Green Mountain Power

2023
Renewable Energy Standard
Tier III Annual Plan
November 1, 2022

Background

Vermont's Renewable Energy Standard (RES) has three tiers of resources for electric distribution utilities to fulfill: Tier I-Total Renewable Energy, Tier II-Distributed Renewable Energy, and Tier III-Energy Transformation. This Annual Plan is being submitted in compliance with the Public Utility Commission's (PUC) Rule 4.417. Under this Rule, Distribution Utilities (DUs) are required to submit written plans that describe how they will comply with the Tier III-Energy Transformation requirements in the RES each year.

GMP's Annual Plan describes how we will continue to meet Tier III requirements in calendar year 2023 by partnering with our customers to help them transform energy use away from fossil fuels.

GMP's annual energy supply is 100% carbon free and more than 78% renewable. Our 2023 Tier III Plan and 2022 Annual Claim reflect this clean supply mix. Our annual supply will be 100% renewable by 2030, as we also align clean resources better seasonally and hourly as the region reduces reliance on fossil fuels.

The goal of RES Tier III is to reduce emissions, measured through carbon (CO2), associated with the use of fossil fuels. From the beginning of this year (2022), GMP in partnership with customers has helped offset over 476 million pounds of lifetime CO2 emissions through Tier III project support. Transportation and heating are by substantial margins the top two contributors of carbon emissions in Vermont and in 2023 GMP will continue to focus on programs for customers that help them reduce their fossil fuel use in these areas. We look forward to continuing this critical work with customers to reduce our state's emissions and meet State energy goals, while continuing to show that cutting carbon also saves money, improves comfort, and supports the local economy.

As we emerge from the pandemic, Vermont, like other states, is experiencing some supply chain and labor market constraints, while also facing some uncertainty in the economy generally marked by accelerating inflation. Throughout this unprecedented period, GMP has continued working closely with customers on projects to help them cut carbon emissions and cost, and we are pleased that in partnership with customers, our 2022 Tier III goals are on target.

Federal spending, particularly through the Inflation Reduction Act passed in 2022, will present exciting new opportunities this coming year for customers to do Tier III qualified projects. The guidelines for this spending will emerge in the coming months and will present a new set of variables for GMP and customers to navigate. We have not made assumptions in this year's Plan based upon that new legislation but will follow it closely and adjust as opportunities arise.

Schedule of 2023 Tier III Filings

This Annual Plan is part of a three-step process that the PUC established for annual Tier III planning and compliance reporting. The following table summarizes these steps and the deadlines in the process governing 2023 Tier III reporting:

Tier III Planning & Compliance Cycle – 2023 Compliance Year

Step	Date
File 2023 Tier 3 Annual Plan	November 1, 2022
File 2022 Tier 3 Savings Claim	March 15, 2023
File 2022 Tier 3 Compliance Filing	August 31, 2023

2023 Fossil Fuel Reduction Targets under RES Tier III
The 2023 calendar year Tier III MWH savings target is 6.00% of retail sales. GMP's forecasted retail sales for the calendar year are expected to be approximately 4,119,498 MWH. Based on this figure, the GMP RES Tier III target for 2023 is 247,170 MWHe. This will be adjusted based on actual retail sales when they are determined and reported in the 2023 Compliance Filing in August of 2024.

Summary of Tier III Observations from 2022 Experience:
As of this writing, GMP is 10 months into our 2022 Tier III Plan. Below are some observations that have helped shape our 2023 Tier III Plan based on this experience. Note some data sets are based on eight or nine months of accrued reported data.

GMP/Efficiency Vermont Collaboration - Throughout 2022, GMP continued to collaborate with EVT through prescribed measure incentive enhancements, commercial and industrial projects, and continued conversations regarding demand response. This resulted in greater energy transformation opportunities for our customers. Below are some examples:

- Cold Climate Heat Pumps (CCHPs) – In 2022, GMP continued to supplement the EVT midstream rebates by maintaining GMP's midstream incentive for ductless systems of $250 per condenser. GMP also continued its downstream $400 rebate for ducted and ductless systems, as well as the low-to-moderate-income incentive that provides $300–$600 more to the base incentive for income-qualified customers. Forecasting for 2022 was challenging as the total impact of the ongoing pandemic was continuing to materialize, but as of this writing, projections for 5,120 added CCHPs are on target with 4,790 added after eight months of data reported.

- Whole Building Heat Pumps (WBHP) – In 2021, GMP observed a significant increase in the installation of WBHPs across our service territory and based our 2022 projects on this momentum. 2022 actuals are on track to meet projections and GMP remains committed to working with EVT to support customers' adoption of this technology to reduce carbon and fossil fuel use. As we look ahead, whole building heat pump systems will be the best way to totally de-carbonize home heating and we are looking forward to accelerating this work in the coming years.

- Commercial and Industrial (C&I) Customer Project Collaboration – The GMP and Efficiency Vermont C&I teams have continued to work closely together during 2022 to ensure customers are benefitting from both electrical efficiency and fossil fuel offset opportunities. This collaboration not only presents customers with options to consider beneficial electrification, paired with efficiency measures where applicable, but also presents non-electrification options. This collaboration has benefited customers by bringing forward options in comprehensive and actionable ways.

- Demand Response – The GMP/EVT partnership has continued to foster an ongoing conversation between stakeholders, leading to a deeper, shared understanding of the relationship among demand response, efficiency, customer economics, and carbon reduction. As the Flexible Load Management Pilot 2.0 nears its end, GMP, EVT, and third-party vendors and stakeholders will explore the feasibility of an FLM tariff or further learnings that can occur through a third FLM Pilot for 2023. While FLM is not part of Tier III, this program serves a similar goal of the overall reduction of fossil fuel use and carbon emission and provides an effective avenue for GMP to promote Tier III initiatives to C & I customers.

Electric Vehicles - With transportation being the top contributor to carbon emissions in Vermont, electric vehicles (EVs) are important to achieve Tier III savings requirements. GMP's 2022 projections for EV adoptions were 1,053 units. At the time of this writing, GMP has provided incentives for over 945 new and used All-Electric Vehicles (AEVs) and Plug-In Hybrid Electric Vehicles (PHEVs) which is on track to meet our 2022 forecast, despite ongoing supply chain challenges felt by most dealerships. Pre-pandemic work with dealerships, federal and state incentives, along with GMP's base and low-to-moderate-income incentives have made EVs competitively priced options compared to conventional fossil-fueled vehicles. GMP's discounted charging rates and free charger offerings contribute to making the total ownership cost of EVs much lower while continuing to provide benefits for all customers. GMP, in partnership with communities, energy committees, Regional Planning Commissions and state agencies also conducted extensive outreach to engage with customers and help them learn about EVs.

Manufacturers have maintained strong commitments to produce more all-electric vehicle models. Greater availability of EV models across a wider price range will support more customers driving electric. Incentives will continue to be essential in supporting Vermonters making the transition away from fossil fuels, particularly with a focus on equity as a used electric vehicle market begins to materialize bringing more lower priced EVs to the market.

In addition to incentives for AEVs and PHEVs, in 2022 GMP has provided incentives for over 1,100 transportation and other internal combustion replacement items including electric bicycles, motorcycles, and land care items including mowers, leaf blowers, chainsaws, and trimmers.

GMP also continues to support electrified transportation through custom measures. In 2022, GMP worked with school districts and public transit companies to help obtain funding for electrified school buses and transit buses. GMP added one new heavy-duty vehicle to its own fleet in 2022, funded 75% through the VW Settlement. At the end of 2021, GMP's Charge Fast make-ready pilot came to an end which helped deploy DC fast charging at various locations. Through 2022, 12 DC Fast charging stations have been installed through the Charge Fast pilot and received Tier III credit. An additional 10 stations are slated to be activated in 2023.

Fossil Fuel Prices: Programs that can leverage greater efficiencies can compete best against fossil fuels. Heat pumps are an excellent example—a fossil fuel solution for heating might be 80% efficient, compared to a heat pump, which can readily achieve 250% efficiency. This delta in efficiency can give electricity a competitive advantage over fossil fuel. Similarly with electric vehicles, greater efficiency contributes to the total cost of ownership for EVs being demonstrably cheaper over the life of the vehicle, making them a good option for Vermonters of all incomes. Demand response measures can also help kWhs compete with fossil fuels, and GMP has leveraged DR programs to help customers economically transition off fossil fuels as well. Continued electrification in heating and transportation also will grow load and thereby help lower costs for all customers, further leveling the playing field compared to fossil fuel prices.

2022 has been marked with significant fluctuation in fossil fuel prices, including rapidly surging prices through the spring and summer. In 2022, electrification has demonstrated that, within a regulated market such as Vermont's, it provides customers with the additional benefit of stability compared to a volatile fossil fuels market.

Policy Alignment to Technical Advisory Group (TAG) Work: The TAG established in the RES legislation has worked effectively over the last year to add new measures and refine existing ones so that DUs have options for expanding and enhancing Tier III programs for customers. DU-initiated work that has transitioned from pilots or custom measures into TAG characterizations has increased the effectiveness of the TAG.

Low-Income Customers: GMP supports helping low-income customers cut carbon and it is important to note our transformation projects help reduce costs for all customers, making this work so critical. In 2022, to further help reach low- and moderate-income customers, GMP maintained its income-qualifying rebates to heat pump base incentives. Incomes are self-reported, and as of this writing, GMP has helped over 1,000 low-income customers get heat pumps.

Although outside RES Tier III eligibility, GMP has engaged moderate- and low-income customers in 2022 through a rebate adder for EVs and the creation of the Sun Match pilot. For 2023, the income-based EV incentive adder will become part of GMP's Tier III program. New and existing initiatives outside the scope of Tier III which target low- and moderate-income customers will help engage all customers in carbon reduction and cost savings and serve as a pipeline to participation in GMP's Tier III programs.

2023 Fossil Fuel Reductions under Tier III Programming Plan

Retail Sales and Number of Customers by Customer Class

Rule 4.413I(3) provides that "[a] Provider shall endeavor to provide equitable opportunities to its Customer sectors in rough proportion to each Customer sector's annual retail sales." As has been the case since Tier III was initiated in 2017, opportunities to reduce fossil fuel usage through Energy Transformation Projects with customers are not uniformly distributed across the classes. While we do not expect exact allocation across classes to be achievable within any program year, GMP's programs include offerings that are intended to make energy transformation accessible for all our customers.

The following table shows what these proportions are forecast to be in 2023 and the corresponding RES MWHe requirements based on forecasted retail sales. Ideally, GMP will provide savings in rough proportion to these percentages in 2023; however, we recognize that there has been a great deal of variation from year to year. In 2017 and 2018, Tier III MWHe volume was heavily weighted towards C&I custom projects, but in 2020 and 2021, the growing focus on CCHPs and EVs saw those prescribed programs yielding a larger portion of MWHe. This continued in 2022 and is expected to carry forward for 2023. The trends in electrification of home heating and transportation suggest that this will continue, as work focuses on decarbonizing these top sectors of carbon pollution in Vermont. Additionally, the completion dates for large C&I projects are difficult to predict based upon other needs of these customers and can cause significant changes to overall allocations given the size of these projects.

GMP's 2023 Forecast Retail Sales and RES Tier III Targets by Class

Class	Forecast 2023 Load (MHW)	% of Sales	2023 RES Target (MHWe)
Residential	1,492,908	36.24%	89,574
Small Commercial and Industrial	1,465,964	35.59%	87,958
Large Commercial and Industrial	1,156,845	28.08%	69,411
Other	3,781	0.09%	227
TOTAL	**4,119,498**	**100.00%**	**247,170**

2. GMP Tier III Program Summary

The Tier III TAG maintains a list of measures that are defined and characterized for Tier III MWHe value, based on new and established research and observation. GMP promotes these prescribed energy transformation measures, primarily among its residential and small commercial customers, through a variety of channels:

- As pandemic-related safety guidance and restrictions on social engagement eased, GMP took proactive measures throughout 2022 to engage with customers in person in communities across the state. In partnership with municipalities, community organizations, and businesses, GMP's EV Ride & Drive events have provided customers with opportunities to learn about EVs, GMP's EV rates, programs and rebates, and test drive EVs from GMP's fleet, and from customers who have brought their EVs to share. We believe a hands-on approach to educating customers and peer sharing about the benefits of driving electric is an essential component of our strategy for encouraging customers to electrify their transportation needs. Our team has participated in 22 Ride & Drive events throughout the previous year.
- GMP continued to host community and customer Open Houses, returning to in-person in the summer of 2022 in our southern district office in Brattleboro, Vermont.
- GMP reached out to and was hosted by Regional Planning Commissions and community energy committees throughout the state to provide education and information about its Tier III programming.
- Energy Innovation Team (EIT)/Call Center - GMP's EIT and Call Center are well prepared to support customer questions about energy transformation and GMP programs. Cross training between the EIT and Call Center continued in 2022. With increasing customer interest and awareness of GMP's carbon reduction efforts, we expect Tier III-related calls will account for an increasing percentage of overall customer exchanges. As such, our Call Center continues to be an

integral part of our innovation work with customers and is equipped to respond to many of their questions.

- Online resources – GMP's website and other online tools were updated and are great resources for customers to learn about their specific energy use, and to learn about program offerings. GMP is also active on social media, both for providing education about programs, and to provide opportunities for real-time discussions with customers. GMP continued to grow its Live Chat presence into 2022 to provide another effective way for communicating with our customers.
- Targeted press releases – New GMP programs and innovation ideas are announced through press releases. This is a cost-effective way of educating the public about energy transformation.
- Vendor Channels – The mid-stream rebate programs continue to offer solution providers with a mechanism to help their energy transformation-related product offerings compete with fossil fuel alternatives. GMP worked with HVAC distributors of VT to educate of our programs in order to socialize our initiatives more broadly. This work was accomplished through meetings with individual firms and businesses, and GMP's presence and presentations at industry-focused conferences.

In 2023, GMP will continue offering an array of flexible, prescriptive programs that allow customers to select their specific steps and path toward energy transformation. Tier III is all about encouraging customers to take action in their energy transformation journey, be it a single small step or a large transformational decision. We have learned from our programs that while customers appreciate a comprehensive transformation program that meets their desire for change, many customers take a "one step at a time" approach where a series of smaller, individual transformation measures are undertaken over time to achieve their goals. For these customers, GMP's prescriptive programs will continue to focus on supporting reductions in fossil fuel consumption for space and domestic hot-water heating within the home and business; helping customers transition from the use of internal combustion engines for transportation and other applications; helping customers transition from the use of fossil fuels in their cooking through a new rebate for the installation of induction cook-tops and ranges; and deploying energy storage to reduce carbon emissions associated with grid generation during peaks.

Low- and Moderate-Income Customer Programs – GMP will continue to provide low-income rebates for Heat Pumps and an EV adder for customers who identify as low- or moderate-income. These adder incentives will continue to help promote equity in electrification. In 2022, a new collaboration between DUs and EVT began providing larger heat pump incentives to customers identified by weatherization agencies, and expanded this incentive from low-income to both low-income and moderate-income customers.

3. GMP Tier III Program Details

Building Program

GMP will continue to support measures, projects, and initiatives that transition the heating of air and water to condition and/or serve buildings to non-fossil-fuel alternatives. This support will continue in the form of mid-stream discounts and low-income down-stream rebates provided to customers in collaboration between GMP and EVT.

Building Program – Cold Climate Heat Pumps (CCHP) – GMP continues to observe increasing adoption of CCHPs. For 2023, EVT has forecasted 10,000 ductless CCHPs installed statewide. In consideration of the lingering economic impacts of the pandemic, increased inflation, and a volatile labor market, GMP forecasts a more conservative approach of 7,000 units to be added within GMP service territory in 2023.

Factors including improving technology, the prevalence of CCHPs in everyday life passively increasing customer awareness and interest, and the volatility of the fossil fuel market will support the trend of CCHP adoption. Additionally, the heat pump rebates/credits provided for in the Inflation Reduction Act (IRA) will make adoption more affordable and likely accelerate customers' installation of CCHPs across GMP's territory. GMP will review incentive levels in 2023 paired with these additional credits and incentives to determine if an adjustment is warranted while still assuring robust adoption.

Our Tier III savings estimate uses an average of 28.90 MWHe per CCHP heat pump based on the 2023 Tier III-approved planning tool and the actual 2022 year-to-date CCHPs installed as reported by EVT.

Building Program – Heat Pump Water Heater (HPWH) – GMP, along with other utilities, is collaborating with EVT on supporting HPWH installations that are claimed through the EVT mid-stream/down-stream program, which specifically offset fossil fuels. GMP's 2023 Tier III Plan includes a forecast of 250 units. Our Tier III savings estimate uses an average of 21.35 MWHe per unit based on the 2023 Tier III-approved planning tool and the actual 2022 year-to-date HPWHs installed as reported by EVT.

Building Program - Whole Building Heat Pumps (WBHPs) – WBHPs include centrally ducted (CDHP), air-to-water (A2WHP), and ground source (GSHP) technologies. This is a relatively new market in Vermont. As of this writing, WBHP volume through EVT and GMP's rebate program has been steady and we have exceeded our 2022 forecast of 400 units. EVT forecasts that roughly 1,340 WBHPs will be installed statewide in 2023. GMP has set its WBHPs forecast at 800 units. The GSHP program administered through EVT is in its second year and this technology is being adopted more slowly than anticipated. We look forward to growth in 2023 and beyond.

GMP's 2023 Tier III Plan includes a forecast of 800 units. Our Tier III savings estimate uses an average of 168.27 MWHe per unit based on the 2023 Tier III-approved planning tool and the actual 2022 year-to-date WBHPs installed as reported by EVT.

2023 Building Program Volume Projections

Measure Type	Forecast Quantity	Avg Unit Tier III MWHe	Est 2023 MWHe Projection	Avg Unit KWh Load Add	Load Add MWH Projections	Average Carbon Offset/Unit (LBs)	Measure Lifetime Carbon Offset (MT)
CCHP	7,000	28.90	202,300.00	2,270.00	15,890.00	43,894.00	139,369.77
HPWH	250	21.35	5,337.50	885.00	221.25	25,978.50	2,945.91
WBHP (CDHP, A2W, GSHP)	800	168.27	134,613.33	7,510.00	6,008.00	241,545.67	87,650.55
Induction Stovetops	50	3.62	181.15	258.18	12.91	4,419.70	100.24
TOTALS	**8,100**		**342,431.99**		**22,132.16**		**230,066.46**

Meeting Minimum Energy Performance Standards - Rule 4.415(6)(C) requires that Tier III Annual Plans include "strategies for encouraging the installation of technologies in buildings that meet minimum energy performance standards, as applicable," when electrification measures are pursued.

Within GMP's energy transformation programs, the installation of CCHPs represents the measure that is most directly related to building energy performance standards. These measures are introduced to customer homes and businesses, and the vast majority are performed by a network of installers who are members of EVT's Efficiency Excellence Network. Members are qualified by EVT based on their expertise in properly specifying and installing such equipment and providing sound advice to customers on where and under what circumstances CCHPs are most beneficial.

When installed in a commercial setting, as part of a custom energy transformation project, heat pumps are typically planned and installed by HVAC experts well versed in those specialized settings. GMP's Energy Transformation Specialists partner with EVT and work closely with C&I customers and their service providers for these projects.

Demand Response Measures

- CCHP – Customers who install a CCHP are eligible for, and encouraged to install, a free Sensibo for each head unit. The Sensibo offers the customer internet-connected control of the head units' main functions. The customer shares access to the Sensibo with GMP. During anticipated peak demand periods, GMP manages the Sensibo by adjusting temperature set points—slightly higher temperatures in the summer, and slightly lower temperatures in the winter. At the time of this writing, over 200 Sensibos have been deployed to customers in 2022. GMP will continue to evaluate solutions and methods for cost-effective management of residential heat pumps.

- HPWH – GMP continues to investigate mechanisms for cost-effectively managing demand from HPWHs. While some units offer internet connectivity for the owner, a manageable and cost-effective method of sharing control has not yet been identified. We will continue to keep up with technology and deploy any solutions in the future that become available and are cost-effective.

Transportation Program

GMP will continue its focus on the transition to Electric Vehicles through incentives, education, EV charging infrastructure, EV rates, and support for an expanded variety of modes of electric transportation. GMP is committed to helping customers transition away from fossil fuel vehicles, as transportation is the top source of carbon pollution in Vermont. The single biggest step a Vermonter can take to reduce emissions is to drive electric. Plus, driving electric is more economical with reduced maintenance costs.

Transportation Programs – Electric Vehicles (EVs)

The focus of GMP's EV program is to help every customer drive electric. This program, in combination with state incentives, dealer incentives, and state and federal tax credits, creates strong reasons for customers to make the switch from fossil fuel transportation to an EV.

The GMP program supports both new and used vehicles, and incentives include an adder for customers who identify as low-income, paid for through GMP's charitable contributions. Customers who register their EV in Vermont are eligible to receive a Level 2 home charger at no additional cost, with the provision that the charger is connected to the customer's home internet, so that GMP may monitor charging activity, and for customers enrolled in the Rate 72 tariff, access control of the charger during peak periods for the purposes of demand response.

In addition, GMP employs a combination of partnerships with the local network of EV dealers to encourage support through sales channels. Customer response to AEV and PHEV incentives in 2022 have followed the 2020-to-2021 upward trend. To date, GMP has provided incentives for over 900 vehicles. The GMP projections for 2023 EVs and PHEV reflect an increase of approximately 22% in unit quantity and 15% increase in lifetime carbon offset from 2022's projections. This reflects important progress needed to meet State energy goals.

2023 Transportation EV Projections

Measure Type	Forecast Quantity	Avg Unit Tier III MWHe	Est 2023 MWHe Projection	Avg Unit kWh Load Add	Est Annual MWH Load Add	Average Carbon Offset/Unit (LBS)	Measure LT Carbon Offset/Unit (MT)
AEV	700	39.67	27,766	2,758	1,930	54,703	17,369
PHEV	400	29.59	11,835	1,698	679	40,804	7,403
Used AEV	125	19.83	2,479	2,758	345	27,352	1,551
Used PHEV	60	14.79	888	1,698	102	20,402	555
eMotorcycle	5	9.00	45	232	1	12,419	28
eBike	700	5.62	3,931	30	21	7,746	2,459
Forklift	2	125.29	251	13,886	28	152,844	139
TOTALS	**1,992**		**47,194**		**3,106**		**29,505**

- Exploration of non-electrification alternatives – Non-electrification alternatives for transportation, apart from combustion engine fossil fuel vehicles that would maintain the status quo, are not robust. While hydrogen and some other nascent technologies are in development for vehicles, the imperative in Vermont should be to transition its transportation options as quickly as possible to EVs to cut carbon and costs for customers, and help meet State energy goals
- Demand Response Measures – The GMP EV program includes the offer of a free Level 2 smart EV charger for all customers who register their EV in Vermont. The chargers are internet-connected devices and compatible with GMP's device management platform. The customer shares access to the charger with GMP to help lower costs for all customers. For customers enrolled in the Rate 72 tariff, during potential peak periods, GMP sends curtailment notes that delay charging until the curtailment period expires. Customers may opt out of any event, but this program has proven highly successful, with very little use of opt outs. In fact, we had over 99% measured compliance with demand response events from the full population of eligible EV chargers. Shared access for EV charging is a key part of Vermont's energy transition, to enhance grid efficiency, lower costs for all customers, and avoid upgrades to infrastructure. GMP's discounted charging rates have been an attractive option for customers. As of this writing, almost 1,800 GMP customers participate in one of the two rates offered. This is around 75% of the over 2,300 total customers who have received an EV incentive (excluding ebike and forklift incentives) from GMP since 2018. The rates are one more tool that makes switching to an EV more attractive.
- With new criteria for federal EV tax credits implemented via the Inflation Reduction Act in August 2022 and another round of changes set to take effect in January 2023, GMP anticipates its Call Center and EIT playing a more active role in guiding its customers through tax credit eligibility criteria for prospective purchases.

- Additionally, GMP is implementing metering/measuring systems which will allow for direct communication with customers' vehicles rather than their chargers. GMP is in the final stages of testing charging telematics for Tesla EVs and expects this to be implemented by early 2023 with charging telematics for EVs produced by other manufacturers implemented on an ongoing basis thereafter. This will provide customers increased choice in charging hardware, further decrease barriers to EV ownership, and increase customer participation in GMP's EV charging rates.

Transportation Program – Charging Infrastructure

For 2023, GMP will continue to offer incentives for customers that deploy Level 2 and Level 3 chargers in public and workplace settings. Multifamily dwellings will continue to benefit in 2023 from state funding for charging infrastructure. GMP will continue to offer incentives for multi-family chargers installed in multi-family dwellings to further support the transition. These measures will help provide options for renters who choose to switch from fossil-fueled vehicles. In addition, GMP is working to lead the charge statewide in deployment of fast chargers and other infrastructure needed to make EVs an easy transportation choice for Vermonters, as further described below.

2023 Transportation Program Charging Infrastructure Projections

Charger Type	Forecast Quantity	Unit Tier III MWHe	Total 2023 MWHe Projection	Average Carbon Offset/Unit (LBs)	Measure LT Carbon Offset (MTs)
Level 2 Public	40	38.74	1,549.56	53,425.59	969.34
Level 2 Workplace	20	61.82	1,236.31	85,250.86	773.38
Level 2 Multifamily	10	1.17	11.74	1,619.16	7.34
Level 3 Charger	10	187.65	1,876.53	258,795.82	1,173.88
TOTALS	**80**	**289.38**	**4,674.15**		**2,923.94**

Transportation Program – EV Public/Workplace Charging Network

GMP has maintained a network of public and workplace Level 2 and Level 3 EV charging stations throughout the service territory. We will continue to increase this network with a focus on Level 3 charging throughout the state. GMP forecasts by the end of 2022 to have installed and/or upgraded nine GMP-owned and -operated Level 3 DCFC charging sites, bringing our total to 19 sites. For 2023, GMP forecasts bringing online at least 10 new GMP-owned Level 3 charging sites and will bring online the remaining charging stations that are in development from the GMP Charge Fast Innovative Pilot. Additionally, GMP anticipates playing a key role in the actualization of Level 2 EV charging projects funded by the Agency of Commerce and Community Development (ACCD). These installations will benefit from the RES Tier III EVSE incentives, and as such GMP anticipates an increase in its 2023 MHWe stemming from broadening the EV charging network.

The projection for 2023 reflects the continued increase in utilization GMP charging stations have experienced.

2023 Transportation Program – Charging Network Activity Projection

Charging Type	Charging Activity (kWh)	Tier III MWHe Projection
Level 2 Charging	150,000	216
DC Fast Charging	275,000	459
Total Tier III Savings-GMP Network	**425,000**	**675**

Demand Response Program – Energy Storage

Storage is an important demand response resource that benefits all customers. When offsetting the import of energy from ISO-New England grid resources outside Vermont with local supply during peak hours, there is a measurable fossil fuel offset. This has been characterized by the Tier III TAG.

GMP supports several storage offerings through tariffs and pilots for customers, both directly from GMP and through private companies.

The carbon offset associated with battery energy storage is derived by comparing the high carbon content of the power supply from the regional grid during battery discharge, to the low carbon content of GMP's power supply during non-peak conditions, when the batteries are recharged. The 2023 Tier III Plan's MWHe calculation for batteries uses an assumption of 1,000 PowerWalls installed through the ESS Tariff program in which GMP works with customers to manage battery charging and discharging. In the Bring Your Own Device Tariff program, GMP does not control charging and so cannot predictably forecast the Tier III value.

In addition, GMP manages a variety of assets to reduce demand during key periods, including electric vehicle chargers, traditional electric water heaters, and smart thermostats. These assets are diverse in terms of their specific capacities, and discharge/recharge characteristics. The TAG characterization for energy storage may be used to describe the beneficial carbon reduction resulting from these types of resources, however their Tier III value is not yet forecast.

2023 Energy Storage System Projections

Storage	Quantity 500 Customers / 1,000 Batteries	MWHe/ Unit	Program MWHe	Average Carbon Offset/Unit (LBs)	Measure Lifetime Carbon Offset (MTs)
ESS Tariff Program	1,000	4.95	4,950	9,500	4,309

Land Care Equipment Program

In 2022, GMP continued providing incentives for electric trimmers, chainsaws, leaf blowers, and lawn and garden tractors. These incentives, as well as the original electric mower rebate, proved to be popular with customers. GMP will continue the rebates for lawn care equipment in 2023, as they represent a great way for customers to decarbonize land care and maintenance.

2023 Land Care Equipment Program Projections

Measure Type	Forecast Quantity	Avg Unit Tier III MWHe	Est 2023 MWHe Projection	Avg Unit kWh Load Add	Est Annual MWH Load Add	Average Carbon Offset/Unit (LBs)	Measure LT Carbon Offset/Unit (MT)
Residential Trimmer	150	1.26	189.21	0.71	0.11	1,739.62	118.36
Residential Chainsaw	75	1.26	94.61	1.02	0.08	1,739.62	59.18
Residential Leaf Blower	70	1.26	88.30	0.78	0.05	1,739.62	55.24
Residential Mower	300	1.14	341.96	8.95	2.69	1,572.00	213.91
Residential Garden Tractor	25	4.90	122.54	72.90	1.82	6,759.60	76.65
Commercial Garden Tractor	10	74.14	741.37	3150.00	31.50	102,242.88	463.77
TOTALS			**1577.97**		**36.24**		**987.11**

- Exploration of non-electrification alternatives – No non-electrification measures are considered through these programs, as noted above.
- Demand Response Measures – Currently, these loads are not directly managed by GMP. Customers enrolled in CLR or FLM may manually manage these loads, but at present GMP does not have the ability to quantify this.

Custom Commercial & Industrial Transformation Program

In 2023, GMP will continue to deepen our partnership with our commercial and industrial customers to develop custom energy transformation projects that can improve the performance of their operations while reducing fossil fuel usage and costs.

In this work, GMP C&I Energy Specialists work closely with customers, alongside EVT's network of consultants. Together, they identify sources of carbon emissions as well as efficiency opportunities, and non-electrification alternatives. This collaboration provides our C&I customers with a seamless and comprehensive approach to reducing their carbon footprints, while optimizing their energy consumption profiles to reduce operating costs.

These customers are very diverse and operate in business sectors such as manufacturing, agriculture, quarries, grocery stores, large retailers, large office buildings, and hospitals, among others. The focus of each project can differ, for example reducing fossil fuels and switching fuels for specific operational processes or switching air and water heating to alternative sources of energy—all to minimize or eliminate carbon emissions.

Custom C&I Tier III projects depend on customer timelines and can take years to develop and launch. As such, the MWHe contribution from C&I projects can vary greatly from year to year. The Tier III target for C&I is developed using an average of

C&I project performance over the past three years. Likewise, the added load associated with projects can vary widely. GMP also supports projects with significant carbon savings that result in no additional electrical load. In some cases, Tier III projects supported in collaboration with EVT can include efficiency measures. Efficiency conversions between fossil fuel applications can also have an impact on added load. Because of this, only a rough estimate of added load from C&I projects can be supplied. In order to establish a reasonable basis to estimate load from custom projects for 2023, the annual load add is based on 76.2 MWh per custom C&I project. This was derived by the average load add of all custom projects 2019–2021.

At the time of this writing, GMP's C&I Custom projects have far exceeded 2022 projections of 50,000 MWHe and 2,500 MWH in added load. As of October 2022, C&I Custom projects account for 111,333 MWHe and 8,358 MWH of added load. With a minimum of 20 projects slated for completion in 2023, GMP is forecasting another strong year of C&I Custom projects contributing to our overall Tier III.

2023 C&I Custom Projects

	Est 2023 MWHe Projection	Load Add MWH Projection
C&I Custom Projects	62,500	1,905

Demand Response Measures – Demand response is a central component in all discussions with C&I customers considering custom energy transformation projects. The anticipated load for projects is calculated, and potential bill changes are discussed. Participation in DR programs is a key tool to help customers financially manage the energy transformation work where a project will result in beneficial electrification. Among the tools discussed are participation in the Curtailable Load Rider program, Critical Peak Pricing, storage, and pilot programs like the Flexible Load Management pilot. GMP, with EVT, provides customers with a comprehensive understanding of the demand implications of their projects, and strategies to mitigate any associated costs.

Non-Electrification Alternatives – Historically, the portfolio of Tier III Custom projects that GMP supports often includes projects that do not involve electrification. These projects have included insulation, #6 oil replacement, and burner replacements in industrial processes. Additionally, through our partnership with EVT, customers considering energy transformation are presented with a full range of options, including beneficial electrification, biomass, and efficiency measures that can, where appropriate, result in load-neutral or load-reducing projects.

4. Tier II Credits

Tier II represents a supplemental source of Tier III-compliant MWH, to meet annual targets at a lower cost to customers than the ACP. GMP has banked over 390,647 MWHe since 2017 but is prepared to utilize Tier II credits for future compliance needs if necessary.

5. 2022 Tier III MWH

As of October 2022, GMP has achieved 100% of its Tier III target with a combination of prescribed measures and energy transformation projects. Reporting for some measures lag by close to two months. As such, we anticipate further exceeding our Tier III target and adding to GMP's banked Tier III MWHe.

Previous Cumulative Banked Tier III Credits Total	2023 Tier III Obligation	2023 Projected Tier III Credits	Projected Cumulative Banked Tier III Credits	Tier II Credits converted to Tier III
552,840	247,170	464,003	769,674	0

6. 2023 Tier III Program Forecast

GMP forecasts that our 2023 Tier III savings targets will be achieved through the delivery of the following customer programming. These forecast numbers include low-income participation in residential programs:

2023 Tier III Program Forecast

Measure	# of Measures	Avg Unit Tier III MWHe	Est. 2023 Total Savings (MWhe)	Avg Unit kWh Load Add	Est. Annual MWH Load Add
Building Program - CCHP	7,000	28.90	202,300.00	2270.00	15,890.00
Building Program - HPWH	250	21.35	5,337.50	885.00	221.25
Building Program - WBHP	800	168.27	134,613.33	7510.00	6,008.00
Building Program - Induction Cooktops	50	3.62	181.15	258.18	12.91
Transportation Program - AEV*	565	39.67	22,411.02	2,758	1,558.18
Transportation Program - AEV + Income-Based Adder	135	39.67	5,354.85	2,758	372.31
Transportation Program - PHEV*	400	29.59	11,834.72	1,698	679.12
Transportation Program - Used AEV*	101	19.83	2,003.11	2,758	278.54
Transportation Program - Used AEV + Income-Based Adder	24	19.83	475.99	2,758	66.19
Transportation Program - Used PHEV*	60	14.79	887.60	1,698	101.87
Transportation Program - eMotorcycle	5	9.00	45.02	232	1.16
Transportation Program - eBike	700	5.62	3,931.43	30.00	21.00
Transportation Program - Forklift	2	125.29	250.59	13,886	27.77
Transportation Program - Res. EV Charger*	700	-	-	-	-
Transportation Program - Level 2 Public	40	38.74	1,549.56	-	-
Transportation Program - Level 2 Workplace	20	61.82	1,236.31	-	-
Transportation Program - Multi-Family	10	1.17	11.74	-	-
Transportation Program - Level 3 Charger	10	187.65	1,876.53	-	-
Land Care Program - Residential Trimmer	150	1.26	189.21	0.71	0.11
Land Care Program - Residential Chainsaw	75	1.26	94.61	1.02	0.08
Land Care Program - Residential Leaf Blower	70	1.26	88.30	0.78	0.05
Land Care Program - Residential Mower	300	1.14	341.96	8.95	2.69
Land Care Program - Residential Garden Tractor	25	4.90	122.54	72.9	1.82
Land Care Program - Commercial Garden Tractor	10	74.14	741.37	3150	31.50
Transportation Program - Level 2 Charging (kWh)	150,000	-	216.00	-	-
Transportation Program - DC Fast Charging (kWh)	275,000	-	459.00	-	-
Demand Response Program - PowerWall 2-Equivalent	1000	4.95	4,950.00	-	-
C&I Custom Projects*	25	2500	62,500.00		1,905.00
TOTAL PROJECTED 2023 TIER III PERFORMANCE			**464,003.44**		**27,179.54**

7. 2023 Estimated Program Cost Forecast

The cost of GMP's 2023 Tier III program reflects a continued commitment to helping customers adopt technologies to reduce their carbon footprints. The 2023 Plan anticipates continued cold climate heat pump adoption of levels at least as high as the previous year with an eye toward slower growth of whole building heat pump technologies. Through a collaboration with EVT, the rebate is included in the purchase price seen by a customer, showing lower costs up front, making it easier for people to get heat pumps. Income qualified customers will continue to benefit from our downstream low- and moderate-income rebate to help ensure opportunities exist in the low-income sector.

Based on 2022 experience, incentives have had a major role in encouraging the adoption of EVs and PHEVs. GMP helped incent over 900 vehicles, far exceeding our 2021 forecast of 586 units. GMP's incentives and the continuation of state and federal incentives all help to lower the purchase price for customers making the switch to EVs. GMP's discounted rate program and free charger program help drivers make the switch.

In other energy transformation applications, low fossil-fuel prices continue to create a competitive challenge, as with some types of heating projects, particularly in natural gas territory.

For 2023, GMP estimates a total cost of $21.56 per MWH inclusive of incentives, labor, and non-labor administrative costs. This is below the 2023 ACP of $71.83. Individual projects or measures may be delivered at a cost higher or lower than $21.56 per MWH. Territory

8. Value Lifecycle Cost

For purposes of GMP's present value lifecycle cost analysis, gross program costs are netted against marginal revenue from the increased retail consumption of electricity resulting from energy transformation measures and projects, which benefits all customers. The analysis of net program cost for Tier III is calculated in the following way:

- Measures are evaluated individually based on their specific measure lives, Tier III MWH values, and annual added electrical consumption. These figures are derived from the 2023 Act 56 Tier III Planning Tool developed by the Tier III TAG.
- Measures are grouped and totaled by program with volume forecasts—Heat Pumps and Water Heaters; Transportation; Demand Response Program; and other measures.
- For Custom C&I projects, equivalent information is developed using averages from past years' results. In 2022, GMP Tier III projects will add approximately .031 MWh annual consumption per lifetime Tier III MWHe. C&I projects average an approximate measure life of 18 years. These assumptions can vary greatly from year to year, depending on the specifics of Tier III projects in the portfolio.
- Total Gross Program Costs – The gross cost for all programs includes all costs for incentives, labor, and non-labor administrative costs.
- Value Life Cycle Cost (Net Cost) – This present value calculation utilizes GMP's Weighted Average Cost of Capital (WACC) as the discount rate used to bring future cash flows into the present. The WACC used for 2023 analysis is 5.74%. The analysis provides the present value costs (revenue) associated with the increased electrical consumption resulting from Tier III measures and projects in relation to the Total Gross Cost of the program. The projects included in this Plan will reduce carbon emissions by an estimated 304,376 metric tons over the life of the projects. At $100 per ton, this is an overall societal benefit of $30 million in nominal dollars.

Value Life-Cycle Cost Summary Table

Measure	Per Measure Incentive	Per Measure Admin Cost	Total Cost Per Measure	# Measures	Total Gross Cost	Present Value Net Revenue	Utility Present Value Life Cycle Cost (Total Net Costs)	Savings per unit (MWHe)	Total Savings (MWHe)	Gross $/MWhe	Value Life Cycle Cost Net$/MWHe
Building Program - CCHP	$ 506.21	$ 44.92	$ 551.13	7000	$ 3,857,882.45	$ (15,698,358.01)	$ (11,840,475.55)	28.90	202,300.00	$ 19.07	$ (58.53)
Building Program - HPWH	$ 373.96	$ 33.18	$ 407.15	250	$ 101,786.69	$ (188,165.40)	$ (86,378.70)	21.35	5,337.50	$ 19.07	$ (16.18)
Building Program - WBHP	$ 2,947.34	$ 261.52	$ 3,208.86	800	$ 2,567,090.54	$ (6,634,148.69)	$ (4,067,058.15)	168.27	134,613.33	$ 19.07	$ (30.21)
Building Program - Induction Cooktops	$ 200.00	$ 5.63	$ 205.63	50	$ 10,281.55	$ (12,753.31)	$ (2,471.76)	3.62	181.15	$ 56.76	$ (13.64)
Transportation Program - AEV*	$ 1,500.00	$ 61.65	$ 1,561.65	565	$ 882,331.27	$ (977,633.18)	$ (95,301.91)	39.67	22,411.02	$ 39.37	$ (4.25)
Transportation Program - AEV + Income-Based Adder	$ 2,500.00	$ 61.65	$ 2,561.65	135	$ 345,822.52	$ (233,593.77)	$ 112,228.75	39.67	5,354.85	$ 64.58	$ 20.96
Transportation Program - PHEV*	$ 1,000.00	$ 45.98	$ 1,045.98	400	$ 418,393.56	$ (426,096.04)	$ (7,702.48)	29.59	11,834.72	$ 35.35	$ (0.65)
Transportation Program - Used AEV*	$ 750.00	$ 30.82	$ 780.82	101	$ 78,863.24	$ (97,095.11)	$ (18,231.87)	19.83	2,003.11	$ 39.37	$ (9.10)
Transportation Program - Used AEV + Income-Based	$ 1,750.00	$ 30.82	$ 1,780.82	24	$ 42,739.78	$ (23,072.10)	$ 19,667.68	19.83	475.99	$ 89.79	$ 41.32
Transportation Program - Used PHEV*	$ 750.00	$ 22.99	$ 772.99	60	$ 46,379.52	$ (35,509.72)	$ 10,869.80	14.79	887.60	$ 52.25	$ 12.25
Transportation Program - eMotorcycle	$ 500.00	$ 14.00	$ 514.00	5	$ 2,569.98	$ (404.17)	$ 2,165.81	9.00	45.02	$ 57.08	$ 48.10
Transportation Program - eBike	$ 200.00	$ 8.73	$ 208.73	700	$ 146,110.23	$ (13,175.82)	$ 132,934.41	5.62	3,931.43	37.16469	$ 33.81
Transportation Program - Forklift	$ 3,000.00	$ 194.73	$ 3,194.73	2	$ 6,389.46	$ (17,424.09)	$ (11,034.63)	125.29	250.59	$ 25.50	$ (44.04)
Transportation Program - Res. EV Charger*	$ 700.00	$ -	$ 700.00	700	$ 490,000.00	$ -	$ -	0.00	-	$ -	$ -
Transportation Program - Level 2 Public	$ 750.00	$ 60.21	$ 810.21	40	$ 32,408.33	$ -	$ -	38.74	1,549.56	$ 20.91	$ -
Transportation Program - Level 2 Workplace	$ 750.00	$ 96.07	$ 846.07	20	$ 16,921.48	$ -	$ -	61.82	1,236.31	$ 13.69	$ -
Transportation Program - Multi-Family	$ 750.00	$ 1.82	$ 751.82	10	$ 7,518.25	$ -	$ -	1.17	11.74	$ 640.36	$ -
Transportation Program - Level 3 Charger	$ 1,500.00	$ 291.65	$ 1,791.65	10	$ 17,916.52	$ -	$ -	187.65	1,876.53	$ 9.55	$ -
Land Care Program - Residential Trimmer	$ 25.00	$ 1.96	$ 26.96	150	$ 4,044.07	$ (66.35)	$ 3,977.72	1.26	189.21	$ 21.37	$ 21.02
Land Care Program - Residential Chainsaw	$ 25.00	$ 1.96	$ 26.96	75	$ 2,022.04	$ (47.92)	$ 1,974.12	1.26	94.61	$ 21.37	$ 20.87
Land Care Program - Residential Leaf Blower	$ 25.00	$ 1.96	$ 26.96	70	$ 1,887.23	$ (34.40)	$ 1,852.83	1.26	88.30	$ 21.37	$ 20.98
Land Care Program - Residential Mower	$ 50.00	$ 1.77	$ 51.77	300	$ 15,531.47	$ (2,000.76)	$ 13,530.72	1.14	341.96	$ 45.42	$ 39.57
Land Care Program - Residential Garden Tractor	$ 100.00	$ 7.62	$ 107.62	25	$ 2,690.44	$ (1,358.06)	$ 1,332.39	4.9014	122.54	$ 21.96	$ 10.87
Land Care Program - Commercial Garden Tractor	$ 2,500.00	$ 115.22	$ 2,615.22	10	$ 26,152.23	$ (15,616.92)	$ 10,535.32	74.1366	741.37	$ 35.28	$ 14.21
Transportation Program - Level 2 Charging (kWh)	$ -	$ 0.00	$ 0.00	150000	$ 335.71	$ -	$ -	N/A	216.00	$ 1.55	$ -
Transportation Program - DC Fast Charging (kWh)	$ -	$ 0.00	$ 0.00	275000	$ 713.38	$ -	$ -	N/A	459.00	$ 1.55	$ -
Demand Response Program - PowerWall 2-Equivalent	$ -	$ 7.69	$ 7.69	1000	$ 7,693.30	$ -	$ -	4.95	4,950.00	$ 1.55	$ -
C&I Custom Projects*	$ 30,978.00	$ 3,885.51	$ 34,863.51	25	$ 871,587.67	$ (2,103,537.49)	$ -	2500.00	62,500.00	$ 13.95	$ -
Totals					**$ 10,004,062.92**	**$ (26,480,091.30)**	**$ (15,817,585.52)**		**464,003.44**	**$ 21.56**	**$ (34.09)**

PUC Rule 4.413(c)(3) states, "a Provider shall endeavor to provide equitable opportunities to its Customer sectors in rough proportion to each Customer sector's annual retail sales." GMP supports transformation projects for all our customers. Over the last several years, the balance of benefits has varied amongst the rate classes, and it is important to point out that these programs help all customers, including non-participating. The 2023 forecast proposes that approximately 90% of the gross cost will be spent in the Residential sector and will contribute 85% of the Tier III savings.

Rate Class	Total Savings (MWhe)	Total Incentive	Total Gross Cost	Savings %
Residential	395,162	$8,409,958	$9,024,120	85%
C&I	68,841	$872,950	$979,943	15%
Totals	**464,003**	**$9,282,908**	**$10,004,063**	

* Some prescriptive measures (heat pumps) are provided to customers on our general service rate (commercial) but are depicted here in the residential sector. Workplace and Public Chargers are reflected in the C&I sector as well as commercial lawn tractors and forklifts, which are prescriptive measures.

Equity

The RES 4.413(b) states, "[a] Retail Electricity Provider that chooses to meet any portion of its Tier III obligations through Energy Transformation Projects in a given year shall make Energy Transformation Project opportunities available to all ratepayers, regardless of rate class or income level." It defines low-income customers as those at or below 80% of Vermont's statewide median income. The Department has provided the statewide percentage of low-income households as 31% and proposes that each DU apply this benchmark to its total forecasted residential costs to establish a target for low-income spending.

Low-income Equity Benchmark	
$	2,748,187.17

GMP does not collect income information from customers and relies on customers to self-identify as income-qualified on rebate forms when they apply. In 2023, GMP will continue to support and expand effective income-qualified incentives for cold climate heat pumps and electric vehicles. As of this writing, GMP is projecting that we will provide over $240,000 to low-income customers for the installation of heat pumps in 2023. This includes the base incentive of $400 per condenser available to all customers and the $600 income-based adder available to customers who self-identify as low-income, defined by household income of 80% or less AMI. Additionally, GMP forecasts providing over $225,000 in Tier III eligible incentives to low-income customers who purchase an EV in 2023. GMP also forecasts providing over $150,000 in income-based incentive adders for the purchase of new and used AEVs. GMP also forecasts providing over $150,000 in income-based incentive adders for the purchase of new and used AEVs. This incentive will continue to serve as an effective mechanism to help make switching from an ICE vehicle to an EV accessible to all customers regardless of income. GMP will monitor uptake and enrollment across all programs and customer eligibility as the Tier III Plan progresses and will pursue modifications if needed to ensure our overall Tier III program remains below the total ACP.

For 2023, GMP will adjust the method of customer self-identification for the income-based EV incentive adder. To this point, GMP has grouped low- and moderate-income incentives together within our projections for EV prescriptive measures. In order to more fully understand the Tier III participation of low-income customers, GMP will begin requiring customers who apply for the EV adder to self-identify as either low-income or moderate-income. GMP has not committed to adjusting the dollar value of the adder for either subset of customers, however tracking low- and moderate-income customers separately will provide the means for more accurate reporting on low-income customers who participate in Tier III.

GMP is also pursuing opportunities in custom projects to assist people living in multi-family residences where the end customer may be income-qualified. In these custom projects, Tier III MWHe credit will be accounted for under the Commercial and Industrial rate class; however, because residential end users will benefit from these instances of carbon reduction by way of efficient heating and cooling, GMP will consider the incentive and administrative costs of these specific projects when calculating its overall low-income reporting.

GMP is also pursuing a Resiliency Zone at the Brattleboro Tri-Park mobile home community that will incorporate community storage and microgrid capability along with funding for weatherization and other energy upgrades. In addition, GMP looks forward to working with EVT on a low-income fuel switching program which will provide heat pumps to income-qualified customers in the GMP territory. GMP anticipates this spending will contribute toward the targeted Low-Income Equity Benchmark identified above.

Although GMP offers numerous incentives and adders, GMP does not anticipate that we will achieve the low-income benchmark proposed for these programs in 2023. This can largely be contributed to a very high inflation rate coupled with a volatile labor market, causing an increased upfront cost, and adoption barrier for LMI customers to participate in these programs.

Low-Income Impacts Table

Low-income Definition	# LI Participants	% LI Participants	MWhe Total	% LI Mwhe	LI Incentive total	% Incentive
Low Income CCHP & WBHP	246	2.01%	7,106.88	1.80%	$ 246,000.00	2.93%
Low/Moderate Income EVs	159	1.30%	5,830.83	1.48%	$ 379,500.00	4.51%
C&I Custom Projects with Low Income Residential Impacts	N/A	N/A	N/A	N/A	$ 72,957.50	0.87%
TOTALS	**405**	**3.31%**	**12,937.71**	**3.27%**	**$ 698,457.50**	**8.31%**

**Percentages are in relation to projected participants, MHWe and incentives in the Residential Rate Class*

9. Portfolio Load Growth Relative to IRP

GMP's 2021 IRP was approved earlier this year and covers a three-year period. That filing includes load forecasts based on projected and desired growth in cold climate heat pumps, electric vehicles, and custom projects done by C&I customers. The chart below illustrates the differences in volumes forecast for 2023 compared to the sensitivity ranges used in the development of the IRP for purposes of load forecasting.

Measure	IRP Forecast Quantity 2023 Low	IRP Forecast Quantity 2023 Medium	IRP Forecast Quantity 2023 High	GMP 2023 Plan Forecast Quantity
CCHP	4,115	4,884	6,442	7,000
EVs	1,235	2,012	3,673	1,285
C&I (Tier III MWH)	50,000	70,000	100,000	62,500

CCHPs – The market for CCHPs remains a large contributor to Tier III. Our 2023 forecast considers the IRP high and medium end sensitivity analysis reflecting a modest increase from 2022.

EVs – While the year-to-date activity in GMP's EV rebate program has been dramatic, the 2023 forecast quantity is on the conservative side to allow for possible continuance of supply chain issues felt by most dealerships in 2022.

C&I Custom Projects – The 2023 forecast takes into consideration the previous three years of volume and reflects a 25% increase in MWHe target compared with our 2022 forecast.

10. Carbon Impacts

As the goal of the RES Tier III program is to reduce carbon emissions in Vermont, we track this metric annually. While our annual targets are established in MWHe, it is these carbon goals that we focus on when we engage with customers and the public about the benefits of energy transformation. The estimated lifetime emission reduction that will result from 2023 projects included in this Plan is over 670 million pounds of CO2.

Program-Level Lifetime CO2 Offset

Program Level Carbon Summary	Metric Tons CO2	LBS CO2
Building Program	230,066	507,209,127
Transportation & ICE Program	33,416	73,668,787
Demand Response Program	4,309	9,499,708
Custom Projects	40,596	89,499,821
Totals	**308,388**	**679,877,442**

GMP 2023 Tier III Plan Attachments

- 2023 Act 56 Tier III Planning tool – provided by EVT, adjusted for 100% Carbon Free
- Excel file containing DPS Summary Tables with DPS-prescribed format and definitions
- Excel file containing tables displayed throughout this narrative