

From: Springer, Darren [Darren.Springer@state.vt.us]
Sent: Saturday, February 28, 2015 8:23 AM
To: Rebecca Ellis
Subject: Re: Memo from Asa to Greshin

Here is the \$2.1 billion cost figure popping up again in Digger from Willem Post, just FYI. He gets it by assuming, wrongly, that utilities will build new solar and wind for 35% of their portfolio between now and 2017, to meet Tier One. He fundamentally does not understand how the ACP being set at one cent makes this impossible or the difference between owning RECs and building projects.....

Willem Post

February 27, 2015 at 11:22 pm

Annette,

Your estimate of 25 MW/yr of new RE systems is much too low.

Based on the H-40 goal to have utility sales increase from 40% RE at end 2014, to 55% RE at end 2017, about $1.2 \times 63 = 75.6$ MW of wind turbine systems (25.2 MW/yr.) and 240×2.2 MW = 528 MW of solar systems (176 MW/yr.) in meadows would be required. The capital cost would be \$2.18 billion, or \$727 million/yr.

Below are the detailed numbers for the increased RE generated and the capital cost to build the systems for the years 2015, 2016, 2017.

New distributed RE at end 2017.....20,800 MWh; mostly solar systems on roofs, etc.

New other RE at end 2017.....819,200 MWh; mostly from ridgelines and meadows, and other sources, such as Hydro-Quebec, as RE from farm methane, biomass, landfill gas, etc., likely will be minor, based on 4.5 years of existing SPEED projects.

If all those RE systems were built in Vermont, and 80% is assumed solar (mostly in meadows, etc.) and 20% is assumed wind (mostly on ridgelines), then the estimated capital cost and number of systems would be:

Wind = $0.20 \times 819,200 \text{ MWh} / (8,760 \text{ hr/yr} \times \text{CF } 0.25) \times \$2,800,000/\text{MW} = \$0.21 \text{ billion}$
Number of Lowell wind systems = $75 \text{ MW} / 63 \text{ MW} = 1.2$

Solar = $0.80 \times 819,200 \text{ MWh} / (8,760 \text{ hr/yr} \times \text{CF } 0.14) \times \$3,500,000/\text{MW} = \$1.87 \text{ billion}$
Number of 2.2 MW solar systems = $534 / 2.2 = 240$

About \$100 million is required for grid upgrades in the NEK, plus more millions of dollars for other grid upgrades. The estimated total capital cost would be at least \$0.21 b Wind + \$1.87 b Solar + \$0.10 b Grid = \$2.18 billion by end 2017, or $2.18/3 = \$727$ million per year.

H-40 is SPEED on steroids!

Sent from my iPhone

On Feb 26, 2015, at 4:15 PM, Springer, Darren <Darren.Springer@state.vt.us> wrote:

My understanding, on hearsay, is from Mark Whitworth of Energize Vermont.....

Darren M. Springer, *Deputy Commissioner*

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From: Rebecca Ellis [<mailto:ellisvermont@yahoo.com>]

Sent: Thursday, February 26, 2015 4:15 PM

To: Springer, Darren

Cc: twk@tonyklein.com

Subject: Re: Memo from Asa to Greshin

Thanks. \$2.1 billion? Where in the world did that estimate come from?

Sent from my iPhone

On Feb 26, 2015, at 3:46 PM, Springer, Darren <Darren.Springer@state.vt.us> wrote:

Hi Rebecca and Tony,

You may want this for floor. It is a worst-case scenario memo Asa provided at request of Rep. Greshin showing cost to utilities if in year one (2017) no one did any Tier 2 or Tier 3 projects and everyone only paid ACP. To be clear, we know for a fact there are many cost effective options utilities would be obligated to pursue at less cost than ACP under their least-cost service obligations. But for purposes of the exercise, we did this. It shows a net impact of \$10 million (or about 1.2% on rates) compared to the \$50 million (or 6% impact) if we lost access to REC market.

I believe there is a figure circulating among some members that the program could cost \$2.1 billion. That is not accurate, and I hope this analysis helps to disprove that, even in a worst case scenario.

Thanks,

Darren

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