rights are required to manage daily

balancing for the entire system, not just the GCR customer's load. If the Company were to reduce storage contracts by 50%, this would result in a capacity portfolio proportionately similar to the capacity portfolio in 2007, but could also result in large penalties from the pipeline.

Q. PLEASE DESCRIBE AND EXPLAIN ATTACHMENT JLK-5.

A. Attachment JLK-5 is identical to Attachment JLK-2, except it shows storage rights reduced by 50%. Attachment JLK-5 demonstrates that there could be multiple occurrences of penalties throughout the winter under this proposed scenario. Had the Company reduced storage during the winter of 2013/2014, the Company would have incurred penalties of approximately \$24 million.

Q. COULD STORAGE BE MANAGED EFFECTIVELY THROUGH ARTIFICIALLY INCREASING OR DECREASING THE TSQ?

A. A third option might be to manage storage through the TSQ. Under this scenario, the Company could require suppliers/aggregators to deliver less than the TSQ in the winter and more than the TSQ in the summer to manage storage balances. However, this would give the suppliers any advantage of the winter/summer price differential without requiring them to pay the full cost of storage, causing a subsidy between choice customers and GCR customers.

Q. COULD INCREASING THE RATE FOR FBS RESULT IN ENOUGH SUPPLIERS VOLUNTARILY CHOOSING EFBS?

If the cost of FBS was closer to the cost of EFBS, more suppliers/aggregators might voluntarily choose EFBS. However, this would increase the cost to suppliers/aggregators that chose FBS with no corresponding benefit. While this option might make it more

1 likely that suppliers would choose EFBS, it could not guarantee that enough
2 suppliers/aggregators would choose EFBS to alleviate the problem with managing
3 storage.

4 **Q. WHAT IS THE COMPANY'S PROPOSED SOLUTION TO EFFICIENTLY**
5 **MANAGE STORAGE AND ENSURE THAT CUSTOMERS ARE NOT PAYING**
6 **MORE THAN IS NECESSARY AND SUPPLIERS ARE TREATED**
7 **EQUITABLY?**

8 A. The Company proposed in this case to change the tariffs such that suppliers/aggregators
9 with a MDQ above 20,000 dth/day be required to take service under the EFBS tariff.
10 This would return the allocation of capacity to pre-2007 levels.

11 **Q. PLEASE DESCRIBE AND EXPLAIN ATTACHMENT JLK-6.**

12 A. Attachment JLK-6 is similar to Attachment JLK-3, but is provided to show the addition
13 to the capacity portfolio under different thresholds for mandatory EFBS. Attachment
14 JLK-6 demonstrates that Duke Energy Ohio can achieve the desired allocation of Firm
15 Transportation and Storage with a threshold capacity of 20,000 dth/day MDQ for
16 suppliers/aggregators. Attachment JLK-6 also shows that lowering the MDQ threshold
17 makes very little difference to the capacity portfolio for meeting the peak design day.

18 **Q. PLEASE EXPLAIN WHY DUKE ENERGY OHIO IS RECOMMENDING A**
19 **CHANGE TO ITS FBS AND EFBS TARIFFS.**

20 A. This change that the Company is proposing results in an equitable sharing of the full cost
21 of providing balancing service between choice and GCR customers. The 20,000 dth/day
22 threshold is the highest threshold possible where the Company is able to achieve the
23 required changes to the capacity portfolio. Additionally, this proposal minimizes the

1 effect on suppliers/aggregators, and mitigates a barrier to entry for smaller
2 supplier/aggregators that may not have the resources to adequately manage an EFBS
3 bank. As a result of its analysis and consideration of these various alternatives, Duke
4 Energy Ohio recommends its proposal to the Commission as the best alternative.

5 **Q. IS THERE A MECHANISM PROPOSED TO RETURN SUPPLIERS TO FBS IF**
6 **THEIR MDQ DROPS BELOW THE THRESHOLD DURING THE YEAR?**

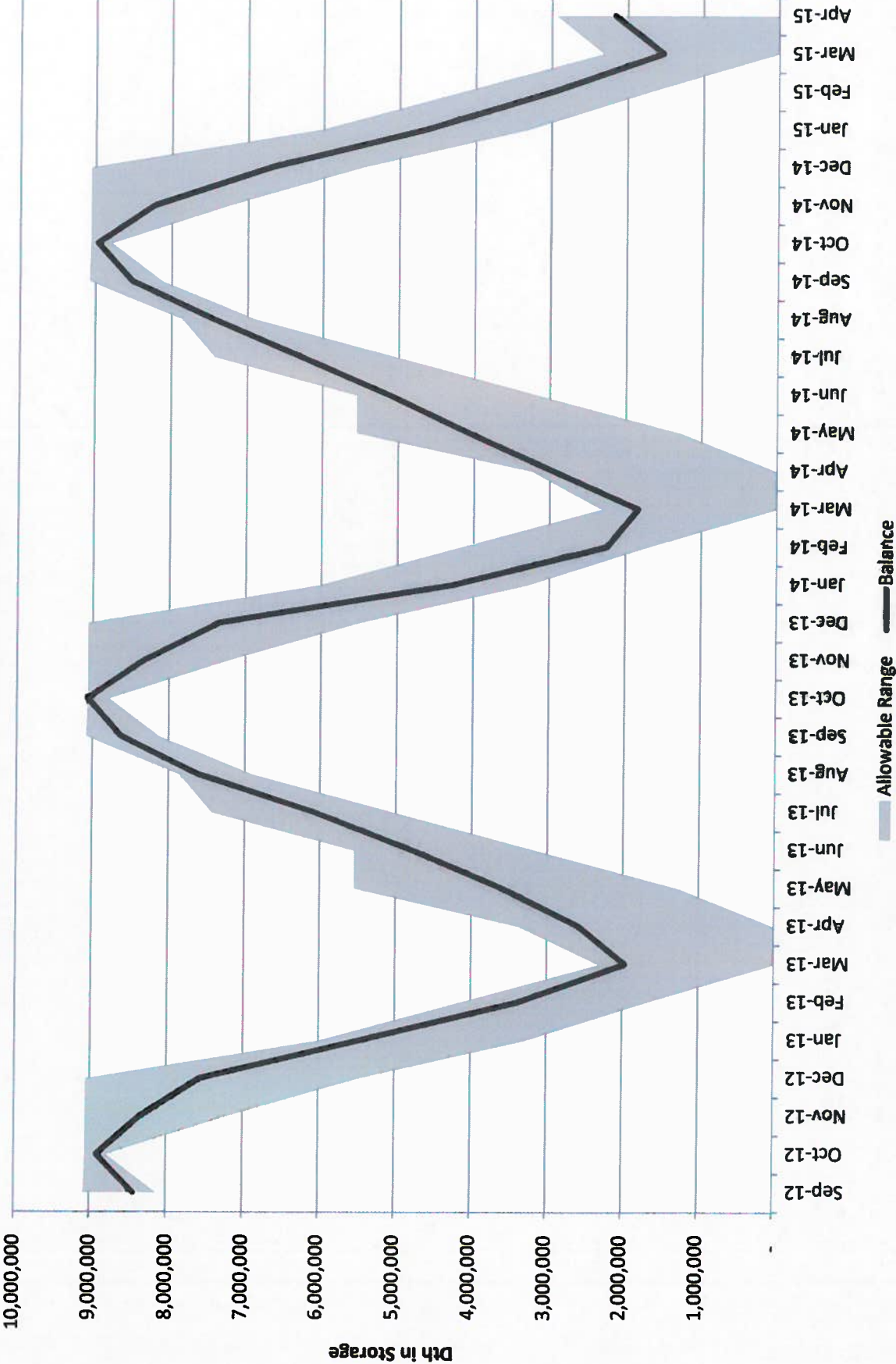
7 **A.** For EFBS to work effectively, it needs to be in place for an entire injection/withdrawal
8 cycle, which is traditionally April 1 through March 31 of the following year. Although
9 there is a mechanism within the Rider EFBS to adjust the amount of banking rights as a
10 supplier's program grows or decreases, returning suppliers to FBS after they have built
11 up a bank raises issues around what happens to that bank. In addition, if the program was
12 set up to return suppliers to FBS if their MDQ drops below the threshold during the year,
13 then the suppliers should also be required to switch to EFBS if their program goes over
14 the threshold during the year. Therefore, the Company proposes that suppliers remain
15 with either FBS or EFBS for the entire injection/withdrawal cycle.

III. CONCLUSION

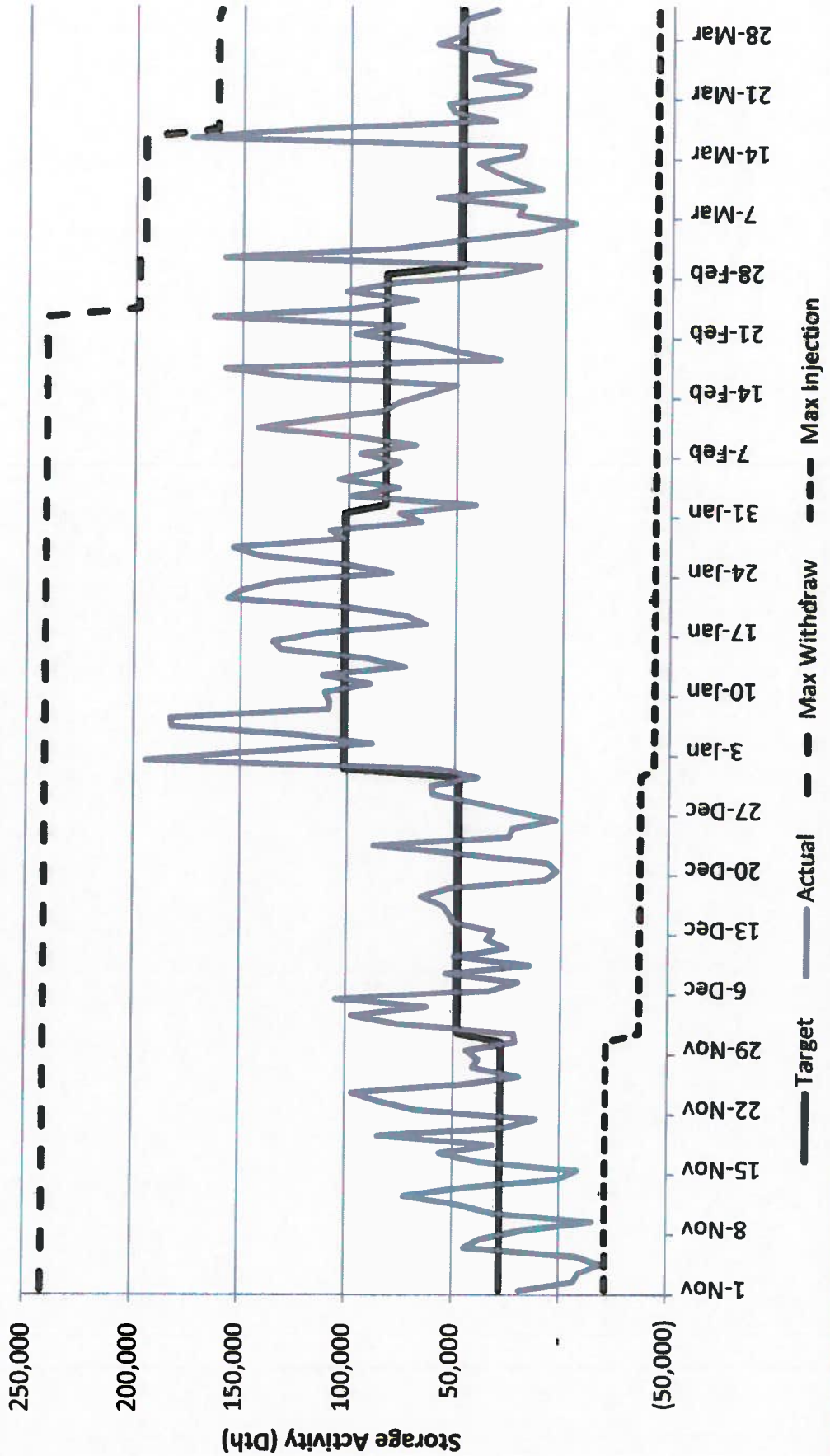
16 **Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?**

17 **A.** Yes.

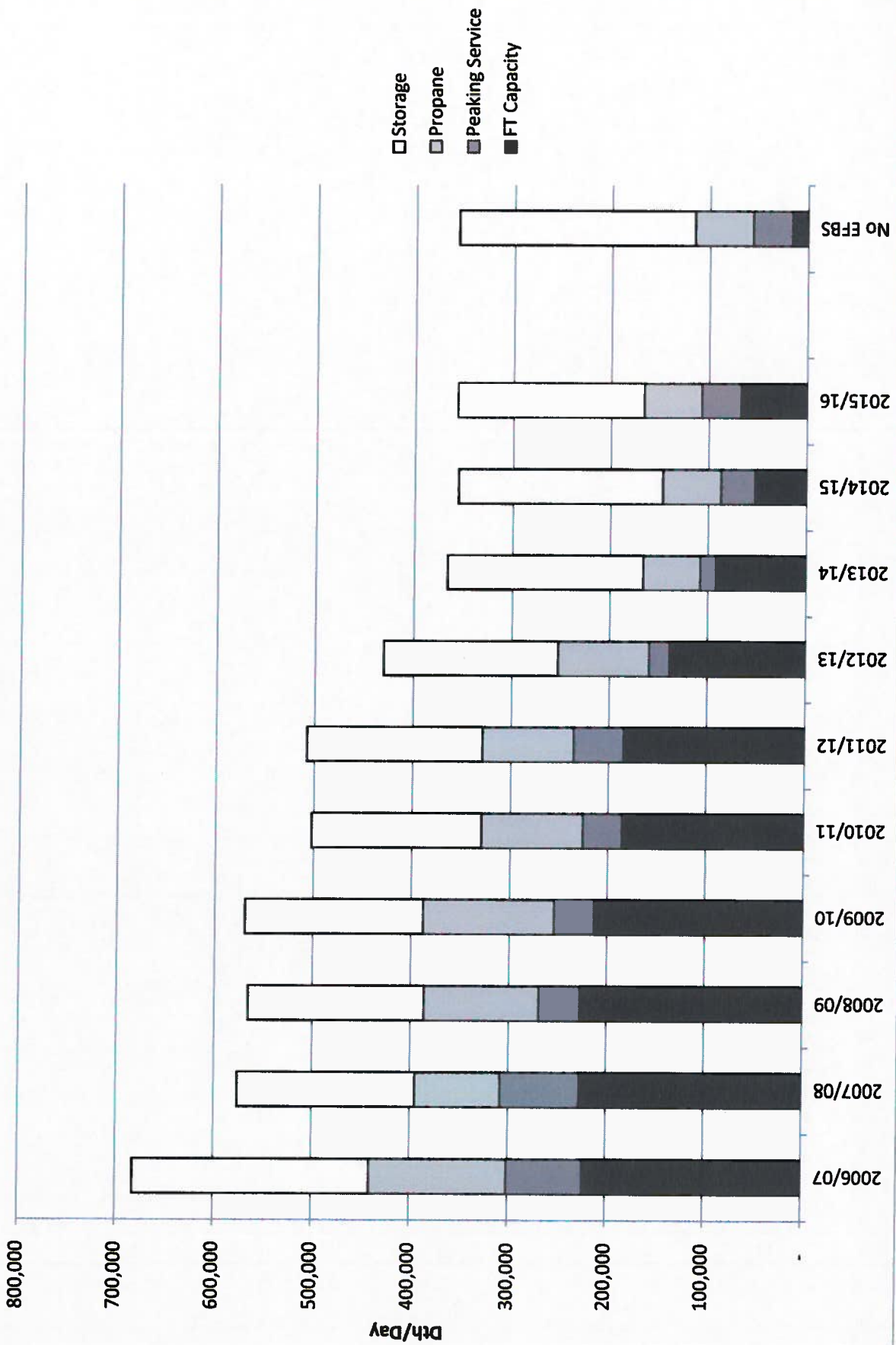
Duke Energy Ohio Storage Activity on Columbia Gas FSS



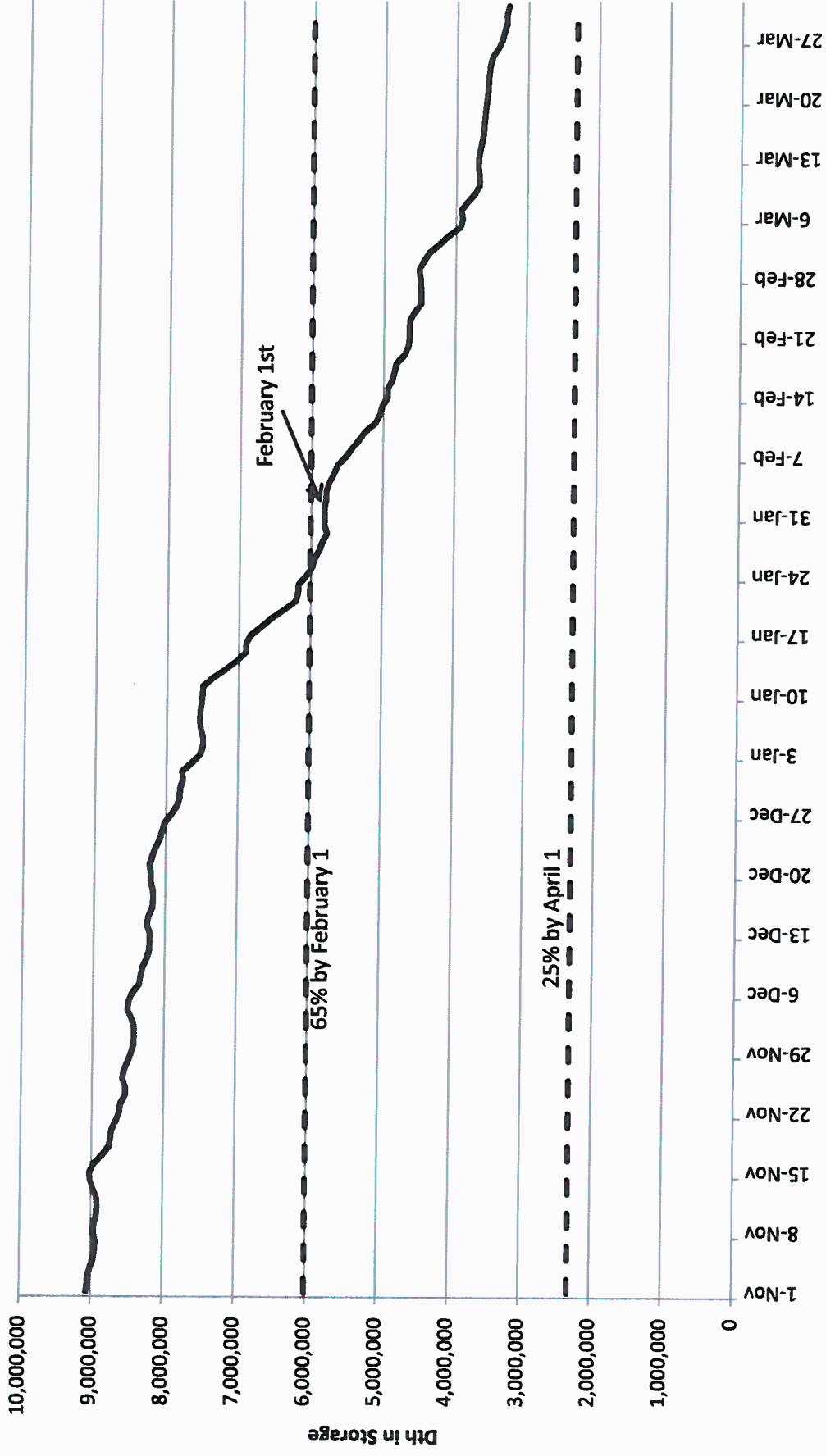
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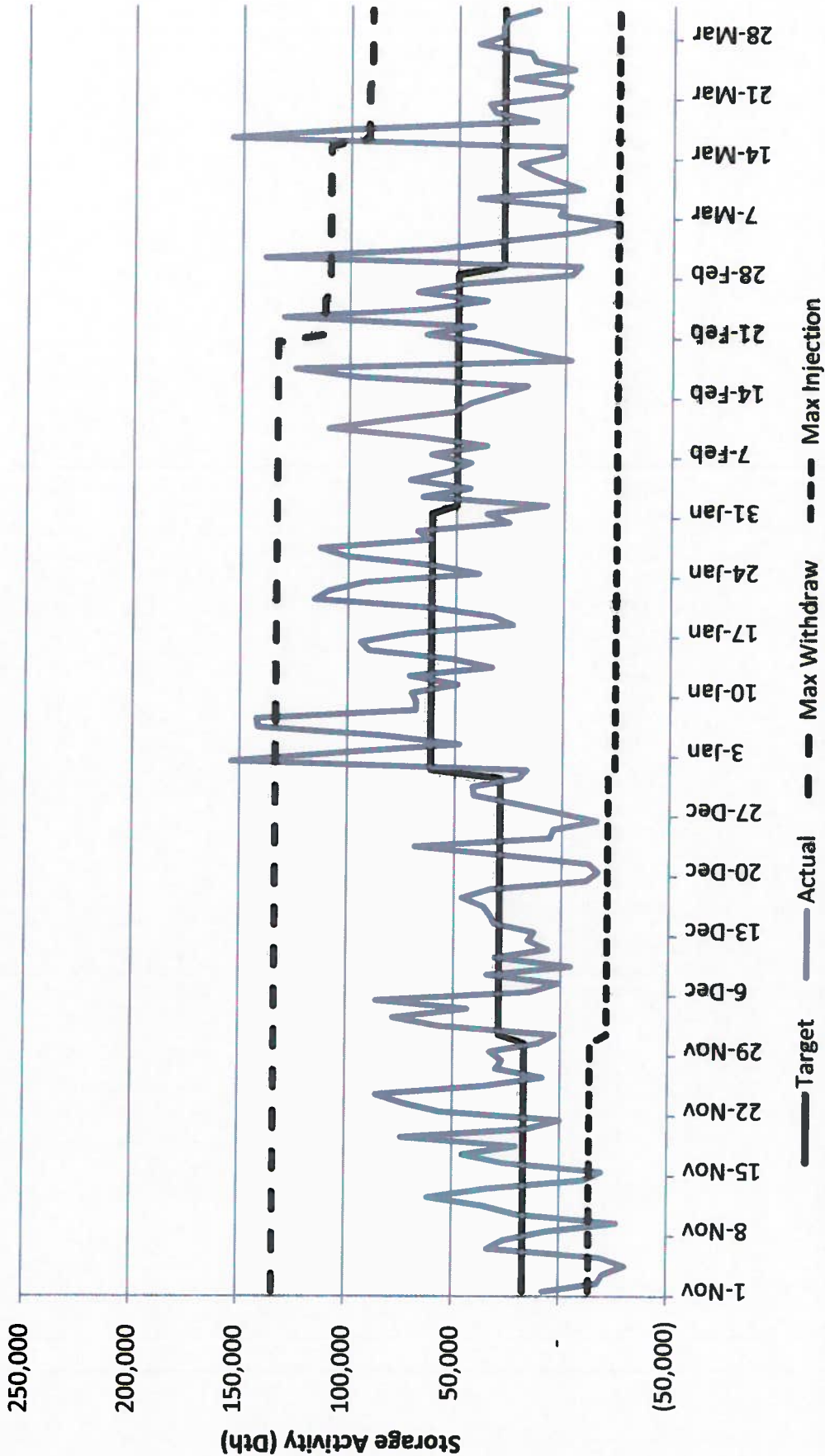
Duke Energy Ohio Capacity for GCR Customers



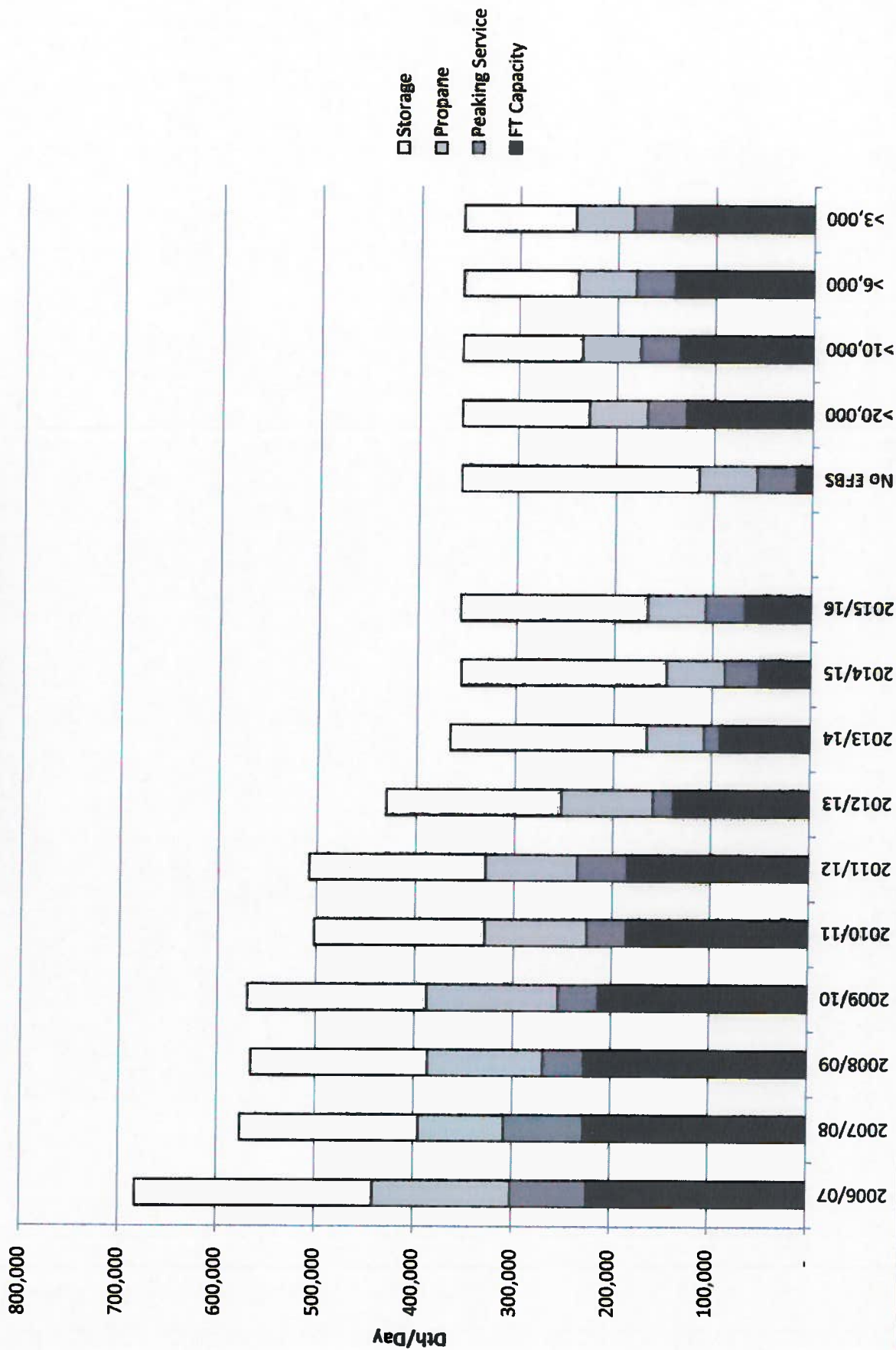
Duke Energy Ohio Columbia Firm Storage Service Balance Estimated Warm Winter with No EFBS



Duke Energy Ohio Storage Activity under Reduced Contracts Winter 2013/14



Duke Energy Ohio Capacity for GCR Customers



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Summary: Testimony Direct Testimony of Jeff L. Kern on Behalf of Duke Energy Ohio, Inc. electronically filed by Dianne Kuhnell on behalf of Duke Energy Ohio, Inc. and Spiller, Amy B. and Watts, Elizabeth H.