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# Transmission developer rides Neptune's success into New England's energy battles

By Mark Hand

Building new electric transmission lines is never an easy process. It is a job that requires a huge amount of patience. That is why it is impressive that executives at [Anbaric Transmission LLC](#), an independent developer of transmission projects, have been involved in the successful completion of not just one, but two electric transmission projects that connected densely populated regions of the U.S. Northeast.

Edward Krapels and his partners were part of the team that developed the Neptune Regional Transmission System, a high-voltage, direct-current undersea transmission line that links the [PJM Interconnection LLC](#) to the New York grid and entered service in 2007. They also developed the Hudson Transmission project, a 660-MW link between New York City and PJM that was completed in 2013.

With those projects on their resumes, Krapels and his partners have now gained a reputation for leading transmission projects to a successful completion. "Because it takes so long, it's not for everybody," Krapels, founder and director of Anbaric, said in an interview. "We're a very patient company. The length of time it takes to develop a project is too long for most developers. I would only advise people to go into it if they have a 10-year willingness to wait things out."

Because electric infrastructure projects have such long lead times, developers must keep several projects on their plate if they wish to sustain a healthy business. Among Wakefield, Mass.-based Anbaric's portfolio of projects are two transmission lines — the Green Line and the Grand Isle Intertie — that the company has designed to move wind energy and hydroelectric power into the New England area.

The Green Line is a HVDC transmission system that will transfer up to 1,000 MW from Aroostook County, Maine, to the Boston area. The full route of the 320-kV system will include a combination of a land-based transmission line in Maine and submarine cable across the Gulf of Maine to Massachusetts. The project was initially proposed in 2006, but its intended route has changed since then. Although the exact route for the new version has not been finalized, current plans call for the Green Line to travel a total of 350 miles, with about 160 of those on land and about 190 underwater.

The project is being developed by the New England Independent Transmission Co. LLC, a partnership of Anbaric, [The Cianbro Cos.](#) and [PowerBridge LLC](#).

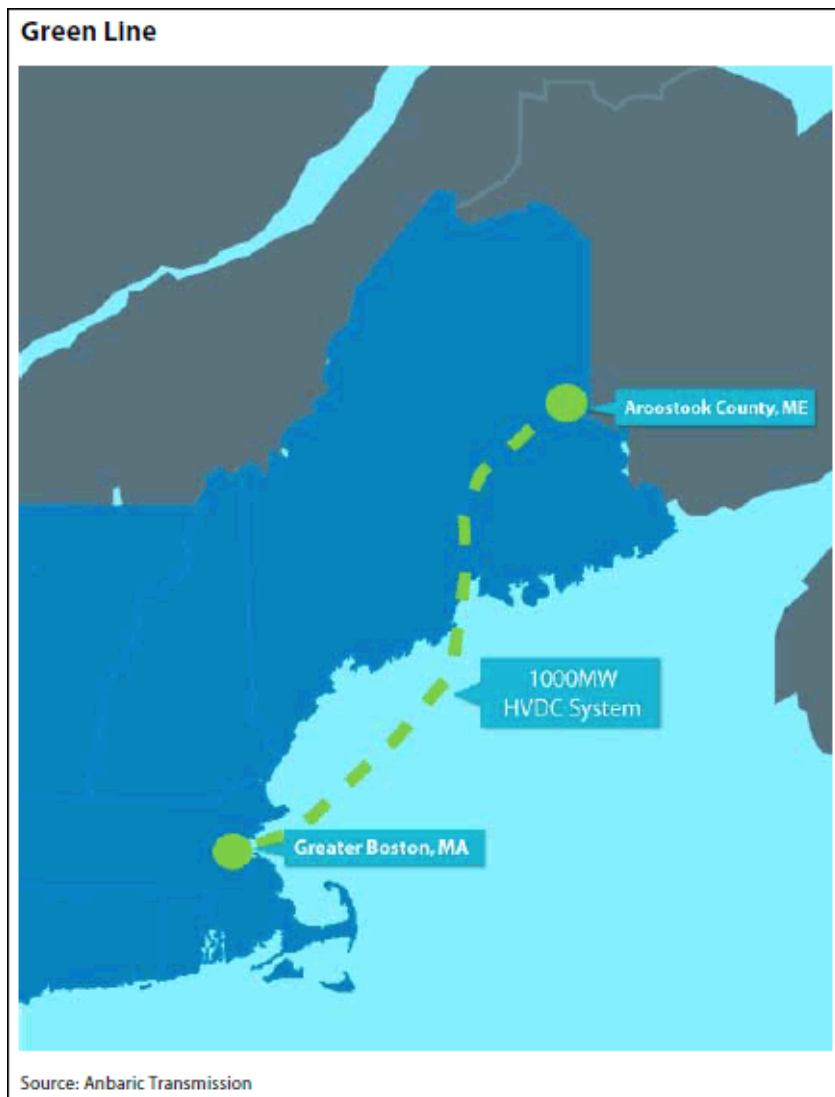
The Grand Isle Intertie is a proposed 230-kV electric transmission line that will carry 400 MW from Plattsburg, N.Y., to Burlington, Vt. The line will travel 35 to 40 miles, with about 20 to 25 miles of the system underwater in Lake Champlain, based on its current design.

Anbaric believes these two projects will help New England move toward greater use of cleaner energy. Governors in the New England states have expressed concern about the region's growing reliance on natural gas and are pushing for a diversification of supply that includes the use of large amounts of renewable energy resources.

The New England States Committee on Electricity, or NESCOE, has announced plans to issue at least one request for proposals for new electric transmission lines that would deliver 1,200 MW to 3,600 MW of "clean energy" to New England from "no- and/or low-carbon emissions resources." NESCOE is an organization of members appointed by the six New England governors to represent the states on energy issues.

Krapels said the current versions of the Green Line and Grand Isle Intertie projects were designed with the New England governors' procurement of new electric transmission lines in mind. "We don't know the exact form of action by the New England governors so we're awaiting their decision on exactly what kind of procurement they're going to launch," he said.

In December 2013, New England's governors signed an agreement for a regional energy infrastructure initiative that seeks to accelerate regional cooperation on expanding renewable energy and energy infrastructure in region. That announcement was followed by a Jan. 21 letter that NESCOE sent to [ISO New England Inc.](#) outlining



a preliminary plan for promoting electric and natural gas infrastructure investments to deliver additional supplies to the Northeast.

In response to the New England governors' plan, ISO-NE said: "In order for the New England states to fully realize their goals for clean and renewable energy sources, additional transmission will be required since those renewable sources are generally in remote areas far from demand centers. We are happy to work with the states by providing technical assistance and other support as needed."

ISO-NE spokeswoman Lacey Girard said the grid operator is "still in the early process" of working with NESCOE on the governors' plan to promote the construction of new electric transmission lines. NESCOE is beginning to move the plan through the stakeholder process in New England, she said.

Transmission developers, as with power generators, must submit applications to the ISO and then get entered into the grid operator's queue. After an application is submitted, the ISO performs a technical analysis to determine if the proposed new resource will have adverse effects on the existing system, Girard explained.

NESCOE's plan to seek proposals on power lines to the New England system from generation resources with little to no carbon emissions appears to match the description of Anbaric's Green Line and Grand Isle Intertie projects as well as other major proposed lines, including the 345-kV Northern Pass Project in New Hampshire being developed by Northern Pass Transmission LLC, a [Northeast Utilities](#) subsidiary. The Northern Pass project will transport largely hydroelectric power produced in Quebec into New England.

Other possible candidates include TDI New England's proposed underground New England Clean Power Link, which will run about 150 miles

from the U.S.-Canadian border to Ludlow, Vt. TDI New England is managed by [Transmission Developers Inc.](#), a portfolio company of the [Blackstone Group LP](#). Another major project in the area, the Northeast Energy Link, will transmit energy on a 230-mile, direct-current underground line from Maine and Canada to southern New England. Partners for the project are [Emera Inc.](#) subsidiary [Emera Maine](#) and [National Grid plc](#) subsidiary [National Grid USA](#).

### RFP process key to transmission project success

Krapels said the RFP process that is expected to take place in New England is crucial to the future of the Green Line and Grand Isle Intertie projects. "We have to invest a lot of our own money until there's clarity about who the counterparty is going to be," he said. "These RFPs are really, really valuable because in the case of New England, we think that these are going to be essentially rate-based projects, just like reliability projects, but under a different procedure for selecting them. That means for us, the financial counterparty is ISO New England."

Building wind-based transmission facilities will be important as New England seeks to meet its renewable portfolio standards. "The basic metric is that the RPS standards of New England, as a whole, require a Cape Wind project to be selected and built each year for the next five years," he said. As proposed by its developer, the Cape Wind project, to be built off the coast of Massachusetts, will total about 468 MW.

If Anbaric's Green Line and Grand Isle Intertie projects are not selected in New England's initial transmission procurement process, Krapels expects to keep developing both of them in preparation for the next RFP. "This is the first of several procurements that will have to be done if we're going to meet our RPS standards in New England," he said.

In an [op-ed published May 1 in \*The Boston Globe\*](#), Krapels said his company wants its transmission lines to focus on wind energy and then add hydroelectric resources when the wind is not blowing — what he described as a clean energy "twofor." The New England electric grid, according to Krapels, was developed to handle natural gas-, coal- and oil-fired power plants, not to accommodate wind. "The six New England governors now plan to remedy that, and have an opportunity either to select the 'twofor' projects, or hydro from Canada, a choice that will affect the New England economy and environment for decades to come," he wrote.

Krapels, who also serves as chairman of [Anbaric Holding LLC](#), the parent

company of Anbaric Transmission, has worked in the energy industry for several decades. He founded the consulting firm Energy Security Analysis Inc. in 1985. Two decades later, he founded Anbaric Transmission. The name of the company is derived from Greek and Arabic and refers to the movement of electricity.

Anbaric's business model is to manage the bulk of the development, permitting and financing of an electric transmission project, with the construction and operation left to other entities, he said.

Krapels said he learned many lessons from the development of the Neptune and Hudson projects. "Assembling the right combination of disciplines is critical," he said, referring to investors, suppliers and construction contractors. "Having those guys on board early and having them study the route carefully is critical."

But the most important lesson that Krapels learned is to respect the rights of the communities through which the transmission infrastructure travels. With the Green Line and Grand Isle Intertie projects, Anbaric has been working "very diligently" on a right of way that the company believes is "buildable," he said.

"To the extent we can, we want to always use the water or routes that work from a burial standpoint," he said. "You just have to pick your route carefully and do a lot of work in ensuring that you can use the route that you designate."

When it comes to independent transmission development in the Northeast, Krapels expects to see more companies appearing in the transmission space. From 2000 to 2011, electric utilities in the region treated independent developers as "nuisance new comers," he said. When FERC issued Order 1000 in 2011 — requiring RTOs to consider transmission alternatives in their planning processes — a new "tone of competition" began to emerge, he said. "We're going to see a lot of new entrants come into the market, not just people like us but also utilities from out of the region."



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