



# THE NORTHERN PASS PROJECT UPDATE

## AS POWER PLANTS CLOSE, WHAT'S NEXT?

### How Northern Pass can help

By the end of 2014, Vermont Yankee Nuclear Power Station will end operations. Located in Vernon, Vermont, across the Connecticut River from Hinsdale, New Hampshire, the plant has provided power to both states, as well as the rest of New England, for more than 40 years. In order to meet our region's energy demands, Vermont Yankee ran at 100 percent capacity from December through March of last winter, according to our electrical grid operator, ISO New England. Closing Vermont Yankee will reduce the amount of constant, base-load power available throughout New England. Energy officials are concerned.

Vermont Yankee is not the only power plant to close in recent years. A number of plants have already shut down, or have announced closures, as you can see in the chart below. ISO New England estimates that roughly 25 percent of New England's power plants are at risk of retiring by 2020, and that we need more than 6,000 megawatts of power generation added into the grid to meet the region's needs. Keep in mind that New Hampshire and the other New England states all share one electric grid.

Adding hydropower from the Northern Pass into New England's electric grid can help fill this energy gap. The project will provide a constant source of clean, renewable energy available for both regular use and during times of peak demand. Northern Pass moves the region toward an energy system that uses more renewable sources, produces lower greenhouse gas emissions, and helps ensure there will be a constant source of power available to New England's homes and businesses.

### MEGAWATTS SET TO RETIRE IN NEW ENGLAND

#### Vermont Yankee Nuclear Power Station

605 MW DECEMBER 2014

#### Brayton Point Power Station – Massachusetts

1,530 MW MAY 2017

### MEGAWATTS RECENTLY RETIRED IN NEW ENGLAND

#### Mt. Tom Power Plant – Massachusetts

146 MW OCTOBER 2014

#### Salem Harbor Power Station – Massachusetts

749 MW JUNE 2014

#### Norwalk Harbor Power Station – Connecticut

342 MW MAY 2014

## WILDLIFE HABITATS THRIVE IN POWER LINE CORRIDORS

There are thousands of miles of transmission and distribution lines throughout New Hampshire that provide electricity to our homes. Few of us give much thought to these lines or the patches of low-growing, shrub-dominated vegetation that grows in the corridor beneath them; however, studies show these corridors are a key habitat for hundreds of creatures, including one of New Hampshire's endangered species, the New England cottontail.

A recent study of 89 miles of power line corridors throughout New Hampshire, Massachusetts and Connecticut found that these corridors provide a home to many native species that are facing a loss of habitat. The study took samples of wildlife in these corridors and found more than 300 plant species and many species of wildlife dependent on open and shrub-dominated habitats, including box turtles, indigo buntings, American woodcocks, rare bees and butterflies. It concluded that power line corridors play an important role in the survival of certain species and are vital to the conservation of hundreds of others.



Years ago, this type of landscape was found throughout New England along the edges of meadows and on farms. When farmland is no longer used for agriculture, shrubs and trees eventually recolonize unused fields, or homes are built on the land.

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## WILDLIFE HABITATS *continued from page 1.*

The region's decline in farming and subsequent loss of shrub habitat and meadows led to a decline in the many native plants and animals that need open space with a mix of grasses, flowers and shrubs in order to flourish.

The land beneath power lines today is managed by utilities. In New Hampshire, trees and shrubs are trimmed to keep them from growing tall enough to interfere with the lines. This kind of trimming creates open spaces similar to the edges of meadows found more often in New England years ago.

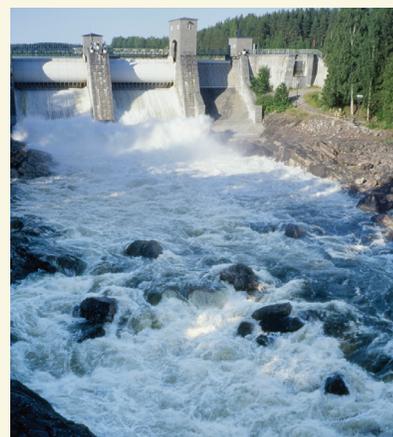
The land beneath the Northern Pass transmission line project will be managed in the same way PSNH power line corridors are managed today. In fact, the vast majority of the project (almost 80 percent) will be along existing rights-of-way that have been managed for decades. In places where a new power line corridor must be built, Northern Pass is required to take steps to minimize disruption to wildlife in the area. Wildlife biologists, botanists, and wetland scientists have been studying the plants and animals in the project corridor over the last few years to determine what species are present and how the project may affect them. These studies are an important component of the state and federal project permitting process.

To learn more about power line habitats, you can view the study here at the University of Connecticut blog: <http://today.uconn.edu/blog/2014/09/power-lines-offer-environmental-benefits-uconn-study/>

## THROUGH THE LINES

### How Northern Pass will bring clean Canadian hydropower to the New England grid

Northern Pass is a transmission project that will bring electricity generated primarily from hydropower plants in Québec into New Hampshire and onto the New England power grid. Getting that power here efficiently and safely requires much planning from our engineers, who are trained to design high-voltage transmission systems. When designing Northern Pass, these engineers used two different kinds of transmission lines for the 187-mile route: a High-Voltage Direct Current (HVDC) line from Québec to the Franklin Converter Terminal, and a High-Voltage Alternating Current (HVAC) line from the converter to the Deerfield Substation, where the project will connect into the regional electric grid.



The electricity supply for Northern Pass will originate at a substation in Québec, where it will be converted from AC to DC. The energy will then travel across the Canadian border into Pittsburg and on to the Franklin Converter Terminal. There, the energy is converted back into AC — the kind of power that flows throughout New England's interstate electric grid and is used by businesses and homes.

Why does Northern Pass change from one kind of line type to another and then back again? The AC electrical systems in Québec and New England are not able to directly connect with one another. This is referred to as an asynchronous system. A DC link must be placed between the two systems for them to interconnect. HVDC lines are also a highly efficient means for transporting electricity over long distances. When electricity travels along power lines, some of that electricity is lost in the form of heat losses. HVDC lines typically have lower power losses than an HVAC line of the same capacity.

If you have questions about the differences between HVAC and HVDC lines, or would like to know more about the type of line in your area, please call **1-800-286-7305** or email your question to [info@northernpass.us](mailto:info@northernpass.us).

## “A NICE BOON TO THE AREA”

In a recent Northern Pass video profile, the owner of a North Country resort spoke to us about how his family business has been affected by large construction projects in the region. In this video, he tells us that during construction of the Burgess BioPower biomass plant and the federal prison in Berlin, the resort saw an uptick in business in their restaurant and lounge. This kept the resort busy during typically slow times and led to hiring more staff. Northern Pass will be one of the largest construction projects in New Hampshire, requiring hundreds of workers. Like those other projects, Northern Pass will bring more business into local communities. You can view the video by going to [www.northernpass.us](http://www.northernpass.us) and clicking on the “Videos” link listed under “News.”



## ABOUT NORTHERN PASS

The Northern Pass is a 187-mile transmission line project that will bring New Hampshire and the rest of New England clean, renewable hydroelectricity. This reliable and affordable source of clean power will also lower energy costs, increase tax revenue in communities along the route and create many jobs during construction. To learn more, go to [www.northernpass.us](http://www.northernpass.us). You can also email questions to [info@northernpass.us](mailto:info@northernpass.us) or call **1-800-286-7305**.



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