MVEC

MINNESOTA VALLEY ELECTRIC COOPERATIVE

A Touchstone Energy® Cooperative

# Innovation Award

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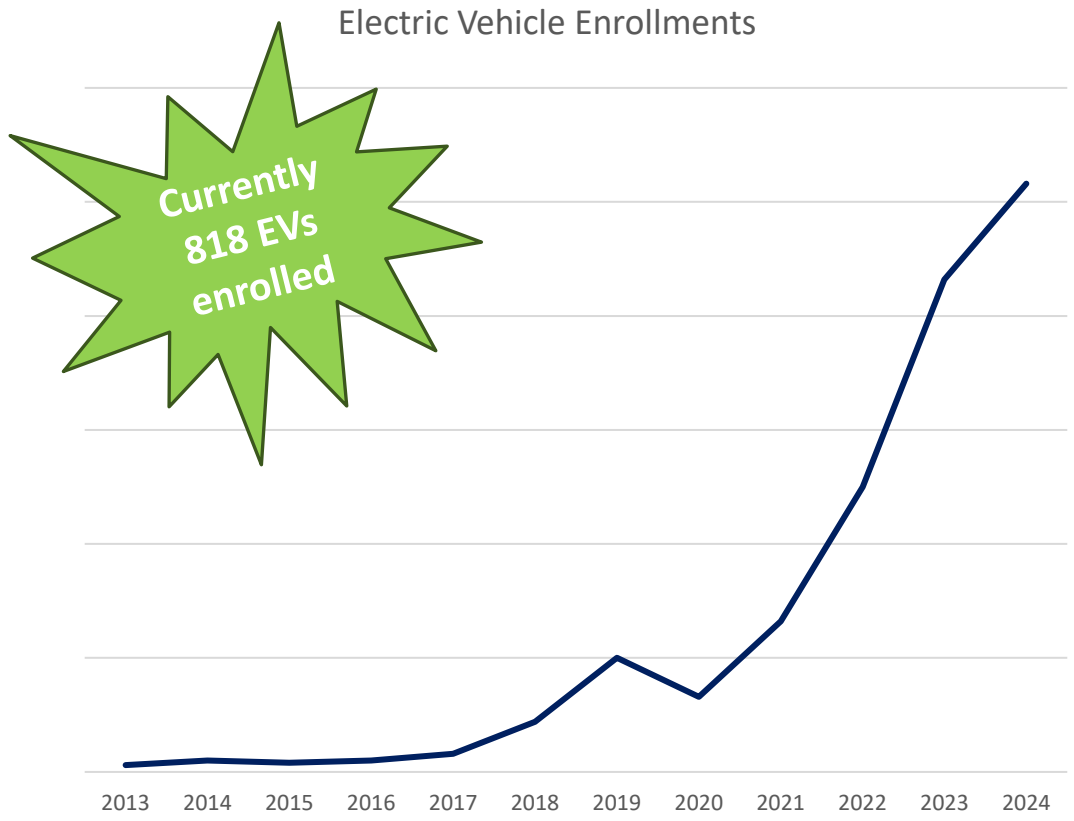
# MVEC EV Charging Program History

## Q4 of 2012 - MVEC's first electric vehicle

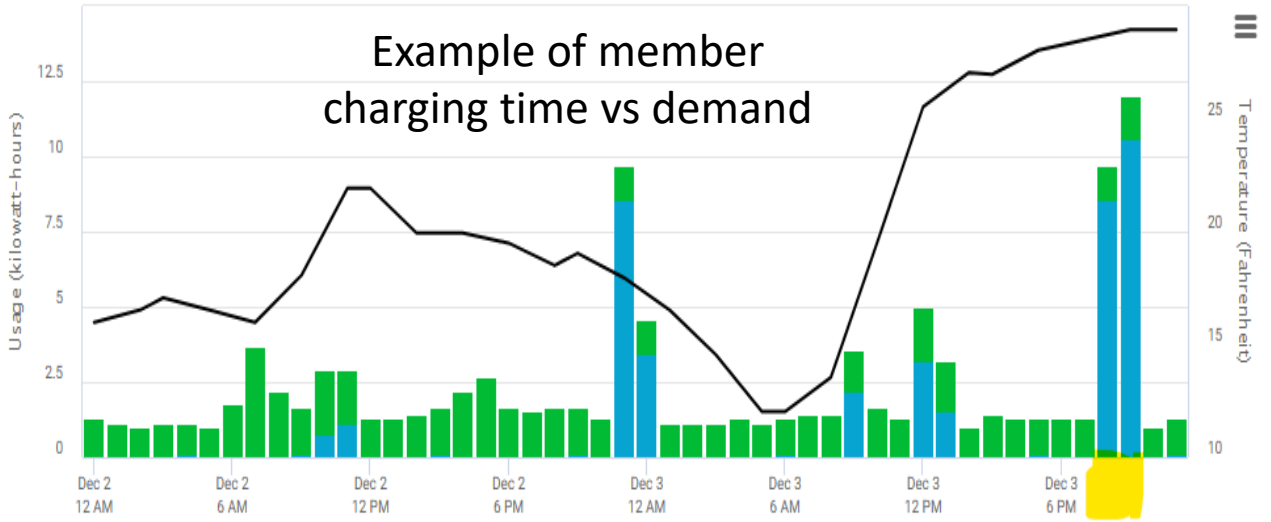
- **General service rate** – challenges and affordability
- **Migrate to existing Energy Wise programs**
  - Load Management Receiver/standard utility metering
  - Storage (water heat)
- **Challenges**
  - Reliability of receivers – extreme cold
  - Additional Energy Wise meter (location)
  - Without a program, the option was an additional, smaller charger
- **Fall 2018**
  - Developed EV24 rate
  - 3-rate program structure ( 8.6 cents/ 24.8 cents/5.8 cents)
  - EVs individually sub-metered separately from other loads
- **Annual Growth**
  - 2018 – double digits of EV Enrollments; triple digits in 2022
  - Currently have 818 EV's enrolled



# Purpose of Study

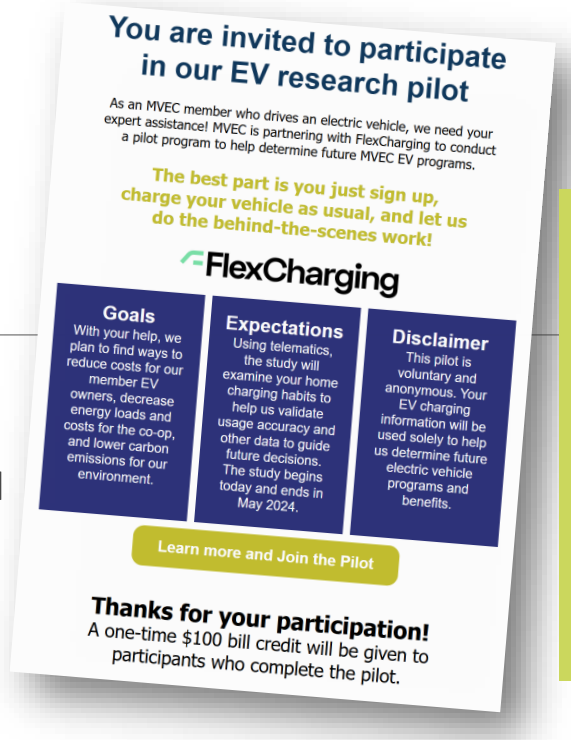
## Evolution of EV24 rate

- **Remove Challenges**
  - Member/Contractor
    - Parts Acquisition
    - Installation cost
    - Scheduling
  - **Utility (MVEC)**
    - Pays for the socket and meter cost (capital investments)
    - Coordination point for delivery
    - Installation cost (metering verification)
    - Powerline carrier metering system
      - No real-time metering
      - Meter data management (estimated missed reads)
  - **Increase Participation**
    - Remove hurdles for EV drivers
  - **Lack of Field Studies**
    - Largest study of utility submeter data against EV telematics in North America




# Study Overview

- **Launched study in October 2023**
  - **Objective:** To analyze EV telematics accuracy and feasibility of eliminating the EV submeter.
- **Partnership**
  - FlexCharging, Great River Energy (GRE), Michaels Energy,
    National Rural Electric Cooperative Association (NRECA), and Minnesota Valley Electric Cooperative
  - NRECA and Great River Energy - financial and advisory stakeholders
  - Michaels Energy – provided EM & V (Evaluation, Measurement and Verification) services
- **550 members** enrolled in EV24
  (at the time of the study)

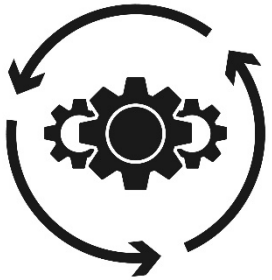



## Two email campaigns

1. $100 incentive to participate in the study – MVEC-branded VISA gift cards.
2. After original deadline, another $50 card was offered to those who continued the pilot for additional months.
   - 200+ participants volunteered
   - 25% signed up within 48 hours
   - Membership showed MVEC's current program was insufficient

## Process

1. Create account
2. Link their vehicle(s)
3. Verify home address



FlexCharging sign-up site took 3 minutes for enrollment

**14 OEMs represented**

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# Results

## FINDINGS:

- **Preliminary Data (November 2023)**
  - 98.6% accuracy
  - Losses to be expected from EVSE standby power drain
- **Second Analysis (November – March)**
  - Not the same findings
  - 85% accuracy with wider distribution of values
  - Decided to extend study
- **Third Analysis (April – June)**
  - Program and analytic interventions led to accuracy gains
  - 93% accurate

## KEY POINTS

- Telematics is well-suited for load management (DR)
- Clear ROI for utilities to shift peak load and save on costs
- Members excited about the possibility of a “frictionless” EV program in the future
- Electrification of transportation requires EOM and utility partnership.
- With effective program design and managed expectations, Telematics Submetering is a cost-saving and viable option
- If developed into the foundation of a program, this could benefit participants both financially and by streamlining processes for enrollment and participation

# CHALLENGES

## Concerns about discrepancies

- **Things you can manage and minimize:**
  - Disconnected vehicles
  - API changes
  - New makes/models/years are rolled out w/different telematics
- **Things you learn to live with:**
  - Estimated utility metering values
  - Managing car turnover within a household
  - Multiple vehicles in the same household
    - 10% multiple vehicles
    - 1% had 3+ EV's
- **Inherent limitations of telematics:**
  - API lost access
  - OEM limitations on polling


# Any questions?

MVEC www.mvec.net/electric-vehicle-program