MMWEC EV PROGRAM

DRIVING REVENUE OPPORTUNITIES

AND

REDUCING GREEN HOUSE GAS EMISSIONS

Mathew J. Ide
Executive Director, Energy and Financial Markets
Massachusetts Municipal Wholesale Electric Company
Overview

Opportunity
• Massachusetts Global Warming Solutions Act
• Majority of EV charging done at home
• Potentially hundreds of dollars in new annual revenue per driver
• Reinforces MLP’s Commitment to “Green” Initiatives

Risks
• Drivers tend to start charging in late afternoon/early evening hours
• Currently 6 months a year would have transmission peaks coincide with driver charging
• Solar PV is pushing summer peaks into the evening

Program Results
EV Adoption Opportunity

MANUFACTURER OUTREACH
Outreach to EV manufacturers began in 2016 led to a strategic partnership with Nissan for promotion of the Leaf EV

MOR-EV Rebate Program
Massachusetts Offers Rebates (MOR)

$2,500 Rebate on Battery electric Vehicles

$1,500 Rebate on Plug-in Hybrid Vehicles

US Department of Energy Federal Incentive Program

Up to $7,500 in Federal Tax Credits
Risk From 1 EV Charging on Coincident Peak

Level 2 Home Charging = 240V-7.7KW
  30 Mile Range/Hour Charging
  6X Faster Than Level 1

Risk of On Peak Charging to Yearly Capacity Costs
• 7.7kw* 1.32 * 12M/Y * $7.025-kw/month= $856.52

Risk of On Peak Charging to Monthly Transmission Costs
• 7.7kw * $8.66-kw/month= $66.68

October through March peak always occurs at 6 P.M. or later. As a result, at a bare minimum, charging that begins when EV drivers arrive home will likely affect at least six monthly transmission peaks and add $400.00 to yearly demand charges.

Annual Capacity & Transmission Costs up to $1,256
Smart Charging

Controlled charging will allow MLPs to benefit from increased sales without increasing peak load

Outreach to EVSE manufacturers began in 2016 and early 2017 led to a strategic partnership with ChargePoint for delivery of Wi-Fi level 2 home charging stations

Charging Benefits:
- Members are seeing initial capital cost recoveries between 3-10% in a single month
- Energy sales alone expected to cover costs of charger in <3yrs

![Energy Demand & ISO System Load by Hour](chart.png)
MMWEC EV Program Results

- Program offered under residential energy conservation programs
- 11 Massachusetts Municipal Light Plants (MLPs) Participating
- Over 83,000 vehicles enrolled in program