2022 IRP Memorandum of Understanding Guide

As part of the approval process of VEC's most recently filed IRP in 2022, VEC agreed to address several specific topics in the 2025 IRP as stipulated in a Memorandum of Understanding (MOU) issued February 9, 2023, in Case No. 22-2764-PET. This document serves as a guide to describe for the reader where and how the 2022 IRP addresses each of the applicable stipulations from the MOU. Below are the applicable Terms and Conditions outlined in the MOU followed by explanations, depicted in bold italics, of where and how they are each addressed in VEC's 2025 IRP.

TERMS AND CONDITIONS

1. **Pre-filing engagement on the next IRP: VEC will initiate the following engagement with the Department, and other stakeholders, prior to filing its next IRP.**
    - **Approximately one year prior to filing, VEC will schedule a kick-off meeting with the Department to discuss the methodology and components of the next IRP and to develop a meeting schedule.**
    - **During the year prior to filing, VEC will initiate meetings with the Department to discuss IRP methods and contents, and to share work in progress, including chapter language as available. VEC will consider incorporating feedback from the Department**
    - **VEC will follow any revised Guidance for Integrated Resource Plans issued by the Department at least one year prior to the scheduled filing date for its next IRP.**

    VEC and the Department held several meetings to discuss VEC's assumptions, methodology, and drafts of this IRP.

    Meetings were held on:
    a. May 24, 2024
    b. January 03, 2025
    c. March 18, 2025
    d. March 25, 2025
    e. April 07, 2025
    f. May 22, 2025
    g. May 23, 2025

2. **Spatially and temporally granular load and distributed energy resource ("DER") forecast scenarios, to the extent feasible, where DERs are considered to include at least distributed generation, energy storage, electric vehicles, cold-climate heat pumps, and other flexible load resources. Load and DER forecast scenarios will consider at least: historical deployment patterns; anticipated deployment patterns including impacts of the Inflation Reduction Act; state energy and emissions requirements; climate change; regional and municipal energy plans adopted under Act 174 of 2016; and the physical limits of distribution and transmission system infrastructure, as appropriate.**

VEC performed an analysis of the impacts of DER growth on 4 representative feeders and scaled this to potential future impacts across VEC's infrastructure. This is discussed in more detail in Section 4.5 – Engage Members.

3. **VEC's Refinement of static hosting capacity methodology, as informed by discussion with stakeholders, and coordination with VELCO and Vermont distribution utilities to overlay GIS maps of generation constraints;**

VEC provides developers and its members a map of generation constrained areas on its website https://vermontelectric.coop/electric-system/grid-data-and-mapping. The Hosting Capacity map is updated every 6 months and shows capacity rating by substation. The rating is based on remaining transformer capacity. This is discussed in more detail in Section 3.4.5 – Orchestrate Distributed Renewable Energy.

4. **Exploration of time series analysis at the substation level for all substations;**

VEC is currently sharing substation level data to several research entities and can upon request share time series data at the substation level for all substations where valuable. At this time publishing this data publicly has not been completed.

5. **Analysis of peak load and peak export conditions at the feeder level for all feeders; and**

VEC performs a System Load and Voltage Study (SLVS) on all 77 distribution circuits for peak load and minimum load on an annual basis. This is discussed in more detail in Section 5.5.3 – Pursue Operations Reliability.

6. **An analysis of the costs, benefits, and availability of resources on annual, seasonal, and hourly bases in VEC's portfolio evaluation, reliability, and resilience discussions; an evaluation of potential climate and market risks to various resource portfolios; and an analysis of the relative achievability and cost-effectiveness of shaping load with load management technologies vs. procuring shape-supply resources (and specifically to estimate the cost of allowing CCHP and EV loads to remain uncontrolled, potentially using assumed load shapes, adoption rates, transmission rates [$/kwmonth] and market prices for energy and capacity markets)**

This is discussed in more detail in Section 3.3 – Orchestrate Distributed Renewable Energy.

7. **A discussion of system resilience, including any anticipated resilience-focused investments; proposed metrics for measuring the impact and financial value of those investments; and a discussion regarding the overlap in benefits and costs between reliability and resilience-focused solutions.**

   This is discussed in Section 5.3 and 5.4 – Pursue Operations Reliability.

8. **An analysis of the optimal power, energy, location, and size distribution of energy storage on VEC's system in the planning horizon; an analysis of the costs and benefits of deploying storage vs. alternatives such as flexible loads and curtailments; and continued evaluation on the confidence with which the peak hour of a given month could be forecasted considering various levels of additional load management and/or battery storage**

   This is discussed in more detail in Section 4.4.5 and Section 4.5 – Engage Members.