STATE OF VERMONT

PUBLIC UTILITY COMMISSION

Case No. 18-____-___

Petition of Town of Stowe Electric Department	)
pursuant to 30 V.S.A. §§ 225 and 227(a) for a 7.9%	)
rate increase to take effect on a service-rendered	)
basis August 15, 2018	)

PREFILED DIRECT TESTIMONY OF TIMOTHY HEBERT
ON BEHALF OF
THE TOWN OF STOWE ELECTRIC DEPARTMENT

Summary of Testimony

Mr. Hebert's testimony provides the power supply and transmission expense projections in support of the Town of Stowe Electric Department's 2018 Rate Case.

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Q1. Please state your name, current employer, business address, and position.

A1. My name is Timothy Hebert, and I am Chief Operating Officer of Energy New England, LLC, a Massachusetts electric and energy services cooperative. Our offices are located at 100 Foxborough Boulevard, Suite 110, Foxborough, Massachusetts 02035.

Q2. Please describe your educational background and work experience.

A2. I hold Bachelor's and Master's degrees in Mechanical Engineering from the University of Massachusetts at Amherst and a Master's in Management degree from Bridgewater State University. I have been involved in the utility industry for nearly 25 years, in a variety of supply side roles. I began that part of my career with the Taunton Municipal Lighting Plant ("TMLP"), where I served as Power Supply Planning Engineer for nearly four years. In that capacity, I oversaw the purchase of short-term power in the evolving

competitive wholesale markets and was involved in fuel procurement for a natural gas and oil fired generating facility. I also was part of the team that structured long-term off take contracts from several landfill gas to energy projects.

Following my tenure at TMLP, I joined Energy New England and have been with the company for twenty years. I have served in a number of roles, beginning with Power Market Analyst, Energy Operations Manager, Vice President and Senior Vice President – Energy Operations, Executive Vice President, and currently as its Chief Operating Officer. In that capacity I oversee a group of 9 professionals to provide a number of services to municipal utilities throughout New England, including risk and portfolio management, resource planning, ISO market management, and energy consulting. My resume is attached as Exhibit SED–TH–1.

Q3. Have you testified previously before the Public Utility Commission?

A3. Yes. I have provided testimony relating to the Town of Stowe Electric Department's ("SED") purchase of electricity from the NextEra Energy Seabrook nuclear power station in Docket No. 7814; SED's 2007 Integrated Resource Plan ("IRP") in Docket No. 7371; the Board's Investigation into SED's Existing Rates in Docket No. 8074; and SED's Nebraska Valley Solar Farm in Docket No. 8611. I also oversaw the preparation of SED's 2017 IRP pending in Case No. 17-5187-PET, although no testimony has yet been submitted in that proceeding.

Q4. What is the purpose of your testimony?

A4. My testimony provides SED's Rate Year power supply and transmission cost projections and four-year projections of those costs in support of SED's requested rate increase. The power supply and transmission cost projections attached to my testimony as Exhibit SED–TH–2 are incorporated into SED's rate case models attached to and discussed in the testimony of Stan Faryniarz and Matthew Loiacono (the "Daymark Panel") including Exhibit SED–Daymark–4.

Q5. How do SED's power supply and power supply costs change in the 2017 to 2021 time period and what are the major cost drivers?

A5. Stowe's resource mix is largely a combination of long term bilateral and life of unit contracts. As demonstrated by the projections contained in Exhibit SED–TH–2, SED's power supply is relatively stable over the 2017 to 2021 time period with a few notable exceptions. Several of the long-term contracts under the Rule 4.100 program have staggered expiration dates that range from March 2018 to December 2020, and only the Ryegate contract has been renegotiated through October 2022. The Miller Hydro (Brown Bear) long term contract is set to expire in May 2021; SED receives 2.613% of the output of that project. Lastly, SED contracts annually for the load following bilateral contract that supplies the Stowe Mountain Resort snowmaking load for the months of October

through April. Apart from these relatively minor changes, SED's power supply is fairly stable during the subject period as more particularly described in SED's pending IRP.

While the SED's power supply portfolio/resource mix is relatively stable through the subject period, there are some material cost drivers within SED's power supply over the next few years, including:

a. Costs to SED under the Seabrook PPA increase in 2019 since there is no refueling outage and the contract will deliver more energy to SED.
b. There is a slight uptick in VEPP Inc. SPEED allocation and costs.
c. Forward capacity market prices are known and measurable, and peak in the June 2017 to May 2018 time period, then drop each June thereafter. The market value of the capacity of SED's contracts or unit entitlements are reflected in their total costs. As capacity market prices drop, this will directionally increase the cost of resources that provide capacity to SED, such as the Seabrook contract as well as its Stony Brook and McNeil entitlements. SED's capacity net interchange purchases are then based on its net requirements, reflecting known capacity market costs in the Vermont load zone.
d. ISO NE Regional Network Service costs continue to rise and are reflected in the ISO OATT Charges line. The rates are determined each June for the coming 12-month period and are a function of which transmission projects are accepted in to the regional transmission system via the ISO NE Reliability and Transmission

Committees. These costs are projected to increase by 10.1% or $171,398 in 2019 on a year over year basis.

e. The other major cost driver are transmission expenses paid to VELCO under the 1991 Transmission Agreement, which sees a substantial $400,948 or 25% jump in 2019 due to transmission work in the state of Vermont, including work on the Highgate Converter station. Then, in 2020 costs decline substantially by $1.274 million as the debt for the Lamoille County Project ("LCP") is retired. As explained in the testimony of Denise Sullivan and the Daymark Panel, a four-year normalization of these costs has been proposed as a consequence, since failing to do so would overstate this Rate Year transmission expense item in the development of SED rates.

The total projected impact of these cost drivers on SED's power supply and transmission budget is a 3.6%, or $319,100, increase in 2018 compared to 2017, then an 8.1%, or $732,316, increase in 2019, followed by a substantial 12.1%, or $1.184 million, reduction in 2020.

Q6. Please explain the sources for your resource cost estimates.

A6. ENE has gone through each of SED's resources and used the known and measurable approach to forecast both the MWH output and associated costs. Below I summarize those estimates on a resource-by-resource basis:

- NYPA:
  - Energy, Capacity and Transmission rates are based on the actual monthly rates in 2017.
  - Delivered generation is projected at a 70% capacity factor. This is a conservative prediction because the NYPA contract includes interruptible power which is not known and measurable for future years. NYPA does not provide annual forecasts for generation schedules or costs.
  - NYPA includes Emission Free Energy Certificates ("EFECs") that qualify for Tier I Renewable Energy Standard ("RES") compliance.

- VEPPI/Standard Offer:
  - Standard Offer and VEPPI 4.100 contracts are based on actual rates from 2017.
  - Forecasted generation for VEPPI 4.100 is based on the 2017 actuals, which are then adjusted to reflect the known and measurable reduction caused by the expiring contracts during that budget year.
  - Since Standard Offer projects represent a load reduction there are no MWH included in the projected resource mix. The forecasted load is modeled using the three-year historical average which includes the historical standard offer reductions.

- SED receives their pro-rate share of the associated renewable energy credits (RECs). These RECs are qualified for both Tier I and Tier II RES for SED's compliance.

- Hydro-Quebec Purchase Power Agreement ("PPA"):
  - The energy rate reflects the terms of the executed contract. ENE used the percent increase from the contract year, Nov-16 to Oct-17, to calculate the energy rate for the next contract year of Nov-17 to Oct-18. ENE then applied a standard increase of 1% going forward. Although the contract allows for a 15% swing in either direction, it is unknown how the price will calculate going forward. We have projected costs with relatively low year-over-year changes due to the period of relatively low forward and spot market prices, except for cold weather events which tend to increase spot market prices. However, those events have been limited enough of late to not move the contract pricing substantially, and whether they occur in the future is not known and measurable in any case.
  - Generation volume is based on the PPA. SED's MW allotment changed from the schedule based on a 218 MW capability to a 225 MW capacity in November 2016. SED receives a fixed MW amount for hours 8 through 23, 7 days a week. Exhibit SED–TH–3 contains the MW proration of SED's HQ PPA.

- SED receives their share of RECs from this PPA. These qualify for Tier I RES towards SED compliance.

- McNeil
  - Costs were based on the 2018 budget received from Vermont Public Power Supply Authority's ("VPPSA"). It was noted the cost had increased by 100% from previous years due to an overhaul of the plant. Referring to the Joint Owners meeting minutes from 12/5/17 (Draft) it states that "Burlington Electric is proposing an accounting order from the public service board to amortize the cost of the major overhaul over seven years, therefore it is not known whether the price will decrease in next year's budget.
  - Generation is based on 2017 actual output. We do know there may be an outage due to the overhaul beginning in May 2018, but it is not known and measurable as to how long it will take for the plant to be back online, therefore ENE has maintained the 62% capacity factor from 2017.
  - SED receives their share of RECs from McNeil. SED monetizes these CT Class I qualifying RECs to help offset any RES costs.

- Stonybrook (1A/1B/1C):
  - Energy, Capacity, and Transmission rates are based the budget projection on December 7, 2017 received from Massachusetts Municipal Wholesale Electric Company's ("MMWEC").

- Generation is based on MMWEC's budget distributed on December 7, 2017.

- NextEra Seabrook PPA
  - Energy Rates are calculated using the rate from the current contract year (Jun-17 - May-18) plus the historical average of escalation which has been 1.591%.
  - Capacity Rates are calculated using the rate from the current contract year (Jun-17 - May-18) plus the historical average of escalation which has been 1.591%.
  - Generation is based on the terms in the PPA which is 2MW delivered 24 hours each day. The only reduction to output is when Seabrook is down for approved refueling/maintenance, scheduled for October of 2018, April 2020, and October 2021.
  - SED receives their contracted quantity of Seabrook EFECs.

- Miller Hydro (Brown Bear) PPA:
  - Energy Rates are based on the terms in the PPA. The price per megawatt-hour includes both energy and RECs.
  - Generation is based on historical production.
  - Miller Hydro RECs SED receives from this project qualify for Tier I RES.

- Saddleback Ridge Wind PPA:
  - Energy Rates are based on the terms in the PPA. The price per megawatt-hour includes energy, capacity and RECs.
  - Generation is based on historical production.
  - Saddleback Wind RECs are Tier I RES qualified.

- Nebraska Valley Solar Project (SED-owned)
  - Project costs are not included in the power supply calculation
  - The generation is modeled as a hedge against SED's load forecast. The load forecast is reconstituted for the historical solar generation, so as to not double count the reduction.
  - Nebraska Valley Solar RECs are dual qualified for Tier I and Tier II RES for SED's compliance with the Vermont RES.

- Mountain Load Following Contract
  - Pricing estimates are based on current forward monthly market pricing with an adjustment to approximate load following service. The load follow adjustment was calculated using the contract and forward market prices at the time when the last three contracts were executed. ENE compared the monthly contract prices to the monthly forward prices and calculated the average conversion to a load follow price.

- The amount of snow making load is the average of the last three contract periods.

- ISO Energy Net Interchange
  - Spot market energy purchases are calculated using the average of 2015-2017 actual wholesale loads less all estimated resource production. These net MWH are priced at the current forward market on and off-peak block energy prices weighted by SED's monthly open position for both on-peak and off-peak hours.
  - Capacity costs are calculated by subtracting known self-supplied capacity from SED's ISO-NE Installed Capacity Requirement ("ICR") and multiplied by the forward capacity auction clearing price for the capacity zone that includes Vermont. Results of FCA 9 through FCA 12 are attached as Exhibit SED–TH–4.

Q7. Please explain SED's capacity market positions.

A7. ENE begins with SED's ICR value for the FCM year to calculate SED's capacity costs. The auctions are performed three years and four months in advance of each June – May period. ENE self-supplies all qualified and appropriate resources for SED, establishing the MW Stowe can subtract from its obligation through May 2022. When Vermont's capacity location changes from Rest of Pool ("ROP") to Northern New England ("NNE")

in FCA 11 (June 2020 – May 2021), SED loses the ability to self-supply its NYPA entitlement due to its delivery point in the Rest of Pool capacity zone. SED will receive the associated capacity revenue from the Lead Market Participant of the resource ("LMP-R") calculated at the payment rate for ROP. SED is unable to self-supply Saddleback, so SED will receive its proportionate share of the capacity revenue calculated at the payment rate for the Maine capacity zone. Because of the lower cost trajectory of the ISO-NE FCM prices, and the FCA 11 change in Vermont's capacity zone, capacity costs were 4-year normalized in the SED Rate Year, as discussed further in the testimony of Denise Sullivan and the Daymark Panel.

Q8. Please explain SED's transmission costs.

A8. SED has both ISO-NE Open Access Transmission ("OATT") Regional Network Service and Local Network Service from VELCO under the 1991 Agreement ("VELCO 91").

- ISO-NE published their five-year OATT rate forecast in the Pool Transmission Owner Advisory Committee / Rates Working Group presentation in July 2017. These forecasts were set during the NEPOOL Reliability and Transmission Committees at the July 2017 Summer meeting. Exhibit SED–TH–5 is the complete presentation. To calculate SED's RNS charges, ENE used the highest monthly peak in each month using the last three years of actual loads.
- VELCO or Vermont Transco provides monthly updated budgets. ENE used the January 2018 version that included the completed 2017 actuals. The forecast for

SED can be found in Exhibit SED–TH–6. Calendar year 2019 brings a 127% increase to SED's allocation of forecasted common revenues, and the specific facility revenue charges end in 2020, reducing net VELCO 91 transmission charges by 64.1%. Again, as discussed previously, due to these substantial changes, a 4-year normalization was proposed for these transmission costs.

Q9. Please explain SED's smaller transmission charges.

A9. SED has two other transmission charges one for WEC Phase I and the other for VELCO Phase I. ENE used the actual 2017 charges to estimate the cost in the Rate Year for both.

Q10. Please explain SED's ISO Load and Schedule Charges.

A10. ENE used SED's 2017 actual ISO charges and credits. ISO-NE specific line item charges are rolled up from ISO Schedule 2, 3, and 5, Participant expenses, GIS, and NEPOOL line of credit charges. Within the ISO-NE load charges are line items such as ARR revenues and Ancillary charges. Within the Ancillary charges we include Winter Reliability, Regulation, Reserves, and Net Commitment Period Compensation ("NCPC") charges. ENE separates the annual ISO-NE membership fee as its own charge within the budget.

Q11. Please explain the projection for SED's VELCO administration fees.

A11. ENE used the VELCO actual 2017 charges for the VECLO Administration fees. These charges are the costs associated with specific activities provided by VELCO for SED, such as market resettlements, transmission dispatch and power administration, power accounting, and NYPA contract settlement.

Q12. Please explain SED's HQ (Highgate Use Rights & HQICC).

A12. SED pays support payments for and receives capacity revenue from having the rights to a percentage of the Phase I Interconnection Transmission Facility (HQ ICC). ENE calculated the revenue at the MW amount multiplied by the capacity rate for the ROP zone. SED has also entered into a contract with Green Mountain Power to sell the use rights to wheel energy across the Phase I facility, since its entitlement is too small to allow it to do so itself. The contract terminates on December 31, 2018 and this adjustment is noted in the testimony of Ms. Sullivan. These payments are forecasted based on the contract terms.

Q13. Please explain SED's Renewable Energy Standards compliance position.

A13. ENE has forecasted SED's Tier I and Tier II RES compliance. We have not forecasted a Tier III compliance cost, as it begins in 2019 and the megawatt conversion for compliance is not known at this time. ENE has forecasted full compliance with Tier II

through the RECs SED receives under current contracts. Further, SED places excess RECs generated by the Nebraska Valley Solar Project and any Standard Offer Tier II Qualified RECs allocated to SED through VEPPI into a reserve account in the NEPOOL GIS system. These excess RECs are then allocated to SED's compliance requirements to maximize value to SED.

For Tier I, ENE has calculated the number of RECs based on estimated generation from SED's contracts. For any RECs that have a Class I qualification outside Vermont, we have assumed SED will sell the RECs at the premium price of the Class I in either Massachusetts or Connecticut and will then buy replacement RECs from a lower-priced resource that qualifies for Tier I. ENE used current REC broker prices for Massachusetts and Connecticut Class I forward prices and replacement prices at Maine existing REC prices.

Q15. Does this conclude your testimony?

A15. Yes.

EXHIBIT LIST

Exhibit SED–TH–1	Resume
Exhibit SED–TH–2	2017 TO 2021 Power Supply & Transmission Projections
Exhibit SED–TH–3	Hydro Quebec Contract Schedule Details
Exhibit SED–TH–4	FCA Results for FCM 9 through FCM 12
Exhibit SED–TH–5	RNS Rates: PTF Forecast
Exhibit SED–TH–6	Vermont Transco, LLC Transmission Forecast