Energy Trends in Wisconsin - Transportation

Wisconsin Clean Cities Annual Meeting
December 12, 2019

Maria Redmond
Director, Wisconsin Office of Energy Innovation
Wisconsin Office of Energy Innovation

Vision
Securing Wisconsin’s energy future and improving its economy and environment.

Mission
The Wisconsin Office of Energy Innovation promotes innovative and effective energy policies and programs that benefit Wisconsin’s citizens and businesses.

Values
OEI is committed to:

- Open Communication and Transparency;
- Collaboration and Teamwork;
- Being Forward Looking and Solutions Oriented;
- Building and Maintaining Expert-Level Knowledge; and,
- Economic Viability.
Basic Structure of Work

- Strategic Assessment and Policy Development
- Energy Assurance and Data Transparency
- Sector Support and Market Development
Energy Use by Source and Sector (2017)

Sectoral energy consumption by source (2017)

- Residential: 69.8% (Coal: 12.7%, Natural Gas: 17.4%, Petroleum: 23%, Renewable: 86.22%, Nuclear: 17.7%)
- Commercial: 89% (Coal: 17.4%, Natural Gas: 23%, Petroleum: 67%, Renewable: 94%, Nuclear: 17.7%)
- Industrial: 67% (Coal: 17.4%, Natural Gas: 23%, Petroleum: 86.22%, Renewable: 17.7%)
- Agriculture: 94% (Coal: 17.4%, Natural Gas: 23%, Petroleum: 67%, Renewable: 17.7%)
- Transportation: 17.7% (Coal: 17.4%, Natural Gas: 23%, Petroleum: 67%, Renewable: 17.7%)
- Electric Utility: 59.7% (Coal: 17.4%, Natural Gas: 23%, Petroleum: 67%, Renewable: 17.7%)

Source: Wisconsin Office of Energy Innovation
## Wisconsin Vehicle Fuel Consumption

### On-Road Transportation Consumption (Gallons)

<table>
<thead>
<tr>
<th></th>
<th>CY2010</th>
<th>CY2014</th>
<th>CY2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>255,361,559</td>
<td>282,549,370</td>
<td>319,136,291</td>
</tr>
<tr>
<td>LPG</td>
<td>2,262,215</td>
<td>2,302,541</td>
<td>3,470,579</td>
</tr>
<tr>
<td>LNG</td>
<td>0</td>
<td>270,653</td>
<td>325,385</td>
</tr>
<tr>
<td>CNG</td>
<td>302,008</td>
<td>8,350,362</td>
<td>15,623,897</td>
</tr>
<tr>
<td>Diesel</td>
<td>748,082,657</td>
<td>779,579,193</td>
<td>849,215,646</td>
</tr>
<tr>
<td>Gasoline</td>
<td>2,332,388,284</td>
<td>2,617,177,389</td>
<td>2,774,793,011</td>
</tr>
</tbody>
</table>

Source: WI Department of Revenue

<table>
<thead>
<tr>
<th>Year</th>
<th>Unleaded</th>
<th>Diesel</th>
<th>Ethanol (E85)</th>
<th>Flex Fuel</th>
<th>Hybrid-Electric</th>
<th>Propane</th>
<th>Compressed Natural Gas (CNG)</th>
<th>Electric</th>
<th>Methanol</th>
<th>Liquefied Natural Gas (LNG)</th>
<th>Other*</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>4455171</td>
<td>173831</td>
<td>190198</td>
<td>21938</td>
<td>81</td>
<td>4664</td>
<td>32</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>693190</td>
<td>5539105</td>
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<tr>
<td>2010</td>
<td>4365757</td>
<td>166473</td>
<td>223564</td>
<td>25758</td>
<td>60</td>
<td>4526</td>
<td>33</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>696347</td>
<td>5482518</td>
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<tr>
<td>2011</td>
<td>4316926</td>
<td>172191</td>
<td>271732</td>
<td>29871</td>
<td>53</td>
<td>4348</td>
<td>51</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>731625</td>
<td>5526798</td>
</tr>
<tr>
<td>2012</td>
<td>4263037</td>
<td>203773</td>
<td>372660</td>
<td>40143</td>
<td>47</td>
<td>4156</td>
<td>234</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>685045</td>
<td>5569097</td>
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<td>2013</td>
<td>5274566</td>
<td>350580</td>
<td>277096</td>
<td>22306</td>
<td>177</td>
<td>4915</td>
<td>203</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>254268</td>
<td>6184111</td>
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<tr>
<td>2014</td>
<td>5883765</td>
<td>419550</td>
<td>378210</td>
<td>31401</td>
<td>184</td>
<td>5770</td>
<td>269</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>300536</td>
<td>7019687</td>
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<tr>
<td>2015</td>
<td>5997946</td>
<td>431255</td>
<td>400018</td>
<td>32832</td>
<td>174</td>
<td>5835</td>
<td>316</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>311144</td>
<td>7179522</td>
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<tr>
<td>2016</td>
<td>5534264</td>
<td>438332</td>
<td>383660</td>
<td>32262</td>
<td>325</td>
<td>5722</td>
<td>375</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>303752</td>
<td>6698694</td>
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<tr>
<td>2017</td>
<td>5719696</td>
<td>468862</td>
<td>425770</td>
<td>38280</td>
<td>403</td>
<td>5806</td>
<td>771</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>316619</td>
<td>6976211</td>
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<tr>
<td>2018</td>
<td>5944016</td>
<td>500789</td>
<td>460698</td>
<td>44279</td>
<td>518</td>
<td>5711</td>
<td>1279</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>331628</td>
<td>7,288,924</td>
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<tr>
<td>2019**</td>
<td>6084153</td>
<td>502220</td>
<td>483173</td>
<td>48087</td>
<td>556</td>
<td>5682</td>
<td>1583</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>342583</td>
<td>7,468,043</td>
</tr>
</tbody>
</table>

*Fuel type left blank, coded as exempt or as a miscellaneous fuel type.

**As of June 30, 2019
Considerations

- Transportation Energy Spending ~$9 billion annually
- No substantial in-state fossil fuel resources, coupled with a strong reliance on fossil fuel
- Electrification
- One size does not fit all
- Where to start (sector or fuel)?
- Conservation, Efficiency, Sustainability, Equity, Social and Environmental Justice
- Lead By Example (state and local government lead the change)
- Is the Technology Available?
Current Policy Drivers

**EXECUTIVE ORDER #38**

Relating to Clean Energy in Wisconsin

**WHEREAS,** climate change poses a serious threat to Wisconsin’s natural resources, public health, communities, tourism, and economy;

**EXECUTIVE ORDER #52**

Relating to the Creation of the Governor’s Task Force on Climate Change

**WHEREAS,** climate change is a grave threat to the health, safety, and economic well-being of people and communities throughout the State of Wisconsin;
Moving Forward

- Investigation of Electric Vehicle Policy and Regulation (5-EI-156) – Workshop December 5, 2019
- Energy Assurance and Resiliency
  - Concerted effort to identify opportunities for Alternative Fuels Vehicles as a resiliency and mitigation opportunity in emergency situations
  - Statewide Assistance for Energy Resilience and Recovery (SAFER2)
- Funding
  - Energy Innovation Grant Program (PSCW)
  - State Energy Program (PSCW)
  - VW Settlement (DOA)
  - Diesel Idle Reduction Grant (DOA)
  - Diesel Emission Grant Program (DNR)
  - Congestion Mitigation Air Quality Program (WisDOT)
Increased Sector Support

- Stakeholder Engagement & Interagency Collaboration
- Technology and Innovation:
  - Advanced Grid Efforts
  - Energy Storage
  - Increased Biofuel Blends and Renewable Fuels (Ethanol, Biodiesel, RNG)
  - Electrification of Transportation
- Workforce Development
- Affordability and Equity
- Resilience and Recovery
The Wisconsin Office of Energy Innovation is here to answer questions, meet with your customers, connected with a vast networks of contacts and resources in the state and nation.

Call: 608-261-6609  
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Visit: https://psc.wi.gov/Pages/Programs/OEI.aspx  
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