



NEW ENGLAND CLEAN POWER LINK

Lake Symposium

OCTOBER 9, 2014



Meeting Goals

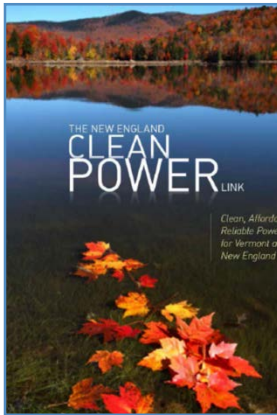
1. Provide overview of the New England Clean Power Link with a focus on the Lake

2. Provide details on HVDC marine technology and installation techniques

3. Provide details on route development, lake surveys conducted and impacts of installation

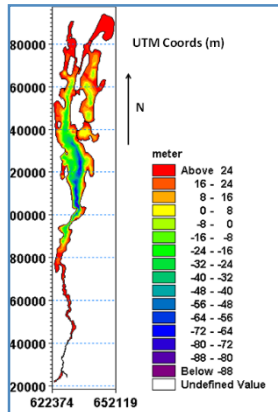
4. Answer questions and receive feedback

Agenda



9:15am – 10:00am → Project Introduction

- Overview of Project (Josh Bagnato, TDI New England)
- Overview of Marine Cable Installation (Gene Martin, TDI New England)
- Q&A

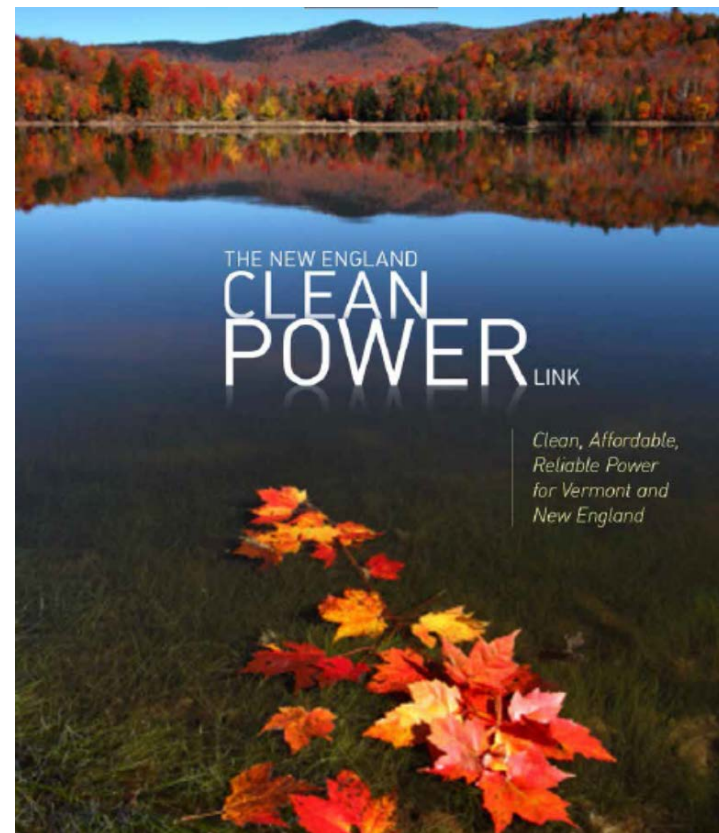


10:00am – 11:45am → Studies Completed / Ongoing

- Marine Archaeological Resources (Chris Sabick, Lake Champlain Maritime Museum)
- Thermal / Magnetic Modeling (Dr. Bill Bailey, Exponent)
- Sediment Characterization (Professor Pat Manley, Middlebury College & Marine Research Corp.)
- Preview of Water Quality Results (Dr. Sean Murphy, Richard Isleib, HDR)
- Overview of Navigational Considerations and RTE (Dr. Sean Murphy, HDR)
- Q&A after each presentation

New England Clean Power Link Project (NECPL)

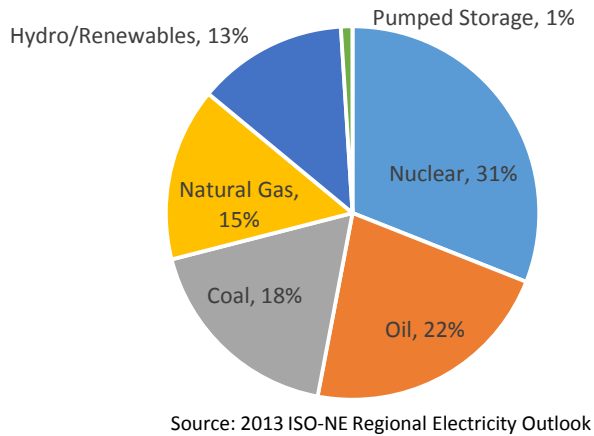
- ~\$1.2B privately-financed merchant transmission project delivering clean, cost-competitive hydroelectricity to help meet Vermont and New England's energy needs and emissions goals
- 1,000 MW HVDC underground/underwater transmission line using existing rights-of-way
- Power to serve ~1,000,000 homes while providing significant environmental and consumer benefits
- 2019 targeted as the in-service date
- Experienced management team currently also developing the Champlain Hudson Power Express Project in New York



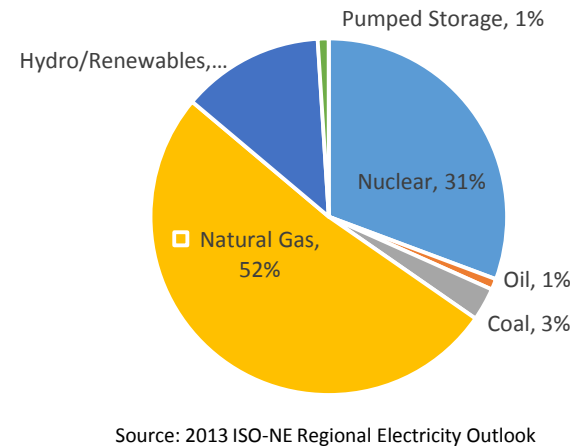
Why Are We Proposing NECPL?

Fuel Source Diversity 2000 > 2012

2000 New England Electricity Generation by Source



2012 New England Electricity Generation by Source



- Approximately 8,000 MW of existing generation at risk of retirement this decade
- New England Governors and Eastern Canadian Premiers have repeatedly called for increased Hydro imports
- Vermont's 2011 Energy Plan recommends cost-effective transmission projects capable of transporting renewable energy to Vermont and neighboring states
- Project will contribute significantly to Vermont and New England GHG emission reduction goals
- Retirement of VT Yankee opens up transmission capacity

High Voltage Direct Current

- Same technology that is proposed for the Champlain Hudson Power Express
- Proven technology that is ideal for efficiently transporting electricity long distances and underwater and underground with minimal losses
- Two, five to six inch diameter cables are buried/submerged along the entire route; minimal maintenance required
- Cables are solid-state and do not contain liquids
- Converter stations required to convert power from DC to AC



Marine HVDC is a Proven Technology

HVDC Installations

Project / Date	Size	Distance	Location	Details
Neptune / 2007	660 MW	65 miles	NJ / NY	River / Ocean / Estuary / Parkway
Trans Bay / 2010	400 MW	53 miles	SF Bay	Land / Estuary / Bay / Land
Cross Sound Cable / 2003	330 MW	24 miles	CT / NY	Long Island Sound

Existing Infrastructure in Lake Champlain

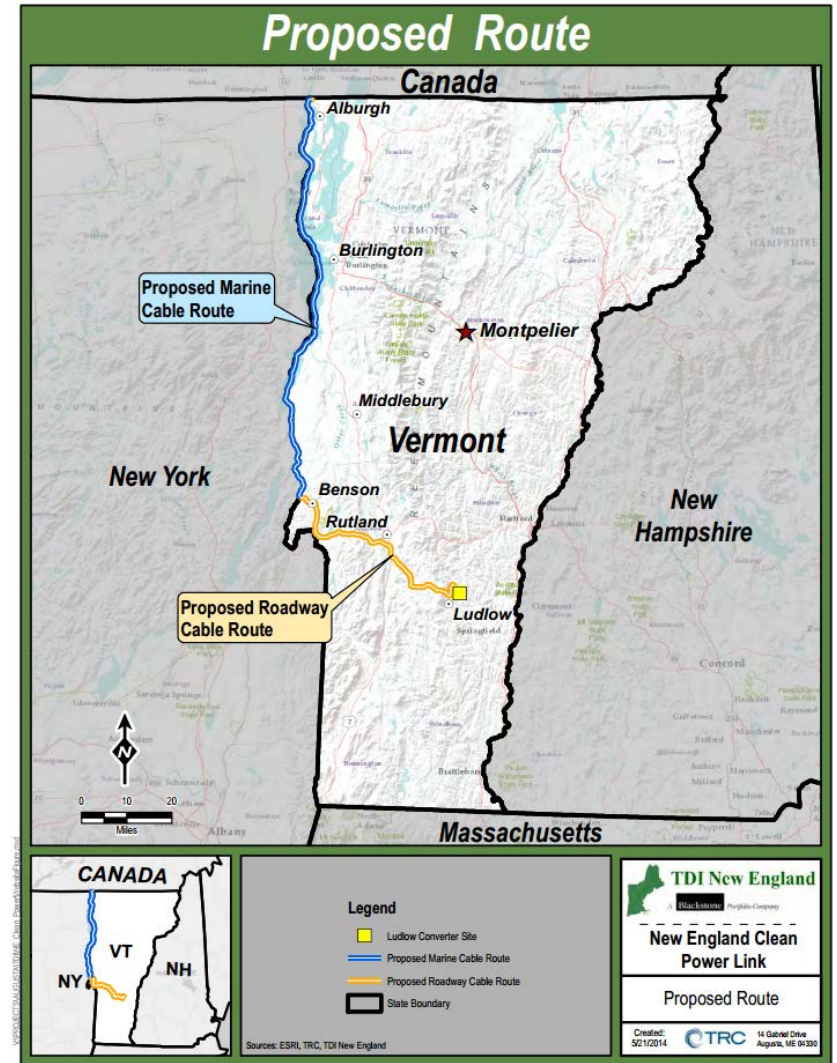
- Multiple power cables owned by NYPA and VELCO
- Multiple telecom cables

Proposed Project Route

154 mile proposed route

- 98 miles in Lake
- 57 miles on Land

Cable Section	Mile	Corridor Type	Proposed Installation
Lake Champlain	0 – 2	Aquatic	HDD / Diver Lay
Lake Champlain	2 – 22	Aquatic	Jet Plow
Lake Champlain	22 – 73	Aquatic	Lay on Bottom
Lake Champlain	73 – 97	Aquatic	HDD / Jet or Shear Plow



Initial Outreach

Stage 1: Initial Stakeholder Outreach

- State / Federal Agencies, Nonprofits, Elected Officials, Utilities, Town Officials, Environmental & Business Groups

Stage 2: Local & Regional Outreach

- **Ongoing**
- Town Managers, Select Boards, Abutters, Interested Citizens, RDCs, RPCs, etc.

Stage 3: Local Information Meetings

- **Ongoing**
- Six local open house meetings held
- Lake Symposium

Stage 4: Formal Agency-led Public Meetings

- **Ongoing**
- DOE Public Comment ongoing
- DOE Scoping Meetings (2014)
- Continuing Regulatory Process



Project Benefits

- Significant annual taxes for Vermont over the life of project
- Lease payments to VTrans for use of rights-of-way
- Reduced wholesale energy prices for Vermonters and Region which spurs economic growth
- Energy diversification for the Region
- Construction and operational jobs for Vermonters and Region
- Significant GHG emission reductions for Vermont and Region
- Buried transmission and “Black Start” capability enhance grid reliability
- Vermont Public Benefit Fund
- 100% financed by private sector

VT Public Benefit Fund

- The Vermont Fund is expected to resemble the structure of the NY Environmental Trust Fund established for Champlain Hudson Power Express
- Basic Tenants of NY Environmental Trust Fund
 - Fund governed by nine public, private and non-profit representatives
 - Funding will go towards projects in the Hudson, East, Harlem Rivers and Lake Champlain
 - Approximately 1/3 of the fund is already dedicated to identified projects
 - Not a mitigation fund
- Vermont Fund expected to fund projects important to Vermonters
 - Assistance with phosphorous clean-up in Lake appears to be top priority for Vermonters
 - No governance structure or group established yet
 - Expected to be a significant contributor to VT Environmental Community over life of project
 - Not a mitigation fund

Proposed Overall Timeline

Timing	Key Events
Q4, 2013	Public Announcement, Interconnection Requests Filed, Team Assembled, Outreach
Q1, 2014	Continued Outreach, Route Vetting with Agencies, FERC Filing Completed
Q2 - Q4, 2014	Local Outreach, Field Studies, Multiple Route Alternatives analyzed in water and on land, Filed Presidential Permit Application
Q4, 2014	248 Petition (CPG) and Army Corps Permit Filings
2015	CPG, DOE Presidential Permit, ANR Permit and Army Corps Permit Review
2016 – 2018	Construction
2019	Line in Operation

Additional Information

TDI New England

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www.necplink.com



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