



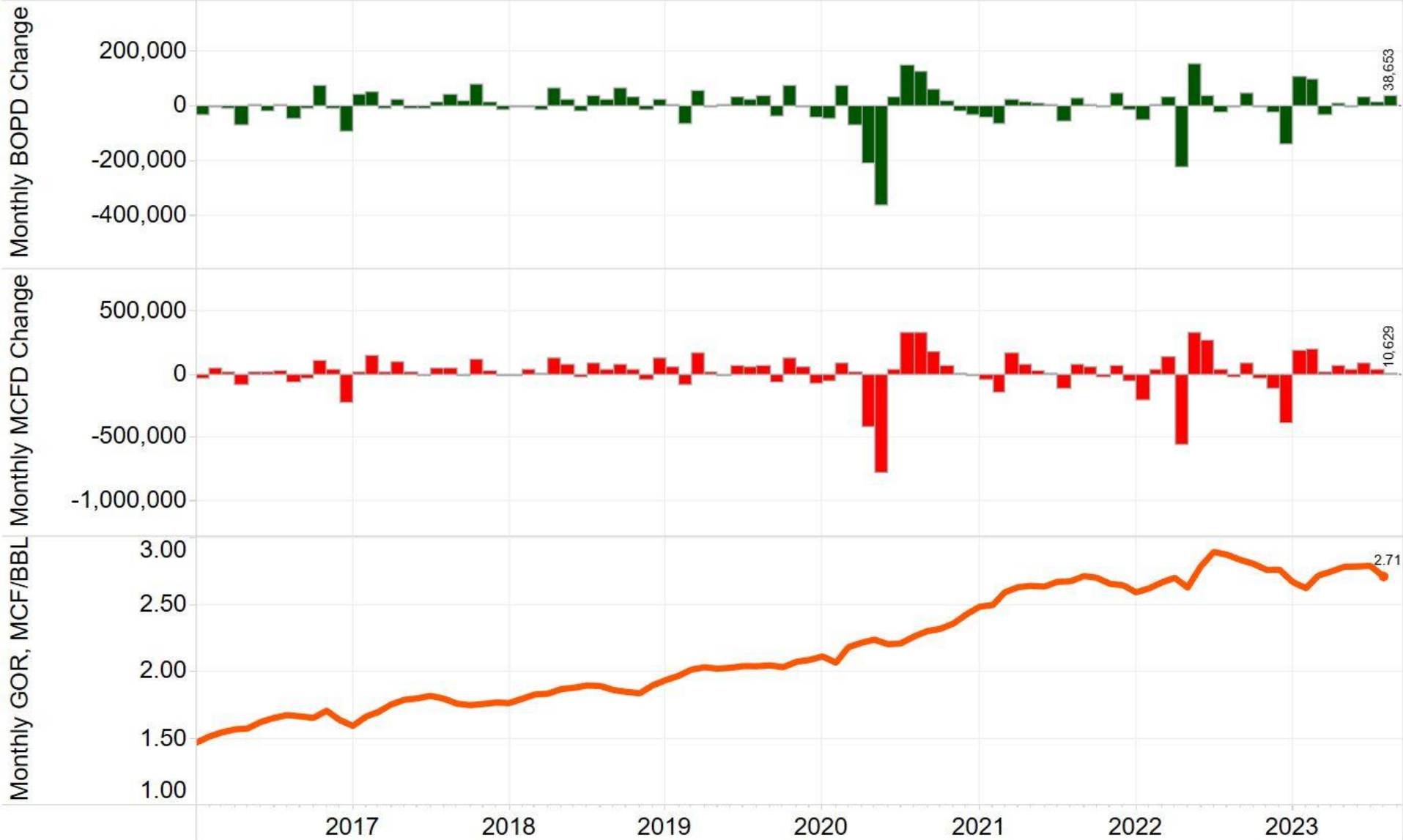
October 2023 Monthly Update
North Dakota Pipeline Authority
Justin J. Kringstad
October 12, 2023

US Williston Basin Oil Production - 2023

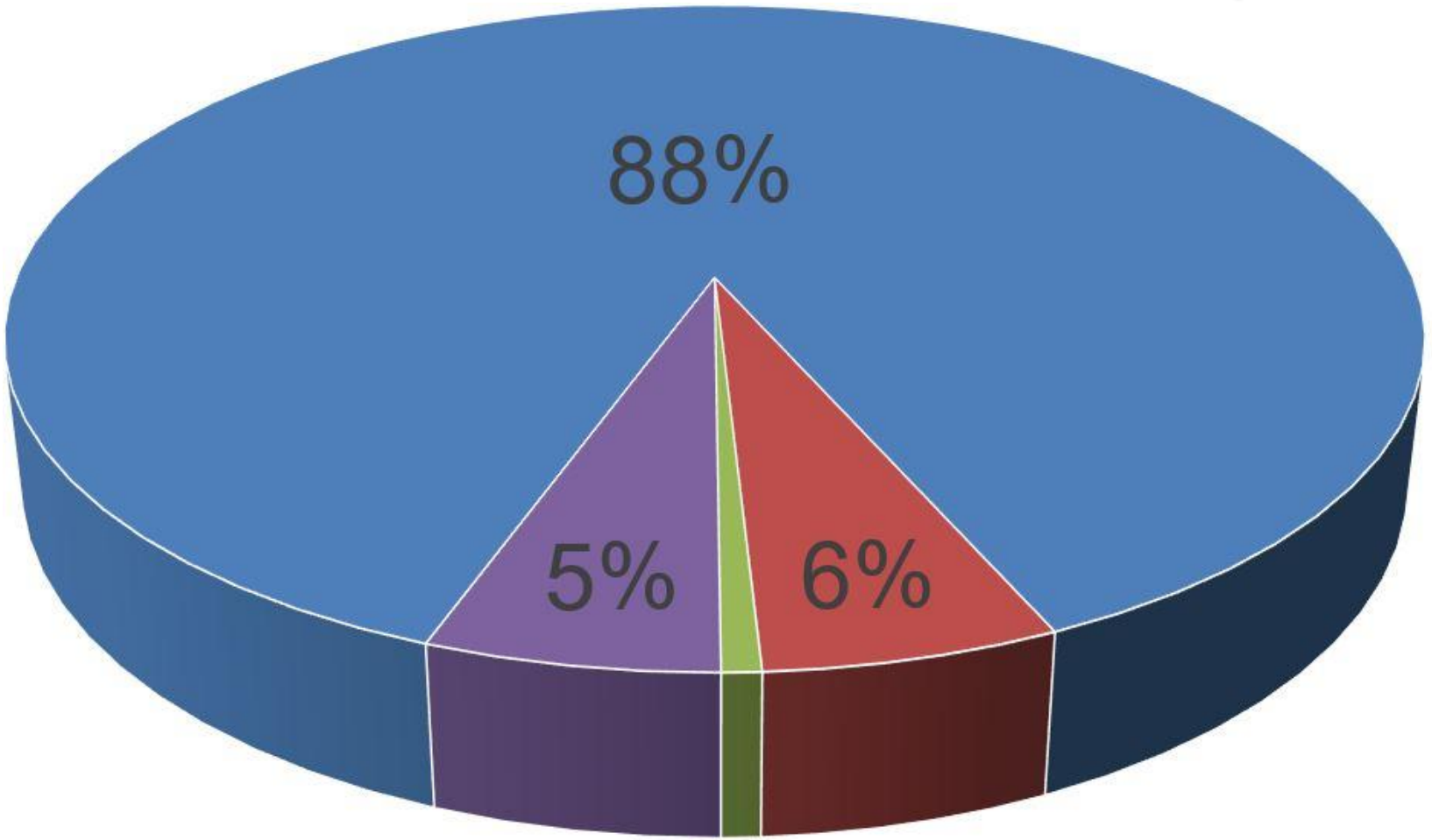
| MONTH | ND | Eastern MT* | SD | TOTAL |
|-----------|-----------|-------------|-------|-----------|
| January | 1,062,878 | 62,094 | 2,610 | 1,127,582 |
| February | 1,158,978 | 63,536 | 2,475 | 1,224,989 |
| March | 1,124,896 | 64,580 | 2,652 | 1,192,128 |
| April | 1,135,825 | 61,897 | 2,557 | 1,200,279 |
| May | 1,134,999 | 60,760 | 2,560 | 1,198,319 |
| June | 1,166,604 | 58,889 | 2,274 | 1,227,768 |
| July | 1,180,692 | | | |
| August | 1,219,345 | | | |
| September | | | | |
| October | | | | |
| November | | | | |
| December | | | | |



North Dakota Monthly Production Change



Estimated Williston Basin Oil Transportation



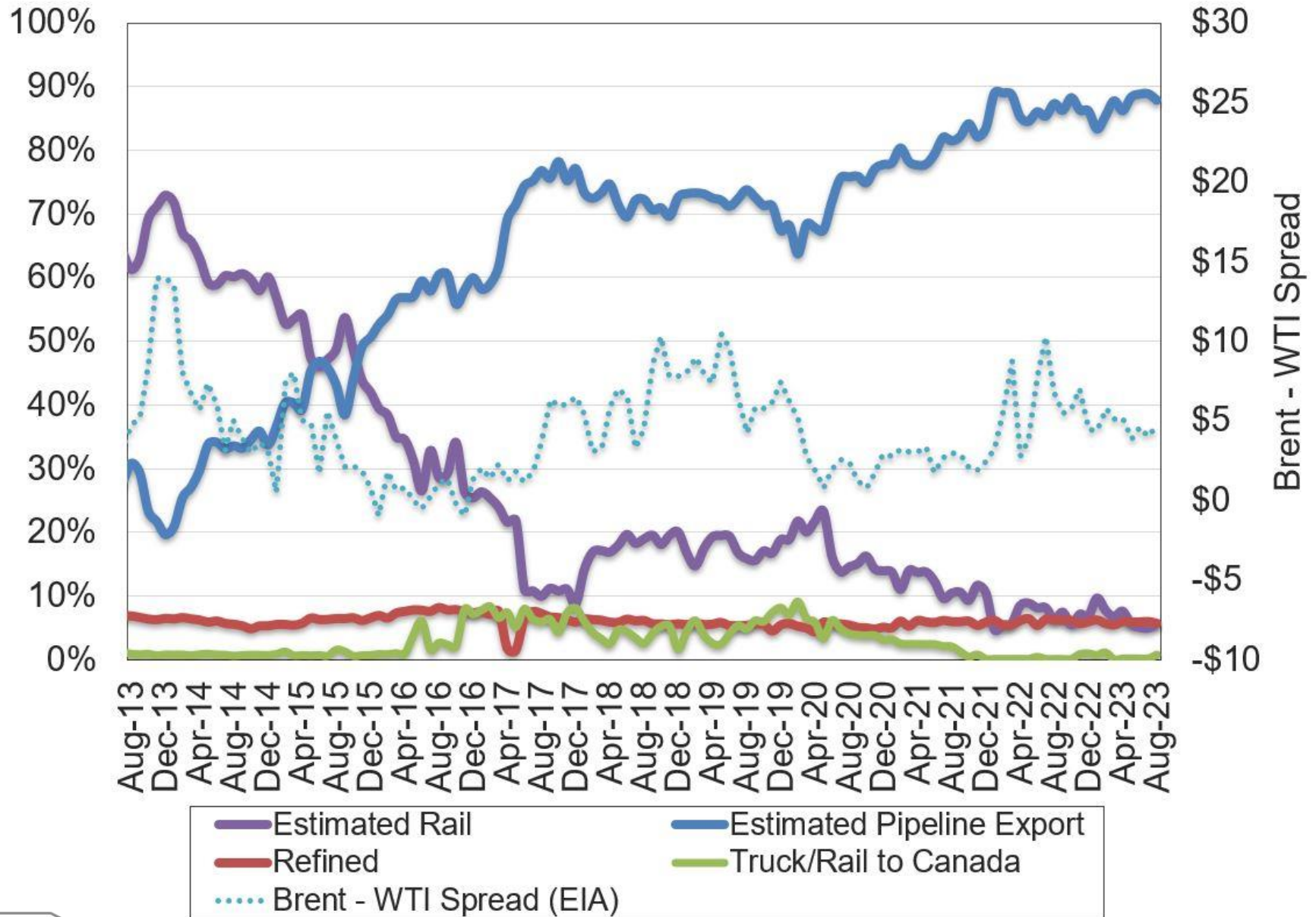
■ Pipeline Export 1%
■ Truck/Rail to Canada

■ Refined
■ Estimated Rail

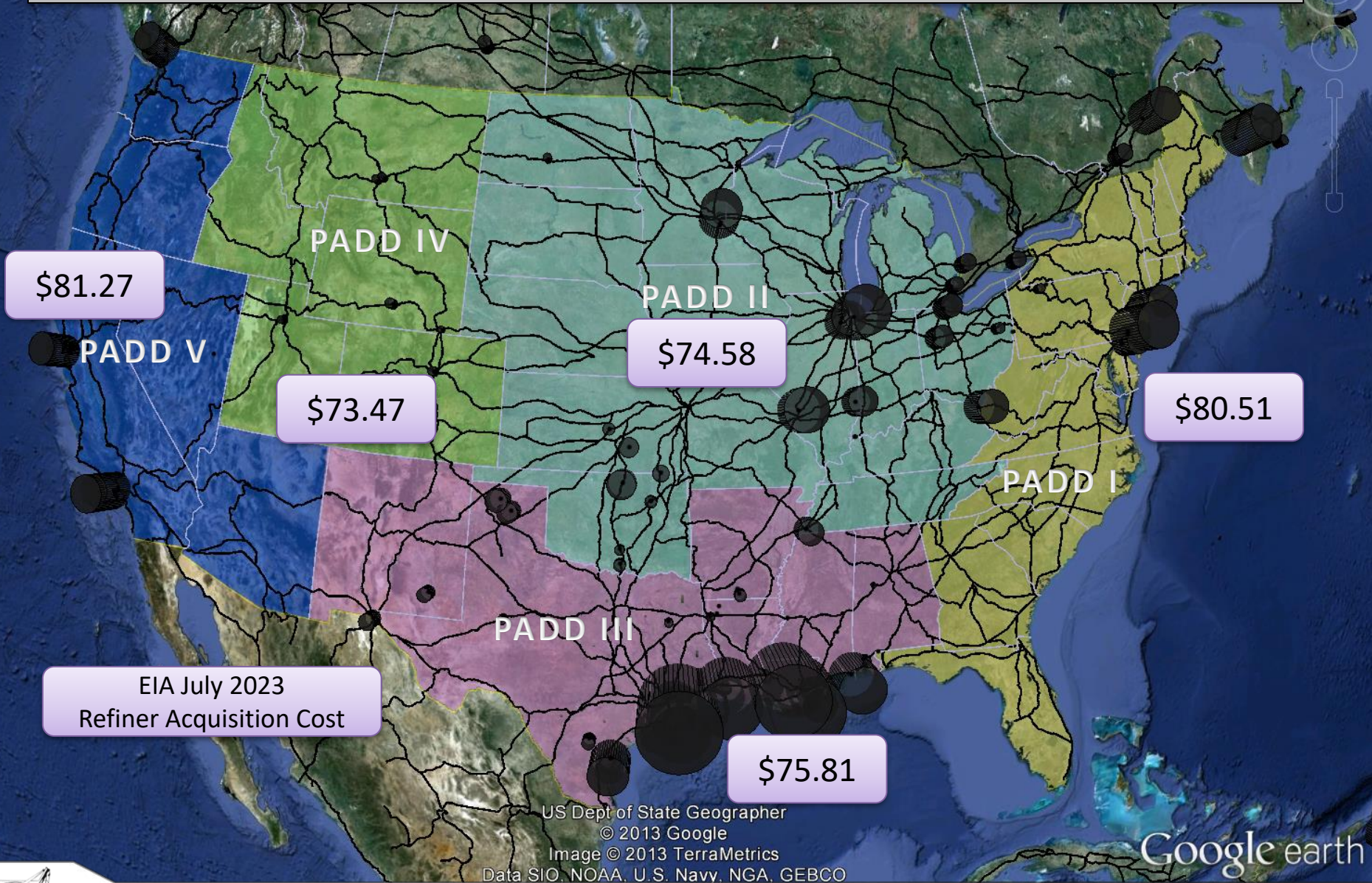
Aug 2023



Estimated Williston Basin Oil Transportation



Major Rail Lines and Refineries



EIA July 2023
Refiner Acquisition Cost

US Dept of State Geographer
© 2013 Google
Image © 2013 TerraMetrics
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

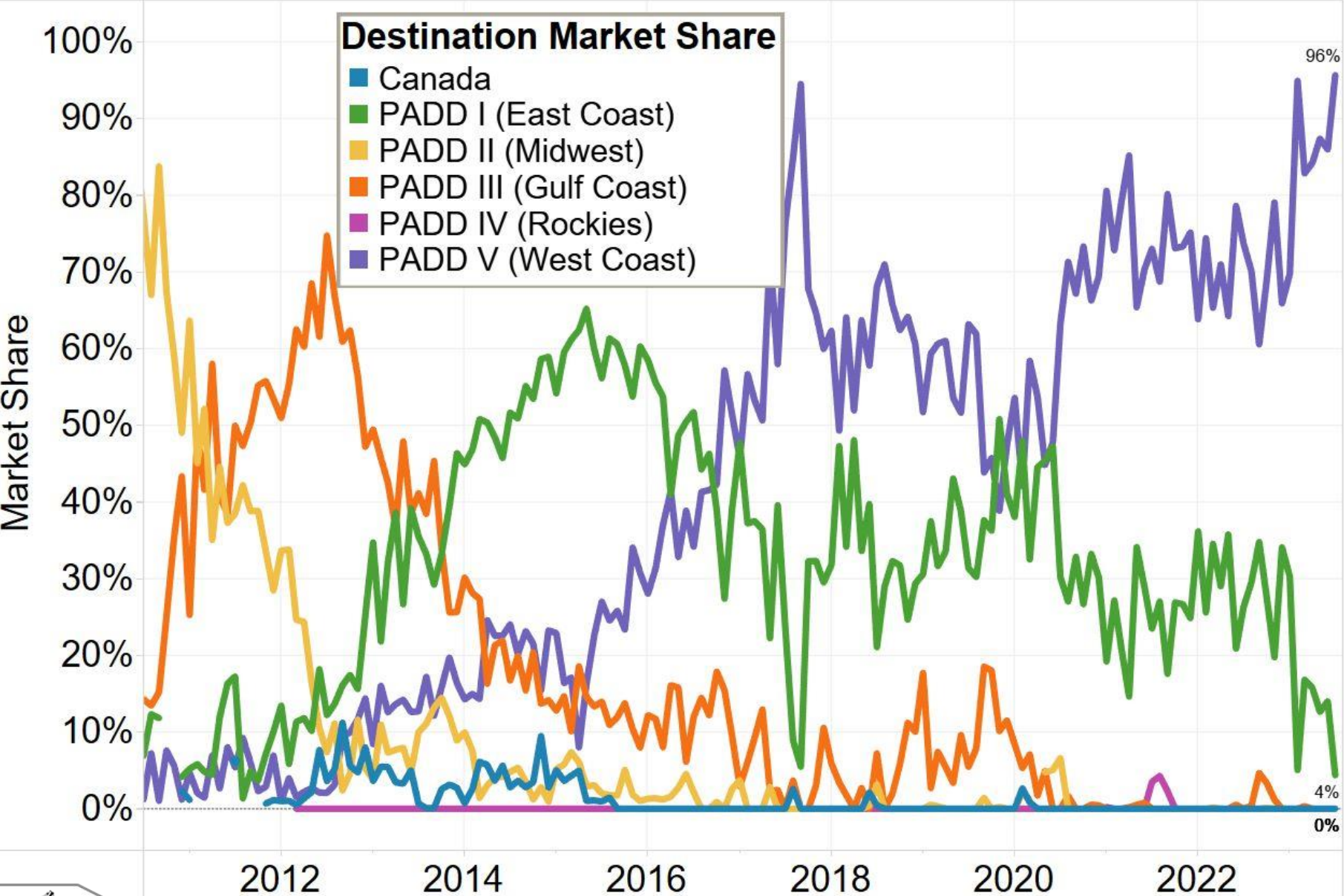
Google earth



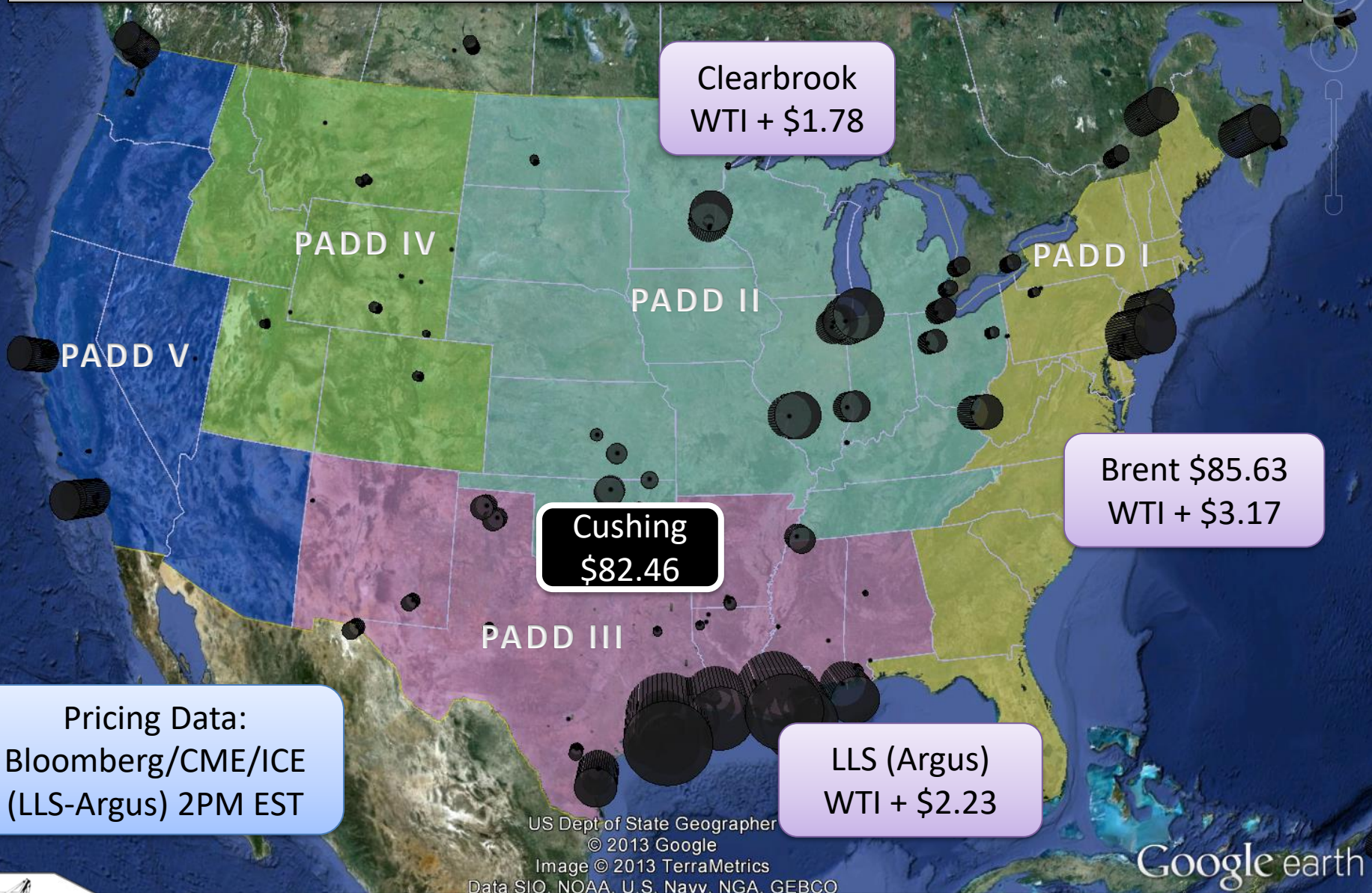
Estimated ND Rail Export Volumes



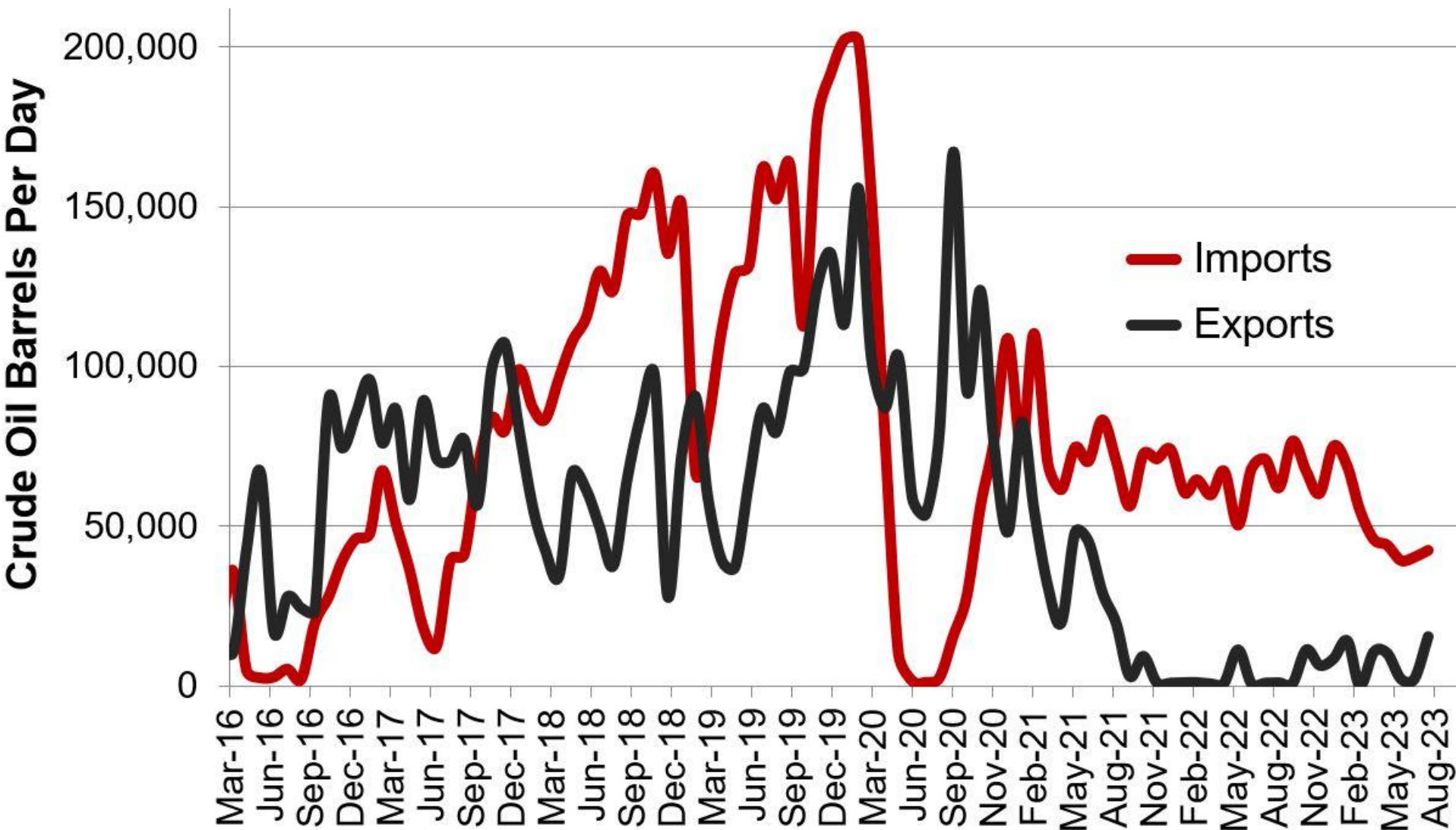
Rail Destinations Market Share (July 2023)



Crude Oil Prices – Oct. 12, 2023



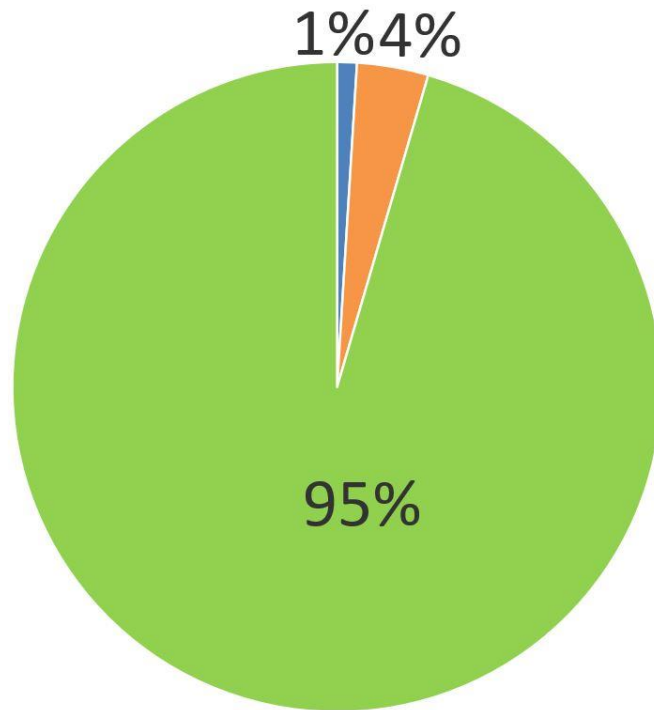
Williston Basin Truck/Rail Imports and Exports with Canada



Data for imports/exports chart is provided by the US International Trade Commission and represents traffic across US/Canada border in the Williston Basin area.



Solving the Flaring Challenge



Statewide

GREEN – % of gas captured and sold
Blue – % flared from zero sales wells
Orange – % flared from wells with at least one mcf sold.

Simple Terms

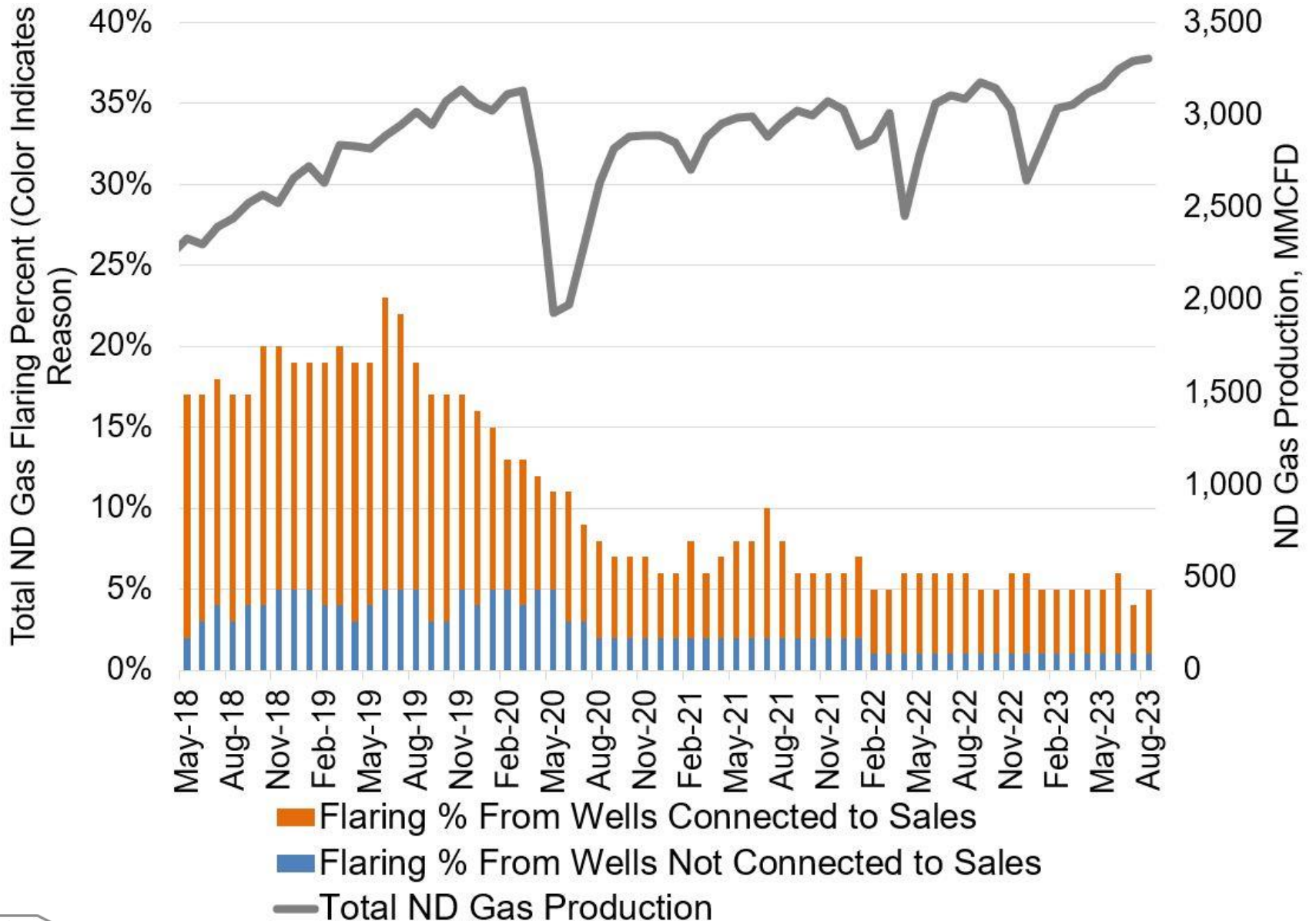
Blue – Lack of pipelines

Orange – Challenges on existing infrastructure

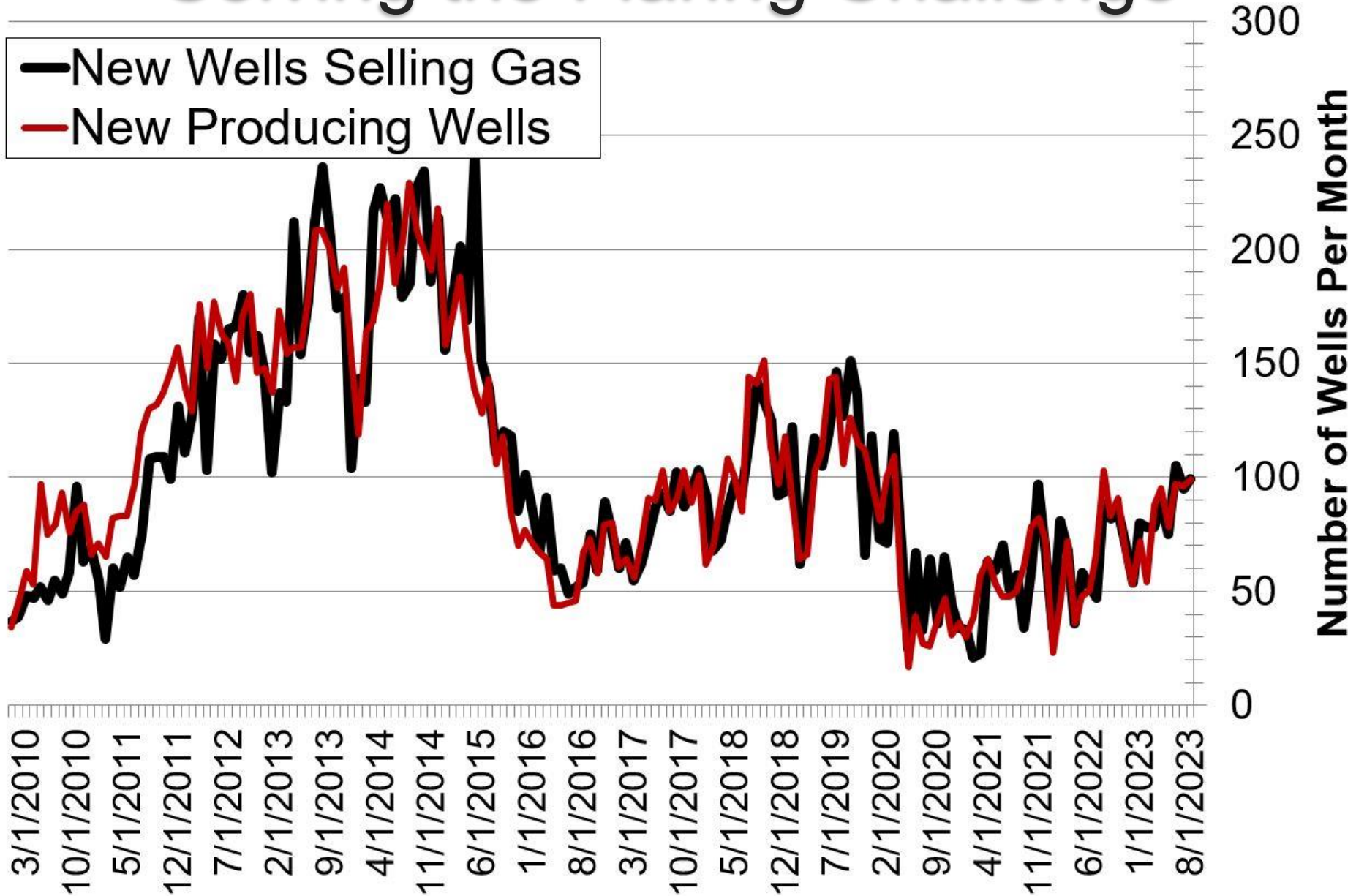
August 2023 Data – Non-Confidential Wells



Solving the Flaring Challenge

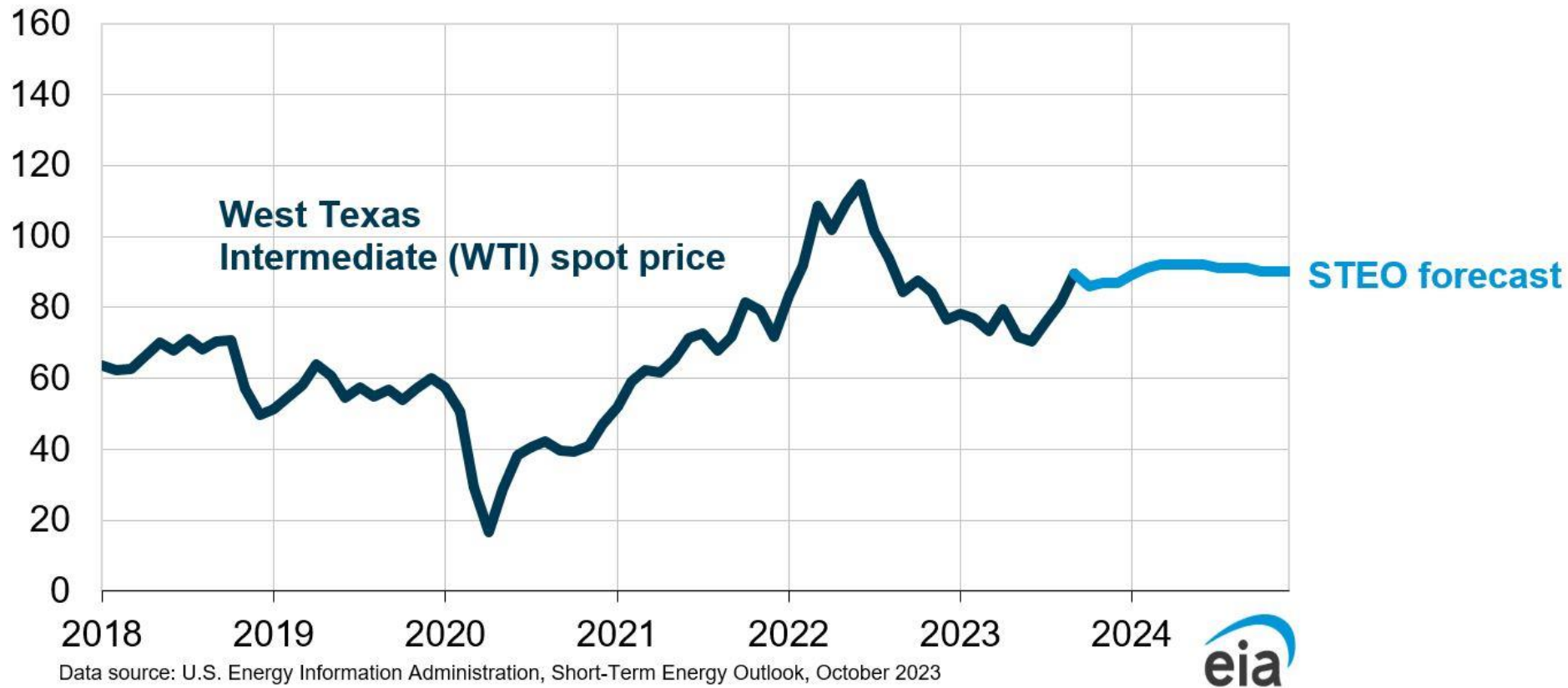


Solving the Flaring Challenge

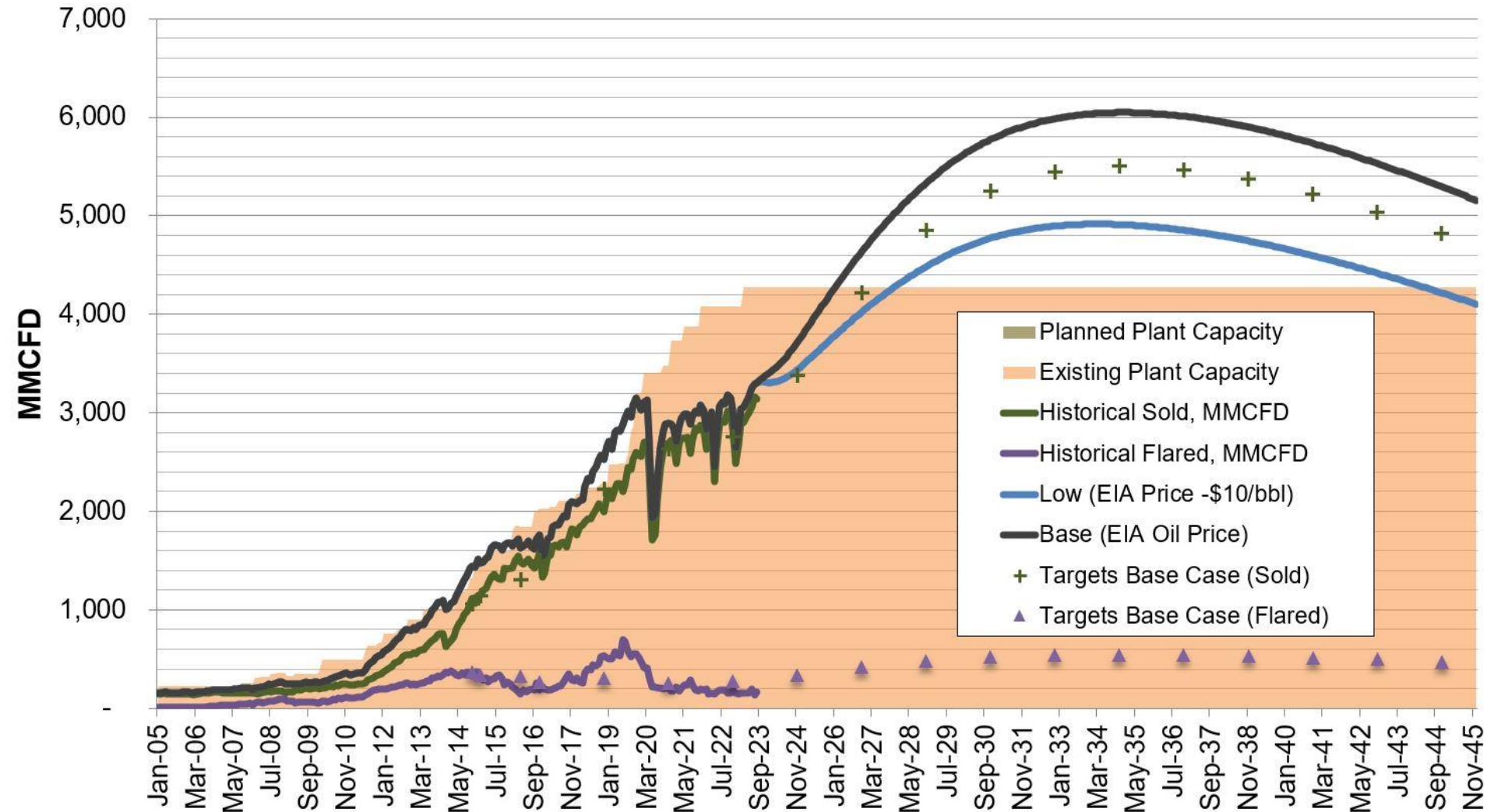


EIA Oil Price Forecast: Oct. 2023

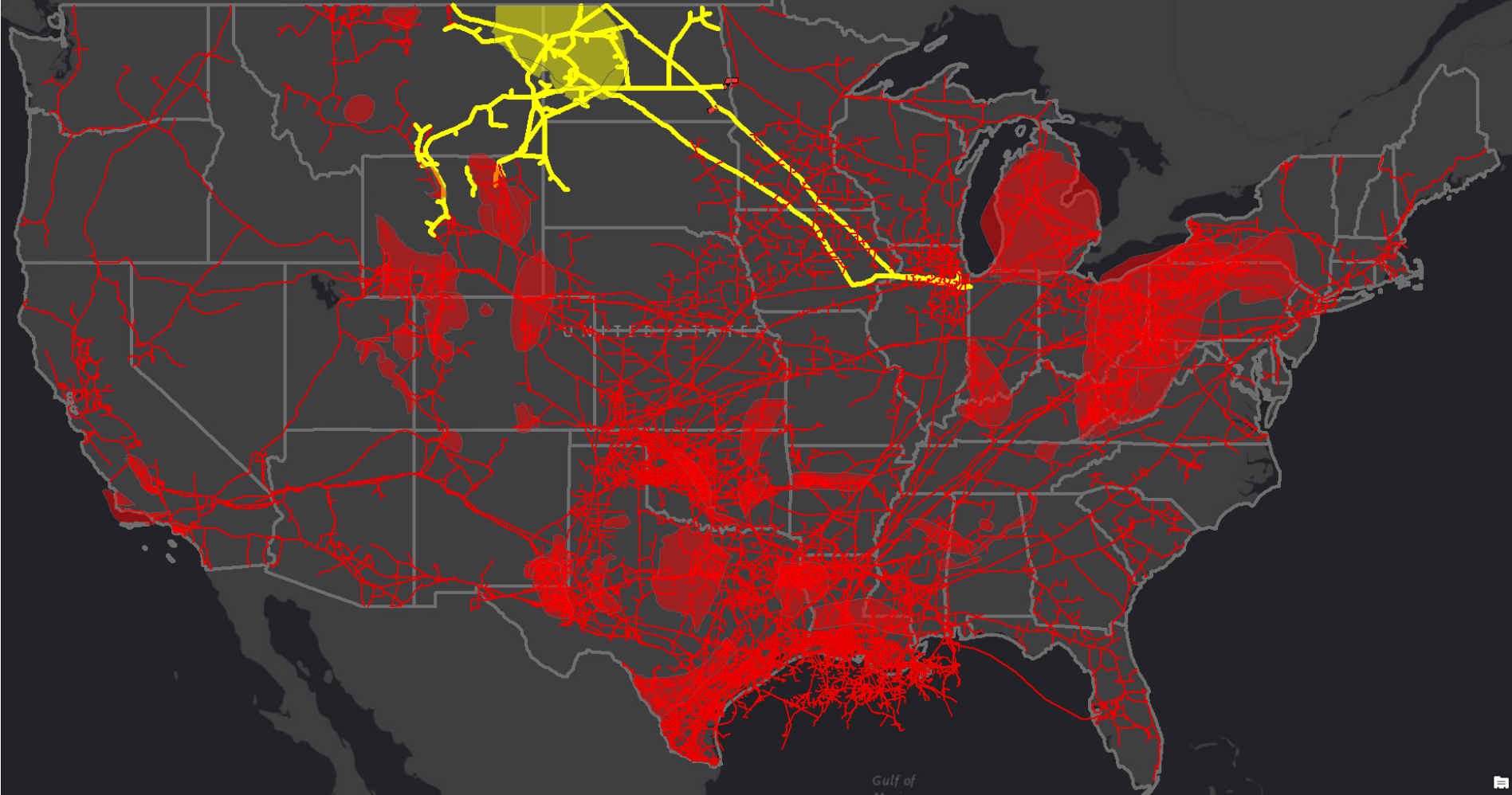
West Texas Intermediate (WTI) crude oil price
dollars per barrel



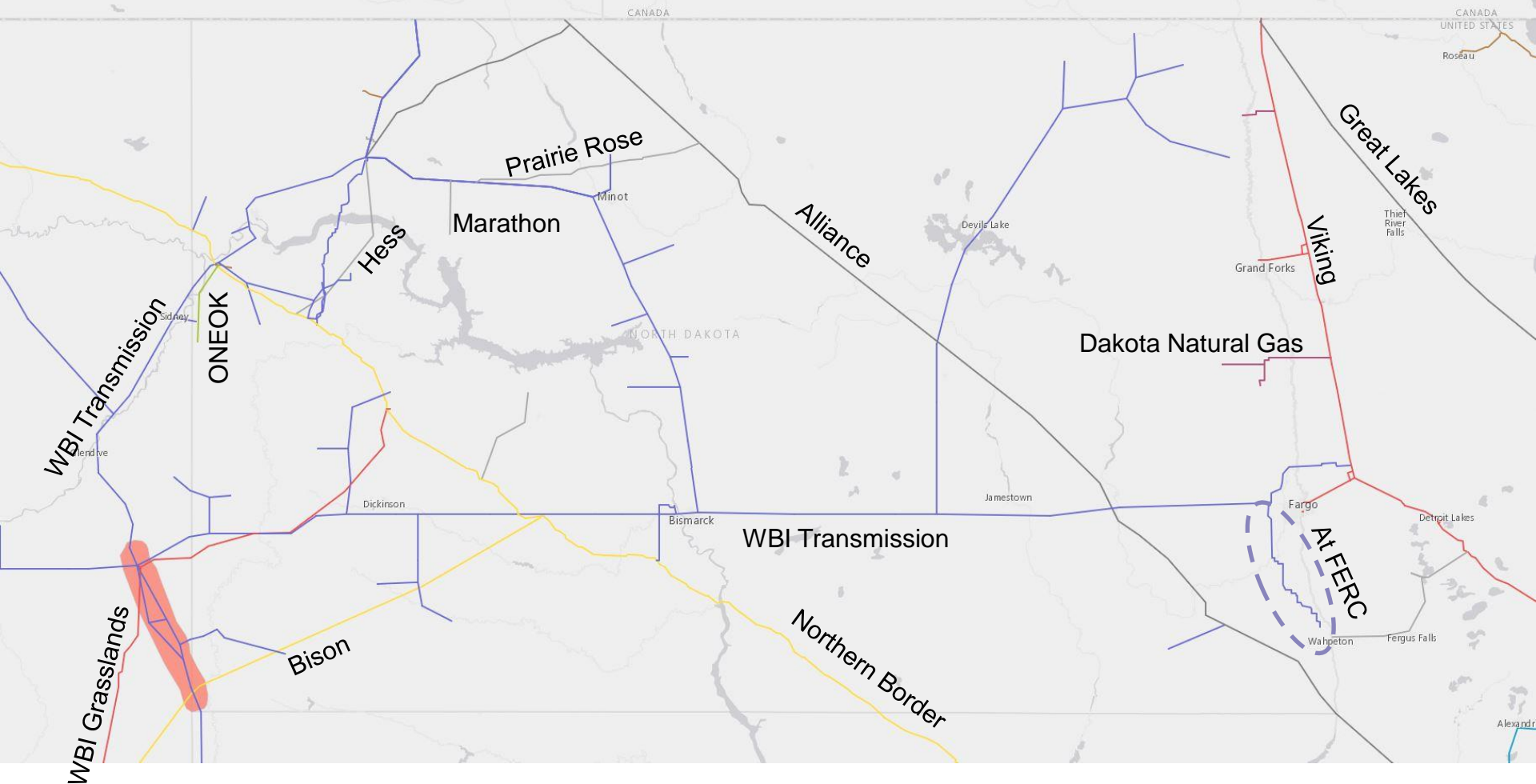
Solving the Flaring Challenge



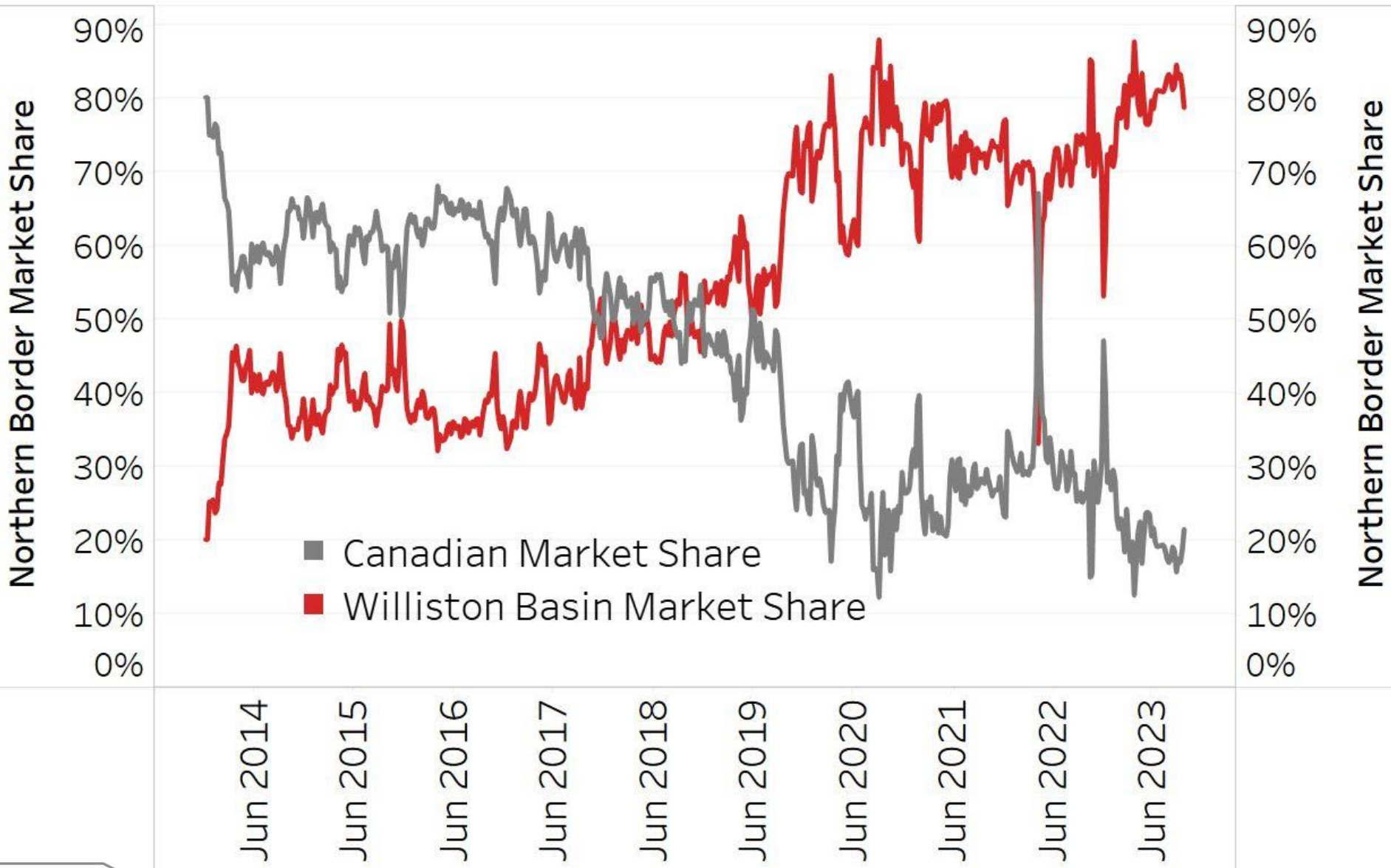
Bakken Natural Gas Infrastructure



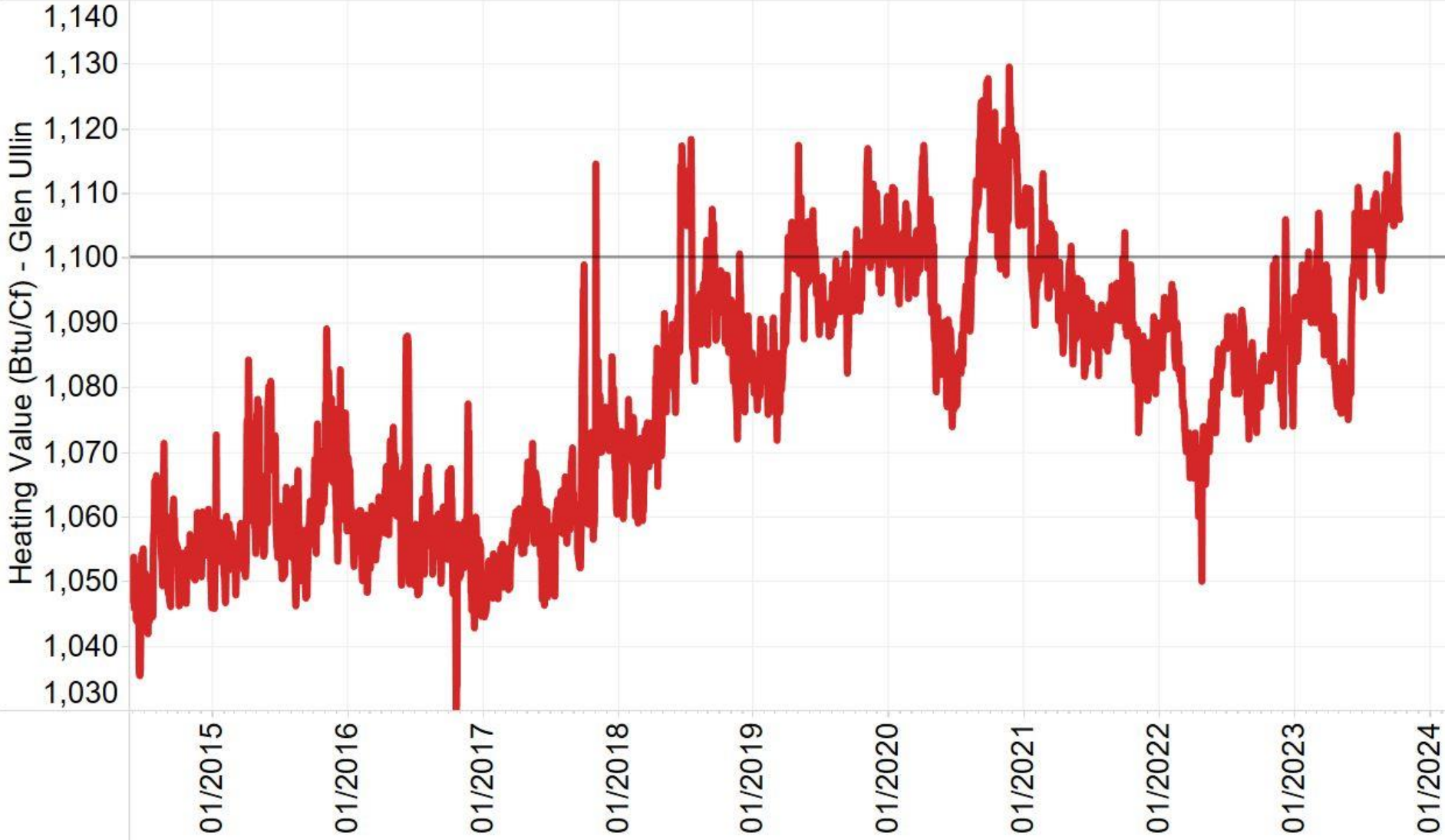
Bakken Natural Gas Infrastructure



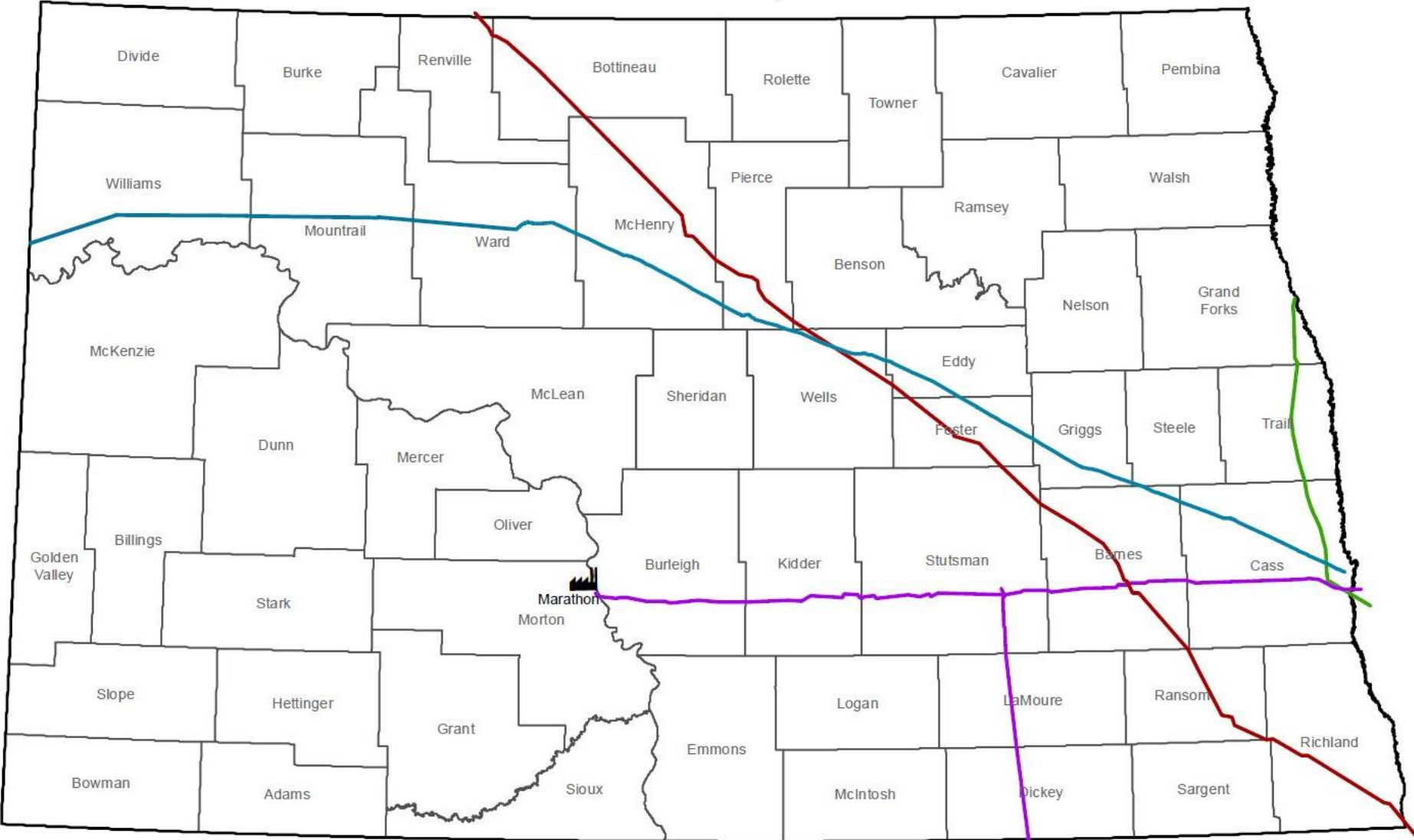
Northern Border Pipeline Market Share



Northern Border BTU at Glen Ullin, ND



Product Pipelines



- Cenex Pipeline LLC - Refined Products

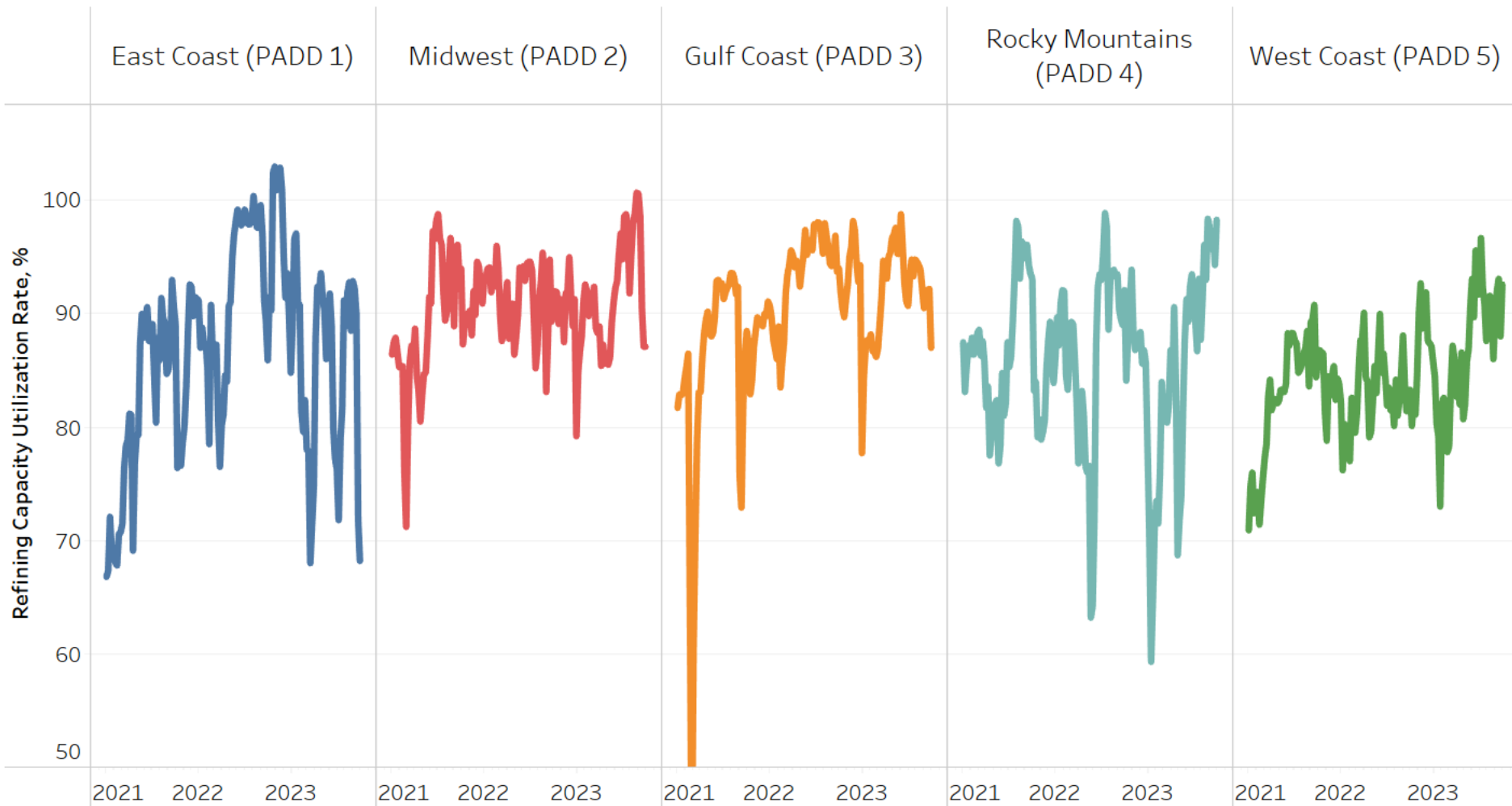
— Magellan Midstream Partners LP - Refined Products

 Refinery
- Kinder Morgan Cochin - Condensate

— NuStar Energy - Refined Products



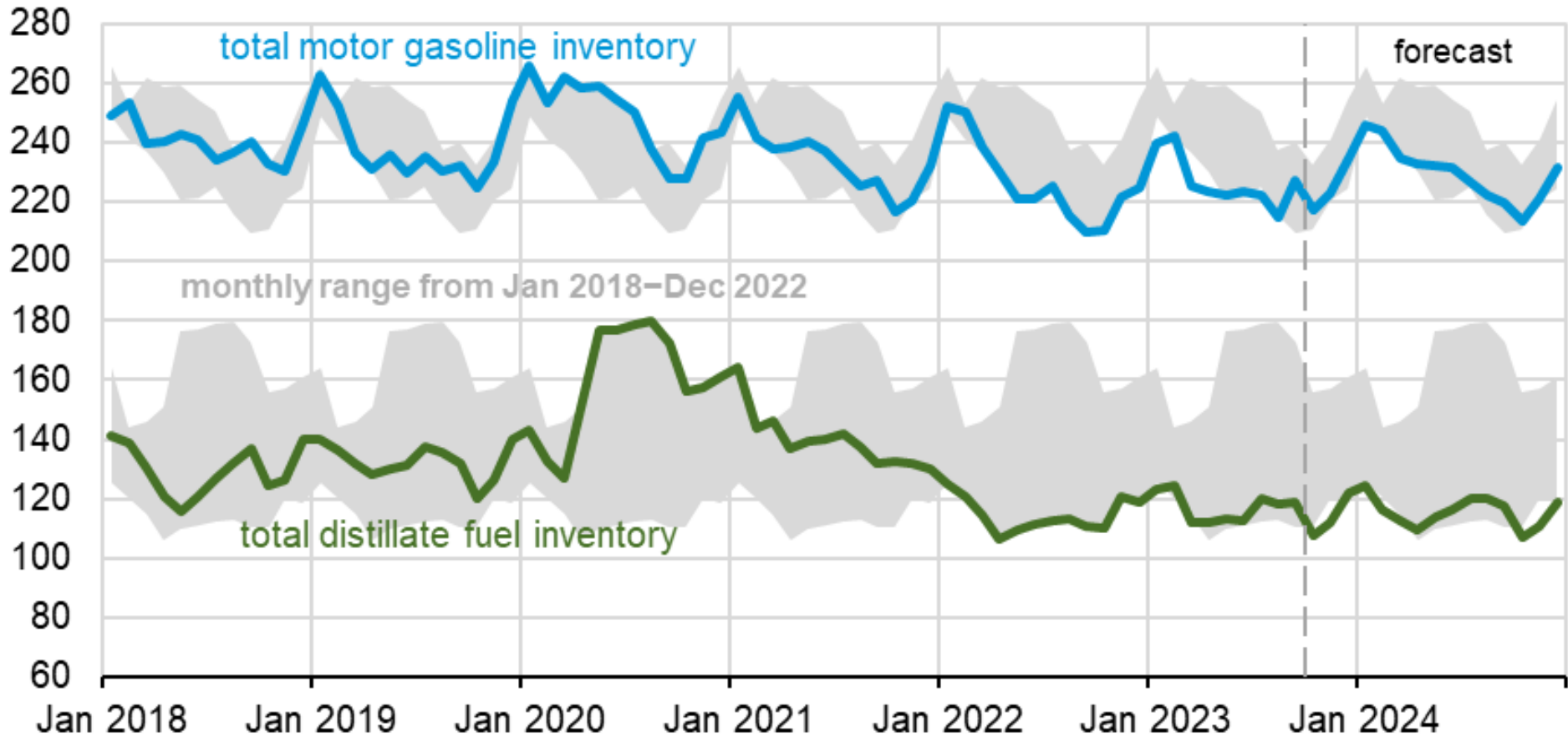
Refinery Utilization Rates Through Week of 9-29-23



U.S. Product Inventories

U.S. gasoline and distillate inventories

million barrels



Data source: U.S. Energy Information Administration, Short-Term Energy Outlook, October 2023



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Call before you dig.**

