S&P Global
Market Intelligence

North Dakota Revenue Outlook

Presentation to North Dakota Legislative Council by S&P Global Market Intelligence

Tuesday, January 10th, 2023

Table of contents

U.S. and North Dakota Macroeconomic Outlook

US Economic Forecast

- We have raised our estimate of fourth-quarter growth to 2.3%. We estimate that over the second half of 2022 GDP grew at an above-trend 2.7% annualized rate after declining at a 1.1% rate over the first half.
- We have revised up our projection of real GDP growth in 2023 from 0.3% to 0.5%. The forecast includes a mild recession starting in the first quarter of 2023, with recovery beginning in the third quarter. We project GDP to grow 1.8% in 2024.
- Labor markets are unsustainably tight and inflation intolerably above the Fed's long-run 2% objective. For now, the Fed is singularly focused on preventing inflation from becoming entrenched and so, over the course of 2022, engineered a tightening of financial conditions that, with a lag, will tip the US economy into a mild recession this year. The peak-to-trough decline in real GDP is 0.6%, with the unemployment rate peaking at 5.1% in the fourth quarter of 2023 before declining gradually to the full-employment rate of 4.4% by mid-2025.
- We expect core PCE inflation to drop from 4.0% in the fourth quarter of 2022 to 2.5% by fourth quarter 2023, and then to 2.0% by late 2024.

Inflation

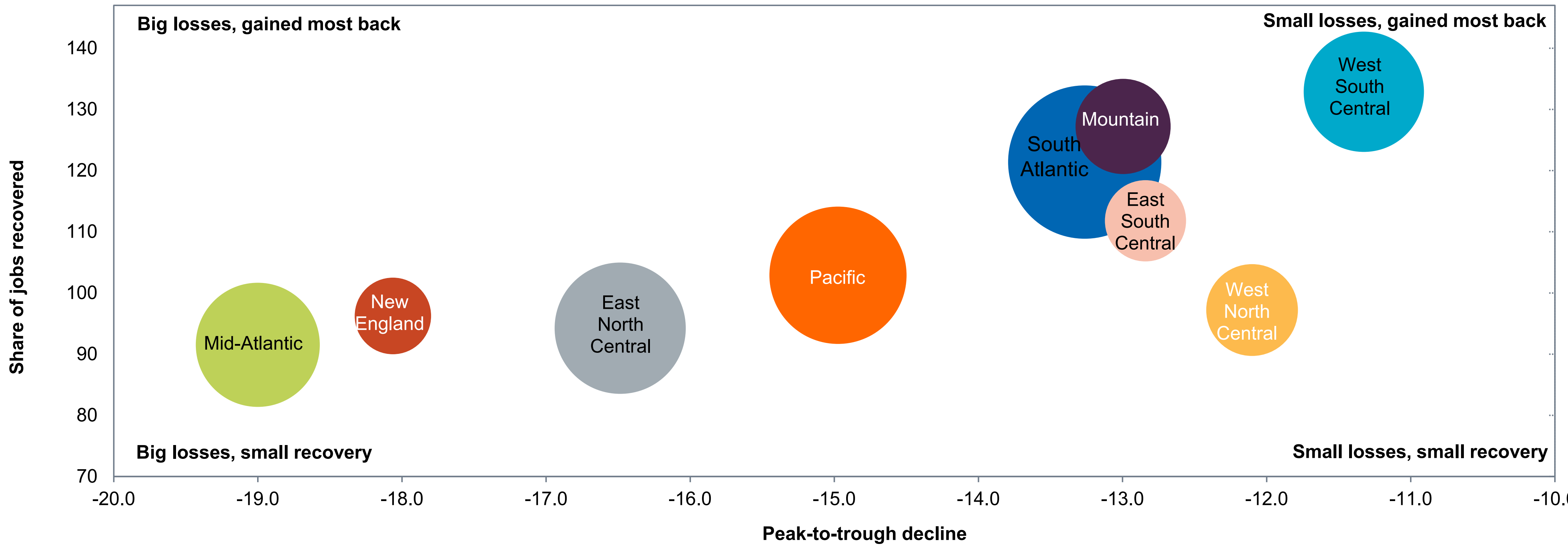
- November data on inflation were encouraging, headline inflation is dropping quickly relative to core inflation as gasoline prices tumble and food prices decelerate.
- The prices of certain core commodities are easing as supply chain issues are resolved.
- Wages will decelerate with the coming recession. We expect core Personal Consumption Expenditure inflation to drop from 4.0% in the fourth quarter of 2022 to 2.5% by fourth quarter 2023, and then to 2.0% by late 2024.
- We project that he Fed raises its policy rate to 4.75–5.00% by March, reversing course in May 2024.

US regional economies overview

- Moderate employment growth continued through 2022 across all regions
  - Employment growth was strongest in the Northeast, while the West had a considerable slowdown in hiring. Gains for the states were driven primarily by leisure and hospitality services, followed by education and health services.
  - Thus far, 26 states have returned past their pre-pandemic peak of employment—including New Hampshire this month.

Most states in the Midwest and Northeast regions have not returned to their pre-COVID-19 peak of employment

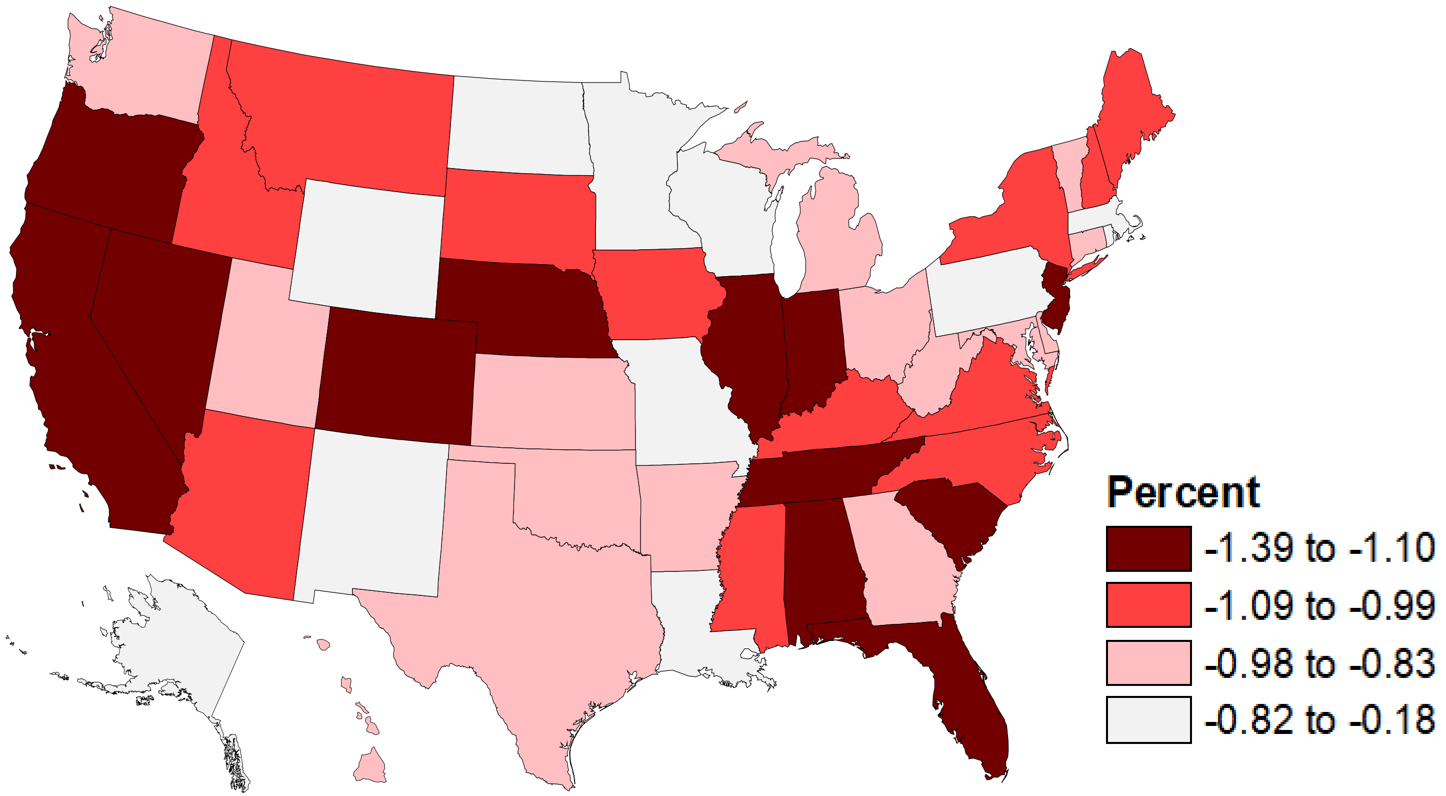
Recovery of jobs lost, through December 2022
(Percent change)



Source: Bureau of Labor Statistics, S&P Global Market Intelligence

The upcoming recession will cause payroll declines through 2023Q4 in all states

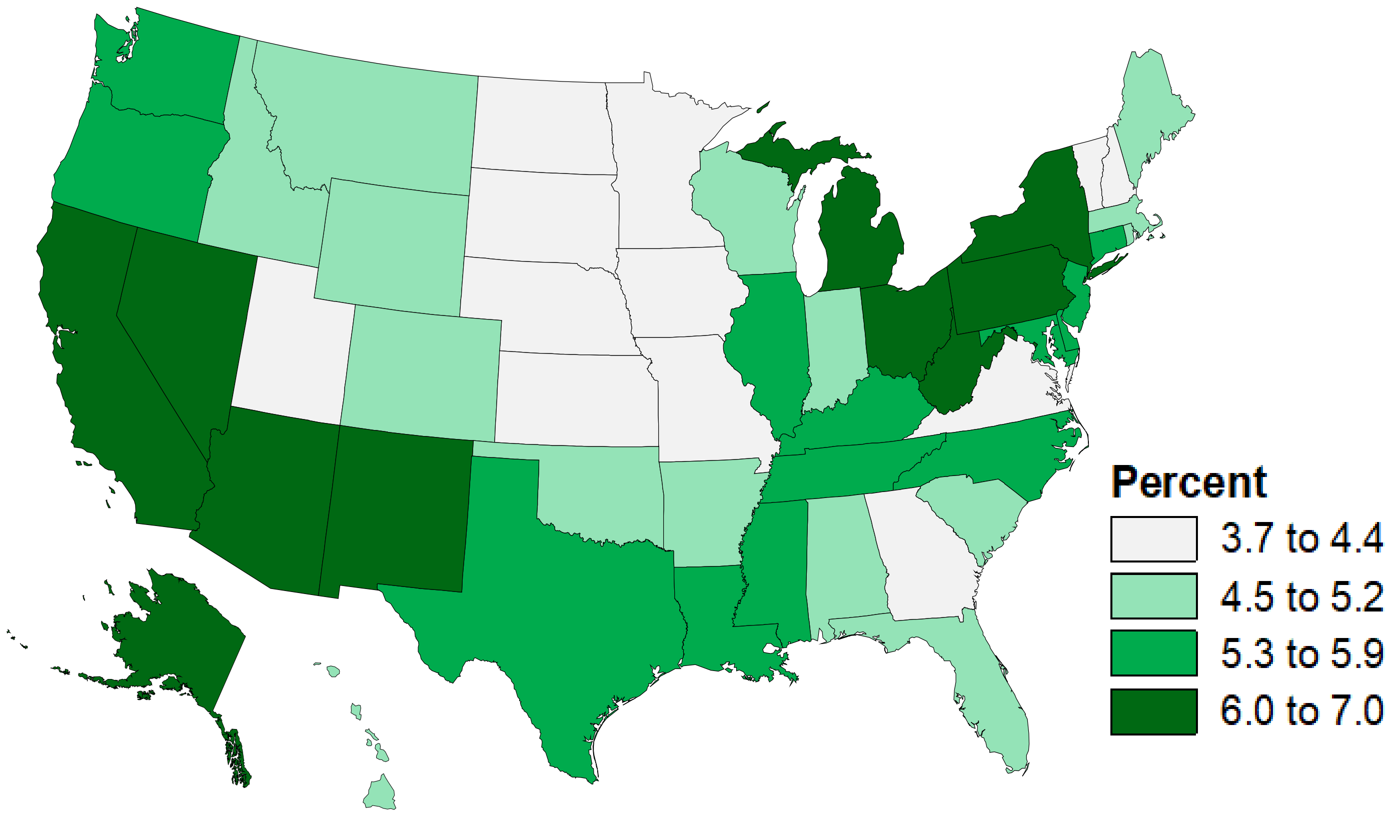
Year-over-year employment growth, 2023Q4 vs. 2022Q4



Source: S&P Global Market Intelligence

Many state unemployment rates will start to rise in 2023 as monetary policy tightens

Unemployment rate, 2023Q4



Source: S&P Global Market Intelligence

North Dakota Overview

- Through October 2022, employment is still down 2% relative to February 2020, ranking 44th among states.
- Employment is back even with the pre-pandemic peak in Bismarck and Fargo but down a steep 2% across the nonmetro portion of the state, as mining is well below its peak.

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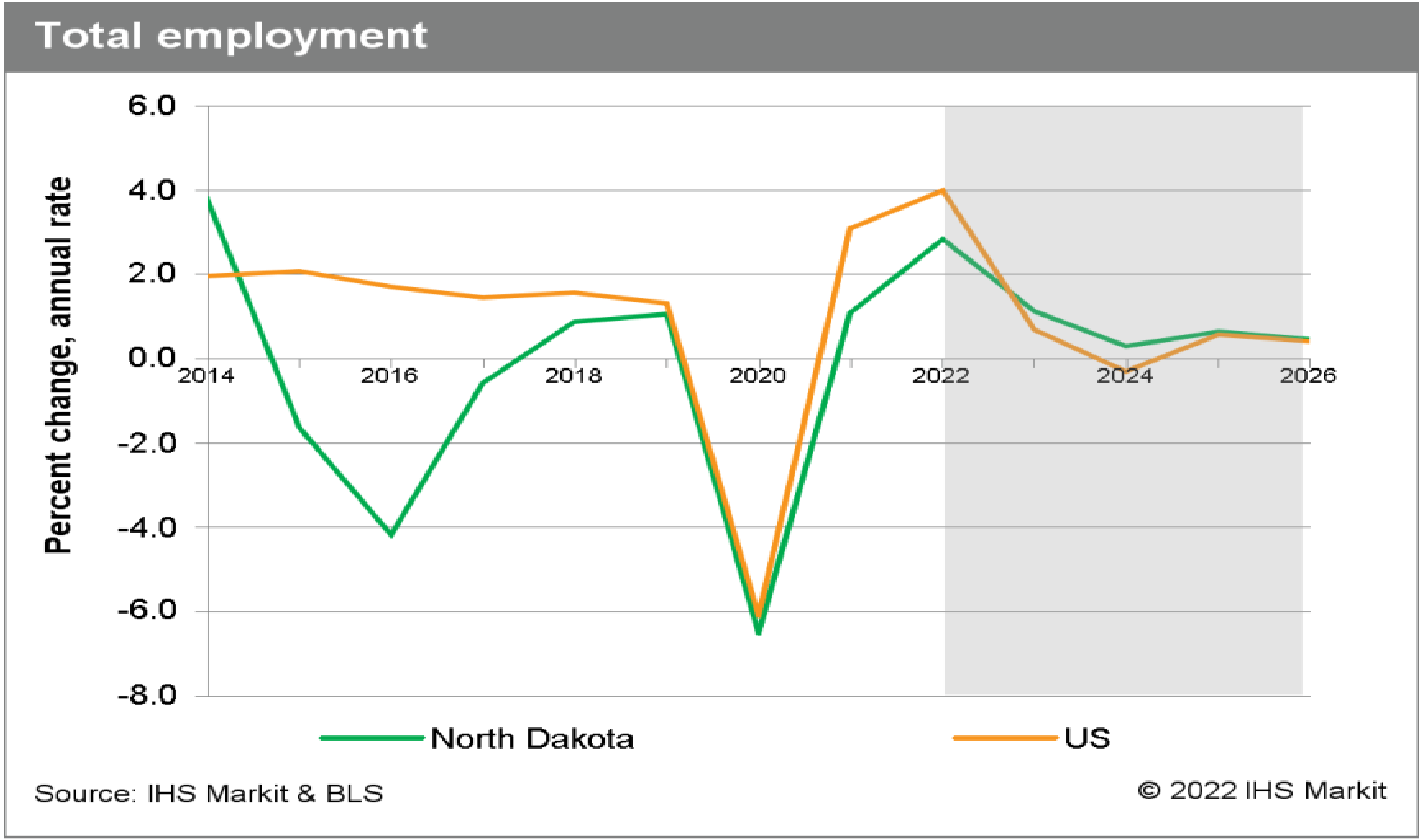
North Dakota Forecast



North Dakota Tax Revenue Outlook

Biennium forecast

Revenue Source	2019-21 Biennium Actual	2021-23 Biennium Forecast (September 2022)	2021-23 Biennium Forecast	2023-25 Biennium Forecast
Sales and use tax	**1,823,991,775**	**1,940,581,097** ***6.4%***	**2,078,519,988** ***14.0%***	**2,166,292,748** ***4.2%***
Motor vehicle excise tax	**259,690,121**	**287,940,849** ***10.9%***	**293,777,345** ***13.1%***	**342,575,275** ***16.6%***
Individual income tax				
Total individual income tax collections	1,025,353,869	1,349,779,966 *31.6%*	1,366,749,441 *33.3%*	1,558,263,178 *14.0%*
Transfer to refund reserve accounts	(207,800,000)	(447,400,000)	(451,400,000)	(331,000,000)
Net individual income tax collections	**817,553,869**	**902,379,966** *10.4%*	**915,349,441** ***12.0%***	**1,227,263,178** ***34.1%***
Corporate income tax				
Total corporate income tax collections	294,644,398	398,064,008 *35.1%*	451,931,830 *53.4%*	349,138,429 *-22.7%*
Transfer to refund reserve accounts	(56,234,413)	(53,351,687)	(62,351,687)	(59,000,000)
Net corporate income tax collections	**238,409,985**	**344,712,321** ***44.6%***	**389,580,143** ***63.4%***	**290,138,429** ***-25.5%***

* The percentages reflect the change from the prior biennium.

Fiscal year forecast

Revenue Source	2019-21 Biennium		2021-23 Biennium		2023-25 Biennium	
	Fiscal Year 2020 Actual	Fiscal Year 2021 Actual	Fiscal Year 2022 Actual	Fiscal Year 2023 Forecast	Fiscal Year 2024 Forecast	Fiscal Year 2025 Forecast
Sales and use tax	**970,559,564** ***1.4%***	**853,432,211** ***-12.1%***	**976,113,737** ***14.4%***	**1,102,406,251** ***12.9%***	**1,067,301,872** ***-3.2%***	**1,098,990,876** ***3.0%***
Motor vehicle excise tax	**119,506,814** ***-4.2%***	**140,183,307** ***17.3%***	**137,876,349** ***-1.6%***	**155,900,996** ***13.1%***	**165,534,408** ***6.2%***	**177,040,867** ***7.0%***
Individual income tax						
Total individual income tax collections	467,896,604 *-6.8%*	557,457,265 *19.1%*	649,390,175 *16.5%*	717,359,266 *10.5%*	757,948,536 *5.7%*	800,314,642 *5.6%*
Transfer to refund reserve accounts	(115,800,000)	(92,000,000)	(193,400,000)	(258,000,000)	(161,000,000)	(170,000,000)
Net individual income tax collections	**352,096,604** ***-14.9%***	**465,457,265** ***32.2%***	**455,990,174** ***-2.0%***	**459,359,266** ***0.7%***	**596,948,536** ***30.0%***	**630,314,642** ***5.6%***
Corporate income tax						
Total corporate income tax collections	112,654,676 *-33.6%*	181,989,722 *61.5%*	239,786,314 *31.8%*	212,145,516 *-11.5%*	172,629,890 *-18.6%*	176,508,539 *2.2%*
Transfer to refund reserve accounts	(21,090,643)	(35,143,770)	(26,351,687)	(36,000,000)	(29,000,000)	(30,000,000)
Net corporate income tax collections	**91,564,033** ***-38.0%***	**146,845,952** ***60.4%***	**213,434,627** ***45.3%***	**176,145,516** ***-17.5%***	**143,629,890** ***-18.5%***	**146,508,539** ***2.0%***

- The percentages reflect the change from the prior fiscal year.
- The big volatility in gross individual income tax collections in FY20, FY21 and FY22 reflects the filing and payment extension from April 2021 to July 2021.

It is estimated that the annual changes of gross income tax collection would be 3.2%, -0.3%, 1.7% in FY20, FY21 and FY22 respectively barring the impacts of the extension.

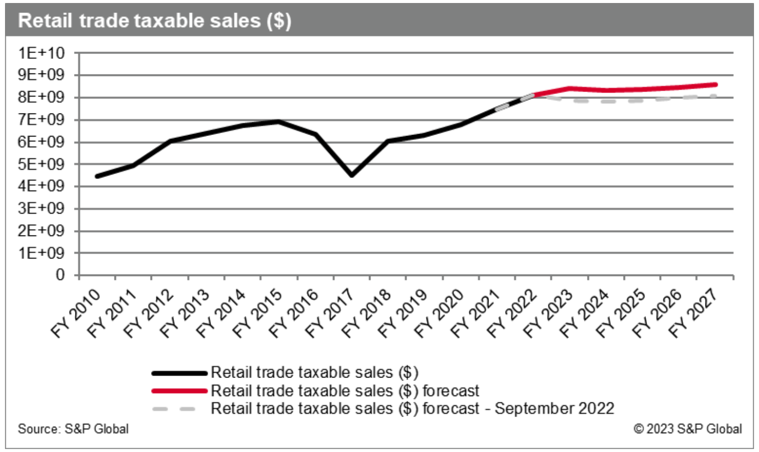
* Increase in net individual income tax collections in FY 2024 is primarily related to the expiration of a tax credit.

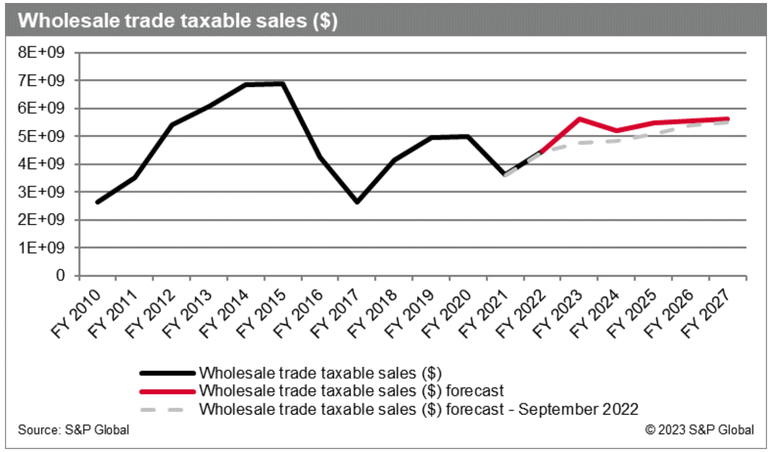
Economic indicators used in the tax model

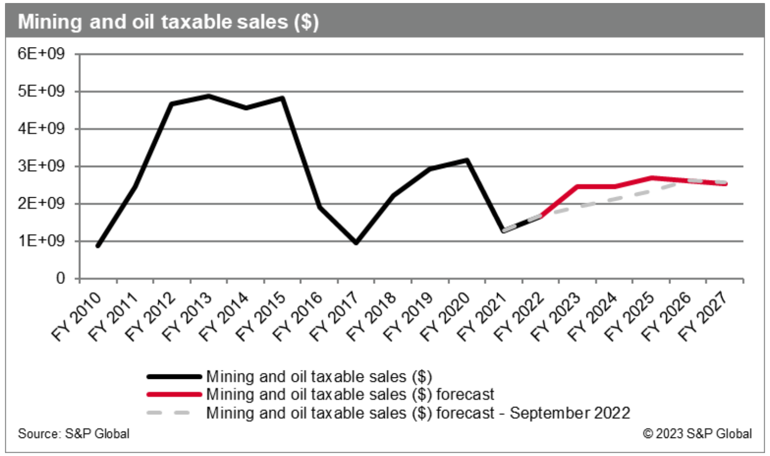
REVENUE SOURCE	ECONOMIC DRIVER	DESCRIPTION
Sales and Use tax	•Bakken new producing wells •CPI inflation •Gross state product by sector	Taxable sales are divided into 15 different sectors and the sectors are individually modeled. The main drivers of these models are the new producing wells in the Bakken play, inflation and gross state product by sector. The forecast of the sectors are summed to total taxable sales then the sales and use tax revenue forecast is calculated.
Motor vehicle excise tax	•New passenger and light truck registrations (ND state)	The motor vehicle excise tax base is best captured by the state's new vehicle registrations (including new passenger car and light truck).
Individual income tax	•Total wage disbursements (ND state) •Personal income, dividends interest and rent (ND state)	The tax base of individual income tax submitted as withholdings is relatively stable and largely driven by total wage income in the state. The tax base of individual income tax submitted as estimated payments, on the other hand, is more volatile due to the nature of capital gains realization. That being said, a reasonable amount of variations in the tax base of individual income estimated payments is captured by the state's property income, i.e., rental income of persons, personal dividend income, and personal interest income.
Corporate income tax	•Bakken new producing wells	The tax base of corporate income tax is mainly driven by by the Bakken new producing wells, as it affects oil company's profits.

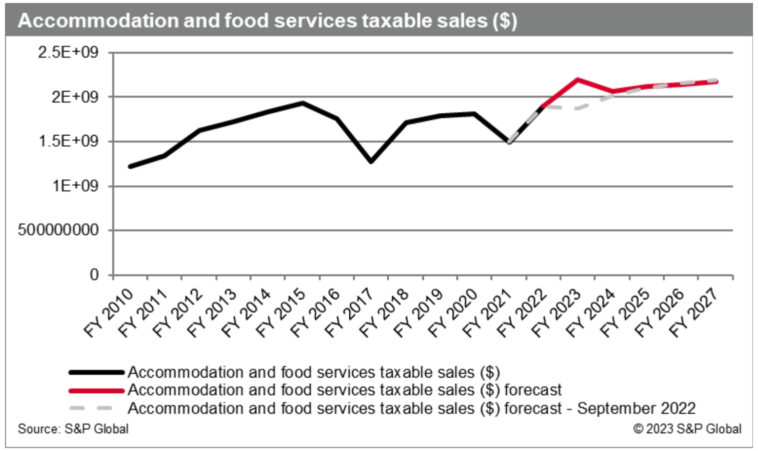
Taxable sales by sector

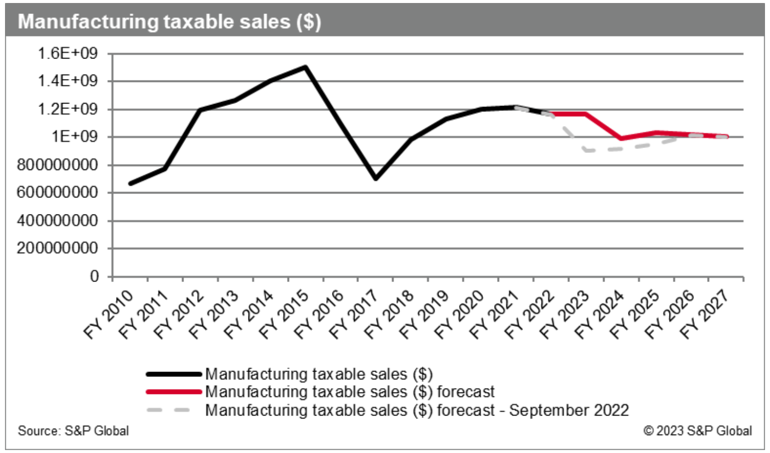
- There are fifteen taxable sales sectors that are modeled. The five largest sectors are retail trade, wholesale trade, mining and oil, accommodation and food services, and manufacturing.





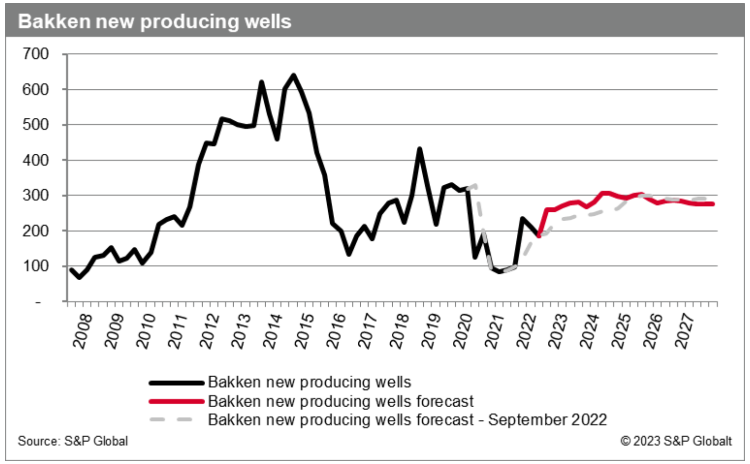


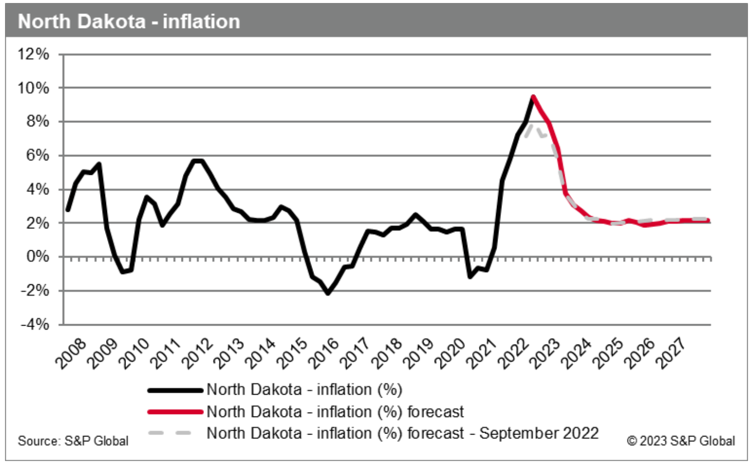


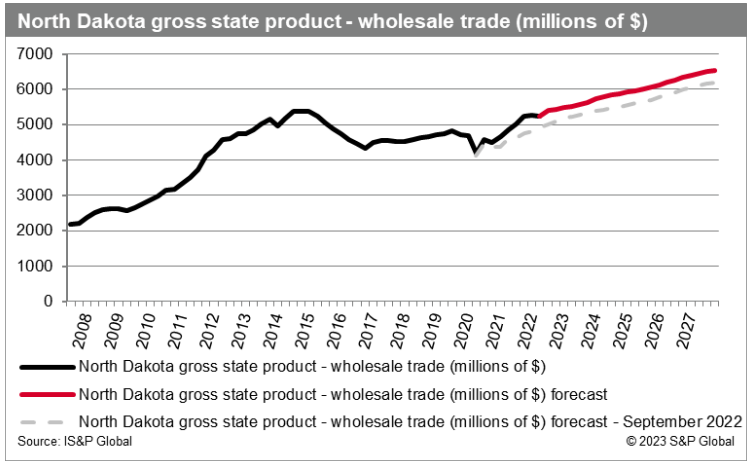


Drivers of taxable sales sectors

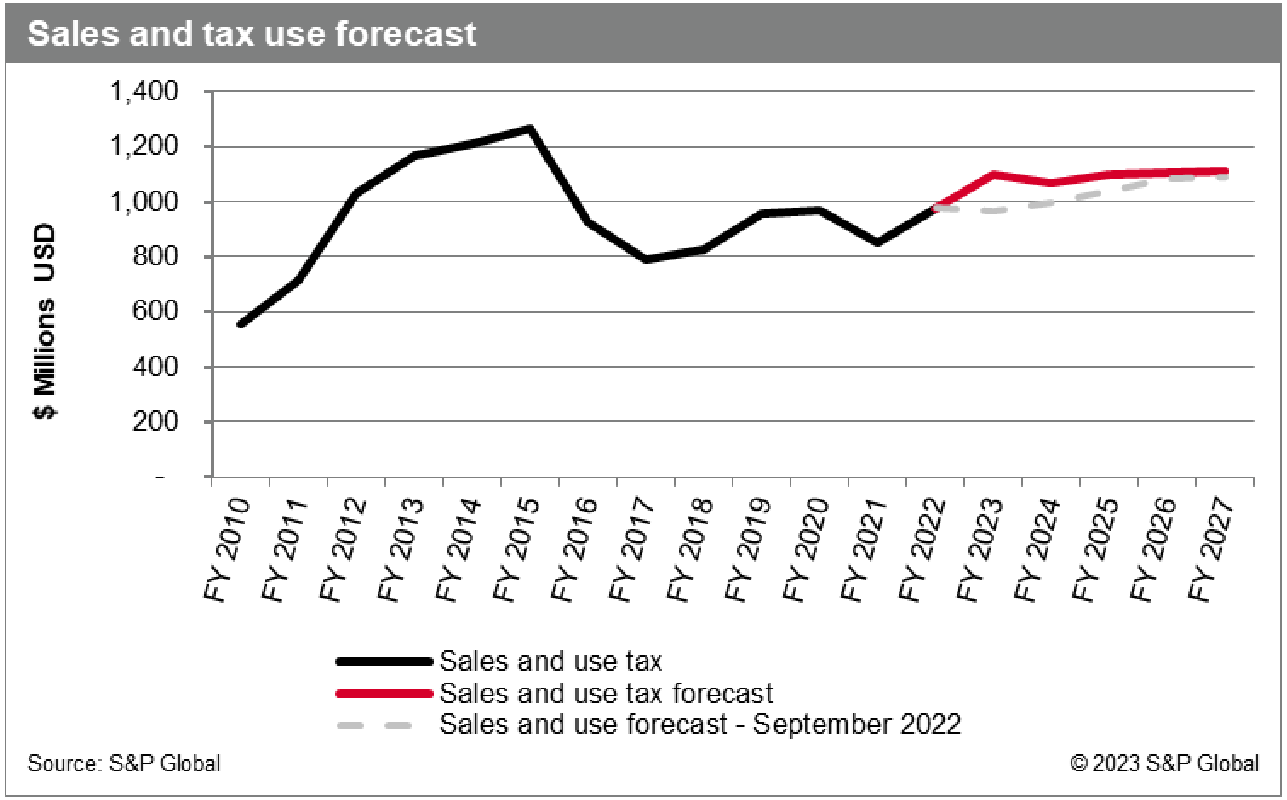
- The number of new producing wells in the Bakken play is the main driver in four of the five largest taxable sales sectors; these sectors are wholesale trade, mining and oil, accommodation and food services, and manufacturing
- Of the fifteen taxable sales models, nine include Bakken new producing wells as a driver.
- Sector-specific gross state product numbers for North Dakota are also used as drivers for some sector models like wholesale trade, and accommodation and food services.
- In the equation for retail trade taxable sales, inflation is included as a driver.

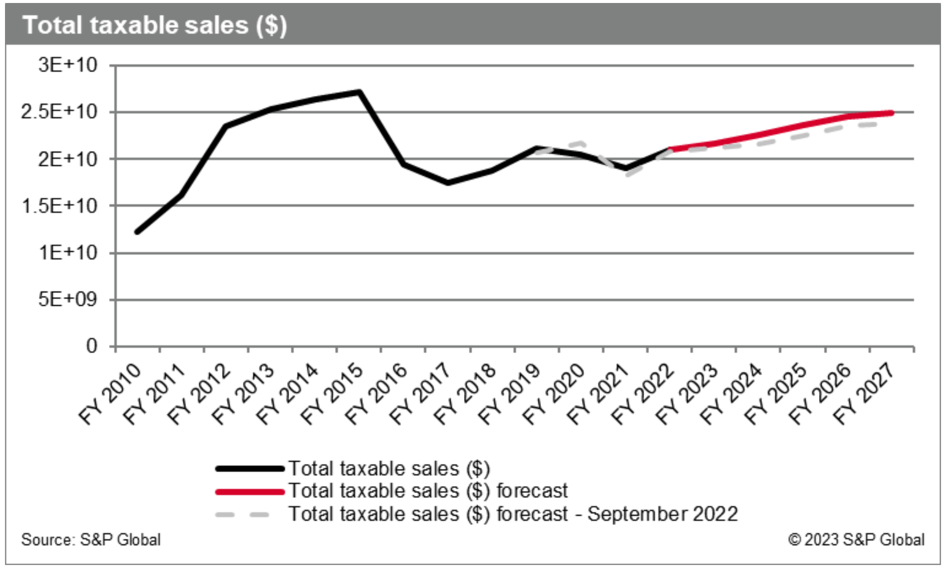




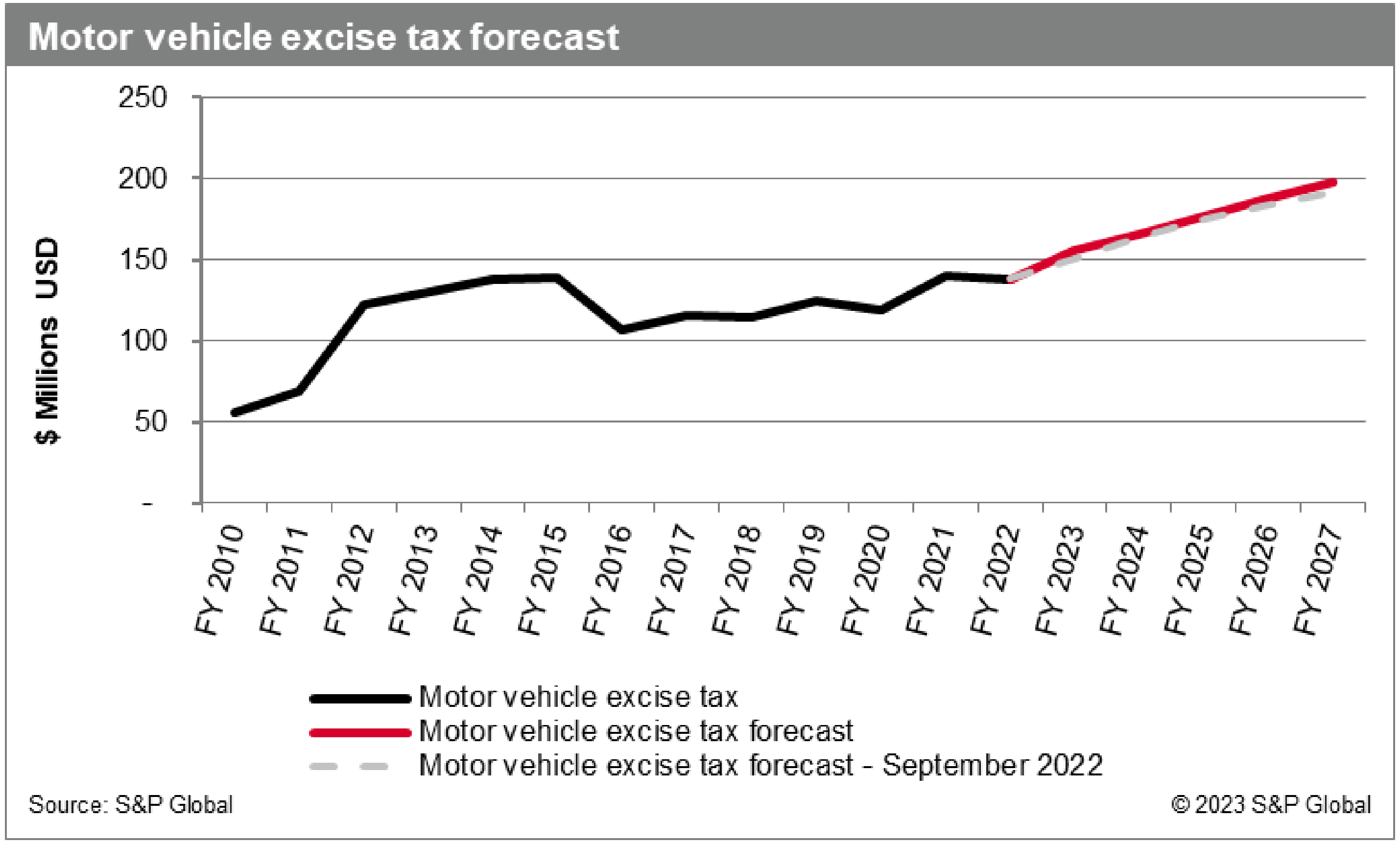


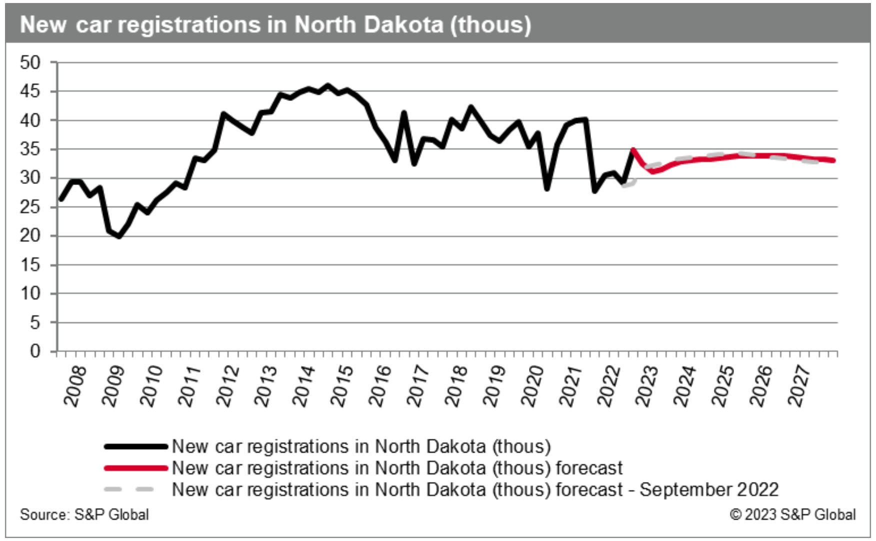
Sales and use tax revenue



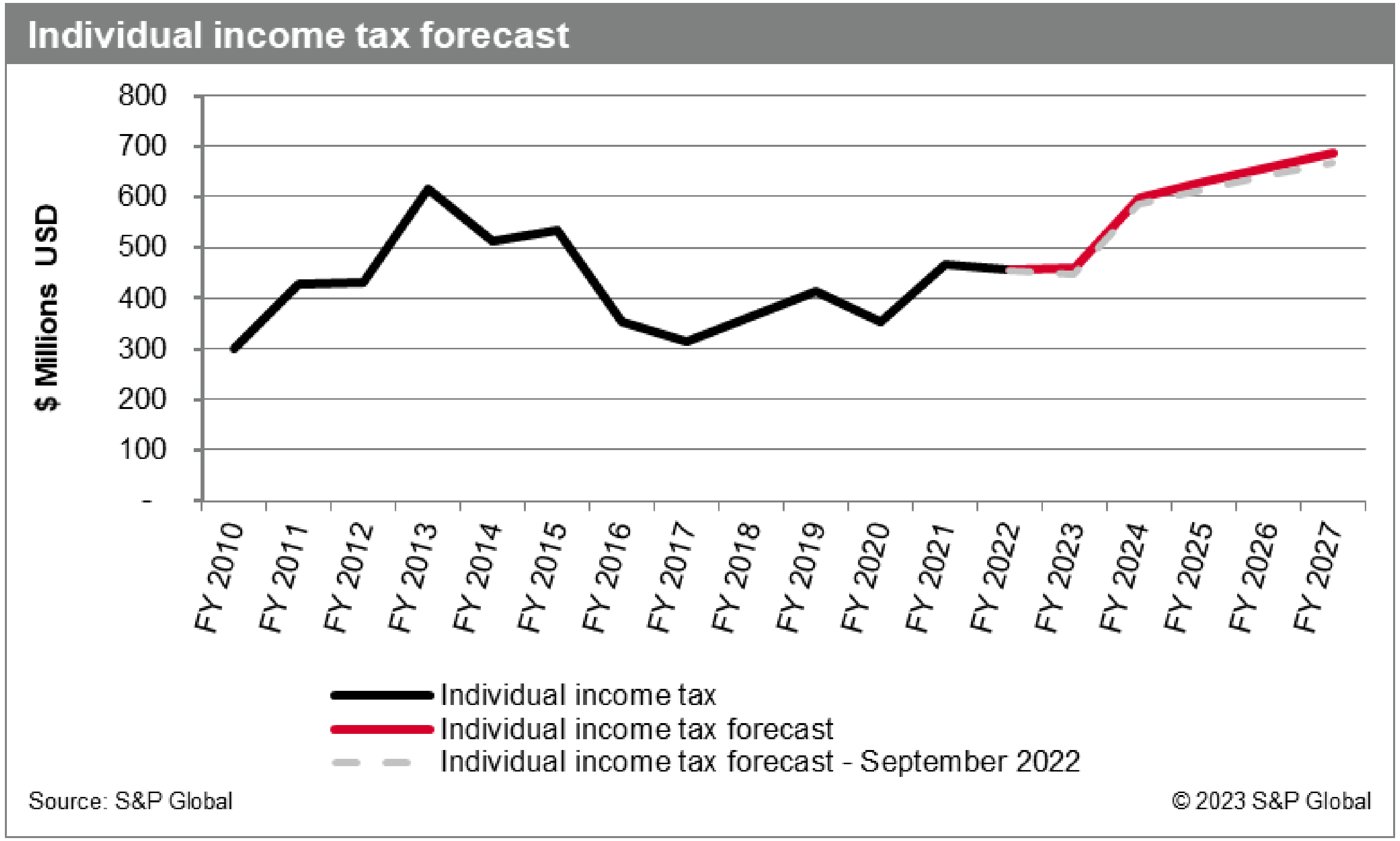


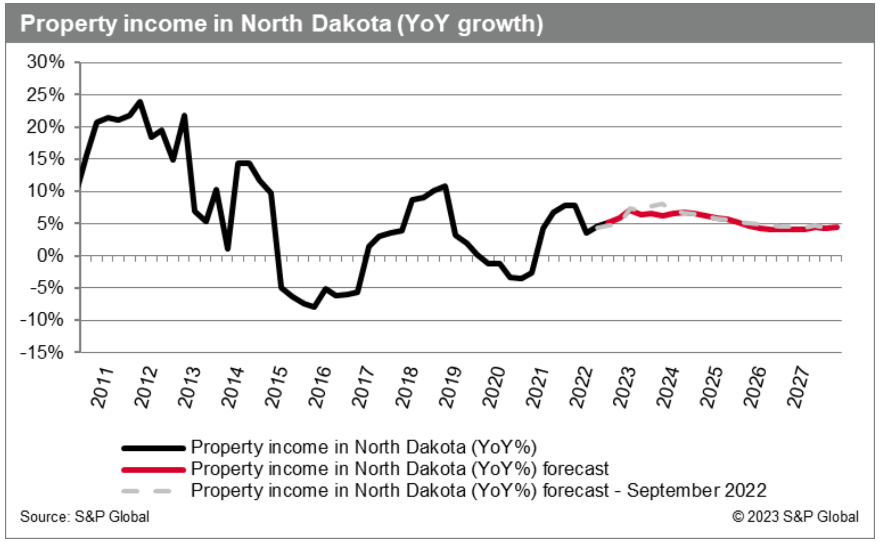
Motor vehicle excise tax revenue

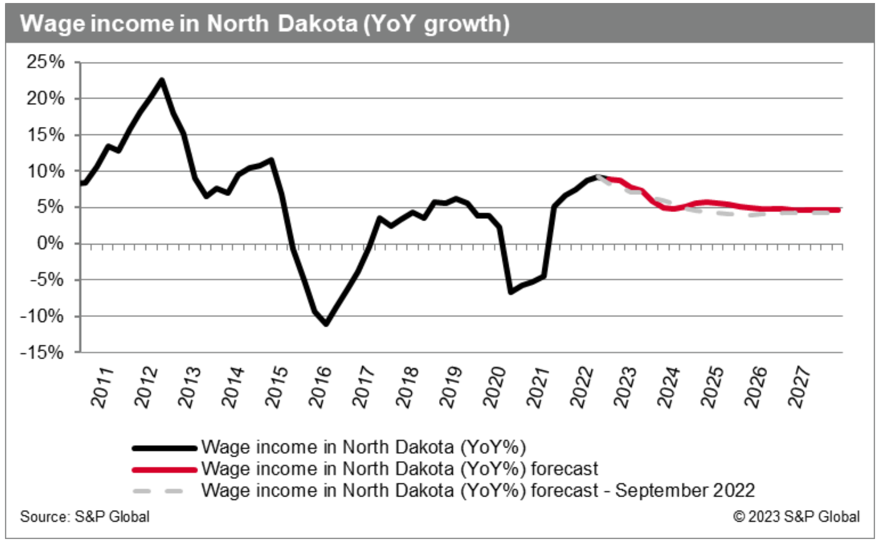




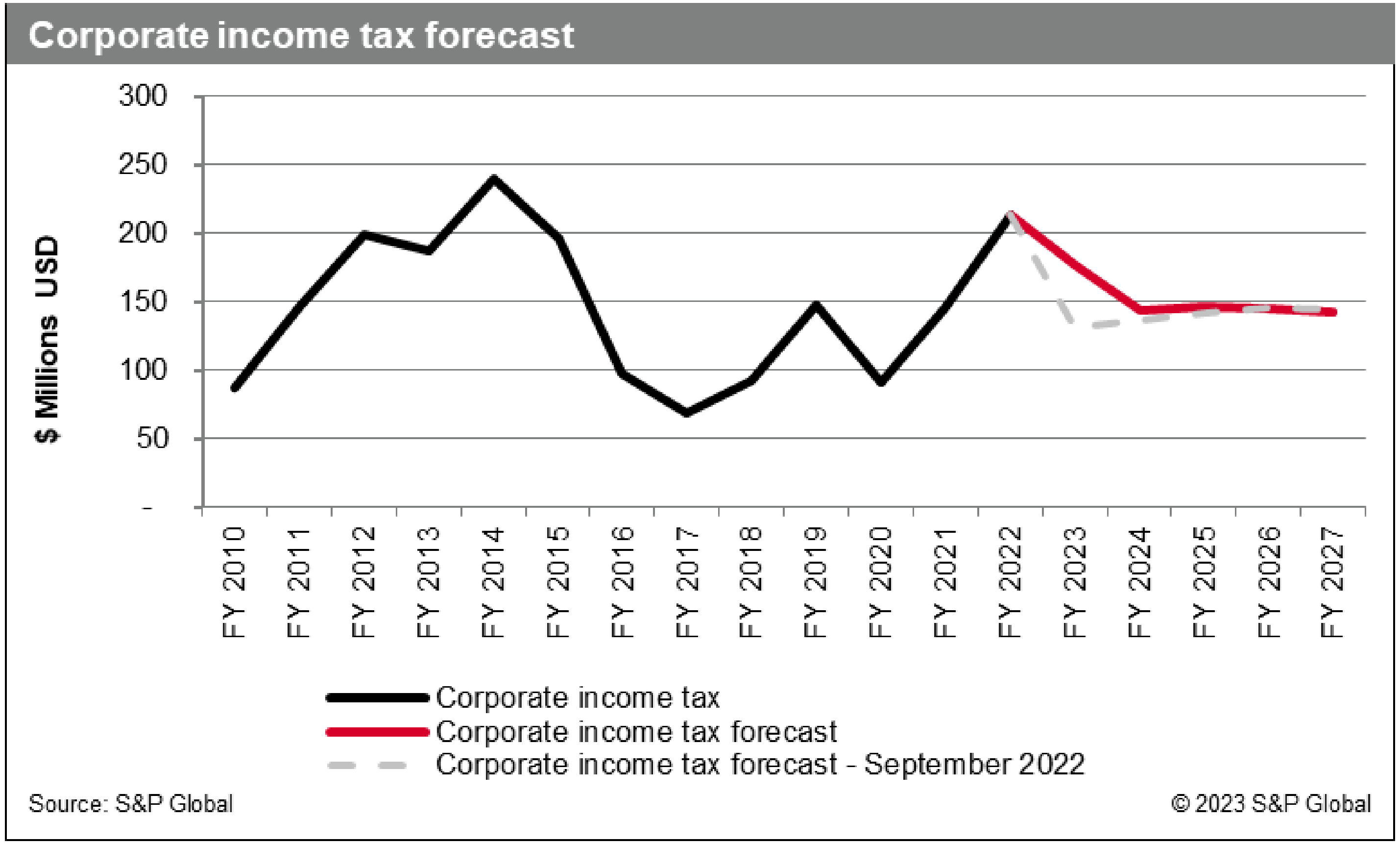
Individual income tax revenue

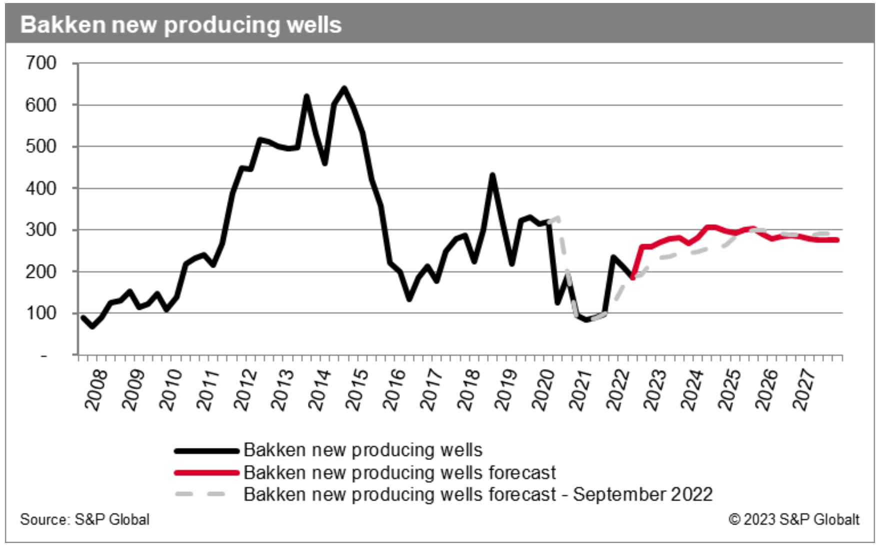






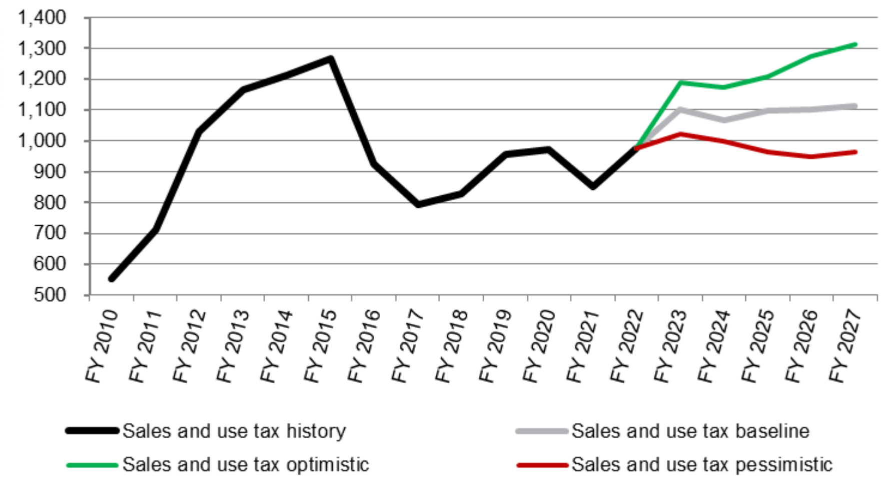
Corporate income tax revenue





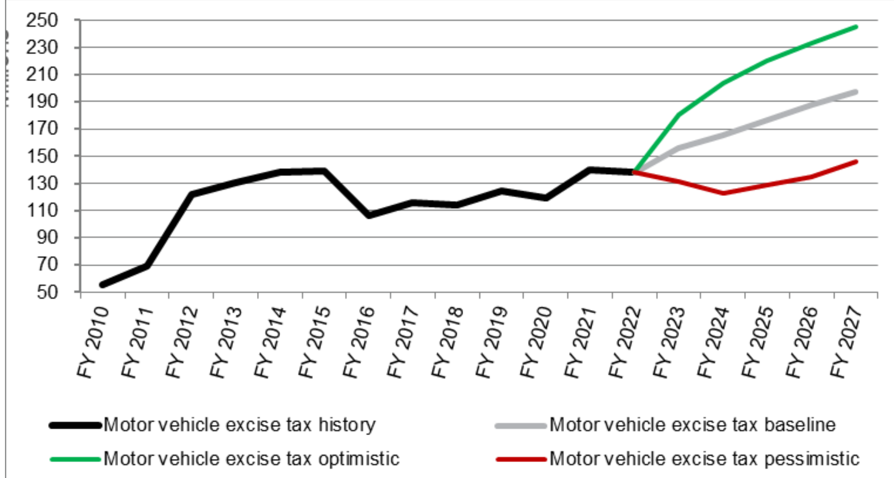
Optimistic and pessimistic scenarios

Sales and use tax forecast scenarios, $ millions



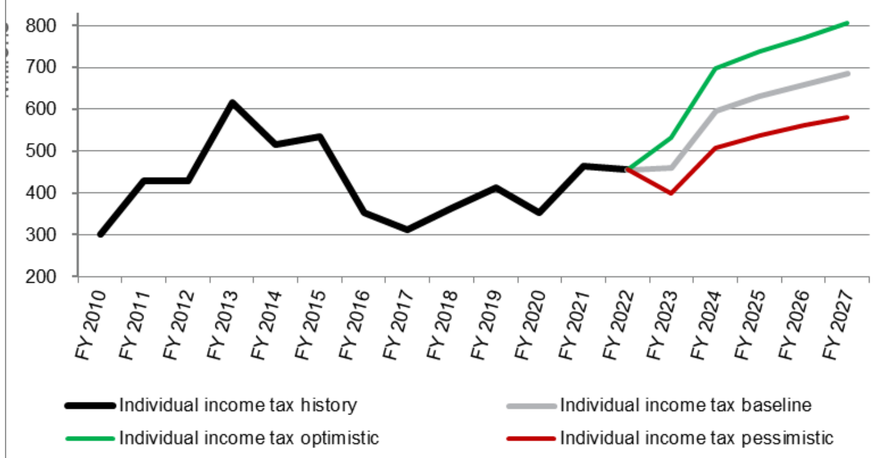
Source: S&P Global

Motor vehicle excise tax forecast scenarios, $ millions



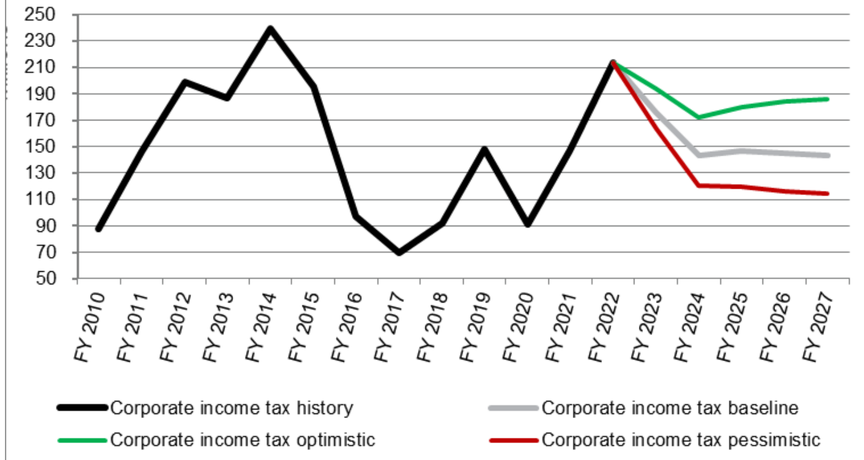
Source: S&P Global

Individual income tax forecast scenarios, $ millions



Source: S&P Global

Corporate income tax forecast scenarios, $ millions



Source: S&P Global

Optimistic and pessimistic scenarios

Revenue Source	2021-23 Biennium Baseline	2021-23 Biennium Optimistic	2021-23 Biennium Pessimistic
Sales and use tax	2,078,519,988 *14.0%*	2,163,783,996 *18.6%*	1,999,658,602 *9.6%*
Motor vehicle excise tax	293,777,345 *13.1%*	318,441,112 *22.6%*	269,650,441 *3.8%*
Net individual income tax	915,349,441 *12.0%*	989,201,585 *21.0%*	854,141,862 *4.5%*
Net corporate income tax	389,580,143 *63.4%*	407,300,066 *70.8%*	376,820,342 *58.1%*

Revenue Source	2023-25 Biennium Baseline	2023-25 Biennium Optimistic	2023-25 Biennium Pessimistic
Sales and use tax	2,166,292,748 *4.2%*	2,382,202,227 *10.1%*	1,960,678,773 *-1.9%*
Motor vehicle excise tax	342,575,275 *16.6%*	424,002,258 *33.1%*	251,522,226 *-6.7%*
Net individual income tax	1,227,263,178 *34.1%*	1,435,357,416 *45.1%*	1,045,167,456 *22.4%*
Net corporate income tax	290,138,429 *-25.5%*	352,461,093 *-13.5%*	240,351,633 *-36.2%*

North Dakota Energy Outlook

Oil markets – high uncertainty in the short-term future global prices

Global Markets

- Our base-case crude oil price outlook, assumes demand remains below production capacity, thin spare capacity generally keeps **Dated Brent oil prices around $85–95/bbl** for 2023.
  - Brent/WTI spread to average about -$5-6/bbl for 2023
- **In 2023, demand growth is concentrated in mainland China and supply growth in the United States.** If one falters, there could be disproportionate price impacts.
- **Recession fears – 2023 global oil demand increase drops to about 1.7 Mmbbls day – helping to keep prices down**
  - **Saudi Arabia** – improved relationships with the US will allow OPEC+ to effectively manage supply (spare capacity) which will put upward pressure on prices
  - **Russia** - Sanctions have had little effect on reducing exports which are still at 10.7 MMbbls/day; however, this situation poses the most uncertainty
    - Russia selling about 2 MMbbls/d of oil to China and India at a discount
    - Price cap of $60/bbl to take affect next month is designed to keep supply flowing but reduce Russian revenues – Russia may not sell oil at that price which could reduce exports
  - **China** – Lockdowns currently lifted, although COVID case load has skyrocketed – oil demand is expected to increase by 0.9 to 1.0 MMbbls/day for 2023
  - **United States** – Production is expected to grow by about 0.8 to 0.9 Million bbls per day in 2023

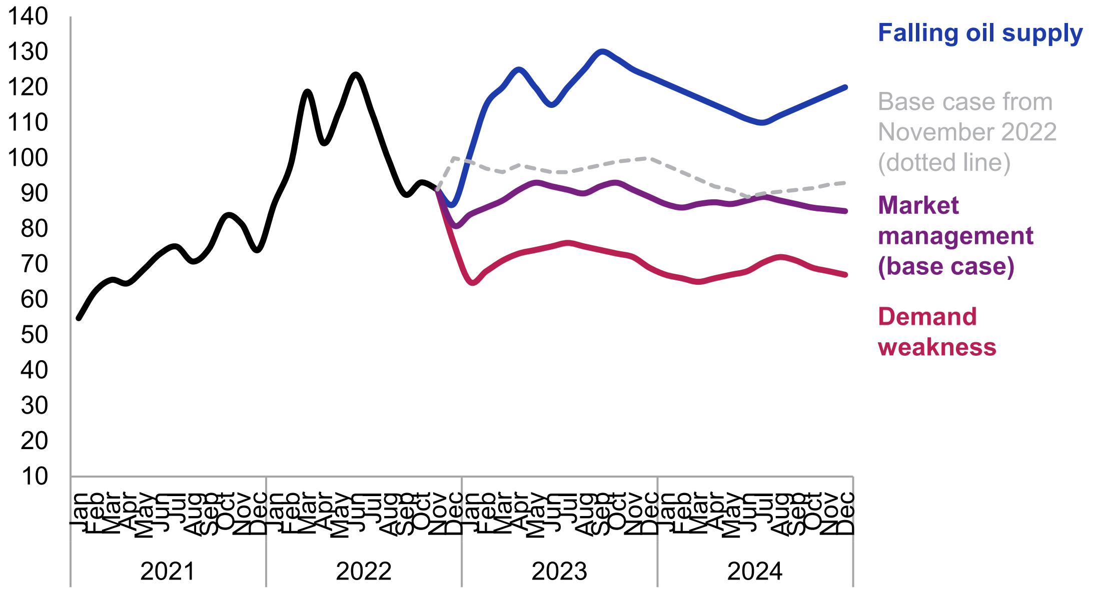
US Markets - Despite a high oil price forecast, US production growth will be modest at about 0.8 - 0.9 million barrels per day in 2023

- **Operators' business model continues to shun production growth in favor of a returns-driven model**
  - Based on our price outlook the industry will still generate a free cash flow margin of 35% - 40% and raise US output to 12.5 MMbbls/day by the end of 2022, (up about 1.0 MMbbls/day in 2022) – despite the high prices earlier this year producers still maintained a conservative approach to re-investing cash flow
  - However, production increases are beginning to hit a wall
    - Labor shortages in the oil patch, especially with fracking crews
    - Cost inflation is rampant with costs up over 15%
    - Consolidation reducing the number of operators
    - Lack of production improvement as core areas become increasingly developed
  - While operators are still declaring discipline to investors, production growth is coming mainly from private operators. Public companies, are forecast to grow volumes 3–4% in 2022, while privately operated production is likely to grow 10%.

- **ESG and regulations will become increasingly important**
  - Most international oil companies are committed to some form of carbon neutrality which is likely to divert investments and resources away from traditional oil and gas projects over the longer term, but are unlikely to affect the short-term outlook
  - Previous and possible leasing and drilling moratoria on federal lands and Native American lands are unlikely to affect the outlook in the short term
  - Attention of environmental groups will be focused most heavily on pipelines and infrastructure – note the recent Keystone PL spill in Kansas and temporary shut down

Oil prices are to be shaped as never before by government decisions in Beijing, Brussels, Moscow, Riyadh, and Washington

Dated Brent price scenarios ($/bbl)



Dated Brent annual average price ($/bbl)

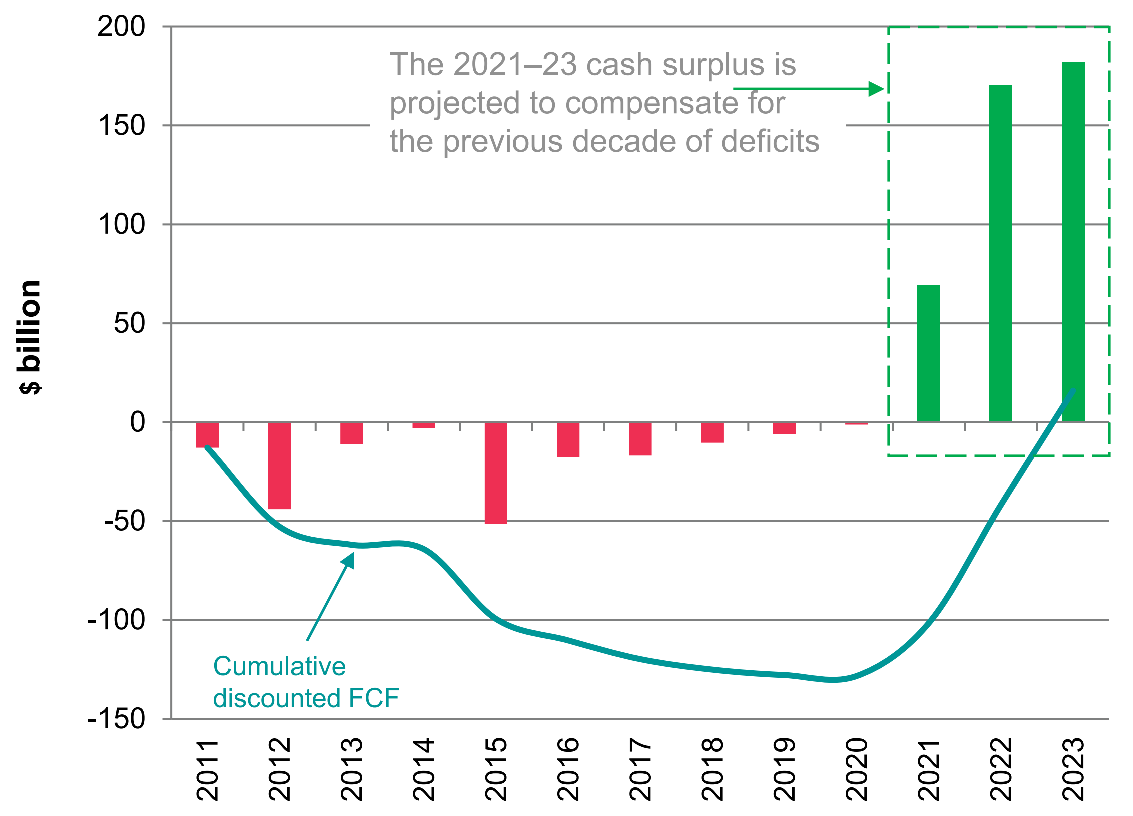
2021	$71		
	Market management (base case)	Falling oil supply	Demand weakness
2022	$101	$102	$101
2023	$90	$121	$72
2024	$87	$115	$68

- **Despite the large range of price uncertainty, US operators are likely to stay the course of modest production increases and conservative reinvestment strategies**
  - **Market management (base case). OPEC+ effectively manages supply to support prices and mainland China returns to growth. Limited drop in Russian crude exports.**
  - **Falling oil supply. Up to 2 MMb/d of Russian oil exports are lost. Spare capacity shrinks to 1 MMb/d or less.**
  - **Demand weakness. Continued China lock downs and OPEC+ looses control of prices**
  - *WTI is expected to be discounted about $5-6 / bbl due to tighter supply in Europe compared to the US*

Data compiled Dec. 14, 2022.
Prices shown are indicative monthly price averages and not intended to project daily/weekly high and low prices.
Sources: S&P Global Commodity Insights; Argus Media Limited (historical prices).

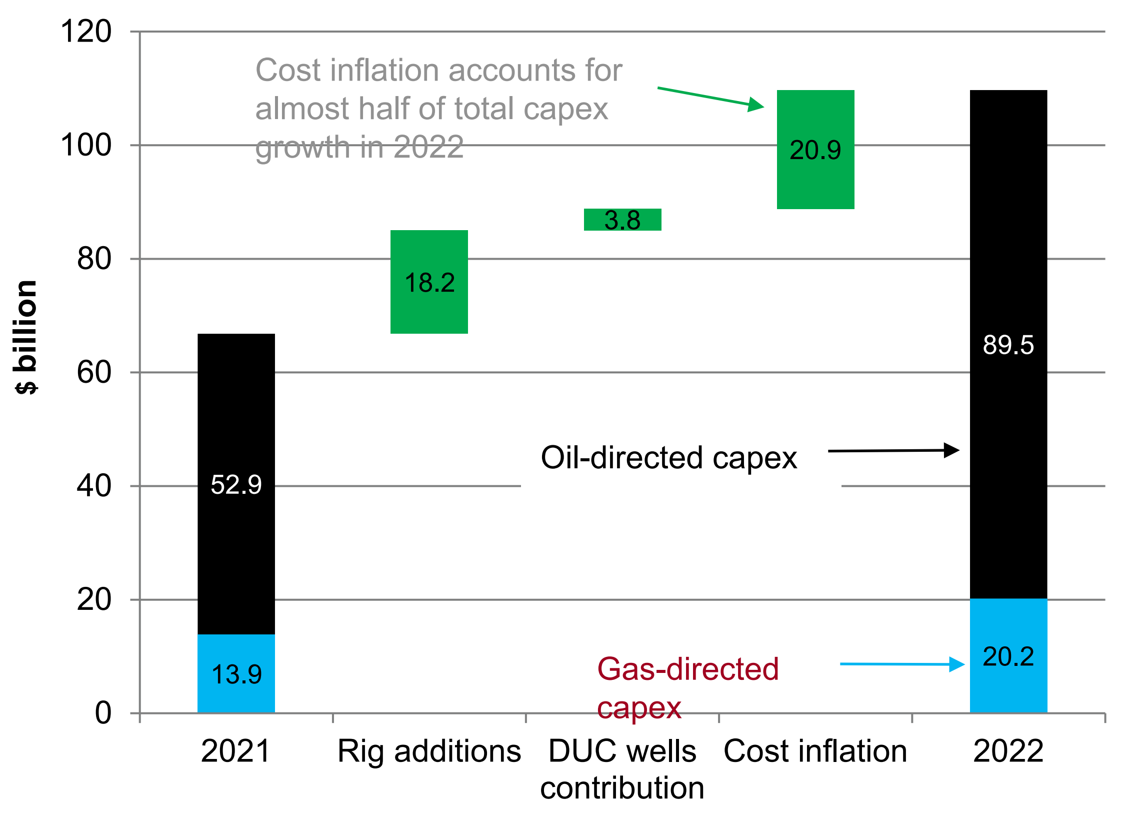
Financial payback is in sight for US operators; however, cost inflation limits reinvestment

Free cash flow (FCF) by US onshore oil and gas operators



Note: FCF = cash flows - capex - interest payments.
Discounted FCF = FCF discounted to 2011 at 10% interest rate.
Source: S&P Global Commodity Insights, formerly IHS Markit

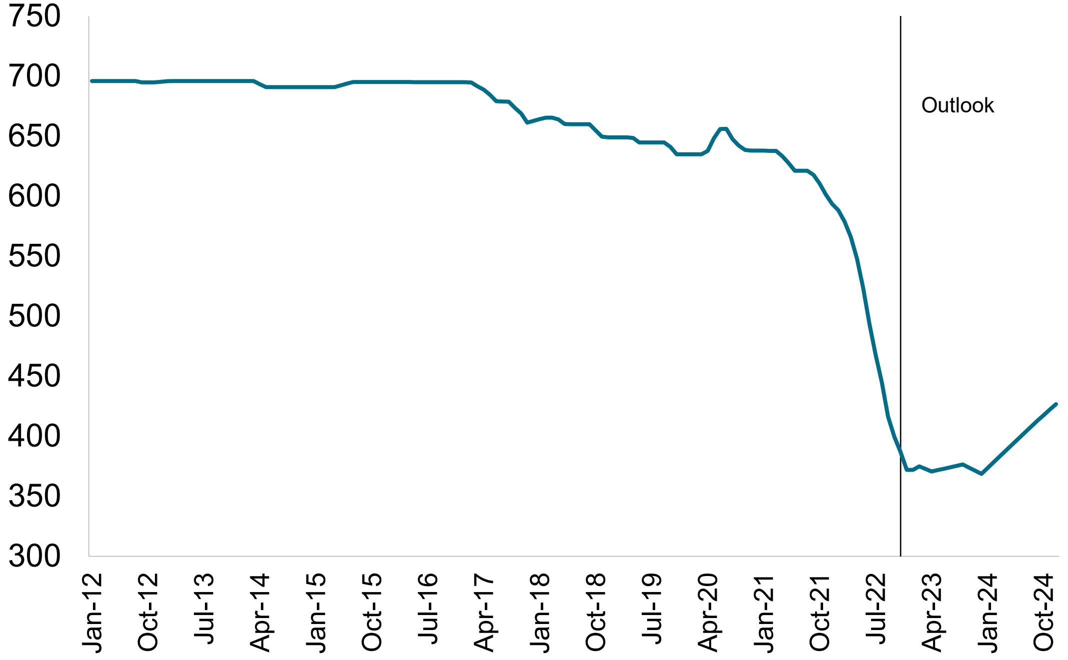
US onshore upstream capex growth



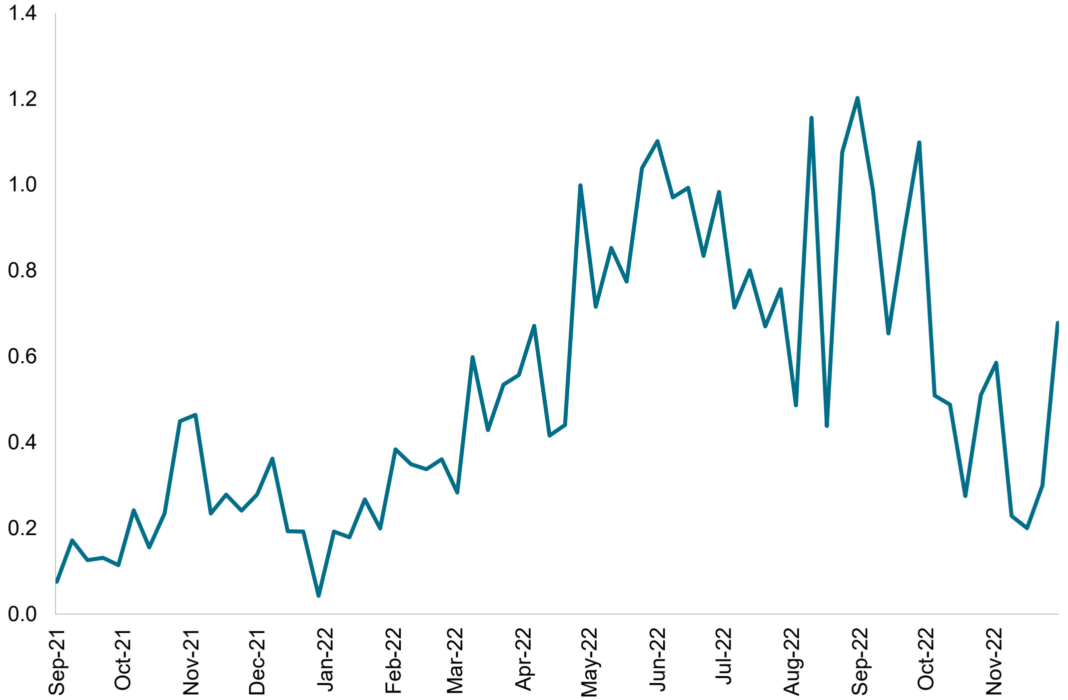
Note: DUC = drilled but uncompleted.
Source: S&P Global Commodity Insights, formerly IHS Markit

As historic SPR release ends, the government begins to plan a refill

US SPR inventories, MMbbl



Weekly change in SPR inventory, MMb/d



The current 180 MMbbl US SPR release—the largest drawdown on record in both magnitude and duration—is ending with the final 15 MMbbl tranche sold in December. The Biden administration has announced plans to buy back 3 MMbbl in January now that oil prices are in the government's target zone of $67–72/bbl. Meanwhile, a bipartisan spending bill is moving through Congress which would cancel existing congressional mandates to sell another 140 MMbbl of crude over the next five years.

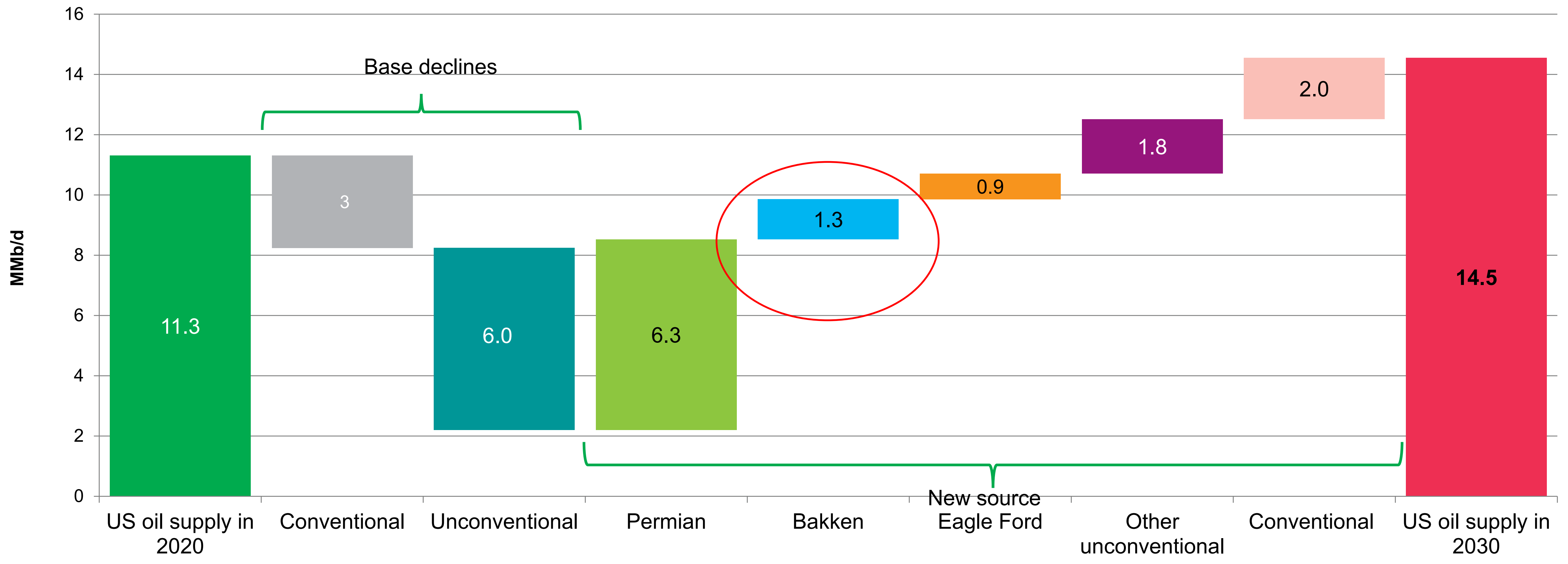
EIA weekly data indicate that the pace of SPR supply to market has downshifted since the third quarter and will soon cease. The release has had the effect of adding more oil to the global market. Some physical SPR crude is being exported, but the added supply in the Gulf Coast has also likely suppressed US crude imports and stimulated more exports.

Data compiled Dec. 21, 2022.

Sources: S&P Global Commodity Insights; US EIA.

Significant base declines slow overall growth in US oil supply and new development will drive nearly all growth – Where does the Bakken fit in?

US oil supply in 2030 – MMBbls/day

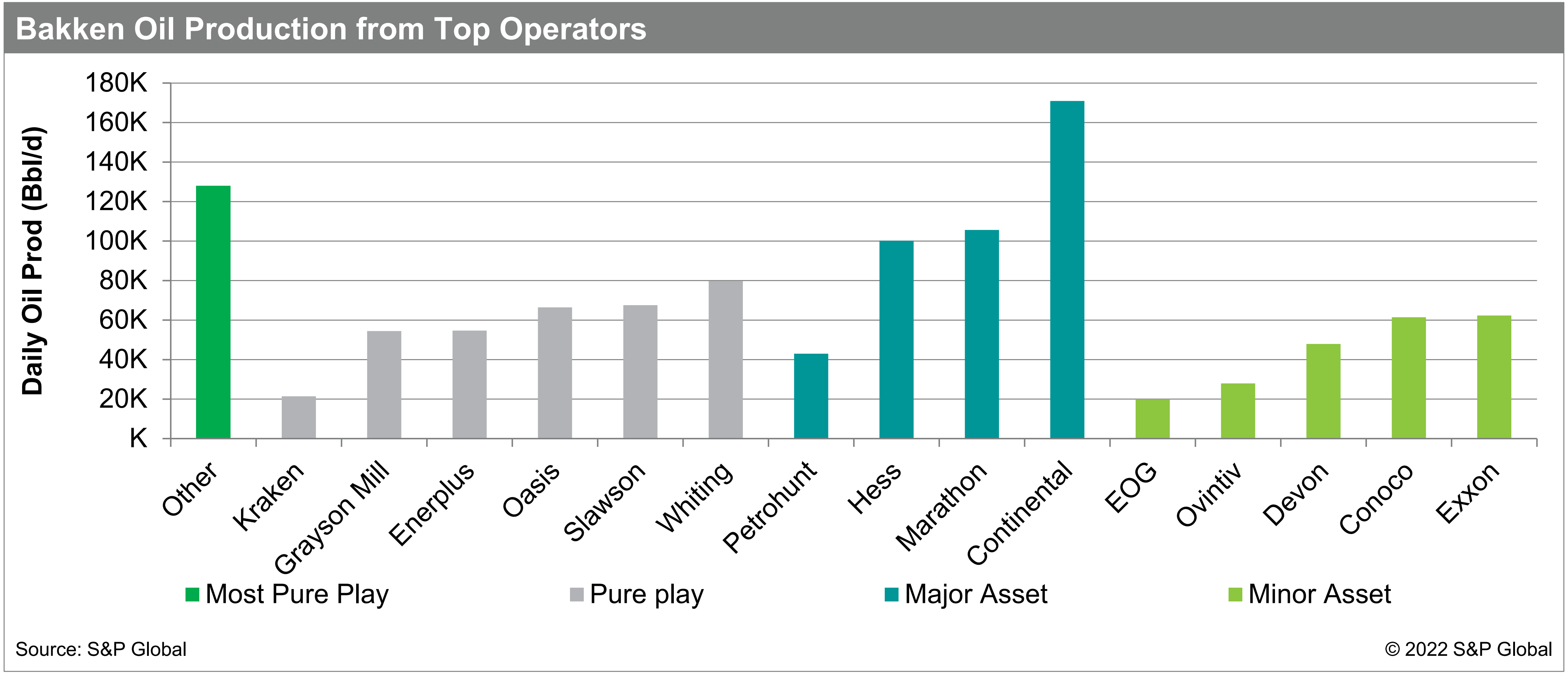


Source: S&P Global Commodity Insights, formerly IHS Markit

Bakken oil play highlights

- **Some large independents and globals have a portion of their portfolios in the Bakken, but the play is mostly dominated by mid-sized and small companies**
  - Compared to other tight oil plays, the Bakken is relatively mature; consequently, less drilling by smaller operators is occurring there and larger companies are likely to divest sometime in the future
  - The Bakken accounted for about 10% of the total US production this year - current production 1.1 MMbbls/d and 3.0 bcf/d
- **We anticipate continued recovery and near-term growth in the Bakken play**
  - Of the nearly 17.6 Bn bbls of remaining technical resource, about 11.8 breaks even at under $60/bbl; however, much of the future production will come from non-core areas (Tiers 2 – 4)
  - Investment in the Bakken and other plays over the next two years is expected to recover from the 2020 price crash with monthly new wells coming online averaging 85 (with 10-20 DUCs) through 2025 and 95-98 in the longer- term.
  - Despite the pause in production increase due to the COVID-19 price collapse, long-term production from the Bakken is expected to grow by about 0.125 MMbbls through 2023 and 2024 from the current rate of 1.1 MMbbls/d.
  - In the longer-term production will level out at around 1.35 MMbbls/day as DUCs are used up and lower tier acreage contributes more and more to the forecast
- **Possible risks to future drilling and production in the Bakken**
  - Accelerated Energy Transition - Adaption of electric vehicles in the US will significantly reduce gasoline demand for the base case, but more especially accelerated energy transition; Over the long term, US unconventional resources will be disproportionately affected as oil prices could drop as low as $20-30/bbl
  - If a permanent shut-down of the Dakota Access Pipeline were to occur, approximately 570 Kbbls/d would need to be transported by rail resulting in a nearly $8-9/bbl differential to WTI
  - Labor shortages and lack of gas take-away may cause short-term disruptions

Several operators have a commitment to the play – others are likely to divest their Bakken assets

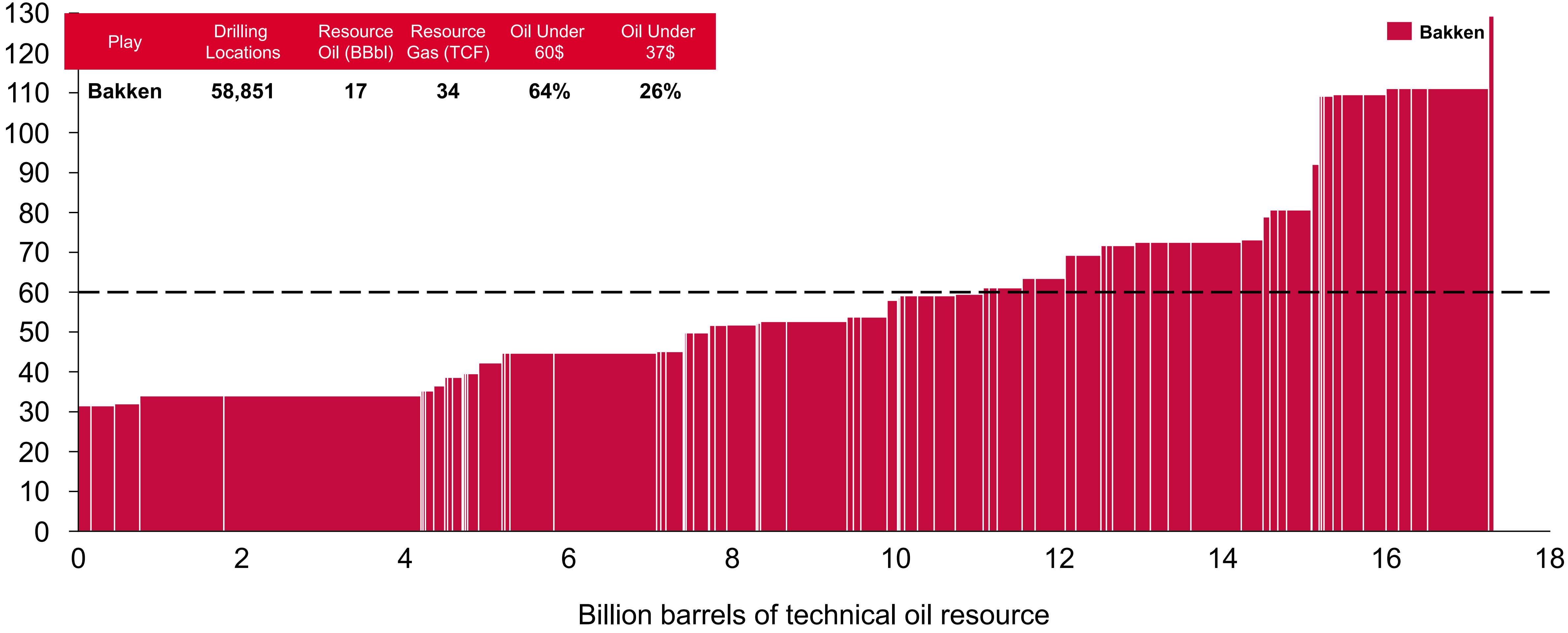


- Led by Continental and followed by other operators that have major assets in this play, the overall the top 15 operators in Bakken makes up 88% of its current daily oil production

Bakken is competitive as about 2/3s of its asset has a production cost less than $60/bbl and around 30% of its asset is under $40/bbl

Oil cost curve
USD per barrel

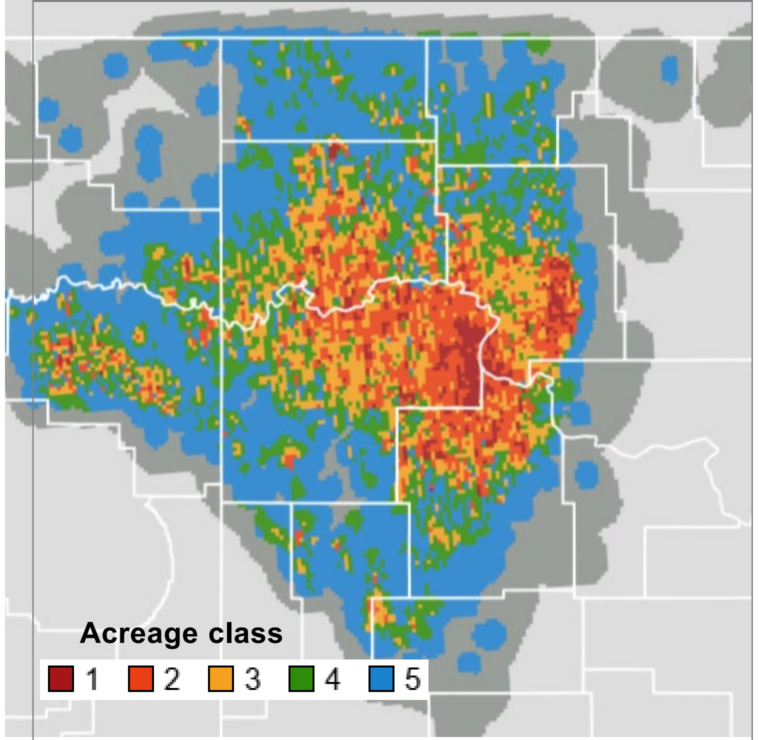
Play	Drilling Locations	Resource Oil (BBbl)	Resource Gas (TCF)	Oil Under 60$	Oil Under 37$
Bakken	**58,851**	**17**	**34**	**64%**	**26%**



Resource estimate – there is still running room for another decade of play development

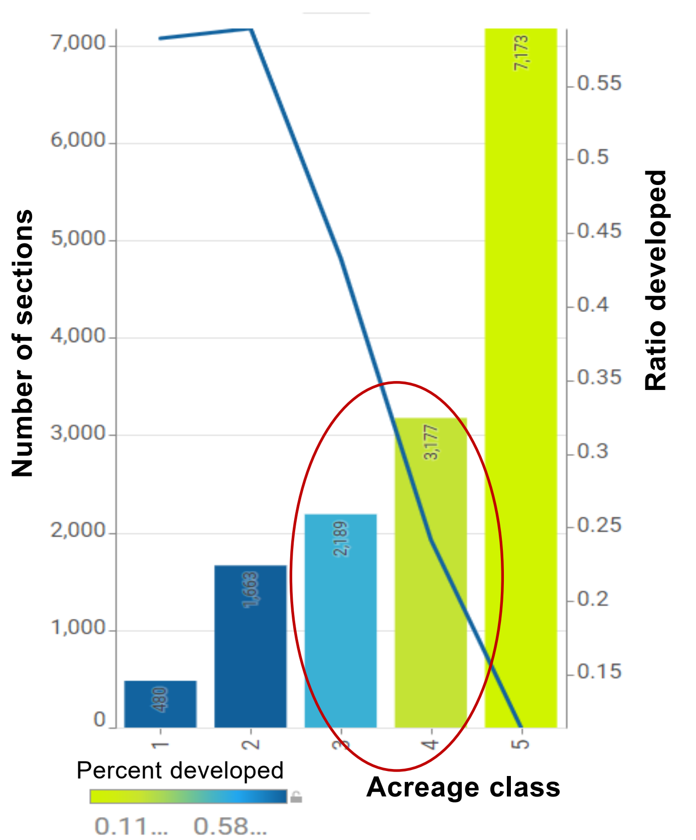
- The Bakken and underlying Three Forks have produced about 4.5 billion barrels at the end of 2022
- The core of the play is about 55-60% developed and future activity will increasingly move to the outlying areas of the play with lower tier acreage.
- With our long-term price forecast of > $70/bbl, acreage classes 1 to 4 are economic. A long-term price forecast of >80/bbl will be needed to motivate purposeful production of class 5
- Drilling locations are determined by assuming
  - 10,000-foot laterals
  - 12 wells per section (880 ft spacing) with stacked development of the Bakken and middle Three Forks

Bakken acreage grade



Source: Data taken from IHS Markit upstream E&P content (Energy Studio: Impact)
Underlying base map provided by © Mapbox and © OpenStreetMap contributors.

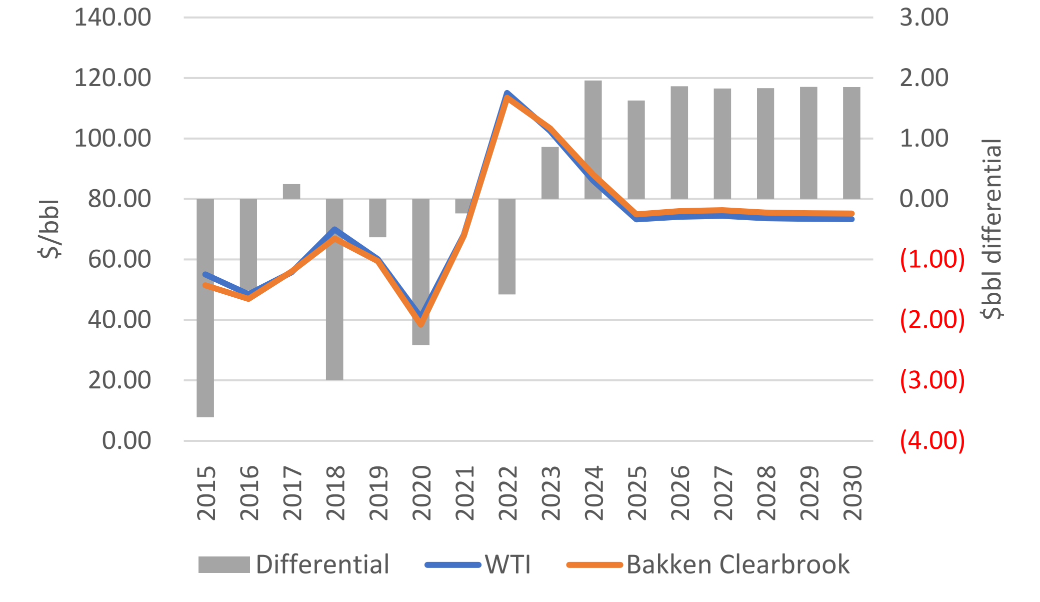
Bakken percent developed—12 wells per section



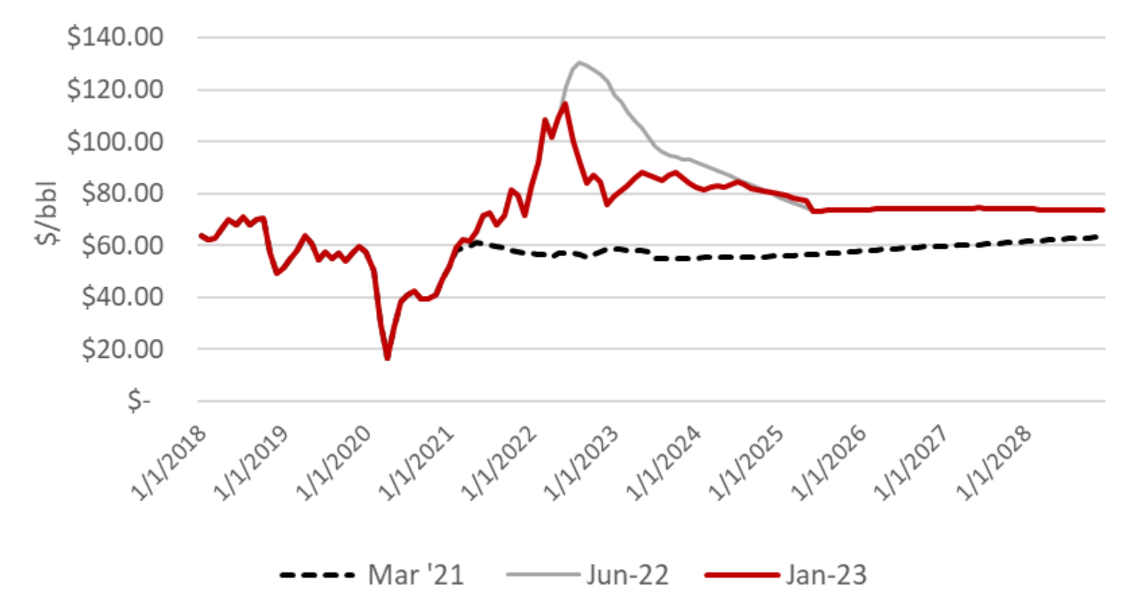
Source: Data taken from IHS Markit upstream E&P content (Energy Studio: Impact)

The changes in short-term price outlook underscore the uncertainty of current global markets, but the longer term is likely to hold due to lower current and projected investment

Oil Price Forecast - Bakken / Clearbrook



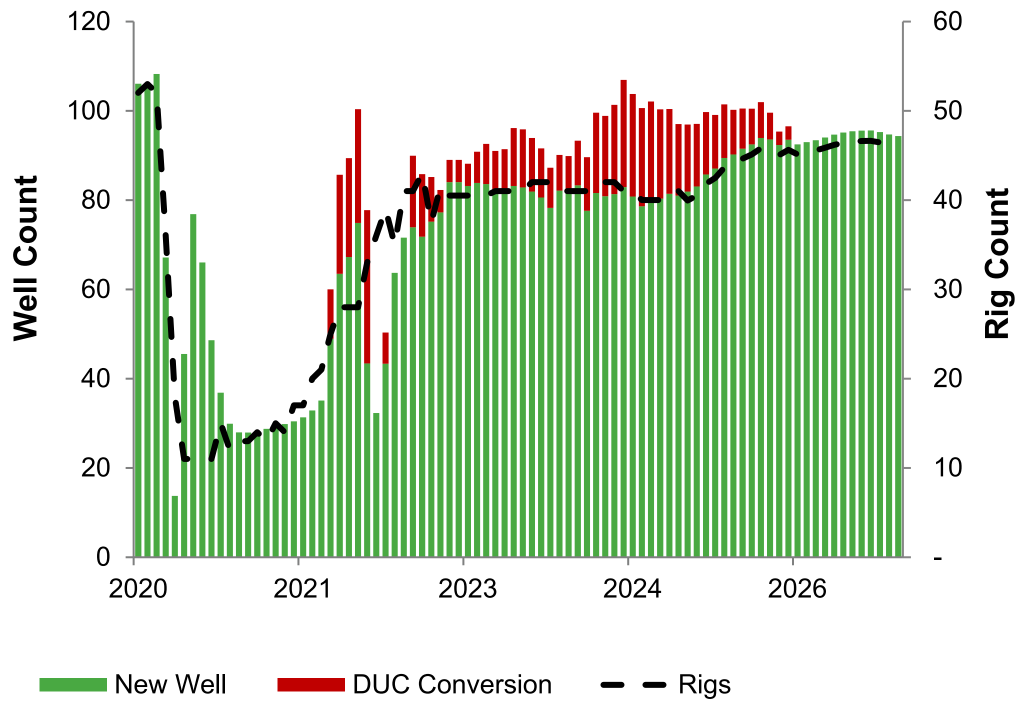
Oil Price (WTI) Forecast Comparison



- Since June the midterm price outlook has come down; nevertheless, the longer term been revised upward to reflect the lack of future global investment in oil and gas projects due to higher risk caused by global markets, cost of capital and the energy transition.
- Future investments will be much more selective with expectations of 20% IRR compared to historic average IRR of 10%
- Because of its location to markets, Bakken-Clearbrook will have a premium to WTI in the future

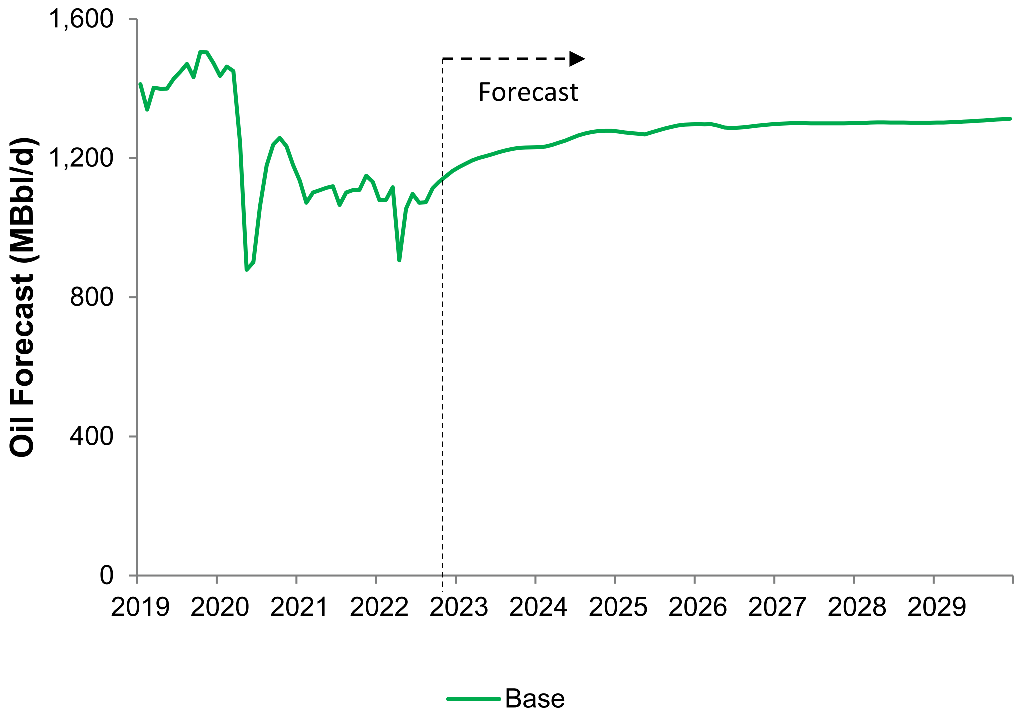
DUC inventory will help contribute to production increases from the current 1.1 MMbbls/d to 1.35 MMbbls per day leveling out in 2025

Bakken New Wells and DUCs



Source: S&P Global

Bakken Historical Oil Production And Forecast By Case

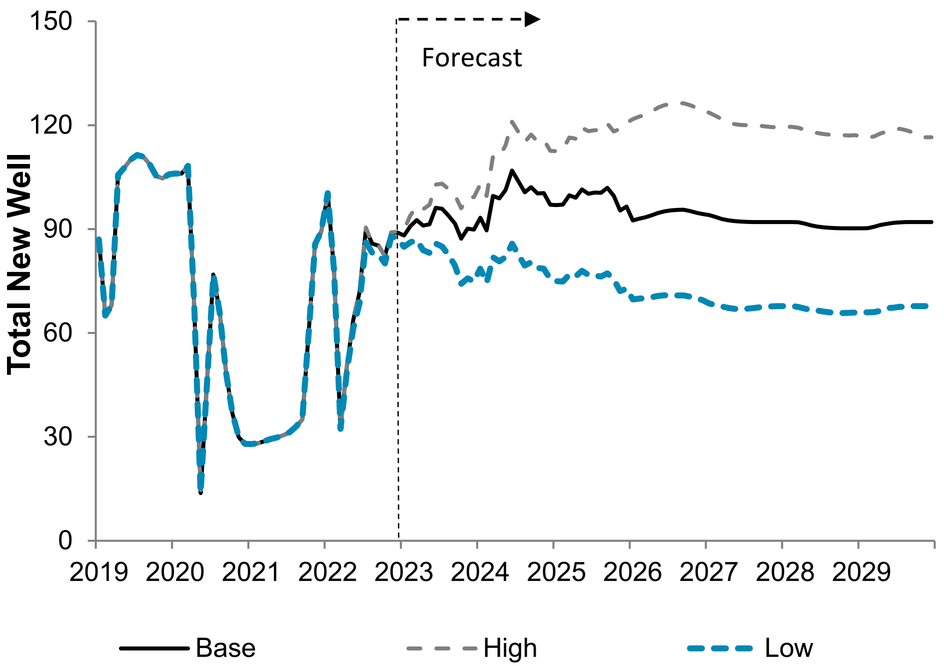


Source: S&P Global

- Growth in 2022 was inhibited by weather related production shut ins and drilling curtailment due to labor shortages, but in 2023 and 2024 we expect an increase of about 125K bbls per day, aided in part by the large DUC inventory.
- Short term increases will be contingent on the weather and availability of oil-field labor, especially fracking crews
- Longer-term increases are likely to be minimal due to the diminishing quantities of core acreage

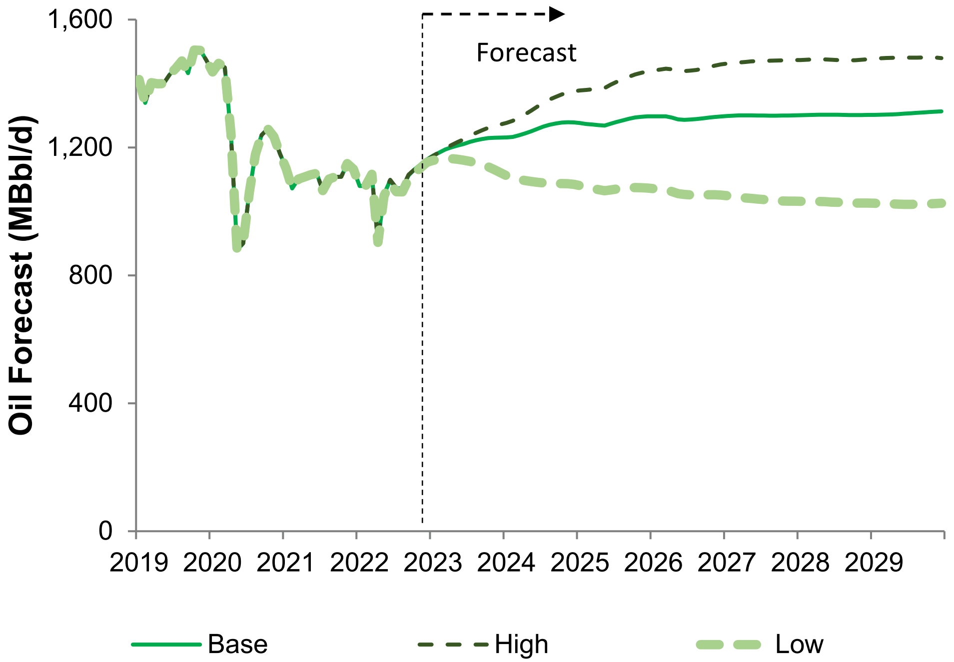
To generate the high and low drilling forecasts, we adjusted the price forecast by 10% and applied a higher and lower re-investment rates (plus-minus ~10% of operating cash flow)

Bakken Historical Well Count And Forecast By Case



Source: S&P Global

Bakken Historical Oil Production And Forecast By Case

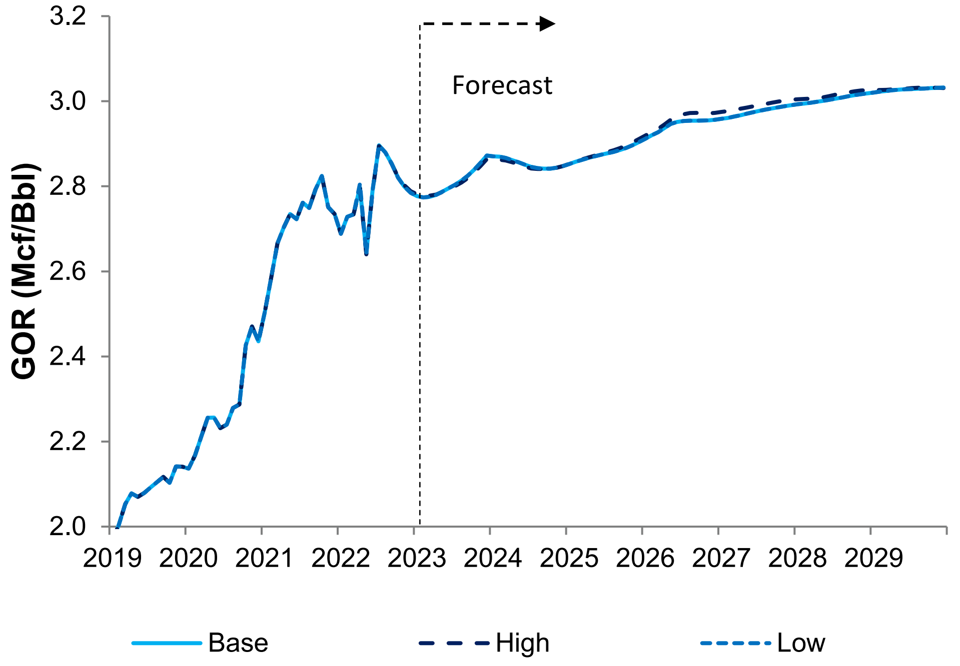


Source: S&P Global

- Re-investment rates, capital costs and labor are more likely to drive the forecast, than is the price forecast, as most of the Bakken resource breaks even at $60/bbl or lower. Reinvestment rates for the base case are in the 35-45% of operating cash flow (~60—65% of free cash flow).
- The high price forecast; however, makes tiers 1-4 economic; however, if prices were to fall below $40 (as they did during most of 2020) then development would be highly curtailed

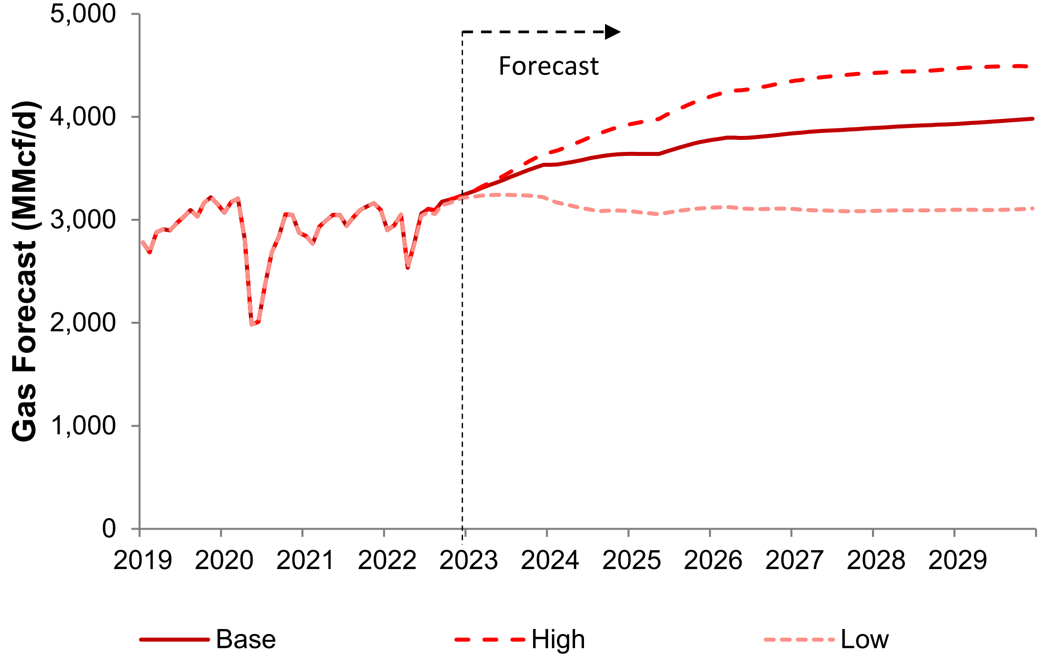
Over time the increasing GOR (gas-oil ratio) will cause gas production to increase at a faster rate than oil production for all cases

Bakken Historical GOR And Forecast By Case



Source: S&P Global

Bakken Historical Gas Production And Forecast By Case

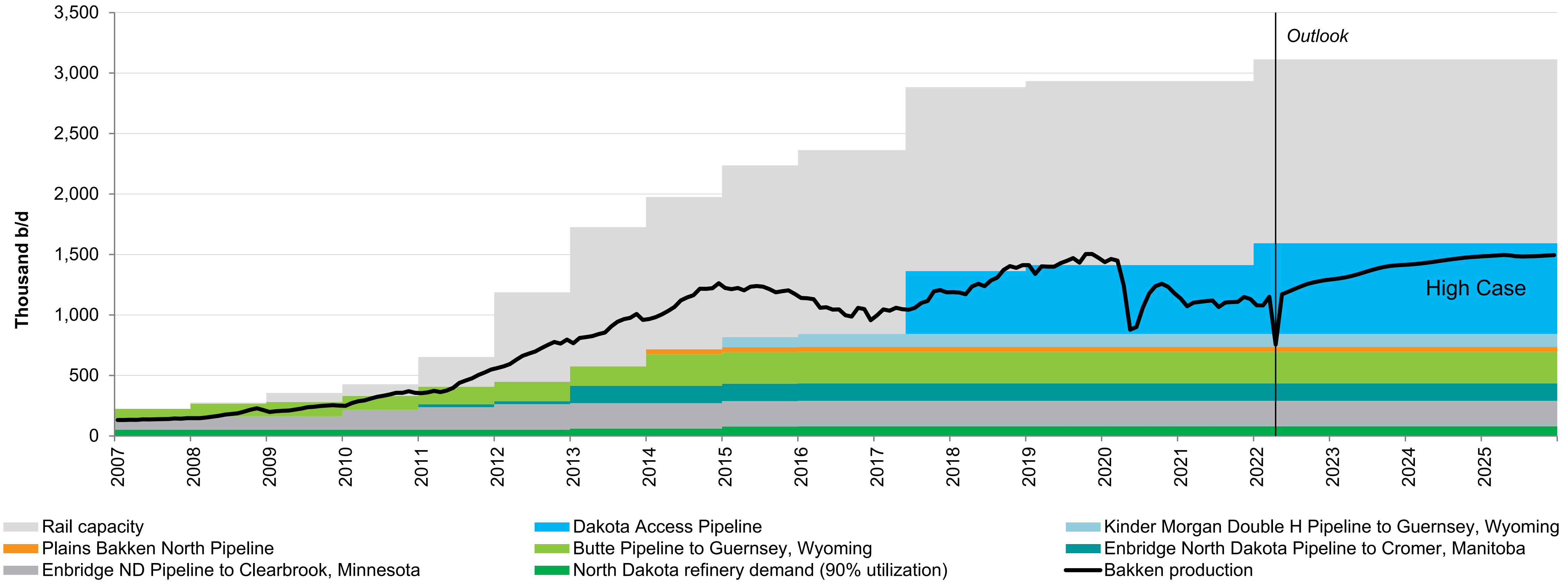


Source: S&P Global

- Most of the current gas production is being handled by available take-away capacity, but capacity remains tight and any equipment failure is likely to impact oil production
- Current gas through put is about 94% in 2022 with the remaining gas being flared
- New take-away infrastructure will be needed to meet the demand of an increasing gas forecast

DAPL is key to the Bakken remaining competitive

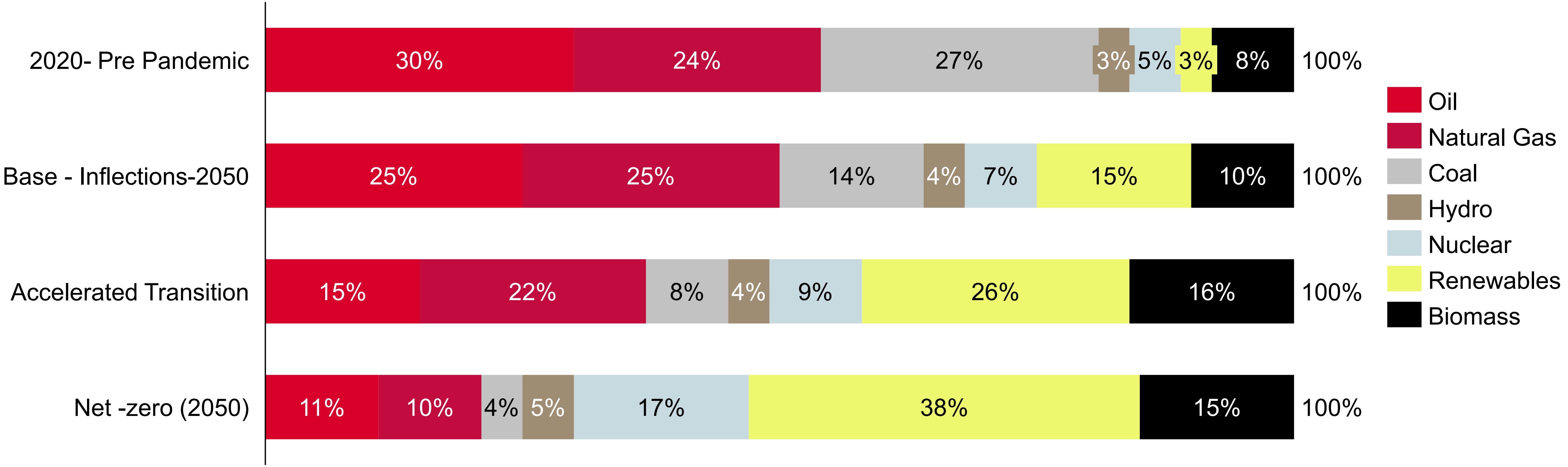
Bakken region takeaway capacity (monthly)



Source: IHS Markit

- Currently the pipeline is allowed to remain open despite ongoing litigation – A final decision should be forthcoming in early 2023.
- Permanent shut-down means that eliminating about **570,000** daily capacity which means more oil would be transported by rail, resulting in an increase of about $8-9 / bbl

Energy transition - Ambitious climate policies and net-zero emissions targets are driving a change in energy mix for all scenarios – Accelerated transition will not meet the goals of Paris compliance



- As a result of the oil-price crash due to the pandemic new emphasis by industry and government on clean energy has shifted. The current projected mix of energy sources has reduced reliance on oil and coal (which are more carbon intensive than natural gas) and increased reliance on renewables, mainly wind and solar

- Projected increases in average global temperature by 2100 for each scenario

Pre-pandemic	3.1* C	Accelerated Transition	1.9* C
Base – inflections	2.6* C	Net – zero	1.5* C

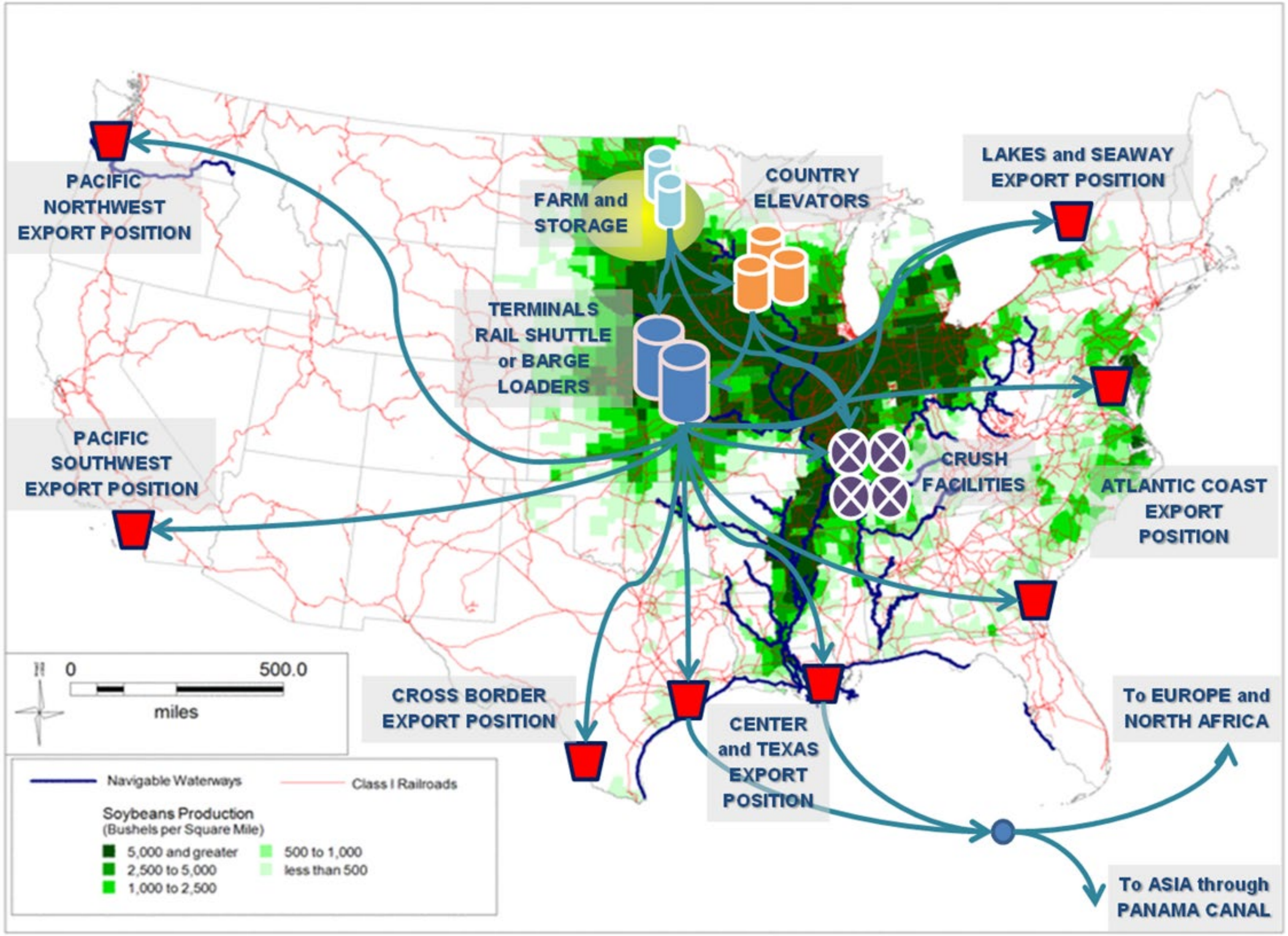
S&P Global
Market Intelligence

North Dakota Agriculture Outlook

Key Considerations

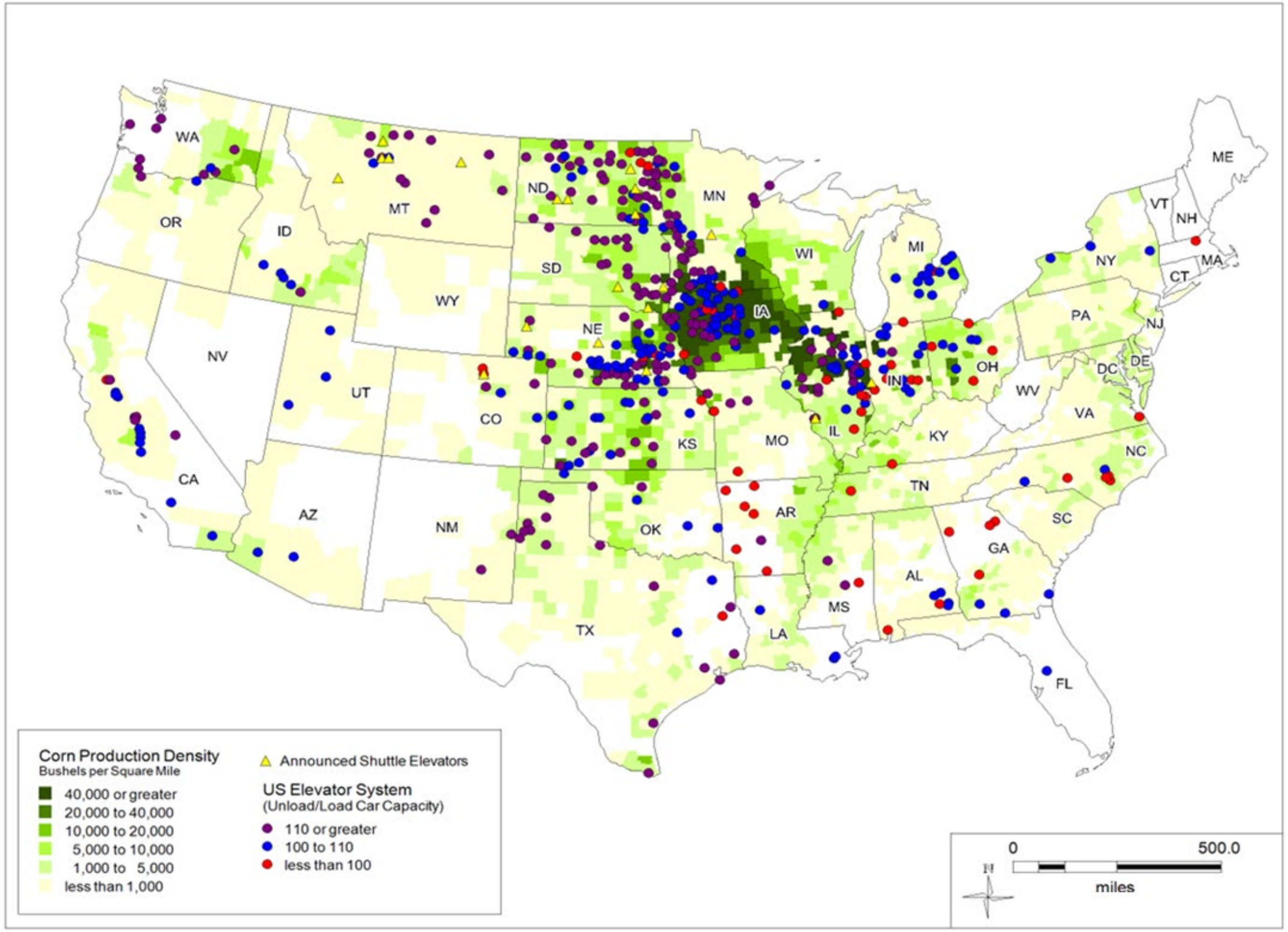
- US crops facing competitive pressure by currency, and transportation and infrastructure impediments
- US spring crop plantings skewed toward more corn, soybeans and wheat
- Black Sea concerns given Russia's war with Ukraine
- Supply chains recovering from monumental disarray
- Despite EPA announcement on November 30, biofuels offer promise and support to crop production to fulfill feedstock requirements
- Waters of the United States has important implications to agriculture
- US rail strike averted, service still to be restored
- US West Coast ports, terminals and shippers continue negotiations with International Longshore and Warehouse Union; cargo diversions from West Coast to Gulf and East Coasts
- Infrastructure investment makes a difference

Multiple modal pipeline options to efficiently and sustainably transport commodities and products to market position

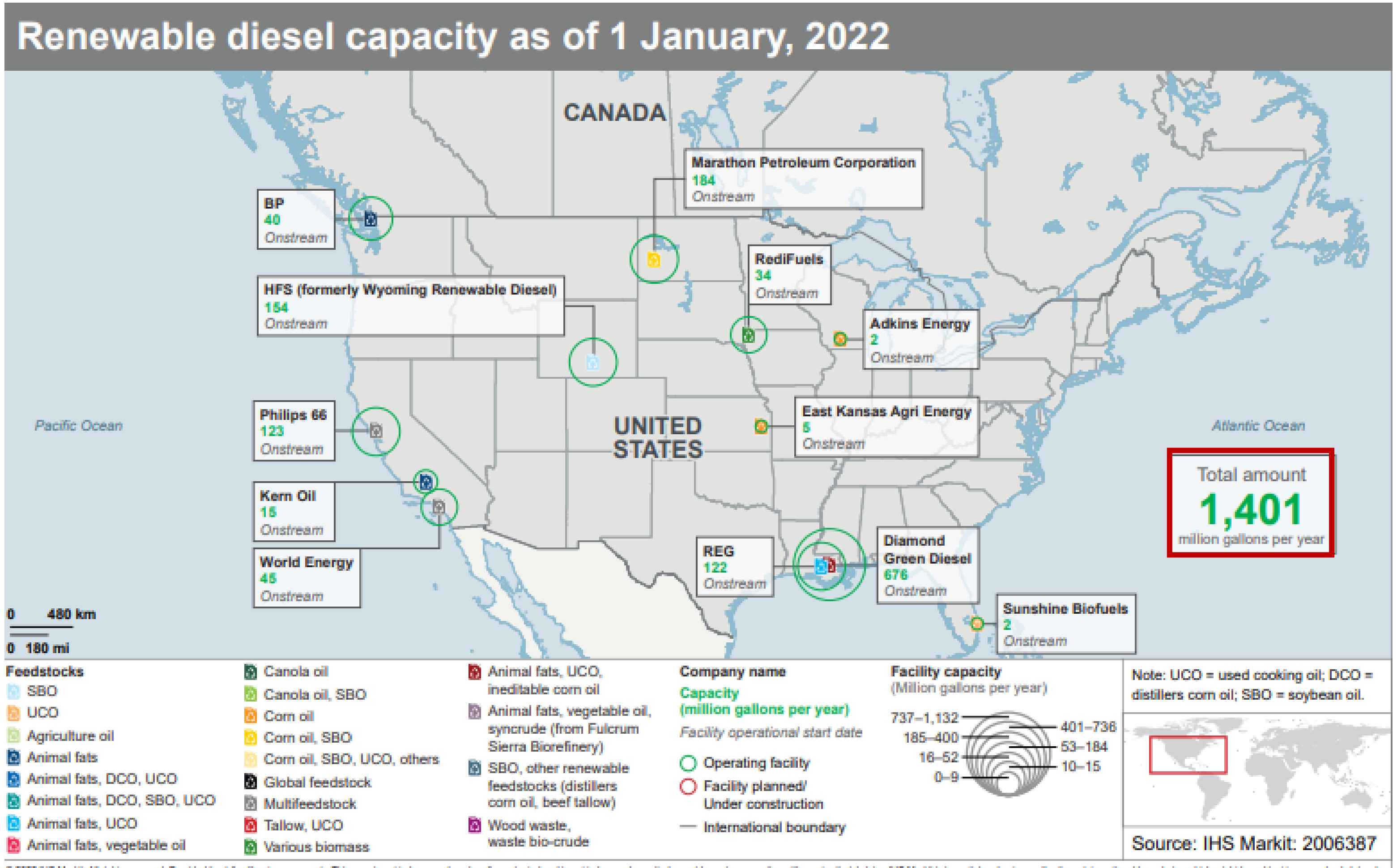


Grain shuttle train facilities

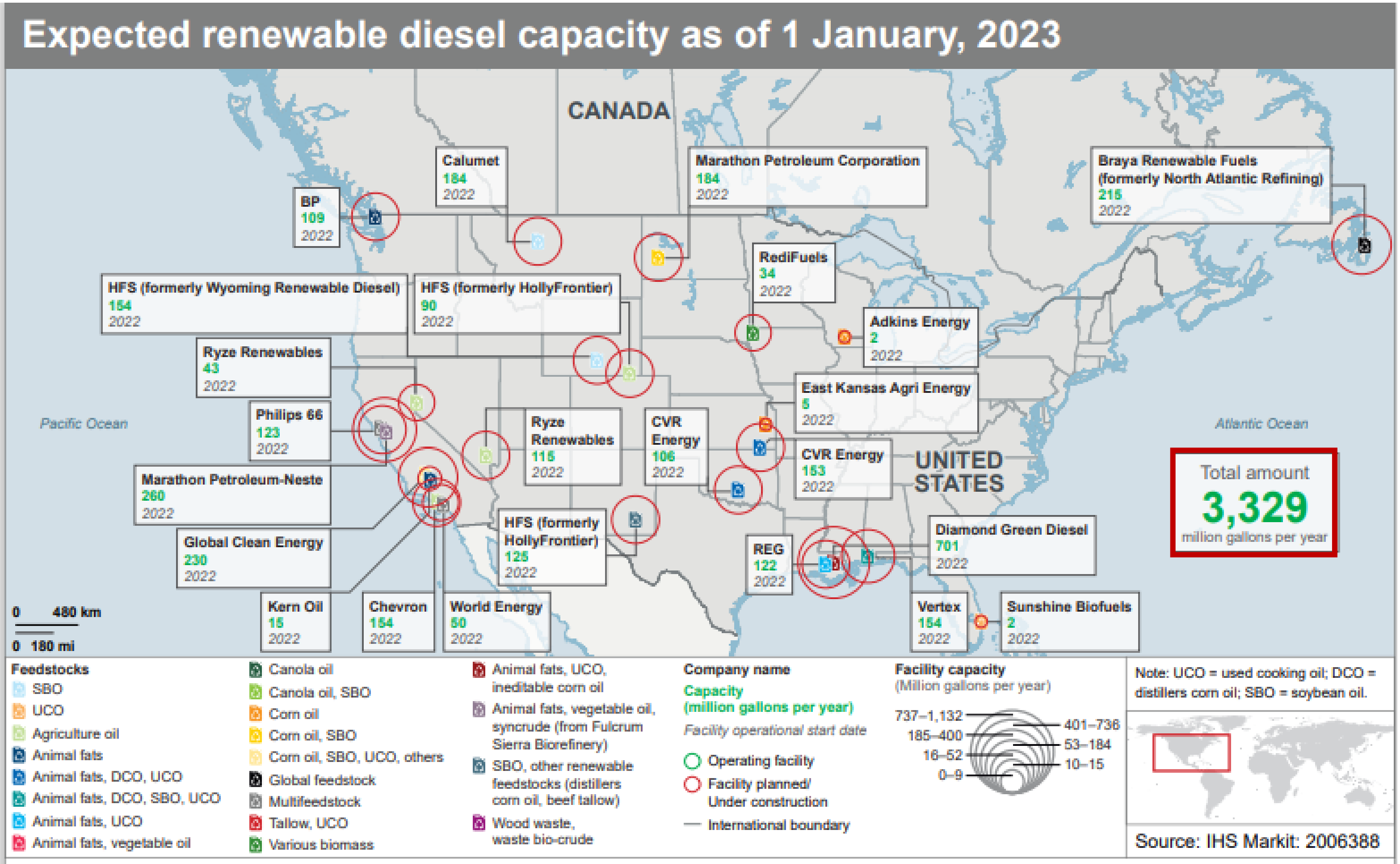
- Receive train sizes greater than 110 cars, each loaded to 110 tons
- Fast load and unload times
- Improved equipment cycle times
- Origin and Destination Efficiency Payments



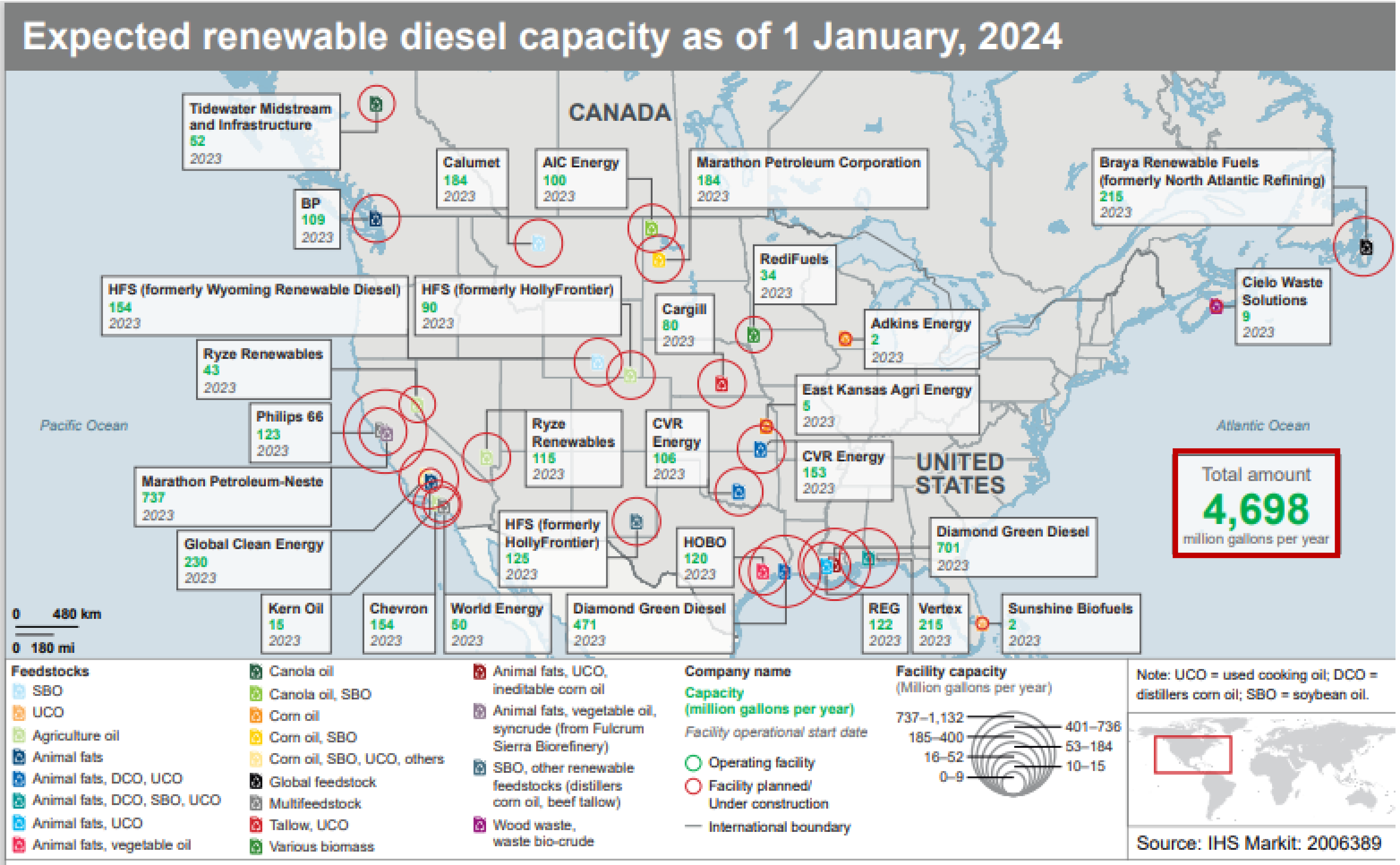
January 2022, US Renewable Diesel capacity doubled to 1.4 billion gallons requiring 10.5 billion pounds of feedstock



By 2023, over 23 billion pounds of feedstock will be required as investment proposals for new US production far outweigh feedstock availability



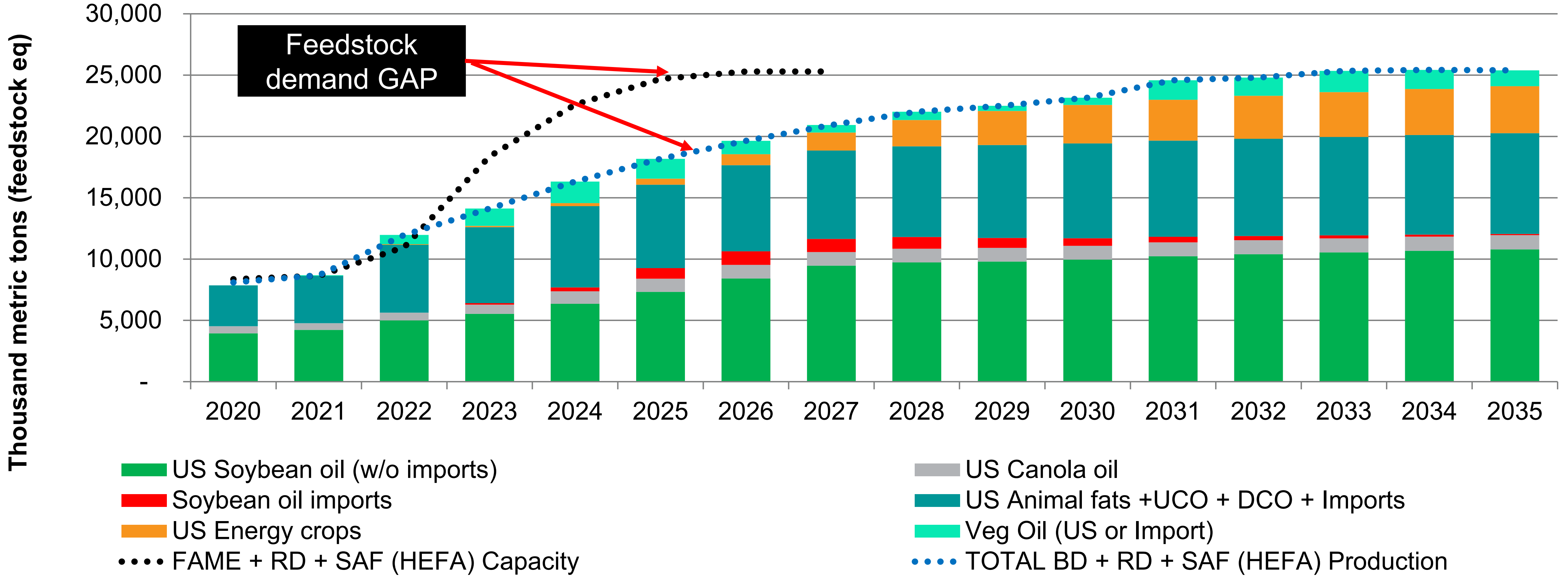
By 2024, over 35 billion pounds of feedstock will be required as investment proposals for new US production far outweigh feedstock availability



Renewable diesel expansion leading to US bio-distillate feedstock gap concerns

Feedstock demand being addressed by agriculture, biofuel and "technology" industries

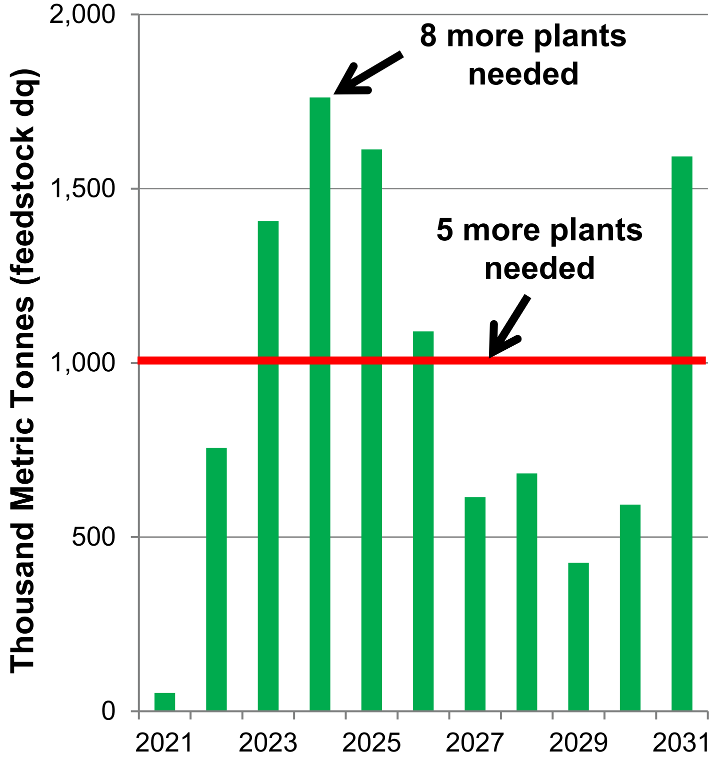
US bio-distillate production, capacity and feedstock mix outlook use



Source: S&P Global Commodity Insights, formerly IHS Markit

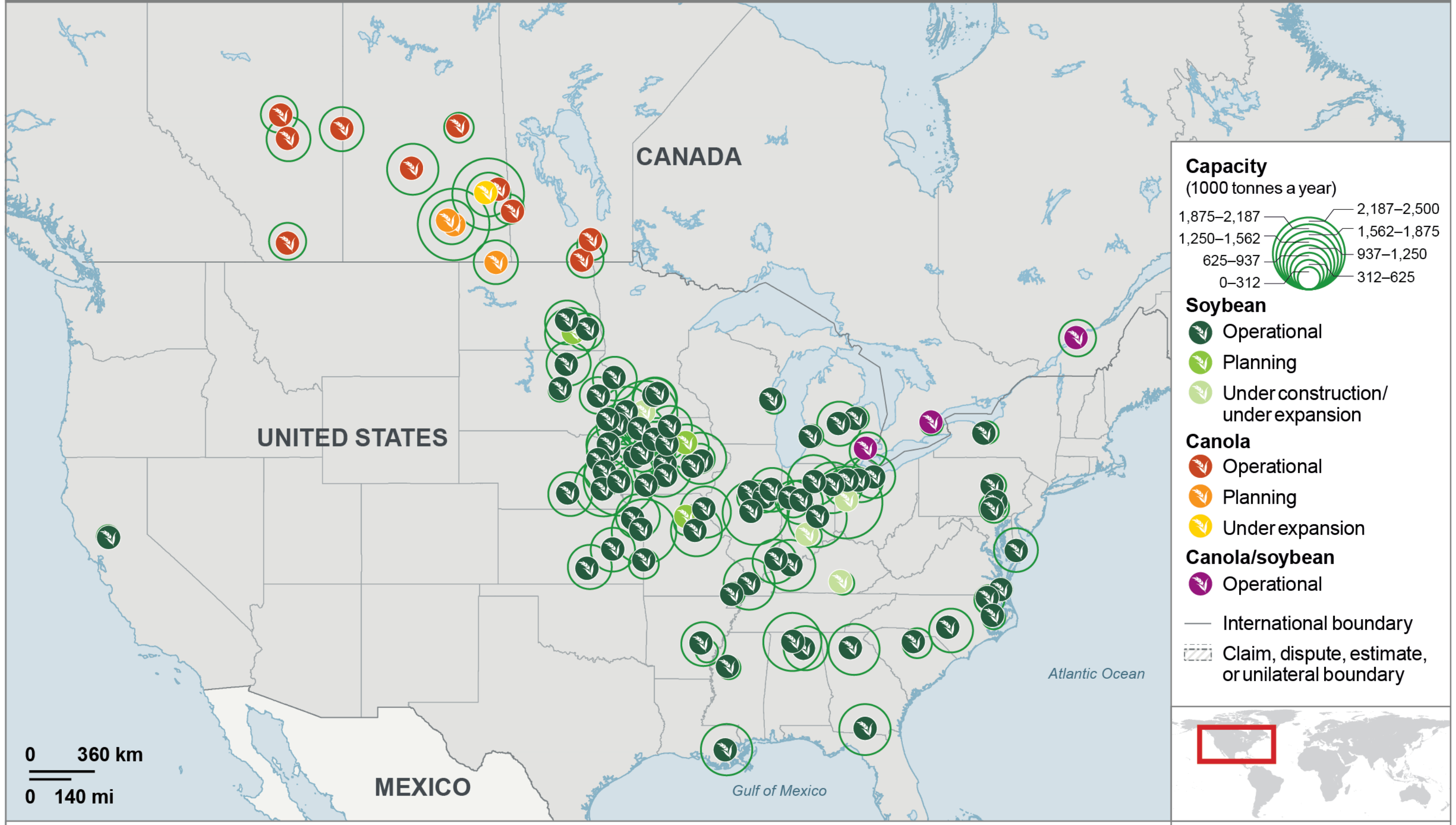
More crush plants required over next decade to meet US domestic biofuel feedstock gap, if met domestically

US biofuel feedstock gap



Source: IHS Markit

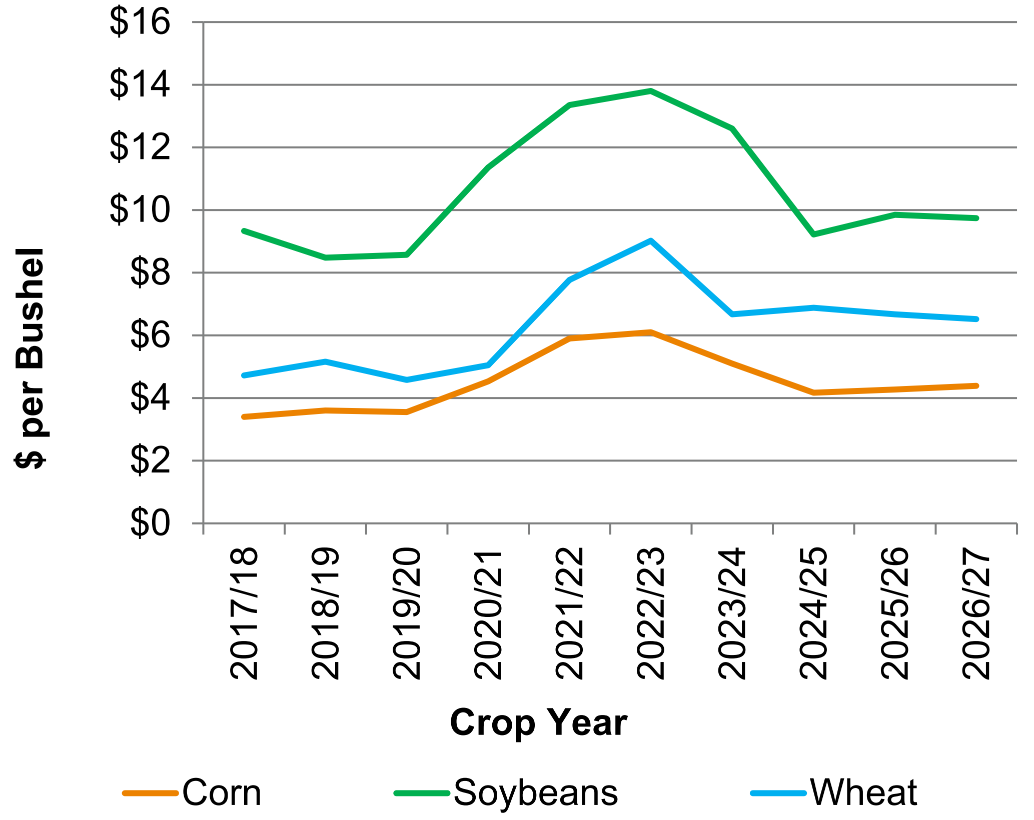
North America crush capacity



Source: IHS Markit: 2003450

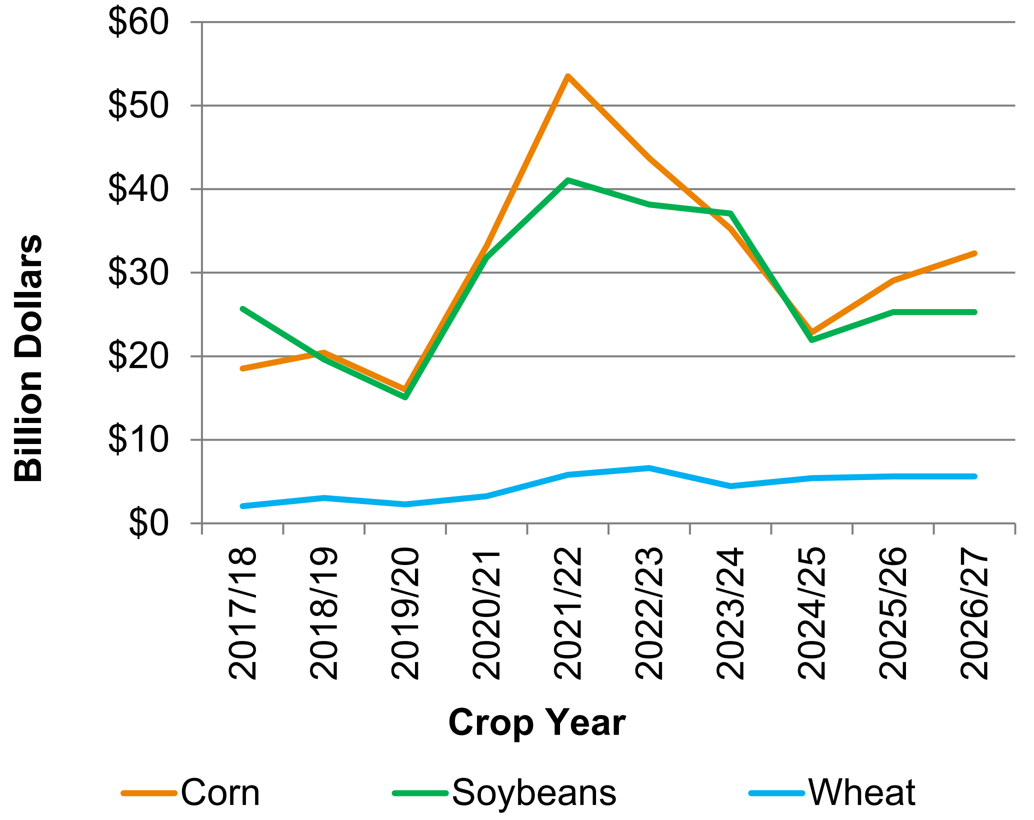
Crop farm prices peak in 2022/23 crop marketing year, while net revenues during 2021/22, moderating through 2023/24 and dropping into 2024/25

US major farm crop price



Source: S&P Global Commodity Insights, formerly IHS Markit

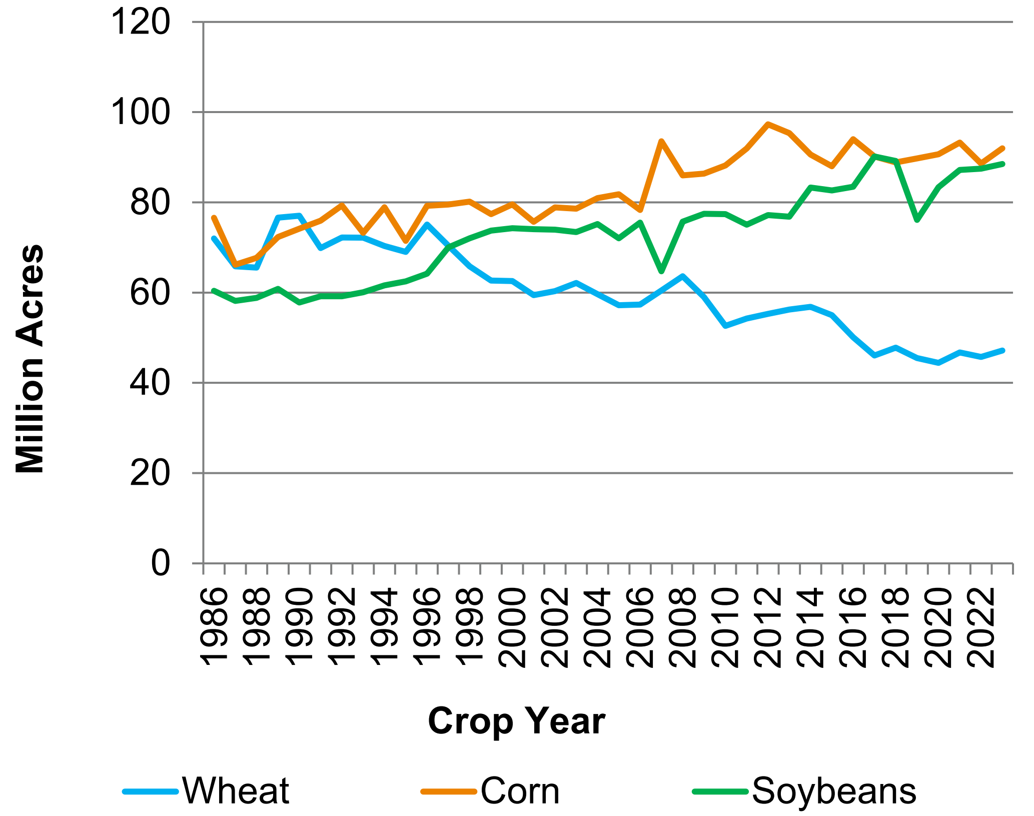
US major farm crop net revenues



Source: S&P Global Commodity Insights, formerly IHS Markit

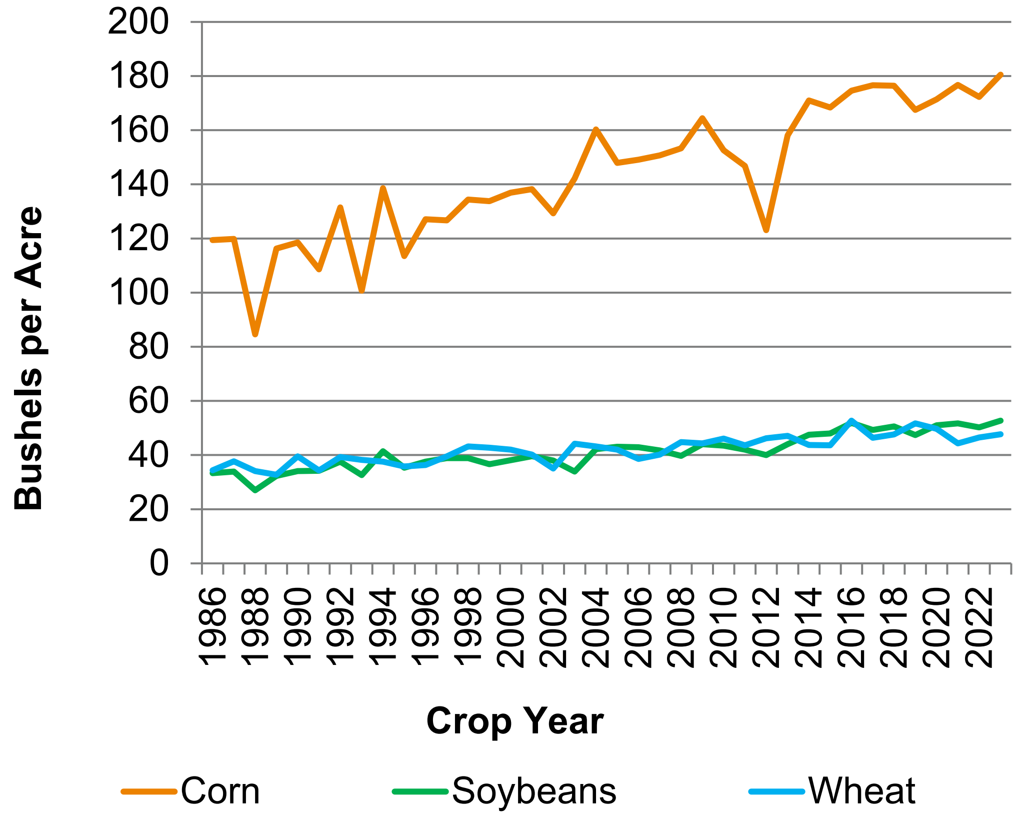
US crop planting to expand during 2023 on firm farmer net revenue

United States crop plantings



Source: S&P Global Commodity Insights, formerly IHS Markit

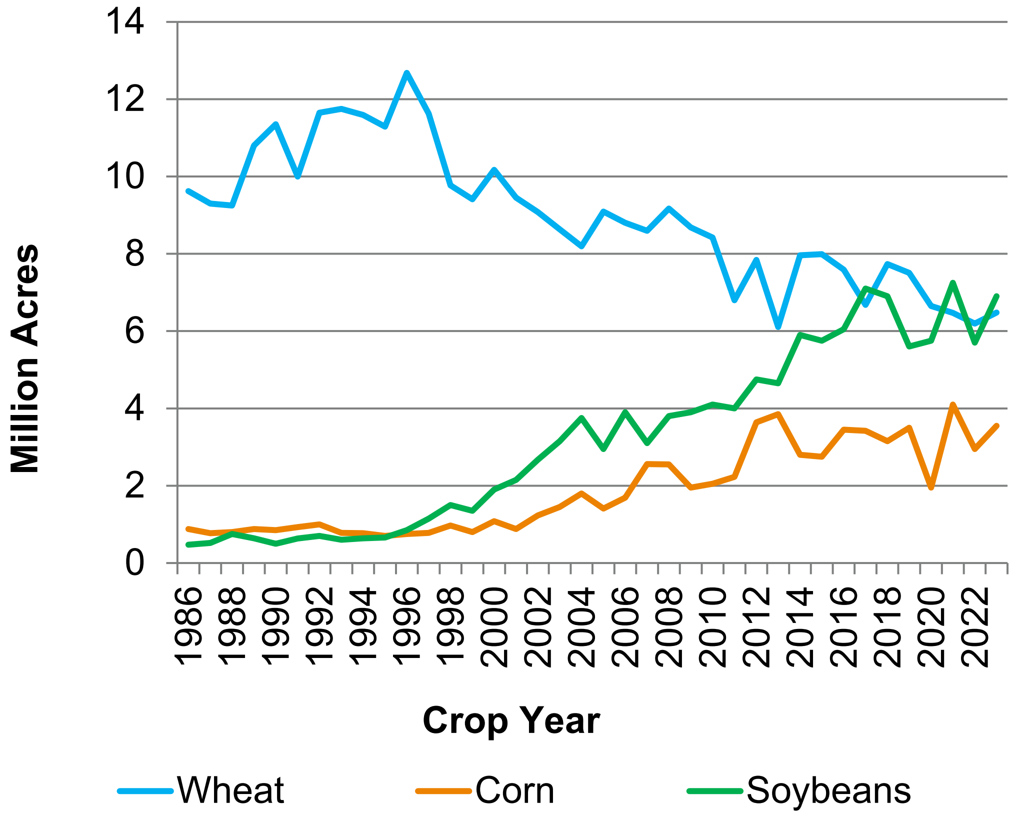
United States crop yields



Source: S&P Global Commodity Insights, formerly IHS Markit

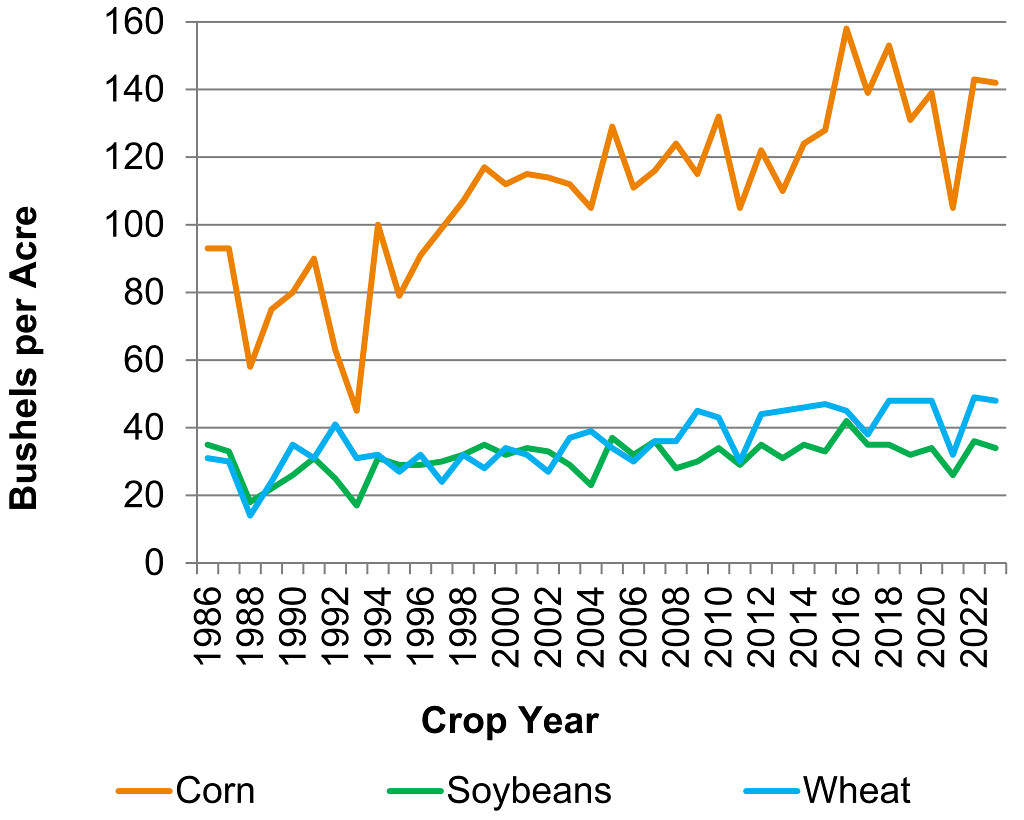
North Dakota plantings and yield by key crops

North Dakota crop plantings



Source: S&P Global Commodity Insights, formerly IHS Markit

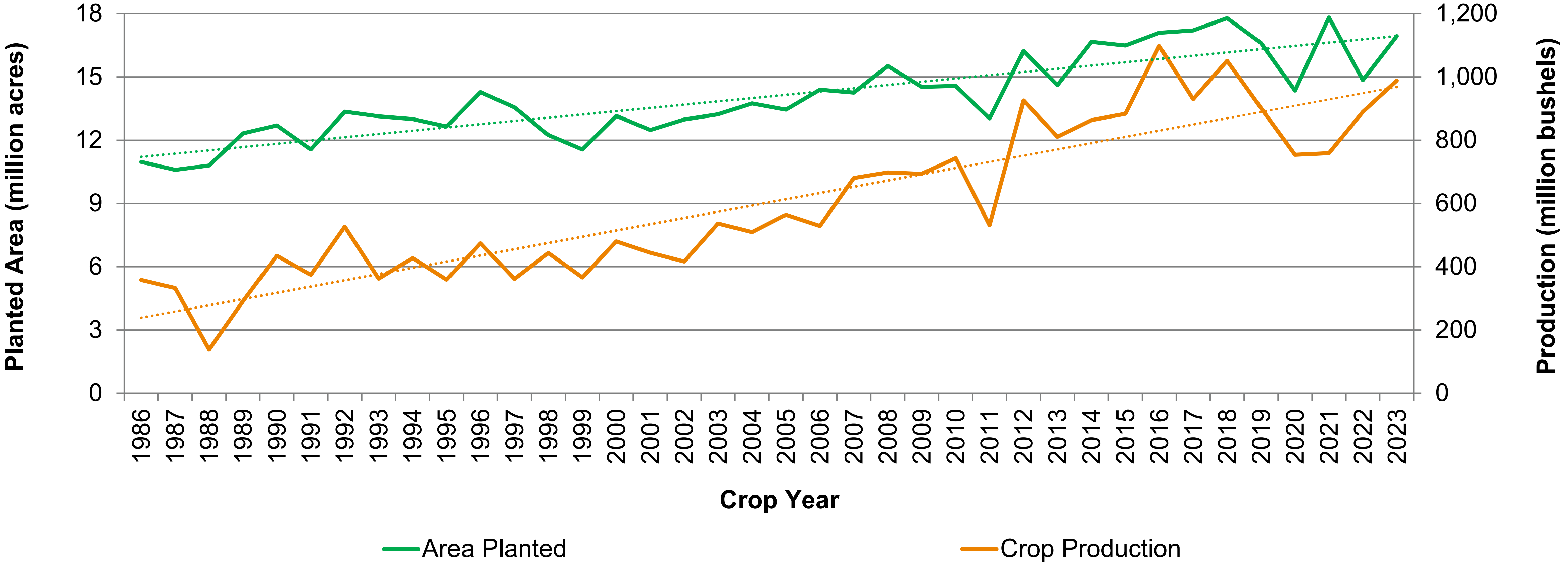
North Dakota crop yields



Source: S&P Global Commodity Insights, formerly IHS Markit

Plantings and production to expand for 2023 harvest

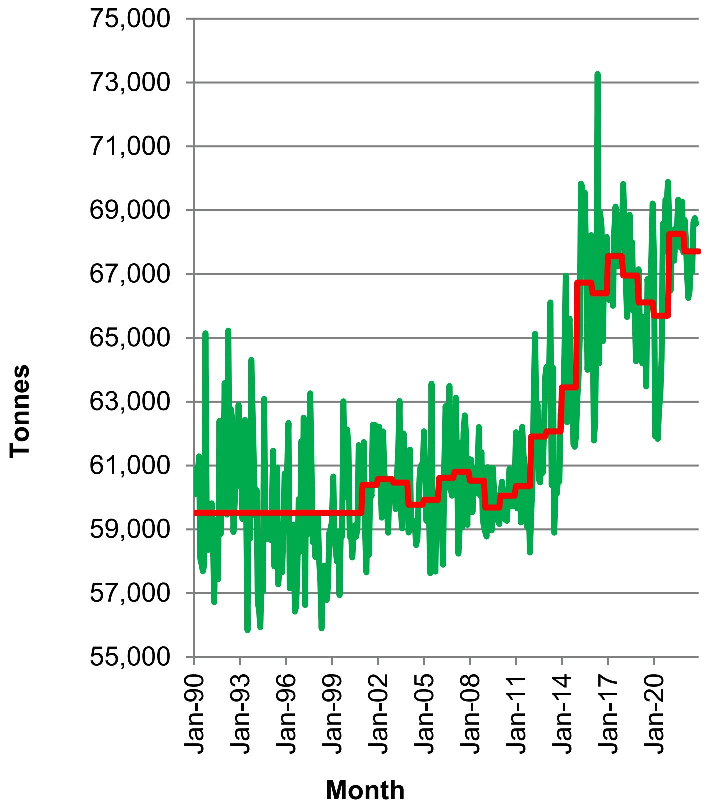
North Dakota crop (corn, soybeans and wheat) plantings and production



Source: S&P Global Commodity Insights, formerly IHS Markit

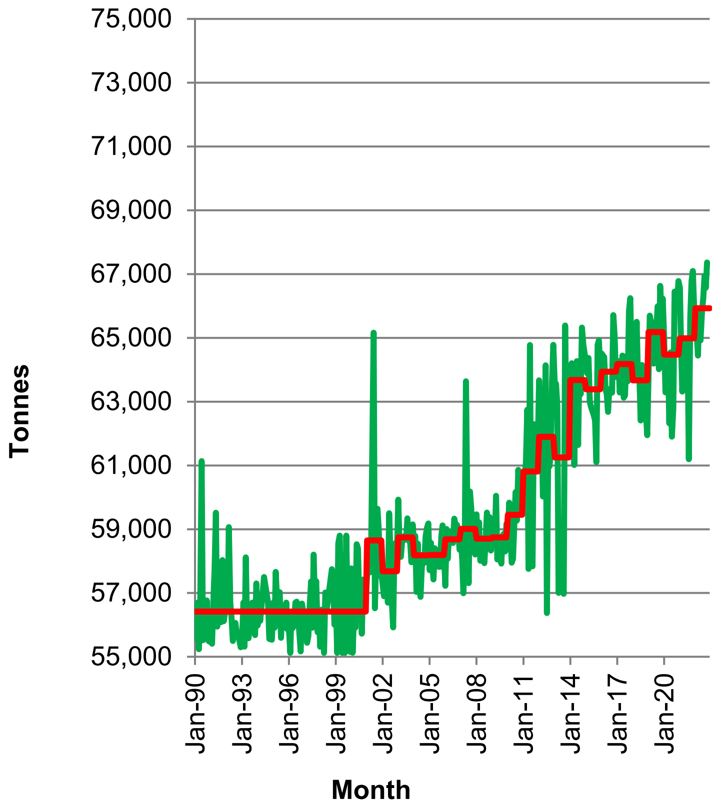
Example of infrastructure benefits: vessel loadings of grain and soybeans above 55,000 tonnes by port region

Mississippi River grain and soybean average monthly loadings per vessel



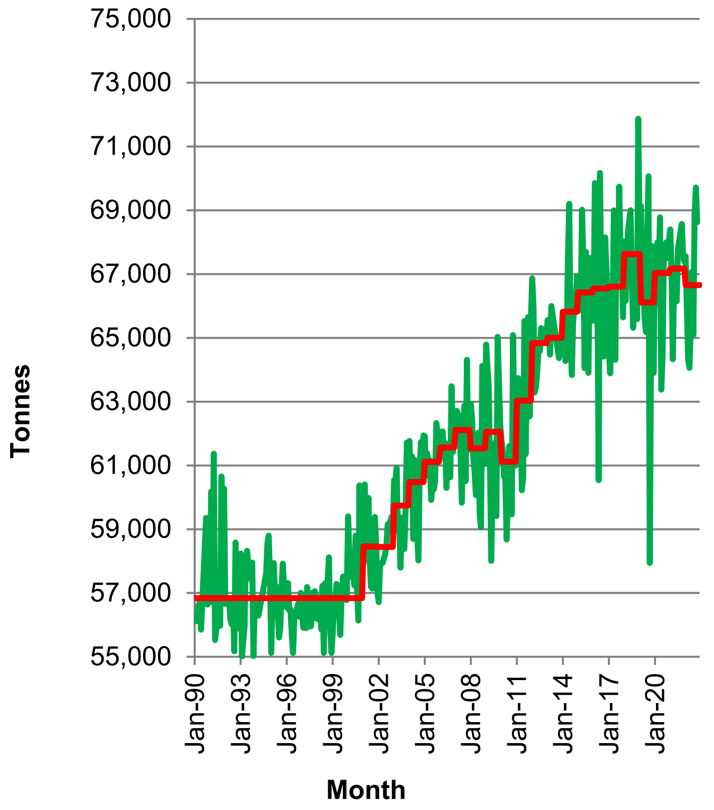
Source: S&P Global Commodity Insights, formerly IHS Markit

Columbia River grain and soybean average monthly loadings per vessel



Source: S&P Global Commodity Insights, formerly IHS Markit

Puget Sound grain and soybean average monthly loadings per vessel



Source: S&P Global Commodity Insights, formerly IHS Markit