

STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 24-1493-PET

Efficiency Vermont’s request for a proceeding)
to review the effects of unanticipated Energy)
Efficiency Utility funding on quantifiable)
performance indicators, fees, and services,)
including the 2024-2026 Demand Resources)
Plan)

**PREFILED TESTIMONY OF
JAY PILLIOD
ON BEHALF OF EFFICIENCY VERMONT**

September 13, 2024

In this testimony Witness Pilliod sponsors Efficiency Vermont’s Amended 2024-2033 Thermal Energy and Process Fuels (“TEPF”) Demand Resources Plan Model. This testimony also describes the amended TEPF resource acquisition modeling assumptions, methodology, and results in order to inform the Commission’s review and approval of proposed amended TEPF budgets, performance metrics, and compensation for the 2024-2026 performance period. Witness Pilliod also explains how the remodeling of the approved TEPF portfolio addresses Efficiency Vermont’s receipt of \$25 million of incremental American Rescue Plan Act of 2021 (“ARPA”) funding for weatherization and efficiency activities.

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I. INTRODUCTION

1 **Q. Please state your name, business address and occupation.**

2 **A.** My name is Jay Pilliod. I am employed by Vermont Energy Investment Corporation
3 (“VEIC”) as Director of Scenario Planning for Efficiency Vermont, Vermont’s statewide
4 energy efficiency utility (“EEU”). My business address is 20 Winooski Falls Way, 5th
5 Floor, Winooski, Vermont, 05404.

6 **Q. Please describe your background and experience.**

7 **A.** I have over 25 years of experience leading strategic energy efficiency program design,
8 development, implementation, and management. I currently direct the scenario planning
9 team responsible for delivering the long-term energy efficiency resource forecasting,
10 budgeting, and planning for Efficiency Vermont. This includes the development and
11 maintenance of forecasting models that evaluate and highlight scenarios for greatest
12 and balanced performance across the portfolio. I am an experienced portfolio planner
13 with expertise in driving new market growth and impact opportunities, proactively
14 managing risk and considering where highest customer value propositions exist. Prior to

1 scenario planning, I led Efficiency Vermont's strategy and planning team responsible for
2 developing and leading innovative, market transformative initiatives across multiple
3 markets in the residential and commercial/industrial sectors. Before that I led the
4 Business Energy Services division responsible for maximizing customer value and
5 savings for commercial and industrial customers of all sizes and types across Vermont.
6 All these roles relied on an understanding of the drivers and barriers to efficiency
7 adoption enabling the design and delivery of innovative, market-based solutions leading
8 to lasting market transformation. Prior to joining VEIC, I served as the manager of
9 energy codes and standards for the state of Colorado.

10 I have a Bachelor of Science degree in architectural engineering from the
11 University of Colorado-Boulder. I have been employed by VEIC for 24 years and have
12 served in my current position for 8 years. During my time at VEIC I have performed a
13 variety of roles, including Director of Strategy and Planning, Director of Business Energy
14 Services, Business New Construction Market Manager, and Senior Energy Consultant.

15 **Q. What are your responsibilities at Efficiency Vermont?**

16 **A.** In my capacity as Director of Scenario Planning my responsibilities at Efficiency
17 Vermont include a variety of roles supporting both the regulatory and operational
18 divisions. My primary role is leading the development and maintenance of the three-, ten-
19 and twenty-year forecasting and planning models used for demand resources planning,
20 annual planning, and ongoing scenario planning needed as program, budget, and market
21 conditions shift. This involves gathering and maintaining critical data and model inputs

1 such as technology specific market potential, trends, innovations, anticipated state and
2 federal standard changes, and overall future market potential of new and existing efficient
3 technologies. I also work closely with the program management and operational teams to
4 understand the market conditions impacting current programs and support opportunities
5 for future program growth.

6 **Q. Have you previously testified before the Vermont Public Utility Commission**
7 **(“Commission” or “PUC”)?**

8 **A.** Yes, I have previously provided testimony before the Commission in Case Nos. 19-3272-
9 PET and 22-2954-PET, and have participated in numerous non-contested regulatory
10 proceedings on behalf of Efficiency Vermont. In particular, I have been involved in
11 several prior Demand Resources Plan (“DRP”) Proceedings (“DRPP”). More
12 specifically, this testimony updates the work I performed in the current DRPP, Case No.
13 22-2954-PET.

14 **Q. What is the purpose of your testimony?**

15 **A.** The purpose of my testimony is to describe the amended Thermal Energy and Process
16 Fuels (“TEPF”) resource acquisition budgets, modeling assumptions, methodology, and
17 results for Efficiency Vermont’s Amended 2024-2033 TEPF DRP model (the “TEPF
18 DRP Model” or “Model”). This model is offered to inform the Commission’s
19 consideration of proposed amended budgets and performance metrics for the 2024-2026
20 performance period. I also explain how Efficiency Vermont’s receipt of \$25 million of
21 incremental American Rescue Plan Act of 2021 (“ARPA”) funding shifts the majority of

1 Low/Moderate Income-eligible projects away from the TEPF budget but will increase the
2 need for TEPF spending for customer and trade ally incentives in order to fully deploy
3 the ARPA Funding. My testimony also serves to inform Efficiency Vermont’s proposed
4 amended performance metrics and compensation. Since the final versions of Efficiency
5 Vermont’s DRP models approved in Case No. 22-2954-PET involved changes to
6 programs authorized under Act No. 142, the updates I report herein are in comparison to
7 the model accepted and approved by the Commission by Order issued July 7, 2024.¹

8 **Q. Do you sponsor any exhibits?**

9 **A.** Yes, I sponsor the *Amended Resource Acquisition Model Results for Efficiency Vermont’s*
10 *2024-2043 Electric Demand Resources Plan and 2024-2033 TEPF Demand Resources*
11 *Plan*, which has been marked Exhibit EVT-JP-1.

II. SUMMARY

12 **Q. Please summarize your testimony.**

13 **A.** My testimony describes Efficiency Vermont’s proposed updates to its TEPF DRP Model
14 which is amended to account for an increase in the 2024-2026 TEPF resource acquisition
15 budget of \$2.2 million as a result of higher than expected revenue from the Forward
16 Capacity Market (“FCM”) and Regional Greenhouse Gas Initiative (“RGGI”) as
17 described by Witness Roe in her testimony. This additional TEPF funding is focused
18 primarily on increased customer and trade ally incentives across low, moderate, and

¹ Act No. 142 refers to *An act relating to miscellaneous changes related to the Public Utility Commission* as enacted by the Vermont General Assembly and signed into law on May 30, 2024 (“Act No. 142”).

1 market rate weatherization programs, as well as increased funding for work force
2 development initiatives. These enhancements to the weatherization programs, enabled by
3 this additional FCM and RGGI funding, were developed with the primary goal of
4 supporting and ensuring that the separate federal ARPA weatherization funding will be
5 fully expended within the 2024-2026 time period in support of improving the efficiency
6 of Vermont’s housing stock. Higher customer incentives, especially for low to moderate
7 income households, will enable more ARPA funded weatherization projects to be
8 completed within the relatively short timeframe of 2024-2026. Efficiency Vermont also
9 acknowledges that without adequate compensation and workforce development for the
10 tradespeople and companies doing the hard work of weatherizing these homes, the goals
11 of fully deploying these federal funds will not be achieved. Although these increased
12 customer and trade ally incentives will help support the increased volume of homes
13 weatherized overall, the number of these projects funded by TEPF is expected to decrease
14 in the 2024-2026 time period by 1,100 households (-29.7%).² This metric does not
15 include the estimated 1,767 increased housing units to be weatherized using ARPA
16 funding. This reduction in modeled TEPF funded weatherization projects resulted in a
17 decrease of 8,700 MMBtu savings (-2.3%) and Greenhouse Gas (“GHG”) savings of 500
18 Metric Tons of CO₂e (-2.4%). All three of these changes are reflected in the amended
19 modeling results in Exhibit EVT-JP-1 and in the amended performance metrics and

² The number of project homes decline because the program cost-per-unit is expected to be higher as a result of increased customer and trade ally incentives for the weatherization projects supported by the TEPF RA budget.

1 compensation tables in Exhibit EVT-DW-1 sponsored by Witness Westman.³

III. DISCUSSION

1. REASON TO AMEND THE TEPF RESOURCE ACQUISITION MODEL

2 **Q. Why has Efficiency Vermont amended its TEPF Resource Acquisition Model at this**
3 **time?**

4 **A.** First, Efficiency Vermont amended its TEPF Resource Acquisition Model to understand
5 the impacts on the TEPF program brought about on account of Efficiency Vermont's
6 entry into a contract with the Vermont Department of Public Service (the "Department"
7 or "DPS") for a total of \$25 million in federal ARPA funds for calendar years 2024
8 through 2026 (the "Contract" or "Contract No. 47391") for the delivery of incremental
9 weatherization services. This funding includes support for low-to-moderate income
10 ("LMI") residential weatherization, for weatherization technical assistance to orient
11 homeowners towards completing weatherization projects, incentives for home repairs that
12 are deemed necessary for weatherization work, and an administrator's performance
13 award. Copies of State of Vermont Contract Nos. 43791A and 47391 Amendment # 1
14 (together Contract No. 47391) entered into by Vermont Energy Investment Corporation
15 ("VEIC"), as the administrator of Efficiency Vermont, and the Department were included
16 with Efficiency Vermont's *Notice of Unanticipated Energy Efficiency Utility Funding*
17 *and Request to Schedule the Review of Additional Demand Resources Plan Amendments*

³ Efficiency Vermont's updated performance metrics and compensation tables are presented in Exhibit EVT-DW-1.

1 that was filed with the Commission in this matter on May 1, 2024.⁴

2 Second, as discussed by Witness Roe, Efficiency Vermont has determined that
3 there are incremental FCM and RGGI revenues that can now be devoted to the delivery
4 of EEU TEPF efficiency services while still assuring that the TEPF Funds balance at the
5 end of the 2024-2026 performance period is adequate to provide a cushion in the event of
6 a reduction of TEPF revenues in future periods. The amended TEPF RA Model assumes
7 an annual budget (in 2024 dollars) of \$9,490,000 in 2024, \$8,995,000 in 2025, and
8 \$9,215,000 in 2026, and then a lower annual budget of \$5,460,470 (in 2024 dollars) for
9 the remaining seven years (2027-2033). The amended TEPF RA Model does not include
10 any changes to 2027-2033 when compared to the TEPF baseline model.

2. AMENDED TEPF RESOURCE ACQUISITION MODEL
DESCRIPTION AND METHODS

11 **Q. Do you Sponsor Efficiency Vermont’s amended TEPF Resource Acquisition Model**
12 **that is a central element of its proposed DRP Amendment?**

13 **A.** Yes. Included as Exhibit EVT-JP-1 is a document titled “*Amended Resource Acquisition*
14 *Model Results for Efficiency Vermont’s 2024-2043 Electric Demand Resources Plan and*
15 *2024-2033 TEPF Demand Resources Plan.*” This exhibit provides details on Efficiency
16 Vermont’s proposed DRP Amendment’s modeling assumptions, key technologies,
17 programs, and resource acquisition budgets for the three-year (2024-2026) performance

⁴ Please note that Contract No. 43791 bears the wrong State number which has been corrected to Contract No. 47391 via the amendment. These contracts were included as Attachments 1 and 2 to the May 1, 2024 filing.

1 period, for the ten-year TEPF model, and the twenty-year electric model.

2 **Q. Please describe the approach Efficiency Vermont employed to amend its TEPF DRP**
3 **Model in support of its proposed DRP Amendment.**

4 **A.** As described in the “TEPF Resource Acquisition Model” section on page 53 of my
5 Exhibit EVT-JP-1, Efficiency Vermont amended the TEPF DRP Model using its web-
6 based modeling tool to create bottom-up, measure-by-measure savings analyses for both
7 the commercial and industrial (“CI”), residential (“RES”), and low-income (“LI”) sectors
8 within the TEPF portfolio. The 3-year (2024-2026) proposed TEPF budgets were based
9 on the updated forecasted FCM and RGGI revenues, adjusted for actual data and revised
10 assumption as explained by Witness Roe.⁵ To enable this additional funding to focus
11 more heavily on residential and low income sectors the additional FCM and RGGI
12 funding does not follow the original sector splits targets of 75% spending for residential,
13 25% for CI, and 21% for low income, which were applied in the previous DRP Model
14 filed in Case No. 22-2954-PET. Instead the additional funding is applied with sector
15 splits of 87.5% spending for residential, 12.5% for CI, and 42% for low income.

16 Efficiency Vermont’s model is centered around measure quantities and the
17 savings those measures bring to Vermont. By establishing a particular technology
18 forecast, market opportunity, measure saturation, and long-term objectives and priorities
19 for the program and the state, the model becomes populated with estimates of each

⁵ See Case No. 24-143-PET, Roe *pf.* of 9/13/24.

1 measure type that will be deployed. Efficiency Vermont also updated the measures in the
2 model to reflect changes to the Technical Reference Manual (“TRM”), changes to net-to-
3 gross factors, updated state and federal efficiency standards, changing baselines, updated
4 avoided costs which impacted measure screening, and changes based on the most recent
5 program and market shifts.

6 The model adjusts measure penetration levels for each year to correspond with
7 anticipated growth or decline in markets according to the program, planning, and field
8 staff implementing them. These staff are the best source for market knowledge, technical
9 expertise, and direct field contact with Vermont businesses and homeowners. Efficiency
10 Vermont also works closely with organizations, manufacturers, suppliers, and state and
11 federal agencies to better understand and estimate future market trends. Program staff
12 reviewed the most recent Department Market Characterization and Assessment Studies⁶
13 which provide market adoption data for various technologies across the residential and
14 commercial existing buildings and new construction markets. This customer and market
15 intelligence informed the extent to which savings from markets, programs, and modeled
16 technologies could remain flat, grow, or decline over the 20 or 10 years.

17 **Q. As it concerns the DRP Model, what elements are being amended as part of**
18 **Efficiency Vermont’s DRP Amendment and what elements remain the same as**

⁶ https://publicservice.vermont.gov/energy_efficiency/ecu_evaluation

1 **those used in Case No. 22-2954-PET?**⁷

2 **A.** As part of Efficiency Vermont’s DRP Amendment three main elements of the amended
3 TEPF Model were adjusted for years 2024-2026. First the customer and trade ally
4 weatherization incentive levels in the model were adjusted across low, moderate and
5 market rate customers to reflect current market conditions, the need for increased trade
6 ally support, and to drive participation in the program with the goal of enabling full
7 spending of the federal ARPA funding.⁸ Funding for workforce development initiatives
8 were added to the non-incentive modeled budget. And lastly, flood recovery incentives
9 were added to the amended TEPF Model to cover TEPF-funded projects supported in
10 2024 as a result of the devastating 2023 Vermont flooding.

11 Second, the quantities of weatherization projects across low, moderate, and
12 market rate customer sectors in the Model were adjusted to reflect current market
13 conditions and to account for the availability of federal ARPA funding for low to
14 moderate income weatherization. Since the low income portion of the amended TEPF
15 budget increased with the additional FCM and RGGI funding, the number of low income
16 weatherization projects funded by TEPF were increased by 98 projects across the 3-years
17 2024-2026. By comparison, since the federal ARPA is now funding most of the moderate
18 income projects, the number of moderate income projects funded by TEPF were reduced

⁷ For purposes of this testimony the term “Case No. 22-2954-PET Model” refers to the results described in Case No. 22-2954-PET Exhibit EVT-JP-2, *Corrected Amended Resource Acquisition Model Results for Efficiency Vermont’s 2024-2043 Electric Demand Resources Plan and 2024-2033 TEPF Demand Resources Plan*, dated December 8, 2023.

⁸ See Case No. 24-1493-PET Attachments 1 and 2.

1 from 1,164 to 64 projects in 2024-2026.⁹ The number of market rate projects were also
2 reduced in the model as a result of increased customer and trade ally incentives, as well
3 as changing market conditions, with the 3-year total number of projects reduced from
4 1,491 to 1,150 projects.

5 The third major change to the amended TEPF Model is the incentive and non-
6 incentive budgets in the Model were increased to reflect the additional FCM and RGGI
7 funding proposed to be included in the DRP budgets, and to support the adjustments to
8 incentive levels and project quantities as previously discussed. The resulting amended
9 TEPF incentive budget was increased by \$900,000 in 2024, \$150,000 in 2025, and
10 \$350,000 in 2026, for a total 3-year incentive budget increase of \$1,400,000 in 2024-
11 2026 representing 64% of the total funding increase. The RA non-incentive budget was
12 increased by \$90,000 in 2024, \$345,000 in 2025, and \$365,000 in 2026, for a total 3-year
13 non-incentive budget increase of \$800,000 in 2024-2026 representing 34% of the total
14 funding increase. This percentage budget split between incentives and non-incentives is
15 consistent with the Case No. 22-2954-PET TEPF Model.

16 All other aspects of the TEPF and electric models remain consistent with the
17 models and results as presented in Case No 22-2954-PET.

18 **Q. Does the exhibit you sponsor identify the elements of Efficiency Vermont's DRP**
19 **Model that have changes and those that remain unchanged from the Case No. 22-**

⁹ An additional 1,767 low to moderate income weatherization projects are expected to complete in the 2024-2026 period using the separate ARPA funding.

2954-PET Model?

- A. Yes, Exhibit EVT-JP-1, *Amended Resource Acquisition Model Results for Efficiency Vermont's 2024-2043 Electric Demand Resources Plan and 2024-2033 TEPF Demand Resources Plan*, identifies the elements of the TEPF Model that changed and presents the impact of those changes on the various modeling results.

3. AMENDED TEPF RESOURCE ACQUISITION MODEL RESULTS

Q. Please describe Efficiency Vermont 2024-2033 amended TEPF Resource Acquisition Model results.

- A. The amended TEPF RA Model aims to deliver high levels of performance across multiple key performance indicators by leveraging a comprehensive portfolio of programs, technologies, and services while serving a balance of customers and markets. The TEPF RA Model outputs include forecasted values for four performance metrics, which include Annual MMBtu savings, Residential Single-Family Comprehensiveness, Number of Residential Housing Units Weatherized, and GHG Reductions in metric tons of CO₂e. Having this comprehensive set of performance metrics helps ensure Efficiency Vermont maintains a balanced approach in terms of the customers it serves, and types of energy savings technologies, programs, and services deployed. Table 2 on page 7 of my Exhibit EVT-JP-1 summarizes the proposed key TEPF performance model outputs for the 3-year (2024-2026) performance period. Annual values for three of these metrics

1 across the 10 years (2024-2033) are also presented in Appendix A of the exhibit.¹⁰

2 **Q. Does the amended TEPF RA Model provide a reasonable basis for the Commission to**
3 **determine Efficiency Vermont’s performance goals (*i.e.*, the methodology you described in**
4 **your Case No. 19-3272-PET testimony of December 13, 2019 (the “Case No. 19-32-PET**
5 **Direct Testimony”) and in your Case No. 22-2954-PET testimony of December 9, 2022 (the**
6 **“Case No. 22-2954-PET Testimony”))?**

7 **A.** Yes. The updated TEPF Resource Acquisition Model includes the most current measure
8 characterizations, market conditions, and program realities, the combination of which
9 provide a reasonable basis for establishing revised performance goals for the 2024-2026
10 performance period.

11 **Q. Did you include new measures in this amended DRP Model compared to the DRP**
12 **Model currently approved in Case No. 22-2954-PET?**

13 **A.** The only new measures in the amended DRP Model include a trade ally incentive which
14 was created to separate trade ally incentives from customer incentives for clarity purposes
15 and a new flood recovery incentive. Both these new measures include incentives but do
16 not directly deliver energy savings.

17 **Q. Is Efficiency Vermont forecasting service changes as a part of its DRP Amendment**
18 **Proposal? If so, please describe the changes and explain how they have been taken**
19 **into account in Efficiency Vermont’s remodeling efforts.**

¹⁰ TEPF QPI #2 for Residential Single-Family Comprehensiveness is an average standard to be achieved that is independent of the number of projects established in the TEPF portfolio modeling.

1 **A.** Efficiency Vermont is not anticipating any significant service changes at this time.

2 **Q.** **Has the Department had a chance to review the updated assumptions used in**
3 **Efficiency Vermont’s DRP Model, and was feedback from the Department**
4 **incorporated into the assumptions?**

5 **A.** Yes. Efficiency Vermont presented draft versions of the updated assumptions used in the
6 Amended DRP Model to the Department on 6/25/24, 7/26/24, and 8/22/24. Following
7 these presentations and meaningful discussion with the Department staff, Efficiency
8 Vermont incorporated the feedback into its modeling assumptions where possible. There
9 were two major outcomes from discussions with the Department. The first was to propose
10 a TEPF budget increase in this period that will put the increase in revenue to work on
11 behalf of ratepayers through the activities and services described in this testimony, but
12 that also assures a remaining fund balance for activities in 2027 and beyond. As
13 proposed, Efficiency Vermont’s amendment proposes a TEPF budget increase of \$2.5
14 million, which as described by Witness Roe will leave a substantial portion of available
15 funds to support activities in the next performance period.

16 The second major outcome of discussions with the Department was to not include
17 any major changes to how new construction building code support is characterized in the
18 DRP. Efficiency Vermont is currently vetting a concept for acquiring electric and thermal
19 resource acquisition savings for new construction code support through the EEU
20 Technical Advisory Group (“TAG”). If the methodology proves acceptable through TAG
21 it will be considered for a future DRP proceeding or otherwise pursued in accordance

1 with stakeholder consultation, including the DPS. However, after discussion with the
2 Department, it became clear that to include any revisions to new construction code
3 support characterization in the DRP or modeling results would be premature at this time.

IV. CONCLUSION

4 **Q. Do you have any concluding thoughts for the Commission?**

5 **A.** Yes, I do. Efficiency Vermont's proposal for its Amended 2024-2026 TEPF Resource
6 Acquisition Demand Resources Plan budget and modeling results are based on the results
7 of rigorous modeling activities that rely on reasonable assumptions and methodologies to
8 forecast expected EEU program costs and savings. These results are incorporated within
9 Efficiency Vermont's Amended Compensation and Performance tables.¹¹ Efficiency
10 Vermont recommends that the Commission approve its proposed DRP Amendment and
11 establish the budgets and performance metrics as described by all witnesses providing
12 testimony and supporting exhibits.

13 **Q. Does this conclude your testimony?**

14 **A.** Yes, it does.

¹¹ See Case No. 24-143-PET Exhibit EVT-DE-1.