



Wyoming Enhanced Oil Recovery Institute
Wyoming CO₂ Conference

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Caution Regarding Forward Looking Statements

Look forward when driving but frequently check rear and side mirrors. Remember that objects may be closer than they appear in mirrors. Your mileage may differ. Do not attempt this at home, this presentation prepared by a professional driver on a closed road. Past performance is no guarantee of future results. It may rain tomorrow but it may not. The wind will probably blow

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, its within our charter
- Bonding capability to \$3 Billion
- Not a regulatory, enforcement, rate making or policy setting body

How do CO2 Systems and Natural Gas Systems Differ?

	Current CO2 Pipeline Environment	Interstate Gas Pipeline Environment
Standard Terms and Conditions	NO	Generally Yes
Obligation to Serve	NO	Generally Yes
Obligation to expand system	NO	NO
Merchant of Commodity	Generally YES	NO
Length of Courtship	Long	Long if new pipe, speed dating if existing pipe

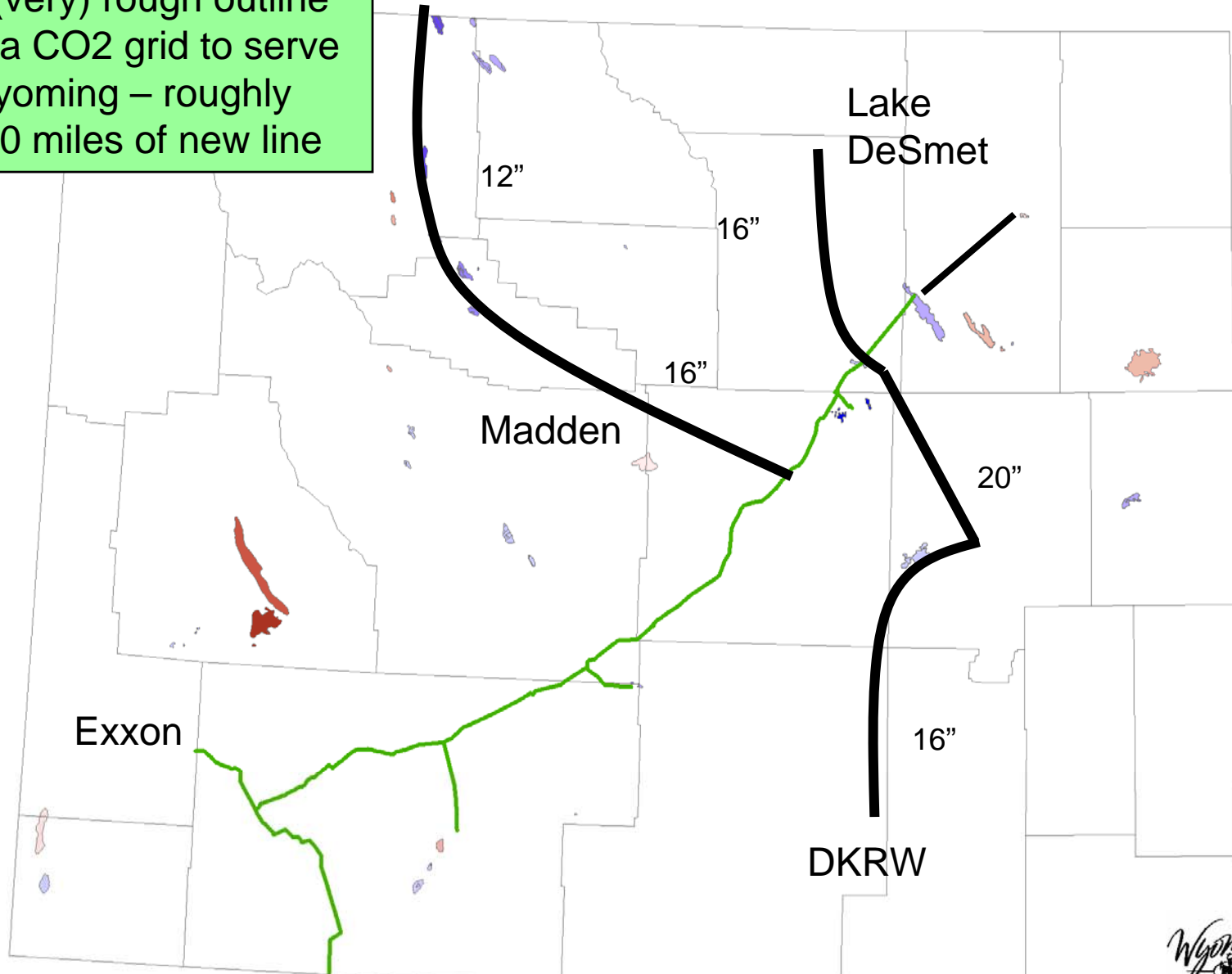
How do pipelines get built?

- Pipeline companies don't build on speculation
- Long term commitments from credit worthy shippers for substantially all 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 400 miles of new line



Existing Exxon/Anadarko System

Rate assumptions

- 400 Miles of 20" – 16" – 12"
- \$90,000 per inch mile
- All compression borne by suppliers
- \$570 Million Investment
- 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
- 350,000 Mcf per day of capacity

Rate matrix – 350,000 Mcf/d system

Contract Term (Yrs)	Levelized Rate per Mcf of capacity	Annual fixed fees on a 50,000 Mcf/d contract	Life of contract fixed fees on a 50,000 Mcf/d contract
10	\$0.68	\$12.3 MM	\$123 MM
15	\$0.53	\$9.8 MM	\$146 MM
20	\$0.47	\$8.0 MM	\$171 MM
30	\$0.41	\$7.6 MM	\$226 MM

Alternative paths to a grid

- **Government Driven**
 - State of Wyoming – Constitutional Issues
 - Feds – Tax Free Treatment on Bonds
- **Industry Response**
 - EOR Producer Coalitions
 - Utility Buyers of Generation
 - CO2 Producers
- **Consolidation**
 - Future Rationalization of Disconnected Systems



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