Electric Vehicles and the Infrastructure they Require

We face a new paradigm that brings new opportunities – if we coordinate!

It took 100 years to build out our current road and parking network. Lots of questions remain about the transition to EVs:

1. EVs could mean a 30-50% increase in residential usage. How can electric utilities best coordinate charging infrastructure?
2. How will drivers figure out where unoccupied charging stations are located – in real time?
3. How will autonomous vehicles influence rollout? Will residents get to repurpose their garages?
4. How can Transportation Planners, Building Codes, Government, Utilities, Ecologists, the Private Sector, and Consumer Behavior get effectively coordinated around this transition?

Where an EV is Charged Impacts the Grid

Delivering electricity to vehicles creates new expectations and new opportunities for electric utilities. Depending on where and when the charging happens, EVs will either increase our current peak loads, or we can organize to “shave peak load”, decreasing moments of maximum electricity need.

GLOBAL CONTEXT

Transportation accounts for 75% of total U.S. petroleum use.

The electric vehicle industry saw exponential growth in ownership last year.

Ford plans an $11 billion investment and 40 EVs by 2022.

Toyota aims to get 1/2 of its global sales from EVs by 2025.

GM believes the future is all-electric and plans 30 new models by 2024.

In this 10-county region, roughly 75% of total greenhouse gases emissions come from the transportation sector.

EVs will cost less than internal combustion engines in U.S. by 2023

ECONOMIC DEVELOPMENT OPPORTUNITIES

- Customer and tourist attraction/retention
- Multi-modal town centers and reduced street parking
- Improved air quality
- Repurposing garages, street parking, and brownfields for new infill developments

ELECTRIC UTILITY OPPORTUNITIES

- Reduced electricity and transportation costs
- Optimized use of electric grid infrastructure
- Greater integration of wind and solar power generation
- Improved energy security

Pre-tax cost. Source: Bloomberg NEF EVO2018

Participating Organizations
BATA | Cherryland Electric Co-op
Consumers Energy | Crystal Mtn
DTE Energy | FUSE | LIAA | TCLP
Traverse City DDA | TAAR