Northeast Energy Direct Project

New Hampshire
Kinder Morgan is one of the largest, most experienced energy companies in North America. We own an interest in or operate approximately 80,000 miles of pipelines and 180 terminals.

Kinder Morgan employs approximately 11,500 people throughout the United States and Canada.

We are committed to operating our assets in a safe, ethical and transparent manner.

We ensure public safety and safe pipeline operations through employee training, regular testing, right-of-way aerial and foot patrols and adherence to our comprehensive Integrity Management plan and procedures.

Kinder Morgan does not have a Political Action Committee (PAC), or make any political contributions.
Kinder Morgan’s Natural Gas Pipelines

[Map showing Kinder Morgan's pipeline network across the United States, with labels for different pipeline systems and colors representing various pipeline types.]
System Overview

- 13,900 miles of pipeline
- 79 Bcf of storage capacity
- ~8.0 Bcf/d – design capacity
- 1.4 million horsepower
- >500 FT customers
- 35 MM households equivalent
- Delivered ~390 Bcf to New England customers in 2012

Abundant & Growing Supply

- Marcellus, Utica, Eagle Ford, Haynesville, Fayetteville
New England LDC Customers

• Liberty Utilities
• Energy North Natural Gas (NH)
• Northern Utilities (ME)
• Fitchburg Gas & Electric Light Co. (MA)
• Colonial Gas Co. (MA)
• Essex County Gas Co. (MA)
• Boston Gas Co. (MA)
• NSTAR Gas Co. (MA)
• Bay State Gas Co. aka Columbia Gas of MA (MA)
• Blackstone Gas Co. (MA, Municipal)
• Narragansett Electric Co. d/b/a National Grid (RI)
• Holyoke Gas & Electric (MA, Municipal)
• Westfield Gas & Electric Dept. (MA, Municipal)
• Berkshire Gas Co. (MA)
• Connecticut Natural Gas Co. (CT)
• Southern Connecticut Gas Co. (CT)
• Yankee Gas Services Co. (CT)

New England Power Generators

• Granite Ridge LLC (NH)
• Entergy RISE
• Blackstone GDFSUEZ
TGP has existing pipelines in 10 municipalities and three counties in New Hampshire.

**Hillsborough County:**
- Hudson
- Manchester
- Pelham

**Merrimack County:**
- Allenstown
- Concord
- Hooksett
- Pembroke

**Rockingham County:**
- Londonderry
- Salem
- Windham
Existing Rights-of-Way in New Hampshire

Pelham, NH

Windham, NH

Pelham, NH

Salem, NH
Existing Valve, Meter & Compressor Stations in the Northeast

Compressor Station in Pelham, NH

Valve Station in Bolton, MA

Compressor Station in Pelham, NH

Meter Station in Schodack, NY
NEW HAMPSHIRE

KINDER MORGAN
In New Hampshire,

- Kinder Morgan operates approximately **50 miles** of pipeline.

- In 2014, Kinder Morgan paid approximately **$1.7 million** to state and local taxing bodies.

- Kinder Morgan owns or operates assets in Hillsborough, Rockingham and Merrimack Counties.

- Kinder Morgan has provided natural gas to New Hampshire for over **60 years**.
The Need for the Northeast Energy Direct Project
Current Sources of New England Natural Gas

New England’s Gas Needs:

- In 2013, New England relied on natural gas for 52% of its electricity produced, more than any other source. (Source: ISO-NE)

- Tennessee Gas Pipeline and Algonquin Gas Pipeline are the two major pipelines transporting natural gas to New England. (Source: U.S. Energy Information Administration)

Sources of New England’s Gas Supply:

- In 2008, the Northeast received only 14% of its natural gas from Appalachia/Eastern U.S. sources such as the Marcellus shale. (Source: Navigant, Spring 2013)

- In 2012, the Northeast region received 60% of its gas supply from Eastern US sources, mainly shale formations. (Source: Navigant North American Natural Gas Market Outlook, Spring 2013)

- It is estimated that by 2022, based on current trends and source supply that the Northeast will receive 92% of its gas supply from Eastern US sources. (Source: Navigant North American Natural Gas Market Outlook, Spring 2013)
“In New England, increasing pressure on an already-constrained natural gas infrastructure is our most pressing and urgent challenge… New England’s pipeline infrastructure is inadequate to serve demand by local distribution companies (for home heating) and power generators in the winter period. This constraint has led to significant electric reliability challenges.”

- Gordon van Welie, President and CEO of ISO-NE.

Current Supply:
- Competitive Energy Services (CES) estimates that New England currently has the capacity to import **2.7 Bcf/d** on existing pipelines (not including Canadian imports, LNG and proposed new pipelines.)

Current and Future Needs:
- Natural gas demand for heating and industrial processes in New England can exceed **4.5 Bcf/d** on the coldest winter days. This does **NOT** include the needs of the electric system.
To provide the ISO-NE with natural gas to meet the needs of electric generators in the winter at competitive prices, CES estimates that New England needs an additional 2.4 Bcf/d of pipeline capacity.

- New Hampshire represents 6% of New England’s natural gas usage and thus needs an additional 0.145 Bcf/d of incremental pipeline capacity.

CES has estimated the economic value of adding 2.4 Bcf/d of capacity to New England is $2.988 Billion to the region’s electricity consumers alone.

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“"The supply-and-demand imbalance caused by pipeline constraints in New England has had a dramatic impact,” translating into “record-high power prices and soaring energy market costs.””

- Gordon van Welie, ISO- New England President and CEO, Jan 21, 2015
New England – Power Challenges

“New England could face significant reliability issues when natural gas-fired power generators are not able to dispatch as a result of the gas pipeline capacity constraints.”

- NESCOE Phase III Study, Fall 2013.

- Electric generation, in New England and elsewhere, is increasingly dependent on natural gas, due to a combination of market forces, environmental regulations, and improvements in technology, but the natural gas infrastructure is trailing behind the construction of new gas-fired capacity.

- The New England region is in a precarious operating position as there is inadequate pipeline infrastructure leading to high prices and reliability concerns; the long term solution is to expand natural gas infrastructure to meet demand.

- The commitment from non-LDCs is not sufficient to build the infrastructure to accommodate the generators, and the generators are unable to transact due to lack of an appropriate regulated incentive mechanism that provides for a recovery of their costs in the current capacity market construct.
Several natural gas utilities in New England are imposing moratoriums on new customers, or limiting deliveries to existing customers due to a shortage of natural gas. These utilities include Berkshire Gas, Columbia Gas of Massachusetts and Holyoke Gas & Electric.

The Boston Globe

Utilities may limit new natural gas connections

By Jay Fitzgerald | GLOBE CORRESPONDENT OCTOBER 04, 2014

Short supplies of natural gas tied to limited pipeline capacity have already led to spiraling winter electricity prices across Massachusetts.

Now the same shortages may force some gas companies in Western Massachusetts to turn away new heating fuel customers and restrict how much additional natural gas existing commercial customers can use if they expand operations.

Berkshire Gas Co., which has 38,000 customers in Western Massachusetts, has announced that this December, and perhaps sooner, it will stop signing up new residential and commercial customers in the Greenfield area because the utility is reaching its capacity to deliver enough gas through existing pipelines. The moratorium will apply to existing commercial and industrial customers that want to expand operations and use additional gas, said Chris Farrell, the Berkshire Gas spokesman.

A similar moratorium will probably be extended by the middle of next year to Hampshire County, home of the University of Massachusetts Amherst, Farrell said.

Berkshire Gas imposes Hampshire County hookup moratorium blocking projects in Amherst, Hadley while calling for Kinder Morgan pipeline

March 20, 2015
On March 5, 2015, Kinder Morgan announced it had reached agreement with key local natural gas distribution companies (“LDCs”) throughout New England to transport approximately 500,000 Dth/d of long-term firm transportation on the Northeast Energy Direct Project route.

These LDC’s include:

- National Grid (186,963 Dth/d)
- Liberty Utilities (115,000 Dth/d)
- Columbia Gas of Mass. (114,300 Dth/d)
- Connecticut Natural Gas Corporation
- Southern Connecticut Gas Corporation
- Berkshire Gas Company
- The City of Westfield Gas & Electric Light Department
Northeast Energy Direct Project
Introduction
Northeast Energy Direct Project Overview

- The Northeast Energy Direct Project will expand the existing Tennessee Gas Pipeline system within Pennsylvania, New York, Massachusetts, New Hampshire and Connecticut.

- The expansion will help meet increased demand in the U.S. Northeast for transportation capacity for natural gas.

- Following completion, the proposed project could bring an estimated increased capacity of up to 2.2 Bcf/d to the Northeast, which is equivalent to an additional 1.5MM households.

- The pre-filing process allows for open and transparent interaction between FERC Staff and stakeholders regarding the Project before the formal certificate application is filed, and is intended for early identification and resolution of environmental and other important issues. During pre-filing, TGP will file detailed draft environmental resource reports with FERC for review and comment.

- FERC Docket #: PF14-22-000

### Estimated Project Schedule

<table>
<thead>
<tr>
<th>Action</th>
<th>Timing</th>
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</thead>
<tbody>
<tr>
<td>Outreach Meetings</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Route Selection and Permit Preparation</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Agency Consultations</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Filed for FERC Pre-Filing</td>
<td>Sept. 15, 2014</td>
</tr>
<tr>
<td>Participate in FERC Pre-filing Process</td>
<td>4th Quarter 2014 to 4th Quarter 2015</td>
</tr>
<tr>
<td>File Certificate Application with FERC</td>
<td>4th Quarter 2015</td>
</tr>
<tr>
<td>Anticipated FERC Approval</td>
<td>4th Quarter 2016</td>
</tr>
<tr>
<td>Proposed Start of Construction Activity</td>
<td>January 2017</td>
</tr>
<tr>
<td>Proposed In-Service</td>
<td>November 2018</td>
</tr>
</tbody>
</table>
Federal, state and local agencies will have extensive regulatory authority over the proposed project. Some of these include:

**Federal**
- Federal Energy Regulatory Commission
- U.S. Army Corps of Engineers - New England District
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Department of Agriculture
- U.S. Department of the Interior - National Park Service
- U.S. Bureau of Land Management

**State**
- New Hampshire Department of Environmental Services
- New Hampshire Fish and Game Department
- New Hampshire Division of Historical Resources
- New Hampshire Division of Forests and Lands
- New Hampshire Site Evaluation Committee

**Local**
- New Hampshire Town Conservations Commissions
Proposed Northeast Energy Direct Route

Legend
- Proposed Pipeline Laterals
- Existing TGP
- Proposed Supply Path Component
- Proposed Market Path Component
The FERC Review Process (part 1)

**PRE-FILING ENVIRONMENTAL REVIEW PROCESS**

**Applicant Process**
- Assesses market need and considers project feasibility
- Studies potential site locations
- Identifies Stakeholders
- Requests use of FERC’s Pre-Filing Process
- Holds open house to discuss project
- Files formal application with the FERC

**FERC Process**
- Receives Applicant’s request to conduct its review of the project within FERC’s NEPA Pre-Filing Process
- Formally approves Pre-Filing Process, issues PF Docket No. to Applicant, and begins project review
- Participates in Applicant’s open house
- Issues Notice of Intent for Preparation of an EA/EIS. Opens NEPA scoping period to seek public comments on the project.
- Holds NEPA scoping meeting(s) and site visit in the project area. Consults with interested agencies.
- Receives formal application from Applicant
### NH Mainline

**Cheshire County**
- Fitzwilliam, NH
- Richmond, NH
- Rindge, NH
- Troy, NH
- Winchester, NH

**Hillsborough County**
- Amherst, NH
- Brookline, NH
- Greenville, NH
- Hudson, NH
- Litchfield, NH

**Rockingham County**
- Londonderry, NH
- Windham, NH

### Haverhill Lateral
- Salem, NH

### Fitchburg Lateral
- Mason, NH
NED Route in New Hampshire
Construction
Construction Process

1) Survey and Staking
2) Cleaning
3) Front-End Grading
4) ROW Topsoil Stripping
5) Restaking Centerline of Trench
6) Trenching (wheel ditzer)
7) Trenching (rock)
8) Padding Trench Bottom
9) Stringing Pipe
10) Field Bending Pipe
11) Line-Up, Initial Weld
12) Fill & Cap, Final Weld
13) As-Built Footage
14) X-Ray Inspection, Weld Repair
15) Coating Field Welds
16) Inspection & Repair of Coating
17) Lowering Pipe into Trench
18) As-Built Survey
19) Pad, Backfill, Rough Grade
20) Hydrostatic Testing, Final Tie-In
21) Replace Topsoil, Final Clean-Up, Full Restoration
Right-of-Way

• Experienced professionals are assigned to local areas to facilitate the process from start to finish

• **Right-of-Way Activities**
  - Survey Permission
  - Easement Negotiations
  - Construction
  - Follow-Up and Restoration
**Horizontal Directional Drilling (HDD)**

- Method of installing underground pipes in a shallow arc along a prescribed bore path by using a surface launched drilling rig, with minimal impact on the surrounding area.
- Directional boring is used when trenching or excavating is not practical.
- The best material is solid rock or sedimentary material.
Planned Compressor Stations

Digitally-rendered representation of proposed 80,000 to 90,000 Hp compressor station.

Final site layout and design at each location will be adjusted based on site specific conditions.
Environmental Considerations

Pre-Construction:
• Develop a route that minimizes environmental impact by following existing utility rights-of-way where possible.
• Conduct field surveys to identify and help protect sensitive resources: 1) Threatened and endangered species; 2) Wetlands and waterbodies; and 3) Cultural resources.

During Construction:
• Utilize environmental inspectors throughout construction to ensure compliance with all necessary permits.
• Use best management practices throughout construction, including:
  - Topsoil segregation and replacement
  - Temporary and permanent erosion control

Restoration:
• Restore all areas disturbed by construction activities as close as practicable to pre-construction conditions.
• Seed and re-vegetate in accordance with landowner and agency requirements and permits.
• Continue monitoring, restoration and reclamation process per agency requirements and permits.
Kinder Morgan’s Commitment to Safety

The Tennessee Gas Pipeline has been operating safely in the northeastern United States for over 50 years.

- **Pipeline operating conditions are monitored 24/7, 365 days a year** from a state-of-the-art control center using a SCADA (Supervisory Control and Data Acquisition) system.
- **The SCADA system** monitors pipeline pressures, volume and flow rates, and the status of pumping equipment and valves. Operators in the control center are able to start and stop equipment, make pressure and volume adjustments, and start and stop the system, the pipelines individually, and even segments of the pipelines to minimize disruptions and isolate issues.
- **Visual inspections** of facilities and pipeline right-of-way are conducted by air and/or ground on a regular basis.
- **Above ground marker signs** are displayed along the right-of-way to alert the public and contractors to the existence of the pipeline.
- **Kinder Morgan’s public awareness program** is designed to prevent third-party damage to its pipelines.
- Kinder Morgan has developed plans to respond to unplanned events and work with local response personnel to educate and drill on the procedures.
- Kinder Morgan **X-Rays all welds** during construction and performs **hydrostatic tests** on new pipelines before they are placed into service.
- Kinder Morgan utilizes **cathodic protection** to prevent corrosion on its pipelines.
Northeast Energy Direct Project
New Hampshire Benefits

KINDER MORGAN
Tax Income: An estimated additional $11.2M to local taxing bodies in NH

Job Creation: Estimated creation of 3,000 construction-related jobs

Economic Stimulus: Economic benefits to surrounding areas during construction (retail, hospitality, etc.)

Energy Reliability: Providing long-term energy reliability to the region.

Future Economic Growth: Provide capacity for growth; expandable to meet future needs

Kinder Morgan signed a Memorandum of Agreement with the Laborers International Union North America (LiUNA) for the Northeast Energy Direct Project.
New Hampshire Project Benefits

- **Economic Stimulus**: An estimated additional $16.8 Million to state and local taxing bodies upon project completion.
  - $11.1 Million to impacted towns.
  - $5.7 Million to state for local school taxes.
  - An estimated 520 contractors will be hired in New Hampshire to construct NED. Several permanent employment positions upon completion will also be created.

- **Increase Energy Availability**
  - **Liberty Utilities**, New Hampshire’s largest local gas distribution company, has entered into an agreement with Kinder Morgan to transport up to 115,000 dekatherms per day (Dth/d) of natural gas to serve Liberty’s customers in New Hampshire. That is enough to heat approximately 65,000 homes in New Hampshire on the coldest day of winter.
Next Steps
Our Commitment to Local Communities
New Hampshire Outreach

**Town Contacts:**
- Amherst, NH
- Brookline, NH
- Fitzwilliam, NH
- Greenville, NH
- Hudson, NH
- Litchfield, NH
- Londonderry, NH
- Mason, NH
- Merrimack, NH
- Milford, NH
- New Ipswich, NH
- Pelham, NH
- Richmond, NH
- Rindge, NH
- Salem, NH
- Troy, NH
- Winchester, NH
- Windham, NH

**Project Outreach:**
- Governor Maggie Hassan
- Pam Walsh, Governor’s Chief of Staff
- Office of US Sen. Kelly Ayotte
- Meredith Hatfield, Director of the Office of Energy and Planning
- Amy Ignatius, Chair of the Public Utilities Commission and Site Evaluation Committee
- Tom Burack, Commissioner of Environmental Services
- Jeff Rose, Commissioner of Resources and Economic Development
- Sen. Chuck Morse, Senate President
- Sen. Bob Odell
- Sen. Jeb Bradley
- Sen. Sharon Carson
- Sen. Sylvia Larsen, Senate Minority Leader
- Sen. Molly Kelly
- Sen. John Rausche
- Sen. Jeff Woodburn
- Rep. Terie Norelli, Speaker of the House
- Rep. Steve Shurtleff, House Majority Leader
- Rep. Mary Jane Walner, House Finance Chair
- Rep. David Borden, Chair, Science, Tech and Energy Committee
- Rep. Charles Townsend
- Rep. Jacqueline Cali-Pitts
- Rep. Robert Intone
- Rep. Beatriz Pastor
- Rep. William Baber
- Rep. Robert Backus
- Rep. John Mann
- Rep. Ian Raymond
- Rep. Marjorie Shepardson
- Rep. Amanda Merrill
- Rep. Larry Rappaport
- Rep. Richard LeVasseur
- Rep. Lester Bradley
- Rep. Aboul Khan
- Rep. Herbert Vadney
- Rep. Harold Reilly
- Rep. James Devine
- Rep. David Murotake
- Rep. Mary Griffin
- Greater Salem Chamber of Commerce
- Greater Londonderry Chamber of Commerce
- Merrimack Chamber of Commerce
We have conducted **47** public project presentations to impacted towns, counties and community groups.

- April 7, 2014: Montague (MA) Board of Selectmen
- April 8, 2014: Dracut (MA) Board of Selectmen
- April 9, 2014: Ashburnham (MA) Board of Selectmen
- April 21, 2014: Hollis (NH) Public Meeting
- April 22, 2014: Plainfield (MA) Board of Selectmen
- April 23, 2014: Ashby (MA) Board of Selectmen
- May 12, 2014: Pepperell (MA) Board of Selectmen
- May 13, 2014: Warwick (MA) Public Meeting
- May 14, 2014: Tyngsborough (MA) Board of Selectmen
- June 4, 2014: Richmond (MA) Board of Selectmen
- June 5, 2014: North Reading (MA) Board of Selectmen
- June 23, 2014: Groton (MA) Board of Selectmen
- June 24, 2014: Tewksbury (MA) Board of Selectmen
- June 25, 2014: Townsend (MA) Board of Selectmen
- June 26, 2014: Bolton (MA) Board of Selectmen
- July 8, 2014: Erving (MA) Board of Selectmen
- July 9, 2014: Andover (MA) Board of Selectmen
- July 10, 2014: Wilmington (MA) Board of Selectmen
- July 15, 2014: Lunenburg (MA) Board of Selectmen
- July 22, 2014: Royalston (MA) Board of Selectmen
- July 23, 2014: Berlin (MA) Board of Selectmen
- July 24, 2014: Shelburne (MA) Board of Selectmen
- July 24, 2014: Franklin Regional Council of Governments (MA)
- August 5, 2014: Nashoba Valley Chamber of Commerce (MA)
- August 12, 2014: Athol (MA) Board of Selectmen
- August 14, 2014: Washington (MA) Board of Selectmen
- August 18, 2014: Boylston (MA) Board of Selectmen
- August 19, 2014: Northfield (MA) Board of Selectmen
- August 20, 2014: Northern Middlesex Council of Governments (MA)
- August 26, 2014: Dalton Board of Selectmen (MA)
- Sept. 2, 2014: Dunstable Board of Selectmen (MA)
- Sept. 16, 2014: Western Mass. EDC
- Sept. 17, 2014: Lenox Garden Club (MA)
- Sept. 18, 2014: Berkshire Regional Planning Commission (MA)
- Sept. 30, 2014: Pittsfield City Council (MA)
- Oct. 1, 2014: Northborough (MA)
- Oct. 1, 2014: Dracut & Tyngsborough Town Presentation (MA)
- Oct. 6, 2014: Winchendon Select Board (MA)
- Oct. 8, 2014: Salem, NH Select Board
- Oct. 30, 2014: Columbia County, NY
- Oct. 30, 2014: Berkshire Chamber of Commerce
- Nov. 21, 2014: Sanford, NY Town Board
- Jan. 5, 2015: Milford, NH Select Board
- Jan. 5, 2015: Londonderry, NH Town Council
- Jan. 5, 2015: Windham, NH Select Board
- March 23, 2015: Litchfield, NH
- March 23, 2015: Amherst, NH
Community Open Houses

Kinder Morgan completed 12 Community Open House’s along the NED East proposed pipeline route in February 2015 which were attended by over 2,400 people.

- 2/4/15: Winchester, NH Open House
- 2/5/15: Greenfield, MA Open House
- 2/10/15: Pittsfield, MA Open House
- 2/11/15: Farmington, CT Open House
- 2/12/15: New Scotland, NY Open House
- 2/17/15: Andover, MA Open House
- 2/18/15: Londonderry, NH Open House
- 2/19/15: Hudson, NH Open House
- 2/23/15: Rindge, NH Open House
- 2/24/15: Milford, NH Open House
- 2/25/15: Berlin, MA Open House
- 2/26/15: Fitchburg, MA Open House
Kinder Morgan in the Community

2014 Donation to Eastern Pike Regional Police Department to support national gas conversion of squad cars.

In 2013, Tennessee Gas Pipeline donated to the Milford Beach in the Delaware Gap National Recreation Area to keep it open for the summer.

In 2013, Parkway Pipeline supported the Collins, MS Fire Department.

In 2013, Kinder Morgan donated 3,000 tree saplings to elementary schools in seven counties across NJ and PA to celebrate Arbor Day.

In cooperation with the Berkshire Natural Resource Council, Tennessee Gas Pipeline provided funding for the Olivia’s Overlook near Lenox, MA.
The Kinder Morgan Foundation funds programs that promote the academic and artistic interests of young people in the many cities and towns across North America where Kinder Morgan operates.
Project Website:
www.kindermorgan.com/business/gas_pipelines/east/neenergydirect/

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