
MMWEC EV PROGRAM

MAXIMIZING OPPORTUNITIES & MITIGATING RISKS

Mathew J. Ide

**Executive Director, Energy and Financial Markets
Massachusetts Municipal Wholesale Electric Company**



Overview

A) Opportunity

- Majority of EV charging done at home
- Potentially hundreds of dollars in new annual revenue per driver
- *Reinforces MLP's Commitment to "Green" Initiatives*

B) Risk

- 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

C) Initial Program Results

- Dual goals of EV adoption and off peak charging

EV Adoption Opportunity

Outreach to EV manufacturers between 2016 and early 2017 led to a strategic partnership with Nissan for promotion of the 2017 Leaf EV



- **Promotion for \$10,000 off MSRP at MA dealerships from June 1st - September 30th 2017**
- **When combined with State and federal incentives customers could receive a 2017 Leaf for almost 1/3 of the price.**
 - MA = \$2,500 US = \$7,500**
- **Nissan Leaf: 107 Mile Range 30 KWh Battery (~4 hrs to charge) MSRP: \$30,680-\$35,300**

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

- $7.7\text{kw} * 1.32 * 12\text{M/Y} * \$7.025\text{-kw/month} = \856.52

Risk of On Peak Charging to Monthly Transmission Costs

- $7.7\text{kw} * \$8.66\text{-kw/month} = \66.68

Based on the slides above, 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.



Smart Charging

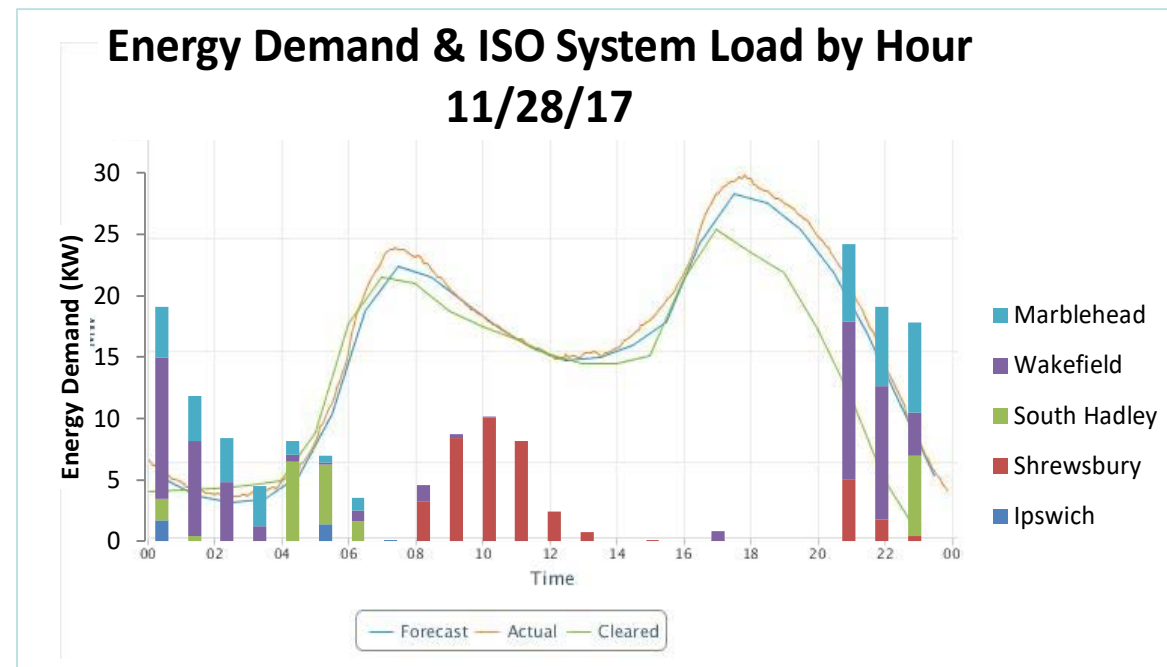
Controlled charging will allow MLPs to benefit from increased sales without increasing peak load

Outreach to EVSE manufacturers between 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



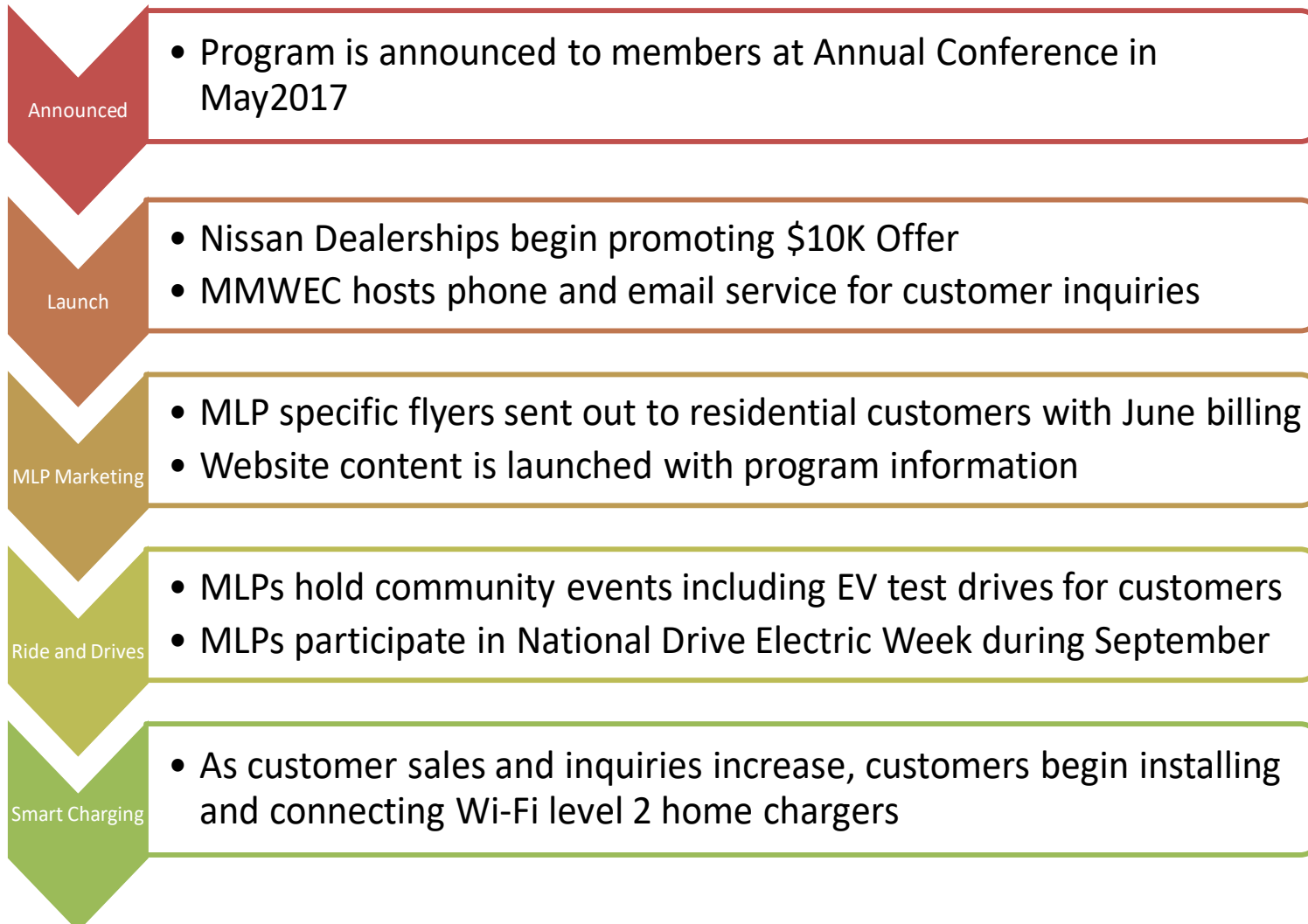
MMWEC EV Program Results



HELPS
Home Energy Loss
Prevention Services

- **Program offered under residential energy conservation programs**
- **9 Massachusetts Municipal light Plants (MLPs) Participating**
- **Over 57,000 potential drivers**

Program Development & Outreach



Initial Program Results

- Close to **40** Community Events and Ride & Drives Held
- **33** New 2017 Leafs Sold (additional EVs purchased through other OEMs)
- **38** Approved Smart Charger Participants
- Participating MLP average fuel mix is **14.7%*** more carbon neutral than the national average
- In the first year we project **104** Tons of CO2 emissions will be avoided

*US EIA 2016

