

# The Energy Irony of SB181

**Presentation to:**  
GPA Midstream 1<sup>st</sup> Quarter Luncheon

By:  
John Harpole



March 7, 2019

# SB181 – Elections have consequences



Rally at Capitol on March 5, 2019



# SB181

Brought to you by 3 Boulder Democrats



Governor Jared Polis

Senate Majority  
Leader Steve Fenberg



House Speaker  
KC Becker

# Summary of CO SB181

- Indefinite permitting/drilling moratorium
- Technical feasibility and cost effectiveness no longer must be considered
- Setbacks
- Subjective regulations
- Local politics supersede facts
- Removing scientific expertise from the COGCC

# Summary of CO SB181 (cont'd)

- How evaluations are conducted for an alternative drill site if there is opposition to a company's proposed site
- A list of “hazardous pollutants” that would have to be continuously monitored at well sites along with methane and volatile organic chemicals
- Emission control regulations
- Tests for the integrity at a wellhead
- Financial assurances that companies are “financially capable of every obligation imposed,” such as plugging, reclaiming and remediating wells after their useful life.
- A provision in the bill also would overhaul the COGCC to grow to nine members from seven, and oil and gas industry representation would get cut to one from three

# The big change: Give local governments the control

“Under the legislation the most significant change is the shift in responsibility to local governments when it comes to the siting and oversight of oil and drilling operations. The state’s oil and gas commission, known as the COGCC, won’t even see a permit application until it has been filed with the local government.”

“The local leaders would not only gain the power to make land-use decisions but would get the authority to inspect facilities, levy fines for spills, leaks and emissions, and collect fees to cover the cost of regulation.”

# The Reality

“As surely as Proposition 112 would have resulted in crushing restrictions on Colorado’s oil and gas industry, SB 181 would have identical implications to our state economy by removing oil and gas revenues that represent over 10 percent of the general fund and directly depriving more than a quarter million Coloradans their livelihood.”





# Noble Midstream Partners LP (NBLX)

## Colorado Omnibus Bill a Mixed Bag

- What's in the bill:
  - An increase to forced-pooling threshold to 51%. Reconstitution of the Colorado Oil and Gas Commission toward environmental gatekeepers away from industry.
  - A change in the COGCC's explicit mission to a focus on health and safety.
  - A section (page 17, line 21) that could morph into a de facto permitting moratorium.

# Noble Midstream Partners LP (NBLX)

## Colorado Omnibus Bill a Mixed Bag

- What's not in the bill:
  - A dispute resolution mechanism to resolve industry vs. local control impasses, the absence of which likely leads to further and more intense litigation if the bill were to pass in its current form.
  - A severance tax increase, which some activists have argued for.

# Noble Midstream Partners LP (NBLX)

## Colorado Omnibus Bill a Mixed Bag

- What's not in the bill:
  - Setbacks, which some activists see as critical to prevent backyard drilling as DJ Basin drilling increasingly clashes with urban areas along Colorado's Front Range.
  - Explicit power for municipalities to ban drilling.
  - A clear mission to reduce rather than encourage hydrocarbon production.



# Anadarko (APC) statement on CO SB181

- “We have reviewed the proposed Colorado oil and gas legislation and remain optimistic in the long-term value of our acreage position, given our long-standing practice of partnering effectively with local communities and the majority of our acreage is situated in Weld County where voters soundly rejected Proposition 112 in November 2018.”

# Anadarko (APC) statement on CO SB181

- “Moreover, we do not expect the bill’s proposed changes to forced-pooling rules to materially affect Anadarko, given the company’s ownership of mineral interests and high working interest throughout most of its acreage position.

# Anadarko (APC) statement on CO SB181

- “We also believe that we have sufficient approved permits and inventory of drilled, uncompleted wells to maintain planned activity into next year and fully expect to continue working collaboratively with communities in the DJ Basin to responsibly and safely produce oil and natural gas in the years to come.”



# Anadarko (APC) statement on CO SB181

- “Finally, recent comments from trade associations and others concerning the impact of the bill do not represent input from Anadarko with respect to this proposed legislation.”

## Et tu Anadarko?

\*Anadarko owns 400,000 acres of land and mineral rights from Adams County through Weld and Larimer County into Wyoming\*

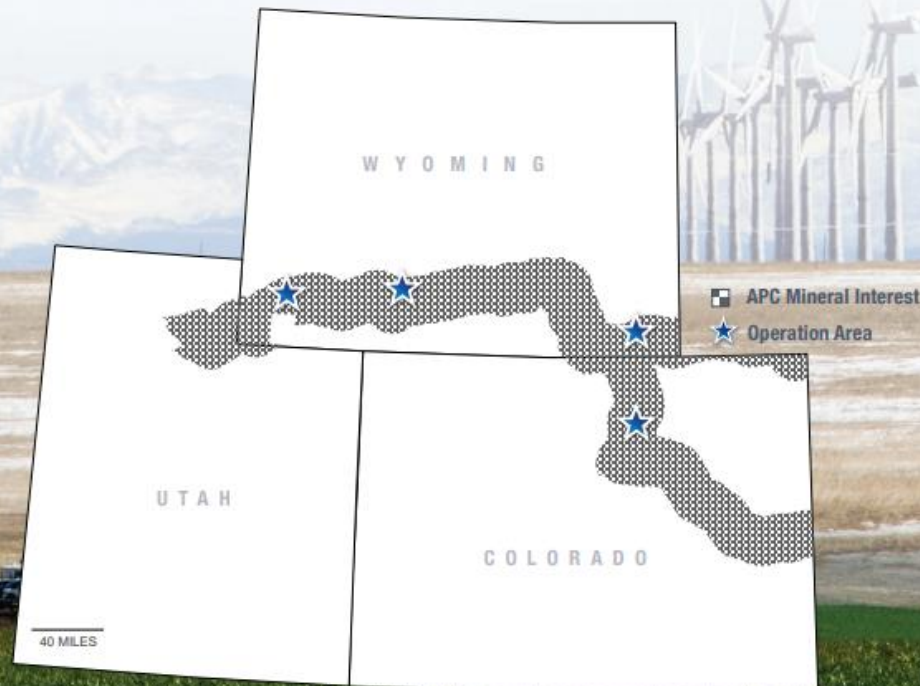
# Land Grant Key Statistics

## Mineral Ownership

- 5 million acres
  - 4.2 Wyoming acres (largest private mineral owner)
- 1,000 operated wells
  - Buffalo Rose
  - North DJ
  - Moxa
- 500 non-operated wells
- 500 royalty wells

## Surface Ownership

- Controlling over 1 million surface acres in Wyoming
  - Sheep and livestock grazers
  - 3 wind farms
  - 19 Gravel pits
  - Controlling ownership over Uinta Development Co.
  - Field offices located in: Granger, Casper, Rock Springs & Douglas
- Anadarko has paid ~\$3.5 billion in taxes, royalties & salaries
- Capital investments of ~\$2.5 billion in WY from 2010-2015



# Anadarko's Ownership

“The UPR strip dates back to President Abraham Lincoln’s administration, which granted railroads, including Union Pacific Railroad, both land and mineral rights to encourage investment in a trans-continental railway.”

“Acreage that makes up the land grant lies in a checkerboard strip almost 700 miles long and 40 miles wide, based on 20 miles on both sides of the original rail tracks. The strip passes through southern Wyoming and portions of Northeast Colorado and Utah.”

# President of the Senate Steve Fenberg

“We also must empower communities to take control over what’s happening in their backyards and equip them with the tools they need to stand up for their best interests. These common-sense reforms will ensure the industry operates in an accountable and cooperative manner.”

“But Fenberg said for him, it’s non-negotiable to dilute the bill’s main thrust – prioritizing protection of public health and safety and the environment when considering oil and gas development.”

# How Does DJ/Niobrara Fit in the World?

# Wyoming and Colorado Crude Oil Pricing Comparison

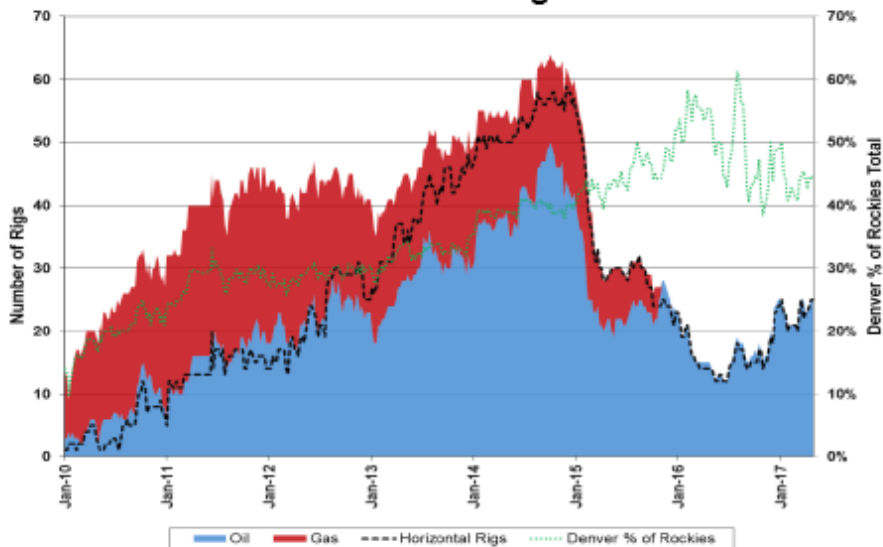
	August 1, 2014 (price per barrel)	April 8, 2015 (price per barrel)	February 6, 2017 (price per barrel)	February 2019 (price per barrel)
WY Asphalt Sour	\$68.50	\$26.50	\$34.50	\$42.61
WY General Sour	\$69.50	\$27.50	\$35.50	\$46.92
WY Southwest	\$85.88	\$40.42	\$44.76	\$49.83
WY Sweet (Other)	\$82.88	\$38.57	\$45.71	\$50.85

# Comparative Rockies Rig Count

	2014 Average	Quarter 2, 2015	Quarter 2, 2016	Quarter 1, 2017	Quarter 1, 2019
DJ Niobrara	54	34	12	23	31
Piceance Basin	12	9	3	5	7
Uinta Basin	28	8	3	5	7
Powder River Basin	34	12	1	12	26
Greater Green River Basin	17	12	6	9	10

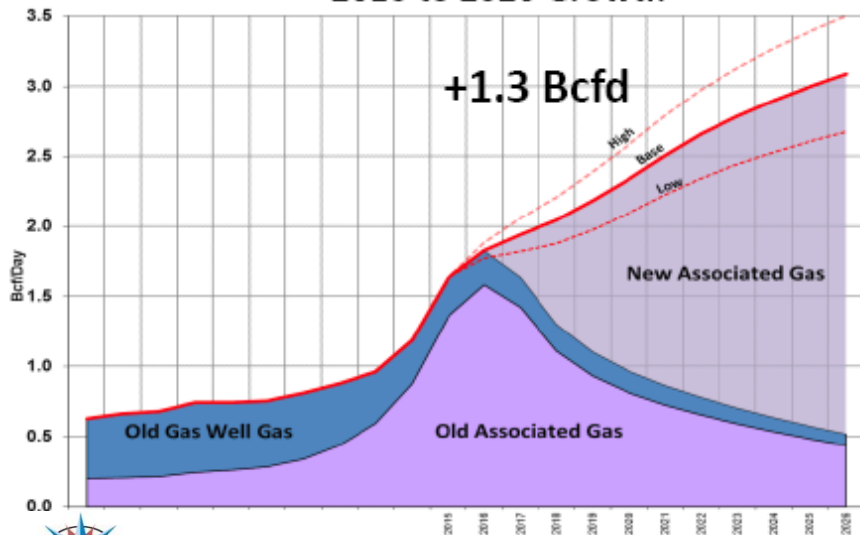
# DJ Basin Update

## Active Rigs



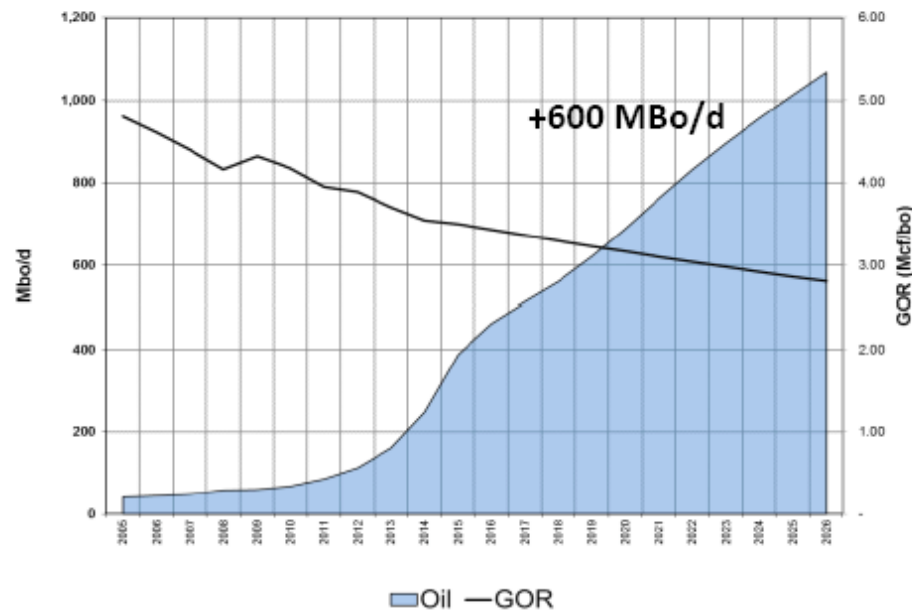
- DJ Basin rigs almost 50% of total Rockies rigs.
- Transition to horizontal wells over last 6 years.
- Increased use of XRL drilling.
- Anticipate additional rigs added in 2017 –
  - Anadarko, Noble, PDC, Extraction, BBG

## 2016 to 2026 Growth



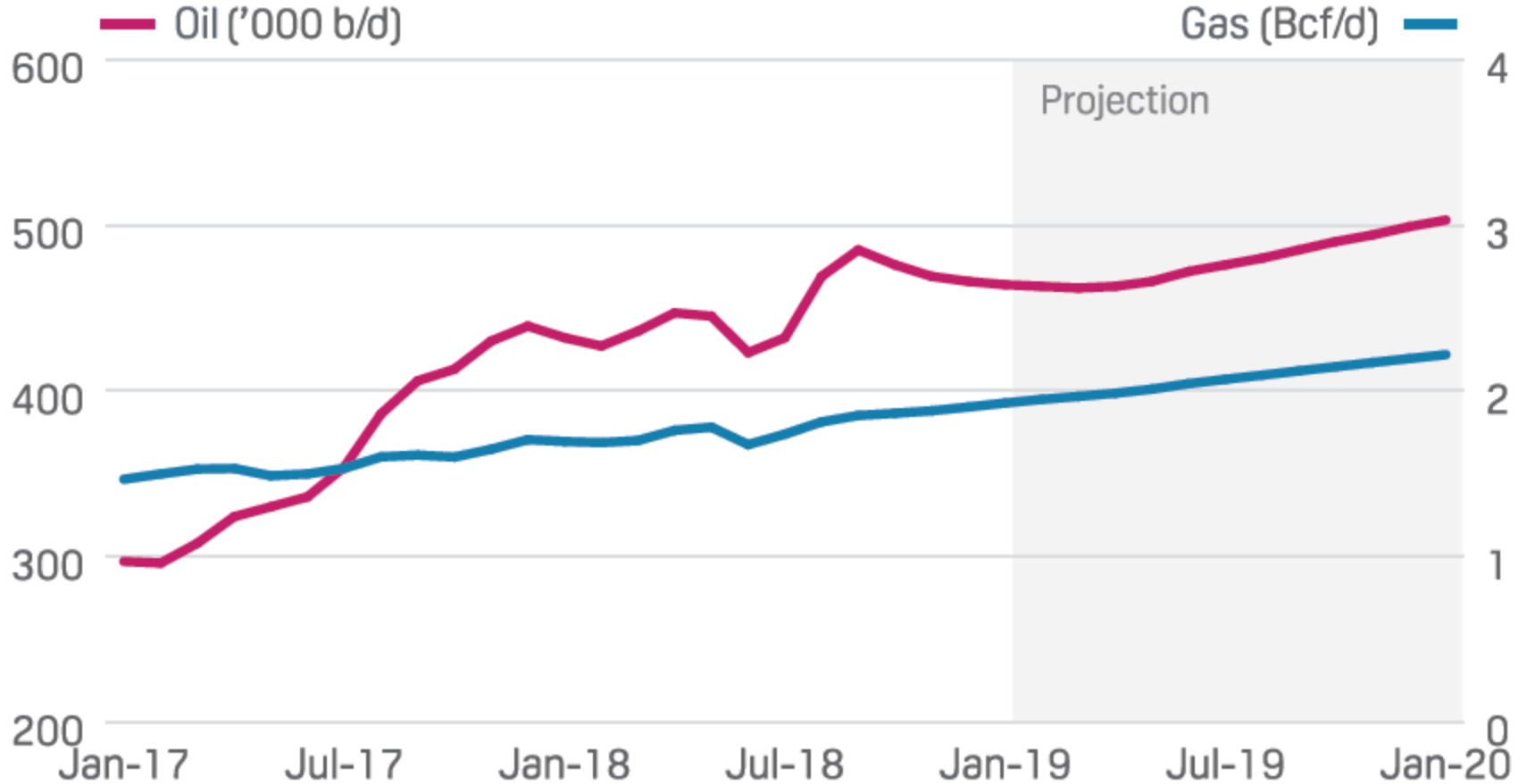
## 2006 - 2026

### Oil Production



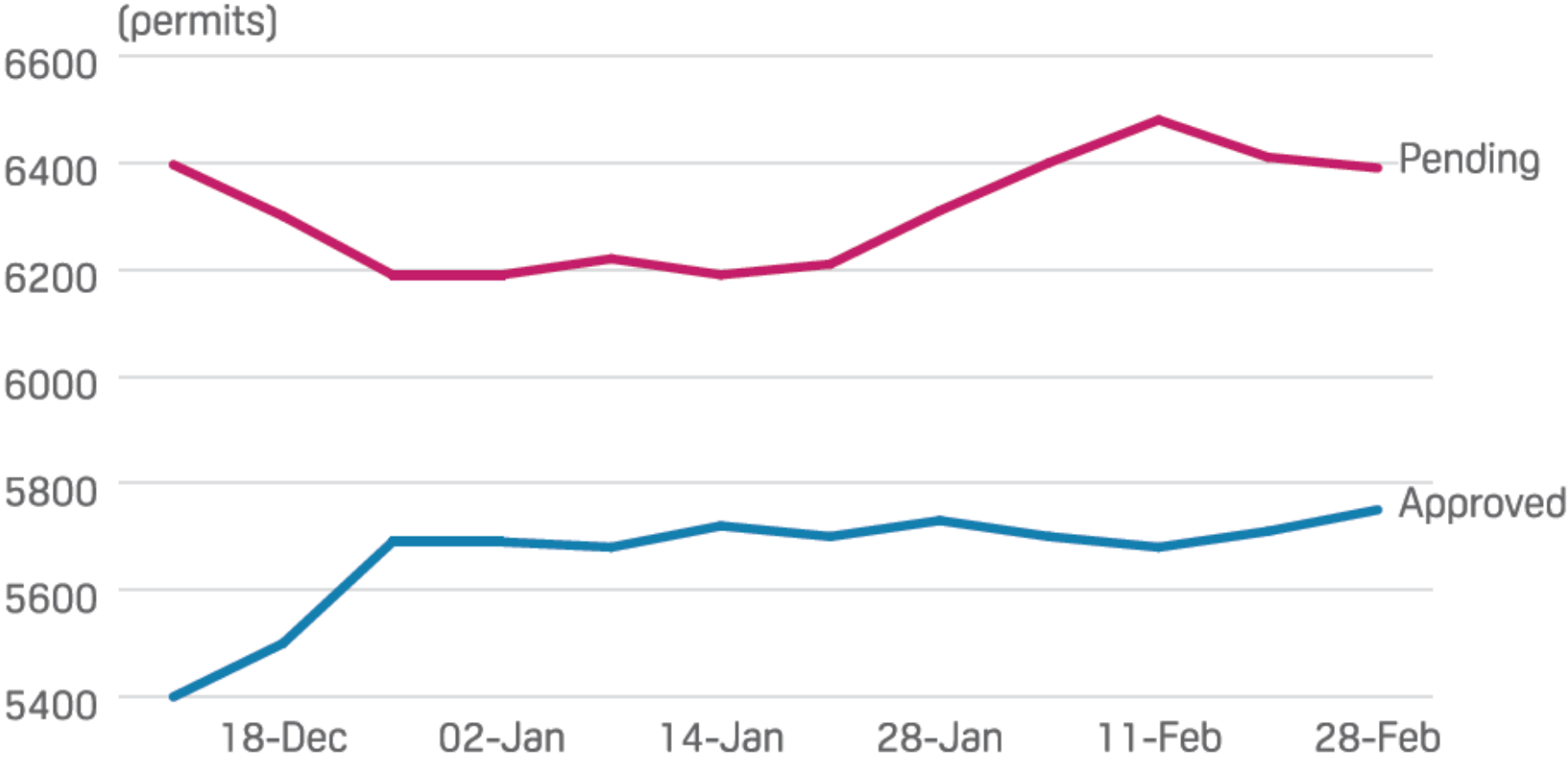


# DJ OIL AND GAS PRODUCTION AND PROJECTIONS



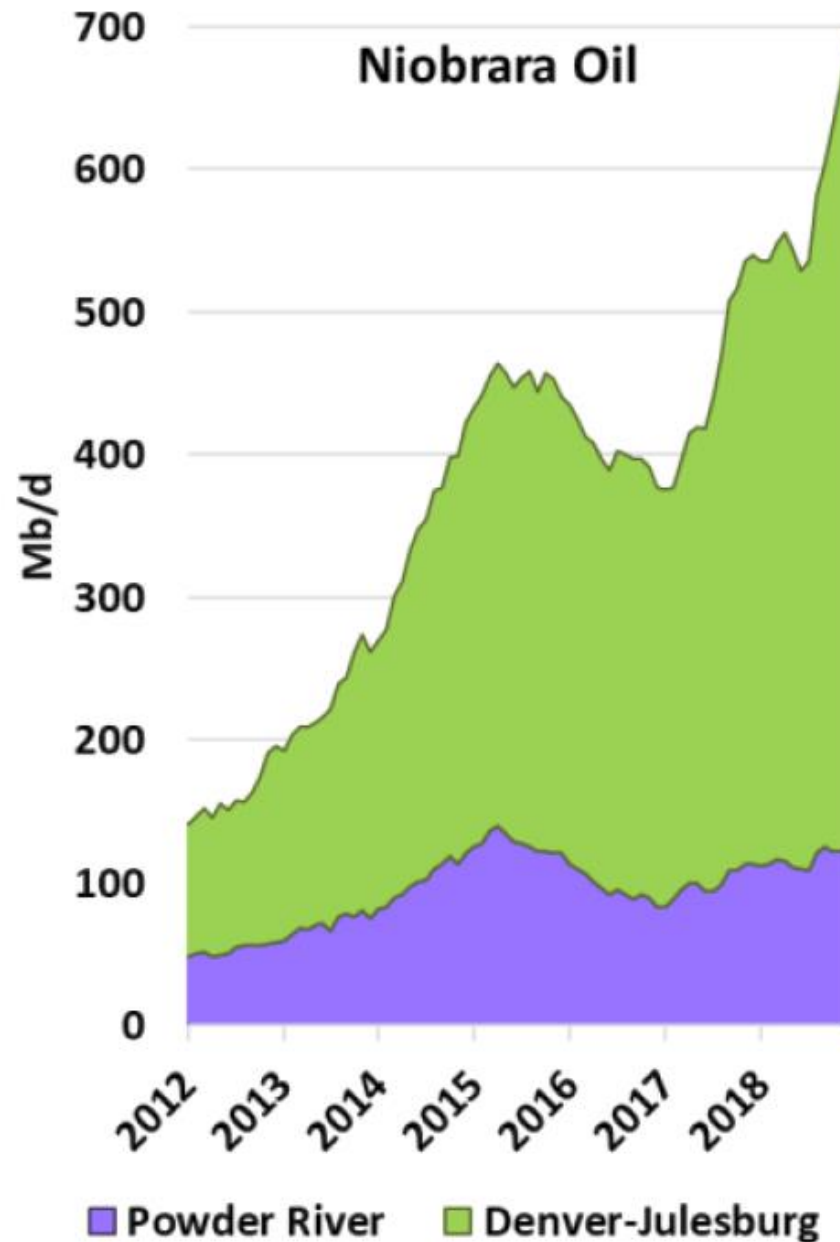
Source: S&P Global Platts Analytics

# PENDING AND APPROVED DRILLING PERMITS IN COLORADO

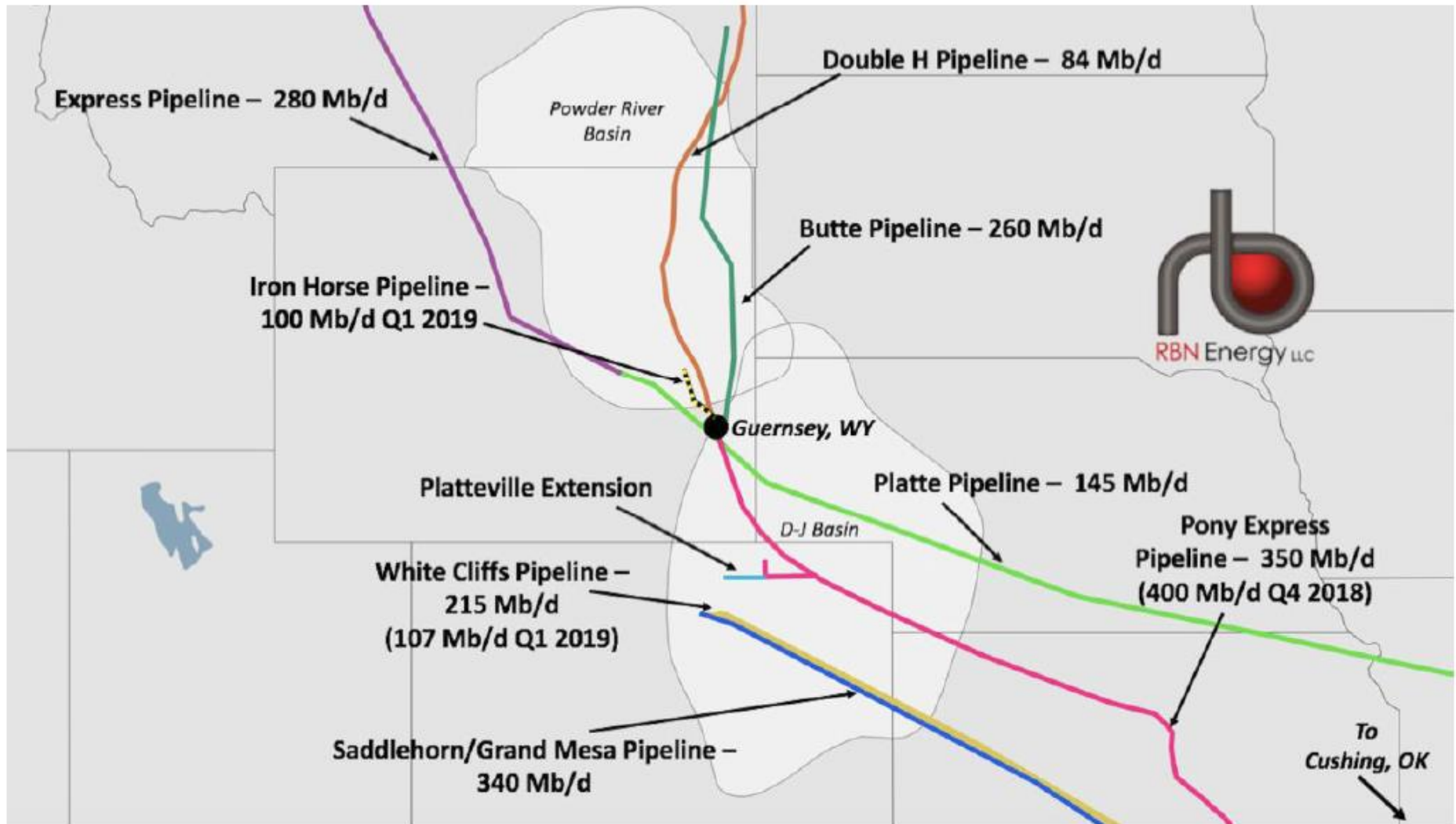


Source: Colorado Oil and Gas Conservation Commission

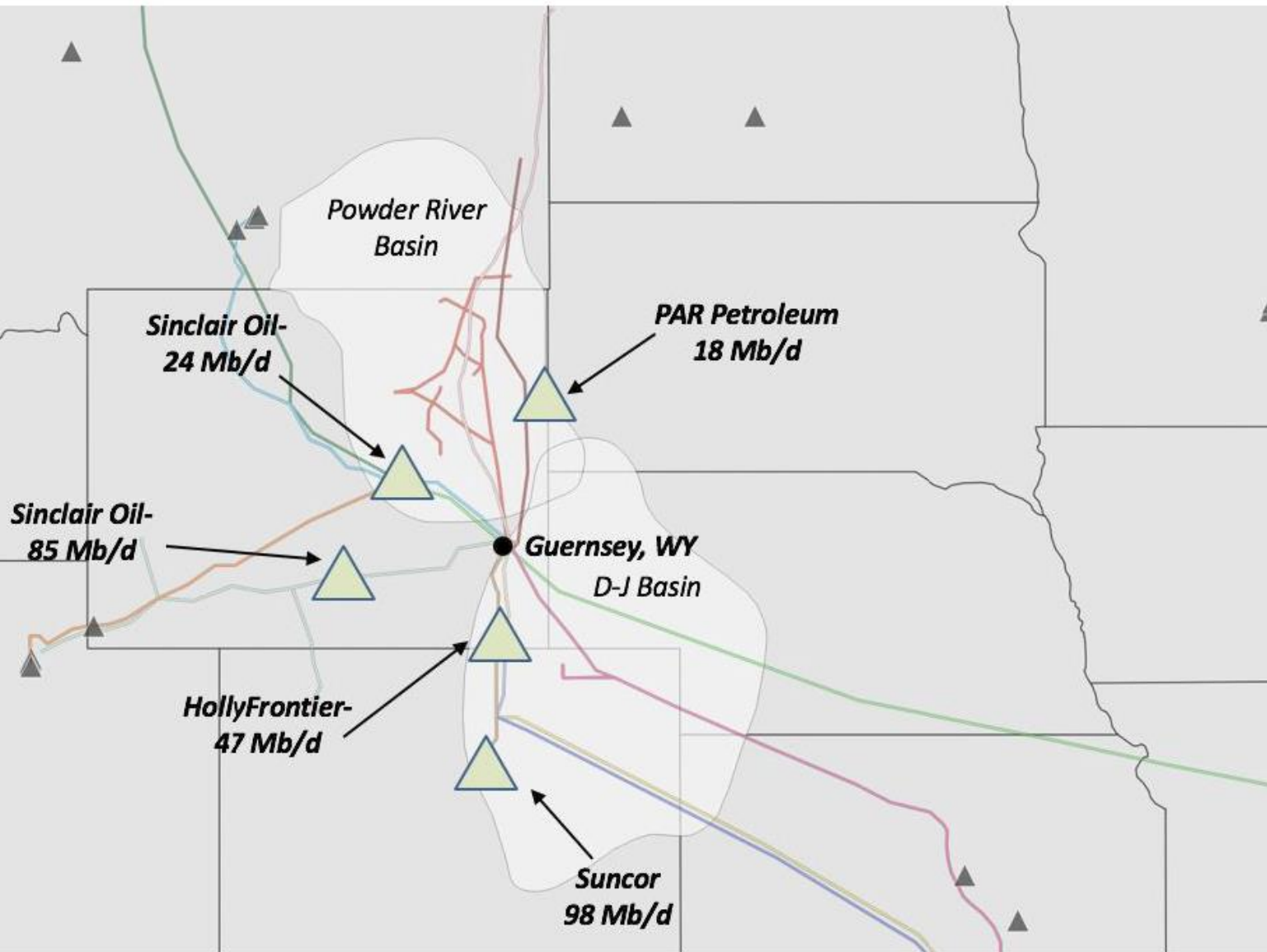
# Niobrara Oil Production



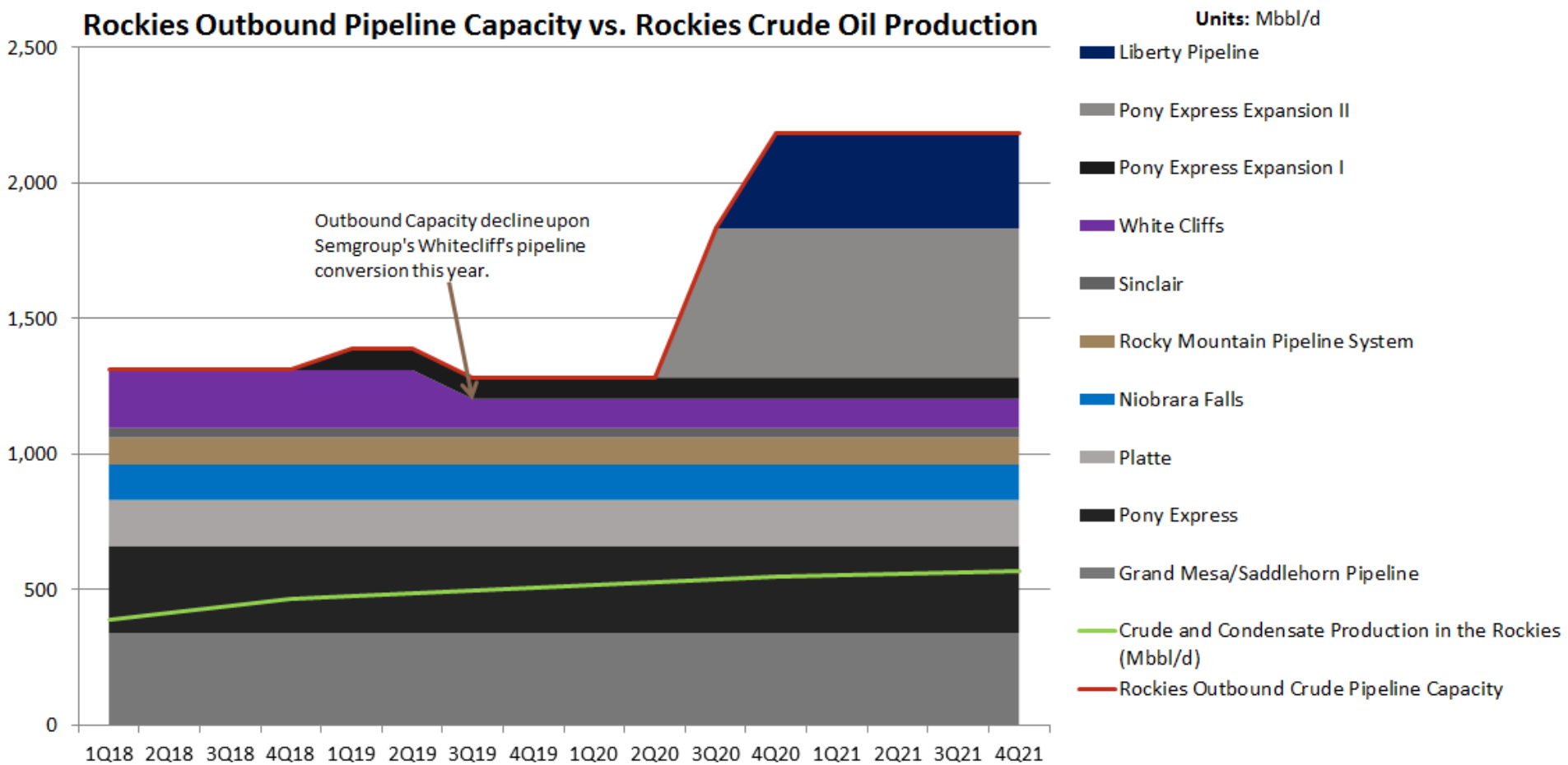
# Niobrara-area Pipelines



# Niobrara Refineries and Their Capacities



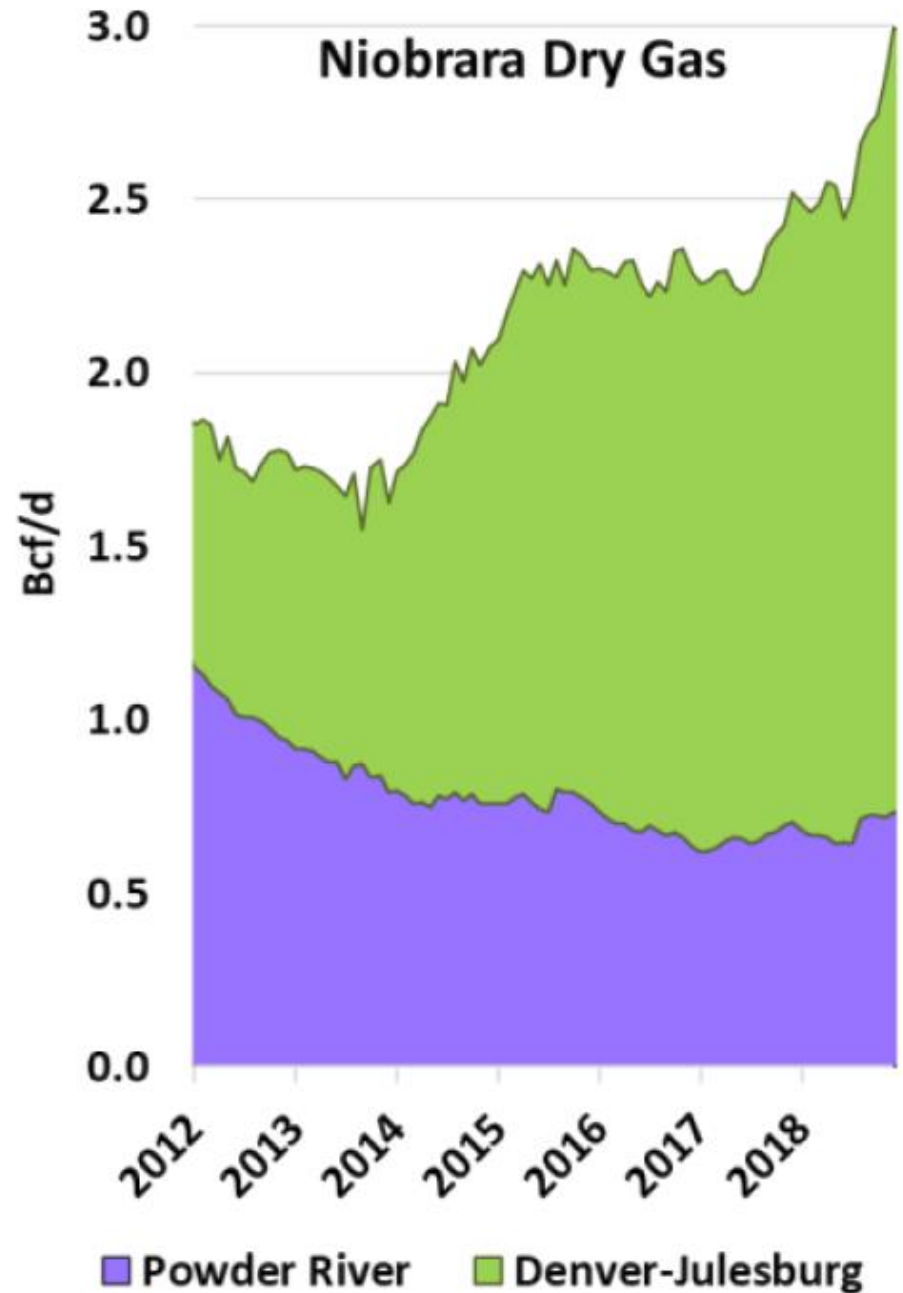
## Rockies Outbound Pipeline Capacity vs. Rockies Crude Oil Production



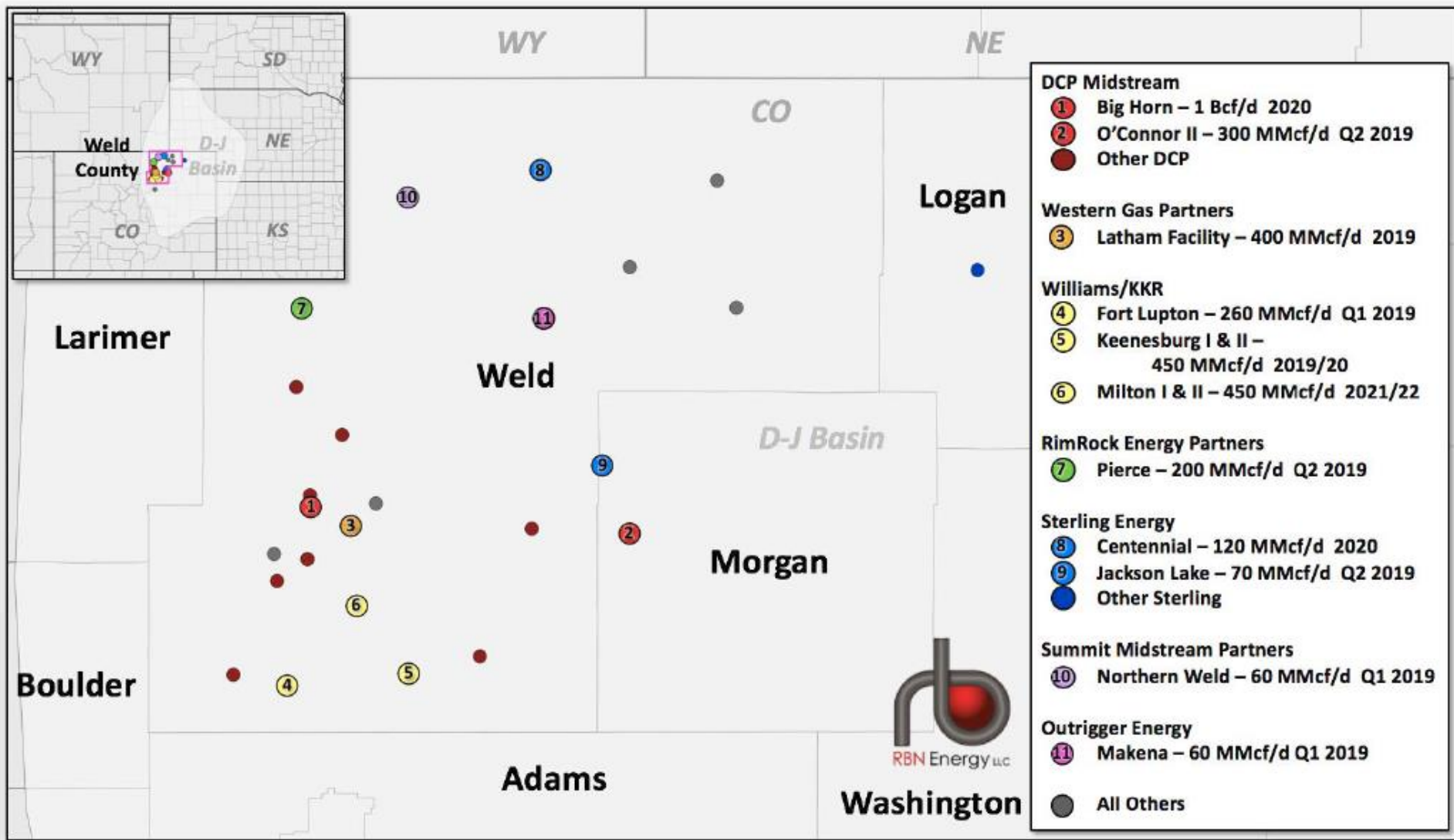
Source: Stratas Advisors, company disclosures

# Niobrara Dry Gas Production

Note: As of February 2019, dry gas production is nearly 3 BCF/day. That is a 30% increase in the last 24 months.

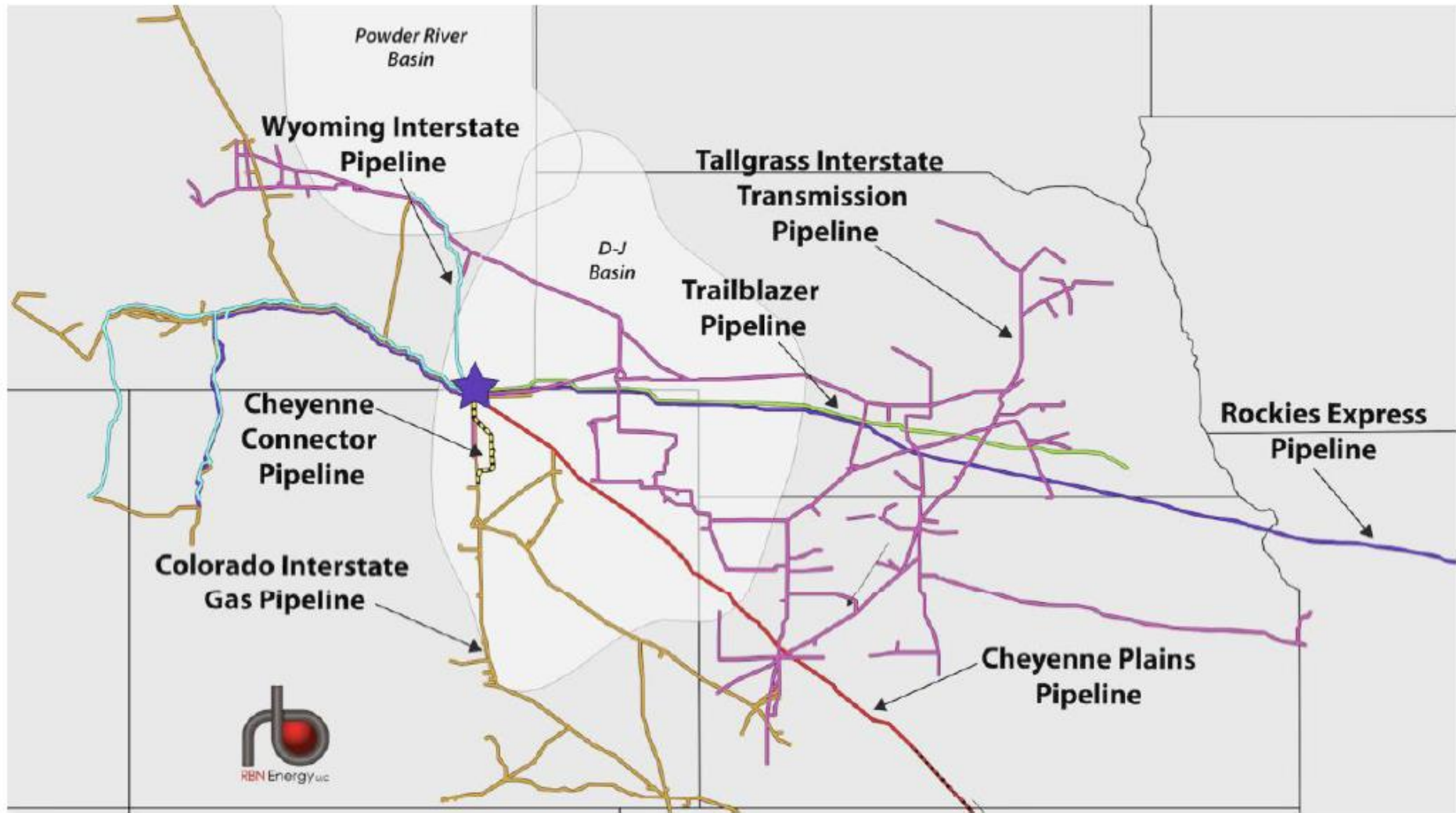


# Existing and Planned Gas Processing Plants in the DJ Basin

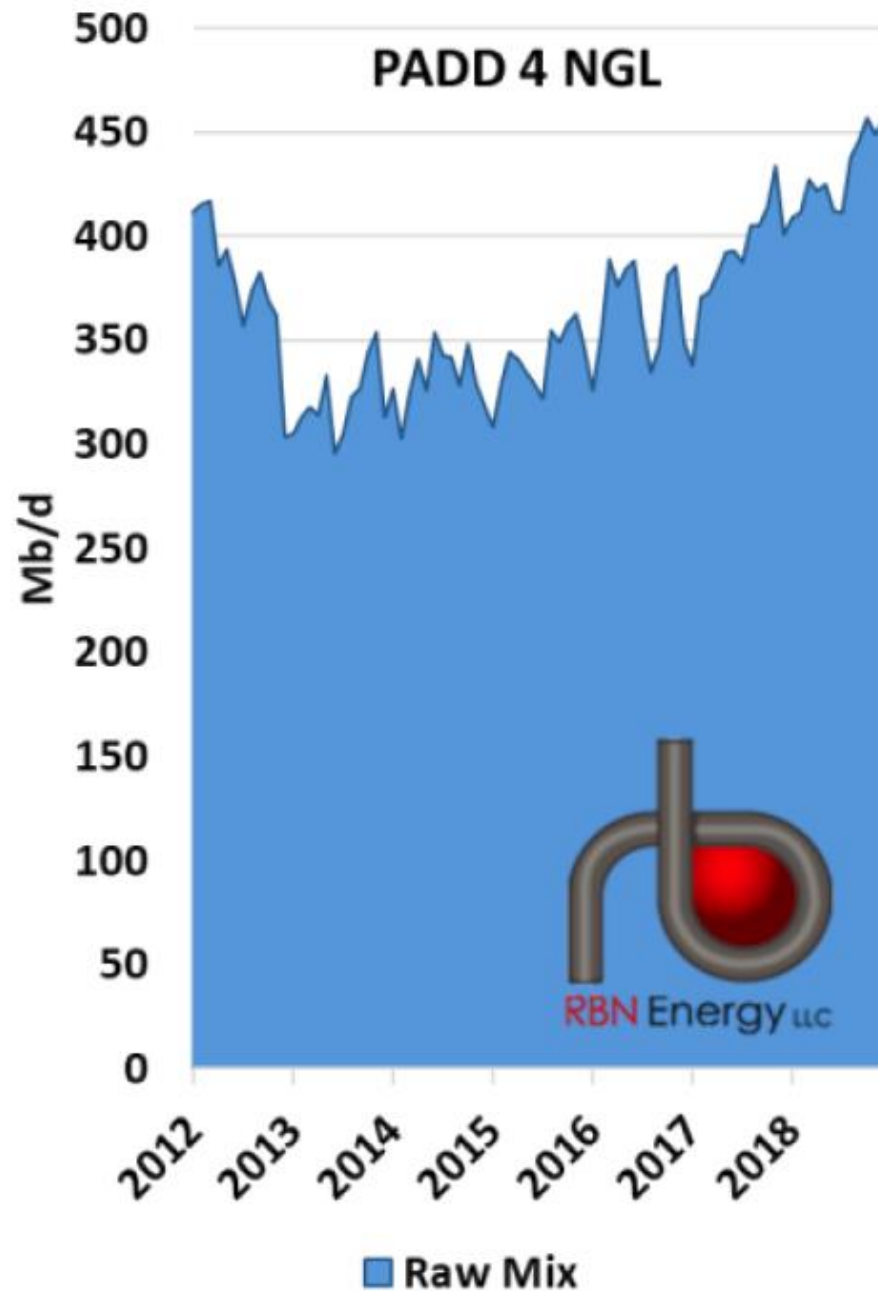




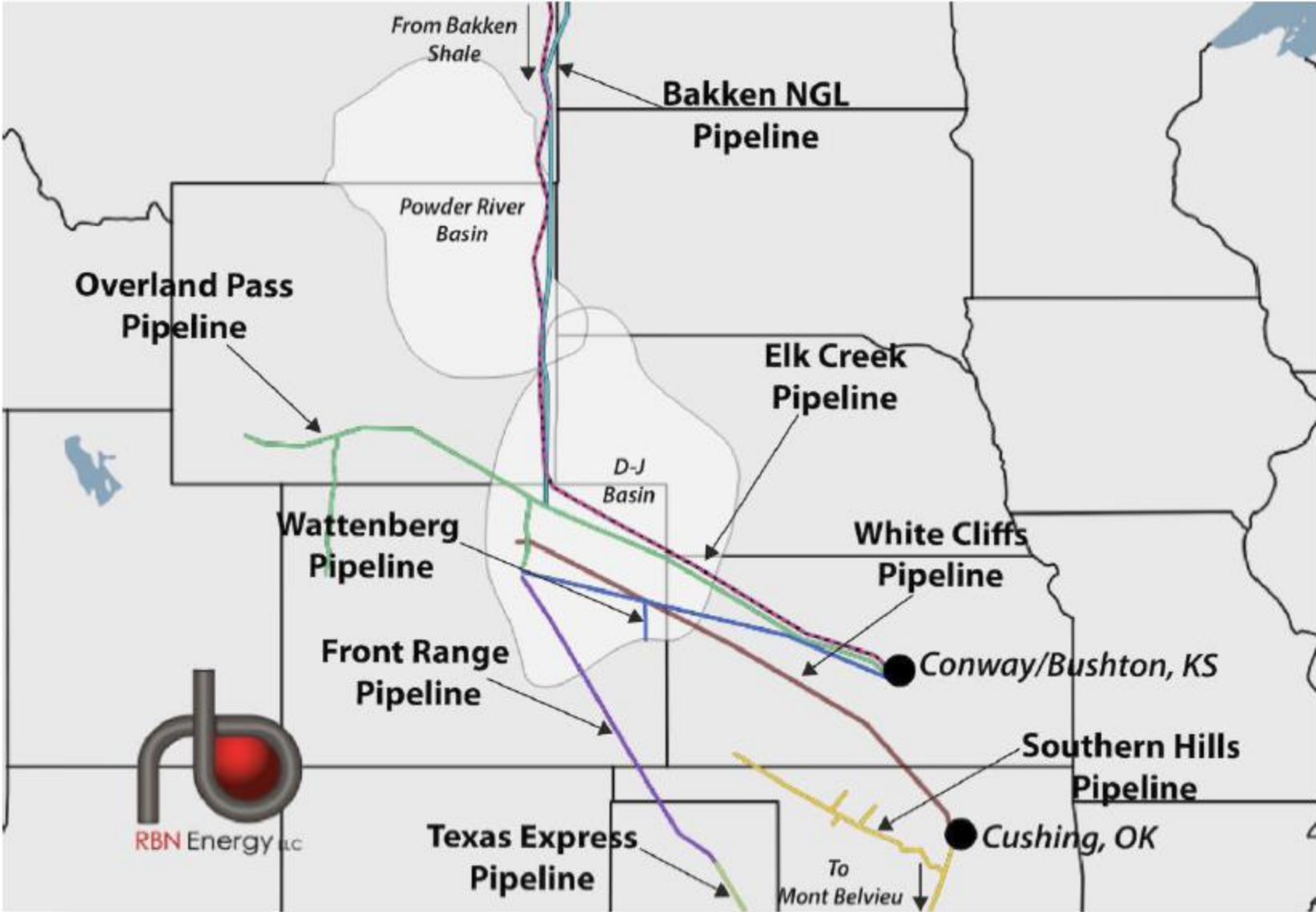
# Major Gas Pipelines Out of the Niobrara



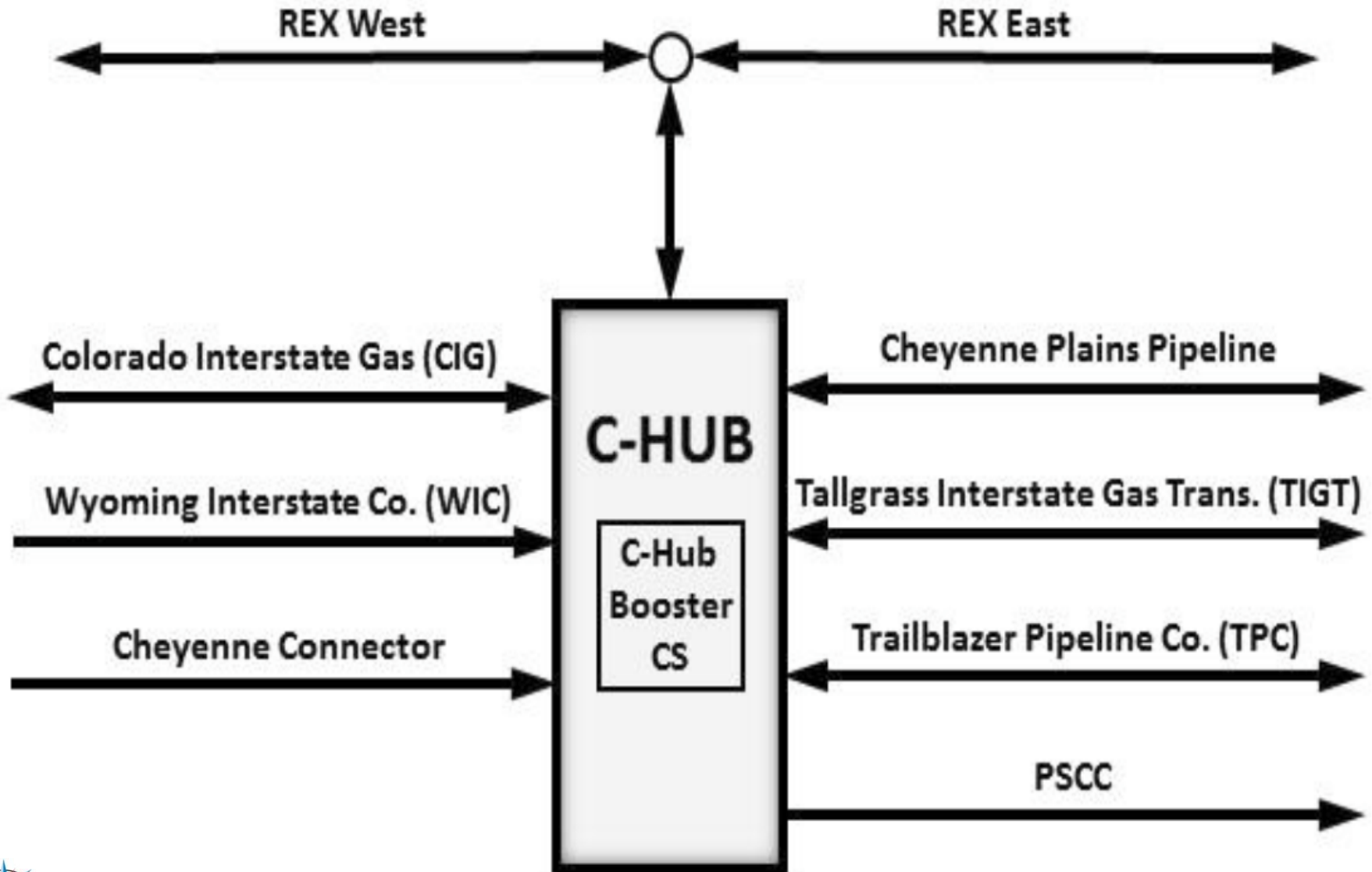
# Niobrara NGL Production



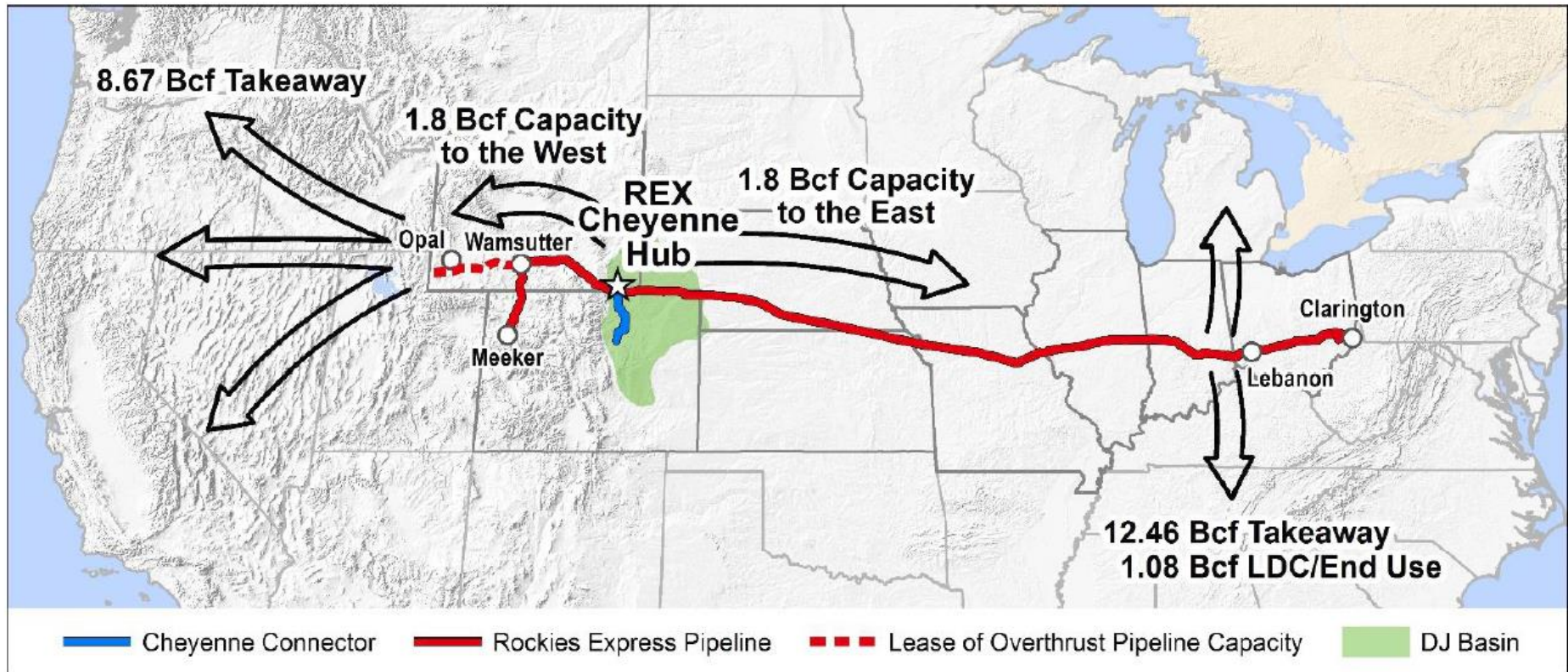
# NGL Pipelines Into and Out of the Niobrara



# REX DJ Expansion



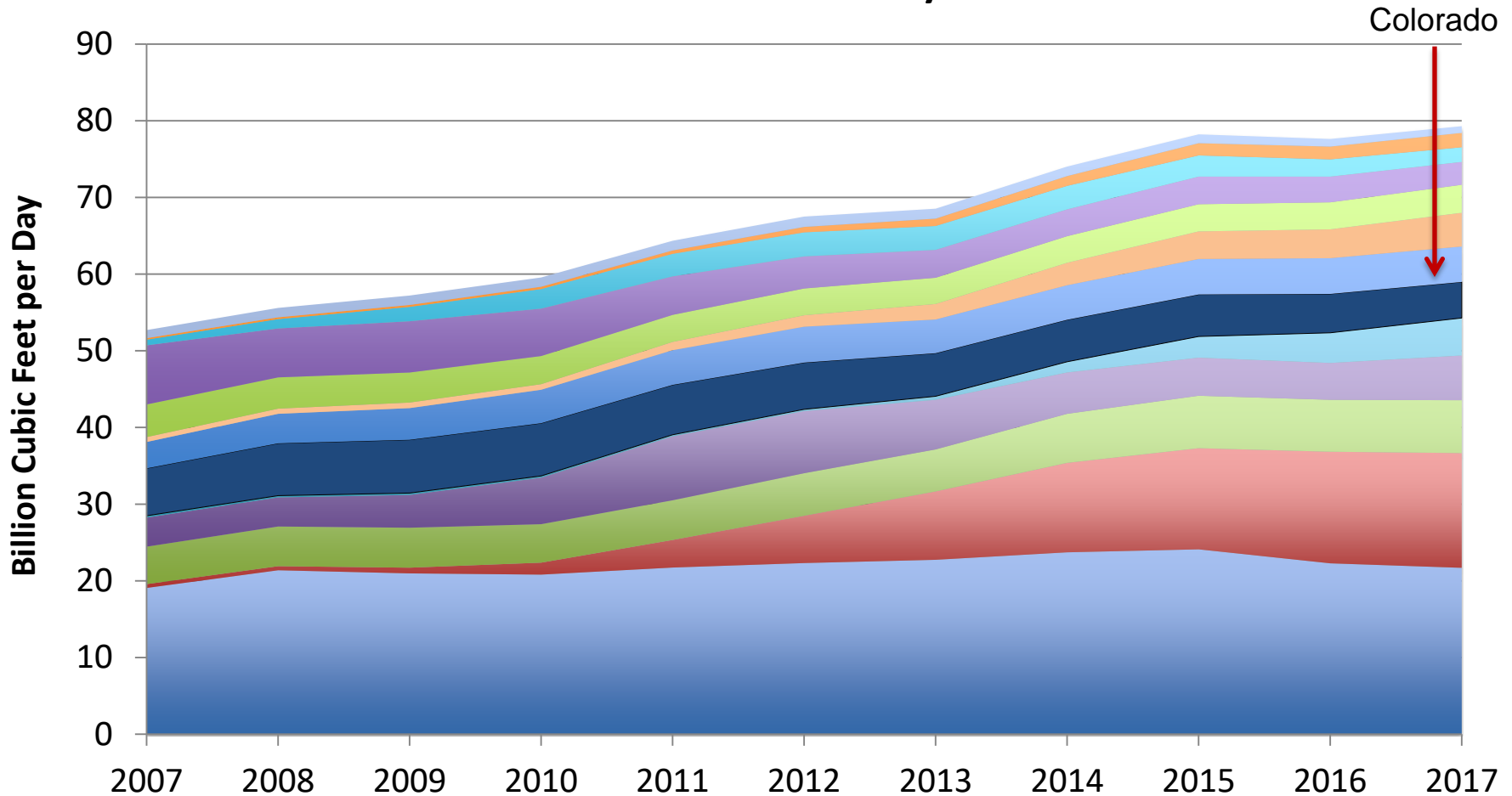
# Path to the Sea?



# US Production up 60% over interval

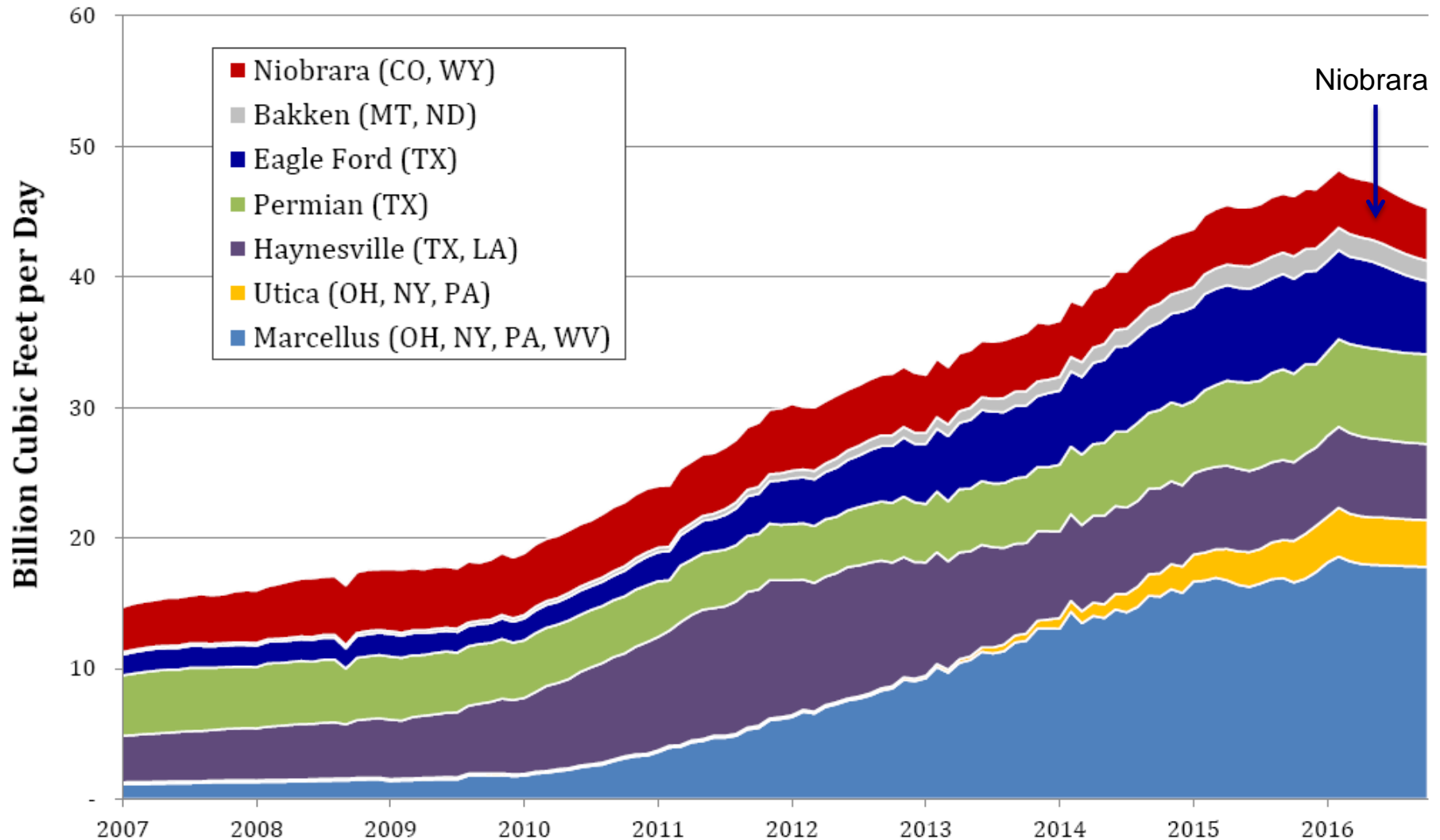


## Natural Gas Production by State



# U.S. Shale Gas Production by Major Resource Play

4.1 bcf per day in the Niobrara formation as of October 2016



Source: U.S. Department of Energy, Energy Information Administration, Drilling Productivity Report

Note: Excludes legacy production; 2016 data through October

Fig. 16

## Yearly Average Natural Gas Production (Bcf/d)

Basin	2018	2019	19 vs. '18	% Change
Northeast	28.16	33.54	5.38	19%
Permian	7.82	9.53	1.71	22%
ArkLaTex	10.03	11.24	1.21	12%
Anadarko	7.72	8.42	0.70	9%
DJ	2.00	2.36	0.36	18%
Bakken	1.47	1.74	0.27	18%
Eagle Ford	6.07	6.20	0.13	2%
Powder River	0.65	0.74	0.09	14%
Barnett	3.12	2.74	-0.38	-12%
Rockies	7.87	7.46	-0.41	-5%
Other	8.31	7.66	-0.65	-8%
<b>Total</b>	<b>83.23</b>	<b>91.63</b>	<b>8.40</b>	<b>10%</b>



# What Fracking Means to Low Income Households

2003-2008 NYMEX <sup>1</sup> Avg. Price <sup>2</sup> /MMBtu	\$7.21	<b>61% Drop</b>
2012 NYMEX <sup>1</sup> Avg. Price/MMBtu	\$2.80	

Price Differential/MMBtu **\$4.41**  
x

2012 Residential Gas Usage<sup>3</sup>/MMBtu **4,179,740,000**

**2012 Residential Cash Savings = \$18,432,653,400**

1 NYMEX – Average last 3 days of close of Natural Gas Contract as reported in Platts Gas Daily Report

2 See Addendum A for supporting documentation

3 2012 Residential Gas Usage – EIA Natural Gas Consumption by End Use



# What Fracking Means to Low Income Households

- 36% of residential households (114 million total<sup>4</sup>) are estimated to qualify for LIHEAP assistance<sup>5</sup>

2012 Residential Cash Savings	= \$18,432,653,400
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Percent of households LIHEAP eligible	x .36
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2012 LIHEAP Eligible Cash Savings	= \$6,635,755,224
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2012 LIHEAP Total Cash Assistance <sup>7</sup>	= \$2,625,000,000
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4 US Census Bureau State and County Quickfacts

5 LIHEAP Home Energy Notebook for FY 2009: Appendix B: Income Eligibility Household Estimates; See Addendum A

6 Households with income up to 150% of the federal poverty income guidelines or, if greater, 60% of the state median income

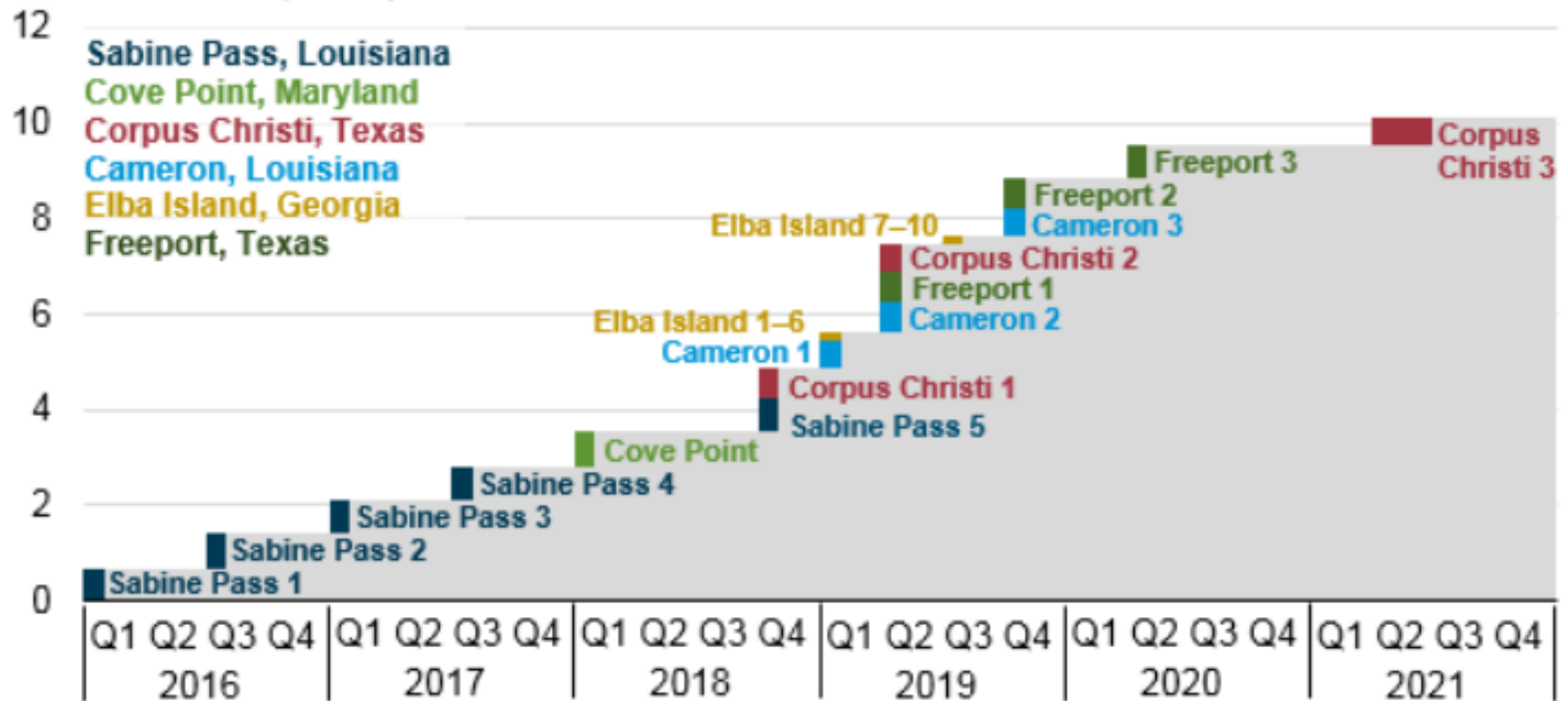
7 10% decrease due to General Administrative Expense; 15% due to efficiency



# U.S. liquefied natural gas export capacity to more than double by the end of 2019

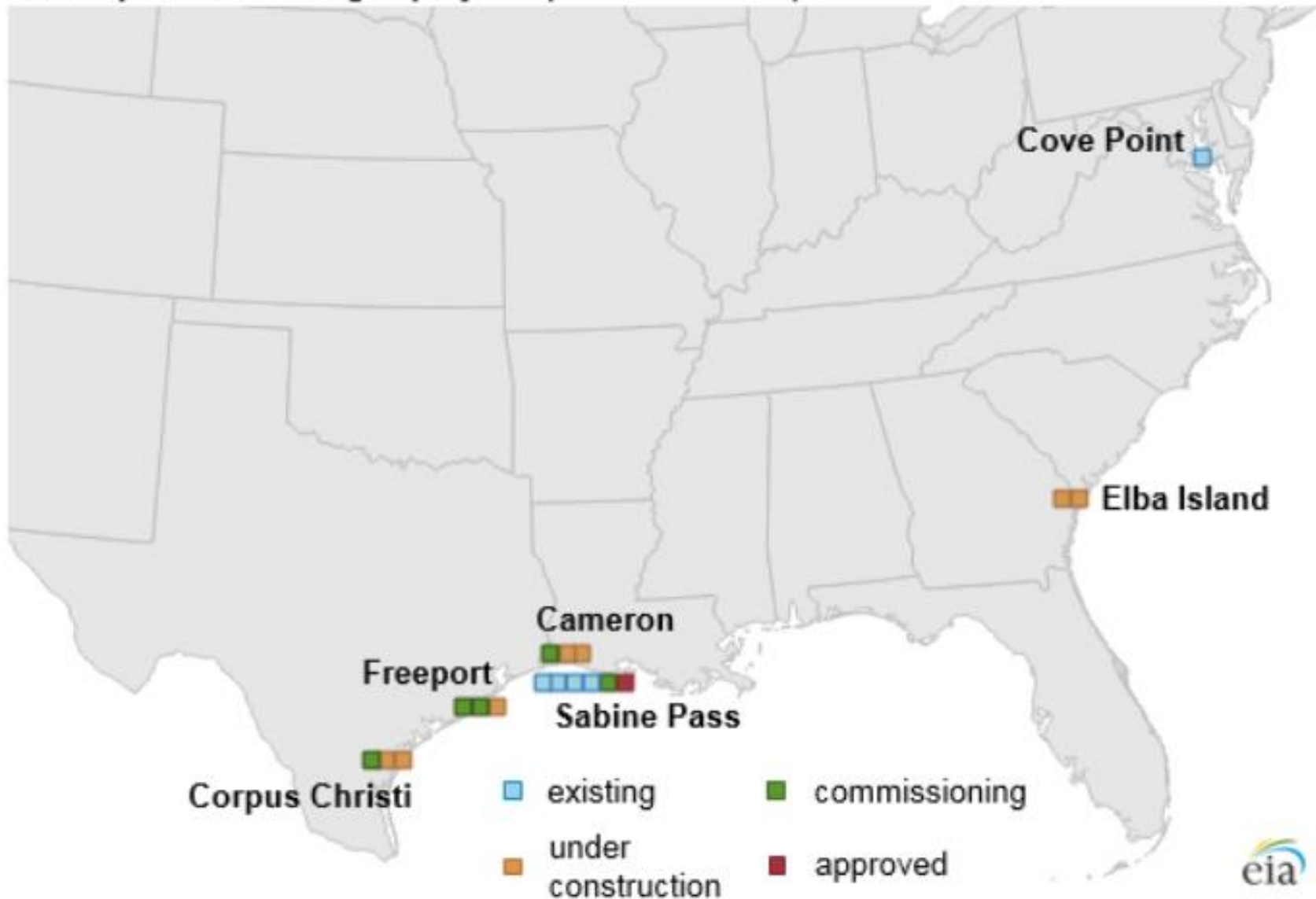
U.S. liquefied natural gas export capacity, 2016–2021

billion cubic feet per day



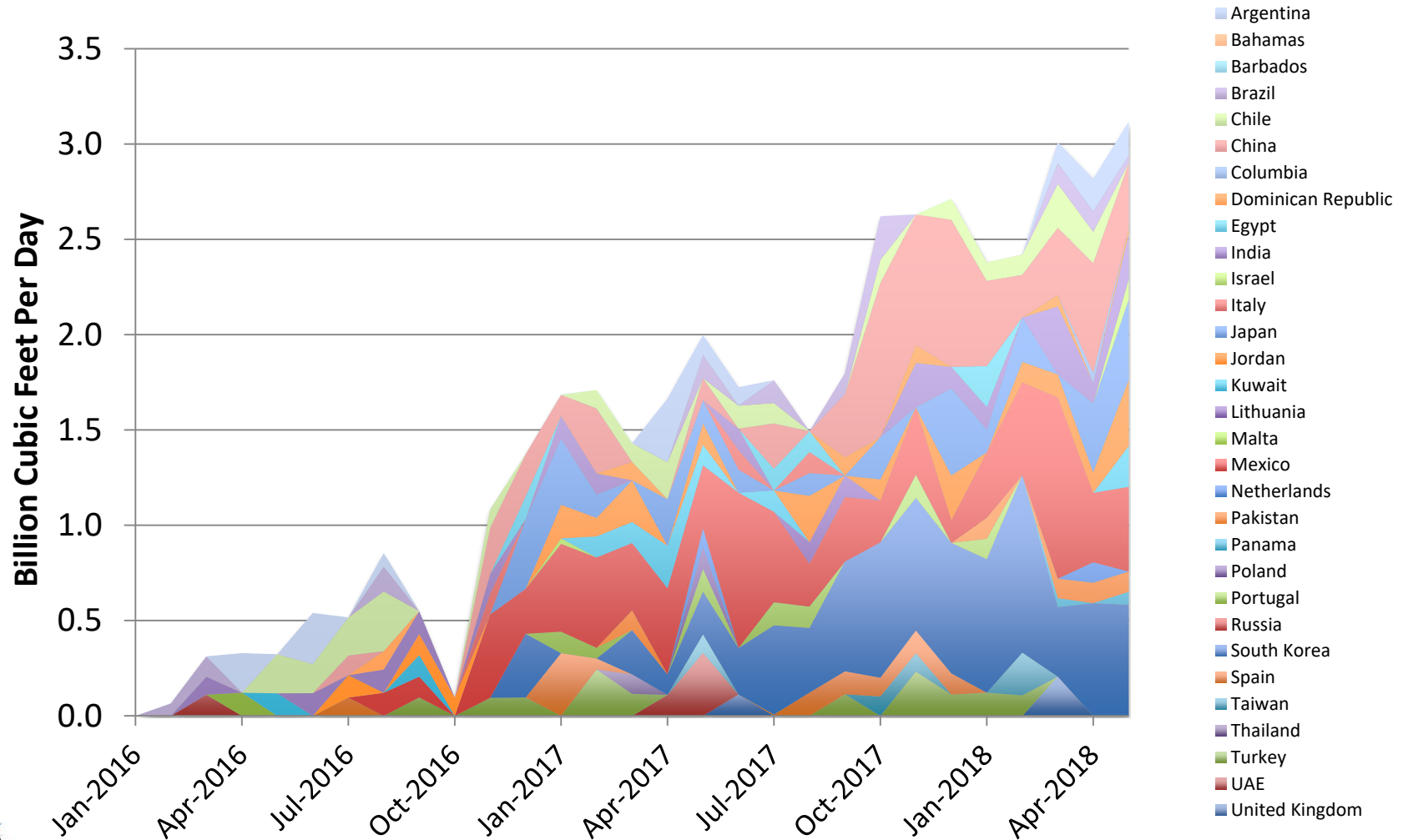
Source: U.S. Energy Information Administration, company investor presentations

## U.S. liquefied natural gas projects (November 2018)



# Quite a diverse exporter at that

## Destination of US LNG Exports



Source: Wyoming Oil and Gas Fair presentation, Brian Jeffries, Wyoming Pipeline Authority, September 2018, EIA

# *“Burned by Russia, Poland Turns to U.S. for Natural Gas and Energy Security”*

*- Stanley Reed, February 26, 2019 The New York Times*



# Headlines

## U.S. Natural Gas Arrives in Lithuania

What It Means for Russia and the Baltic Region

- In an e-mail statement to me, Lithuanian President Dalia Grybauskaitė wrote, “U.S. gas imports to Lithuania and other European countries is a game changer in the European gas market. This is an opportunity for Europe to end its addiction to Russian gas and ensure a secure, competitive and diversified supply.”

# Headlines

*“Poland Seals Deal To Buy LNG From U.S> To Ease Dependence on Moscow”*

- RadioFreeEurope, RadioLiberty, October 17, 2018

*“UAE looks to increase US LNG imports”*

- Hellenic Shipping News, July 12, 2017

*“Lithuania could be gateway for US LNG to Europe, formin says”*

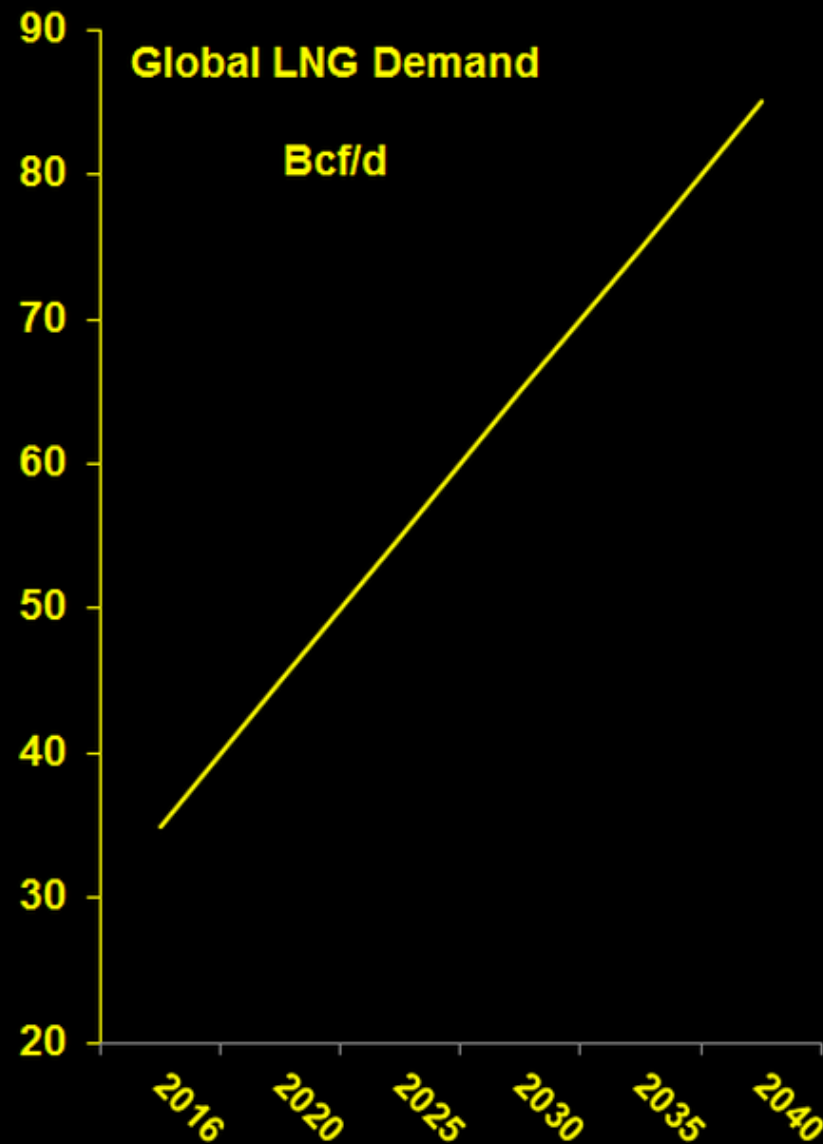
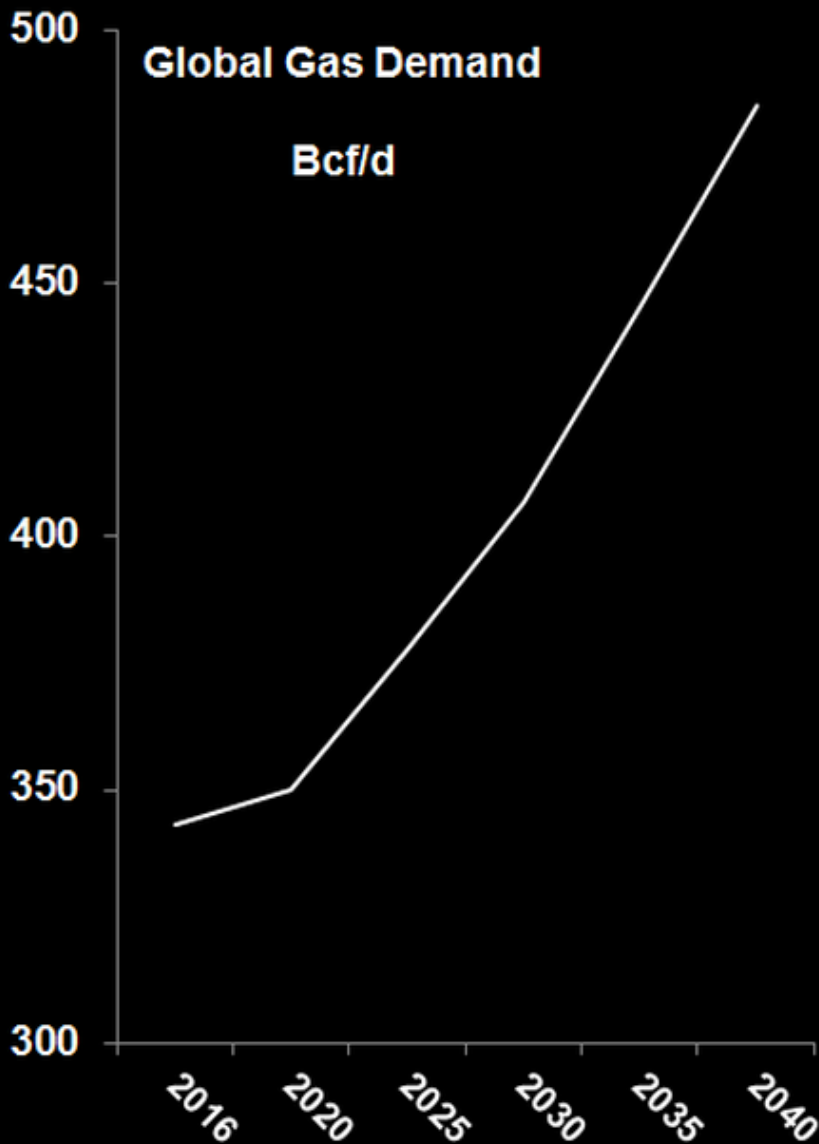
- The Baltic Times, February 12, 2019

*“China To Quadruple LNG Imports – Will U.S. Exporters Benefit?”*

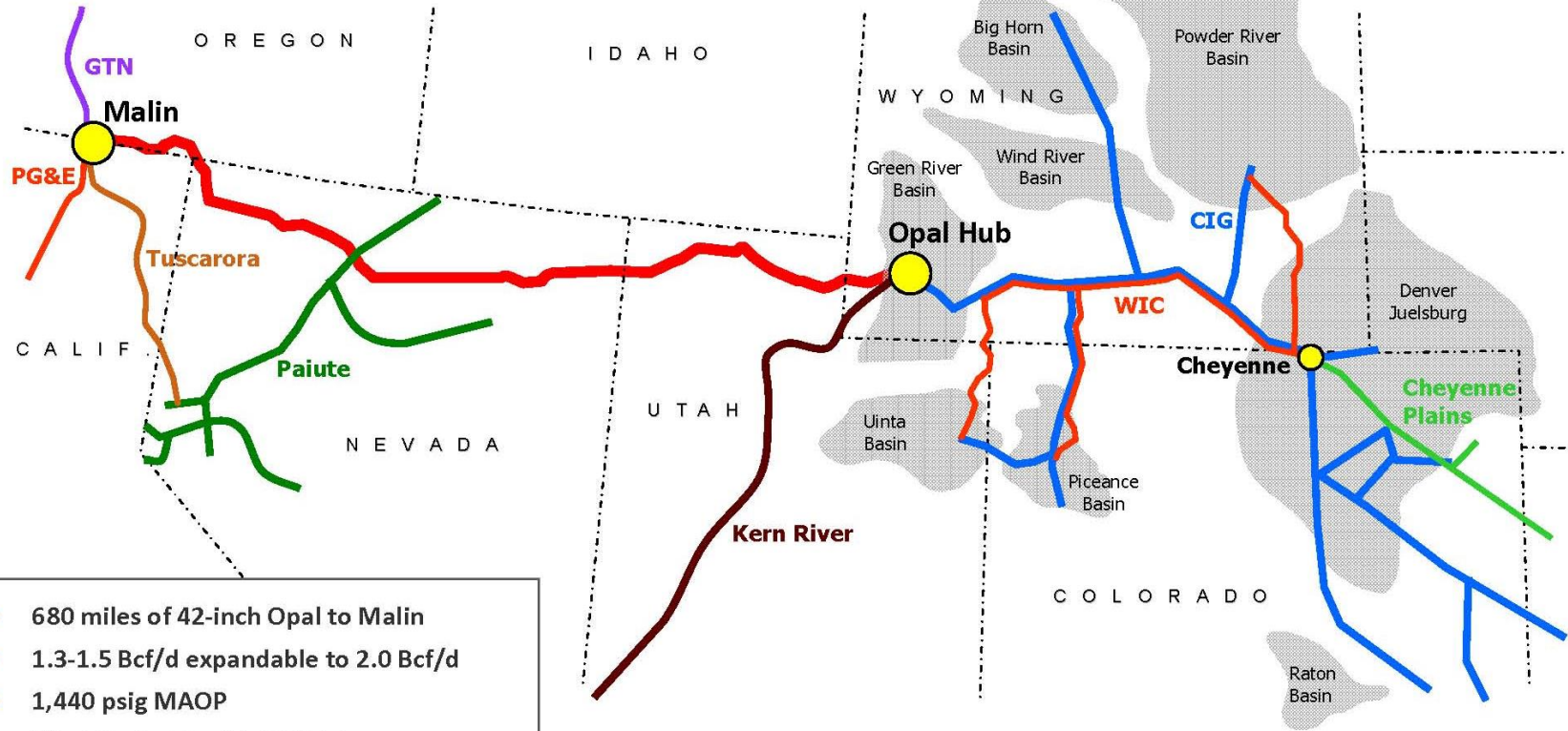
- Forbes.com, January 17, 2019



# The Global Boom in Natural Gas (projected by U.S. Energy Information Administration)

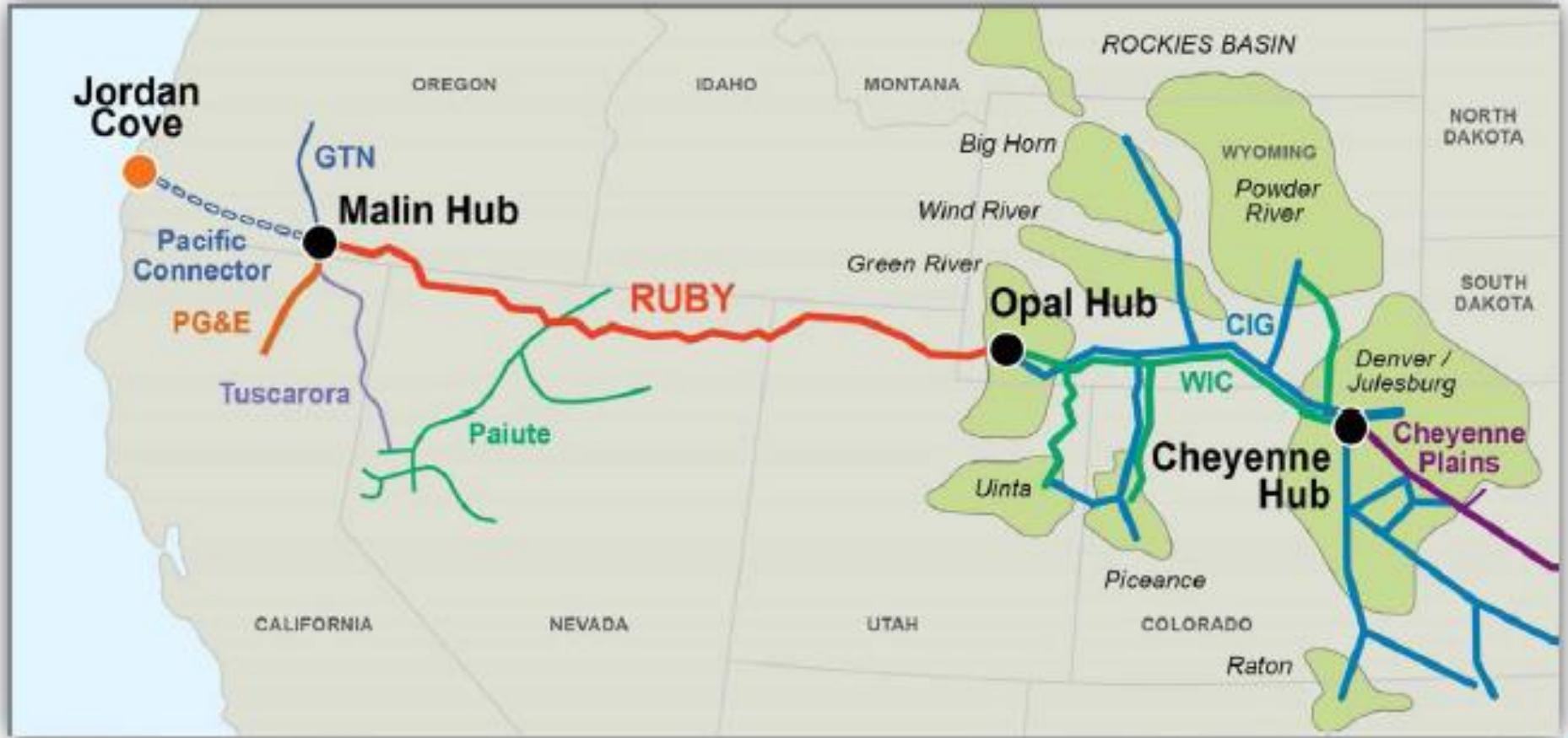


# Ruby Pipeline Map



- 680 miles of 42-inch Opal to Malin
- 1.3-1.5 Bcf/d expandable to 2.0 Bcf/d
- 1,440 psig MAOP
- Measurement – 8 locations
- 64%+/- Public Land
- 2 National Forests – Cache and Fremont

# Piceance to Pacific



# World LNG Estimated October 2014 Landed Prices (\$U.S./MMBtu)



Source: Waterborne Energy, Inc. Data in \$US/MMBtu. Landed prices are based on a netback calculation.

Note: Includes information and Data supplied by IHS Global Inc. and its affiliates ("IHS"); Copyright (publication year) all rights reserved.

Prices are the monthly average of the weekly landed prices for the listed month.

# World LNG Estimated December 2018 Landed Prices (\$U.S./MMBtu)

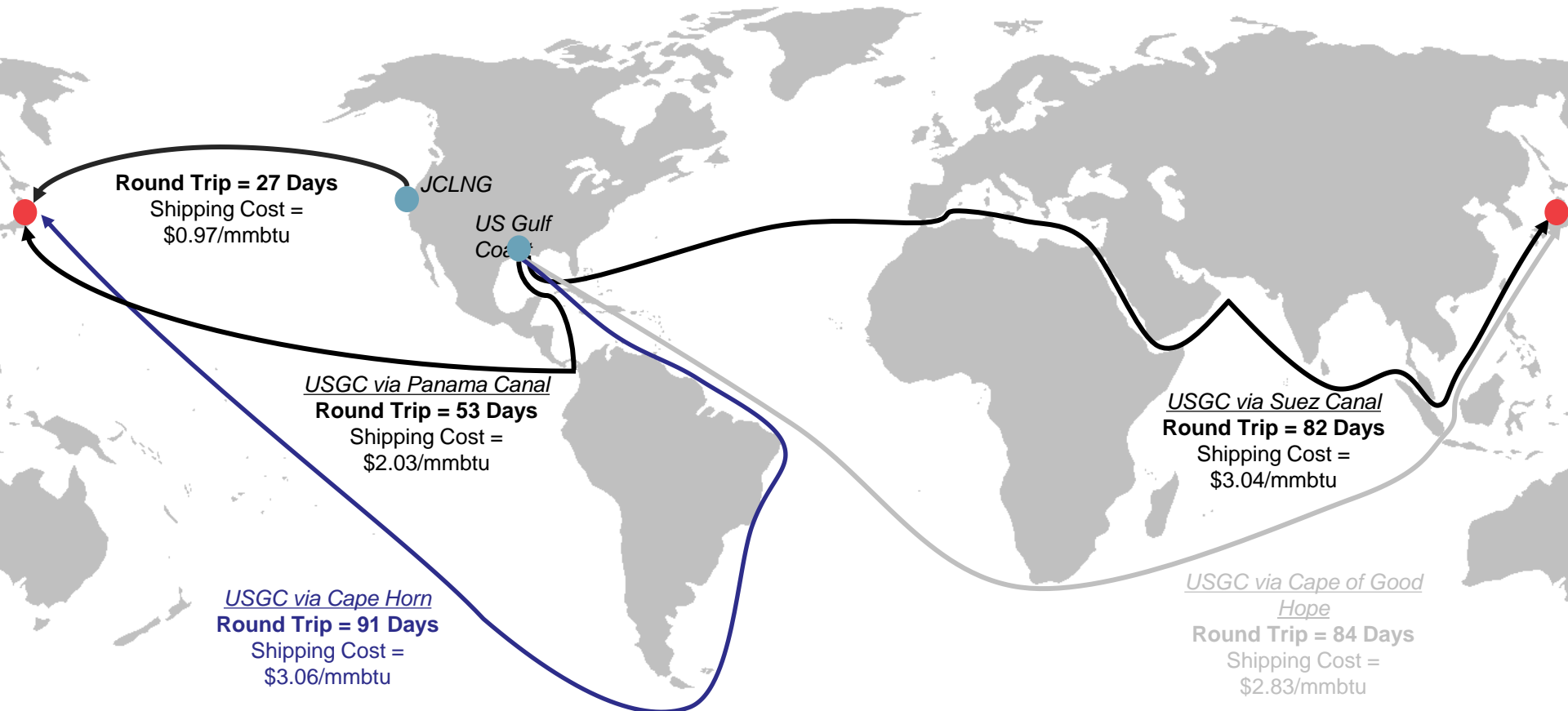


Source: Waterborne Energy, Inc. Data in \$US/MMBtu. Landed prices are based on a netback calculation. Updated: January 2019  
Note: Includes information and Data supplied by IHS Global Inc. and its affiliates ("IHS"); Copyright (publication year) all rights reserved.  
Prices are the monthly average of the weekly landed prices for the listed month. Landed prices are based on a netback calculation.

# Shipping logistics comparison

## Assumptions:

- Henry Hub pricing of \$3.00/mmbtu; AECO trades at a discount to Henry Hub of (\$1.50)/mmbtu
- 170,000 m<sup>3</sup> DFDE ships; time charter rate = \$85,000/day
- 90% ship utilization rate



(1) Shipping distances derived from Platts Portworld shipping distance calculator

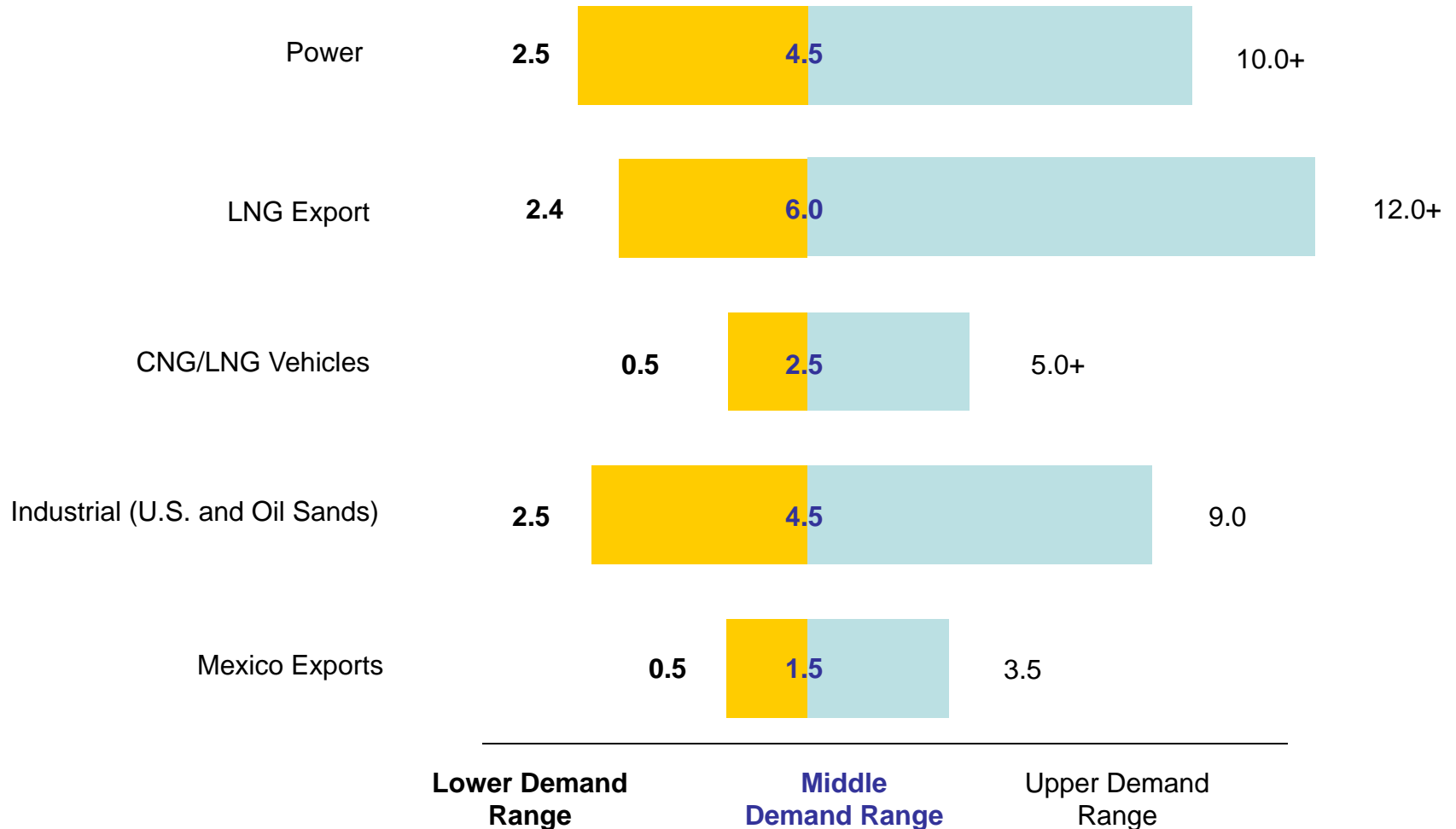
**Uncertain access to Panama Canal expansion puts additional USGC LNG shipping costs at risk**

# A New Era of Exports

“U.S. crude oil, NGL and gas markets have entered a new era. Exports now dominate the supply/demand equilibrium. These markets simply would not clear at today’s production levels, much less at the flow rates coming over the next few years, if not for access to global markets. This year, the U.S. may export 20-25% of domestic crude production, 15% of natural gas and 40% of NGLs from gas processing, and those percentages will continue to ramp up.”

# North American Natural Gas Demand Ranges by Selected Sector

Significant demand growth is possible in the LNG, transportation/HHP and power sectors through 2020 in Bcf per day.





# SB181 – Current Status

(March 7, 2019)

- In Senate Finance Committee today
- Goes to floor of the Senate, 2<sup>nd</sup> reading next Tuesday, March 12, 2019
- Introduced in House (up to Speaker)
  - Anticipate additional environmental amendments
- Assigned to committee of reference, probably Energy Committee
  - Dems will try to move it through 3 committees in the House in 1 week

# SB181 – Current Status (cont'd)

(March 7, 2019)

- Two weeks from now, we could see the 3<sup>rd</sup> reading with the Bill signed by the Governor as quickly as 3 weeks from now
  - The budget is scheduled to be introduced on March 19, 2019 which is another reason why the Democrats are in such a hurry
- If the votes go down on party lines, this Bill will be law in less than a month

# Conclusions

- Key Question: Is global climate change a threat to health and safety in Colorado?
- The Reality/Energy Irony? – The U.S. Shale success story has
  - Saved billions annually for low income households
  - Allows European countries to have a choice in who supplies them natural gas... WHILE... WE FIGHT FOR OUR VERY LIVELIHOOD HERE AT HOME
- The new order?
  - New regulations at all levels and a backlog of “Takings” lawsuits clogging up our courts

# Citations for Report

All of the information utilized for this report is a compilation of information pulled from the following data sources:

Energy Information Administration (EIA)  
Ponderosa Advisors LLC  
Office of Energy Projects  
Bloomberg  
U.S. Department of Energy  
Raymond James and Associates, Inc.  
Wikipedia  
The Power and Natural Gas Planning Taskforce  
Platts Gas Daily Report, S&P Global Platts  
Platts Inside FERC Gas Market Report, S&P Global Platts  
Baird Equity Research  
Colorado Energy Coalition  
Rueters  
Oilprice.com  
RBN Energy  
Waterborne Energy, Inc.  
Colorado Oil and Gas Conservation Commission  
Wyoming Pipeline Authority, Brian Jeffries  
National Energy Board  
Rockies Express Pipeline  
The Statistics Portal  
Kinder Morgan, Gregory Ruben  
Shell Energy Connect  
Tudor Pickering Holt & Co.  
The U.S. LNG Association  
Forbes.com  
Veresen  
Oilmonster.com  
Shaleexperts.com

Global Energy Statistical Yearbook 2018

# Contact Information

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