

Vermont System Planning Committee
Forecasting Subcommittee Meeting Minutes
June 27, 2017 | 1:30p.m.
Vermont Public Power Supply Authority

In attendance:

- Deena Frankel, VELCO
- Hantz Pr sum , VELCO
- Jess Carney, VELCO intern
- Steve Fitzhugh, Northfield Electric Department
- Bill Powell, WEC
- Dave Westman, VEIC
- Mike Wickenden, Residential Representative to VSPC
- Mike Leach, BED
- Rip Kirby (via phone), GMP
- TJ Poor (Chair), VPPSA
- Eric Fox, Itron
- Mike Russo, Itron

Next Meeting: August 2nd – VPPSA.

Agenda - Mr. Poor indicated that the primary subject matter of this meeting was a presentation by Itron covering the draft forecast. Committee members commented on pieces that needed discussion, including EE forecast, heat pumps, timing for analysis on long range plant. All were discussed within the context of the forecast.

Previous meeting minutes – Mr. Poor indicated that April minutes would be forthcoming prior to the August Meeting.

Itron Presentation Mr. Fox and Mr. Russo provided an overview of the preliminary results of their work to develop the draft long range forecast. The presentation is located [here](#).

1) Preliminary Results

Itron presented its “baseline” and “adjusted” forecasts. Forecast adjustments included for EE program savings, heat pumps, solar, and electric vehicles. Highlights of discussion (not already included in presentation) include:

- Impact of expected EE outweighs economic growth as a driver of the forecast
- The base forecast includes (has embedded in it) solar up “to a point” (historical solar). Incremental monthly beyond that.
- Non-residential sales are flat.
- The base forecast, prior to adjustments, shows that still summer peak (however the solar adjustment ultimately flips VT to a winter peak).
- Heat pumps and EV’s have significant impact on demand.

- EV assumptions – no load management

2) EE Program Savings Integration

- Itron used efficiency forecasts from March 2017. Since then, both the Public Service Department and VEIC have recommended lower budgets than what these estimates were based upon. A Public Utility Commission (PUC) determination on budgets should be available by late July/early August, where new forecasts can be provided by VEIC to Itron.
- As per historical practice, Itron makes a determination of how much future EE is already embedded in the baseline forecast. **They have estimated 90%.**
 - (note some lighting savings are considered outside this trend)
- There was some discussion of the treatment of EE savings as heating load. Dave Westman will follow up with Itron to clarify EE treatment of heating savings.

3) Heat Pump Projections

- Current forecast shows approximately 40% of homes having heat pumps in 2037. Much discussion in the Committee on this possibly being high, this came from 2015 heat pump projections originally.
- Energy Futures Group report also provided heat pump estimates that were used, it may be available for the Committee to see. The forecast now assumes GMP saturation rates extrapolated to the rest of the state. BED has indicated its saturation is lower given its territories characteristics.
- VEIC will follow up with Itron and the committee on their assumptions re: heat pumps.
- Heat pumps increase both heating AND cooling load. Department's interim study may shed more light on heat pumps impact, final report should be out soon.
 - Under current assumptions, heat pumps have limited impact on demand. This impact largely mitigated by solar

4) Solar impact

- Large scale solar "load reducers" will be modeled exogenously (e.g. standard offer plants and other "utility scale" solar).
- Load factors used are a vT specific weighted average between types of installations seen in VT
- Historic solar is assumed to be embedded in the forecast. The forecast shows approximately 400MW of capacity in 2035.
- It was noted that solar actually performs worse in a 90/10 forecast – due to the heat/humid not optimal generation conditions.

5) Electric Vehicles

- Used Drive electric Vermont "Low" forecast of impacts in model, consistent with VSPC LFC's recommendation. Other scenarios appeared to aggressive.
- The average use per vehicle was an assumed mix of PHEV and full electric vehicles.

6) Weather Station analysis

- Itron was requested to review other weather stations to determine if zonal forecasting would benefit from using different weather stations. The problem is that BTV is class 1 weather

station, while others (e.g. Rutland, Bennington, Keene) have substantial missing data. Some methods can be used to fill those holes, however only a very slight improvement in the model resulted.

7) General

- Mr. Poor made two requests re: presentation of the forecasts –
 - request to show CAGR for first 10 years as well as the entire period.
 - Request to show the expected monthly peak hour for the duration of the forecast, how that is expected to change.
- Peaks shown are all 50/50 peaks.

8) Next steps

- EE new forecast depending on approved budgets – early august
- Heat Pump discussion via email
- Early August meeting.