

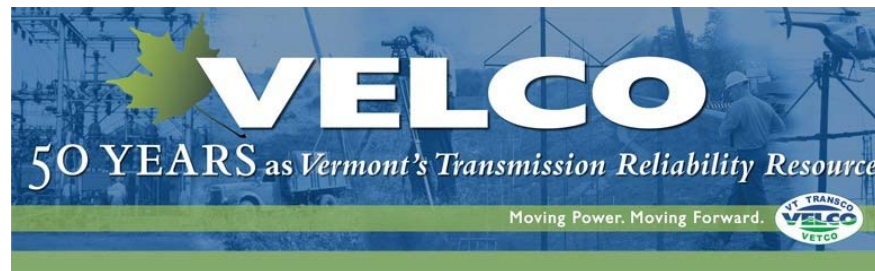
The VELCO logo is displayed in a bold, white, sans-serif font against a background of a scenic Vermont landscape with rolling hills and power lines.

VERMONT'S TRANSMISSION RELIABILITY RESOURCE

# Capital Project Program 2003-2018 Overview

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August 18, 2011



***Prepared for: Operating Committee***

# Capital Project Program

## Reliability Projects Under Closeout & In Permitting Phase

### Southern Loop Coolidge Connector (2010):

- Received State permits in 2008
- Project commissioned in 2010
- 2 substation upgrades, 1 new substation
- 53 miles of new 345 kV T-Line construction
- Total Investment: **\$204M**

### Other Substations (2009-2010):

- Taft Corner total investment: **\$8M**
- Lyndonville total investment: **\$12.5M**
- Lime Kiln total investment: **\$14M**

### Projects under permitting:

- Georgia, Ascutney & Bennington substation replacements (~\$60M)
- VEC system upgrades (~\$35M)
- 345 kV Reactors (New Haven, Coolidge, Vernon) (~\$20M)

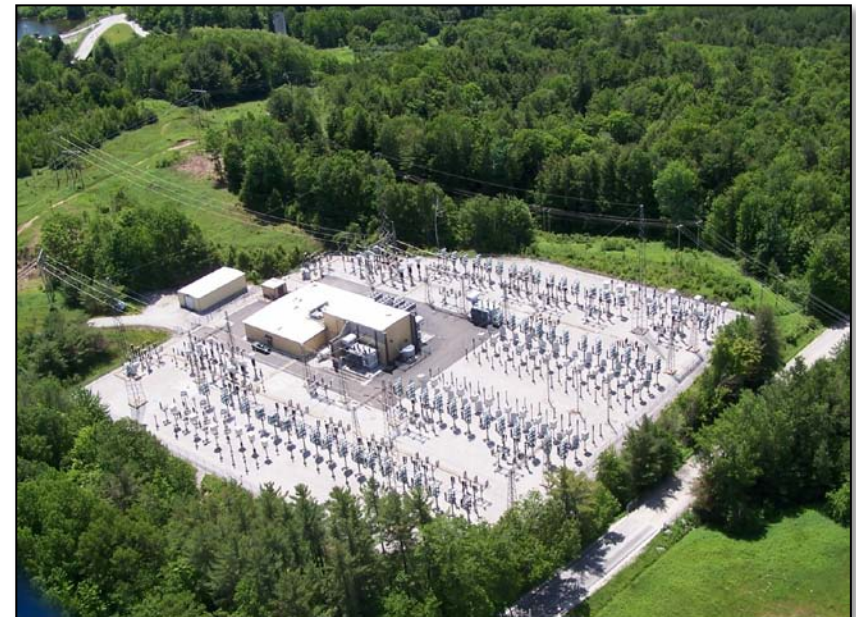


# Capital Project Program

## Highgate Converter Refurbishment

### Highgate Converter Refurbishment:

- Back to Back converter station design
  - North AC Bus 120 kV (HQ TransEnergie)
  - South AC Bus 115 kV (VELCO)
- Commissioned in 1985
- Nominal Rating: 225 MW
- Scope of Work includes
  - Control System replacement
  - Cooling System replacement
  - Thyristor control unit and capacitor replacement
  - Runback Scheme optimization
  - Transformer monitoring equipment
  - 480V Station Service replacement
  - Fire protection system & warehouse expansion
- Anticipated life extension 25 to 30 years
- Target commissioning date for the upgrades 4Q 2012
- Total Investment: **\$35.4M**



**Highgate Converter Station**



# Capital Project Program

## Project Under Planning Review – VT/NH Transmission Solution Study

### Northwest Vermont Solution:

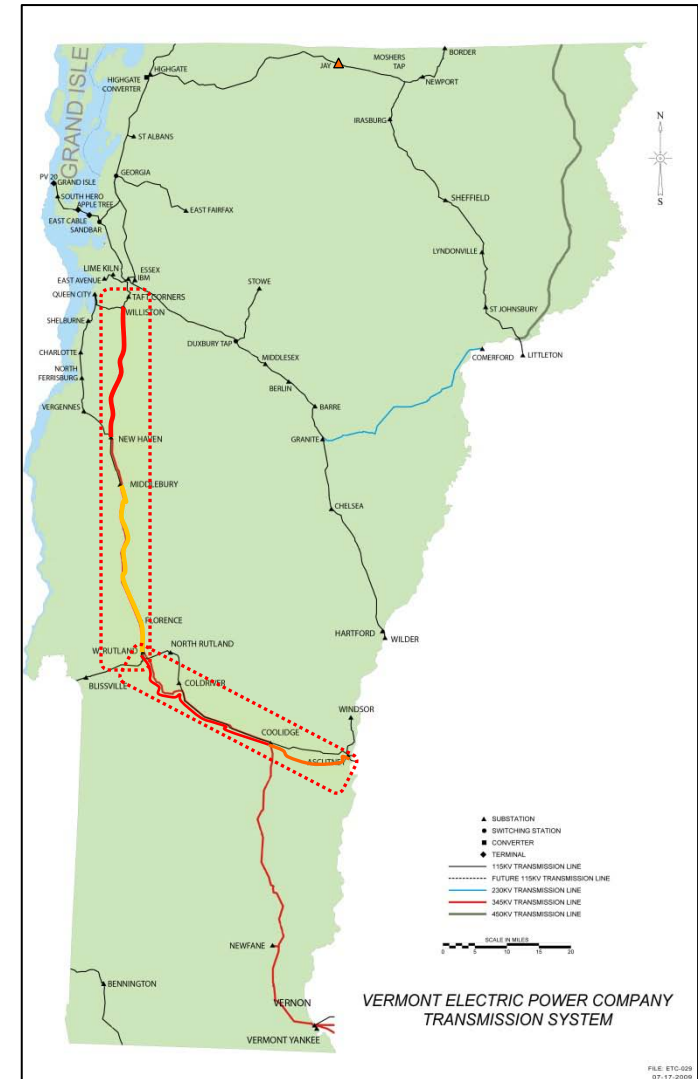
- Area Load: 600 MW (Deficiency: Thermal & Voltage violations)
- Critical Load ISO-NE (26,000/24,000 MW) or VT (1040/960 MW)
- Preferred Transmission Solution:
  - Rebuild 28 miles of 115 kV (W. Rutland to Middlebury)
  - Rebuild 23 miles of 115 kV to 345 kV (New Haven to Williston)
- Total Investment: **\$221M**

### Central Vermont / Connecticut River Solution:

- Area Load: 350 MW (Deficiency: Thermal & Voltage violations)
- Critical Load ISO-NE (26,000/21,500 MW) or VT (1040/860 MW)
- Preferred Transmission Solution:
  - Build 27.1 miles of new 345 kV (W. Rutland to Coolidge)
  - Build 15 miles of new 345 kV Op. at 115 kV (Coolidge to Ascutney)
  - Rebuild 2.2 miles of new 345 kV operate at 115 kV (Ascutney to Ascutney Tap)
  - Expand W. Rutland, Coolidge and Ascutney substations
- Total Investment: **\$263M**

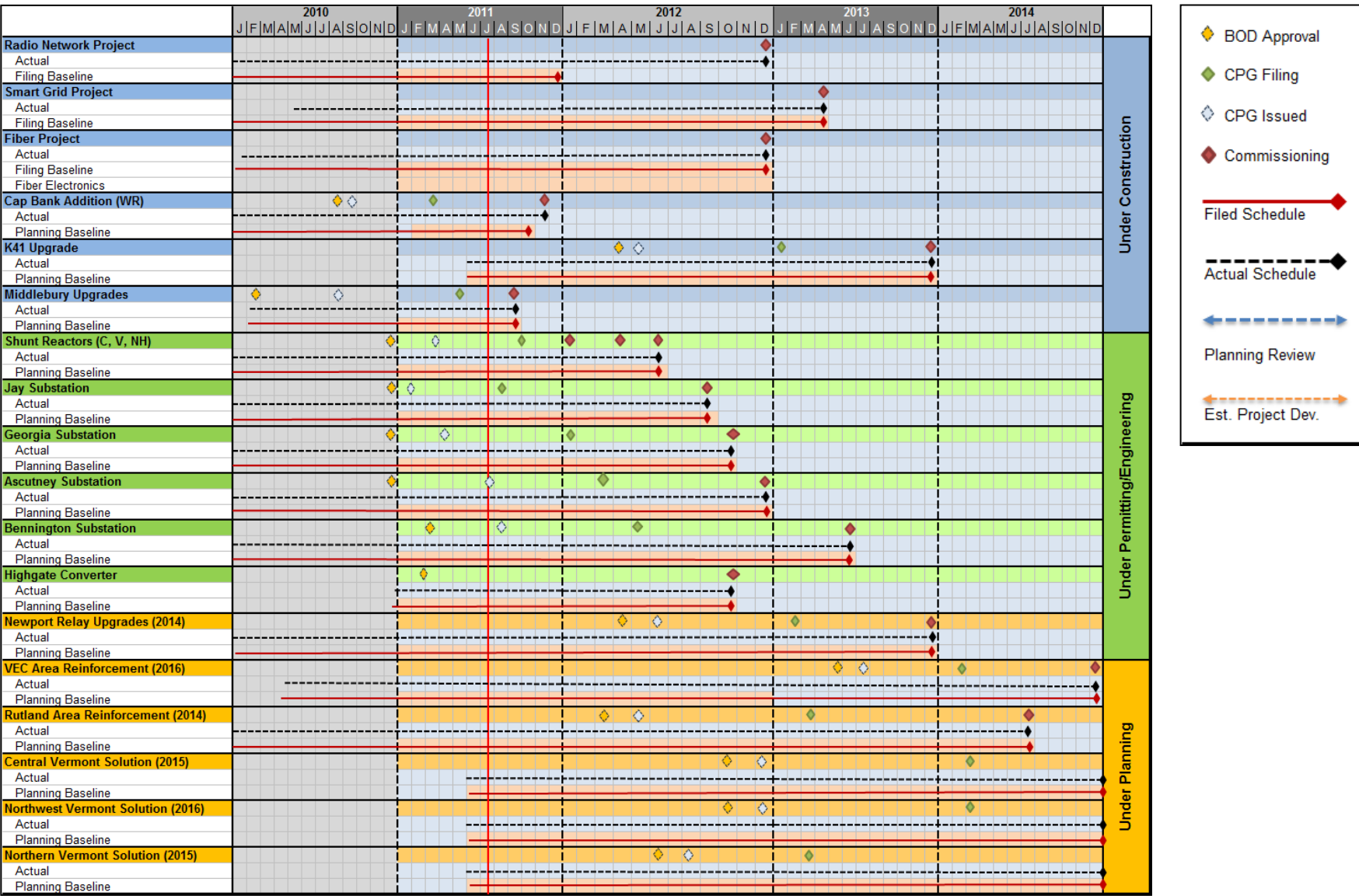
### Other Projects:

- Northern VT / Northern NH: Capacitor Bank at Jay Substation (**\$4.4M**)
- Southern VT: 381 Line Upgrade (**~\$6M**)



# Capital Project Program

## Overall Project Schedules



**Note:** Schedule Dashboard as of August 17<sup>th</sup> 2011.

# Capital Project Program

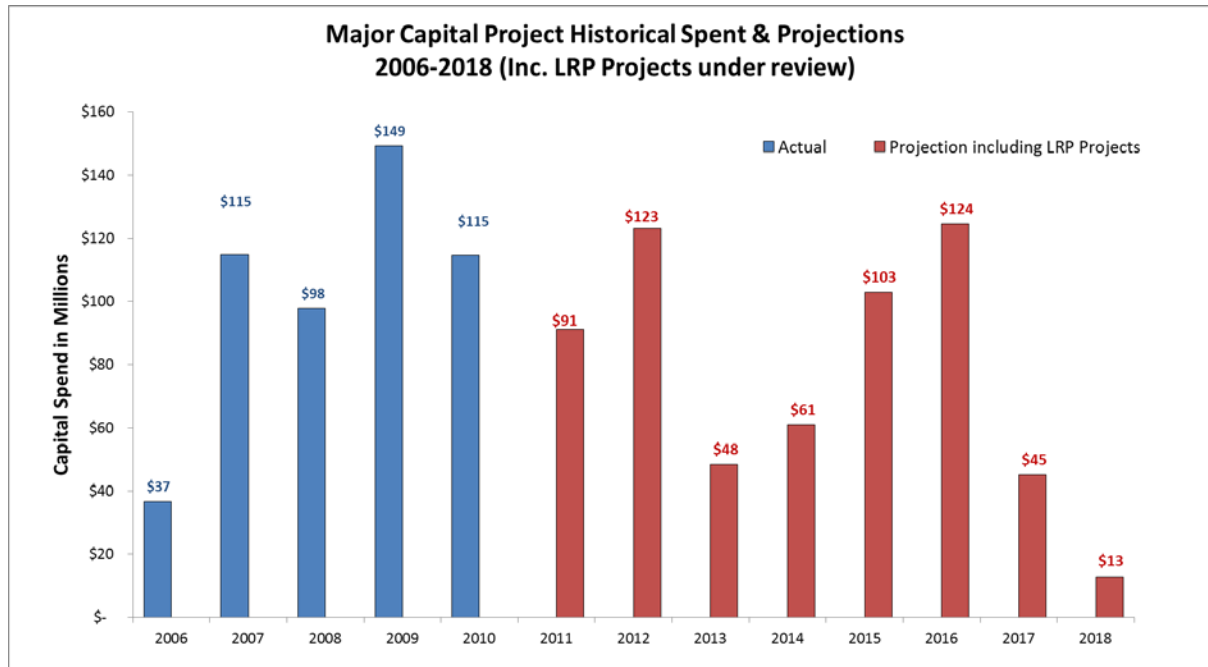
## Capital Investment Projections

### Project under closeout & Construction (2011-2013):

- Lamoille County Project and Southern Loop (2011-2012)
- Lime Kiln & Lyndonville (2011-2012)
- Statewide Radio Project (2011-2012)
- Fiber (2011-2013)
- W. Rutland Cap Bank (2011-2012)
- Highgate (2011-2013)
- Total Investment: **\$131M**

### Project Under Permitting / Planning Review (2011-2018):

- Reactors Project (2011-2013)
- Jay, Georgia, Ascutney, Bennington Substation (2011-2014)
- Northeast Vermont & Newport Area (2012-2015)
- K-41 (2011-2013)
- W. Rutland to Ascutney Tap (2011-2016)
- Barre, Chelsea, St Albans-Georgia (2016-2018)
- Total Investment: **\$477M**



**Note:** As of 2011 Q2 Forecast. Timing of some projects have been changed based on VT/NH Study