Meeting One: Energy Supply and Renewable Energy (Morning, March 22, 2011)

Discussion Questions for Small Groups

- **What are the top 1 or 2 concerns or aspects of energy supply and renewable energy to consider in the state's energy future over the next (10) years?**

  - All viable options need to be presented in a plan, together with a full cost-benefit assessment that highlights environmental costs of each alternative. External costs of many renewables, as well as fossil energy, can and should influence energy choices. Ridge-top wind, biomass electricity, and large-scale Canadian hydro, as well as Marcellus shale, have broad environmental implications that need to be described in an energy plan. Cumulative impacts across all energy sectors must also be considered- biomass is being eyed by electricity, transport & heating sectors, for instance. Wood is a limited resource. Wind on very ridge would have a huge impact on Vermont.
  - Keep renewable small & local. Instate "renewable" should not mean just instate siting and out of state manufacturing & ownership.
  - Measuring intangible impacts—aesthetic, historical, cultural, and recreational. How do we monetize cost/benefits of intangible consequences? Unintended consequences (Need scenario planning-best/worst case)
  - Encourage community scale projects, local ownership & local use of generation capacity. This will create more buy in around renewable projects.
  - The need for new investment of scale to build an entirely new energy infrastructure for wind, solar, biomass - financing & investment. The need to address climate change & reduce GHG emissions. Using each energy source for it's (sic) highest & best use - maximizing efficiency, sustainability, local economic return.
  - 1. How much forests should be burned for electricity vs. CO2 storage + sequestration. 2. Focus on lowering consumption (efficiency, conservation, industrial individual energy reduction.) 3.Transparency - environmental & community impacts of all renewables & take into account or prioritize economic incentives.
  - Carbon and other externalities incorporated into planning. Consistency/coherence to renewable incentives, funding tax breaks. Efficiency, renewables, conservation, transportation, and land use need to be integrated in this plan, not separated viewed.
  - Supply: Power quality, 1. Distribution - standards for distributed generators costs estimates $.20/kWh by 2016. 2. Shock tolerance (Resilience) improved.
  - As society turns more to electricity for end use such as computers, plug ins, geothermal systems etc. are we going to have sufficient supply and how can we supplement it locally.
  - That we fully address non electric energy use thermal & transport. That we develop a ranking & weighting of options so we can get the best bang for our resources - $ wise, soueter (sic)
  - Reliability, quality, cost, sustainability, reduce reliance hydrocarbon - equal treatment, wide diversity options, clarity for consumer, reputations - quality of life/branding.
  - 1. Keep local workforce. Balance promoting RE with costs to ensure public acceptance. 2. How is the State going to fund the CEDF? - As is the Fund is exhausted @ its current funding every year. Proposed $0.55 charge will not be suffice.
  - Carbon tax, PACE program.
  - Sustainable/resilience, reduce consumption to lower burden on natural resources, security.
  - Focusing on expansion of solar PV and wind energy systems (100ks and greater).
  - Essential to raise mandate for solar PV to 7% of renewable mix by 2020. Increase mandate for solar hot water & solar thermal space heating

- **What options do you see that can help Vermonters meet their energy needs in the future?**

  - Vermont is well positioned to demonstrate on energy policy based on intensive efficiency investments and distributed energy production. The energy plan needs to present policy options to maximize the potential of these strategies.
  - Tax breaks for EV homes & home improvement incentives to continually improve.
  - Public transportation significantly increased, rail infrastructure built, town planning mandatory, stop sprawl.
  - Look at non-regulated fuels - are their policies incentivizing or disincentivizing efficiency in use of propane, heating oil? Is it time to provide parameters for what costs are attached to purchase of small quantities, efficient use of non-regulated fuels.
  - Biomass Thermal, wind - electric, solar - hot water - photo voltaics (some primary applications)
  - 1. Power down looking at own personal over consumption, simplifying lifestyle, separating energy "needs" from energy "wants."
  - Electrical - efficiency first, planning, broad portfolio of renewables and obviously hydro. I want us to be careful in jumping or to replacing VY with natural gas which will delay the imperative to move forward.
  - Public Power Owners of Velco. Thermal Biomass for commercial/industrial true Biomass co-gen applications where electricity is by product of thermal load. Strong building efficiency codes.
  - Smart Meters - These MUST be accessible to residential customers any minimums must be realistic to allow home owners to use power in non-peak times. VT Electric Co-op told me I would not meet requirements & Smart Meters only affects large usage customers.
  - Pass Legislation that promoted other renewables (not just PU) & Energy Efficiency measures.
  - Community solar projects, more decentralized power.
  - Remain aware that the most vulnerable Vermonters will have the hardest time benefiting, whether it's accessing info or tapping PACE funds.
  - Focus on distributed generation systems (solar & wind) that meet the needs of onsite properties, meet there electrical demands. Look at other states that have implemented effective solar PV programs, such as Massachusetts, New Jersey and Pennsylvania.
  - Increase Feed In Tariff funding availability to $8 million/yr

- **Should the state set additional goals or targets for energy are areas, and if so, what targets and through what mechanisms should they be encouraged or required?**

  - We should as a state monitor external costs of our energy choices, beyond simply carbon emissions. As to carbon emissions, life cycle carbon emissions should be the relevant measure. Biomass energy & large scale HQ Hydro are no "carbon neutral," simplistic treatment of GHG emissions could actually increase total emissions.
  - Standard treatment of renewable energy types. Look at externalities on each type of generation - where are we going to balance costs & incentives of each energy type? Include localized costs as defined by locality.
  - Yes: targets & mandates are essential. Some might include: 1. Renewable heating mandates for all public & commercial buildings. 2. RPS for all fuels/all sectors; electric, thermal & transportation. 3. More - but can't develop all that right here or now.....
  - 1. Prioritize renewables based on impacts.
  - Acknowledgement (Getting the word out.) Survey
  - Need a good survey to determine future use & needs.
  - Public Power Authority to Finance public financing partnership on new renewables. Yes- to additional goals & targets. Use of state $ requirements & ranking/weighing of each option/source. We really need

a fair & accurate assessment of our options & where to place our first efforts. PRIORITIZE - of sustainable resources.

- Yes! District wide renewable energy projects, municipal scale, town scale!
- Population control - reduction statewide, efficiency education - start with schools, incentives - stable source @ low interest, statewide controls & codes.
- Good metrics, good communication. Incentives to reduce baseload! I used to do all my laundry after midnight, thinking the rates were lower. When I realized GMP (or VT) didn't reward my intentional after - hours use, I lost heat. Please encourage users (in their wallets) to change behavior.
- Essential to raise mandate for solar PV to 7% of renewable mix by 2020. Increase mandate for solar hot water & solar thermal space heating. Improve small hydro with in state. Develop 60 MPG cafe standards by 2020. Increase feed in tariff funding availability to $8 million/year.
- Develop 60 mpg CAFÉ standards by 2020

Questions for Large Group

- **How much emphasis should the state place on Carbon as a driver for energy policy vs. other criteria for energy development such as cost?**

  Our carbon footprint is what it's all about. Denmark has a near zero footprint.

- **If you had to choose between in-state renewable supplies with higher costs and out of state non-renewable options with lower costs, which would you choose?**
  Lets face it we are a region and our grid is regional - but the more decentralized the power the better - low transmission loss!

- **If cost effectiveness is an important criterion, what should "price" include: externalities (e.g., carbon), other resource costs (e.g., cost of lost heat from incandescent light bulbs)? Who should bear these costs?**

  The higher the cost of fossil fuel the less we will use! Carbon taxing works! Look at British Columbia

General Questions

- **Are there any areas in the prior plan draft that you feel the state should de-emphasize as we move forward?**

- **Is there something missing?**

- **What suggestions do you have for making the plan as useful as it can be?**

  PACE Program in place.

- **What suggestions do you have regarding the process for revitalizing the CEP?**