What is the Wyoming Pipeline Authority?

- Board of Directors appointed by Governor
- Mission (i) to promote the infrastructure necessary to produce oil and gas assets of the state and (ii) to promote access to high value markets
- If it can move in a pipeline, it’s within our charter
- Bonding capability to $3 Billion
- Not a regulatory, enforcement, rate making or policy setting body
How do pipelines get built?

- Interstate gas pipeline model
- Pipeline companies don’t build on speculation
- Long term commitments from credit worthy shippers for 90%+ of capacity
- Sometimes market pull, sometimes supply push
- Multi-year lead time to design construct
- Up front engineering and environmental expense growing
Potential Terms in a CO2 Transportation Contract

- 10 – 30 year initial contract life
- Fixed Monthly Fee is based on units of contract capacity
- Fixed Monthly Fee is paid whether capacity used or not
- Usage Fees are quite low
- Credit worthiness of shipper is big issue
A (very) rough outline of a CO2 grid to serve Wyoming – roughly 480 miles of new line.
Rate assumptions

- 480 Miles of 20” – 16” – 12”
- $52,000 - $57,000 per inch mile
- All compression borne by suppliers
- Debt/equity ratio 70/30
- Debt @ 7% Equity Return @12%
- Three years to place in service
- Bridge loan debt @ 10%
- 10 – 30 year contract horizons
- 540,000 Mcf per day of capacity
## Rate matrix – 540,000 Mcf/d system

<table>
<thead>
<tr>
<th>Contract Term (Yrs)</th>
<th>Levelized Rate per Mcf of capacity</th>
<th>Annual fixed fees on a 50,000 Mcf/d contract</th>
<th>Life of contract fixed fees on a 50,000 Mcf/d contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>$0.44</td>
<td>$8.0 MM</td>
<td>$80 MM</td>
</tr>
<tr>
<td>15</td>
<td>$0.37</td>
<td>$6.8 MM</td>
<td>$101 MM</td>
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<tr>
<td>20</td>
<td>$0.34</td>
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<td>$124 MM</td>
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<tr>
<td>30</td>
<td>$0.31</td>
<td>$5.7 MM</td>
<td>$172 MM</td>
</tr>
</tbody>
</table>
## Rate matrix – 360,000 Mcf/d system

<table>
<thead>
<tr>
<th>Contract Term (Yrs)</th>
<th>Levelized Rate per Mcf of capacity</th>
<th>Annual fixed fees on a 50,000 Mcf/d contract</th>
<th>Life of contract fixed fees on a 50,000 Mcf/d contract</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>$0.55</td>
<td>$10.0 MM</td>
<td>$100 MM</td>
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<tr>
<td>15</td>
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<td>$8.4 MM</td>
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<tr>
<td>30</td>
<td>$0.40</td>
<td>$7.3 MM</td>
<td>$219 MM</td>
</tr>
</tbody>
</table>
Alternative sources of funds

• State of Wyoming – Constitutional Issues
• Federal Government?
• EOR Producer coalitions?
• Utility Buyers of Generation Output?
• CO2 Producers?
What about crude export capacity?

- Capacity out of Wyoming constrained at present
- Driven by increased Canadian, Wyoming production
- Some expansions on the way
- Crude line expansions accomplished along same dynamic as natural gas
- Where needed crude gathering lines could be laid with CO2 lines