Orr&Reno

June 2, 2015

Via Hand Delivery and Electronic Mail
Alexander F. Speidel, Esq.
Staff Attorney/Hearings Examiner
New Hampshire Public Utilities Commission
21 South Fruit Street
Concord, NH 03301

Re: IR 15-124 – Electric Distribution Utilities Investigation into Potential Approaches to Ameliorate Adverse Wholesale Electricity Market Conditions in New Hampshire

Dear Attorney Speidel:

On behalf of Tennessee Gas Pipeline Company, L.L.C. ("Tennessee"), in accordance with the protocol for submission of documents in the above-captioned docket enumerated in your emails dated May 14 and June 2, 2015, enclosed please find one hard copy of Tennessee's Initial Comments. We have also sent one electronic copy to your email address in PDF format.

Please note that in addition to Attorneys Douglas Patch and Susan Geiger of Orr & Reno, P.A., Tennessee is represented by the following Nixon Peabody and Kinder Morgan attorneys in this docket.

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Please contact me if there are any questions about this filing. Thank you for your assistance.

Very truly yours,

Douglas L. Patch

Enclosure

DLP/eac

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THE STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

IR 15-124

ELECTRIC DISTRIBUTION UTILITIES

Investigation into Potential Approaches to Ameliorate Adverse Wholesale Electricity Market Conditions in New Hampshire

Initial Comments of Tennessee Gas Pipeline Company, L.L.C.

June 2, 2015

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Table of Contents

I. Introduction 1

II. Executive Summary 2

III. Overview of the Northeast Energy Direct Project 4

IV. The Root Cause of the New England Energy Cost Problem 5

A. Increasing Proportion of Gas-Fired Power Generation in New England 5

B. Lack of Incentives for Longer-Term Contracting 6

C. Pipeline Capacity into New England is Highly Utilized 9

D. Relatively Higher Commodity Prices Associated with Alternatives to Natural Gas-fired Generation 9

E. Lack of Regional Natural Gas Production and Underground Storage 10

F. High Natural Gas Prices Directly Translate into High Wholesale Electric Market Prices 11

G. The Cost Burden on New England Energy Consumers 12

H. High Electric Costs Will Persist Without Additional Energy Infrastructure 14

V. New England's Energy Cost Problem Can Significantly Benefit from Additional Pipeline Capacity 17

A. Significant Pipeline Capacity Would Provide Substantial Economic Benefits to New England 17

B. A Policy Decision is Required to Achieve the Electric Market Benefits 19

C. There Are Net Benefits to New Hampshire Acting Unilaterally to Mitigate the High Energy Costs 20

D. The Commission Has the Legal Authority to Authorize New Hampshire EDCs to Contract for Pipeline Capacity and Recover the Associated Costs 23

VI. Benefits to Customers Should be Maximized 23

VII. The NED Project Will Provide Additional Benefits to New Hampshire 27

A. The NED Project Will Be Able to Serve New Gas-Fired Generation in New Hampshire 28

B. Opportunities for Expanded Natural Gas Service for Residential and Business Use 28

C. Opportunities for Expanded Use of Compressed Natural Gas ("CNG") 28

D. Uniquely, the NED Project Will Supply Other Interstate Pipeline Systems Serving New Hampshire 28

E. Employment and Tax Benefits of NED 29

F. The NED Project is Necessary For the Development of Renewable Generation Technologies . 29

G. Environmental Benefits 29

VIII. Conclusion 30

APPENDICES

APPENDIX A Tennessee's Responses to the Specific Issues Requested for Stakeholder Input

APPENDIX B Evaluation of the Commission's Legal Authority to Approve and Allow Cost Recovery of EDC proposals for Purchasing Natural Gas Pipeline Capacity

I. Introduction

Pursuant to the request by the Staff of the New Hampshire Public Utilities Commission ("Commission"), Tennessee Gas Pipeline Company, L.L.C. ("Tennessee") very much appreciates the opportunity to submit these comments regarding the preferred solution to resolve the high winter wholesale electricity prices that have been experienced by consumers in New Hampshire specifically, and across New England generally.

The current structure of the New England wholesale electric markets does not create financial conditions that are conducive for natural gas-fired generation to contract for firm natural gas pipeline capacity, and consequently, gas-fired generation has not typically contracted for pipeline capacity. Because gas-fired generation contracted in the wholesale markets is short-term in nature, gas-fired generators generally cannot demonstrate the creditworthiness required to support the long-term commitments to pipeline capacity contracts that are required for the expansion of pipeline facilities. Due to this lack of contracting by gas-fired generation, the interstate pipelines serving New England have not been sufficiently expanded to accommodate increasing natural gas demand for the generation of electricity, which has limited the ability of gas-fired generation to operate when the pipeline capacity is being utilized by those that do contract for it. The existing shortage of pipeline capacity to serve the demand from the electric generation sector, particularly during the winter, leads to higher natural gas prices, and in turn, higher electricity prices.

A change in the wholesale electric market rules to incentivize gas-fired generation to contract for firm pipeline capacity has not occurred and appears unlikely to occur. Accordingly, New Hampshire, along with other New England states, is considering how electric distribution companies ("EDCs"), which have the creditworthiness to support long-term capacity commitments to pipeline contracts, may contract for pipeline capacity that could be used to reliably fuel gas-fired generators. Tennessee fully supports New Hampshire EDCs contracting for pipeline capacity that would be made available to gas-fired generators and recovering the costs associated with those capacity contracts from its retail electric customers to help mitigate natural gas and electric prices in New Hampshire.

As described herein, numerous parties have demonstrated that additional pipeline capacity into New England will provide substantial benefits to the region through lower energy costs. Tennessee firmly believes that its proposed Northeast Energy Direct pipeline project ("NED" or the "Project") is an important and critical means of providing essential energy cost relief to both electric and natural gas consumers in New Hampshire. The Project will also provide greater reliability for both the natural gas and electric markets, as well as the opportunity for future natural gas growth within the state for customers that do not currently have access to natural gas. Therefore, the NED pipeline project is an essential and integral part of the preferred solution for resolving New Hampshire's and New England's volatile and high wholesale natural gas and electric prices.

Tennessee has retained Concentric Energy Advisors, Inc. ("Concentric"), a well-known and respected energy consulting firm focused solely on the North American energy industry, to provide assistance and expertise throughout this proceeding. Concentric has a significant level of experience with the New

England natural gas and electric markets, and has contributed its expertise in the preparation of these comments.

Attached as Appendix A to these comments are Tennessee's responses to the questions posed to stakeholders in this proceeding. Since Tennessee's comments herein go beyond the questions posed, Appendix A generally refers to specific portions of the comments as the response to the questions.

Appendix B contains an analysis of the legal authority of the Commission to approve cost recovery for EDC proposals for purchasing natural gas pipeline capacity.

II. Executive Summary

Tennessee's positions as reflected in its comments are summarized as follows:

- New Hampshire and New England are experiencing the highest electricity and natural gas prices in the continental United States, which can be mitigated or eliminated through contracting for and building additional pipeline capacity in the region.
- The ability to bring low-cost, abundant and environmentally clean natural gas to New Hampshire and New England will lower and stabilize energy costs for gas and electric customers and help stimulate economic growth, providing the opportunity for New Hampshire to benefit similarly to other regions of the U.S. where low-cost natural gas is transforming the economy.
- Natural gas is the environmentally cleanest fossil fuel, and new supplies of gas capacity will create the opportunity for residences and businesses to convert from oil and other fuels for heating and manufacturing to less expensive and cleaner natural gas.
- Natural gas-fired generation is a necessary backup source of generation to support the growth in renewable technologies such as wind and solar that have intermittent and non-dispatchable characteristics.
- It is imperative that policy intervention, such as that being considered by the Commission, allow New Hampshire EDCs to contract for pipeline capacity that can be used to transport fuel to gas-fired generators, particularly considering that a change in the wholesale electric market rules to incentivize gas-fired generation to contract for firm pipeline capacity has not occurred and appears unlikely to occur.
- The legal analysis of Tennessee's counsel indicates that the Commission has the legal authority to allow New Hampshire EDCs to contract for pipeline capacity and recover the associated costs from their retail electric customers to help mitigate natural gas and electric prices in New Hampshire. Tennessee fully supports the Commission making such authorizations.
- While it would be optimal for the New England states to take collective and timely action in order to facilitate the construction of incremental natural gas pipeline capacity into the region, time is of the essence to reduce costs to energy consumers.

- In the absence of a comprehensive agreement among the New England states, it is in New Hampshire's interest to also pursue, on an independent and parallel track, unilateral efforts to underpin incremental pipeline capacity into the region for the benefit of New Hampshire energy consumers.
    - New Hampshire utilities can achieve benefits for their energy customers by contracting for additional pipeline capacity, regardless of the actions of the other New England states.
    - If New Hampshire acts unilaterally, other New England states that do not contract for additional pipeline capacity will also receive the benefit of lower natural gas and electric costs, but such potential "free ridership" should not deter New Hampshire from pursuing an initiative to achieve electric savings for the customers in this State.
- New Hampshire should prioritize commitments to pipeline project(s), one of which must include Tennessee's NED project, that offer: scale, the direct connection to incremental gas supply, directly serve substantial natural gas-fired generation, and the ability to serve other regional pipelines with low cost natural gas, which will maximize the benefits to New Hampshire citizens in the form of lower energy costs. In either scenario (comprehensive action by New England states or a unilateral effort by New Hampshire), Tennessee's NED pipeline project is an essential and integral part of the preferred solution.
    - Currently, Tennessee directly serves a substantial portion of existing installed gas-fired generating capacity in New England that cannot be served by any other pipeline, and has the unique and critical ability to supply generation connected to other interstate pipelines.
    - The existing Tennessee pipeline is a high pressure transmission system, interconnecting in New England with Algonquin Gas Transmission ("Algonquin"), Iroquois Gas Transmission ("Iroquois"), Maritimes & Northeast Pipeline ("M&NP"), and Portland Natural Gas Transmission ("PNGTS") systems to serve natural gas demands throughout the region. A unique and important feature of the NED project is that it will enhance this interconnection flexibility of the existing Tennessee system such that Tennessee will be able to *deliver incremental natural gas supplies to all those pipeline systems* and related markets.
    - As a new path for gas into New England, the NED project will create a large bi-directional pipeline loop that will fundamentally improve natural gas flows, relieve existing bottlenecks, and enhance gas supply diversity and reliability for decades to come.
    - Combined, the existing Tennessee system and the proposed NED project are, among all pipeline systems serving New England, best situated and designed to serve the areas specifically identified by ISO New England where additional generation is required to replace substantial amounts of oil and coal-fired

generation retiring in the next few years without triggering electric transmission constraints.

- In addition to lowering energy costs, Tennessee's NED project uniquely provides a number of benefits specifically for New Hampshire:
  - the opportunity for expanded natural gas service for homes and businesses, allowing homeowners and businesses to convert from fuel oil for heating and manufacturing to much cleaner, less expensive, and domestically sourced natural gas;
  - the opportunity for expanded use of compressed natural gas for those unable to receive natural gas utility service;
  - employment and tax benefits to the State, both during construction and through the life of the pipeline infrastructure;
  - the ability to serve new gas-fired generation in the State, thus reducing regional carbon emissions by displacing higher emitting generating resources; and
  - support for the State's development of renewable generation initiatives.

III. Overview of the Northeast Energy Direct Project

The NED project is designed to address the need for additional natural gas pipeline infrastructure and firm transportation service to serve natural gas local distribution companies ("LDCs") and gas-fired generators in New England with a basin-to-market solution. The NED project will provide direct connection to the historically low-cost and abundant supplies in the Marcellus Shale in northeast Pennsylvania with approximately 135 miles of new pipeline from Tennessee's existing 300 Line in Susquehanna County, Pennsylvania to Wright, New York at interconnections with Tennessee's existing pipeline system and the Iroquois system. From Wright, New York, the Project further extends approximately 188 miles to interconnections near Dracut, Massachusetts with PNGTS, M&NP, and Tennessee's existing substantial pipeline system, thereby largely and uniquely relieving the natural gas supply bottlenecks across the region. With NED, Tennessee's existing delivery of supplies into the Algonquin System at Mendon, Massachusetts will also be enhanced.

Approximately 91% of the overall project route for the NED project from Wright, New York to Dracut, Massachusetts is co-located with existing utility or energy rights of way, meaning that the pipeline will be adjacent to, or overlapping, existing rights of way that already contain utility or energy facilities. Specifically, there will be 53 miles in New York generally co-located with Tennessee's existing pipeline and an existing utility corridor. There will be 64 miles in Massachusetts largely co-located with existing electric utility transmission corridors. The NED route in New Hampshire consists of approximately 71 miles of new pipeline, with 87% of that distance adjacent to, or overlapping, an existing 345 kV electric transmission line corridor. (Tennessee currently operates approximately 50 miles of pipeline in three counties and ten municipalities in New Hampshire that are currently served by Liberty Utilities.) Therefore, as a result of the significant degree of pipeline co-location within existing energy rights of way, construction of the Project is designed specifically to be less disruptive to fewer people than other pipeline proposals in more congested and heavily populated regions of New England that involve repeatedly replacing older pipeline with much larger pipeline whereby the resulting incremental value of doing so is more limited.

The capacity to be provided by the NED project is uniquely and flexibly scalable, meaning that it can be constructed to accommodate up to 2.2 Bcf/day of capacity, or for a lesser customized market need. The Project provides opportunities for future expansion over time by adding compression rather than the significantly more disruptive process of repeatedly replacing older pipeline with much larger pipeline or constructing additional parallel pipeline loops in continuously expanded rights of way.

Operationally, as a new path for natural gas into New Hampshire and New England, the NED project will create a large bi-directional pipeline loop that will fundamentally change and improve natural gas flows resulting in incremental additional gas supplies being available to LDCs, gas-fired generators and industrial end users throughout New England. The NED Project alone will also enhance the reliability of the entire New England pipeline grid by creating new high-capacity, high-pressure natural gas transmission infrastructure to provide gas supply in case of required outages on one or more of the legacy natural gas transmission systems serving New England.

The planned in-service date for the Project is November 2018, in time for the winter heating season.

IV. The Root Cause of the New England Energy Cost Problem

Both wholesale natural gas and electric prices have skyrocketed over the past three winters in New England. The root cause of the natural gas price increases, which in turn have largely caused the wholesale electric market price increases, is a function of the confluence of a number of factors, including:

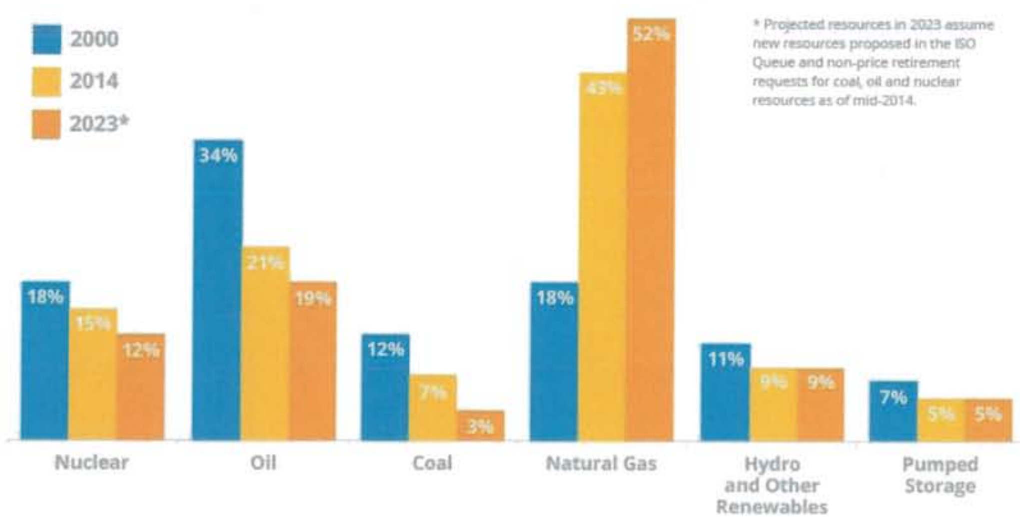
- An increasing proportion of natural gas-fired generation in New England, resulting in an increasing amount of natural gas required by such generating resources to produce electricity;
- A lack of incentive for gas-fired generation in the restructured wholesale electric market to contract for longer-term natural gas supply or transportation capacity;
- Very high utilization of the existing pipeline capacity into New England from the south and west;
- Relatively higher commodity prices associated with alternatives to natural gas-fired generation (*e.g.*, oil and liquefied natural gas ("LNG")); and
- A lack of native gas production or underground storage that could otherwise help to mitigate natural gas prices in the region.

Each of these factors is discussed in more detail below.

A. Increasing Proportion of Gas-Fired Power Generation in New England

Over the past 15 years, the proportion of gas-fired generation to meet capacity and energy requirements in the competitive electric generation market in New England has steadily increased. As shown in Figure 1, in 2000, natural gas-fired generation represented 18% of the total installed generating capacity in New England. In 2014, natural gas-fired generation represented 43%, and by 2023, ISO New England is forecasting that number to jump to 52%.

<u>Figure 1:</u> ISO New England Historical and Projected System Capacity by Fuel Type



Source: ISO New England, Resource Mix (http://www.iso-ne.com/about/what-we-do/key-stats/resource-mix).

Figure 1 shows that of all the electric generation resources that serve New England, gas-fired generation is the only resource that ISO New England projects will experience a significant increase in generating capacity between 2014 and 2023. Therefore, as a greater proportion of the generating capability in New England is fueled by natural gas, it is imperative that sufficient pipeline infrastructure be available to allow that gas-fired generation to operate reliably and without resulting in substantially higher energy costs for consumers in the region.

B. Lack of Incentives for Longer-Term Contracting

While the amount of gas-fired generating capacity in New England has been rapidly increasing, the region's pipeline infrastructure has not experienced the same level of growth to accommodate the increased needs of gas-fired generation. The pipeline expansions that have occurred over the past 15 years in New England have largely been to accommodate the natural gas demand growth of customers of the LDCs in the region. The regulatory framework in New England (and elsewhere in the U.S.) is such that LDCs contract on a long-term basis for sufficient firm pipeline capacity to meet their customers' respective needs throughout the year and then have the ability to recover the costs of that pipeline capacity from their customers.

In contrast, however, the wholesale electric market has been restructured in New England such that generation is for the most part no longer owned and operated by the electric utilities to serve their utility electric demands, but rather the generation is owned by third-parties that participate in a highly competitive wholesale market to serve the regional electric demand. The existing structure of the New England wholesale electric market does not incent gas-fired generation in the region to contract for and underpin the construction of additional pipeline capacity, because the generators are not assured that they will be able to recover the long-term costs associated with contracting for new pipeline capacity and, therefore, in most all cases cannot financially justify the required long-term contractual pipeline commitments. In other portions of the U.S. in which electric utilities continue to own generation, those utilities procure the necessary natural gas for their gas-fired generation such that it is available when needed throughout the year, including during peak demand periods, and they have a mechanism similar to LDCs to recover the costs of the necessary pipeline capacity.[1]

In addition, while New England's gas-fired generators are generally not in a position to contract for pipeline capacity, pipelines are unable to build incremental pipeline capacity without sufficient long-term contracting to support the investment required of such a highly capital intensive and long-lived asset. Long-term firm pipeline contracts provide a pipeline with the recovery of fixed costs on a monthly basis over the term of the contract, are required by FERC to show market need for the project, and demonstrate that the project is in the public interest.

Consequently, most gas-fired generation in New England relies on pipeline capacity that is available in the market only if it is not otherwise required by the parties that have contracted for the capacity. However, when the demand for natural gas by LDCs and other natural gas consumers is high, there is a shortage of natural gas pipeline capacity available to serve the gas-fired generation in New England. For example, during the winter months, gas-fired generation must contend with winter heating demands of LDCs, which depend primarily on pipelines for gas deliveries. Although electricity demand in New England is highest during the summer, pipelines are more highly constrained during the winter due to gas requirements for winter heating *and* gas-fired power generation. This results in extreme competition for natural gas supplies within New England during the winter period especially (though not exclusively), which drives up the price of natural gas in the region. In addition, during peak summer power demand periods, although pipeline capacity is generally not being utilized by other contracted parties at the highest levels, required maintenance activities can require a reduction of the pipeline's capacity and/or operational flexibility during short-term periods.[2] Tennessee, for example, sees demand for its services exceeding its New England capacity generally year-round, though higher during winter periods.

Figure 2 shows the difference in natural gas prices between the Gulf Coast producing area relative to the New England consuming area. This pricing differential is referred to as a "basis differential," or the

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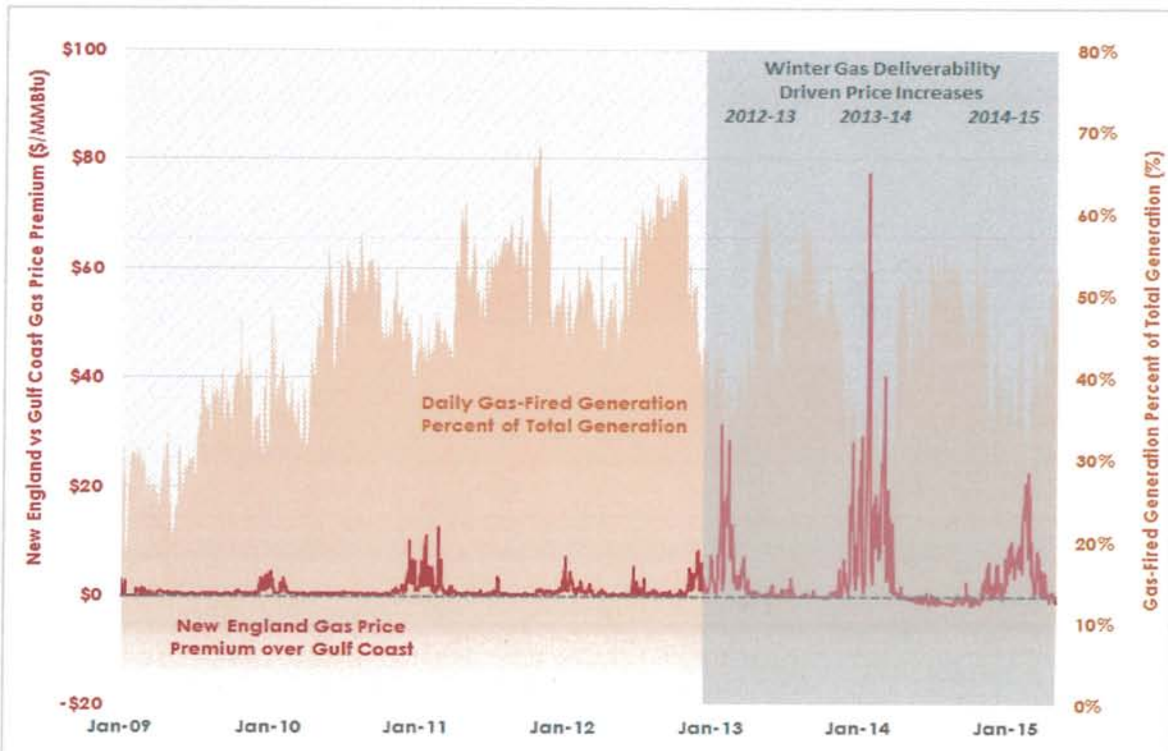
1 There are numerous regions of the U.S. in which electric utilities continue to own generation (*e.g.*, Midwest, Great Lakes, Southeast), with the costs associated with fuel supply and transportation recovered from utility customers through retail rates. For example, Entergy Louisiana owns over 5,000 MW of natural gas-fired generation and contracts with Tennessee for transportation service in the Gulf Coast.

2 *See, e.g.*, Tennessee Gas Pipeline, Outage Impact Report, May 21, 2015 (http://pipeline2.kindermorgan.com/Notices/NoticeDetail.aspx?code=TGP&notc_nbr=355889&date=5/27/2015&subject=&notc_type=18&notc_sub_type=-1&notc_ind=P); Algonquin Gas Transmission, Planned Service Outage Notification, May 15, 2015 (https://infopost.spectraenergy.com/infopost/AGHome.asp?pipe=AG&mode=1).

difference in the price of natural gas at two pricing points at a given point in time. Basis differentials reflect the value (but not necessarily the cost) of pipeline transportation between two pricing points at a particular time, and account for a number of factors, including weather conditions and pipeline capacity constraints. If the basis differential between two points is substantially higher than the cost of transportation between those points, and that differential is sustained over a reasonably long period, this indicates that there are pipeline constraints between those points, and provides a signal to pipeline project developers that there should be sufficient demand to support the construction of new pipeline capacity to alleviate those constraints.

Figure 2: New England Natural Gas Price Premium v. Proportion of Gas-Fired Generation Relative to Total New England Generation



Source: SNL Financial, ISO New England; Basis differential reflected is the difference between the daily Tennessee Zone 6 spot price index and the Henry Hub spot price index.

As shown in Figure 2, the basis differentials and resulting natural gas prices have been very high during the past three winters. The premium that New England paid for natural gas in December, January and February relative to prices in the Gulf Coast averaged approximately $7.30 per million British thermal units ("MMBtu") for the winters of 2012/2013 and 2014/2015. The premium paid by New England was over double that for the winter of 2013/2014, averaging $14.80/MMBtu. As shown in Figure 2, during the past three winters, the basis differential reached historic levels, reaching above $70/MMBtu in January 2014 and up to approximately $30/MMBtu in January 2013 and 2015. These natural gas pricing premiums benefit those contracting for firm capacity that can resell their capacity during peak periods, but negatively impact those parties purchasing natural gas in New England (*e.g.*, larger commercial and industrial customers), as well as all electric consumers in the region as the higher natural gas prices paid by gas-fired generators translate into higher electricity bills.

Also as shown in Figure 2, during the high-priced previous three winters, the proportion of the electricity generated in New England from gas-fired generation dropped substantially, in part as a result of the inability of those generators to access pipeline capacity to transport natural gas so that their units could be operated. As a consequence, greater oil and coal-fired generation was required.

C. Pipeline Capacity into New England is Highly Utilized

To highlight the constrained nature of pipeline capacity into and within New England, Tennessee receives requests nearly every day of the year for transportation service to or within New England that greatly exceed Tennessee's operating capacity. Specifically, in the winter (*i.e.*, November through March), Tennessee is required each day to restrict shippers' requested volumes for non-firm service. The extent of these restrictions over the past three winters range from an average low of approximately 0.7 Bcf/d, to an average high of 1.4 Bcf/d, with sustained periods of significantly greater restrictions (*e.g.*, restricting up to 2.6 Bcf/d of shipper requests during the winter 2014 /2015). These required restrictions of requested service that are affecting New England occur at multiple locations along Tennessee's system, and importantly, usually impact all priorities of Tennessee's various interruptible transportation services.

Algonquin has indicated that its system is similarly highly utilized throughout the year, with little to no transportation service available to shippers that have not contracted for firm service or are not able to acquire firm service released from another shipper that is not utilizing its contracted pipeline capacity. For example, volumes through Algonquin's Cromwell compressor station, which is located in central Connecticut, were at or above the operational capacity for nearly all of the days of 2014.[3] Similarly, from 2012 through 2014, there were fewer than 10 days in which there was any interruptible service available on the pipeline,[4] meaning that if a shipper did not contract for firm service or was not able to acquire firm service released from another shipper, then pipeline transportation service in New England was unavailable on Algonquin's system.

D. Relatively Higher Commodity Prices Associated with Alternatives to Natural Gas-fired Generation

Differences in the cost of fuel to produce electricity is another factor in the high wholesale electric rates that New England has experienced. Historically, the differential or spread between natural gas and oil prices on an equivalent $/MMBtu basis was relatively small, and the two prices generally moved in tandem. However, in the past five years, natural gas and oil prices in the U.S. have decoupled substantially from one another. There has been a fundamental shift in the prices of these commodities such that natural gas now holds a significant competitive price advantage relative to oil-based fuels.

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[3] Spectra Energy, Presentation to NGA 2015 Regional Market Trends Forum, April 23, 2015, Slide 11.

[4] *Id.*, Slide 11.

Since the price of imported LNG is typically a function of world oil prices, the cost of imported LNG is also much higher than the cost of pipeline natural gas delivered to New England in an unconstrained market. Thus, when oil or LNG have been utilized as fuel to produce electricity in the past few years, the resulting cost has been substantially higher than if unconstrained natural gas had been utilized to produce the electricity. The U.S. Energy Information Administration projects that the price spread between natural gas and oil-based fuels in New England is also expected to continue through 2040, and in fact, increase over time.[5]

E. Lack of Regional Natural Gas Production and Underground Storage

Another contributing factor to high winter natural gas prices in New England is that the region has neither indigenous natural gas production nor the ability to store significant amounts of natural gas that otherwise could help mitigate increased regional gas prices.

First, the availability of indigenous natural gas production provides a region with the ability to use natural gas produced in that region during periods of peak demand as opposed to having to transport that gas from outside the region. To meet its natural gas demands, New England has historically relied heavily on natural gas transported from the U.S. Gulf Coast, western Canada, and offshore Atlantic Canada. More recently, New England has increasingly made use of nearby Marcellus and Utica shale gas production from Pennsylvania, Ohio, and West Virginia, though the slow pace of pipeline development out of that region and into New England has handicapped New England's ability to take full advantage of these abundant and cost-effective natural gas supplies to meet the demand requirements of both natural gas consumers and gas-fired generation.

Second, unlike the neighboring regions of New York and the Mid-Atlantic, due to its geology, New England does not have any indigenous underground natural gas storage (in the form of underground salt caverns, aquifers, and depleted oil and gas reservoirs). Underground storage provides the ability to purchase natural gas during low price periods (generally the summer) and store the gas so that it can be withdrawn and displace the need to purchase more expensive natural gas during peak demand periods (generally the winter). LDCs in New England utilize natural gas storage in Pennsylvania, New York, eastern Canada and Michigan. However, because the gas withdrawn from that storage requires the use of pipeline capacity into New England, the use of storage does not free up any additional pipeline capacity. The exceptions are the smaller-scale peak-shaving facilities, and on-site LNG storage tanks utilized by certain LDCs; however, these facilities are not directly accessible by gas-fired generators. Imported LNG is also utilized, but similar to pipeline capacity, its availability is dependent upon long-term contracting. In addition, the region must compete against generally higher-priced international LNG markets to attract such supplies, including from volatile foreign sources.

Therefore, this lack of indigenous natural gas production and underground storage makes New England more vulnerable to natural gas and power price increases during peak demand periods.

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[5] Energy Information Administration, 2015 Annual Energy Outlook, Energy Prices by Sector and Source – New England, Reference Case.

F. High Natural Gas Prices Directly Translate into High Wholesale Electric Market Prices

New England participates in a restructured, competitive wholesale electric market that is overseen and administered by ISO New England. ISO New England's objective is to ensure a reliable and economic supply of electricity throughout all hours of the year. As part of that objective, ISO New England administers an hourly energy market, whereby electric generating plants submit bids to supply power in each hour, and ISO New England then dispatches the generation on a least-cost basis from lowest to highest bid such that there is sufficient generation operating to meet the amount of energy required in a particular hour.[6] Hourly electric supply bids are based, in large part, on a generator's fuel cost. One important feature of the wholesale electric energy market is that the last (*i.e.*, most expensive) generating plant dispatched to serve the required demand in a particular hour sets the clearing price (known as the locational marginal price ("LMP")) to be paid by the entire load in a specific regional zone (or in all of New England if there are no transmission constraints) in that hour.[7]

Because of the increasing proportion of natural gas-fired generation in New England, these facilities set the LMPs the majority of the hours of the year, which, in 2014, was approximately 70% of the time.[8] As a result, as New England natural gas prices rise, so too do the wholesale electric market prices. As described earlier, when there is insufficient gas supply and pipeline capacity in New England to meet natural gas demand from both LDCs and gas-fired generation during peak periods, the resulting high local natural gas prices are in turn reflected in the bids of gas-fired generators in the energy market, and thus are reflected in the high wholesale electric market prices in New England. Accordingly, the significant rise in natural gas prices during the past three winters has translated directly into significant increases in New England power prices. Figure 3 shows the relationship between New England's natural gas and power prices over the past several years.

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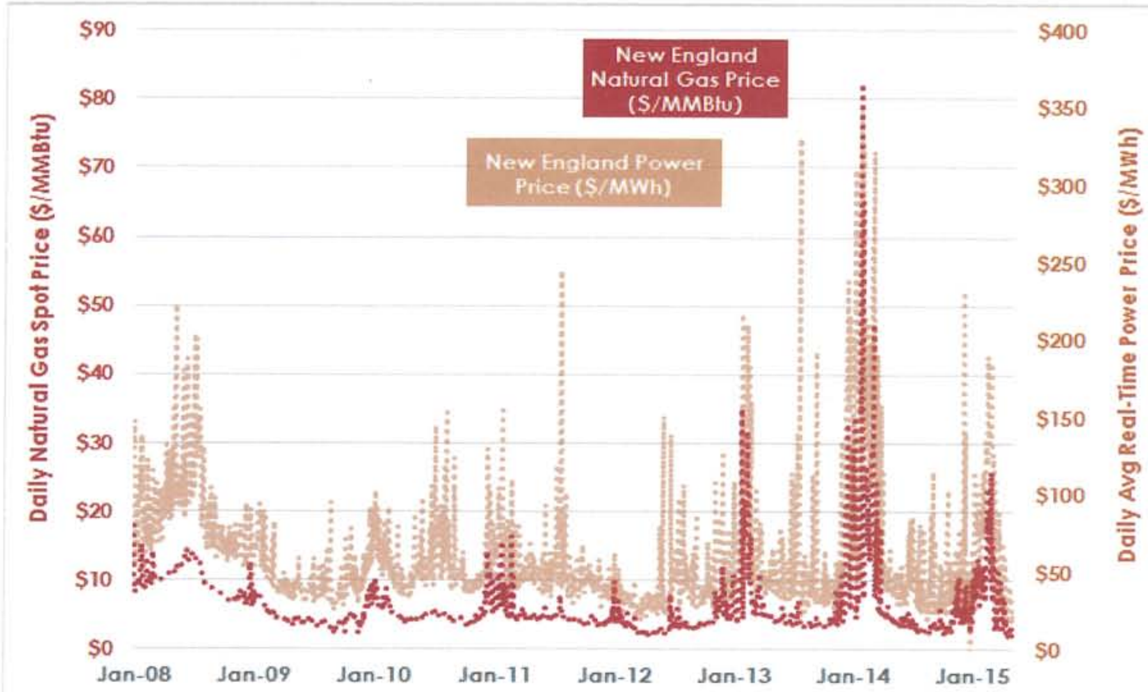
6 The actual hourly dispatch of the generating resources in New England is complicated by a number of factors, including transmission constraints, losses, hourly availability of the resources, minimum run times, and reserve margins, but conceptually the generation in New England is operated based on a least-cost economic dispatch order.

7 For a more detailed description of wholesale electricity market operations, please see: ISO New England Internal Market Monitor, "Overview of New England's Wholesale Electricity Markets and Market Oversight," May 6, 2014.

8 ISO New England, Inc. Internal Market Monitor, "2014 Annual Markets Report, Figure 2-17: Marginal fuel-mix percentages of all pricing intervals, 2014," May 20, 2015.

<u>Figure 3:</u> New England Natural Gas and Power Price Relationship

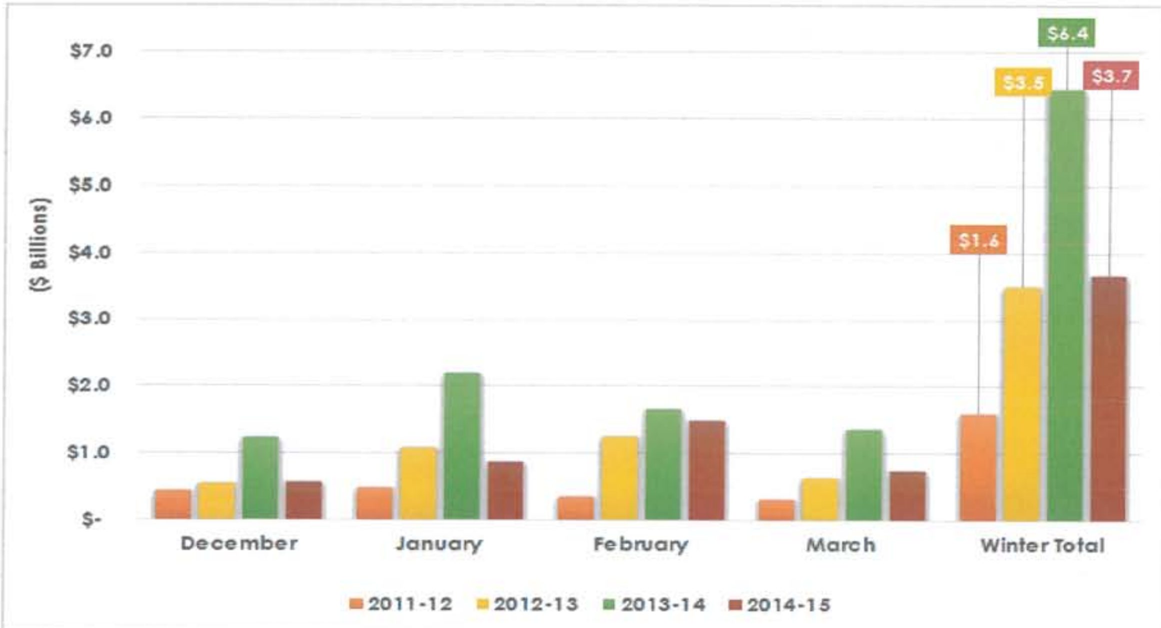


Source: SNL Financial; ISO New England (the New England natural gas price represents the Tennessee Zone 6 spot price index, and the New England power price represents the WCMass Real-Time On-Peak Strip price).

G. The Cost Burden on New England Energy Consumers

High energy prices are having significant harmful impacts to the economies of New Hampshire and New England. The gas supply access issues have become extremely costly, with wholesale power costs reaching $6.4 billion over the 2013-2014 winter season, or a year-on-year increase of 83%, as shown in Figure 4.

Figure 4: New England Wholesale Power Costs by Winter Season



Source: ISO New England, "Wholesale Load Cost Report," for the years 2011-2015. Available at: http://www.iso-ne.com/search?query=wholesale%20power%20costs%20

Natural gas customers of LDCs are less impacted by the higher natural gas prices as a result of LDCs' ability to contract for sufficient firm pipeline capacity to meet their respective needs (and therefore having greater contractual control over natural gas supplies) and to recover the costs of that capacity from their customers. However, the financial burden of the substantial natural gas and electric cost premiums being imposed on New Hampshire is largely being borne by electric consumers, as well as larger commercial and industrial natural gas consumers. As described earlier, high natural gas prices that result in high wholesale electric market prices are passed through and borne by all electric customers in New England. In addition, larger natural gas consumers are also typically negatively affected by the high natural gas prices experienced in New Hampshire, as they often purchase natural gas at the higher New England prices. Unlike most residential and smaller commercial natural gas customers, many larger commercial and industrial customers (which can have very substantial daily natural gas requirements) procure their own natural gas supplies and pipeline transportation as opposed to having their LDC purchase such supplies and transportation on their behalf.[9] Industrial transportation customers generally purchase their supplies from third-party marketers and these supplies are typically priced based on New England market area price indices (as opposed to production

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9 These larger commercial and industrial customers are referred to as "transportation" customers, as an LDC only has to transport these larger customers' gas through its distribution system, not purchase and transport that gas through the interstate pipeline system such as it does with its other, smaller customers. Customers for which the LDC both purchases natural gas supply and pipeline transportation service, as well as distributes that gas to the customer, are known as "sales" customers.

area price indices reflective of Marcellus or Gulf Coast prices), which have been extremely volatile and the highest average prices experienced in North America over the past few winters.[10]

H. High Electric Costs Will Persist Without Additional Energy Infrastructure

Without intervention, the extreme energy costs that New Hampshire energy consumers have experienced are expected to persist, and could in fact be exacerbated due to a number of supply and demand fundamentals expected to occur in the next few years. Specifically:

- *Substantial Generation Retirements*: ISO New England has noted that there is over 3,500 MW of generation that has or is scheduled to be retired by 2018, and has highlighted that an additional 6,000 MW of oil and coal-fired generation in New England will be over 40 years old in 2020, and thus at-risk for retirement for competitive reasons.[11]

  To replace this retiring generation, it is expected that a substantial portion of the new generation will be natural gas-fired, which will further solidify New England's reliance on natural gas-fired generation, and create an even greater demand and need for pipeline capacity in New England.[12] As the competitive market continues to expand its use of natural gas-fired generation, such resources will continue to be on the margin and thus dictate power prices. For example, approximately 77% of the generating resources listed as active in ISO New England's generation queue as potential future additions to the grid are proposed to be fueled by natural gas.[13]

- *Peak and Annual Electric Load Growth*: Electric load in New England is projected to grow, both for the winter peak, as well as annually, over the next decade. Specifically, it is projected that winter peak electric demand in New England will experience 0.7% compound annual growth, resulting in an additional 1,435 MW over this period.[14] Net annual load is also expected to grow at a compound average rate of 1.0% per year over the same period.[15]

- *Increased Development of Renewable Generation*: The New England states have established goals for increased production of electricity from renewable generation, known as renewable portfolio standards. For example, there is currently approximately 900 MW (nameplate) of solar photovoltaic generating resources in New England, and there is

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10 Review of all North American natural gas spot price indices reported by SNL Financial for the winters of 2012/2013, 2013/2014 and 2014/2015.

11 ISO New England, Resource Mix (http://www.iso-ne.com/about/what-we-do/key-stats/resource-mix).

12 ISO New England, 2014 Regional System Plan, November 6, 2014, p. 6.

13 ISO New England, Interconnection Requests for New England Control Area, Projects as of May 2, 2015; includes both units fired solely by natural gas and units with dual-fuel capability with natural gas being one of the fuels.

14 ISO New England, CELT Report, 2015-2024 Forecast Report of Capacity, Energy, Loads, and Transmission, May 1, 2015, p. 1.5.1 (represents reference forecast at expected weather). ISO New England is projecting even greater growth in summer peak demand.

15 *Id.*

projected to be an additional 1,500 MW (nameplate) over the next ten years.[16] In addition, there is currently approximately 800 MW (nameplate) of installed wind generating capacity in New England,[17] while there is approximately 4,650 MW (nameplate) of wind generation projects currently listed as active in the ISO New England interconnection queue.[18]

However, renewable generation is intermittent and non-dispatchable, meaning it cannot be turned on when it is needed to meet electric demand, but rather is subject to weather conditions as to when and how much electricity such resources can produce (*e.g.*, when the sun shines for solar generation, and when the wind blows for wind generation). As a result, ISO New England considers only a fraction of the maximum capacity of these resources (*e.g.*, 40% of the total nameplate capacity in the case of solar photovoltaic resources; approximately 20-35% in the case of wind resources) for planning purposes when determining whether additional generating resources are required.[19] Furthermore, siting wind generation and any associated transmission that is required for interconnection to the New England grid can be difficult.

Thus, even though renewable generation is expected to grow significantly in the future, due to its intermittent nature, the projected increase in the amount of renewable generation in New England is not sufficient to offset the need for the continued reliance on natural gas-fired generation in New England. Furthermore, quick-starting natural gas-fired generation, and thus sufficient pipeline capacity, will continue to be required to complement the growing renewable generation in New England to be able to ramp up to support electric demand when the renewable resources are otherwise unavailable.

- *Lack of Natural Gas from Offshore Nova Scotia*: For the past 15 years, New England has benefitted from natural gas supplies produced by the Sable Island Offshore Energy Project ("SOEP"); however, natural gas production from SOEP is reaching the end of its commercial operation.[20] Since 2013, additional natural gas has been produced from the Deep Panuke field, also located offshore Nova Scotia, but it has experienced a number of issues, and the estimated reserves from this field have recently been cut in half, and will only be producing during the winter period.[21] Consequently, current expectations are that natural gas will no longer be produced from either of these fields beyond 2018. This creates a near-term need

16 ISO New England, CELT Report, 2015-2024 Forecast Report of Capacity, Energy, Loads, and Transmission, May 1, 2015, p. 3.1.1-1 (cumulative total of al PV categories in all New England states from 2014 to 2024).

17 ISO New England, Resource Mix (http://www.iso-ne.com/about/what-we-do/key-stats/resource-mix).

18 ISO New England, Interconnection Requests for New England Control Area, Projects as of May 2, 2015.

19 ISO New England, CELT Report, 2015-2024 Forecast Report of Capacity, Energy, Loads, and Transmission, May 1, 2015, pp. 3.1.1-1 and 3.1.2-1 (cumulative total nameplate capacity of al PV categories in all New England states from 2014 to 2024 relative to their estimated summer seasonal claimed capability); ISO New England, New England Wind Integration Study Summary, November 2010, p. 7.

20 Duta, Ashok, "ExxonMobil developing plans to shut down Sable," Platts Gas Daily, October 9, 2014.

21 *See, e.g.*, Natural Gas Intelligence, "Deep Panuke NatGas Reserves Halved by Encana," February 26, 2015; Encana, Transcript of Fourth Quarter and Year-End 2014 Conference Call, February 25, 2015;

to transport natural gas to New England from other sources to replace the gas supplies lost from offshore Atlantic Canada.

- *Increased Gas Growth from LDC Customers*: There is consensus among a number of independent parties that New England is expected to experience natural gas demand growth going forward. This growth is expected to be driven by utility programs and state-level initiatives (*e.g.*, Connecticut) to promote the conversion of customers currently using fuel oil to natural gas. In the past few years, there has been a significant difference between the price of natural gas and the equivalent price of fuel oil that has supported a large number of customer conversions. While oil prices have declined recently, natural gas continues to have a price advantage relative to oil. However, because of the existing pipeline constraints into New England, some LDCs have had to halt new customer conversions until additional pipeline capacity can be obtained to serve those customers.[22]

In an effort to address the region's gas supply access issues and associated electric reliability issues, ISO New England instituted an out-of-market Winter Reliability Program in 2013, which included paying for fuel oil backup at dual-fuel generators that could be called upon when required, including when gas-fired generation was unable to acquire sufficient gas supplies. These oil supplies played a significant role during the 2013-2014 winter season when sufficient gas supplies were unavailable. This past winter, ISO New England expanded the Winter Reliability Program to include LNG import contracts, and the out-of-market Winter Reliability Program is expected to continue for the next several years.

As a result, New England gas markets remain constrained, a condition that is expected to worsen as gas-fired generation's share of the total regional generation expands. Because the projected demand and supply fundamentals just discussed are likely to continue to put pressure on natural gas and electric prices during peak periods, it may not even require weather conditions as harsh as the past few winters to trigger such high energy prices, absent any intervention to mitigate these factors.

Moreover, it should also be recognized that while the past few winters have experienced prolonged periods of cold weather, including record cold temperatures, the conditions experienced were not what the industry refers to as "design" conditions. LDCs plan for "design" conditions, which represent significantly colder than normal weather, to ensure reliable service to customers even during reasonably extreme cold weather events. The Polar Vortex and the rest of the winter of 2013/2014 did not surpass LDC design conditions, nor did the winter of 2014/2015, yet gas and electric prices in New England were the highest in the United States. Thus, should future conditions more closely approximate design conditions, the cost consequences to energy consumers would likely be magnified.

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22 Both Berkshire Gas and Columbia Gas of Massachusetts have had to impose moratoria on new gas customers in western Massachusetts. *See, e.g.*, Commonwealth of Massachusetts Department of Public Utilities, D.P.U. 15-48, The Berkshire Gas Company, Direct Testimony of Jennifer M. Boucher, pp. 6-7; Kinney, Lee, "Berkshire Gas imposes hookup moratorium," The Republican (Springfield, MA), March 20, 2015 (citing Columbia Gas of Massachusetts' moratorium).

V. New England's Energy Cost Problem Can Significantly Benefit from Additional Pipeline Capacity

A. Significant Pipeline Capacity Would Provide Substantial Economic Benefits to New England

As discussed in the previous section, constraints on the natural gas pipelines serving New England have contributed to high regional energy prices in the last several years. Multiple recent studies conducted by independent experts have demonstrated an indisputable need for, and the substantial benefits to be provided by, significant additional natural gas pipeline infrastructure in New England.[23] Each of these studies modeled the forecasted total demand for natural gas (*i.e.*, heating and electric generation load) in New England during winter to determine whether the region's natural gas infrastructure was capable of delivering adequate supplies during such periods. To varying degrees, these studies account for anticipated market changes that could impact the demand and/or supply of natural gas in New England (*e.g.*, pipeline expansions, power plant retirements, energy efficiency initiatives, electricity imports from neighboring regions, and LNG imports), and each study clearly establishes a need for incremental natural gas pipeline capacity. Many of these studies also examined the impact that additional pipeline capacity would have on energy prices in New England, demonstrating that incremental pipeline capacity would place downward pressure on natural gas prices, which would, in turn, lead to a reduction in electric prices that would provide significant benefits to the region.

In December 2014, Competitive Energy Services ("CES") filed a report ("CES Report") on behalf of Tennessee in a Maine Public Utilities Commission proceeding to consider whether Maine should execute or direct a utility to execute a contract for pipeline capacity on the NED project or another pipeline project in order to reduce energy costs for Maine consumers. The CES Report concluded that New England would benefit from the addition of up to 2.4 Bcf/d of incremental natural gas pipeline capacity.[24] The CES Report was an update to an original study conducted by CES in February 2014 for the Industrial Energy Consumers Group, the purpose of which was to evaluate and assess the status of natural gas supply in New England, and the impact that such supply conditions would have on natural gas and electric prices under various scenarios of incremental pipeline additions.

The analysis in the CES Report began by deriving LDC and electric generation demand for natural gas on an hourly basis, which was then aggregated to calculate total demand for each hour in Calendar Year 2013. CES also developed assumptions regarding the fuel prices for the four commodities used in the analysis (*i.e.*, pipeline gas, LNG, propane, and fuel oil) as well as the current supply capabilities of the region's natural gas infrastructure (*i.e.*, interstate pipelines, LNG import facilities, LNG peaking shaving facilities, and propane-air facilities). The total demand for gas in each hour was compared to the

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[23] *See, e.g.*, (1) Black & Veatch, *Natural Gas Infrastructure and Electric Generation: Proposed Solutions for New England,* August 2013; (2) Competitive Energy Services, *Assessing Natural Gas Supply Options for New England and their Impacts on Natural Gas and Electricity Prices*, February 2014; (3) ICF International, *Study on Long-term Electric and Natural Gas Infrastructure Requirements in the Eastern Interconnection*, September 2014; (4) ICF International, *Assessment of New England's Natural Gas Pipeline Capacity to Satisfy Short and Near-Term Electric Generation Needs: Phase II*, November 2014; (5) Competitive Energy Services, *Report to Tennessee Gas Pipeline Company, LLC*, December 2014; and, (6) Synapse Energy Economics, *Massachusetts Low Gas Demand Analysis: Final Report*, January 2015.

[24] Competitive Energy Services, *Report to Tennessee Gas Pipeline Company, LLC*, December 5, 2014.

amount of natural gas supply sources to calculate the number of hours in 2013 that total demand for natural gas exceeded the pipeline capacity into New England, causing the region to rely on higher cost supply sources such as LNG, propane, and fuel oil to satisfy demand. In essence, CES developed and ran a natural gas dispatch model based on the assumptions specified, in which the lowest cost supply source (*i.e.*, pipeline gas) to fuel gas-fired generation was exhausted before the next least-cost resource (*i.e.*, LNG) was deployed, or an alternative and more costly fuel was required to operate generation (*i.e.*, fuel oil).

Under the study's base case, where the only incremental pipeline capacity in New England is Spectra's AIM project and Tennessee's Connecticut Expansion (a total addition of 400 MMcf/d), CES calculated that there were more than 2,100 hours where cumulative regional pipeline capacity was insufficient to meet firm demand, leading to a substantial reliance on higher cost fuel sources and driving up the average costs of feed gas for electric generation. However, as the amount of incremental pipeline capacity added to New England increases, the number of hours where cumulative regional pipeline capacity is insufficient to meet total gas demand continually decreases, as does the average annual electric cost in the region.[25] The CES Report concludes that the addition of up to 2.4 Bcf/d of natural gas pipeline capacity into the region would produce a benefit to New England electric consumers by reducing the number of hours that LNG, propane and/or oil must be deployed from 2,100 to approximately 50, resulting in almost $3 billion in savings or a 40% reduction in the average regional electric cost relative to the base case.

Other recent studies on the region's energy infrastructure needs draw similar conclusions regarding the benefits that additional natural gas pipeline capacity would provide to New England:

- In November 2014, ICF International conducted a study on behalf of ISO New England which examined the potential for shortfalls in gas supply to electric generators on a winter peak day through 2020, and given currently available pipeline capacity and likely near-term expansion projects, concluded that gas supply deficits could be up to 1.7 Bcf/d in 2020.
- In August 2013, Black & Veatch conducted a study on behalf of the New England States Committee on Electricity ("NESCOE Report") to evaluate the sufficiency of the regional gas infrastructure to support electric power generation in New England for the years 2014-2029. This study concluded that an incremental 1.2 Bcf/d of natural gas pipeline capacity presents the least expensive long-term solution and provides the highest net benefit to New England consumers.
- In September 2014, ICF International conducted a study on behalf of the Eastern Interconnect States' Planning Council that examined the amount of natural gas infrastructure that would be needed by 2030 to serve both heating and power generation loads, and which modeled optimal infrastructure expansions in response to perceived instances of supply deficiency. This study found that between 1,600 and 9,000 inch-miles of natural gas transmission mainline and lateral pipeline will be required in New England by 2030.

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[25] As noted previously in Section IV.C, demand for pipeline capacity exceeds the availability of pipeline capacity on the Tennessee system nearly every day throughout the year.

- In January 2015, Synapse Energy Economics, Inc. published a report on behalf of the Massachusetts Department of Energy Resources ("DOER Report") that concluded that there is a need for 600 to 800 MMcf/d of incremental pipeline capacity by 2020 to serve forecasted demand in Massachusetts alone under base case and low demand scenarios. The DOER Report results support the conclusion in the CES Report that over 2 Bcf/d of pipeline capacity would provide benefits to New England as a whole.

B. A Policy Decision is Required to Achieve the Electric Market Benefits

As discussed earlier in these comments, an increase in regional demand for natural gas, particularly from electric generation, with no matching increase in the region's supply capabilities, has resulted in New England natural gas and electric markets experiencing significant price increases and volatility during recent winter periods, much to the detriment of energy customers and the region's economic competitiveness. LDCs have an obligation to plan for system demand during design day conditions and will continue to contract for pipeline capacity as needed to support demand growth in their respective service territories. However, growth in natural gas demand from electric generators has not signaled the same type of infrastructure response, but rather has caused higher energy prices for consumers, and requires a change in policy, such as authorizing EDCs to acquire pipeline capacity and recover the costs from their customers.

The failure of a market-based solution to materialize in response to this problem is in large part due to the fact that the wholesale electricity market does not create the financial conditions and long-term credit support that are conducive to gas-fired generators contracting for pipeline capacity. As a result, electric generators have typically relied on interruptible pipeline capacity, firm capacity purchased in the secondary market on an as-needed basis, or a delivered gas product (bundled transportation and commodity) for the transportation of natural gas to their facilities. However, as pipeline capacity becomes increasingly fully utilized, generators find themselves at the mercy of a limited supply market.

Due to these market conditions, and despite the rapid and substantial growth in gas-fired generation in New England, the numerous projects that have been proposed to deliver additional supplies of natural gas into New England have garnered little to no interest from electric generators. Without firm contracts for capacity that is reserved to serve gas-fired generators, the problem will only be exacerbated as any additional pipeline capacity constructed to serve New Hampshire and New England will be to serve load growth from the LDCs or other parties that contract for the capacity. In the absence of a market-based solution, stop-gap policy measures, such as ISO New England's out-of-market Winter Reliability Program that was approved by the FERC, have already been employed for reliability purposes, but these measures are temporary and a longer-term policy solution is necessary.

Each of the New England states has been and will continue to be negatively impacted by high prices and volatility in both natural gas and electric markets unless additional pipeline infrastructure above and beyond that which is needed to serve LDC demand growth is constructed in the region. It would be ideal if the New England states could work collaboratively to establish a policy that would result in the region jointly underpinning the construction of incremental pipeline capacity. Such a process is underway; however, it has been challenging to align the interests of six separate states.[26]

While it would be optimal for the New England states to take collective and timely action in order to facilitate the construction of incremental natural gas pipeline capacity, time is of the essence for energy consumers. Pipeline projects of the scale needed to serve New Hampshire and the rest of New England generally take at least three years to develop, permit, receive regulatory approval, construct and place into commercial operation. In addition, the complicated political and regulatory process required for the New England states to negotiate and structure an agreement to collectively underpin additional pipeline capacity may lengthen the timeframe required to develop new pipeline capacity. As such, it is important to recognize that the prospect of economically harmful energy costs will continue to be present for New Hampshire and all New England energy consumers for a number of years even if contracts for additional pipeline capacity are approved in the near-term. Therefore, under these circumstances, and in the absence of a comprehensive agreement among the New England states, it is in New Hampshire's interest to also pursue, on an independent and parallel track, unilateral efforts to underpin incremental pipeline capacity to bring increased supply into the region for the benefit of New Hampshire energy consumers.

C. There Are Net Benefits to New Hampshire Acting Unilaterally to Mitigate the High Energy Costs

There appears to be consensus among the New England states that incremental natural gas pipeline capacity would benefit the region. On April 23, 2015 the New England Governors issued a statement affirming their intent to work together as a region to find a solution to high energy prices.[27] Indeed each of the New England states appears to be moving in this cooperative direction.[28] Based on the regional coordination efforts to date, New Hampshire may proceed with confidence in this proceeding and then with action on the conclusion reached in this investigation, knowing that the other New England states are moving forward with their own processes and working towards a coordinated regional solution.

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26 In December 2013, the six New England governors signed a letter expressing their unanimous support for the construction of additional pipeline infrastructure into the region and, in collaboration with NESCOE, are continuing an ongoing region-wide stakeholder process in support of this goal.

27 New England Governor's Statement, Regional Cooperation on Energy Infrastructure, April 23, 2015.

28 In addition to New Hampshire's action in this proceeding, the other New England states, with the exception of Vermont, are either moving forward with a similar process or considering how to proceed. In Maine, for example, the Maine Public Utilities Commission has been conducting an investigation in Docket No. 2014-00071 since March 2014 to consider whether it should direct a state utility to execute a contract for pipeline capacity. Chairman Vannoy has stated his desire to have this proceeding conclude in mid-summer 2015. In Massachusetts, the Department of Public Utilities has opened an investigation in D.P.U. 15-37, to consider issues substantially similar to ones before the New Hampshire Commission in this proceeding. In Rhode Island, the Affordable Energy Security Act establishes a transparent process for the Office of Energy Resources to work with energy officials throughout New England to identify cost effective energy infrastructure projects. In Connecticut, Senate Bill 1078 has recently passed the House and Senate and is awaiting the Governor's signature. S.B. 1078 would permit the Department of Energy and Environmental Protection to conduct a competitive process to select an energy infrastructure project(s) that would contribute to lower energy costs in Connecticut.

Notwithstanding the fact that regional coordination efforts are proceeding, New Hampshire, or any state for that matter, might balk at the notion of unilateral action to underpin incremental pipeline capacity into New England out of a fear that such action would lead to the rest of the New England states realizing free rider benefits in the form of lower electricity costs as a result of its infrastructure investment. Based on the structure of the New England electric market, such free ridership could occur in the event of unilateral action by New Hampshire or any other state to increase the deliverability of natural gas into the region; however, this fear of unintended consequence should not overshadow the benefits of such action to New Hampshire's electric customers.

The net benefits to New Hampshire of unilaterally contracting for either 200 MMcf/d or 400 MMcf/d of incremental natural gas pipeline capacity can be illustrated based on the methodology, assumptions, and results outlined in the CES Report, as summarized in Table 1.

Table 1: New Hampshire Net Benefits of Pipeline Capacity

	Assuming Contract for Additional Pipeline Capacity of 200 MMcf/d	Assuming Contract for Additional Pipeline Capacity of 400 MMcf/d
Benefits of Pipeline Capacity		
Energy Cost Savings of Additional Pipeline Capacity in New England:		
Energy Cost Savings - Total New England	$ 487,589,951	$ 1,020,859,716
New Hampshire Electric Load as % of Total New England Load	9%	9%
Energy Cost Savings - New Hampshire	$ 43,883,096	$ 91,877,374
Market Value of Add'l Pipeline Capacity to Gas-Fired Generator(s):		
Pipeline Capacity Contracted by New Hampshire (MMBtu/d)	200,000	400,000
Assumed Avg. Heat Rate of Gas-Fired Generator(s) Using Add'l Capacity (btu/kWh)	8,500	8,500
Total Annual Amt. of Electricty Capable of Being Generated (kWh)	8,600,000	17,200,000
Average Annual New England Wholesale Electric Prices ($/kWh):		
After NH Add'l Pipeline Capacity	$56.55	$52.36
With 2.4 Bcf/d of Add'l Pipeline Capacity	$36.90	$36.90
Difference	$19.65	$15.46
Market Value of Add'l Pipeline Capacity	$ 168,990,000	$ 265,912,000
Total Annual Benefit for New Hampshire	$ 212,873,096	$ 357,789,374
Cost of Pipeline Capacity		
Pipeline Capacity Contracted by New Hampshire (MMBtu/d)	200,000	400,000
Reservation Rate ($/dth/Day)	$1.50	$1.50
Annual Pipeline Cost	$ 109,500,000	$ 219,000,000
Assumed Contract Term (yrs.)	15	15
Total Pipeline Cost over Contract Term	$ 1,642,500,000	$ 3,285,000,000
Comparison of Cost and Benefit		
Annual Net Benefit/(Cost)	$ 103,373,096	$ 138,789,374
Payback Period for 15 year contract (yrs.)	7.7	9.2

Source: CES Report, Figure 1. Assumes 1 MMBtu = 1 Mcf.

As an illustrative example, based on the conclusions in the CES Report, if New Hampshire were to authorize EDCs within the state to underpin incremental pipeline capacity into New England to support electric load by purchasing 400 MMcf/d of firm pipeline transportation service, then New England as a whole is estimated to benefit by a reduction of $1.02 billion in annual energy cost savings, as greater access to natural gas supplies reduces the average price of electricity in the region.[29] Since New Hampshire accounts for approximately 9% of total electric energy usage in New England, New Hampshire electric customers would be projected to receive approximately $92 million of the estimated annual electric energy cost savings.

In addition, the CES Report assumes that the entity that contracts for the additional pipeline capacity would receive an additional benefit from the resale of that contracted pipeline capacity, presumably to electric generators in New England, through the well-established, flexible and FERC-regulated capacity release market on the interstate natural gas pipeline system, or some other mechanism that is developed to facilitate the process of EDCs making capacity available to gas-fired generators. The CES Report estimates the value of the contracted capacity that is released based on the difference between (i) the average annual wholesale electric price in New England resulting from a market in which there is an amount of newly contracted pipeline capacity; and (ii) the average annual wholesale electric price in an unconstrained New England wholesale electric market if 2.4 Bcf/d of new pipeline capacity were introduced into the region. In the example reflected in Table 1, the 400 MMcf/d of additional pipeline capacity could have an estimated market value of $266 million/year, which would largely enhance benefits to New Hampshire EDCs contracting for such pipeline capacity. Combined, the reduction in the average electric price in New England and the incrementally captured market value of the pipeline capacity provide an estimated total annual benefit to New Hampshire electric customers of $358 million.

This annual benefit must then be weighed against the annual cost of the pipeline capacity to determine if unilaterally contracting for this quantity of pipeline capacity is a sensible investment for New Hampshire. The CES Report assumes an illustrative daily pipeline transportation rate associated with incremental pipeline capacity into New England of $1.50/Mcf.[30] Assuming this daily transportation rate, 400 MMcf/d of pipeline capacity would have an annual cost of $219 million. Thus, on an annual basis, the purchase of 400 MMcf/d of pipeline capacity could yield a net annual benefit of approximately $139 million to New Hampshire (*i.e.*, the difference between the estimated annual benefit of $358 million and the estimated annual cost of the additional capacity of $219 million). Assuming a 15-year contract term for incremental pipeline capacity, the total cost of the pipeline capacity over the contract term would be $3.285 billion. With a total annual benefit of $358 million to New Hampshire, the payback period for the investment in 400 MMcf/d of incremental natural gas pipeline capacity would be approximately 9.2 years in this illustrative example.

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[29] See Figure 1 of the CES Report. The addition of 400 MMcf/d of incremental pipeline capacity reduces the average electric price in New England from $60.38 $/MWh under the base case to $52.36/MWh.

[30] Note that this pipeline transportation rate is a proxy for transportation from the Marcellus to New England and is used for illustrative purposes, and does not attempt to reflect the cost of any actual proposed pipeline project.

All of these calculations are based on the assumptions and methodology contained in the CES Report, therefore, different assumptions would produce different results. In addition, the quantity of natural gas pipeline capacity that New Hampshire may authorize EDCs in the state to ultimately underpin will need to consider factors such as an appropriate payback period. Regardless, the CES analysis illustrates that New Hampshire electric customers could receive benefits, despite free rider impacts, from unilateral action to underpin up to 800 MMcf/d of incremental pipeline capacity. Moreover, the estimated benefits just discussed reflect only the benefits associated with lower electricity costs, and do not account for the additional benefits that would also accrue to New Hampshire homes and businesses associated with lower natural gas costs for larger commercial and industrial customers in the state, the far reaching benefits of access to natural gas previously not available, enhanced economic development potential because of lower energy costs, and the environmental benefits associated with reducing the reliance on oil and coal-fired generation.

It is therefore Tennessee's recommendation that New Hampshire pursue opportunities to underpin incremental natural gas pipeline capacity into the region both in collaboration with the other New England states (*i.e.*, the New England Governors/NESCOE initiative), but also unilaterally to ensure that energy savings for New Hampshire customers can be achieved in the most expeditious and efficient manner possible. New Hampshire can achieve benefits to energy customers in the state by contracting for additional pipeline capacity, regardless of the actions of the other New England states. If New Hampshire acts unilaterally, other New England states that do not contract for additional pipeline capacity might also receive the benefit of lower natural gas and electric costs, but such potential "free ridership" should not deter New Hampshire from achieving electric savings for the customers in its state.

D. The Commission Has the Legal Authority to Authorize New Hampshire EDCs to Contract for Pipeline Capacity and Recover the Associated Costs

Pursuant to Staff's request to stakeholders at the May 12, 2015 meeting in this proceeding, Tennessee asked its counsel to examine relevant statutes and case law regarding the possible legal authority of the Commission for reviewing and approving proposals to address the high wholesale electric market costs. As discussed in detail in Appendix B, the legal analysis indicates that the Commission has authority to approve and allow cost recovery of EDC proposals for purchasing natural gas pipeline capacity and reselling that capacity to electric generators as a means of lowering electricity prices. As such, Tennessee recommends that the Commission allow New Hampshire EDCs to contract for pipeline capacity, and provide EDCs with a reasonable assurance of cost recovery of such contracts.

VI. Benefits to Customers Should be Maximized

Building additional pipeline capacity to serve New England will help to mitigate, or possibly eliminate, the existing constraints and will produce significant benefits in the electric market by lowering energy prices and enhancing electric market reliability. New Hampshire should prioritize commitments to pipeline project(s), one of which must include Tennessee's NED project, that offer: scale, the direct connection to incremental gas supply, directly serve substantial natural gas-fired generation, and the ability to serve other regional pipelines with low cost natural gas, which will maximize the benefits to New Hampshire citizens in the form of lower energy costs.

Some stakeholders may offer that the expansion or development of a single intra-regional pipeline system is sufficient to eliminate energy cost premiums and enhance reliability for New England. However, a single pipeline cannot fully accomplish these goals. Rather, any pipeline solutions should offer the scale and geographic access to incremental supply necessary to maximize the benefits of lowering energy costs and enhancing long-term reliability, as does NED.

Following are some of the factors that the Commission should consider in evaluating pipeline proposals:

- _Enhancing Electric Market Reliability_: ISO New England has concluded that the potential for significant oil-fired and coal-fired generation retirements in the region by 2020 will likely cause serious reliability concerns absent additional generation replacements, primarily in central and western Massachusetts (defined by ISO New England as the "Hub").[31] Specifically, ISO New England found that:

    - If 8,300 MW of oil-fired and coal-fired generation were to retire by 2020, resource adequacy needs dictate replacement capacity of at least 5,900 MW, plus almost 800 MW of new energy efficiency;
    - At least 900 MW of the 5,900 MW must be in specific locations due to transmission constraints (in southeastern Massachusetts and Connecticut); and
    - Approximately 5,000 MW may need to be integrated into the Hub.[32]

  Since the existing Tennessee system is the only pipeline currently situated and with an expansion project ideally located to serve the Hub area, and because the NED project would uniquely increase that coverage, expanding Tennessee is essential to address the impending generation retirements. As ISO New England also concluded, if substitute resources are not available by 2020, only 950 MW of the 8,300 MW of older oil and coal generating facilities will be able to retire without causing reliability problems. Accordingly, this would not only continue to put upward pressure on electricity prices during peak periods when these resources would be required to operate, but also continue to contribute harmful environmental emissions that could otherwise be mitigated through pipeline expansion.

  Furthermore, increasing capacity on more than one natural gas pipeline, one of which must include NED, enhances electric market reliability by diversifying natural gas supply access. If only a single intra-regional pipeline is expanded with limited regional connectivity, therefore insufficiently relieving regional bottlenecks, planned or unplanned pipeline outages could significantly affect ISO New England operations by limiting the amount of gas-fired generation available for dispatch at various locations, thereby increasing costs to energy consumers. As an example, Tennessee often works together with other pipeline operators in times of required

31 ISO New England, "ISO New England's Strategic Transmission Analysis", June 14, 2013.

32 *Id.*

maintenance and expansions requiring short term outages. This reliability requirement and dependence is particularly important considering the increasing use of natural gas for electric generation in New England, the significant level of impending power plant retirements that are likely to be replaced with natural gas-fired generation, the declining supplies of natural gas from Atlantic Canada, and the increased renewable generation that is likely to need support from additional gas-fired generation.

Importantly, while Tennessee can currently deliver into the Algonquin and Granite State Gas Transmission ("GSGT") systems, and receive gas from Iroquois, PNGTS, and M&NP, the NED project significantly and uniquely enhances Tennessee's unmatched ability to support other pipeline customers in times of short-term outages throughout New England. The NED project will provide the opportunity for Tennessee to deliver into, and therefore help supply, all of the pipelines in New England, thus providing the opportunity to meet the demands not only in Tennessee's own markets, but also for incremental natural gas deliveries into every other pipeline's system in New England.

Moreover, the geographic reach of the NED project is important for reliability reasons because it provides the opportunity for new gas-fired generation to be sited in areas that currently have little or no access to natural gas (*e.g.*, communities along New Hampshire's southern border), thus providing the opportunity to further diversify generation locations in New England.

- *Ensuring Electric Market Price Reductions*: No existing or proposed single pipeline project delivers natural gas to all or nearly all of the gas-fired generation in New England. Today, Tennessee directly serves approximately 37% of existing installed gas-fired generating capacity in New England on a Net Generation basis. In addition, the existing Tennessee pipeline is a high pressure transmission system, and delivers natural gas into the regional systems of Algonquin at Mendon, Massachusetts and Mahwah, New Jersey, and into GSGT.[33] Thus, Tennessee currently helps to supply existing gas-fired generation capacity regionally. Moreover, as just discussed, the NED project significantly enhances Tennessee's pipeline interconnections by providing the opportunity to grow and/or enhance natural gas supplies of Iroquois, M&NP, Algonquin, PNGTS, and GSGT thereby helping to serve virtually all New England markets.

  Figure 5 is a map of the existing Tennessee pipeline system and the proposed NED project that shows the expected flows once the NED project is placed into service. Clearly, to maximize the electric market benefits, Tennessee's NED project is required to ensure that nearly all of the gas-fired generation in New England has increased access to lower cost natural gas.

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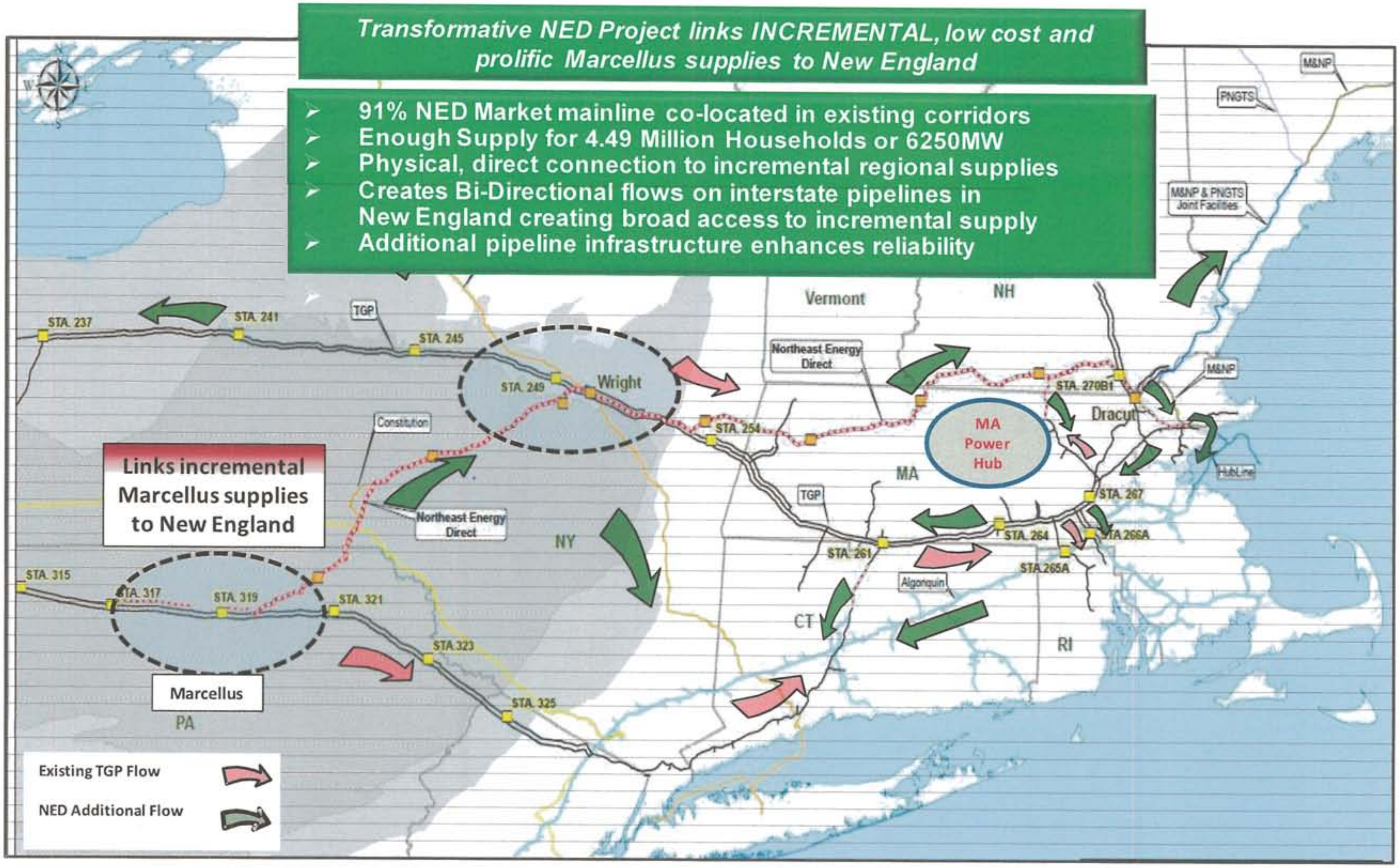
[33] For example, Tennessee often serves Algonquin's operations and markets alone at levels of approximately 1 Bcf/d.

Figure 5: Map of Flows on Tennessee Once the NED Project is in Service



It is Tennessee's position that the NED project is prudent and necessary to ensure that as many gas-fired generating plants as possible in New England have access to natural gas pipeline capacity. Pipeline capacity should be contracted to reasonably reach, either directly or indirectly, the greatest number of gas-fired electric power plants in New England. Doing so will minimize the possibility of electric prices continuing to be set higher as a result of certain gas-fired generation not having sufficient natural gas capacity. If only a portion of the gas-fired generation in New England has firm access to lower-priced natural gas, it is likely that gas-fired generation located on a pipeline on which capacity continues to be constrained will be paying relatively higher gas prices. Thus, when those gas-fired generators are either setting the wholesale electric price or are unable to obtain natural gas and higher cost generating resources are instead required to operate, higher electric prices for all of New England will persist. If pipeline capacity in New England is not reasonably expanded to broadly reach gas-fired generation in New England, the region is not likely to fully realize the electric price benefits that are expected to be produced by additional pipeline capacity. With NED in service, Tennessee is set up to serve and help supply gas-fired generation in New Hampshire and throughout New England.

- *Mitigate the Potential of Economic Retirements of Gas-Fired Generation*: Increasing capacity on more than one pipeline, one of which must be Tennessee, enhances the electric market by continuing to support a diverse fleet of natural gas-fired generating resources located throughout New England. If only one pipeline is expanded in already-existing geographic markets, and as a result, gas–fired generators on other pipelines are left at a competitive disadvantage from an inability to access inexpensive gas supplies, that gas-fired generation may retire for economic reasons. Consequently, this could concentrate gas-fired generating resources on a single pipeline with limited geographic reach, thereby limiting ISO New England's dispatch flexibility. In addition, significant costs could be incurred to continue to support otherwise uneconomic generators that must run for reliability purposes because the retiring gas plants are located in particular load pockets served by constrained systems.

As a result, to maximize the benefits to New England electric markets in the form of lower energy costs and required reliability, it is important that New Hampshire focus on pipeline project(s) that offer scale, the ability to serve other regional pipelines, and provide a direct connection to incremental supply – which is exactly what the NED project will provide.

VII. The NED Project Will Provide Additional Benefits to New Hampshire

Uniquely, the NED project will provide benefits to New Hampshire in addition to the net economic benefits described above.

A. The NED Project Will Be Able to Serve New Gas-Fired Generation in New Hampshire

Tennessee currently provides firm contracted gas transportation service to Granite Ridge Energy, a 762 MW (winter rating) gas-fired combined-cycle facility located in Londonderry, New Hampshire. The NED project will be able to serve new generation that may be developed in New Hampshire to replace existing oil and coal facilities being retired. For example, Merrimack Station in Bow, New Hampshire, a 460 MW (nameplate) coal-fired generator owned by Eversource, could be repowered with natural gas. The NED project will bring sufficient capacity of new natural gas to the existing Tennessee line, which is just across the Merrimack River from this plant, to allow the repowering of this generating facility to a gas-fired facility. This plant is currently on the list of generators owned by Eversource to be divested if the settlement agreement with the state is approved. New natural gas generation with adequate access to a gas supply will improve the reliability of the electric grid in both New Hampshire and New England.

B. Opportunities for Expanded Natural Gas Service for Residential and Business Use

The NED project will provide substantial benefits to natural gas customers in the state, including residential and commercial customers, by moderating costs to existing customers and permitting the expansion of natural gas service to areas and businesses where it is not available today. Currently in New Hampshire, natural gas is an option for residential and business customers in only 52 of the state's 234 cities and towns. By siting new gas transmission facilities in New Hampshire, the NED project will create a much greater opportunity for residences and businesses to convert from oil and other fuels used for heating and manufacturing to less expensive and environmentally cleaner natural gas. Liberty Utilities has indicated that an average residential customer who switches to natural gas from a competing fuel could save 40% on their heating bills. The NED project will also provide Northern Utilities with an opportunity to expand its gas distribution system to the benefit of New Hampshire citizens. Moreover, the Project will provide an opportunity for the New Hampshire Gas Corporation in Keene to perhaps convert from propane-air to natural gas service and to expand to serve new customers in its service territory.

C. Opportunities for Expanded Use of Compressed Natural Gas ("CNG")

Tennessee has received inquiries from developers of CNG and LNG fueling station facilities in New Hampshire that are not currently located near a natural gas pipeline or distribution system. CNG is increasingly being used to replace diesel, gasoline and propane in the transportation industries, and is currently being used by large New Hampshire facilities like the Dartmouth Hitchcock medical centers in Lebanon and Keene. The NED project could encourage the use of CNG by other industries in New Hampshire, which would have economic and environmental benefits for the state.

D. Uniquely, the NED Project Will Supply Other Interstate Pipeline Systems Serving New Hampshire

As previously discussed, the NED project is capable of delivering incremental, low cost gas supplies to the PNGTS and M&NP systems, thereby providing additional gas services and supplies to other markets in New Hampshire and Maine. These deliveries, able to be uniquely performed by Tennessee upon NED being in-service, will allow for the opportunity to significantly offset the declining gas imports from

Canada. In addition, NED will provide an important diverse supply option for Granite State Gas Transmission's markets.

E. Employment and Tax Benefits of NED

The construction of the NED project will bring jobs to New Hampshire. Tennessee estimates that over 500 temporary jobs will be needed to construct the New Hampshire portion of the Project, which would be filled largely by construction contractors and traffic control and security personnel. Local businesses such as restaurants, hotels and similar service providers will benefit from the construction. Tennessee estimates that the NED project will significantly increase Tennessee's property tax payments and local school tax payments in New Hampshire.

In addition, the development of the pipeline, the resulting lower energy costs to be paid by New Hampshire homes and businesses, and the opportunity for the provision of expanded natural gas service will also create the opportunity for economic development and to stimulate new investment in New Hampshire.

F. The NED Project is Necessary For the Development of Renewable Generation Technologies

As described earlier, gas-fired generation is a necessary complement to the development of renewable power technologies. Solar and wind are intermittent generation technologies, and generation from solar and wind varies by the season, day and hour and both are prone to sudden fluctuations. Weather forecasts can be unreliable, and there is often uncertainty as to how much power renewable technologies will produce on any given day. To ensure that power is available to the grid on a reliable basis, natural gas is a necessary backup source of electricity to support renewable power. Natural gas generators are highly flexible and have load-following capabilities that allow start-up or shut-down in as little as 10-minute intervals. Coal, oil or nuclear generation does not have the same flexible capabilities. The percentage of renewable generation in New Hampshire is likely to increase, as New Hampshire seeks to attain its increasing Renewable Portfolio Standard obligations.[34] Gas generation is the preferred back-up generation for renewables and will allow that growth in electric production from renewable technologies to continue.

G. Environmental Benefits

The NED project provides environmental benefits in at least two respects. First, natural gas produces significantly less carbon emissions than oil or coal-fired generating plants or fuel oil used in heating. Thus, when natural gas-fired generation is utilized to generate electricity, and natural gas is used to heat homes and businesses, it contributes to the reduction in greenhouse gases in the state.

In addition, as discussed previously, because of the existing pipeline constraints in New England that limit the ability of gas-fired generation to produce electricity during the winter, New England burns significantly more coal and oil to create electricity, thus expanding, not contracting, the region's emissions. In fact, oil and coal-fired generation produced 24% and 18% of the total electricity in New

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[34] *See, e.g.*, http://www.puc.state.nh.us/sustainable%20energy/renewable_portfolio_standard_program.htm.

England in January and February 2014, respectively.[35] ISO New England indicated that, through February of the winter of 2013/2014, generators burned 2.7 million barrels of oil as part of the Winter Reliability Program to produce electricity.[36]

Tennessee recognizes that with the increased use of natural gas comes a responsibility to minimize methane emissions. Working towards this goal, Tennessee's parent, Kinder Morgan, is a part of the One Future Coalition, which is a voluntary coalition of participants across the natural gas supply chain committed to achieving cost-effective solutions to environmental challenges. The organization's goal is to enhance the energy delivery efficiency of the chain by limiting energy waste and achieving a methane "leak/loss rate" of no more than 1%. One Future is working with the Environmental Protection Agency who will verify industry voluntary programs, and will document reductions and progress toward the goal. Kinder Morgan is the only midstream company participating in this effort.

VIII. Conclusion

Tennessee firmly believes that a "status quo" or "do nothing" approach to the current high energy cost problem in New England is not viable, and will continue to be a substantial economic drag on the region. Building incremental capacity with the NED project will lower and help stabilize both natural gas and electricity costs in New England, which in turn will help facilitate new investment and economic development growth in the region. Tennessee and Concentric are committed to working with the Staff, the Commission and the EDCs in this Investigation. They look forward to actively participating in this Investigation so that additional natural gas pipeline resources can be developed in New Hampshire for the benefit of all electric and gas customers in the state.

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35 ISO New England, Post Winter 2013/14 Review, Electric/Gas Operations Committee Presentation, March 6, 2014, slides 25 and 47.

36 *Id.*, slide 3.

APPENDIX A

Tennessee's Responses to the Specific Issues
<u>Requested for Stakeholder Input</u>

Question 1:

Identification of the root cause of the high winter wholesale and/or retail electricity prices.

Response:

Please see Section IV ("The Root Cause of the New England Energy Cost Problem") of Tennessee's comments for a detailed discussion of the causes of the high winter wholesale and retail electric prices in New Hampshire and in New England.

Question 2:

How the preferred solution results in lower wholesale and/or retail electricity prices for New Hampshire consumers. For example, if the preferred solution requires one or more New Hampshire EDCs to purchase firm pipeline capacity, explain in detail how that purchase translates into lower Load Marginal Prices (LMPs) for wholesale electricity customers and eventually lower electric energy rates for retail customers. Identify all steps in the process and specify all assumptions.

Response:

Please see Sections V and VI ("New England's Energy Cost Problem Can Significantly Benefit from Additional Pipeline Capacity" and "Benefits to Customers Should be Maximized", respectively) of Tennessee's comments.

Question 3:

Whether the preferred solution is part of a regional solution to reduce wholesale electricity prices. If so, describe the regional solution and specify all approvals needed to ensure such solution moves forward.

Response:

Please see Section V.B and V.C ("A Policy Decision is Required to Achieve the Electric Market Benefits" and "There Are Net Benefits to New Hampshire Acting Unilaterally to Mitigate the High Energy Costs", respectively) of Tennessee's comments.

Question 4:

For pipeline-based solutions, specify the firm pipeline capacity in Dth/day to be purchased by each EDC, the associated annual cost and the contract term, identify the pipeline project to which the estimated annual cost relates, provide the estimated benefit-cost ratio for such project and the projected reduction in wholesale and/or retail electricity prices.

Response:

As described in Section V ("New England's Energy Cost Problem Can Significantly Benefit from Additional Pipeline Capacity") of Tennessee's comments, multiple recent studies conducted by independent experts have demonstrated an indisputable need for, and the substantial benefits to be provided by, significant additional natural gas pipeline infrastructure in New England.

Question 5:

For LNG-based solutions, describe the product/service offered, specify the quantity to be purchased by each EDC, the associated annual cost and the contract term, identify the storage facilities underlying the LNG product/service and their location(s), and provide the estimated benefit-cost ratio for such solution and the projected reduction in wholesale and/or retail electricity prices.

Response:

Not applicable.

Question 6:

For energy efficiency-based solutions, provide the incremental winter kWh savings projection for each EDC for the ten year period beginning 2018 and the associated annual costs, identify the energy efficiency measures underlying the winter period kWh savings and related lifetime benefit-cost ratios and the projected reduction in wholesale and/or retail electricity prices.

Response:

Not applicable.

Question 7:

Whether the preferred solution will enhance reliability of the electric power system in New Hampshire and the region. If so, explain how the preferred solution enhances reliability.

Response:

Please see Section VI ("Benefits to Customers Should be Maximized") of Tennessee's comments that discuss how additional pipeline capacity provided by the NED project will enhance reliability of the electric power system in New Hampshire and the New England region as a whole.

Question 8:

Provide all studies that support the claimed: (i) benefit-cost ratio(s); (ii) reduction in wholesale and/or retail electricity prices and (iii) reliability enhancement.

Response:

The studies referenced in these comments that discuss (i) benefit-cost ratio(s); (ii) reduction in wholesale and/or retail electricity prices and (iii) reliability enhancement, are as follows:

(1) Black & Veatch, *Natural Gas Infrastructure and Electric Generation: Proposed Solutions for New England,* August 2013 (http://www.nescoe.com/uploads/Phase_III_Gas-Elec_Report_Sept._2013.pdf);

(2) Competitive Energy Services, *Assessing Natural Gas Supply Options for New England and their Impacts on Natural Gas and Electricity Prices*, February 2014;

(3) ICF International, *Study on Long-term Electric and Natural Gas Infrastructure Requirements in the Eastern Interconnection*, September 2014 (http://www.naruc.org/Grants/Documents/ICF-EISPC-Gas-Electric-Infrastructure-FINAL%202014-12-08.pdf);

(4) ICF International, *Assessment of New England's Natural Gas Pipeline Capacity to Satisfy Short and Near-Term Electric Generation Needs: Phase II*, November 2014 (http://www.iso-ne.com/static-assets/documents/2014/11/final_icf_phii_gas_study_report_with_appendices_112014.pdf);

(5) Competitive Energy Services, *Report to Tennessee Gas Pipeline Company, LLC*, December 2014; and,

(6) Synapse Energy Economics, *Massachusetts Low Gas Demand Analysis: Final Report*, January 2015 (http://synapse-energy.com/sites/default/files/Massachusetts%20Low%20Demand%20Final%20Report.pdf).

APPENDIX B

Evaluation of the Commission's Legal Authority to Approve and Allow Cost Recovery of EDC proposals for Purchasing Natural Gas Pipeline Capacity

The Order of Notice ("OON") in this docket identified a number of provisions of New Hampshire law which the Commission directed its Staff to investigate as possible legal authority for reviewing and approving proposals for addressing market problems identified in the OON. OON at p. 3. The statutes identified in the OON included, inter alia, RSAs 374-F, 374-A, 378, 378:37-41, and 374:57. During the stakeholder meeting on May 12, 2015 Staff asked the interested EDCs and the stakeholders to include in their submissions comments on the legal authorities. In this portion of its submission, Tennessee examines relevant statutes and case law, and discusses the Commission's authority to consider and approve natural gas pipeline capacity contracts entered into by EDCs as a means of addressing the market problems noted in the OON, and the authority for providing EDCs with reasonable assurance of cost recovery for such contracts.

The New Hampshire Supreme Court has interpreted the state's public utility statutes as conferring broad regulatory authority upon the Commission, though those powers are circumscribed by the purposes which the underlying statutes seek to accomplish. *Allied New Hampshire Gas Co. v. Tri-State Gas & Supply Co.*, 107 N.H. 306, 308 (1966). See also *Appeal of Granite State Elec. Co.*, 120 N.H. 536, 539 (1980) (the Commission must not only perform its statutorily created duties, but also exercise the powers inherent within its broad grant of power.) While the powers of the Commission may be limited by the express provisions of public utility law, they include powers that may be fairly implied from those provisions. *Blair v. Manchester Water Works*, 103 N.H. 505, 506 (1961). The New Hampshire Supreme Court has also recognized that the Commission has broad discretion to act in the public interest. *Harry K. Shepard, Inc. v. State*, 115 N.H. 184, 185 (1975). Finally, the Court has found that the Commission's ratemaking power is plenary, except in narrowly defined circumstances. *Bacher v. Public Serv. Co. of N.H.*, 119 N.H. 356, 357 (1979).

The Commission's authority over public utilities such as the EDCs is reflected in a number of New Hampshire statutes. Specifically, RSA 374:3 grants the Commission general supervisory authority over "all public utilities...so far as necessary to carry into effect the provisions of this title." One provision of Title XXXIV includes the requirement that "[e]very public utility shall furnish such service and facilities as shall be reasonably safe and adequate and in all other respects just and reasonable." RSA 374:1. Another requires that all charges made by a public utility "for any service rendered by it or to be rendered in connection therewith" be "just and reasonable". RSA 374:2. EDCs also have the authority to "enter into and perform contracts" associated with electric power facilities "or the product or service therefrom..." RSA 374-A:2, and are required to "work to reduce rates for all customers." RSA 374-F:3,

XI. The Commission also has broad authority under RSA 374:26 to "prescribe such terms and conditions" for the exercise of the privilege of being a public utility "as it shall consider for the public interest."

Although, as indicated above, EDCs have a responsibility to provide safe and reliable service at just and reasonable rates, and to work to reduce rates for all customers, the Commission must supervise the utilities to ensure that their responsibilities are executed in conformity with all of the statutory provisions included within Title XXXIV. Moreover, with regard to the issue that is central to this investigation, *i.e.*, cost and price volatility issues affecting wholesale electricity markets in New Hampshire, the Commission is not simply authorized but is in fact required by RSA 374-F:8 to "advance the interests of New Hampshire with respect to wholesale electric issues...to assure nondiscriminatory open access to a safe, adequate, and reliable transmission system at just and reasonable prices."

The Legislature has provided the Commission with important responsibilities and authority regarding electric industry restructuring. One of the primary purposes of electric restructuring was "to develop a more efficient industry structure and regulatory framework that results in a more productive economy by reducing costs to consumers..." RSA 374-F:1, I. The Legislature has also explicitly recognized that the transition to competitive markets for electricity is "a complex endeavor" that "requires the development of creative and flexible mechanisms to facilitate the movement from monopoly to competition." RSA 369-A:1, II. Clearly the development of effective wholesale markets is critical to the development and continuation of competition in the electricity markets.

The law which set New Hampshire on a path to a restructured electric industry specifically recognizes that competitive markets should provide rate relief for all customer classes. See RSA 374-F:3, XI. It also provides that "[t]o the greatest extent practicable, rates should approach competitive regional electric rates." RSA 374-F:3, XI. Thus, New Hampshire must be conscious of and act in concert with other New England states when developing electricity markets. New Hampshire must also "work with other New England and northeastern states to accomplish the goals of restructuring." RSA 374-F:3, XIII. In doing so, New Hampshire "should assert maximum state authority over the entire electric industry restructuring process." Id.

RSA 374-F:1, I identifies the "development of competitive markets for wholesale and retail electricity services" as being "key elements in a restructured industry..." In addition, RSA 374-F:4, VIII (a) expressly authorizes the Commission "to order such charges and other service provisions and to take such other actions that are necessary to implement restructuring and that are substantially consistent the principles established in this chapter." Taking action to address cost and price volatility issues affecting wholesale electricity markets in New Hampshire is clearly consistent with the provisions of New Hampshire law noted above. One such action would be to allow EDCs to purchase natural gas pipeline capacity and to sell it to gas-fired electricity generators as a means of reducing electricity prices.

Other statutes provide authority for such capacity purchases by EDCs. For example, part of an EDC's ongoing least cost planning responsibility is to complete "[a]n assessment of supply options including owned capacity, market procurements, renewable energy, and distributed energy resources." RSA 378:38, III. This statute, therefore, may be interpreted as authorizing a plan for the procurement by EDCs of natural gas capacity. In addition, RSA 374:57 requires each electric utility that enters into an agreement with a term of more than one year for the purchase of "energy" to furnish a copy of the agreement to the Commission. Clearly, by using the word "energy" rather than "electricity", the law can reasonably be interpreted as allowing an EDC to procure natural gas capacity to address concerns about electricity prices.

As for cost recovery, RSA 374:57 authorizes the Commission to disallow recovery in whole or in part, if it finds the utility's decision to enter into the energy transaction was "unreasonable and not in the public interest." Thus, the Commission impliedly has the authority to allow recovery for any such agreement if the transaction is found reasonable and in the public interest. As the Court noted in *In re Pinetree Power, Inc.*, 152 N.H. 92 (2005), the Commission, as part of its rate-making authority, is authorized and required to provide a cost recovery methodology for electric utilities. In the *Pinetree* case - where the Commission approved cost recovery by an EDC of modifications to a generating facility - the Court cited three statutes as the legal authority for approving an incentive cost recovery methodology: RSA 374:3 (giving the Commission general supervision of public utilities); RSA 374:3-a (giving the Commission authority to approve alternative forms of regulation so long as it results in just and reasonable rates); and RSA 363:17-a (requiring that the Commission be the arbiter between the interests of customers and those of the regulated utility).

For all of the reasons set forth above, Tennessee respectfully submits that the Commission has authority to approve and allow cost recovery of EDC proposals for purchasing natural gas pipeline capacity and reselling that capacity to electric generators as a means of lowering electricity prices.