THE OUTLOOK FOR ENERGY
Montana Energy Industries: Year of Change?
By Terry Johnson
A Quick Look Back
Major Developments in 2014

• NorthWestern Energy
  – Purchased Dams

• US Oil & Natural Gas Production
  – #1 Producer in the World

• Oil Price Collapse

• New CO₂ Standards Proposed
  – US Coal Fired Plant Impacts

• Production Tax Credit Extended
  – Further Wind Farm Development
Total Value of Production in Montana
Oil, Natural Gas, Coal, Metals

How Big is the Industry? 2013 $4.3 Billion

- Oil, $2,592.7, 60.0%
- Natural Gas, $188.2, 4.4%
- Coal, $602.0, 13.9%
- Metal, $936.6, 21.7%

Source: Montana Department of Revenue
2013 Production Value by County
Oil, Natural Gas, Coal, Metals

Only 16 Counties Do Not Have Production Activity

Source: Montana Department of Revenue
Oil Situation

Oil Price Plunge

- Increased US Production
  - Texas & North Dakota

- Slower Economic Growth
  - China & Other Asian Countries

- OPEC Maintaining Production Quotas
  - 30 million B/D

57.8% decline

Source: Energy Information Administration
Oil Price Differential
Montana vs. West Texas Intermediate

Source: Energy Information Administration
U.S. Rotary Rigs in Operation

The Bad News …

• “Texas drilling permits drop 57% in November.”
• “Continental Resources will cut spending 40%.” (largest producer in MT.)
• “Will also reduce drilling rigs by a third.”

Source: RIGZONE.com 12/23/2014
Average Barrels per Day per Well Bakken Formation

Source: MT. Board of Oil and Gas, North Dakota Industrial Commission
US Natural Gas Production By Type of Well

Source: Energy Information Administration
US Natural Gas Production
December 2014 Shale Formations

Source: Energy Information Administration
Montana Natural Gas Production By Well Type

Source: Energy Information Administration
US Coal Consumption
By Electric Utilities (Fiscal Year)

Source: Energy Information Administration
US Coal Exports (Fiscal Year)

US Export Markets - 2013
- Europe 61 Million
- Asia 27 Million
- North America 13 Million
- South America 13 Million
- Africa 4 Million

Source: Energy Information Administration
US Renewable Energy By Type

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2013</th>
<th>% Change</th>
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<tbody>
<tr>
<td>Solar</td>
<td>0.068</td>
<td>0.307</td>
<td>315.3%</td>
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<tr>
<td>Geothermal</td>
<td>0.181</td>
<td>0.221</td>
<td>21.2%</td>
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<tr>
<td>Other biomass</td>
<td>0.397</td>
<td>0.476</td>
<td>19.2%</td>
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<td>Wind power</td>
<td>0.264</td>
<td>1.595</td>
<td>390.8%</td>
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<tr>
<td>Liquid biofuels</td>
<td>0.414</td>
<td>1.126</td>
<td>128.7%</td>
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<tr>
<td>Wood biomass</td>
<td>2.099</td>
<td>2.138</td>
<td>1.8%</td>
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<tr>
<td>Hydropower</td>
<td>2.869</td>
<td>2.561</td>
<td>-12.6%</td>
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Source: Energy Information Administration
Montana Electricity Generation
By Type 2013

Source: Energy Information Administration
Montana Wind Production
By Fiscal Year

Source: Energy Information Administration
Impact of Production Tax Credit

Historic Impact of Production Tax Credit (PTC) Expiration on Annual Wind Capacity Installation

Source: American Wind Energy Administration
Montana’s Energy Outlook

• Oil –
  – **Low Prices**
    • Over supply
    • Slow World Economic Growth
    • OPEC Production Quotas
  – **Production Declines**
    • Maturing Wells
    • Reduced Investment

• Coal –
  – **Stable Prices**
    • Transportation and Labor Costs
  – **Reduced Production**
    • US Power Plant Demand
    • Export Markets
Montana’s Energy Outlook

- Natural Gas -
  - Price Declines
    - Over Supply
    - Adequate Inventories
  - Production Declines
    - Maturing Fields
    - Reduced Investment

- Wind -
  - Production Increase
    - Production Tax Credit Extension
  - Production Tax Credit Future Legislation
Questions

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