Montana Environmental Information Center

The Quarantine Series
Brian Fadie, Clean Energy Program Director

Montana Renewable Energy 101:
How Renewable Energy Can Power Our Future
Do Montanans Like Clean Energy?
Montanans Love Clean Energy!

- 86% Support increasing wind
- 90% Support increasing solar
- 95% Support increasing energy efficiency


Solar Jobs Rally at Montana Capitol
Does Montana Have a Lot of Clean Energy to Produce?
Montana Has Abundant Clean Energy Potential!

Judith Gap Wind Farm, Judith Gap, MT

Ravalli Electric Co-op Community Solar
Montana Has #2
Wind Energy Potential in USA
Solar Energy

Montana Advantages

• Many sunny days (winter especially)

• Temperate climate
Montana Solar

Rooftop Solar

Utility Scale Solar

St. James Episcopal Church, Lewistown, MT
Is Clean Energy Low Cost?
Clean Energy Has Become Low Cost

Technologies advanced → Installations increased → Costs declined further

Source: U.S. Department of Energy
National Cost Averages

<table>
<thead>
<tr>
<th>Energy Type</th>
<th>Levelized Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar PV—Rooftop Residential</td>
<td>$151</td>
</tr>
<tr>
<td>Solar PV—Rooftop C&amp;I</td>
<td>$75</td>
</tr>
<tr>
<td>Solar PV—Thin Film Utility Scale</td>
<td>$32, $42</td>
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<tr>
<td>Wind</td>
<td>$28, $54</td>
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<tr>
<td>Gas Peaking</td>
<td>$150, $199</td>
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<tr>
<td>Nuclear</td>
<td>$118, $192</td>
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<tr>
<td>Coal</td>
<td>$66, $152</td>
</tr>
<tr>
<td>Gas Combined Cycle</td>
<td>$44, $68</td>
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</tbody>
</table>

Source: Lazard Levelized Cost of Energy (2019)
Montana Wind Energy is VERY Low Cost

Source: Montana Consumer Counsel (2017)
But Aren’t Renewables “Intermittent”?
Energy Storage is Ready!

- Wind and solar become on-demand when paired with battery energy storage.
- Not required at low to medium renewable %’s on the grid.
- But helpful, especially as more renewables come online.
Montana Energy Storage

- Gordon Butte Pumped Hydro Energy Storage Project (proposed)
- Martinsdale, MT
- Giant battery
Energy Storage is Ready

- 250 MW wind
- 250 MW solar
- 200 MW battery (large!)

“It’s actually cheaper, economically, than a gas peaker plant of similar size…”

Phillip Schaeffer
Western Farmers electric co-op
But Can Renewable Energy Power Our Economy?
Clean Energy Creates Major Economic Opportunities!

- Creates new careers
- Creates new tax revenue
  - $66M to state and local govts in first 10 years
- Montana’s current energy customers want clean energy
**Washington**
No coal by 2025
100% clean energy by 2045

**Oregon**
No coal by 2030
50% clean energy by 2040

**Idaho**
Idaho Power 100% clean energy by 2045

Governor Brad Little (R):
“Climate is changing, there’s no question about it. [...] And we’ve got to slow it down.”
Summary

- Montanans love clean energy
- Montana has abundant clean energy resources
- Clean energy is now low cost energy
- Clean energy = new careers, tax revenue for Montana
Questions & Answers

Using the “Chat” function, please type in your question

For More Information or to join MEIC go to: meic.org

Join us
Thursday, May 7, 4 pm
for
Montana Renewable Energy 202
“A Deeper Dive”