Fleet vehicles are all around us. From supporting our towns and cities to shuttling our packages and mail to making sure our campuses run smoothly, fleets have a tremendous impact on our daily lives. Today, many organizations are electrifying their fleets for the financial, environmental and operational benefits that it offers.

**Benefits**

### Cost Savings

**Fuel:** Electric vehicles are highly efficient, and running on electricity is cheap — about the equivalent of paying $1.10 per gallon of gasoline in North Carolina.\(^1\) Electricity is also locally generated, and prices have historically been more stable than gasoline.

**Maintenance:** Electric vehicles contain a fraction of the parts of their internal combustion engine counterparts. Therefore, they cost less to maintain, and common scheduled maintenance, like oil changes, is a thing of the past.

**Total Ownership:** Between their fuel and maintenance savings, electric vehicles can save you thousands of dollars over their lifetimes, which can be invested back into the community or your organization.

### Environmental Advantages

**Emissions Reductions:** Electric vehicles give off no greenhouse gases or air pollutants when driving on electricity, providing cleaner air for our communities. They are even superior when taking into account the electricity needed for charging. On average, the emissions associated with driving a new electric vehicle in North Carolina are equivalent to those produced by a gasoline vehicle that gets 102 mpg, and as energy production gets cleaner, so will the cars.\(^2\)

### Operational Characteristics

**Mileage:** Electric vehicle ranges continue to improve, and fleets often have predictable routes when meeting daily needs, lessening concerns over range anxiety.

**Charging Convenience:** The centralized parking typically employed by motor pools and fleets offers a convenient place for charging stations. Charge during lunch shifts and at the end of the day.

**Data Connectivity:** Electric vehicles are a “connected” technology. They track driving distances and behavior, diagnostics and maintenance, and battery health for more informed decision-making.

**Guilt-free Idling:** No tailpipe means no worrying about emissions or cost impacts of idling.

**Satisfaction:** Electric vehicles are not only clean and quiet but also fun to drive. With their enhanced performance, they can improve employee satisfaction and support retention.\(^3\) They can also boost awareness for others and help normalize electric transportation.
Electric Vehicle Cheat Sheet

Go electric when replacing vehicles that are 7 years or older
Identify vehicles that are highly utilized or have costly maintenance
Target vehicles that often idle or are in noise-sensitive settings (like around classrooms)
Look for opportunities to switch to smaller vehicle categories when possible
Review state contracts for electric vehicle options and charging stations
Explore grants and funding opportunities
Plan to acquire electric vehicles over time
Share your story and engage stakeholders

Case Studies

City of Raleigh
• 24 battery electric vehicles
• 8 plug-in hybrid electric vehicles

University of North Carolina at Charlotte
• 115 electric vehicles out of 500 total fleet vehicles
• Aiming for 25% electric vehicle mix
• 48 charging stations on campus

Popular Fleet Vehicles

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Make</th>
<th>Model</th>
<th>Estimated Range</th>
<th>Vehicle Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSV</td>
<td>Polaris GEM</td>
<td>eM 1400 LSV</td>
<td>45-68 miles</td>
<td>Utility Vehicle</td>
</tr>
<tr>
<td>BEV</td>
<td>Chevrolet</td>
<td>Bolt EV</td>
<td>259 miles</td>
<td>Hatchback</td>
</tr>
<tr>
<td>BEV</td>
<td>Nissan</td>
<td>LEAF Plus</td>
<td>226 miles</td>
<td>Hatchback</td>
</tr>
<tr>
<td>BEV</td>
<td>Tesla</td>
<td>Model 3 Standard</td>
<td>240 miles</td>
<td>Sedan</td>
</tr>
<tr>
<td>PHEV</td>
<td>Ford</td>
<td>Fusion Energi</td>
<td>21 miles electric / 610 miles total</td>
<td>Sedan</td>
</tr>
<tr>
<td>PHEV</td>
<td>Toyota</td>
<td>Prius Prime</td>
<td>25 miles electric / 640 miles total</td>
<td>Hatchback</td>
</tr>
<tr>
<td>PHEV</td>
<td>Ford</td>
<td>Escape*</td>
<td>30 miles electric / 550 miles total</td>
<td>SUV</td>
</tr>
<tr>
<td>PHEV</td>
<td>Mitsubishi</td>
<td>Outlander PHEV</td>
<td>22 miles electric / 310 miles total</td>
<td>SUV</td>
</tr>
<tr>
<td>PHEV</td>
<td>Chrysler</td>
<td>Pacifica Hybrid</td>
<td>32 miles electric / 520 miles total</td>
<td>Minivan</td>
</tr>
</tbody>
</table>

Notes: LSV = Low speed vehicle; BEV = Battery electric vehicle; PHEV = Plug-in hybrid electric vehicle

*Expected Release: Spring 2020

Sources
1. U.S. Department of Energy
2. Union of Concerned Scientists
3. Midwest Evolve
4. City of Raleigh
5. NC Clean Energy Technology Center

www.pluginnc.org  pluginnc@advancedenergy.org  @PlugInNC