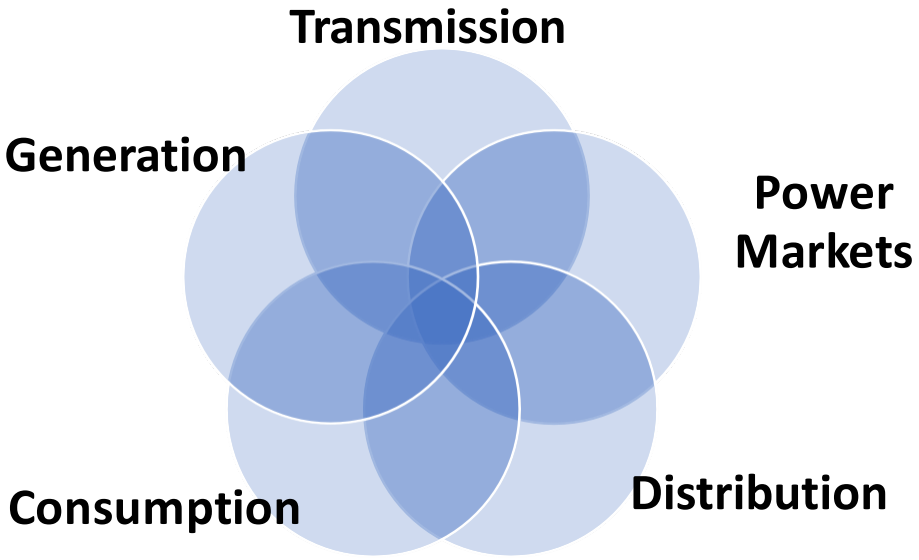
Electric Infrastructure Investment Proposals

VT Senate Transportation Committee Jan 27, 2022

Rebecca Towne
Chief Executive Officer

VERMONT ELECTRIC CO OP

Our energy world is changing quickly



- Climate Change
- Increased Renewables
- Distributed & centralized
- Vehicle & heating electrification
- Flexible, managed loads
- Storage growing fast

Shared Energy Goals

- Vermont utilities shared approach
- Aligned with Climate Commission and Comprehensive Energy Plan
- Must meet goals at *least cost* to consumer
- Reach all corners of the state
- Thoughtful targeted investments

Smart Investments Accelerate Energy Transformation

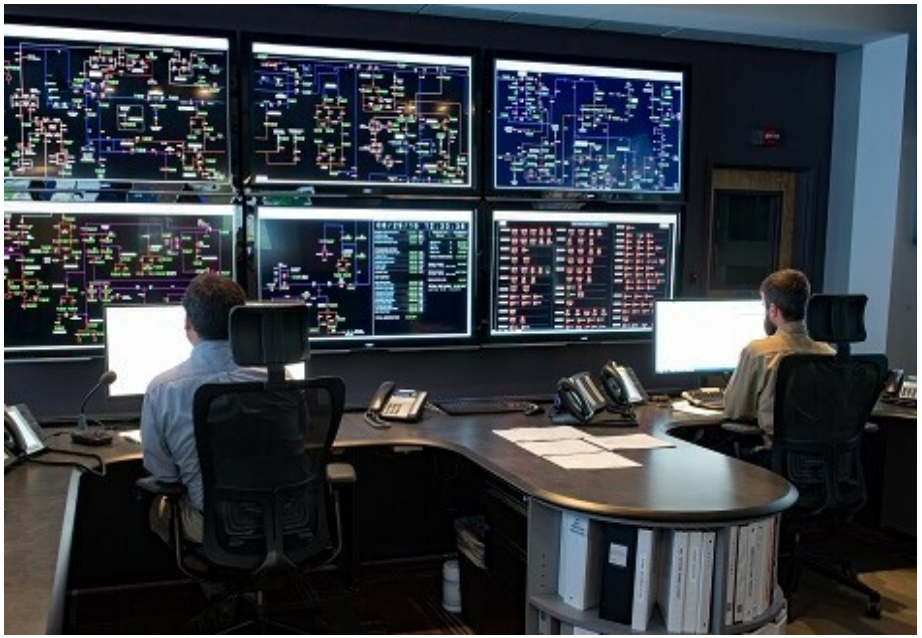
- Balance investments with impact on rates
- Emerging technology, Vermont leads as energy innovator
- Impacts of climate change create new challenges
- Transition brings everyone along

Reliability & Resilience

Highly available, restored fast

1. **Strategic Relocation & Upgrade of Distribution Infrastructure**
   - Reduce outages
   - Increase capacity
2. **Vegetation Management**
   - Emerald Ash Borer emergence requires one-time investment
3. Apprenticeship & Training
   - Resources to do the work

1. **Advanced Metering Infrastructure**
   - Enabling technology for all VTers
2. **Flexible Load & Distributed Energy Mgmt Systems**
   - Technology necessary for complex system management
3. **Distribution Automation**
   - Automated circuit restoration
   - Substation communication and infrastructure for real-time DER info
4. **Energy Storage**
   - Manage growing peak
   - Resiliency zones
   - Improve integration of renewables

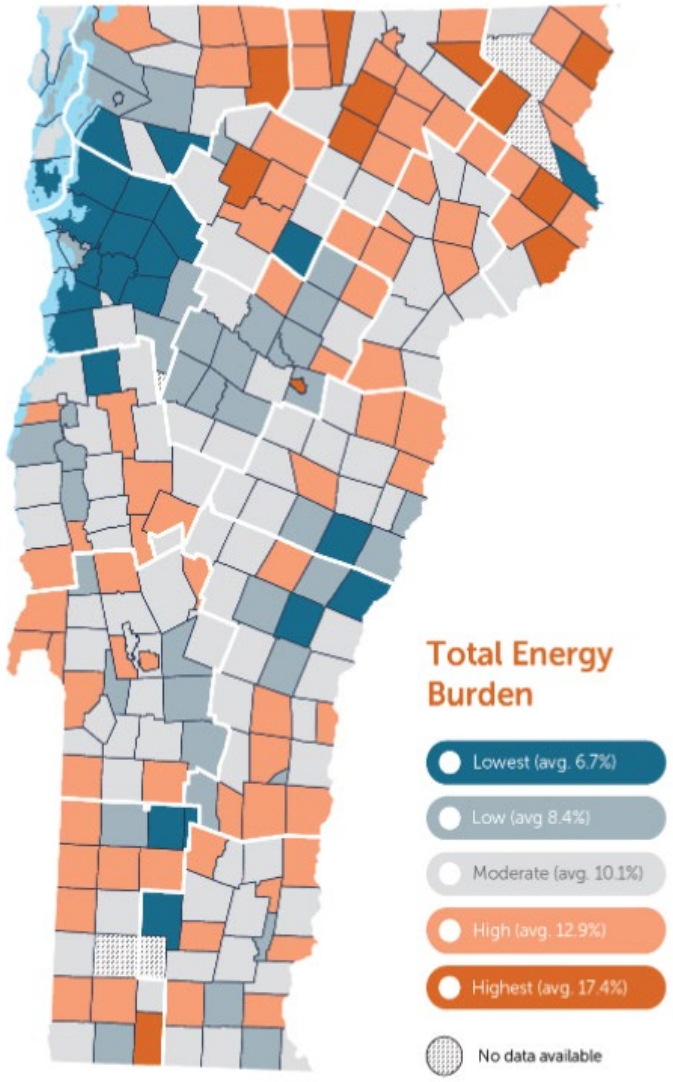


Grid Modernization

Technology complements & maximizes the infrastructure

Energy Transformation Equity

2019
Energy Burden Report



Efficiency Vermont

Assist Energy-Burdened with transitions

Electrification Make-Ready for Home and Business

- Service upgrades
- Panel upgrades
- Upsizing transformers

Distributed Generation Integration

Support distributed generation & electrification

Distribution-Generation Unlocking Transmission

- Upgrade substation & transmission capacity across VT grid

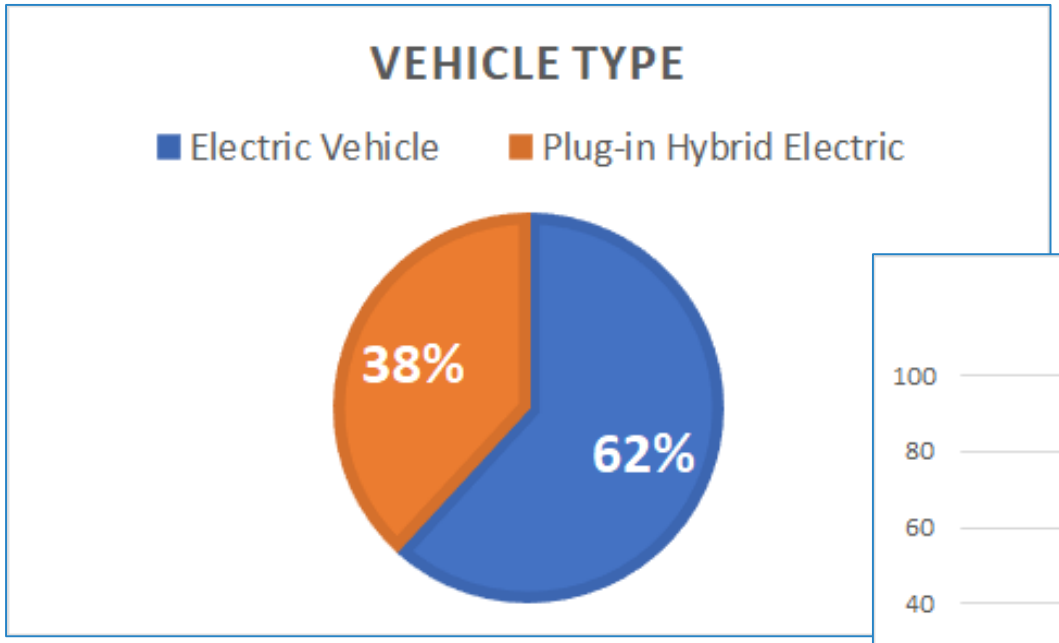
- Vehicle charging is advantageous because it is **flexible** load.
- This load can help reduce costs for **all** VEC members, regardless of whether they are EV drivers.

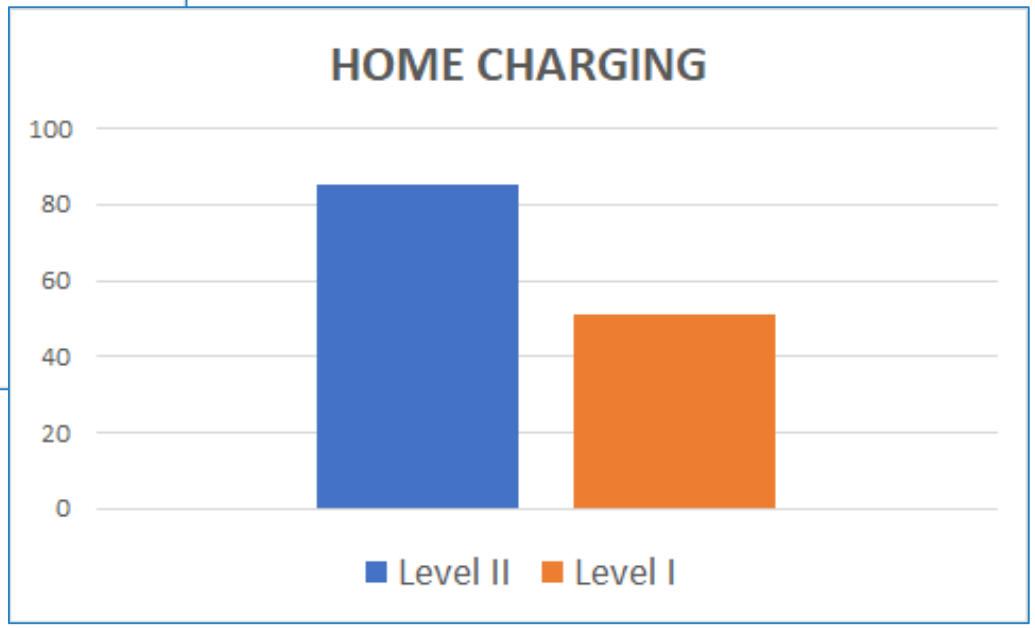
Electric Vehicles = Flexible Load

Flexible load is most easily accommodated, with technology

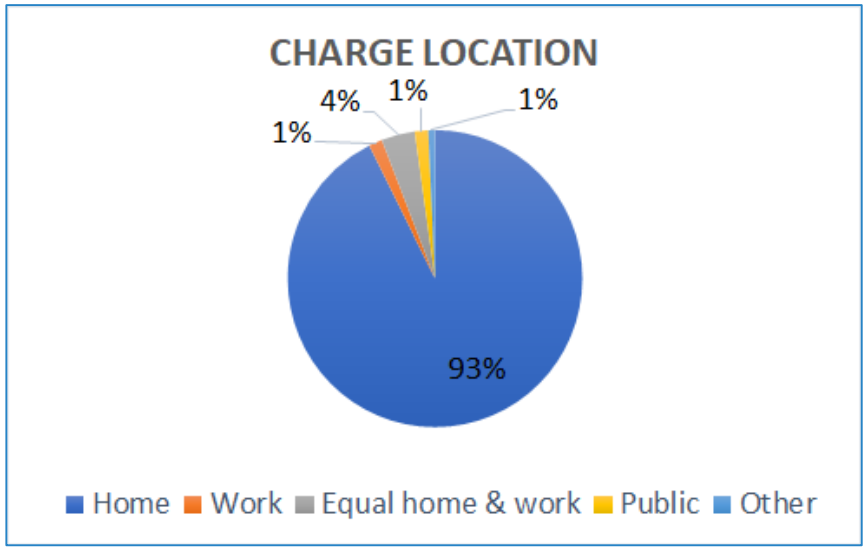
2022 VEC Member Plug-in Driver Survey

249 VEC members utilized the VEC Electric Vehicle (EV) Energy Transformation Incentives (who drive electric) were invited to complete an EV charging survey. 55% completed the survey.





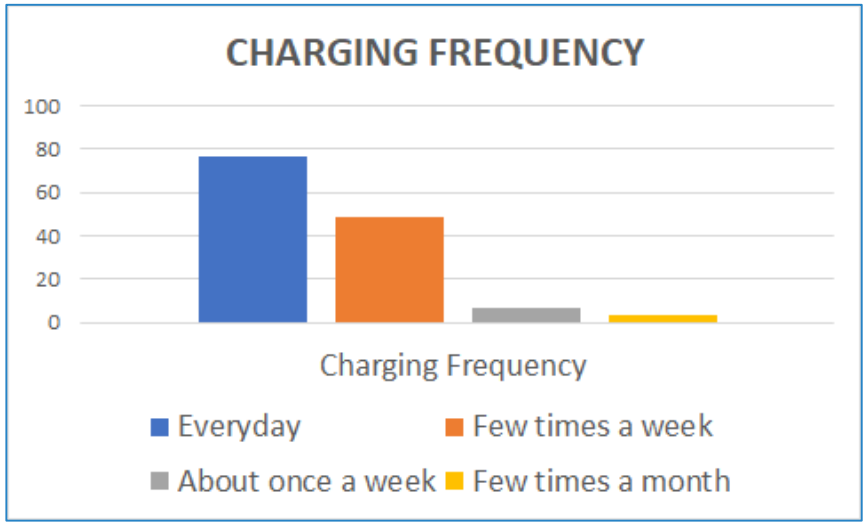
2022 VEC Member Plug-in Driver Survey

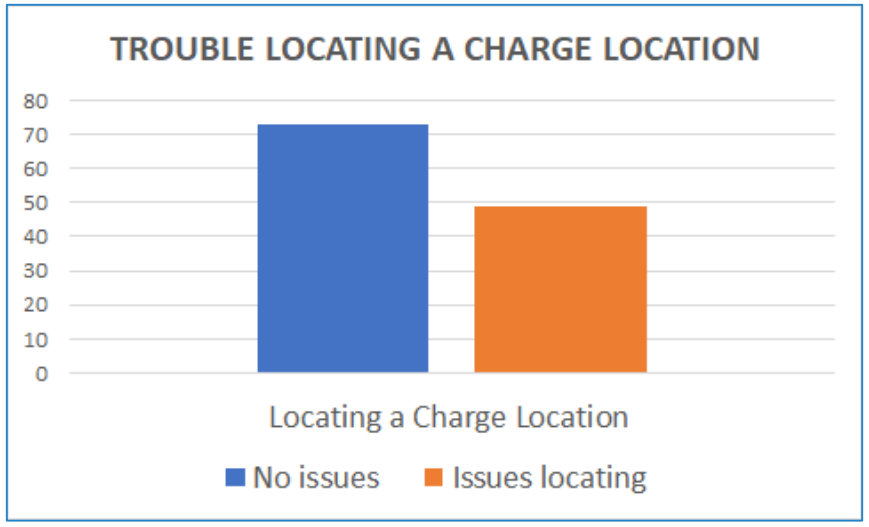


Charging at home 93%

Charging frequency everyday 77%

No issues locating a charge 60%





VEC Ongoing Electric Vehicle Support

PURCHASE INCENTIVES

- EV or PHEV purchase
  - Additional to state incentive
  - Higher $$ for low-income (~15% of incentives)
- Home Level 2 (240v) charger
- Publicly available charging stations

LOAD MANAGEMENT

- Whole home time-of-use rates
- Incentive for managing vehicle charger during peak load

Future of EV Load Management

1. Pilot **Level 1 charger management** program
   - Manage trickle-charging for those without Level 2 or connected chargers
2. Support development of **Public Charging Stations** & **workplace charging**
3. Explore **Vehicle-to-Grid technology** – using vehicles for home resilience or peak management

Rebecca Towne
Chief Executive Officer
rtowne@vermontelectric.coop
802-324-0132

Andrea Cohen, Manager
Government Affairs and Member Relations
acohen@vermontelectric.coop
802-696-9036
www.vermontelectric.coop