MEMORANDUM

TO: Public Utilities Commission

FROM: Bruce R. Oliver
Revilo Hill Associates, Inc.

DATE: September 16, 2015

SUBJECT: National Grid 2015 Market Area Hedge Proposal

On August 18, 2015, National Grid (hereinafter "National Grid" or "the Company") submitted testimony to support its Market Area Hedge Proposal for the winter of 2015-16. This memorandum reviews that proposal and offers an assessment of its merits.

BACKGROUND

During the winter of 2013-14 the New England area experience unusually cold weather. Due to the limited amount of interstate gas pipeline capacity presently available to the New England region, that extreme weather resulted in high demand for gas in the local market area for substantial portions of the months of January, February, and March of 2014. Those unexpectedly high demands, in turn, generated unusually high prices for daily purchases of gas supplies in the local market area as significant incremental gas supply demands vied for limited amounts of available gas supply in local markets.

In the context of weather uncertainties, the Company cannot economically hedge all of its requirements for incremental gas purchases during periods of extremely cold weather. Thus, it must rely in part on daily purchases of gas supplies in the local market area (i.e., "swing supplies") to meet a portion of its gas supply requirements during periods of extremely cold winter weather. However, the timing and magnitude of weather-dependent requirements for "swing supplies" cannot be accurately forecasted. Therefore, any effort to lock-in pricing for such requirements involves a degree of risk that actual daily requirements will not match the volumes of gas for which hedges are established.

The volumes of daily gas purchases at unexpectedly high prices during the months of January through March of 2014 did not constitute a large percentage of National Grid's total gas supply requirements for the winter of 2013-14, but the prices paid for such volumes averaged more than two-and-half times the Company's forecasted average

commodity cost of gas. As a result, daily purchases of gas in the local market area contributed significantly to the Company's under-collection of its variable gas supply costs and to its reporting of unusually high deferred gas cost balances for the winter of 2013-14.

As part of its review of the Company's request for an interim adjustment to its GCR charges during the winter of 2013-14, the Division and the Company discussed the potential that more might be done to limit National Grid's exposure to high daily purchases prices in future winters. National Grid subsequently investigated alternatives for reducing such exposure and reviewed the results of its analyses with the Division. Based on those results, National Grid incorporated a proposed a plan for hedging local market area basis costs for certain pipeline supply contracts in its 2014 GCR filing in Docket No. 4520 in September 2014. Although the proposed hedging of basis costs for local market gas purchases added approximately $667,000 to National Grid's forecasted gas costs, it reduced the estimated exposure of Rhode Island's Firm Gas Sales Service customers to increased costs under severe weather conditions by more $10 million. The Division assessed that the added cost of the proposed hedges was justified under current market conditions by the greater gas cost stability that could be achieved by limiting exposure to the potential for higher priced daily purchases of "swing supplies."

LAST YEAR'S LOCAL MARKET AREA HEDGING RESULTS

For the winter of 2014-15 National Grid developed a one-year plan for hedging local market area basis costs for portions of three gas supply pipeline contracts. Those hedging arrangements addressed:

- 3,000 Dth per day of Algonquin service for December 2014, January 2015, and February 2015;

- 3,800 Dth per day of Transco Non-New York service for the months of January through March 2015; and

- 13,800 Dth per day of Tetco M3 service for January 2015 through March 2015.

Schedule SAM-1 which accompanies witness McCauley's August 18, 2015 testimony in Docket No. 4520 indicates that the hedges entered into for the winter of 2014-15 for Transco Non-New York service saved consumers $385,000. Similarly, the Company's hedges for Tetco M3 service for the winter of 2014-15 saved consumers over $950,000.

However, the basis price hedges for Algonquin service increased ratepayer costs by approximately $1.5 million.

The calculations presented in Schedule SAM-1 indicate that actual net cost to ratepayers of the Company's hedging of basis costs for local market gas purchases for the winter of 2014-15 was approximately $180,000. That compares to the estimated net cost of $667,000 that was included in National Grid's 2014-15 GCR costs. The savings generated from the hedges entered into for the winter of 2014-15 were not sufficient to fully offset the costs of those hedges. However, in my opinion, the $180,000 net cost for such hedges is small compared to the added costs to which the Company could have been exposed in the absence of the hedges entered into for last winter if more severe cold weather been experienced. Moreover, consistent with this Commission's preference for greater stability in GCR costs, the hedges entered into for the winter of 2014-15 served as an effective tool for mitigating the potential for large variations in gas costs for Rhode Island's Firm Gas Sales Service customers.

THE COMPANY'S PROPOSAL FOR THE WINTER OF 2015-16

For the coming winter season (i.e., November 2015 through March 2016), National Grid once again proposes a one-year plan to hedge basis costs of the same pipeline supply arrangements. It also recommends a mix of hedges by pipeline, location, and month that is comparable to that used last year for the winter of 2014-15. That is:

- 3,000 Dth per day of supplies purchased at Beverly, MA into the Algonquin Hubline capacity for the months of December 2014, January 2015, and February 2015;

- 3,800 Dth per day of Transco Non-New York service for the months of January through March 2015; and

- 13,800 Dth per day of Tetco M3 service for January 2015 through March 2015.

Witness McCauley's testimony explains that the Company's proposal mitigates risk associated with about 85% of local market area requirements under normal weather conditions. Under colder than normal weather conditions, the Company's plan is estimated to mitigate risk associated with about 57% of market area requirements and 34% of the price exposure for market area purchases.

EVALUATION AND RECOMMENDATION FOR THE WINTER OF 2015-16

The Company's analyses demonstrate that the chosen pipelines, locations, and volumes represent sound opportunities for cost-effective hedging of comparatively high load factor purchases. As shown in Schedules SAM-3 and SAM-4 attached to witness McCauley's August 18, 2015 testimony, the cost-to-risk ratios for the proposed hedging arrangements are quite favorable. However, as illustrated in Schedule SAM-5, hedging of additional Algonquin supplies and/or Tennessee (TGP) Zone 6 supplies is not assessed to be economic. Due to the lower load factors at which those supplies are expected to be utilized, the probability that hedged volumes for those sources of supply will not be utilized is greatly increased.

The Company's presentation of a second one-year plan is appropriate. The anticipated addition of the Algonquin Incremental Market (AIM) project capacity in November 2016, as well as anticipated changes in requirements for electric generators to either maintain greater on-site fuel inventories or obtain more firm access to interstate pipeline gas supply capacity, should at least partially mitigate the factors that have contributed most heavily to price volatility in local area markets as we move forward in time. Thus, the need for, and economics of, basis price hedges may diminish in future years, and continued annual re-evaluation of local market hedging plans is warranted.

Further, it is important to observe that Schedule SAM-2 which accompanies witness McCauley's August 18, 2015 testimony in this docket, indicates the anticipated costs of hedges for each of the pipelines and locations included in the Company's plan are expected to be lower for the winter of 2015-16 than for the prior year. Those reduced hedging costs serve to improve the cost-benefit ratios for those hedging activities. This is particularly important for purchases into the Algonquin Hubline at Beverly, MA. Based on actual results, the Algonquin hedges were the least economic of the local market hedges entered into by the Company last year. However, National Grid's forecasted 2015-16 costs of hedges for Algonquin are $1.26 million or 27% below the Company's actual 2014-15 Algonquin hedge costs. Overall, National Grid's forecasted hedging costs for the winter of 2014-15 are nearly $1.6 million below its actual hedge costs for the prior winter.

Based on the foregoing, I recommend that the Commission approve National Grid's proposed Market Area Hedging Plan for the winter of 2015-16.