Electric Vehicles
Electric Co-op Perspective

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March 10, 2015
Great River Energy
Meet Frank & Zhoey

- New variables to consider
- Decision factors are evolving
- More players
- Utility is one of them
Wise Use of Electricity - Why EVs?

- Increase the deployment of PEVs
- Electricity is a smart choice
- Electrification efforts
- PEVs are:
  - Smart use of electricity (efficient & off-peak)
  - Environmental and efficiency benefits
  - Improved fleet efficiency – commercial opportunity
Three “Pillars” of Activity to EV Growth

**EV electric sales growth**

- Infrastructure
- Awareness
- Retail Initiatives
Determining Our Role

- Energy expert
- Education and awareness
- Partnerships
- Stakeholder meetings
- Electric Vehicle Round Table September, 2014
- Utility collaboration discussions
Affect on Electric Load

- Increases in PEV sales will increase electricity load – approximately 4,000 kWh
- The effect of this new load will depend on where/when PEV drivers charge
- Understanding customer’s PEV expectations and purchase intentions is critical
GRE’s Current Load Curve

Daily electric usage patterns

- Summer
- Winter

Megawatts

1400
1600
1800
2000
2200
2400
2600
2800
Limiting Not the Answer

- Charging Plan A: "Anytime" - 52%
- Charging Plan B: "Time of Use" - 30%
- Charging Plan C: "Night-Time Only" - 18%

More than half of respondents (52%) chose the plan that allows them to charge at any time at a fixed and uniform rate.

Source: EPRI, 2013
# Time of Use Rates Available

## PILOT PROGRAM - EV1

<table>
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<tr>
<th>June-August</th>
<th>Mon</th>
<th>Tues</th>
<th>Wed</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat/Sun</th>
<th>Holidays*</th>
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</thead>
<tbody>
<tr>
<td>9 pm - 8 am</td>
<td>5.85¢</td>
<td>5.85¢</td>
<td>5.85¢</td>
<td>5.85¢</td>
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<td>8 am - 4 pm</td>
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<td>4 pm - 9 pm</td>
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<td>Tues</td>
<td>Wed</td>
<td>Thurs</td>
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<tr>
<td>8 am - 4 pm</td>
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<tr>
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<td>5.85¢</td>
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</tbody>
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## Time of Day Rate

Wholehouse Cost of Basic Service: ..... $9.50 per month (in lieu of General Service Cost of Basic Service)

**Electric Vehicle Charging: .................. $270 Rebate for installation of Time-of-Day meter

<table>
<thead>
<tr>
<th>Energy Charge</th>
<th>Time</th>
<th>Day</th>
<th>Month</th>
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<tbody>
<tr>
<td>Peak Period Summer* (4%)</td>
<td>$0.438/kWh</td>
<td>4 p.m. - 8 p.m.</td>
<td>M-F</td>
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<td>Peak Period Winter* (8%)</td>
<td>$0.328/kWh</td>
<td>4 p.m. - 8 p.m.</td>
<td>M-F</td>
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<td>Intermediate Period* (38%)</td>
<td>$0.093/kWh</td>
<td>8 a.m. - 4 p.m.</td>
<td>M-F</td>
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<td>Off Peak Period* (50%)</td>
<td>$0.057/kWh</td>
<td>8 p.m. - 8 a.m</td>
<td>All Days</td>
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</tbody>
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*Depend on hours during year
Infrastructure
PLANT SEEDS FOR THE FUTURE...