

Item	Category	Description	Projection	Value Accrues to:
Energy	Energy	An hourly value of reduced energy market charges equal to the Real-Time hourly LMP at the Vermont Load Zone times the assumed hourly output adjusted for line losses. For this entire analysis the hourly output shape was estimated using the average hourly output shape of 4 randomly selected Net Metering projects on the VEC system from 10/1/17-9/30/19.	The energy projections are a function of: CME Group (aka NYMEX) Day-ahead Market prices for on-peak energy at the Hub in the ISO-NE settlement system as traded on at the close of business on 9/4/19, basis between the Hub DAM prices and the Vermont Load Zone Real-Time market prices for 9/1/18-8/31/19, and the assumed hourly output. For years beyond which there is forward market data for on-peak energy on the NYMEX, the on-peak energy price is escalated based on NYMEX natural gas prices at the close of business on 9/4/19.	Ratepayer/utility ²

Item	Category	Description	Projection	Value Accrues to:
Capacity ¹	Capacity	A monthly value from June – May of a capacity commitment period equal to the output of the facility adjusted for line losses at the one hour of the New England annual peak from the calendar year immediately preceding the start of the capacity commitment period times the effective capacity reserve margin times the monthly Net Regional Clearing price for the capacity zone VT resides in.	Capacity projections are based on actual Forward Capacity Auction clearing prices through FCA #13 (June 2022-May 2023) escalated by 2.5% per year. The reduction in the utility's capacity obligation is based on the average assumed hourly output in hour ending 1800 for June and July and hour ending 1700 for August; multiplied by 1.2 to account for the ISO-NE planned capacity reserve requirement.	Ratepayer/utility ²

Item	Category	Description	Projection	Value Accrues to:
Regulation	Regulation	An hourly value of reduced Regulation market charges based on hourly regulation charges in ISO-NE and VEC's % share of real-time load obligation as reduced by the hourly output adjusted for line losses.	Monthly Regulation \$/MWh-of-Real-time-load-obligation was calculated for each month of September 2018 – August 2019 using actual data from VEC settlement data with ISO-NE. Rates beyond August 2019 are based on the monthly assumption for the year prior times the ratio of the NYMEX Natural Gas forward prices for the month divided by that for the same month one-year prior.	Ratepayer/utility ²

Item	Category	Description	Projection	Value Accrues to:
Reserves	Reserves	An hourly value of reduced Reserve market charges based on hourly regulation charges in ISO-NE and VEC's % share of real-time load obligation as reduced by the hourly output adjusted for line losses.	Monthly Reserves \$/MWh-of Real-time-load obligation was calculated for each month of September 2018 – August 2019 using VEC's actual settlement data with ISO-NE. Rates beyond August 2019 are based on the monthly assumption for the year prior times the ratio of the NYMEX Natural Gas forward prices for the month divided by the Natural gas price for the same month one-year prior.	Ratepayer/utility ²

Item	Category	Description	Projection	Value Accrues to:
NEPOOL OATT Schedule 1 ¹	Transmission	A monthly value equal to the assumed output adjusted for line losses at the one hour of the Vermont Peak each month times the NEPOOL OATT Schedule 1 rate.	Projected \$/kw-month rate is rate as of 6/1/19, escalated each June by the average annual increase of the most recent 8 years (0.42%). Rate is multiplied by the assumed output at time of VT peak each month.	Ratepayer/utility ²
NEPOOL OATT Schedule 2 ¹ - VAR	Transmission	A monthly value that is based on total ISO-NE VAR charges and VEC's load at the time of the Vermont monthly peak.	Actual effective monthly rate for each month of 8/2018-7/2019 based on actual Schedule 2 costs in settlement and the assumed output at the time of the Vermont peak each month adjusted for losses. Each successive month was escalated using the monthly assumption for the year prior times the ratio of the NYMEX Natural Gas forward prices for the month divided by the Natural gas price for the same month one-year prior.	Ratepayer/utility ²
NEPOOL OATT Schedule 9 ¹	Transmission	A monthly value equal to the output of the facility adjusted for line losses at the one hour of the Vermont Peak each month times the NEPOOL OATT Schedule 9 rate.	Projected \$/kw-month rate is rate as of 6/1/19, escalated each June by the average annual increase of the most recent 5 years from 2011-2019 (6.43%). Rate is multiplied by assumed impact at time of VT peak each month, which is Avg actual output for corresponding hour and month for the assumed output, adjusted for losses.	Ratepayer/utility ²
NEPOOL OATT Schedule 16 – Black Start	Transmission	A monthly value that is based on total ISO-NE Black Start charges for the month and VEC's load at the time of the Vermont Peak.	Actual effective monthly rate for each month of 8/2018-7/2019 based on VEC's actual Schedule 16 charges in its settlement with ISO-NE and its load in settlement at the time of the Vermont peak each month.	Ratepayer/utility ²

			Each successive month was escalated using the monthly assumption for the year prior times the ratio of the NYMEX Natural Gas forward prices for the month divided by the Natural gas price for the same month one-year prior.	
ISO Tariff Schedule 1 ¹	Transmission	A monthly value equal to the assumed hourly output adjusted for line losses at the one hour of the Vermont Peak each month times the ISO Tariff Schedule 1 rate.	Projected \$/kw-month rate is rate as of 1/1/19, escalated each January by compound annual growth rate from 2013-2019 (0.75%). Rate is multiplied by assumed impact at time of VT peak each month, adjusted for losses.	Ratepayer/utility ²
ISO Tariff Schedule 2 ¹	Transmission	A monthly value equal to the total assumed monthly output adjusted for line losses times the ISO Tariff Schedule 2 rate for volumetric charges.	Projected \$/MWh rate is rate as of 1/1/19, escalated each subsequent January by compound annual growth rate from 2013-2019 (5.20%). Rate is multiplied by projected monthly output, adjusted for line losses.	Ratepayer/utility ²
ISO Tariff Schedule 3 ¹	Transmission	A monthly value equal to the assumed output, adjusted for line losses, at the one hour of the Vermont Peak each month times the ISO Tariff Schedule 5 rate.	Projected \$/kw-month rate is rate as of 1/1/19, escalated each January by compound annual growth rate from 2013-2019 (4.00%). Rate is multiplied by assumed impact at time of VT peak each month, adjusted for losses.	Ratepayer/utility ²
ISO Tariff Schedule 5 ¹	Transmission	A monthly value equal to the assumed output, adjusted for line losses, at the one hour of the Vermont Peak each month times the ISO Tariff Schedule 5 rate.	Projected \$/kw-month rate is rate as of 1/1/19, escalated each January by compound annual growth rate from 2013-2019 (-2.20%). Rate is multiplied by assumed impact at time of VT peak each month, adjusted for losses.	Ratepayer/utility ²
Auction Revenue Rights ¹	Transmission	A monthly value based on the amount of Auction Revenue Rights	\$/kw-month projections based on actual ARR \$ in VEC's settlement with ISO-NE for 9/2018-	Ratepayer/utility ²

		\$ allocated to load serving entities based on their load in settlement at the time of the monthly peak in NE.	8/2019 for each month divided by load at time of ISO peak for the month. Data is directly from settlement files with ISO-NE. No escalation was assumed because trend has been flat and there is very little congestion in most parts of New England. Congestion should also go down as more transmission is built. Load reduction at time of peak is based on the monthly average assumed output in the same hour of the ISO monthly peak each month. (For example in May 2019 ISO-NE peaked on 5/20/2019, hour ending 19. To calculate the load reduction, VEC used the average assumed output in hour 19 for each day of May.)	
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Item	Category	Description	Projection	Value Accrues to:
Renewable Energy Certificates	RECs	An hourly value based on the market value of a VT Tier 2 REC. (as a result of acquiring a REC the utility can either re-sell another REC if it is excess Tier 2 RECs or if it is short Tier 2 RECs the utility will not have to purchase a REC from another entity.	2019 value is based on broker data as of 10/8/2019. 2020-2022 values based on a transaction entered by VEC no 10/2/19. 2023 value is based on broker data as of 10/8/2019. For 2024 and beyond, assumed \$15/REC using projections from rec Sustainable Energy Advantage (a REC consultant used by VEC) report whose reference case has price below \$10/REC for much of the late 2020's and early 2030s. The SEA reference case assumes all renewable energy laws in the NE states continue as they currently are.	Ratepayer/utility ²
Job retention/creation				A subset of Society in General
Environmental Benefits not captured in REC value.				Society in General
Reduced electric bill ³				NM customer
Profit ³				Developer
Rates higher than they otherwise would be ³				Non-NM Customers

1. It should be noted that whether there is a value or not, and/or when that value is realized, depends upon how big the society we are looking at is. For example, regarding Capacity charges, each utility is charged its percentage share of the total ISO-NE capacity charges in the month based on the utility's percentage share of the load in the one hour of the annual New England Peak in the previous calendar

year. If a utility reduces its load in that hour, the total capacity charges in New England do not change immediately, however the utility realizes a savings in the next year and all other load serving entities in New England realize an increase in capacity charges. As time goes on, ISO-NE will use the reduced load in New England and determine a lower capacity requirement for the entire region, but that savings will not be realized for several years. A similar situation occurs for other relatively costs based on load such as NEPOOL OATT and ISO Tariff expenses. In these cases VEC has calculated the value to the Vermont ratepayers only.

2. VEC is a Cooperative, which is a not-for-profit entity owned by the customers it serves. Thus the terms “ratepayer” and “utility” cover the same groups.
3. The reduced electric bill flows to the Net Metering customer. The developer also receives profit. The combination of these two are paid for by higher rates for the utility’s non-Net Metering customers. So, depending on what are considered the boundaries of “Society in General” there is either a benefit or no benefit at all.