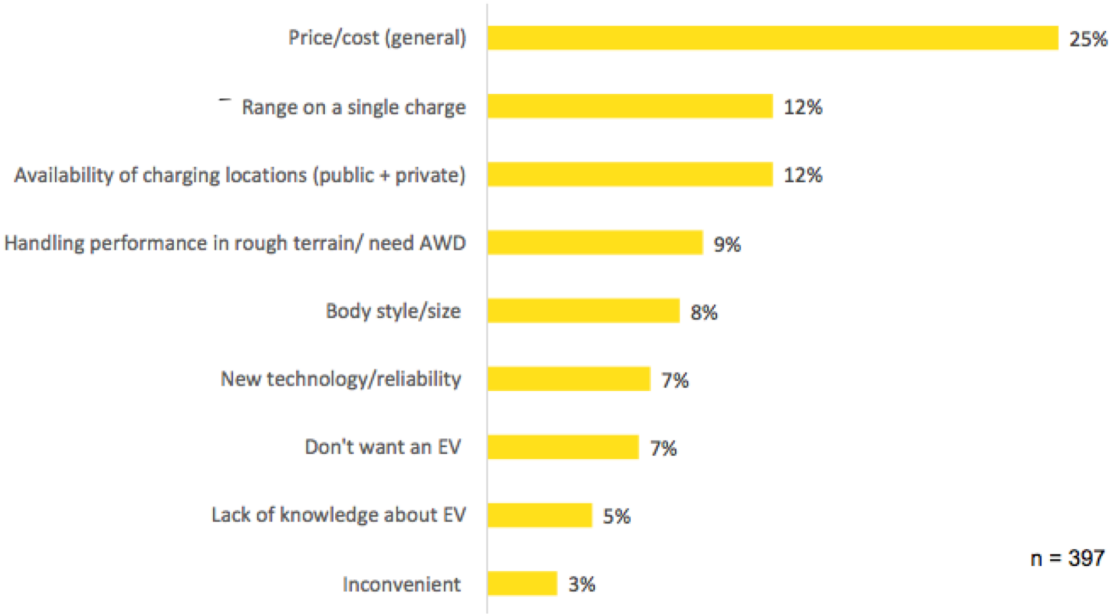
Cutting Carbon: Promoting Electric Vehicle Programs & Outlook

Barriers to EV Adoption

2016 Drive Electric Vermont survey question: “What prevents you from buying an electric vehicle?”



Price mentioned as a barrier more than twice as often as any other barrier

41% of respondents likely to purchase/lease an EV if $2.5k incentive was available (up from a baseline of 19%)

Source: VEIC 2016

2017 Nissan Leaf Incentive

Green Mountain Power Teams Up with Freedom Nissan to Give Customers $10,000 Off Leaf Purchases

- Incentive funded entirely by Nissan USA
- Freedom Nissan in South Burlington was #2 Leaf dealership in the country for 3 months*
- Went from selling 2-3 Leafs per month to ~200 over 4 months (of which 155 were GMP customers)

*Anecdotal information provided by Nissan

Current GMP EV Purchase Incentives

Great Savings on a 201… $5,000 discount or 0% financing

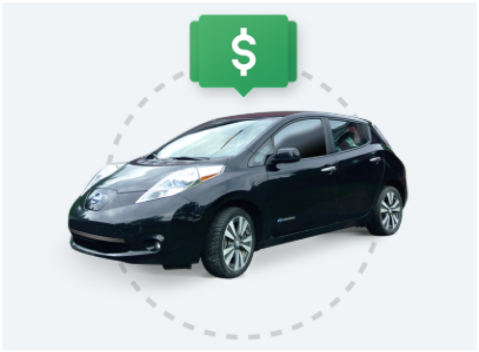
$5,000 discount or 0% financing on 2019 Nissan Leaf at Freedom Nissan or Nissan of Keene

Funding source: Nissan

2018 Chevy Electric Vehicles GM Discount

GM employee discount for Volt and Bolt at Alderman's Chevrolet

Funding source: GM



Low Income EV Rebate $600 Rebate

$600 rebate on purchase of new EV for qualifying low-income customers

Funding source: Contributions

In-Home Level 2 EV Charger FREE

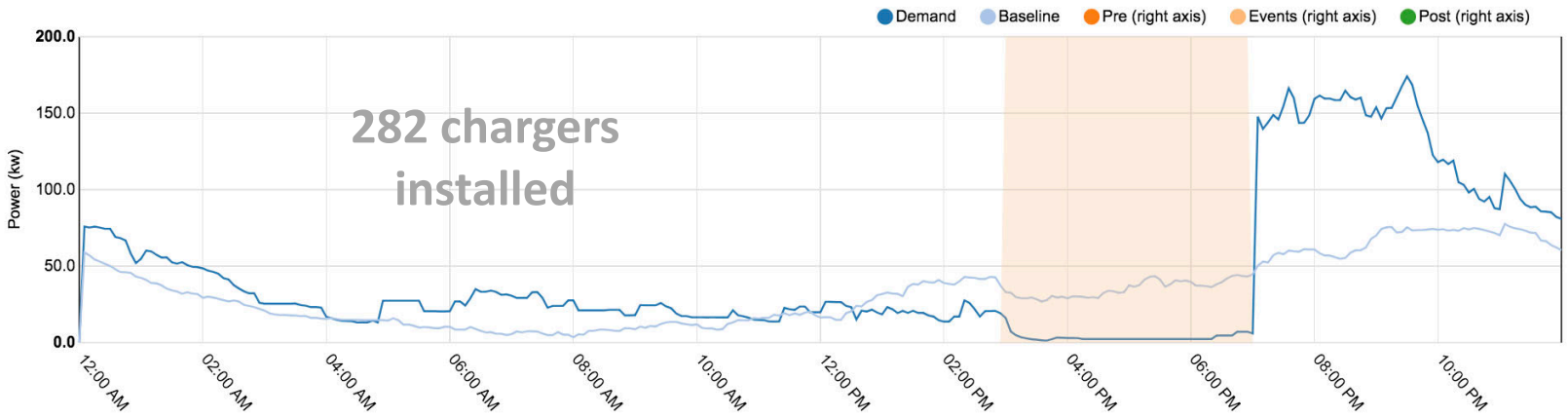
Free Level 2 smart home charger with the purchase of an EV

Funding source: Tier III

eCharger Pilot

Customer shares access of Level 2 home charger with GMP to manage load during peaks to benefit all customers

- 5-10 peak events per month (2-6 hours long)
- Customers notified 8-24 hours in advance
- **Working well with less than 5% opt-out rate**



August 2018 peak
29kW curtailed = $3391 saved

EV Unlimited Plan

Details

- $29.99 for unlimited off-peak charging*
- $0.60 per kWh during peaks
- 151 participants
- GMP created streamlined enrollment for connecting customer chargers into the GMP device management system

Lessons learned

- Participants consumed *more* than TAG assumption**
- Low opt-out rate indicates that customers want to participate in a program that provides GMP shared access to their devices

Outcome

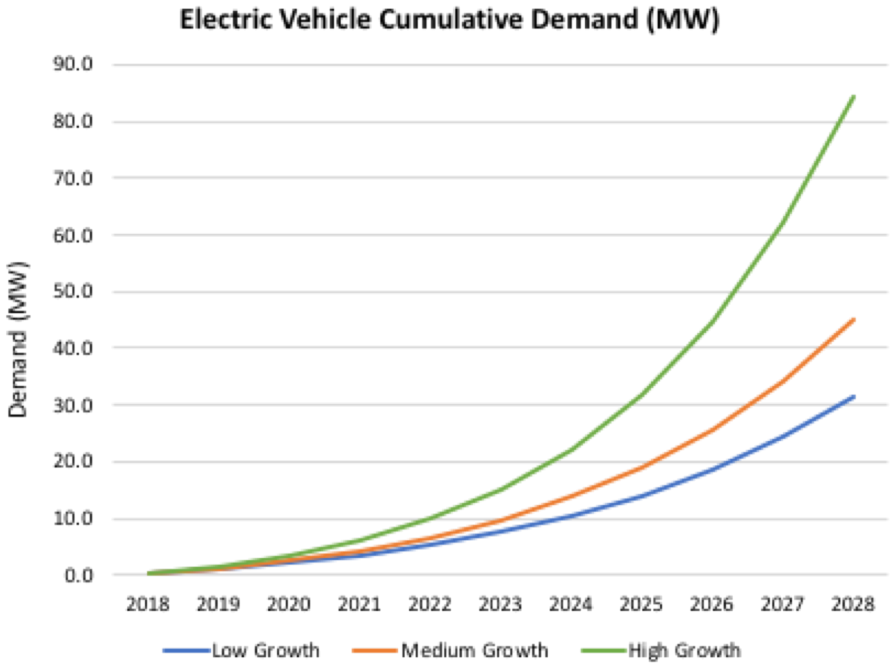
GMP will not convert this pilot into a tariff. We are exploring programs that allow for the EV charger to be managed during critical periods with a cost-based incentive mechanism that rewards customers for participation and benefits all customers through cutting carbon and costs.

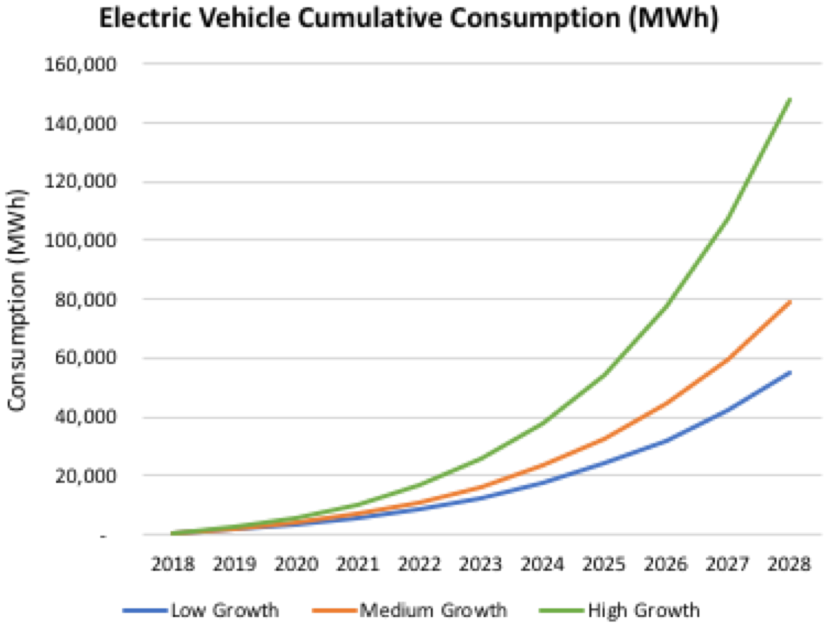
*price based on Technical Advisory Group's average annual EV miles

** In 2018, TAG increased assumed EV consumption

Added EV Charging Load

Conducted sensitivity analysis in 2018 Integrated Resource Plan (IRP)





Scenarios based on VEIC estimates for EV percentage of VT fleet by 2050

Low: 40%

Medium: 60%

High: 90%

In medium growth scenario, EVs represent a ~5% increase in peak demand* and ~2% increase in overall consumption

* Peak coincidence assumes **no management** in place

Workplace & Public Charging Programs

- Partnership with Tesla to install workplace chargers. Tesla pays for all hardware and subsidizes installation
- $5000 Nissan Leaf discount for business customers' fleets (provided by Nissan)

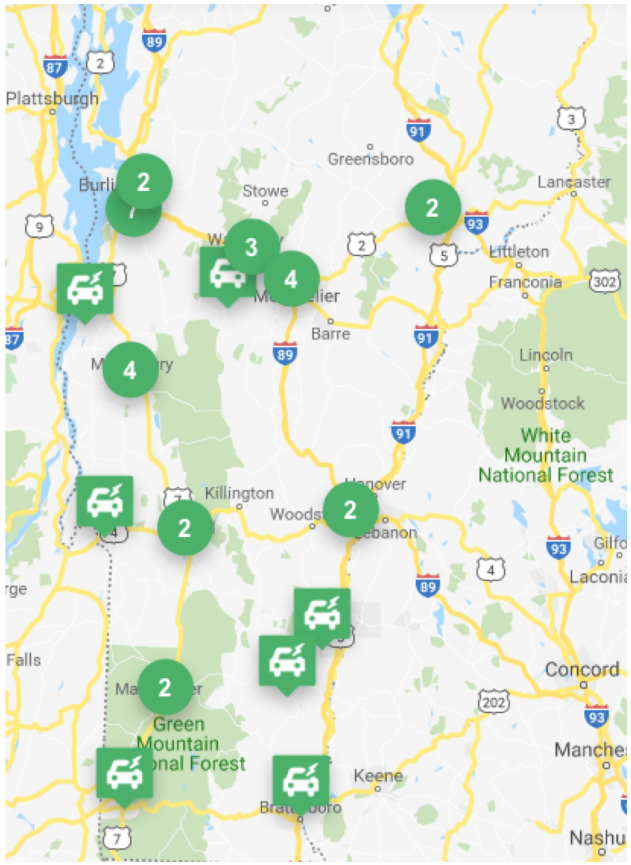
- Help business customers set up an EV purchase incentive for their employees and match up to $600 (Tier III)
- $375/port incentive for public charging stations (Tier III)

Demand Charges

- GMP provides General Service to customers up to 200 kW and up to 7600 kWh/month via a rate design that does not include demand charges.
- For larger accounts that are served via demand-billed rate schedule, the public charging stations that are behind the commercial customer's billing meter have the opportunity to diversify the maximum monthly demand if that EV equipment is used infrequently.
- For Level 3 charging that is directly served through a separate utility meter, a demand charge can become a large percentage of a relatively small utility bill if the utilization is low. For these cases, rate structures that mitigate the effect of demand charges for low utilization charging stations during an initial period of time have been discussed by workshop participants.

Public Charging Deployment

- Deployed over 100 Level 2 and DC fast charging ports across the state
- In 2018, DC charging more than doubled & L2 charging increased by 30%
- Still room for more use of the charging network



Charger Precision and Billing Processes

- ChargePoint conducted a comparison study for another US utility. The Level 2 charger metrology showed a 0.76% difference in accuracy compared to the utility meter, which was deemed sufficient for a GMP pilot.

In EV Unlimited Pilot, subtract charger kWh from total home consumption, charge $0.60/kWh for any on-peak consumption

- DC Fast Chargers may be off by as much as 30%, as measured by other Vermont utilities