

VELCO Overview to Senate Finance

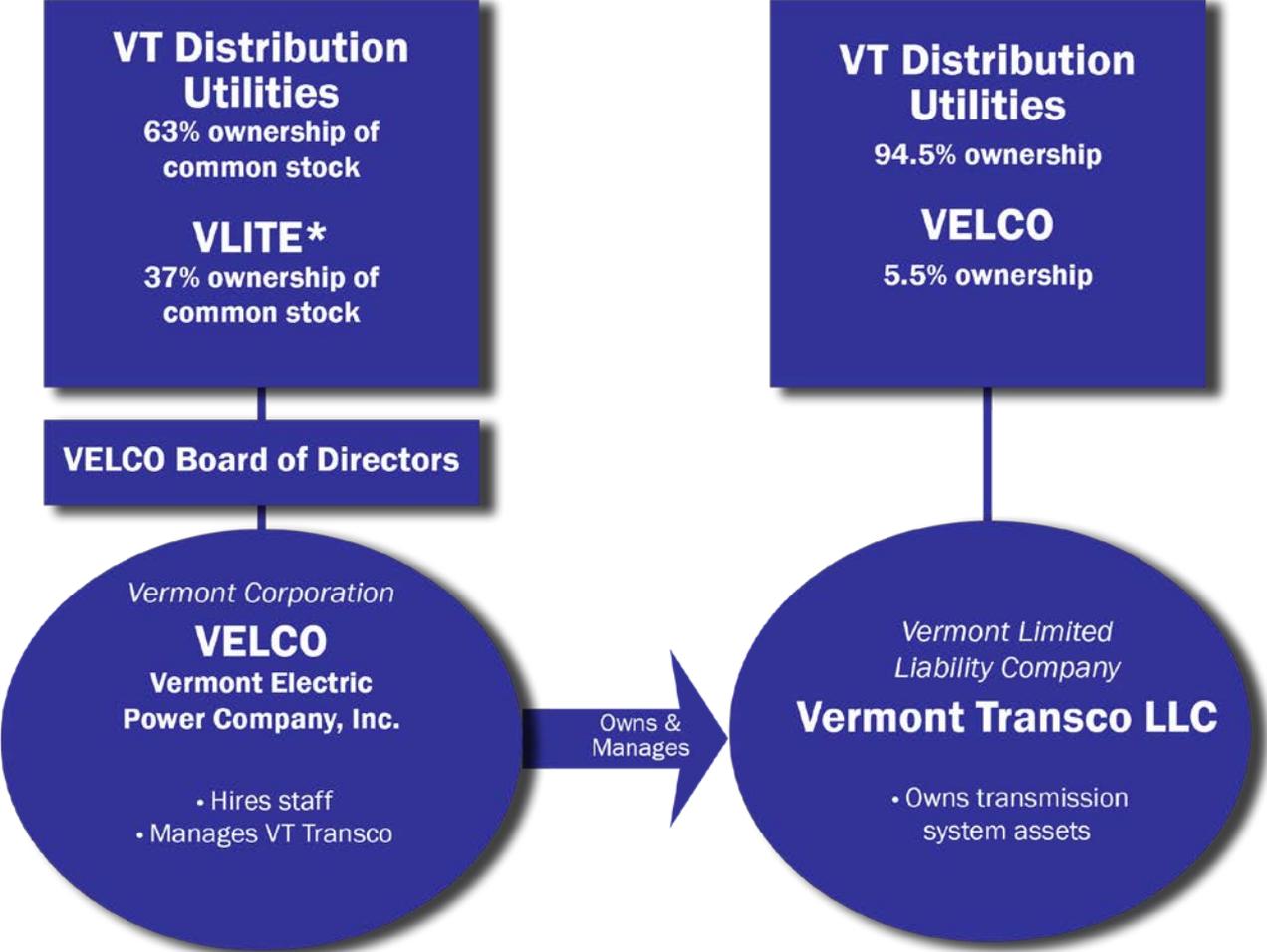
vermont electric power company



February 16, 2017

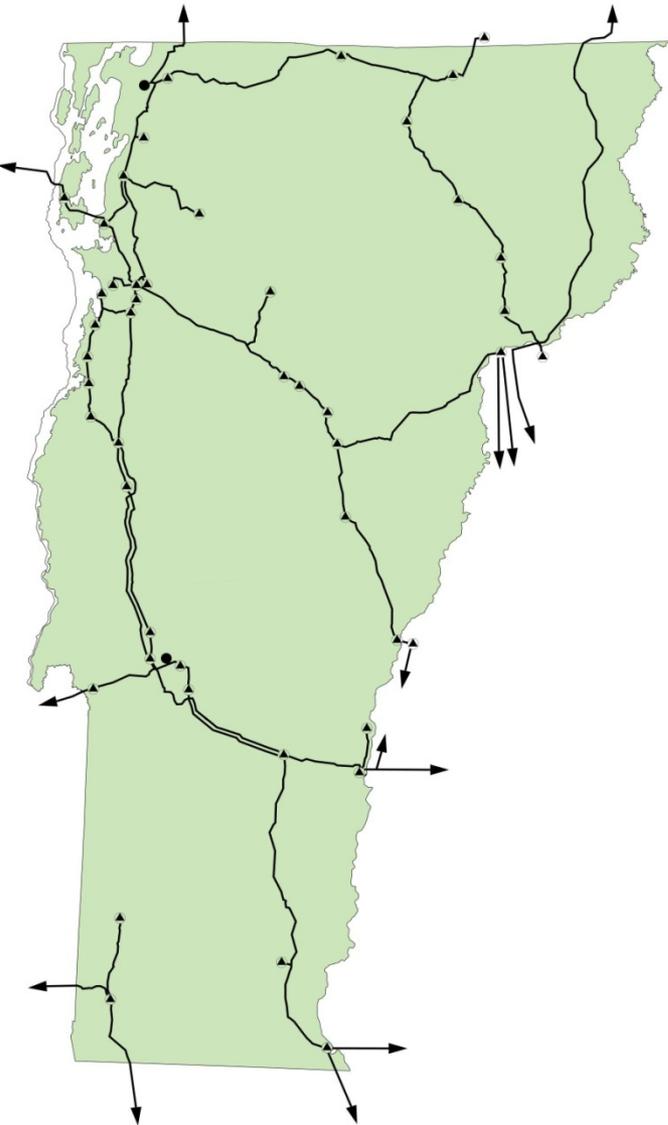
Tom Dunn, President & CEO

Corporate structure



*VLITE: Vermont Low Income Trust for Electricity, Inc.

VELCO-managed assets

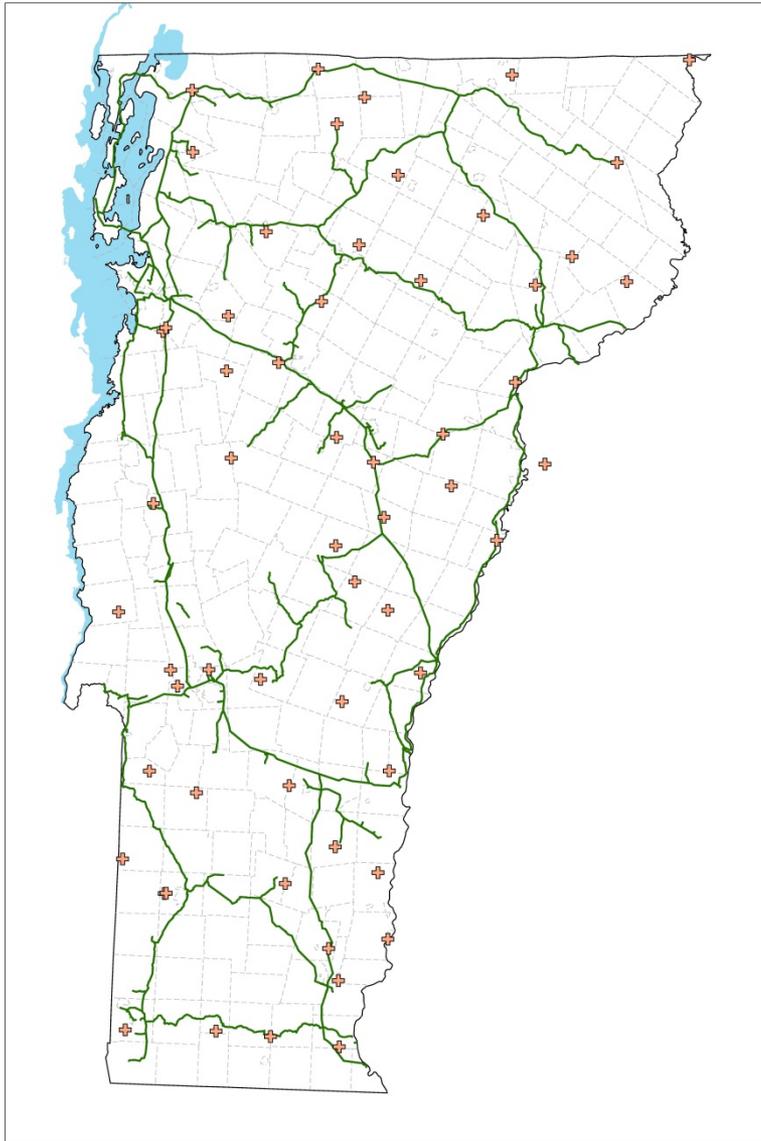


- 738 miles of transmission lines, 115 kV and higher
- 14,000 acres of rights-of-way
- 55 substations, switching stations and terminal facilities
- Equipment that enables interconnected operations with Hydro-Québec
- 1500 Fiber optic communication networks that monitor and control the electric system and provide the backbone for most Vermonters' high-speed data internet access
- 52-site Statewide Radio System
- 52-mile high-voltage direct current line through the Northeast Kingdom owned by Vermont Electric Transmission Company (VETCO)

Background

- Formed in 1956 by local utilities to share access to clean hydro power and maintain the state's transmission grid
- Nation's first statewide, "transmission-only" company
- Owned by Vermont's 17 local electric utilities and VLITE

VELCO fiber optic and radio networks



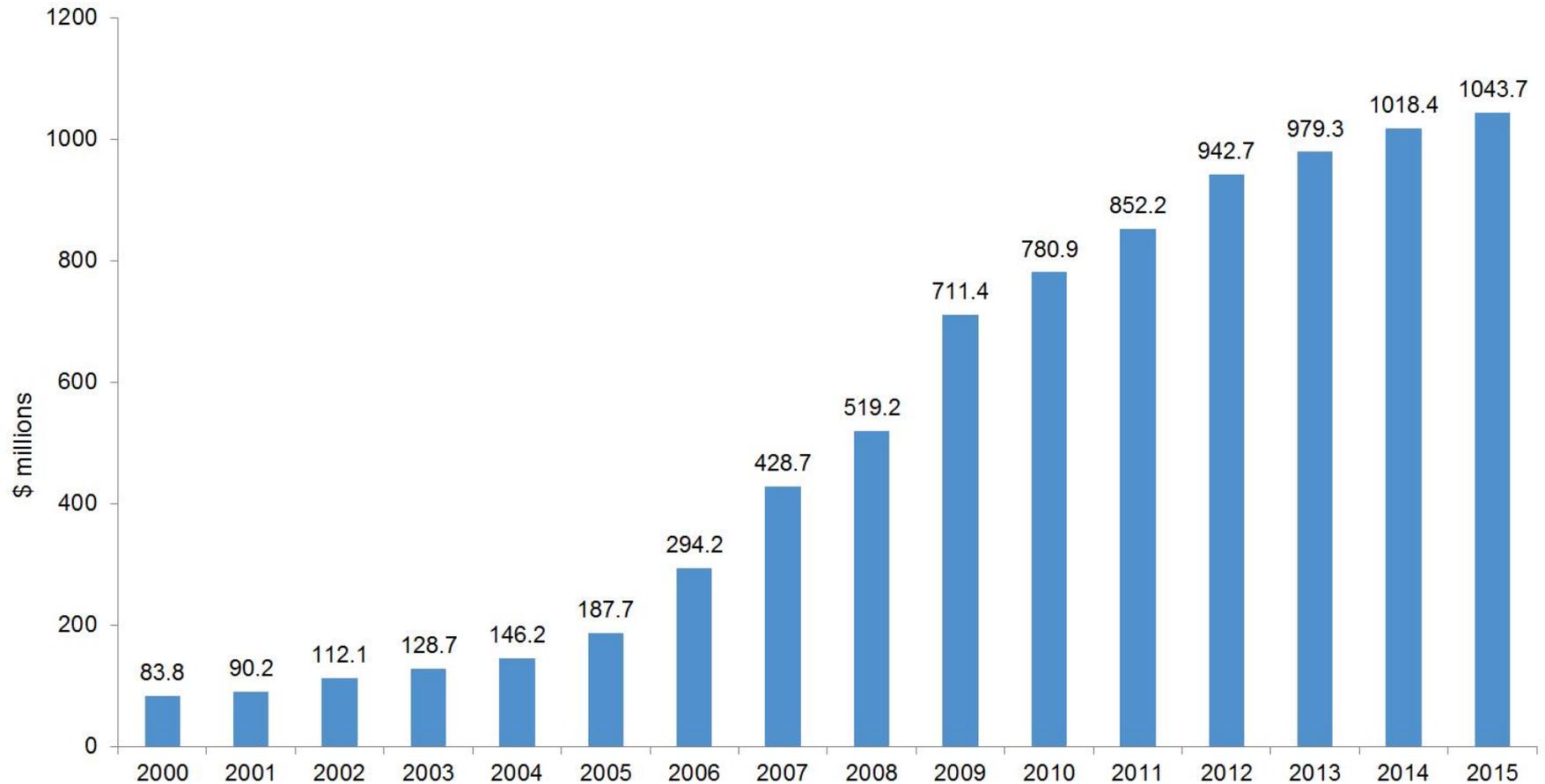
Fiber

- Enhances overall electric grid stability, speed and reliability
- 1,500-mile, 72-strand fiber optic cable installed on transmission, subtransmission and distribution lines
- Connects over 250 substations; provides access to 172 communities
- Provides ~\$19M in value annually in growing VELCO/DU operational, corporate voice and data transport services

Radio

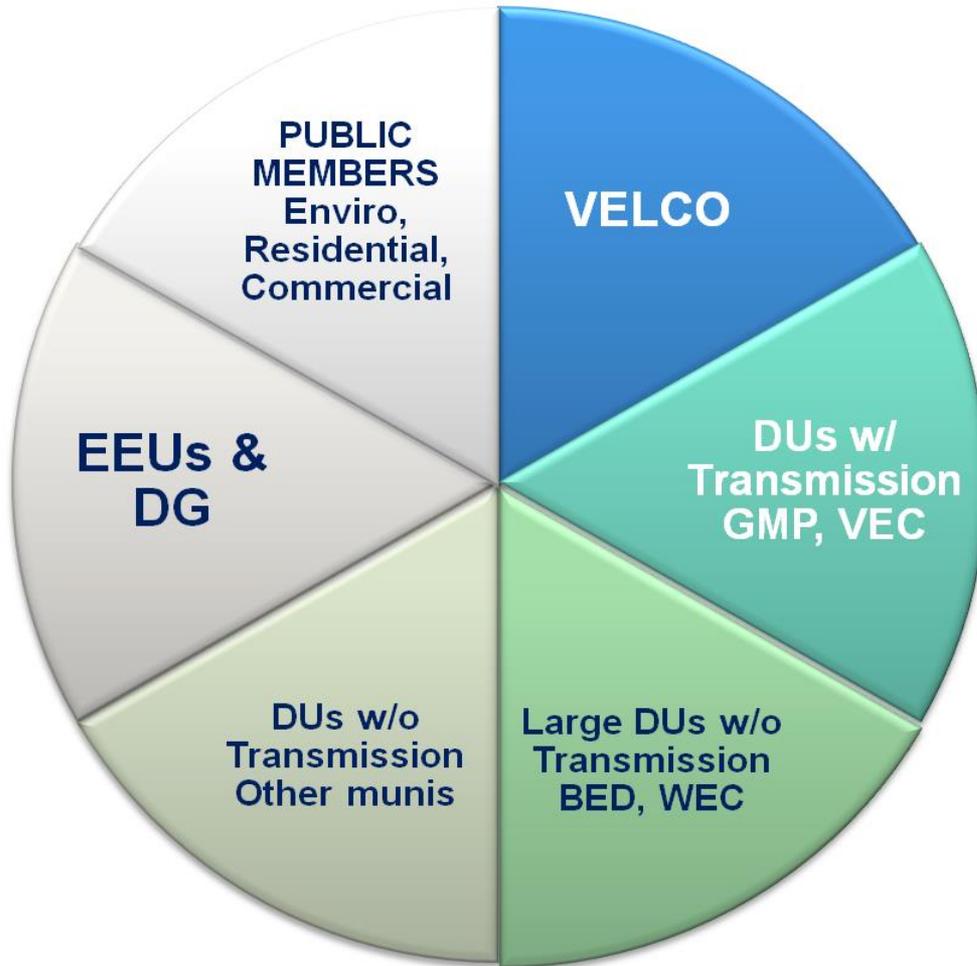
- Used for utility maintenance and emergency operations
- Driven by FCC “narrowbanding” deadline by January 1, 2013
- 53-site Statewide Radio System 98% statewide coverage
- Shared tower use with Dept. of Public Safety in Brighton, St. Albans under discussion

VELCO asset growth 2000-2015



Vermont System Planning Committee

full, fair & timely consideration of all cost effective solutions



Key concepts:

Collaborative grid planning

Broadly inclusive stakeholder process

Six sectors with equally weighted votes

Advisory and binding votes

Transparency

Public engagement

VT Transco major tariff structure

VT Transco's transmission agreements are set to recover 100% of its total costs

Operating Expenses, Interest, Taxes,
Debt amortization and Owners' ROE

=

Revenue of VELCO

Level #1

ISO New England OATT
(approximately 80% of Revenues)
Obligor: ISO New England

Level #2

1991 Transmission Agreement
(Apprx 20% of Revenues-Determined by Revs at Level #1)
Obligors: Vermont's distribution utilities

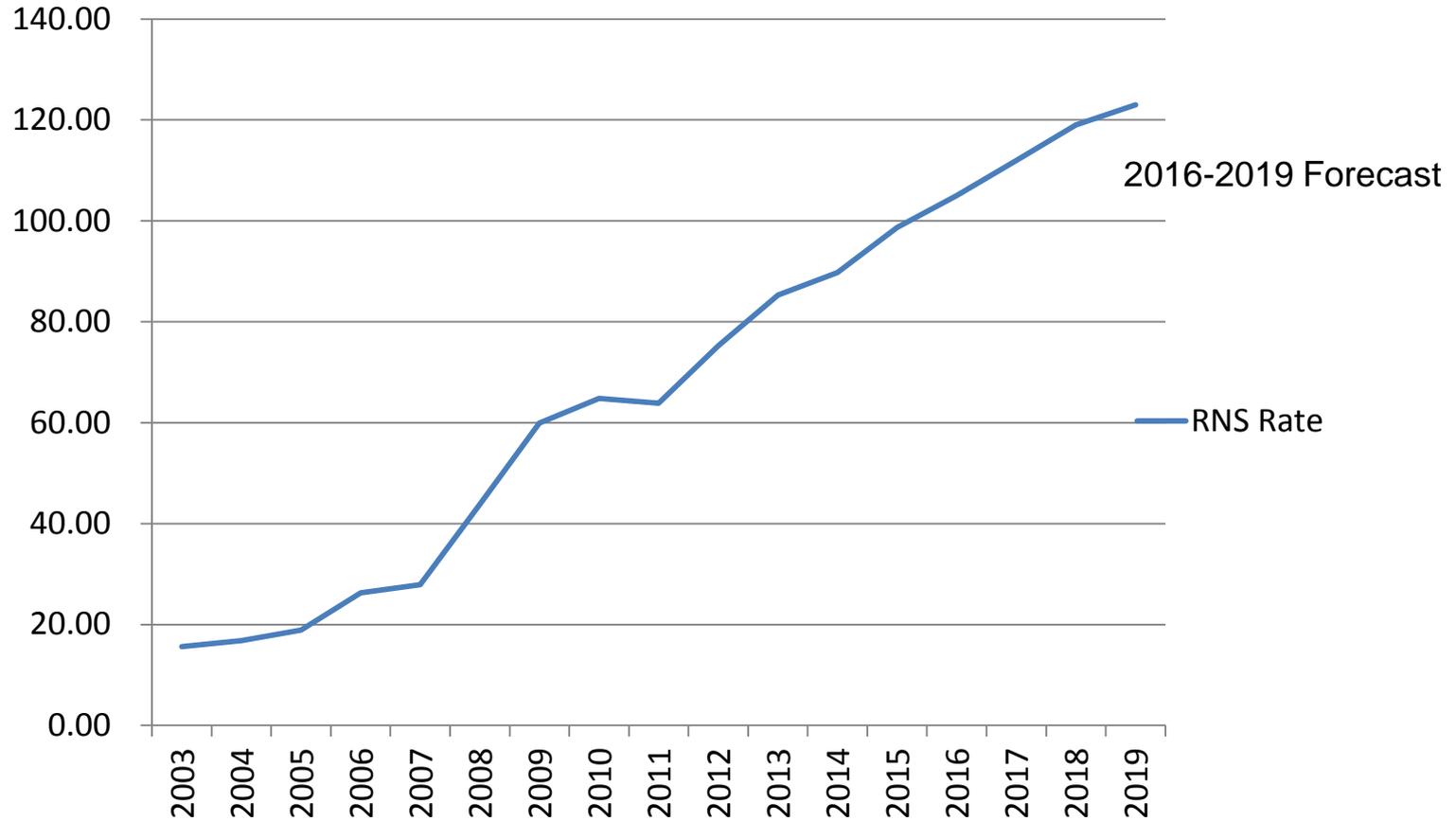
Level #2

**Transco Local
Service Schedule 21**
(<1% of Revenues)
Obligors: PSNH; NH Co-Op

Level #3

**Three Party Transmission Agreement (1957)
Amended and Restated as of 2006**
(Revenue Backstop to Levels #1 & #2)
Obligors: Green Mountain Power

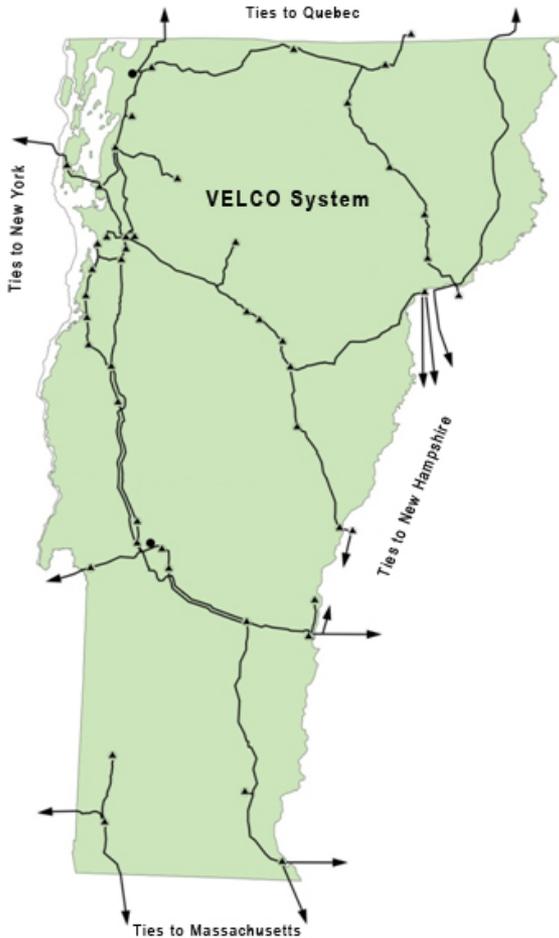
RNS rates (\$/kw-year) June 1, 2003 – June 1, 2019



PTF investments in New England—ISO New England OATT

Calendar Year Ending:	Total	CMP	CTMEEC	EMERA MAINE	EVERSOURCE (CL&P, PSNH & WMECO)	EVERSOURCE NSTAR	NGRID	NHT	UI	VT Transco
12/31/2003	2,217.2	151.3		19.7	699.8	531.0	568.2	24.0	125.6	97.6
12/31/2004	2,344.2	152.6		20.2	779.6	534.8	592.5	24.0	131.8	108.7
12/31/2005	2,562.8	158.9		25.9	900.1	553.4	633.5	24.2	132.8	133.9
12/31/2006	3,075.9	162.6		26.1	1,170.7	686.9	695.8	24.5	135.6	173.6
12/31/2007	3,759.2	179.4		168.2	1,374.8	823.3	816.2	24.4	136.5	236.4
12/31/2008	5,761.0	245.8		170.1	2,633.5	971.0	855.0	25.0	461.7	398.9
12/31/2009	6,237.6	287.9		173.7	2,777.4	1,074.6	977.8	50.3	459.3	436.6
12/31/2010	6,666.6	307.5		206.7	2,828.3	1,122.7	1,063.9	54.1	467.6	615.8
12/31/2011	7,037.5	353.9	51.3	235.3	2,902.6	1,177.1	1,153.7	54.4	481.5	627.7
12/31/2012	8,053.8	619.0	51.3	311.9	3,324.3	1,237.9	1,239.1	57.4	553.5	659.4
12/31/2013	9,501.1	948.5	51.3	338.2	3,893.5	1,530.6	1,352.6	60.8	611.7	713.9
12/31/2014	10,412.7	1,278.0	51.3	344.4	4,201.8	1,570.5	1,466.6	62.7	634.9	802.5
12/31/2015	11,762.9	1,657.7	51.3	355.6	4,696.7	1,720.6	1,702.5	63.5	677.7	837.3

Vermont now imports close to half its power



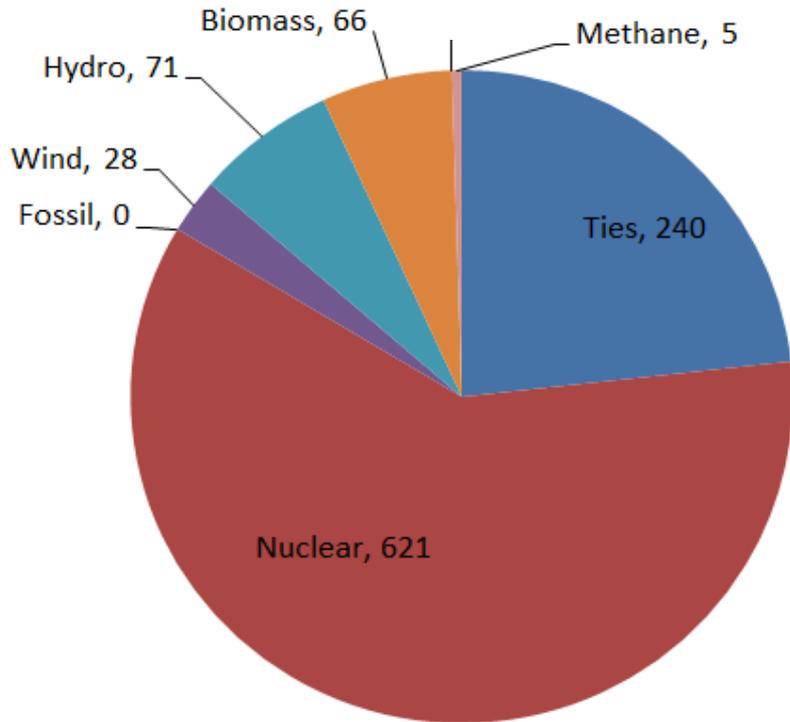
Type		MW 2014	MW 2015
Fossil (fast start units)	Winter	188	188
	Summer	138	138
Hydro		152	152
Wind		123	123
Trash-to-energy		9	9
Biomass (wood)		72	72
Nuclear		625	0
Solar and other, e.g. methane		~100 and growing	~100 and growing
TOTAL IN-STATE GENERATION		1265	640

73% of 2014 hours VT was exporting power

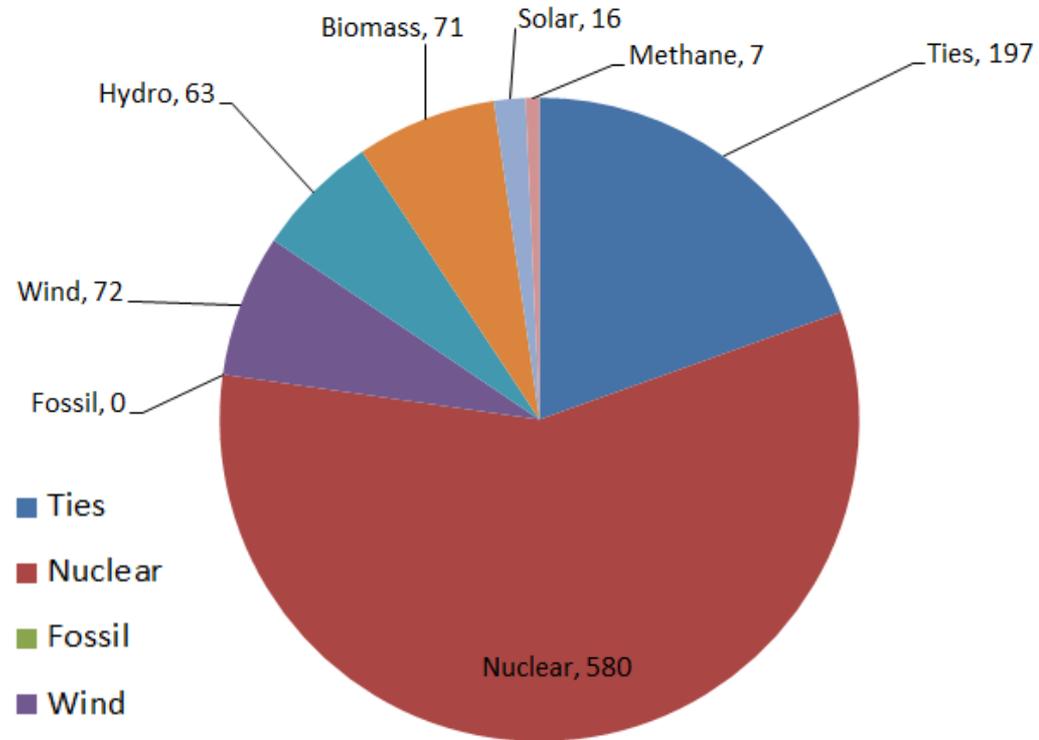
~84% of 2015 hours VT will import >400 MWs

2014 Vermont peak days

- 2014 **winter** peak day (1/2/14 18:00)
- Load was 1,029 MW



- 2014 **summer** peak day (7/2/14 12:00)
- Load was 1,006 MW

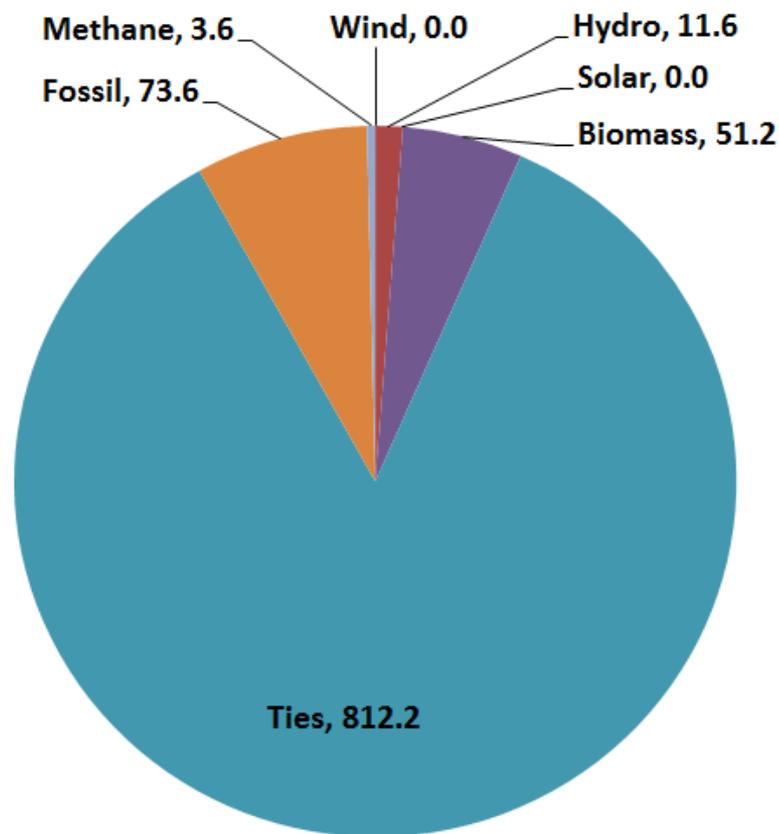
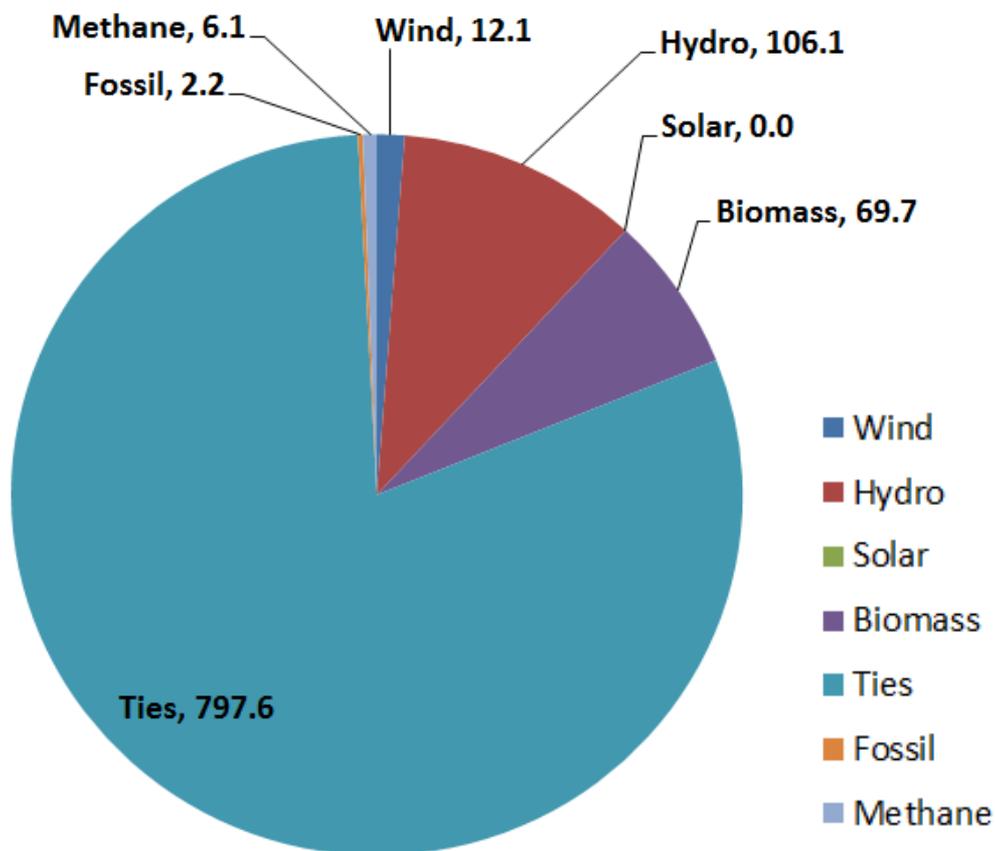


- Ties
- Nuclear
- Fossil
- Wind
- Hydro
- Biomass
- Solar
- Methane

2016 Vermont peak days

- 2016 **winter** peak day (1/4/16, 18:00)
- Load was 993.7 MW

- 2016 **summer** peak day (8/11/16, 21:00)
- Load was 952.2 MW



Strategic Initiatives

**FOR THE SAKE OF
THRIVING**

Champion

Champion an energy future
aligned with Vermont values

**FOR THE SAKE OF
PERFORMANCE**

Deliver

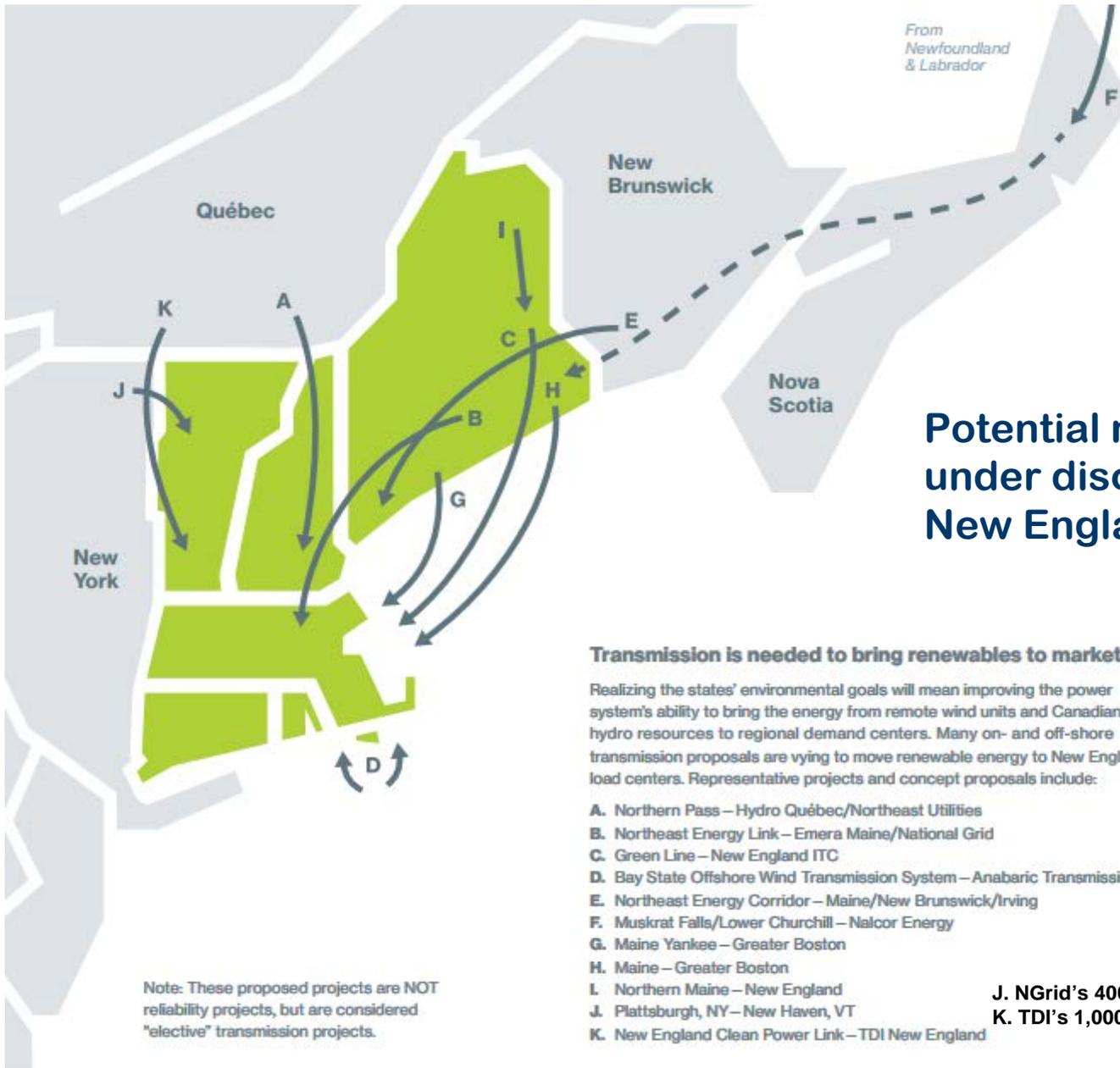
Deliver value to owners, Vermont,
the region and each other

**FOR THE SAKE OF A
STRONG FOUNDATION**

Transform

Transform VELCO's culture
to live Trusted Partner





Potential merchant projects under discussion around New England

Transmission is needed to bring renewables to market

Realizing the states' environmental goals will mean improving the power system's ability to bring the energy from remote wind units and Canadian hydro resources to regional demand centers. Many on- and off-shore transmission proposals are vying to move renewable energy to New England load centers. Representative projects and concept proposals include:

- A. Northern Pass – Hydro Québec/Northeast Utilities
- B. Northeast Energy Link – Emera Maine/National Grid
- C. Green Line – New England ITC
- D. Bay State Offshore Wind Transmission System – Anabarc Transmission
- E. Northeast Energy Corridor – Maine/New Brunswick/Irving
- F. Muskrat Falls/Lower Churchill – Nalcor Energy
- G. Maine Yankee – Greater Boston
- H. Maine – Greater Boston
- I. Northern Maine – New England
- J. Plattsburgh, NY – New Haven, VT
- K. New England Clean Power Link – TDI New England

Source: ISO-NE
2015 Regional
Energy Outlook

J. NGrid's 400 MW Vermont Green Line project
K. TDI's 1,000 MW NE Clean Power Link project

VELCO Participation Terms

- Interconnecting TO: Preserve Reliability
 - Treat all projects in similar fashion (FERC Code of Conduct)
- Preserve Independence
 - Consider multiple projects
- Maximize risk-adjusted value
 - Recover expenses, obtain revenue stream
 - Provide services (e.g., R/W, engineering, O&M)

VELCO's ongoing work

- Deliver transmission services for reliability, power supply decarbonization and microgrid deployment
- Evolve from construction to data analytics and advanced communication networks
- **Create more adaptable, resilient and efficient grid that better serves customer choice**
- Advocate appropriate recognition of DERs' value at regional level
- Serve as resource/broker, innovation enabler and advocate