1/31/13 Darren Springer (follow-up document)

Summary of Act 125 Net Metering Report

As required by Act 125 of 2012, the Public Service Department analyzed the costs and benefits of net metered generation to non-participating Vermont ratepayers; these results were reported to the Legislature on January 15, 2013.

The PSD identified the following costs:

- Net metering bill credits (lost utility sales revenue), including the solar credit
- Program administration costs (billings, interconnection, etc.)

The PSD identified the following benefits:

- Avoided energy and capacity purchases
- Avoided line losses in transmission and distribution
- Avoided regional transmission costs (reducing VT's share of regional costs)
- Avoided new in-state transmission and distribution construction
- Hedge value of a predictably-priced resource vs. volatile fossil fuel costs
- Wholesale market price suppression
- Value associated with environmental benefits (e.g. avoided greenhouse gas emissions) or SPEED qualifying resources

The PSD developed forecasts for the values of each of these costs and benefits, relying upon regional studies, ISO forecasts, Board ordered values used in other contexts (such as energy efficiency), and known forward market prices.

The PSD's analysis examined a generic Vermont installation, rather than utility-specific values. The PSD examined wind and solar (fixed and tracking) PV installations, which together comprise over 90% of net metering systems and capacity. We examined both small (individual) and large (group) systems.

Statewide levelized cost and benefits over 20 years:

Technology	Cost ($/kWh)	Benefit (no GHG)	Benefit (with GHG)
Small fixed solar	0.222	0.222	0.264
Small tracker	0.221	0.211	0.254
Small wind	0.187	0.108	0.151
Group fixed solar	0.228	0.222	0.264
Group tracker	0.226	0.211	0.254
Group wind	0.199	0.108	0.151

Without including GHG benefits, the small fixed solar PV costs exceed the benefits during the 10 years in which the solar adder is in effect; in all subsequent years the benefits outweigh the costs. With GHG benefits included, the benefits are very close to or exceed the costs of solar net metering after 5 years or less. The figure on the reverse side of this summary graphically displays these results.

20-year net benefits from solar photovoltaic systems are either positive or negative depending on whether the value of non-internalized greenhouse gas emissions are included or not included respectively. Wind power has net costs whether greenhouse gas emissions reduction benefits are included or not. Impacts on transmission and distribution infrastructure costs are a significant component of the value of net-metered systems. Solar PV has much greater coincidence of generation with times of peak demand than does wind power; this results in more net benefits for solar PV than for wind.

The further analysis of net metering that the draft bill requires by October, 2014, would revisit this analysis to update forecast values, as well as to identify and calculate, where possible, the differences between utilities in the costs and benefits of net metering.

Annual costs and benefits associated with a 4 kW fixed solar PV residential system installed in 2013.