

## **2020 Tier III Plan – Vermont Electric Cooperative November 1, 2019**

The Energy Transformation (Tier III) provision of Act 56, passed by the Vermont Legislature in 2015, set targets for utility-led or utility-partnership projects that will reduce fossil fuel usage. The legislated target starts at 2 percent of sales (BTU equivalency) in 2017, rising by two-thirds of a percent each year until it reaches 12 percent in 2032.

A utility can satisfy this requirement through additional distributed renewable generation (Tier II), by implementing “energy transformation projects,” or by paying an Alternative Compliance Payment (ACP). In order to be eligible, an energy transformation project must have commenced on or after January 1, 2015, must provide delivery of energy goods or services other than electric generation, and must result in a net reduction in fossil fuel consumption by a utility’s customers.

The statute does not mandate any particular product or service and allows for flexibility in how each distribution utility will meet its targets. The statute includes the following project criteria, which will influence our implementation strategy. Projects must:

- Meet the lowest present value life cycle cost, including environmental and economic costs;
- Be evaluated against alternatives that do not increase electricity consumption;
- Cost less per megawatt-hour (MWh) than the ACP;
- Be implemented in a partnership with others unless exclusive delivery can be shown to be more cost-effective or because no others have the expertise;
- Ensure “an equitable opportunity to participate in, and benefit from, energy transformation projects regardless of rate class, income level, or provider service territory.”

### **Annual Planning and Evaluation**

In 2016, the Public Utility Commission ruled that Tier III annual plans must include a description of the estimated Tier III compliance obligation for the following year and a description of the overall implementation strategy.

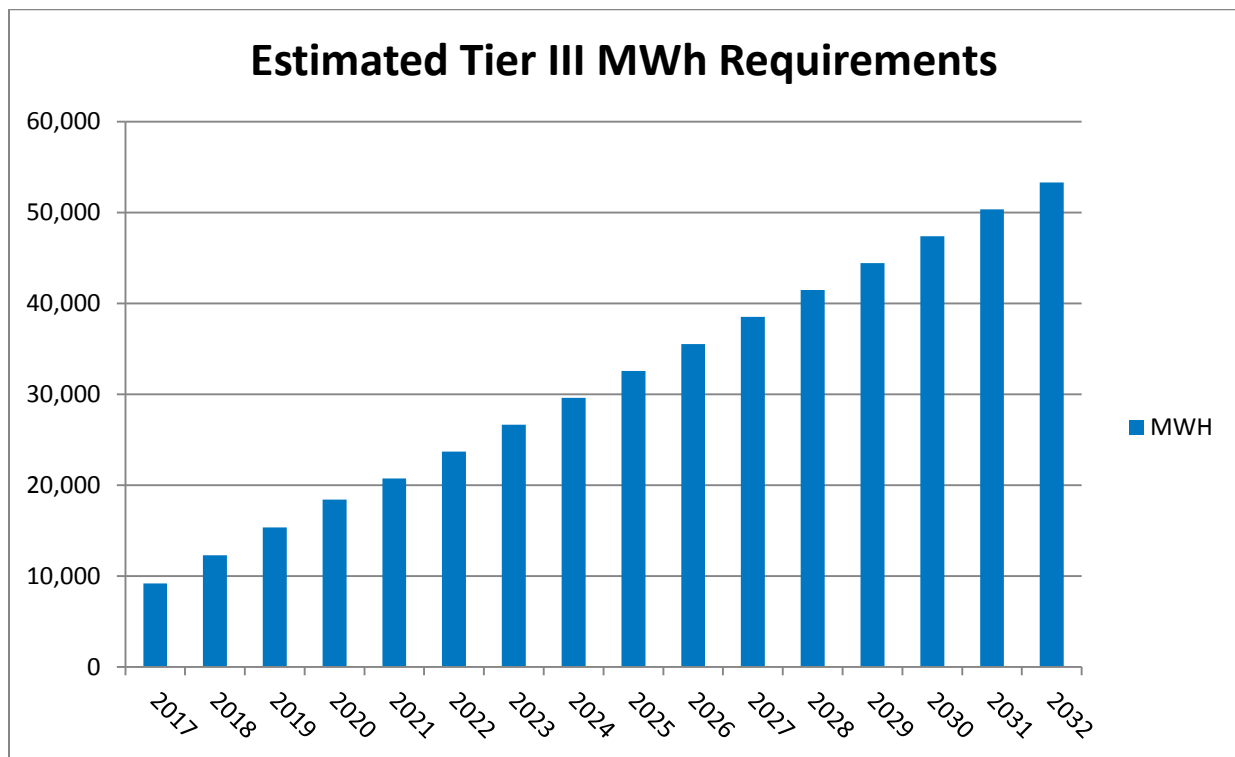
For energy transformation projects, the submitted plan must describe the project and include:

- Anticipated number of participants;
- Any collaborative efforts, or an explanation of why it is more cost-effective for the utility to work alone, or that there is no other entity with the capability to deliver the goods or services;
- Description of how all ratepayers will have an equitable opportunity to participate in and benefit from energy transformation projects regardless of rate class or income level;

- Description of the estimated electric impact of such measures and the demand management best practices that will be incorporated;
- How the technologies are appropriate for Vermont;
- How the installation of the technologies in buildings that meet minimum energy performance standards will be encouraged;
- Least-cost alternatives that do not increase electricity consumption that were analyzed;
- Methodology for allocating project costs and savings if services are shared between partners.

## VEC’s Tier III Targets

We estimate that our 2020 Tier III requirement will be 18,400 MWh. Over time this requirement will continue to increase. The targets set in statute are aggressive and could be difficult to meet with existing technologies and without imposing excessive costs on ratepayers.



## Components of VEC’s 2020 Tier III Program

VEC’s 2020 Tier III plan is organized into the following sections: the Clean Air Program, thermal, transportation, tools and equipment, storage and demand control, and complementary systems and services.

## The Clean Air Program

VEC's Clean Air Program (CAP) offers customized opportunities to members with off-grid or underserved homes or businesses to replace fossil fuel usage with electricity. These opportunities may include service upgrades or line extensions, the costs of which are shared between the utility and the member through customized agreements. Each project is a custom measure with unique fuel savings estimates and Tier III credit. In August 2019, the Commission approved a tariff that VEC can use to determine eligibility for a custom CAP incentive. This tariff has replaced the previous process of applying for a special contract.

VEC's service territory includes many maple syrup producers who collect and process their sap off-grid using diesel, oil, or propane generators. Before CAP, the cost of extending electric service to their seasonal sugaring operations was prohibitive in many cases, and used generators and burned thousands of gallons of fossil fuel each season. With these custom agreements, many businesses are now able to connect to electric service, which saves them time, money, and thousands of gallons of fossil fuel each year.

In VEC's rural service territory, we have found ample opportunity to replace existing fossil-fuel generators with new electric service or service upgrades. As members have become aware of the opportunity through outreach and word of mouth, we have also been able to prevent members from purchasing a generator and have worked with them on discounted line extensions as a cleaner alternative. Ten projects have been completed to date, which have included several sugaring operations, two off-grid homes, a sawmill, a gravel company, and an asphalt producer.

When screening CAP projects, VEC requires fuel receipts (in the case of an existing generator), estimates the additional electric load, and completes a cost estimate. In the case of a project that currently does not have a generator (e.g. a new sugarbush), we estimate what the consumption would have been based on the projected power requirements of the operation.

The screening criteria include:

- Must provide Tier III credits
- Must pass the "but for" test (i.e. the project would not have been done but for VEC's contribution and outreach)
- No adverse impact to grid (i.e. will not add load in areas where the grid cannot handle it)
- Load profile – annual, monthly, and daily – and demand response potential
- Net present value (NPV) payback period of less than 7 years
- No adverse effect on the current year capital budget or future operations and maintenance budgets

For every CAP project that comes to fruition, VEC's team evaluates several potential projects that do not move forward. In some cases, the project does not meet VEC's criteria; in other cases, the member decides not to pursue the project. CAP projects take time and effort to

develop. However, when both VEC and the member determine that the project is worth pursuing, the benefits are immense.

CAP project MWh saving assumptions are based on a 30-year project life because these projects provide permanent infrastructure to serve an existing home or business. The project participants are generally paying about 75 percent of the total project cost, a significant investment that demonstrates a commitment to continued use of the electric service. We will continue to evaluate each CAP proposal to determine an incentive level that provides positive rate impacts for the overall VEC membership.

For each CAP project, VEC is working with Efficiency Vermont to identify efficiency opportunities. When Efficiency Vermont and VEC incentives overlap, VEC has worked with Efficiency Vermont to negotiate savings claims to avoid double-counting.

VEC continues to be excited about CAP opportunities. These projects provide large fossil fuel reductions, offer service to members that had previously found the investment cost-prohibitive, and increase electric sales so that the benefit accrues to all members. CAP projects pay back in fewer than seven years, while the benefits last for the life of the infrastructure.

Program	Clean Air Program
Objective	Discounted line extensions and service upgrades that offset use of fossil fuels
Number of participants	Unknown; we evaluate these projects on an ongoing basis
Lifetime MWh credit	Varies
Partners	Efficiency Vermont
Additional kWh	Varies
Incentive	Varies, historically about 25% of the total cost
Total budget	\$150,000
Best practices	Evaluate projects for DR potential, impact on the grid, potential for increased sales, and Tier III savings. Efficiency Vermont will discuss efficiency opportunities with the participant.
Appropriate for VT	Yes
Min Building Standards	N/A
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes

## Thermal

As identified in Vermont’s 2016 Comprehensive Energy Plan (CEP), 30 percent of Vermont’s total energy consumption is a result of heating. In order to tackle Vermont’s ambitious energy goals, we must transform the way we heat our buildings. The CEP states that 20 percent of heating in Vermont is currently from renewable sources and sets a goal of increasing that share to 30 percent by 2025.

Since 2017, we have offered a cold climate heat pump bill credit in conjunction with Efficiency Vermont’s upstream incentive. In 2018, we added an incentive for installation of new pellet stoves and heat pump water heaters. In 2019, we added an incentive for Zero-Energy Modular (ZEM) homes. We plan to continue all of these incentives in 2020 and are adding incentives for whole building centrally ducted and air-to-water heat pump systems, in partnership with Efficiency Vermont.

### Cold Climate Heat Pumps

# of units	Per unit MWh	Total MWh	% of 2020 goal
200	27*	5,400*	29%

\* This number represents an average of the credit for CCHPs of different sizes.

The CEP set an ambitious goal of installing 35,000 cold climate heat pumps (CCHPs) statewide by 2025. Because VEC’s current electric portfolio is about 75 percent carbon-free (renewable resources under Tier I plus nuclear), CCHPs offer an attractive solution from a carbon emissions perspective. However, VEC is aware that the economics and efficacy of CCHPs are highly sensitive to fuel prices, appropriate sizing and placement, and user behavior. VEC promotes messaging from Efficiency Vermont to help members understand the factors they should consider when deciding whether a heat pump is right for their property and needs.

VEC will continue to offer a \$300 bill credit per outdoor unit. VEC plans to add a \$150 bonus per outdoor unit if the heat pump is installed in a building that meets one of the thermal efficiency criteria that the Department of Public Service has identified. To receive the VEC bill credit, members fill out a short form that identifies information required for Tier III compliance and submit that along with a proof of installation as well as any additional paperwork for demonstrate that the building meets thermal efficiency standards.

Program	Cold Climate Heat Pumps
Objective	Incentivize 200 CCHPs to displace fossil fuel heating.
Number of participants	200
Lifetime MWh credit	27 expected on average
Partners	Efficiency Vermont, Energy Co-op of VT
Additional kWh	700 – 5,800
Incentive	\$300 bill credit; \$150 thermal efficiency bonus
Total budget	\$66,000

Best practices	Participants will be informed about VEC's TOU rate and the benefits of weatherization; thermal efficiency bonus
Appropriate for VT	Yes
Min Building Standards	Thermal efficiency bonus; participants will be given information about the benefits of weatherization.
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes

## Pellet Stoves

# of units	Per unit MWh	Total MWh	% of 2020 goal
30	11*	330	2%

\*VEC's anticipated share of the Tier III credit after credit-sharing with Efficiency Vermont.

Like cold climate heat pumps, pellet stoves are an important supplemental heating option for homeowners who would like to reduce the amount of fuel oil or propane they use. To offer another option to members interested in transitioning their heating away from fossil fuels, VEC will continue offering a pellet stove bill credit of \$150 in 2020. To qualify, models must meet the emissions standards set forth by the Technical Advisory Group (< 2 g/hr of PM<sup>2</sup>) and directly offset a fossil-fuel heating system. We will also offer a \$150 bonus if the pellet stove is installed in a building that meets one of the Department's thermal efficiency criteria.

Modern wood heating is a growing market in Vermont and can play a key role in helping Vermont achieve its carbon reduction goals. Efficiency Vermont is also offering a pellet stove incentive, and VEC will continue sharing Tier III credit for this measure.

Program	Pellet stoves
Objective	Provide an incentive for pellet stoves installed in VEC homes and businesses to displace fossil fuel heating.
Number of participants	30
Lifetime MWh credit	11 expected on average
Partners	Pellet stove distributors, Efficiency Vermont
Additional kWh	1,000
Incentive	\$150 bill credit; \$150 bonus for thermal efficiency
Total budget	\$5,400
Best practices	Participants will be informed about VEC's TOU rate, weatherization programs, and best practices for choosing which pellets to use; thermal efficiency bonus
Appropriate for VT	Yes
Min Building Standards	\$150 bonus for thermal efficiency; participants will be given information about the benefits of weatherization.
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes

## Heat Pump Water Heaters

# of units	Per unit MWh	Total MWh	% of 2020 goal
30	3*	90	<1%

\*VEC's anticipated share of the Tier III credit after credit-sharing with Efficiency Vermont.

To provide an option to members interested in transitioning their water heating away from fossil fuels, VEC will continue offering a \$150 bill credit for heat pump water heaters in 2019. The credit will be available for Energy Star-rated models that replace fossil fuel water heaters as well as for new applications.

Program	Heat Pump Water Heaters
Objective	Provide an incentive for 30 HPWHs in VEC homes and businesses to displace fossil-fuel water heating
Number of participants	30
Lifetime MWh credit	3
Partners	Efficiency Vermont
Additional kWh	1,300
Incentive	\$150 bill credit
Total budget	\$4,500
Best practices	Participants will be informed about VEC's TOU rate
Appropriate for VT	Yes
Min Building Standards	N/A
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes

## Centrally Ducted and Air to Water Heat Pump Systems

Type	# of units	Per unit MWh	Total MWh	% of 2020 goal
Centrally ducted	2	64	128	1%
Air to Water	2	117	234	1%

Incentives for centrally ducted and air-to-water heat pumps are new in 2020 and will be delivered in coordination with Efficiency Vermont through their upstream process. These systems are more comprehensive, complex and expensive than cold climate heat pumps, and we are working with Efficiency Vermont to support their program delivery as they work to educate contractors on identifying good applications for these systems.

Program	Centrally ducted heat pumps
Objective	Support EVT's work to develop and promote this technology
Number of participants	2
Lifetime MWh credit	64 on average
Partners	Efficiency Vermont
Additional kWh	4,100

Incentive	\$400/ton, upstream
Total budget	\$3,200
Best practices	Participants will be informed about VEC's TOU rate and the benefits of weatherization
Appropriate for VT	Yes
Min Building Standards	Participants will be informed about the benefits of weatherization and existing weatherization incentives
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes

Program	Air to water heat pumps
Objective	Support EVT's work to develop and promote this technology
Number of participants	2
Lifetime MWh credit	117
Partners	Efficiency Vermont
Additional kWh	4,900
Incentive	\$500/ton, upstream
Total budget	\$4,000
Best practices	Participants will be informed about VEC's TOU rate and the benefits of weatherization
Appropriate for VT	Yes
Min Building Standards	Participants will be informed about the benefits of weatherization and existing weatherization incentives
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes

### Renewable Thermal Energy Assessment Program

# of participants	Per unit MWh	Total MWh	% of 2020 goal
14	TBD	TBD	TBD

In 2019, VEC began offering free renewable thermal energy assessments to commercial, industrial and agricultural members through a partnership with EnSave. Supported by a grant from the US Department of Agriculture, the program determines whether renewable thermal energy opportunities such as heat pumps and biomass are applicable at a given location and projects potential fossil fuel savings. VEC then offers a custom incentive if the participant decides to pursue the recommendation.

Recommendations that VEC has offered incentives for have fallen under one of the existing programs (e.g. cold climate heat pumps and heat pump water heaters). However, because VEC has specific estimates for the fossil fuel savings at the particular location, VEC has offered an incentive based on those water heating and space heating estimates. Sometimes those incentives are the same, and sometimes they are greater than what is offered under the standard program.



Program	Renewable Thermal Energy Assessment Program
Objective	Offer energy assessments and custom incentives based off of those to C&I and agricultural members
Number of participants	14
Lifetime MWh credit	TBD
Partners	EnSave
Additional kWh	TBD
Incentive	TBD
Total budget	\$11,250
Best practices	Participants will be informed about VEC's TOU rate and the benefits of weatherization
Appropriate for VT	Yes
Min Building Standards	Participants will be informed about the benefits of weatherization and existing weatherization incentives
Equitable opportunity - customer class	Specific to C&I
Equitable opportunity - low-income	Yes

### Zero Energy Modular (ZEM) Homes

# of units	Per unit MWh	Total MWh	% of 2020 goal
1	custom	custom	unknown

VEC will continue to offer a \$500 credit per home to support the ZEM program and help the homeowner overcome the initial electrical costs, which include some upfront fees for net metering. The Tier III credit will be determined on a custom basis.

ZEM homes are a high-quality alternative to traditional manufactured housing. They are more expensive to purchase, but the operating costs are extremely low by comparison. The quality of the building materials and design facilitates a much healthier and more comfortable experience than that of traditional manufactured housing. Unlike most manufactured housing, ZEM homes are designed specifically for colder climates. Currently, the company manufacturing them is Vermod in Wilder, Vermont. ZEM homes are entirely electric. The tight building envelope allows them to heat with CCHPs, and they come with a HPWH. Despite their reliance on electricity for thermal load, solar panels on the roof ensure that the electric costs are minimal.

Program	ZEM Home
Objective	Support Efficiency Vermont's work to develop and promote this program
Number of participants	1
Lifetime MWh credit	Custom
Partners	Efficiency Vermont
Additional kWh	Custom
Incentive	\$500 bill credit

Total budget	\$500
Best practices	Participants will be informed about VEC's TOU rate
Appropriate for VT	Yes
Min Building Standards	Yes
Equitable opportunity - customer class	This is a residential measure
Equitable opportunity - low-income	Yes

## Transportation

According to the CEP, nearly half of Vermont's greenhouse gas emissions are the result of transportation. Vermont cannot meet its greenhouse gas reduction goals without electrifying the transportation sector.

The appetite for electric vehicles continues to grow as the technology improves, costs come down, and infrastructure expands. In 2020, VEC will maintain the existing bill credits for fully electric vehicles (EVs), plug-in hybrid electric vehicles (PHEVs), and publicly accessible charging stations. VEC is adding an incentive for home charging stations, which is available only for models that are compatible with a VEC software platform.

### Electric and Plug-in Hybrid Electric Vehicles

Vehicle type	# of units	Per unit MWh	Total MWh	% of 2020 goal
EV	40	34	1,360	7%
PHEV	40	26	1,040	6%

Since 2017, VEC has offered a bill credit for fully electric and plug-in hybrid electric vehicles, used or new, purchased or leased. To obtain the bill credit, members fill out a simple form and include proof of purchase or lease. To date, 134 VEC members have taken advantage of these incentives. The chart below shows the distribution among the incentive types.

		PHEV	EV
Purchased	Used	9	11
	New	41	55
Leased		8	10
Total		58	76

The incentive for a fully electric vehicle is \$500 for a purchase and \$100/year for a lease. The incentive for a plug-in hybrid is \$250 for a purchase and \$50/year for a lease. We will continue promoting the incentives directly to members, as well as through local car dealers, many of whom we have been provided with incentive forms. VEC will also be working with dealers and the Agency of Transportation to help implement the statewide EV incentive program.

According to agreements made within the Tier III TAG, savings claims will be made for the full lifetime of the measure on new, purchased vehicles as well as leased vehicles. Used vehicles

were characterized in the 2019 TAG, and VEC will use that savings claim rather than our prior process of prorating based on the age of the car.

Program	Electric Vehicles and Plug-in Hybrid Electric Vehicles
Objective	Promote EVs and PHEVs and encourage their deployment in VEC service's territory.
Number of participants	40 EVs, 40 PHEVs
Lifetime MWh credit	34 for new and leased EVs, 26 for new and leased PHEVs 17 for used EVs, 13 for used PHEVs
Partners	Car dealerships, Drive Electric Vermont, VTrans
Additional kWh	2,700 for EVs; 1,700 for PHEVs
Incentive	\$500 for EV purchase; \$100/year for EV lease \$250 for PHEV purchase; \$50/year for PHEV lease
Total budget	\$30,000
Best practices	Participants will be informed about VEC's TOU rate.
Appropriate for VT	Yes
Min Building Standards	N/A
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes, leased and used vehicles are included

### Home Level II Charger Program

# of units	Per unit MWh	Total MWh	% of 2020 goal
35	0	0	0%

VEC is offering a \$250 bill credit for the purchase of a qualifying Level II electric vehicle charger. This incentive is designed to help members purchase and install a Level II charger and avoid charging at times when electricity costs are highest. To participate in the program, members must commit to avoiding charging from 5-9 pm Monday through Friday.

This incentive is the first phase of VEC's home charging program. In the next few months, we plan to offer an ongoing program where a signal would be sent from VEC's platform to ask chargers not to operate at certain times. This second phase would be optional to members who would like to receive additional benefit from their home charger. Participants would be able to opt out of events when necessary.

No additional Tier III credit will be claimed for the charger itself. However, credit will be claimed in Phase II when VEC is able to communicate with the chargers and ensure that peaks are avoided. For compliance reporting, the cost of this incentive will be included in the cost of the electric vehicle Tier III savings claims.

Program	Home Level II Charger
Objective	Enable connected and responsive home charging
Number of participants	35
Lifetime MWh credit	N/A, same as vehicle incentive
Partners	Packetized, Virtual Peaker, charger manufacturers
Additional kWh	N/A, same as vehicle incentive
Incentive	\$250 bill credit
Total budget	\$8,750
Best practices	Participants will avoid charging M-F, 5-9 pm and will be offered the option to enroll on control platform in Phase II
Appropriate for VT	Yes
Min Building Standards	N/A
Equitable opportunity - customer class	Specific to residential
Equitable opportunity - low-income	Yes

### Public Charging Stations

# of units	Per unit MWh	Total MWh	% of 2020 goal
4	14	56	<1%

We will continue to offer an incentive of \$500 per head for publically accessible chargers, Level II and up to help expand charging infrastructure in our service territory.

Program	Public Charging Stations
Objective	Enable public charging
Number of participants	4
Lifetime MWh credit	14
Partners	Businesses, municipalities
Additional kWh	1,200
Incentive	\$500 per head
Total budget	\$2,000
Best practices	Participants will be informed about VEC's TOU rate
Appropriate for VT	Yes
Min Building Standards	N/A
Equitable opportunity - customer class	Specific to C&I
Equitable opportunity - low-income	Yes

## Tools and Equipment

### Electric forklifts

# of units	Per unit MWh	Total MWh	% of 2020 goal
5	75	375	2%

To expand opportunities for commercial and industrial members to participate in VEC's Energy Transformation Program, we began offering an incentive for electric forklifts in 2019. We will continue offering an incentive of \$1,000 for the purchase of a new or used electric forklift that directly replaces an existing fossil fuel forklift or for new applications.

Program	Electric forklifts
Objective	Promote the adoption of electric forklifts in VEC's service territory
Number of participants	5
Lifetime MWh credit	101 for new, 49 for used
Partners	Forklift dealers and C&I members
Additional kWh	14,000
Incentive	\$1,000 per forklift
Total budget	\$5,000
Best practices	VEC will work with participants to recommend the optimal charging schedule for demand charges as well as peak
Appropriate for VT	Yes
Min Building Standards	N/A
Equitable opportunity - customer class	Specific to C&I
Equitable opportunity - low-income	Specific to C&I

### Electric Lawn Mowers – Commercial and Residential

Type	# of units	Per unit MWh	Total MWh	% of 2020 goal
Residential	50	2	100	1%
Commercial	2	70	140	1%

In May 2019, VEC began offering incentives for both commercial and residential electric lawn mowers. The amount is \$1,000 for commercial and \$50 for residential. The larger incentive is available for specific models of commercial lawn mowers for use by a lawn care business, state agency, or institution with a campus such as a hospital or university. Other users are considered on a case-by-case basis. The residential incentive is available for a new, corded or cordless mower.

Program	Lawn Mowers – Commercial and Residential
Objective	Promote the use of electric mowers to displace fossil fuels
Number of participants	2 commercial, 45 residential
Lifetime MWh credit	70 for commercial, 2 for residential
Partners	EcoSupply Equipment, local hardware stores
Additional kWh	9,500 for commercial, 218 for residential
Incentive	\$1,000 for commercial, \$50 for residential
Total budget	\$4,250
Best practices	Participants will be informed about VEC's TOU rate
Appropriate for VT	Yes
Min Building Standards	N/A
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes

## Storage and Demand Management

### Packetized Electric Resistance Water Heater Devices

# of units	Per unit MWh	Total MWh	% of 2020 goal
40	0.3	12	<1%

Since 2018, VEC has been working with Packetized Energy to deploy devices for electric resistance water heaters that shift usage away from off-peak times. Currently we have about 110 devices installed. The TAG has recently created a model to quantify savings for devices that reduce peak load. VEC estimates that each Packetized water heater device would be eligible for 0.3 MWh of credit over its 10-year lifetime.

Program	Packetized electric resistance water heater devices
Objective	Shift water heating load away from peak times
Number of participants	40
Lifetime MWh credit	0.3 MWh
Partners	Packetized Energy
Additional kWh	none
Incentive	Two \$25 bill credits
Total budget	\$2,000
Best practices	This technology is a best practice
Appropriate for VT	Yes
Min Building Standards	N/A
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes

## Home Level II Charger Controls

# of units	Per unit MWh	Total MWh	% of 2020 goal
25	2	50	<1%

In Phase II of VEC’s home charger program, we plan to offer participants the option of enrolling in VEC’s communications platform, which would send a signal to the charger not charge when we call an event. We plan to offer an upfront incentive of \$50 to enroll and a monthly credit of \$6.25 for participating in events. We will use the peak-shaving TAG model to estimate the savings based on the average kW of the charger.

Program	Home Level II Charger Controls
Objective	Shift EV charging away from peak times
Number of participants	25
Lifetime MWh credit	2 MWh
Partners	Virtual Peaker, charger manufacturers
Additional kWh	none
Incentive	\$50 to enroll, \$6.25 monthly credit
Total budget	\$3,125
Best practices	This technology is a best practice
Appropriate for VT	Yes
Min Building Standards	N/A
Equitable opportunity - customer class	Yes
Equitable opportunity - low-income	Yes

## Complementary Systems and Services

### Time of Use (TOU) Rates

TOU rates can be an effective tool for shifting load and giving members more control over their usage and monthly electric bill. Since January 1, 2017 VEC has offered a pilot TOU rate available for both residential and small commercial members who participate in the Tier III program. As of October 1, 2017, we also have a pilot TOU rate available for larger commercial members participating in Tier III initiatives.

These pilot rates are optional rather than mandatory so that members who may not want to be charged a TOU rate are not discouraged from participating in the Tier III program. Currently, four large commercial, three small commercial, and seventeen residential members have opted to participate in the pilot TOU rate.

## Tier III Program Summary

See Attachment A for a more detailed summary table.

Program	# participants	MWh/unit	Total MWh	% Requirement	Incentive	Budget
CAP	TBD	TBD	TBD	TBD	TBD	\$150,000
Thermal Measures						
CCHP	200	27	5,400	29%	\$300	\$60,000
Pellet stoves*	30	11	330	2%	\$150	\$4,500
Wx bonus	55	6	330	2%	\$150	\$8,250
HPWH	30	3	90	0%	\$150	\$4,500
Centrally ducted HP	2	64	128	1%	\$1,600	\$3,200
A2W HP	2	117	234	1%	\$2,000	\$4,000
ZEM home	1	TBD	TBD	TBD	\$500	\$500
C&I Custom	TBD	TBD	TBD	TBD	TBD	\$11,250
Transportation Measures						
EV	40	34	1360	7%	\$500	\$20,000
PHEV	40	26	1040	6%	\$250	\$10,000
Home L2 Charger	35	0	0	0%	\$250	\$8,750
Public L2 Charger	4	14	56	0%	\$500	\$2,000
Tools and Equipment						
Electric forklifts	5	75	375	2%	\$1,000	\$5,000
Residential Mower	50	2	100	1%	\$50	\$2,500
Commercial Mower	2	70	140	1%	\$1,000	\$2,000
Storage and Demand Control						
Packetized Controls	40	0.3	12	0%	\$50	\$2,000
Home L2 Control	25	2	50	0%	\$125	\$3,125
2020 Total	556		9,645	52%		\$301,575

### Tier III Savings Projections

	MWh
Current bank (expected)	8,744
2020 estimated savings	9,645
2020 requirement	18,400
Difference	-11