



Electricity Options for Vermont

Vermont Legislative Committees

February 12-13, 2009

Bill Deehan, Central Vermont Public Service

Doug Smith, Green Mountain Power



Discussion topics

- Vermont context
- Regional power market
- Power supply options in the pipeline
- Longer-term view of options
- Joint utility RFP 2009



What we do

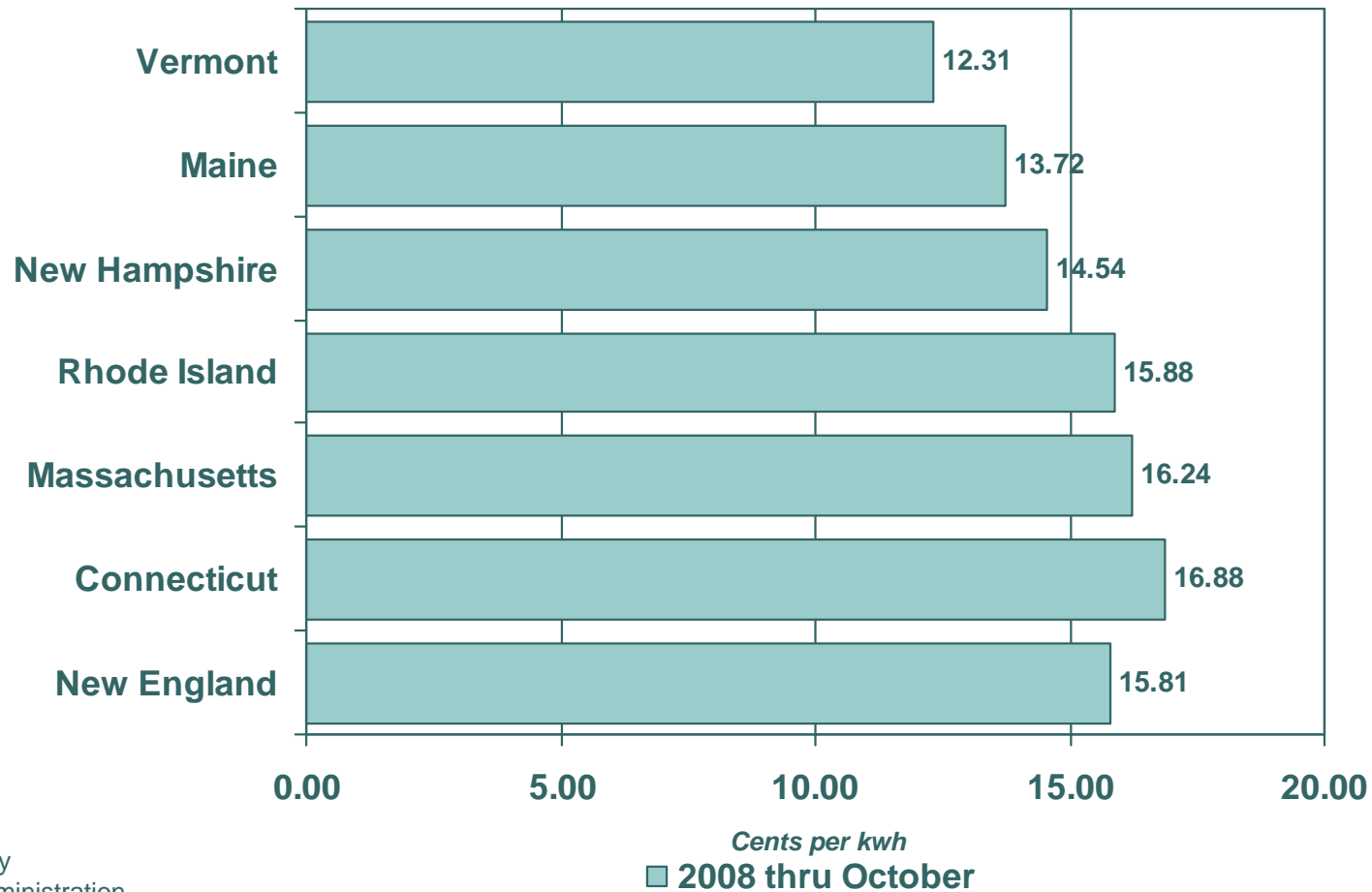
- Utility service territories
- Fully regulated by the VT Public Service Board
- Provide integrated electric service to about 70% of Vermont's consumers
- Build and maintain reliable transmission & distribution system
- Generate and purchase power to meet consumers' needs
 - Hourly, daily, monthly, longer-term
 - Manage price volatility
 - Address other portfolio goals (e.g., SPEED)



Vermont's Current Power Supply

- Majority from purchased power
- Instate plants
 - Hydro & biomass (utility-owned and small power producers)
 - Utility peaking plants
 - Searsburg wind (about 6 MW)
- Desirable portfolio from several perspectives
 - Cost well below regional average
 - Relatively stable prices
 - Very low air emission profile

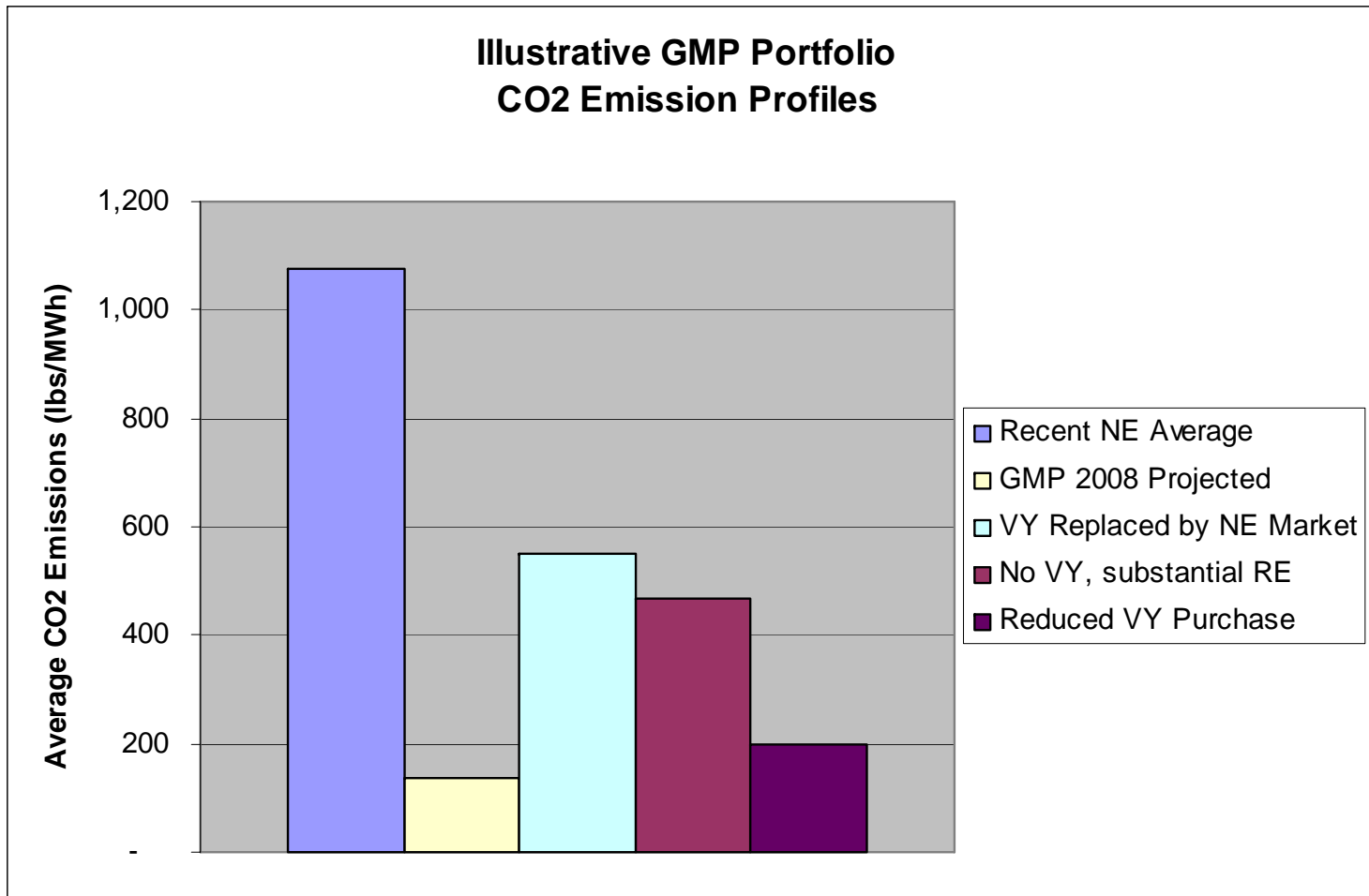
New England's Average Retail Price of Electricity



Vermont's electricity rates are the lowest in New England due largely to current power supply contracts.

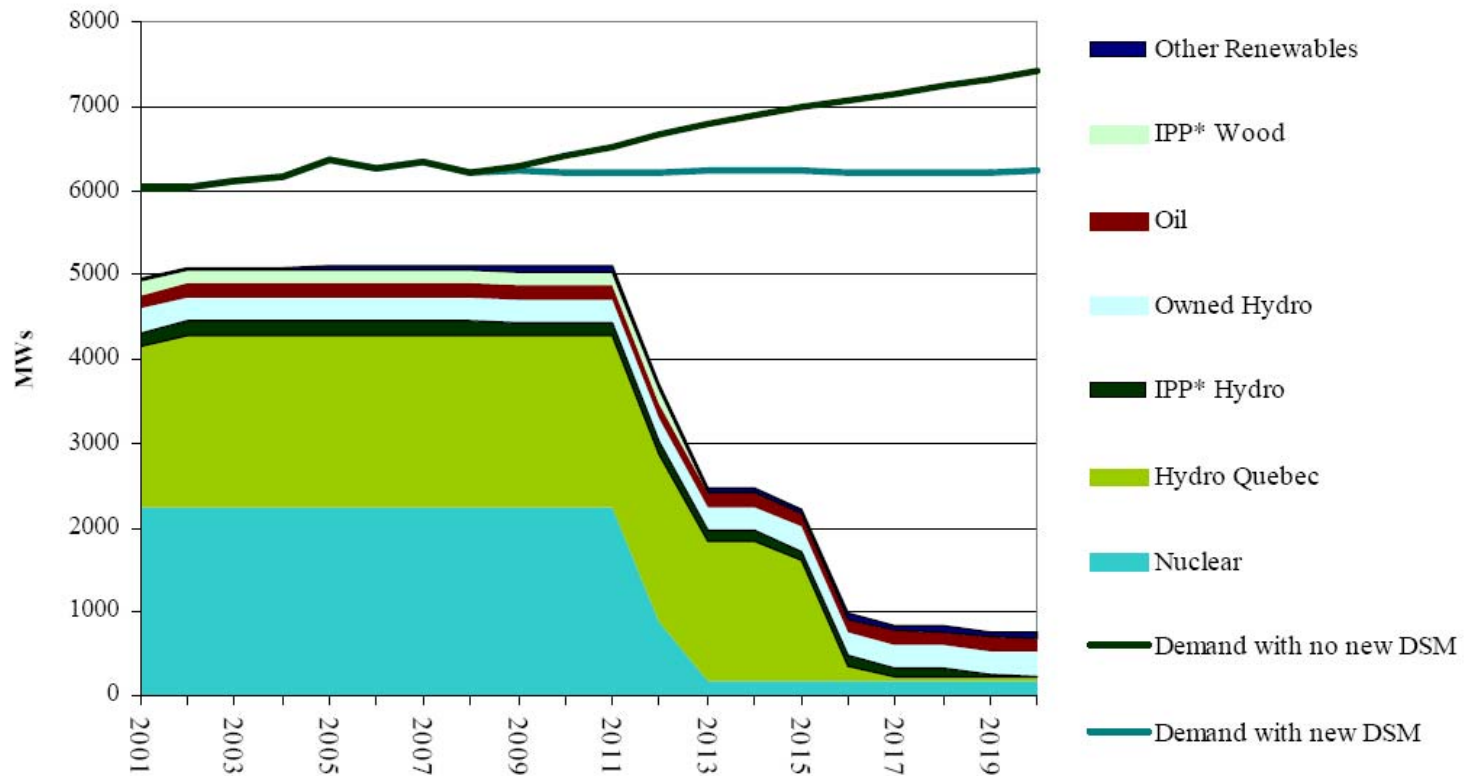


Portfolio Emission Tradeoffs



Vermont's Energy Future: A Challenge and an Opportunity

Figure III-2 Committed Resources, 2006



* Independent Power Producer.

Source: Vermont Department of Public Service, 2009 Energy Plan Public Review Draft, Pp. III-40. Existing sources include 280 mw Vermont Yankee and 310 mw Hydro-Quebec, which expire in 2012 and 2015, respectively

Over the next several years, Vermont has some important decisions to make.



Power Supply Portfolio Overview

GMP

- 2009 and 2010: essentially set
 - Committed supplies near projected load
 - Mostly stable-priced sources
- 2011: about 90% committed
 - Expiration of a system power PPA
- March 2012 forward: about 50% committed
 - Assuming no Vermont Yankee
 - Pending future sources (see below)
- 2016 forward: about 25% committed

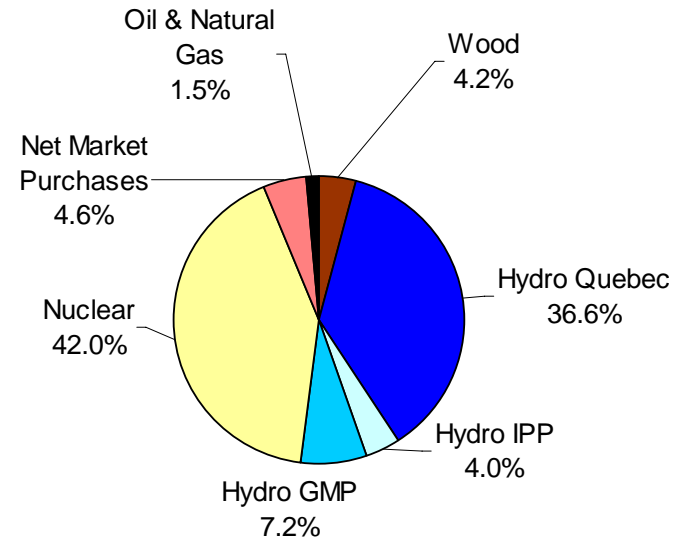
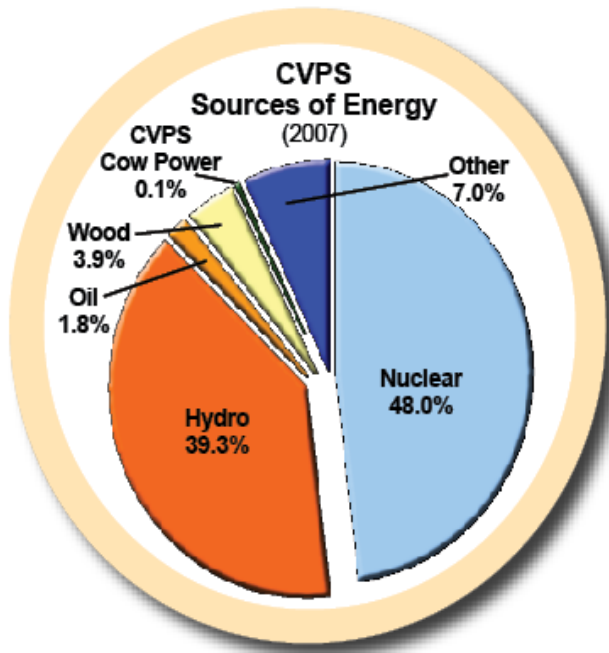
CVPS

- Excess uncommitted energy supplies in 2010 -2011
- Beyond 2011 - similar to GMP's situation

Energy Supply Mix

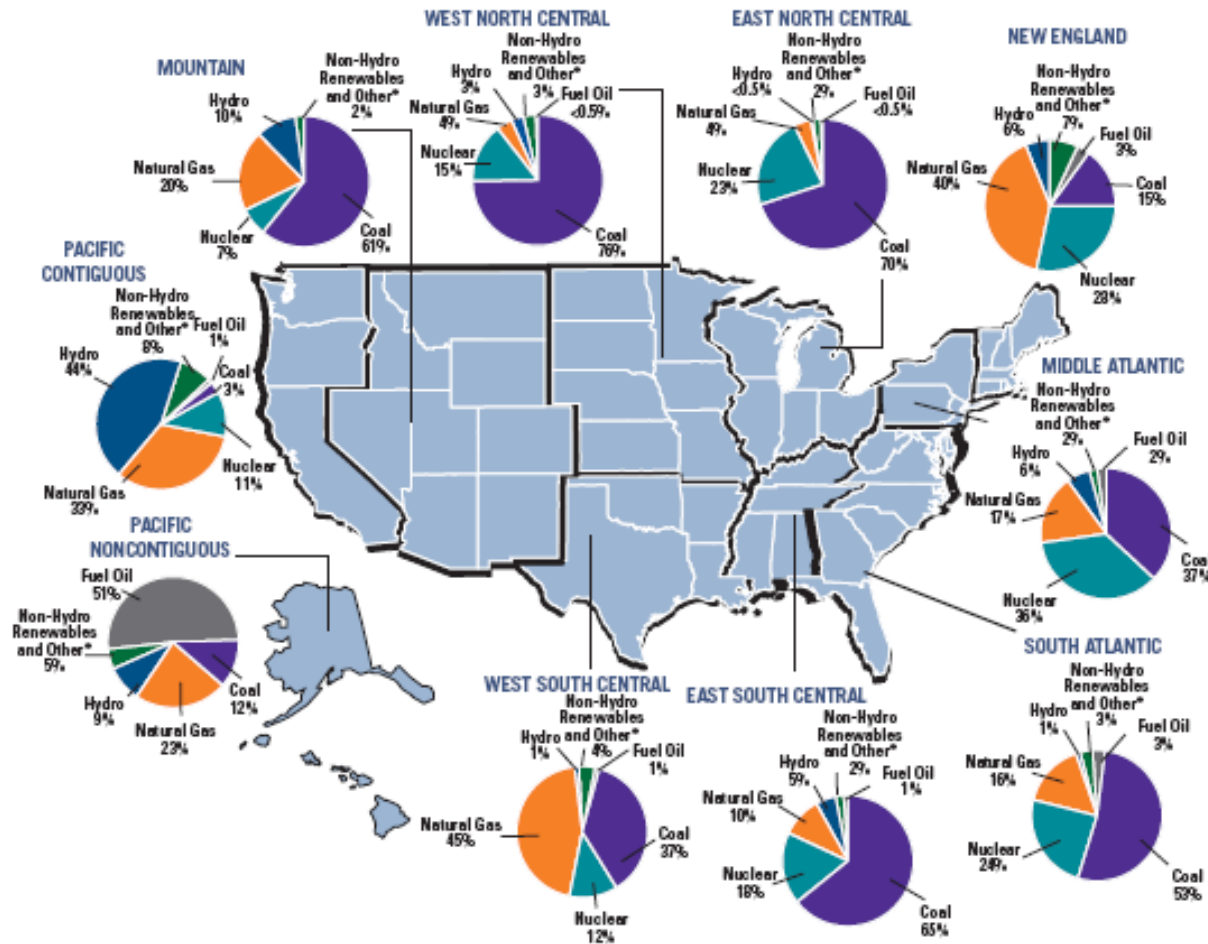
CVPS

GMP



Vermont's power supply is relatively clean; price is relatively stable.

Different Regions of the Country Rely on Different Mixes to Generate Electricity



Across the United States, a diverse mix of fuel is used to generate electricity. Several factors influence an electric utility's decision to use particular fuels. These include the price and the availability of supply. This map, arranged by census region, illustrates the diversity of fuel use and shows how the electricity generation mixes in various regions of the country differ. The map further demonstrates that major changes in the generation mix could have economic and reliability impacts, especially on a regional basis.

Regional power supply determines pricing.



Alternatives to Vermont Yankee

- A “competitive” regional wholesale power market
 - Sufficient supply apparent through at least 2012
 - Retirement would likely not trigger major near-term transmission upgrades
 - Likely more costly than current VY contract & higher air emissions
- New instate renewables
 - Appropriate to pursue, although more costly than “generic” market power
 - Broad public support
 - Portfolio diversity benefits
 - Secondary local economic benefits (e.g., jobs, tax payment)
 - However, not sufficient volume to replace VY and remainder of the gap without very large rate impacts



Wholesale Electricity Market – Opportunity and Challenges

- New England regional market
 - And neighboring region influences
- “Merchant” power sector
- Volatile prices
 - Natural gas, regional supply/demand of electricity
 - Emission regulation (particularly greenhouse gas limits)
- Other significant challenges
 - Capital unavailability
 - Construction cost escalation
 - Greater competition for sustainable resources
 - Changing state and Federal regulation



Recent Power Supply Activities

Both GMP and CVPS:

- McNeil emission reduction project
 - Jointly owned, Burlington lead
 - Will be “Class 1 renewable” in CT
- Reviewing potential investments generation sites
 - Existing hydro and fossil-fired peaking units

GMP:

- Moretown landfill project (3 MW): long-term purchase of output
- Upgraded Essex peaking plant (8 MW)
- Small purchases from farm methane generation

CVPS:

- 13 MW of purchases from:
 - Gilman Hydro, Martinsville Hydro, Lower Valley and Lower Village Hydros, Woodsville Hydro, Factory Falls Hydro, Sweet water Hydro, Brattleboro Landfill, North Hartland Hydro, Simon Pearce Glass, Carthusian Foundation, Montagne Farm, Green Mountain Dairy, Blue Spruce–
- Millstone Uprate -- 1 MW
- 25 MW of Vermont reliability demand reduction in 2009



GMP Energy Plan Themes

- Focus on cost, carbon, and reliability
- More renewable generation
- Stably priced and reliable power
- Support energy efficiency, expand demand response



CVPS– Long Term Energy Plan

- Integrated Resource Plans reviewed by VT Public Service Board
- Issue series of market RFPs
- Conclude VY and HQ Legacy Contract Negotiations
- Evaluate all potential sources using common evaluation process
 - Explicitly incorporates preferences from DPS' public outreach process
 - This process weights together preferences with portfolio economics and system needs
 - Low cost, low carbon, sustainable, in-state resources are favored



Vermont Yankee

- The plant must be determined to be safe and reliable
- Potentially a unique resource - providing cost-effective, non-emitting baseload power
 - Existing revenue sharing agreement is expected to provide value to Vermont consumers
 - We also seek an attractive power contract
 - Price, stability, collateral requirements
 - Could support VT PSB's public benefit determination within the Certificate of Public Good process
- Volume: ramp down historic VY purchase volumes
 - Increase portfolio diversity and providing room for sustainable resource purchases
- Sooner action is better



Hydro Quebec

- Existing business relationship since 1985
- Low emission power from a hydro-based system
 - Very large, financially stable seller
 - We seek an attractively priced power contract, and some price stability
- Several potential delivery points
 - Vermont (Highgate, Derby, HVDC Phase 2)
 - New Hampshire (proposed NU transmission project)
- Explore purchases from other hydro-based suppliers



Power Purchase Options – Market- wide Request For Proposals

What We Did

‘Joint Utilities RFP’:

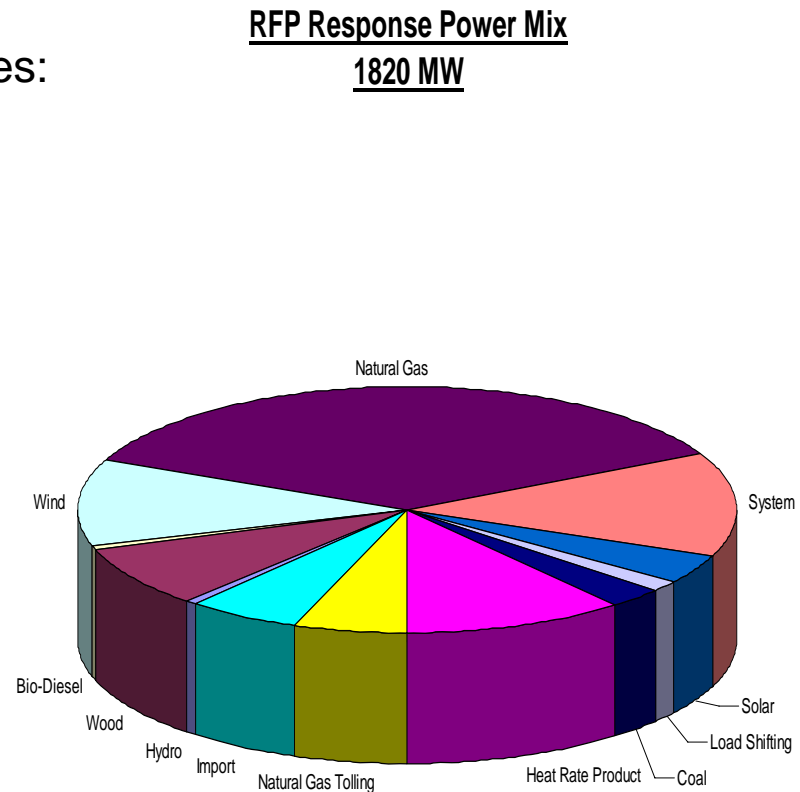
- CVPS, GMP and VEC
- December 2008 market-wide solicitation for offers to sell power
- Seeking long-term sources starting 2012
- Total 40 to 100 MW

CV & GMP ‘Contingent RFP’:

- Up to 150 MW
- Conditional on VY’s outcome

Joint Utilities RFP: What Showed Up

- Bidders include a robust mix of sources:
 - New renewables, biomass & solar
 - New England system power
 - Gas generation output
 - Existing hydro
 - Other
- Issues that arise
 - Price
 - Performance uncertainty
 - Collateral feasibility





Joint Utilities RFP: What's Next

- “Short list” has been identified
- Reasonably confident that some commitments will be made in March-April 2009
- Future periodic RFPs expected to “ladder” purchase the most competitive resources needed to meet consumer load
 - Timing and amounts will depend on VY outcome, electricity demand growth, etc.



Other Options in the Pipeline: GMP Wind & Solar

- Seek to purchase output from VT wind projects
 - Letter of intent with Deerfield Wind
 - Other proposals (in-state and region)
- Potential investment in wind projects
 - Kingdom Community Wind (20 to 30 MW)
 - Georgia Mountain (7 to 12 MW)
 - Opportunity for lower cost to customers
 - Utility cost of service, as alternative to negotiating with developers
 - Project/site value after 20 years (like hydro)
- Solar power projects
 - GMP solar rate (customer investments)
 - Exploring other models, including GMP investment