

ATTACHMENT A – STATEMENT OF WORK

Introduction

The PSD is conducting a Thermal Sector Carbon Reduction Potential Study with the assistance of Optimal Energy, LLC (Contractor). Optimal Energy, LLC will subcontract with Energy and Environmental Economics, Inc. for assistance with the work stated in this contract.

The Contractor will be the prime contractor and overall project manager. The subcontractor will provide analytical and subject matter expertise for renewable and emerging fuels modeling and measure characterization. The Contractor will coordinate with the subcontractor to compile and provide deliverables.

The Contractor is assessing thermal sector carbon reduction potential for the State of Vermont. This information will be used by the PSD in the Public Utility Commission (“PUC”) Clean Heat Standard proceeding.

The primary objective of this work is to quantify technical and economic thermal sector carbon reduction potential as well as two types of achievable potential (maximum and program achievable). The results shall include a comparison to the legal obligations of the thermal sector portion of the requirements of the Global Warming Solutions Act (“GWSA”). The study shall also evaluate market conditions for delivery of clean heat measures within the State and workforce needed to meet obligations of the GWSA.

Task 1: Kick-Off Meeting and Revised Work Plan

The Contractor shall coordinate and attend a project kick-off meeting with PSD staff to ensure there is a common understanding of the project’s needs, the proposed work efforts, and products. The Contractor’s designated representatives will attend this meeting virtually or in person.

The Contractor will prepare a draft agenda for the kick-off meeting for review by PSD staff. The Contractor will prepare detailed notes and action items identified during the kick-off meeting. The Contractor will submit an updated work plan that documents any revisions to the initial project scope that result from the kick-off meeting discussions, as well as an updated detailed schedule for completion of deliverables.

Topics shall include but not be limited to identification of data needs, data sources, and stakeholder engagement needed to effectively carry out the scope of work as well as meet the timelines associated with the work.

Task 1 Deliverables –

The Contractor shall provide a draft of the agenda for the kick-off meeting, meeting minutes and action items, an updated work plan and an updated project schedule based on discussions at the kick-off meeting.

Task 2 – Modeling Inputs and Data Collection

The Contractor shall compile modeling inputs and data collection needed to model and characterize the market and measures. The Contractor shall compile the characterizations to enable modeling of the

carbon reduction potential assessment. Modeling inputs and data collection shall include but not be limited to the areas below.

- Modeling inputs and assumptions
 - Potential study estimates should be provided for a 25-year timeframe, from 2026 through 2050 with an emphasis on near-term years 2026 through 2030.
 - Fuel switching (technologies, markets, and scenarios as needed)
 - Renewable fuels (technologies, markets, and scenarios as needed)
 - Emerging technologies
 - Emerging fuels
 - Program delivery equity in a variety of forms (sector, low and moderate income, energy burden, geographic)
 - Participation estimates
 - Cost effectiveness tests (at a minimum Societal Cost Test)
 - Avoided Costs
 - Fuel and clean heat measure annual and cumulative lifecycle emissions reductions
- Market characterization
 - Natural gas and delivered fuels sales (volume and price) forecasts
 - High, medium, and low forecasts
 - Adjusted for no future efficiency as needed
 - Sales forecast disaggregation
 - By fuel type, sector (residential, commercial/ industrial), end use, and building type (including residential income qualified/non-income-qualified).
 - Customer counts and demographics
 - Baseline market characteristics
- Measure characterization
 - Measure list and interactions
 - Measure adoption rates
 - Measure lifetimes, annual and cumulative energy savings and emissions reductions, O&M impacts, and incremental costs
 - Measure incentive, non-incentive, and administrative costs
 - Insights from past program performance and Vermont specific EM&V results
 - Net to Gross ratios

Task 2 Deliverables –

Summary of modeling inputs and assumptions, natural gas and delivered fuels sales forecasts, characterization of current market, measure database containing the following elements for each measure: a brief measure description, average per unit energy savings, clean heat measure annual and cumulative emissions reduction impacts, incremental and total measure costs, measure lifetimes, and discussion of data needed but unavailable. Presentation of modeling assumptions to the PSD and stakeholders with opportunity for comments, questions, and subsequent revisions based on feedback.

Task 3: Workforce Estimate Analysis

The Contractor shall conduct an assessment of workforce characteristics capable of meeting consumer demand and meeting the obligations of the GWSA. The Contractor shall characterize both the current state of the thermal sector workforce and develop a business-as-usual (“BAU”) forecast of capacity. In

addition, the Contractor shall develop a thermal sector workforce forecast needed to meet the GWSA.

The GWSA thermal sector workforce forecast should be compared to the BAU forecast and identify any gaps needed to meet GWSA. The Contractor shall include an estimate of costs and pace needed to fill any workforce gaps identified.

Task 3 Deliverables –

The Contractor shall quantify and characterize the current state of the thermal sector workforce and develop a BAU forecast. The Contractor shall conduct an analysis of the BAU thermal sector workforce forecast's ability to meet customer demand and meet the obligations of the GWSA. The Contractor shall quantify and characterize the future state of the thermal sector workforce capable of meeting GWSA compared to the BAU forecast.

Task 4: Technical, Economic, Maximum Achievable, and Program Achievable Potential Analysis

The Contractor shall estimate the following levels of potential for thermal carbon reduction measures.

- Technical Potential
- Economic Potential
- Achievable Potential
 - o Maximum Achievable
 - o Program Achievable

Task 4 Deliverables –

The Contractor shall develop a summary memo and slide deck describing forecast calibration results and supporting documentation in spreadsheet format; databases showing the inputs and results of the calculations of technical, economic, maximum and program potential, including benefit/cost screening results and annual and cumulative emissions reductions compared to emission reductions required under the GWSA. Presentation of potential study results to the PSD and stakeholders with opportunity for comments, questions, and subsequent revisions based on feedback.

Task 5: Program Achievable Potential At 18 Optimization

Using the program achievable potential assessed in Task 4 as the “base case”, the Contractor shall optimize to meet the requirements of Act 18, The Affordable Heat Act of 2023. Optimization shall include but not be limited to the following required by Act 18.

- Assessment of workforce characteristics capable of meeting consumer demand and meeting the obligations of GWSA from Task 3;
- Prioritize customers with low income and moderate income and those households with the highest energy burdens;
- Prioritize residents of manufactured homes, and renter households with tenant-paid energy bills;
- Maximize the use of available federal funds to deliver clean heat measures;
- Disaggregation of potential for multi-unit dwellings, condominiums, rental properties, commercial and industrial buildings, and manufactured homes; and
- Sequencing and pacing of emissions reductions potential to balance equity and workforce objectives meet the targets of the GWSA most cost effectively.

Task 5 Deliverables -

The Contractor shall develop a summary memo and slide deck describing Act 18 optimization results and supporting documentation in spreadsheet format; databases showing the inputs and results of the calculations of Act 18 optimized program potential. The Contractor shall include benefit/cost screening

results, annual and cumulative emissions reductions compared to the other potential scenarios as well as compared to GWSA. Presentation of Act 18 optimized program potential results to the PSD and stakeholders with opportunity for comments, questions, and subsequent revisions based on feedback.

Task 6: Reporting

The Contractor shall develop preliminary and final results memos associated with Tasks 2, 3, 4 and 5. The Contractor shall develop draft final overall report, and final overall report including review processes and incorporation of feedback from the PSD and stakeholders. The Contractor shall participate in PUC proceedings as needed to provide information and presentations of draft results related to Tasks 2, 4, 5 and final results.

Task 6 Deliverables –

The Contractor shall provide status reports as needed, task results memos, and data summaries as needed to develop the analysis. Key deliverables include preliminary and final memos associated with Tasks 2, 3, 4, and 5. The Contractor shall also develop a draft final overall report and final overall report. The Contractor shall also provide presentations as needed as part of the PUC process, including at least one presentation of the final results. Participation in PUC process and presentations may occur virtually or in person. Participation in PUC process and presentations may occur virtually or in person.

In addition, outside the PUC process, the Contractor shall provide up to 3 virtual presentations of the final results to audiences to be determined by the PSD.

Task 7 – General Administration and Management

The Contractor shall designate a project manager that will lead communication with the PSD. Responsibilities shall include regular, bi-weekly (at a minimum) project updates with the PSD project manager, in which the Contractor and the PSD have a conference telephone call to discuss progress on the project.

Task 7 Deliverables –

Expected results should be proposed according to the timeline below.

Key Deliverables	Deliverable
Kick-off Meeting	TBD
Task 2	REDACTED
Tasks 3 and 4	REDACTED
Task 5	REDACTED
Final Report	REDACTED

Performance Measures

Timeliness – Contractor shall complete tasks and submit deliverables as scheduled above, or if a timeframe is not specified, within a reasonable time to allow adequate opportunity for PSD review.

Quality – Contractor shall insure financial and economic analysis, recommendations and written work, including any reports, testimony and discovery, is well-written, clear and thorough without need for significant editing by PSD staff.

Relationships – Contractor shall work well with the PSD staff and other individuals or entities as requested by the PSD.

In the event the work described above is not going to be provided within the time outlined above, Contractor shall contact the PSD to discuss a remedy to resolve the situation. If a mutually acceptable resolution cannot be reached, then the contract shall be terminated.