The Future of Energy
Who We Are

Executive Director
Scott Coenen

Leadership Council

- Tommy Thompson – Former WI Governor
- Ryan Owens – UW Madison Professor
- Debbie Crave – VP Crave Brothers Cheese
- Jon Hochkammer – WI Counties Association
- Mark Honadel – Former GOP Rep.
- Matt Neumann – Neumann Companies Inc.
- Benji Backer – American Conservation Coalition
• Launched in December 2017

• WICEF Mission:
  ✓ Messenger; be the conservative voice for energy policy discussions.
  ✓ Seat at the table.
  ✓ Expand conservative definitions of “responsible resource development” – All of the Above
  ✓ Focus on technology, innovation, cost competitive expansion of clean & renewable energy
  ✓ Sustainability is a “bottom line” value
  ✓ Principles: market driven, cost effective, reliable, home-grown, diverse sources.
  ✓ Apply conservative principles to markets that are changing rapidly.
Market driven.
Cost effective.
Economically viable.
Independent.
Reliable/conducive to economic growth.

Principles popular with the American people
BUT...we NEED to apply them to markets that are CHANGING.
Why EVs?

- Cost of ownership.
- WI economic development potential.
- National security.
- Grid stability.
- Environmental benefits.
Battery Tech Improving

Can Falling Battery Prices Push Electric Cars?
Average price of battery packs for electric vehicles ($ per kWh)*

<table>
<thead>
<tr>
<th>Year</th>
<th>Price (2018 dollars)</th>
</tr>
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<tbody>
<tr>
<td>2010</td>
<td>$1,160</td>
</tr>
<tr>
<td>2011</td>
<td>$899</td>
</tr>
<tr>
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<tr>
<td>2017</td>
<td>$214</td>
</tr>
<tr>
<td>2018</td>
<td>$176</td>
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</tbody>
</table>

Top 3 concerns about electric vehicles**
- Purchase price: 65%
- Charging infrastructure: 60%
- Immature technology: 45%

* prices in 2018 dollars; averages weighted based on volumes sold
** based on a November 2018 survey of 1,279 vehicle owners in the U.S.

Sources: CarGurus, BloombergNEF
Cost Falls/Range Rises

Thousand 2016 $

- 2016: 48%
- 2018: 42%
- 2020: 36%
- 2022: 31%
- 2024: 27%
- 2026: 24%
- 2028: 21%
- 2030: 18%

Legend:
- Battery
- Powertrain
- Vehicle
- ICE medium

Source: Wisconsin Conservative Energy Forum
Increased Demand → Prices Fall → Tap into new markets → No Fuel? No Problem!
New Reality

Electric Vehicles = Cheap Transpo
Pace of Change
Average infrastructure turnover in years

- **15 YEARS**
  - Light vehicles

- **20 YEARS**
  - Heating Systems

- **24 YEARS**
  - Aircraft

- **25 YEARS**
  - Commercial Shipping

- **40 YEARS**
  - Power plants

Source: IHS Energy © 2015 [Illustrations sourced from Shutterstock by IHS]
Problem? Breaking a long term trend

U.S. Electricity Generation: Total, All Sectors
1950-2017

Source: EIA
Where are we?
We need engaged policy solutions.

- Charging infrastructure. Chicken or egg? Who owns? Convenience store business model?
- Recycling/end of life management.
- Raw materials acquisition.
- Ways to support consumer electric vehicle uptake.
- How do we help utilities manage electric load?
- Public transportation crossover.
- Bipartisan common sense solutions that seek to facilitate a market led transition to new tech.
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