Presentation

to Great Lakes Regional Pollution Prevention Roundtable,

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About COCFC

- Non-profit organization based at OSU Center for Automotive Research
- Mission: increase energy security, improve AQ, strengthen Ohio’s economy by advancing alt fuels, efficient vehicles and trans tech
  - We deploy vehicles, fuels, refueling stations, technologies;
  - educate policy-makers, target audiences, and the public
Transportation’s Share of Selected Air Emissions

- CO – 79%
- NO\textsubscript{x} – 49%
- VOCs – 42%
- CO\textsubscript{2} – 32%
- PM – 26%

Motor vehicles, especially diesel powered, also emit substantial carcinogenic pollutants.
Energy Use Within Sectors

Quads

- Residential
- Commercial
- Industrial
- Transportation

Categories:
- Electricity
- Renewable
- Coal
- Natural Gas
- Petroleum
World Oil Reserves are Consolidating in OPEC Nations

Economics of Oil

In 1973 the U.S. imported about 25% of oil consumed. In 2003, we imported 63%.

The true costs of petroleum (direct military, lost investment) would add $3.67 per gallon of gas.
Many Solutions are Here Now…

- Biodiesel
- Ethanol
- Natural Gas
- Propane
- Hybrids
- Electric Vehicles
- Idle Reduction
- Fuel Economy Improvements
…Others are Coming

- Everything Available Today plus...
- Improved/More Hybrids
- More Efficient ICE/Drive Train Fuel Economy
- Better Electric Vehicles
- Smaller, Lighter, Cheaper Idle Elimination Equipment
- Hydrogen – H/NG Blends, ICE, Fuel Cells
## WTW Efficiencies of Hybrids Impressive

<table>
<thead>
<tr>
<th></th>
<th>Well-To-Tank</th>
<th>Tank-To-Wheel</th>
<th>Overall Well-to-Wheel Efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average 2003 Car</strong></td>
<td>79%</td>
<td>18%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>1999 Prius</strong></td>
<td>79%</td>
<td>27%</td>
<td>21%</td>
</tr>
<tr>
<td><strong>2003 Prius</strong></td>
<td>79%</td>
<td>31%</td>
<td>24%</td>
</tr>
<tr>
<td><strong>2004 Prius with HSD</strong></td>
<td>79%</td>
<td>37%</td>
<td>29%</td>
</tr>
<tr>
<td><strong>Commercial FCHV</strong></td>
<td>58% Natural gas-H$_2$</td>
<td>50%</td>
<td>29%</td>
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</tbody>
</table>

Based on US-market fuels and US combined fuel economy
Source: Toyota
Transportation Biofuels Policy

- Ohio Biofuels and Energy Efficiency Task Force (March 2004 Report)
- Focusing on demand side – fuel use incentives and infrastructure development
- Other states have enacted policies – e.g. Minnesota, Iowa, Illinois, Indiana, Pennsylvania (not much yet in Michigan or Ohio)
Possible Initiatives in Ohio

- Biofuels (E85, B20) mandates for state fleet vehicles
- Incremental cost buy downs (especially biodiesel)
- BTU-based motor fuel taxes
- Retail infrastructure grants
- Grants to improve accessibility to distributors and customers
- B2 mandates (all diesel fuel sold)
Questions?

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