Wyoming Pipelines - The Territory Ahead
Cheyenne, Wyoming
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Executive Director
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Wyoming imports, produces, refines and exports crude
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1000s Barrels per Day

145 → 195 → 155 → 205
Key points for Wyoming crude

- Canadian heavy crude from tar sands is majority of import
- Production growth in North Dakota and Wyoming adding to competition for export space
- Expansion on lines from Alberta to mid-west US and beyond should reduce pressure on local crude price
- Condensate production and disposition in SW Wyoming is a growing issue
Wyoming produces and exports refined products
Wyoming produces, imports and exports refined products

1000s Barrels per Day

128 → 97 → 65 → 32
Key points for refined products

- Products are gasoline, diesel and jet fuel
- Export capacity not constrained
- Competition for Denver market is against product coming from KS and TX
Wyoming natural gas liquids (NGL) pipelines
NGL will reach three distinct markets after expansion:

- **Texas Panhandle**: 8 - 10 1000s Barrels per Day
- **Texas Gulf Coast**: 220 1000s Barrels per Day
- **Kansas**: 80 - 150 1000s Barrels per Day
• Majority of NGL leave Wyoming by pipeline
• Current NGL system is to TX Gulf Coast and TX Panhandle
• New NGL line due in service soon provides first access to NGL market hub in KS
• Growth in gas production leading to increased NGL in SW Wyoming, Colorado west slope and Utah – expansion to KS is timely
Wyoming produces, uses and exports carbon dioxide
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Key points for CO₂

• CO₂ pipelines have been operating in WY since mid 1980’s
• Current CO₂ supply is by-product of natural gas production
• Wyoming has many excellent candidate fields for enhanced oil recovery using CO₂
• Additional geologic and industrial sources on the horizon
• UW and WPA working together to identify the “optimum system” for purposes of policy discussion
Wyoming produces, imports, consumes and exports NG
Wyoming produces, imports, consumes and exports NG
Wyoming is at the front end of a long road
Wyoming shares the grid with Colorado and Utah
Wyoming shares the grid with Colorado and Utah

Total Export Capacity out of Region is currently 7.7 Bcf per day

Billion cubic feet per day (Bcf)
Production Growth in CO, UT and WY is filling the grid

Demand for Export Capacity with 2%, 4% and 6% Production Growth

100% of Export Capacity

85% of Export Capacity
Pipeline capacity constraints force WY gas prices down
Wyoming gas is significantly discounted to Louisiana gas.
Pipeline expansions reduce the discount
Proposed additions to capacity out of the Rockies

<table>
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<tr>
<th>Name</th>
<th>Sponsor</th>
<th>Capacity</th>
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<tr>
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<td>Grasslands</td>
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Not all of these projects will be built.
Why is it hard to get a pipeline built?

• Long term (10 - 15 year) fixed fee contracts for >90% of proposed capacity is threshold
• Creditworthiness to become a shipper on a new pipeline is a high bar
• Expansion projects typically take 3 – 5 years to commercially develop
• Uncertainty around access to resource base clouds forecast of individual company need
Nonetheless, pipelines do get built

- Pipeline capacity out of the Rockies has nearly doubled since 2001
- Over $9 billion in contract commitments
- Producers have been responsible for ≈ 60% of new export capacity
- Projects that are close to commercial success add another 1.8 Bcf per day of capacity with associated contract commitments of over $4 billion
Cheyenne Hub handles ≈ 7% of US gas demand

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