

MEMORANDUM

TO: Rhode Island Public Utilities Commission

FROM: Bruce R. Oliver, Revilo Hill Associates, on behalf of the Division of Public Utilities and Carriers

DATE: March 19, 2014

SUBJECT: Docket 4436; Review of National Grid's Request for Adjustment of its GCR Charges for Effect April 1, 2014.

This memorandum presents the assessments of Revilo Hill Associates, Inc. of National Grid's proposal for revision of its currently effective Gas Cost Recovery ("GCR") rates. As the Division has had limited time for discovery and analysis with respect to the details of this National Grid request, this memorandum draws no final conclusions regarding the reasonableness of the actual costs that the Company reports for the first three months of its current GCR year (i.e., November 2013 through January 2014). Rather, the focus of this memo will be on: (1) the reasonableness of the GCR surcharge that National Grid requests; (2) the factors contributing to the magnitude of the current projected GCR under-recovery balance; and (3) issues relating to the increases in gas costs that National Grid has experienced that warrant further consideration prior to the filing of the Company's next annual GCR rate filing.¹

SUMMARY

National Grid's request for the addition of a surcharge to its GCR charges for the remainder of its current GCR year appears to be reasonable. Although the proposed surcharge will have noticeable impacts on customers' bills, the Company's proposal constitutes a necessary step toward limiting the magnitude of gas cost under-recoveries and reducing the deferred gas cost balance that must be carried into National Grid's 2014-15 GCR year. Limiting the size of the Company's projected deferred gas cost balance serves the interests of both National Grid and its firm gas sales service customers, particularly in the face of the potential for further gas cost increases over the coming months. Constraints on the availability of interstate natural gas pipeline capacity to serve New England are likely to continue to have a significant impacts on spot market natural gas prices during periods of extreme winter weather over at least

¹ On March 10, 2014 National Grid filed a document with the Commission titled "Gas Long-Range Resource Plan for the Forecast Period 2013/14 to 2022-23." The content of that report is relevant to considerations regarding National Grid's gas cost this winter and Commission policies for addressing the potential that similar cost increases could be experienced in subsequent winters. However, due to time limitations, the finding of that report and the content of the analyses contained therein are not addressed in this memorandum.

the next two to three winters (i.e., until significant additional pipeline capacity into New England can be planned and constructed), and during that period further steps may be required to limit the Company's reliance on daily gas purchases at greatly elevated prices during winter months. Furthermore, review of the Company's gas transportation service terms and conditions, including the terms and conditions under which marketers deliver gas to National Grid, may be warranted to better protect existing firm gas sales service customers from the provision of unintended gas cost subsidies to other natural gas users.

BACKGROUND

On February 14, 2014, National Grid submitted a request to the Commission for revision of its GCR rates for the remainder of the current GCR period (April 1, 2014 through October 31, 2014). Due to extreme cold weather and a shortage of pipeline capacity in New England, National Grid has found that its actual GCR costs for the first three months of the winter of 2013-14 have significantly exceeded its expectations. As a result, the Company now projects an under-recovery of gas supply costs for the current GCR year (i.e., November 1, 2013 through October 31, 2014) of **\$34.5 million**. National Grid witness Leary indicates at page 3 of 7 of her February 14, 2014 testimony that projected under-recovery equates to approximately 19% of the Company's total annual gas costs.

To offset a portion of that projected under-recovery balance, National Grid requests approval of a GCR surcharge of \$0.2582 per therm that would apply to all therms of gas used for all firm gas sales service customers for the period April 1, 2014 through October 31, 2014. The requested surcharge is designed to recover an additional \$17.5 million of gas costs over the April 1, 2014 through October 31, 2014 period. That equates to about 50.7% of the Company's projected October 31, 2014 under-recovery balance at the time of its February 14, 2014 filing. Attachment AEL-1 to witness Leary's February 14, 2014 testimony indicates that the proposed surcharge represents a 39% increase over the currently effective GCR charges for "Low Load" factor customers. It also represents a 40.5% increase in GCR charges for "High Load" factor customers.

The impacts of this proposed increase in GCR charges to recover only a little over half of the projected October 31, 2014 deferred balance are significant. For the average residential heating customer, the proposed GCR surcharges are estimated to increase National Grid's total charges for gas service by **16.3%** over the April 1, 2014 through October 31, 2014 (17.2% for low-income residential heating customers). If the surcharge is approved as proposed, overall residential heating customer bill impacts for the April 1, 2014 through October 31, 2014 period would range from 14.5% to 18.3%. Non-heating residential customers would experience bill increases between 9.55% and 14.4%. Witness Leary's Attachment AEL-4, pages 4 of 5 and 5 of 5, also indicate that Commercial and Industrial bill impacts resulting from the proposed GCR surcharge would range from 21.2% to 31.7%.

ANALYSIS

1. Reasonableness of Proposed Surcharge

a. Overall Costs

Although the impacts of National Grid's proposed GCR surcharge are significant, we anticipate that additional cold weather experienced since the end of January 2014 has most likely added substantial additional costs to the Company's projected GCR under-recovery. In that context, National Grid's request for recovery of only half of its projected \$34.5 million deferred gas cost balance appears conservative. Any effort to reduce the amount collected through the proposed surcharge will likely to lead to larger gas cost increases in the Company's next GCR filing. As explained below, the deferral of roughly half the Company's projected deferred gas cost balance (at the time of the Company's February 14, 2014 filing), coupled with other anticipated gas cost increases, can be anticipated to yield rate increases in National Grid's next annual GCR filing that are similar in magnitude to the increase the Company's present proposal for the remainder of the current GCR year. Still, the Commission should be cognizant of the fact that any increase in GCR charges at this time will further intensify the budgetary pressures that many customers have already experienced as a result of a colder than normal winter heating season.

b. Reasonableness of Surcharge Structure

National Grid has proposed a single uniform surcharge for all classes for firm gas sales service customers. Although the Company's current GCR charges are differentiated for "High Load" factor and "Low Load" factor customer groups, the proposed surcharge is not differentiated. National Grid rationalizes that it's proposed uniform treatment of high load factor and low load factor customers since the cost increases are found primarily, if not exclusively, in its variable costs of gas supply. However, National Grid's increases in gas costs this winter are clearly a function of peaking-related fluctuations in gas demand, and as such, those increases would appear to be more heavily attributable to the requirements of "Low Load" factor gas users. On the other hand, since April through October gas use for any class does not contribute to peak gas supply requirements the Company's proposal for treating "High Load" factor and "Low Load" factor customer groups in a uniform manner for the remainder of the current GCR year appears reasonable.

2. Factors Affecting Future Natural Gas Prices

a. Drivers of this Winter's Gas Cost Increases

Key drivers of the increases in gas costs that National Grid has experienced are (1) increased daily spot market prices for natural gas and (2) increased basis prices for unanticipated upward fluctuations in natural gas delivery requirements. As a result of those factors, prices for incremental volumes of natural gas during December 2013 and

January 2014 were well above normal expectations. Moreover, similar price increases have continued throughout most of February 2014 and even well into March 2014. The magnitude of the Company's overall increase in gas costs was further amplified by the fact that the incremental volumes purchased in short-term markets to meet demands under colder than normal weather conditions could only be obtained at greatly increased prices. Thus, the likelihood is great that the Company's projected deferred gas cost balance has continued to grow over the last month and a half (i.e., since the end of January 2014).

Attachment EDA-3(e), page 5 of 5, to witness Arangio's February 14, 2014 testimony, graphically illustrates the increases in daily natural gas prices that were experienced over the first three months of the winter of 2013-14. The increases in daily prices shown in that presentation are dramatic. Daily natural gas prices for National Grid from its three largest pipelines soared to record levels, reaching highs in the \$70 to \$80 per dekatherm range. Just as importantly daily prices for gas on each of the Company's three major pipelines (i.e., Tennessee, Algonquin, and Texas Eastern) were sustained at high levels for periods of 10 days or longer three times within the months of December 2013 and January 2014. During January 2014 the average daily price for spot deliveries of natural gas from each of the Company's three major pipelines was in excess of **\$20.00** per dekatherm. In prior winters a price in excess of \$20.00 per dekatherm was considered an extreme upward fluctuation, this year it represents the average daily price.

These problems are driven by a shortage of interstate gas pipeline capacity to serve demands under extreme winter weather conditions, and that shortage of interstate pipeline capacity into the New England region is primarily attributable to the unwillingness of operators of gas-fired electric generation to make the long-term commitments necessary to justify the building of additional interstate gas pipeline capacity. As a result, during periods of extreme cold weather, when space heating demands are already high and interstate gas pipeline capacity is at or near full utilization, electric generators superimpose large incremental demands in a market with limited available capacity. This imbalance in supply and demand pushes daily natural gas prices sharply higher in search of a new supply-demand balance. Increased reliance on natural-gas fired generation as a marginal source of supply on cold days has magnified the amount of incremental electric generation demand for natural gas on cold days and that, in turn, has amplified the sensitivity of daily natural gas prices to cold weather.

b. Other Factors Affecting National Grid's Natural Gas Costs This Winter

National Grid's response to Division Data Request 1-8, issued on February 17, 2014, identifies two areas that may warrant further action by the Company and the Commission prior to the National Grid's submission of its next annual filing. First, the Company's response to that request indicates that marketers may be using National Grid's current policies in a manner that inappropriately places additional costs on the National Grid and its firm gas sales service customers. Second, the Company has had

customers with and without assignments of pipeline and storage capacity seek to return to firm gas supply service. This winter's experience suggests that a review of the service and pricing policies applicable to such customers is in need of review and possible revision to ensure that the Company's policies are fair, reasonable, and consistent with protection of the interests of existing sales service customers for whom National Grid plans its procurement of gas supply resources.

The Company's February 14, 2014 testimony and attachments also suggest that the winter heating season requirements of Residential Non-Heating customers have grown at a disproportionately high rate. Even though the numbers of residential non-heating accounts has continued to decline,² a comparison of actual usage for the months of December 2013 and January 2014 indicates that actual sales volumes for residential non-heating service for those months was nearly **36%** above the Company's projections in its September 2013 annual filing in this docket. Those unanticipated winter season service requirements added noticeably to the Company's need for additional peaking gas supplies in those months, and thereby contributed to the Company's need for purchases of expensive supplemental gas supplies. Thus, the changes in the usage patterns of residential non-heating customers are having an adverse impact on National Grid's gas supply planning and the factors contributing to those changes need to be better understood such that rates and policies can be better designed to reflect the actual nature of the service requirements that class can be expected to impose. In addition, the changes in residential non-heating customers' usage patterns have reached the point at which residential non-heating service may no longer be appropriately classified as a "High Load" factor class for GCR pricing purposes. Therefore, a timely review of the inclusion residential non-heating service among National Grid's "High Load" factor classes is needed.

c. Natural Gas Price Outlook

The gas price problems that surfaced this winter will not be fully eliminated by return of warmer weather. Upward pressures on daily natural gas prices have not diminished since the end of January 2014. Rather, for the vast majority of days in February 2014 and most of the first two weeks of March 2014, daily natural gas prices on two of National Grid's three major pipelines (i.e., Algonquin and Tennessee) have remained at elevated levels. Moreover, daily natural gas prices in early March 2014 exceeded the highest daily prices reported any time during the month of February 2014 even though average daily spot market prices in February for the Algonquin City Gates and Tennessee Zone 6 were once again in excess of \$20.00 per dekatherm.

The continuation of high demands and high daily prices for spot natural gas purchases has three important implications looking forward. First, as previously noted, it contributes further to the Company's projected deferred gas cost balance at the end of the GCR year and increases the amount of cost that must be rolled forward for recovery in the Company's next GCR period. Second, it increases pressure on LDC's and buyers of competitive natural gas supplies to do more to lock-in gas prices and

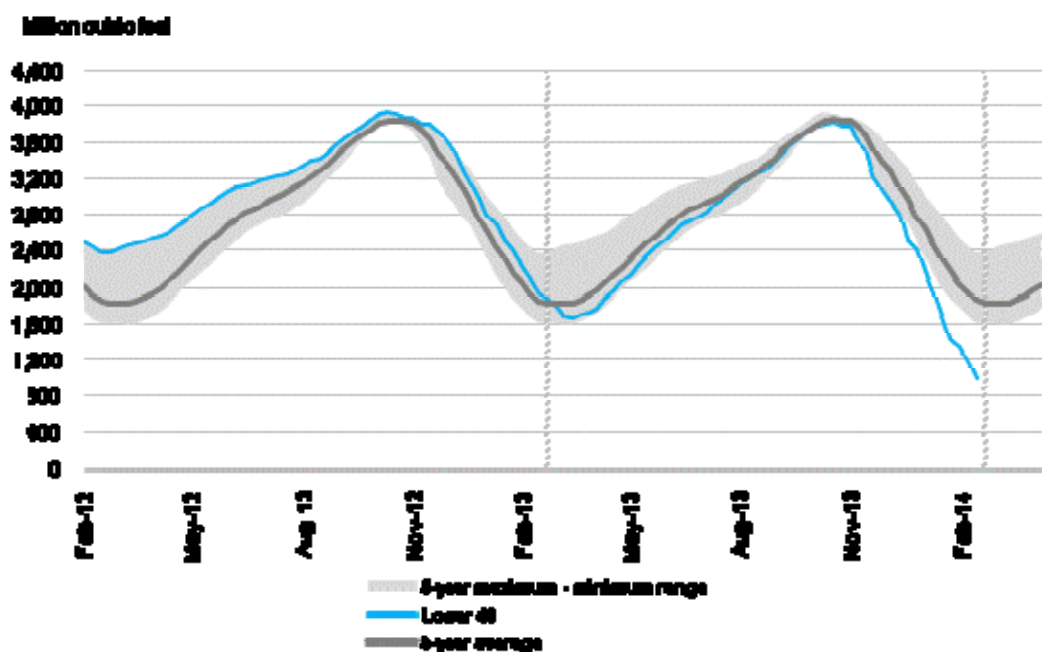
² See National Grid's response to Division Data Request 1-5, part c.

interstate gas pipeline capacity, where possible, prior to the start of the next winter season. That pressure will, in turn, tend to increase basis charges for natural gas delivery points in New England, particularly the Algonquin City Gates and Tennessee Zone 6. Third, continuing high demands for natural gas this winter have led to a record draw down of U.S. natural gas storage inventories by the first week of March 2014, and suggests that the industry will require natural gas storage injections on average of about 100 Bcf per week over the Spring, Summer and early Fall months to rebuild severely depleted storage volumes for next winter. Those storage injection requirements will add to natural gas demand through the off-peak months, and that increased demand will tend to support higher market prices over the off-peak months than may have been previously anticipated.

Since electric generators have no requirements or incentives to undertake long-term commitments to pipeline capacity, much of the increased demand for daily supplies of natural gas on cold days is attributable to electric generators, and their demands have a substantial impact on gas pricing on cold days. Thus, daily purchases of natural gas by electric generators amplify the magnitude of natural gas price increases on days when National Grid also requires additional supplies to meet demands in excess of planned pipeline gas supplies.

The unusually large withdrawals from natural gas storage inventories experienced this winter are reflected in U.S. Energy Information Administration (“EIA”) weekly Storage Inventory Reports. The graph displays the most recently weekly assessment of U.S. natural gas inventories. By the first week of March 2014 natural gas storage inventories for the entire U.S. were at their lowest level in more than a decade with more cold weather withdrawals of gas yet to be reflected.

Working gas in underground storage compared with the 5-year maximum and minimum



Source: U.S. Energy Information Administration

As of March 7, 2014, U.S. natural gas inventories had fallen to 1,001 Bcf from a peak at the start of the winter season of more than 3,800 Bcf. In terms of Bcf of gas withdrawals, this winter's withdrawals appear to represent the largest ever reported for a winter season and the winter is not yet completed. This implies that throughout the Spring, Summer and early Fall of 2014, natural gas demand will need to be above normal expectations (regardless of weather) to provide re-fill of these severely depleted inventories. That will tend to maintain natural gas prices throughout the remainder of the current GCR year at levels above those previously anticipated. Thus, we can anticipate both further actual gas cost increases this year and higher gas costs in next year's GCR to reflect increased costs for gas price hedging transactions as well as increased costs for gas injected into storage.

3. Issues that Warrant Further Consideration Prior to National Grid's Next GCR Filing

a. Review of Gas Cost Hedging Program

Based on the National Grid's experience this winter, the adequacy of the Company's current gas price hedging program may warrant further review. The evidence from this winter suggests that the costs of being short on price-locked natural gas volumes appear to have grown relative to the costs of having excess price-lock gas supply volumes. That suggests National Grid may need to increase the percentages of its forecasted monthly gas supply requirements for which hedging is required.

Additional Issues that I believe warrant further review include:

- b. Other Means of Limiting Requirements for Daily Spot Purchases of Natural Gas During Periods of Extreme Weather.**
- c. Revision of the Terms Under Which Gas Marketers Deliver Gas to National Grid.**
- d. Review of Pricing for Customers Who Return to Gas Supply Service Provided by National Grid.**
- e. Non-Firm Customer Compliance with Service Interruption Requests and the Adequacy of Penalties for Non-Compliance Given Current Market Conditions.**

Time constraints limit further development of these issues in this memorandum, but I believe these warrant further consideration and will discuss these issues with the Company prior to the next GCR filing.