

“Innovating for Vermont’s Energy Future” – Discussion on H. 40



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SLIDES 1-6

COMMENTS ON H40/ACT56 AND HOW VEC WILL COMPLY

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SLIDES 7-10

What is Genesis of H. 40?



- Current SPEED program presents issues for region
- Act 99 of 2014 had legislative study on RPS/SPEED
- Total Energy Study pointed to need for more policies to help reach state energy and greenhouse gas emission reduction goals

H. 40



- H. 40 builds on the Governor's proposal:
 - Eliminates SPEED program
 - Tier 1 – Total Renewable Electric 55% by 2017 rising to 75% by 2032
 - Tier 2 – Distributed Generation (subset of Tier 1) 1% qualifying DG by 2017, rising to 10% by 2032
 - Tier 3 – Energy Transformation (distinct from Tier 1 and 2) 2% by 2017 rising to 12% by 2032

H. 40 Tier 2



- Subset of Tier 1, for 5 megawatt and under distributed renewable projects connected to Vermont distribution system, two and a half year ramp up
- New net metering (with REC ownership by utility), Standard Offer, utility owned projects all count
- Alternative Compliance Payment cap of 6 cents per kWh, relatively consistent with New England Class I
- Flexibility for banking credits up to three years, allows for larger projects if utility cannot meet with smaller projects alone in given year

H. 40 Tier 3



- Most unique element of the proposal, requirement for utilities to help customers reduce fossil fuel use
- Technology neutral approach, any clean heating or transportation technology counts, as does energy storage for the grid
- Three year ramp up for 2017, flexibility in terms of banking credits, safe harbor, and rate impact protections
- Partnership opportunities with efficiency providers, fuel dealers, etc.

H. 40 modeling



- **Department of Public Service modeling shows:**
 - Total energy cost savings to Vermont of between \$150 million and \$904 million depending on fuel price sensitivities, reference case analysis shows \$390 million net savings
 - 1,000 net new jobs over life of bill
 - Greenhouse gas emission reduction to put state on track for one quarter of our 2050 goal
 - Deployment of weatherization, heat pumps, biomass heat, other clean heat technologies in 80,000 homes and buildings

H. 40 – ACT 56 Effect on VEC
- Jeff Wright -



- ACT56 was signed into law this spring; VEC supports the new law and is excited about the Tier 3 Energy Transformation Projects (ETPs) (**COUNTER-DUCK CURVE PROGRAMS**) in particular for the reasons cited in this presentation.
- VEC is participating in the rule making process along with the other DUs. (Get involved)
- VEC is nearly ready to launch some ETPs ahead of schedule.
- VEC believes that if we promote the ETPs correctly we can offset potential impacts of “ALOT” of renewables.

H. 40 – ACT 56 Effect on VEC - Jeff Wright -



- **How will VEC comply with Tier One and Tier Two goals?**
 - Tier One is virtually already met with existing renewable contracts.
 - Tier Two will be met by building out new renewables (mostly solar probably, hopefully storage soon and not discounting wind). VEC plans to execute purchase power agreements for these new projects to minimize risk of generation ownership.
 - ✦ Year One – 2017 new renewable requirements – 1% of VEC energy sales (450,000 MWH) annually = 4,500 MWH
 - ✦ Years 2-15 – new renewable requirements - 6/10th % of VEC energy sales annually = 2,700 MWH
 - ✦ Using a 15% capacity factor for solar this equates to nameplate capacity installed of:
 - ✦ 3 MW of new solar in 2017 & 1.5 MW of new solar every year for 14 years, or 24 MW of new solar in the next 15 years – (1 MW = 6-10 acres)

H. 40 – ACT 56 Effect on VEC - Jeff Wright -



- What effect will Tier Two have on VT electrical grid?
 - Using VEC's requirements and expanding them to all distribution providers in VT, we will be building roughly 300 MW of solar (nameplate capacity) between 2017-2032.
 - What does this mean in terms of acreage? Roughly 2,000+ acres
 - How will it effect the electrical grid? That will depend on the success of the ETPs and our ability to manage and flatten load factor so new peaks don't drive significant infrastructure investment. Hopefully affordable storage will soon have a role.
 - Distribution Utilities must have the technology to manage consumer loads, be flexible in offering time of use rates and encourage ETPs through incentives, partnerships with vendors, etc.

H. 40 – ACT 56 Effect on VEC - Jeff Wright -



- **What ETPs will VEC evaluate?**
 - Electric Maple Evaporators
 - ✦ Dominion Grimm has patent on only electrical evaporator “ECO VAP”
 - ✦ VEC is host to 1st in USA – VEC/DG partnership will promote and incentivize
 - ✦ VEC maple producer made 5,000 gallons using roughly 5,200 kWh
 - ✦ Average cost of energy to produce one gallon of syrup = 20.8 cents
 - ✦ Equivalent oil needed to produce one gallon of syrup = 2/3 Gallon or \$1.80
 - ✦ Carbon Offset = 30 Tons Annually (Equivalent of 80,000 road miles/year)
 - Air-Air Heat Pumps/Water Heaters
 - Electric Vehicles
 - Others...

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- Are we excited? Yes
- Are we nervous? Yes
- Are we supportive? Yes for the right reasons...