An All-Electric Ford F-150 Pickup Truck Is Happening

A hybridized truck is in the cards from Ford, too; both will likely appear once the F-150 gets redesigned.

caranddriver.com
Shell acquisition of charging network Greenlots points to juice as the new gas

With Shell's Acquisition Of Greenlots, Big Oil Extends Its Reach Into EV Infrastructure

Shell buys charging company Greenlots as oil majors prep for rise of EVs

- Industry observers say the deal is a clear positive for the sector, signaling oil majors likely see the writing on the wall when it comes to electrification and demand for their products. While the U.S. has only recently topped 1 million EVs on the road, that number is forecast to reach 7 million by 2025.
## Plug-In Sales by Year - 2010* thru Oct 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>345</td>
</tr>
<tr>
<td>2011</td>
<td>17,735</td>
</tr>
<tr>
<td>2012</td>
<td>52,835</td>
</tr>
<tr>
<td>2013</td>
<td>96,702</td>
</tr>
<tr>
<td>2014</td>
<td>118,773</td>
</tr>
<tr>
<td>2015</td>
<td>114,022</td>
</tr>
<tr>
<td>2016</td>
<td>157,112</td>
</tr>
<tr>
<td>2017</td>
<td>194,479</td>
</tr>
<tr>
<td>2018</td>
<td>361,307</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,113,310</strong></td>
</tr>
</tbody>
</table>

## 2018 Monthly Plug-In Vehicle Sales - US Market

<table>
<thead>
<tr>
<th>Month</th>
<th>Plug-In Hybrid Electric Vehicles (PHEVs)</th>
<th>Battery Electric Vehicles (BEVs)</th>
<th>Total Plug-In Electric (PEVs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>5,881</td>
<td>6,128</td>
<td>12,009</td>
</tr>
<tr>
<td>February</td>
<td>8,234</td>
<td>8,611</td>
<td>16,845</td>
</tr>
<tr>
<td>March</td>
<td>10,956</td>
<td>15,487</td>
<td>26,443</td>
</tr>
<tr>
<td>April</td>
<td>9,749</td>
<td>9,874</td>
<td>19,623</td>
</tr>
<tr>
<td>May</td>
<td>11,219</td>
<td>13,088</td>
<td>24,307</td>
</tr>
<tr>
<td>June</td>
<td>9,936</td>
<td>15,093</td>
<td>25,029</td>
</tr>
<tr>
<td>July</td>
<td>9,161</td>
<td>20,437</td>
<td>29,598</td>
</tr>
<tr>
<td>August</td>
<td>9,622</td>
<td>26,725</td>
<td>36,347</td>
</tr>
<tr>
<td>September</td>
<td>10,418</td>
<td>34,126</td>
<td>44,544</td>
</tr>
<tr>
<td>October</td>
<td>9,455</td>
<td>24,619</td>
<td>34,074</td>
</tr>
<tr>
<td>November</td>
<td>12,589</td>
<td>29,999</td>
<td>42,588</td>
</tr>
<tr>
<td>December</td>
<td>12,674</td>
<td>37,226</td>
<td>49,900</td>
</tr>
<tr>
<td><strong>YTD</strong></td>
<td><strong>119,894</strong></td>
<td><strong>241,413</strong></td>
<td><strong>361,307</strong></td>
</tr>
</tbody>
</table>
Why do a Level Two Charging Project?

Reduces Transportation Costs - Dramatic fuel and maintenance cost reduction

Better Driving Experience - Instant torque, quiet, smooth

Environmental Benefits - Electricity can be 100% carbon free with solar!

Electric Grid Benefits - utilities and consumers can use the vehicle’s storage

Charging as business model - Workplace (employee) or Amenity (attract drivers)

Consumer Education - Charging creates visibility for the technology and generates EV adoption

Free Money! Incentives Available - Maine now has grants for the cars and for charging infrastructure. Example: ReVision and Nissan $5k Rebate
The Charging Pyramid & Site Selection

Think about anyplace cars spend 1-2 hours at a time (minimum)

Categories of Host Sites - Our Prospects
- Workplace Charging
- Municipal & Public Parking
- Multi-Unit Dwellings (MuD’s)
- Commercial/Retail
- Destination Venues/Tourist Attractions
- Colleges/Universities
- Sustainability-Oriented/Non-Profits

Where are we seeing the MOST funding opportunities?
- DCFC/Long Distance Corridors
- Workplace Charging
- Destination Charging/Tourism
- Public Access Venues
- MuD’s
Site Host Basic Questions to Consider

1. **What is the goal of the project?**
   Who will use the chargers? What types of vehicles typically charge? (PHEVs or BEVs) Desired charging speed? How long is the typical charging window? Who pays for the electricity? Is there a business model? What benefits are you pursuing by providing charging?

2. **What are the existing site host physical resources/needs?**
   How much electricity is available to dedicate to charging? Do you need to upgrade electrical or need a new electrical service? Distance between power and charger? Cell service strength? How much parking is available? Is there lighting? How much site prep is necessary? How complex is the conduit run between electric panel and charger?

3. **What charging technology/accessories best fit the project goals, resources & budget?**

4. **Are there additional funding sources available to help cross the finish line?**
   State/federal/utility/foundation/OEM/other?

**Last Caveat:** Always plan ahead to expand- overbuild, anticipate more dedicated parking spaces, lay extra or oversize conduit. If possible integrate charging into the design and building of new facilities parking.
Scarborough Public Library
Install Date: March 20, 2018
CMP Grant
Project Details:
• Dual Pedestal L2 EVSE with Solar Kiosk
• Free public charging/EarthDay ribboncutting
• Library also installed 23.23 kW rooftop array using a PPA

LL Bean’s Justin’s Way Lot
Install Date: June 13, 2018
Privately Funded
Project Details:
• Eight Dual Pedestal L2 EVSE –Basic chargers
• Free public charging/NDEW ribboncutting
• Largest L2 charging cluster in Maine

MA Audubon HQ- Drumlin Farm
Install Date: February of 2019
Electrify American Cycle One/Eversource Make Ready Funding
Project Details:
• Six Dual L2 EVSE- Smart Chargers
• Eversource Make Ready/Greenlots Partnership
• Additional SV’s at other MA staffed sanctuaries
Site Host Basic Questions to Consider

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Costs of Hardware and Installation

**AC Level 1 Charging**
2 to 5 miles of range per 1 hour of charging
- J1772 charge port
- $500-$1,000*

**AC Level 2 Charging**
10 to 20 miles of range per 1 hour of charging
- J1772 charge port
- $1,000-$12,500*

**DC Fast Charging**
60 to 80 miles of range per 20 minutes of charging
- J1772 combo
- CHAdeMO combo
- Tesla combo
- $15,000-$75,000*

*Does NOT include installation costs
L2 Technology Choices

Smart Chargers

- ChargePoint
- Flo
- EV Box
- Greenlots
- EVgo

Basic Chargers

- Basic Charging Hardware
  - ClipperCreek
  - Tesla
  - JuiceBox
  - Bosch

More attractive as utilization & incentives increase where host wants energy data, revenue from electricity sale, where utility/grid benefits or public access needs to be managed. Cell/Wifi/Bluetooth required.

Best in lower use environments, low cost and reliable, where access control not big issue, willingness to give away electricity and poor cell signals. Can use installation as transition to smart charging.
Site Host Basic Questions to Consider

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**Last Caveat:** Always plan ahead to expand- overbuild, anticipate more dedicated parking spaces, lay extra or oversize conduit. If possible integrate...
Maple Hill Farm in Hallowell adds electric vehicle chargers

Two electric vehicle charging stations at Maple Hill Farm Inn in Hallowell continue the owners' mission of using "green" and sustainable energy.
Green College Campus
UNE
USM
Unity College
Thomas College
College of the Atlantic
Bowdoin College
UMO
Bates College
Colby College
St. Joseph’s College
100% RENEWABLE:

- EV CHARGING
- BEER

100% OF OUR ELECTRICITY IS PROVIDED BY RENEWABLE SOURCES, INCLUDING ANAEROBIC BIODIGESTION & SOLAR
Drive Electric Maine’s Purpose & Structure

Leveraging private sector involvement to accelerate adoption of electric vehicles (EV) and EV infrastructure for businesses and institutions. Create models that bring stakeholders together to enhance benefits for employers and attract EV-related business and tourist investment to Maine.
Questions? Comments?

Barry Woods, Director of Electric Vehicle Innovation

barryw@revisionenergy.com

207-494-4440 (direct)

Twitter- @barrytwoods