# CANADIAN NATURAL GAS PRODUCTION TO 2040

APRIL 2025

# EXECUTIVE SUMMARY

- Incorrys forecasts total Canadian dry gas supply will grow to 25 Bcf/d (26 PJ/d) in 2040 from 17 Bcf/d 2023 as new gas production from Tight and Shale Gas formations is brought onstream to meet increasing demand, including for Liquified Natural Gas (LNG) exports.
- Western Canadian production is currently constrained by market access leading to depressed gas prices and producer returns. The limitation to production growth is lack of access to markets priced at levels sufficient for producer full-cycle cost recovery and investment—there is more resource available for production in Western Canada than markets over the forecast period.
- The increase in Western Canadian production over the forecast period reflects new market outlets resulting from BC West Coast LNG demand, and other demand from Canadian oil sands production and power generation.
- Most new gas in Western Canada will come from the lowest cost areas of the Montney formation. Montney BC dry gas is expected to reach 14.3 Bcf/d in 2040 up from 6.2 Bcf/d in 2023. Montney Alberta (AB) and AB Deep Basin are expected to reach 6.8 Bcf/d in 2040, up from 5.8 Bcf/d in 2023. Montney and AB Deep Basin are among the lowest full-cycle cost gas plays in North America and have sufficient resources to maintain production far beyond the forecast period.
- Shale gas production in Western Canada will come mostly from the Duvernay reaching over 1.4 Bcf/d in 2040.
- Legacy CBM production will decline and become uneconomical during the forecast period.
- Alberta will continue to increase production of associated gas from non-oil sands oil wells to reach around 1.4 Bcf/d in 2023. Other gas production comes primarily from conventional gas in Alberta, which was around 3.2 Bcf/d in 2023 expected to decline to less than 1.2 Bcf/d in 2040.
- Higher cost Horn River production peaked in 2012-2016 at around 0.15 Bcf/d and will significantly decline without new drilling. Horn River gas is dry and has high CO2 content. No major Horn River or Liard development is expected during the forecast period. There is huge potential in these plays to support additional LNG Projects, data centres, or other industrial demand.

Gas Processing Plant in Cochrane, AB. Credit iStockPhoto

# INTRODUCTION

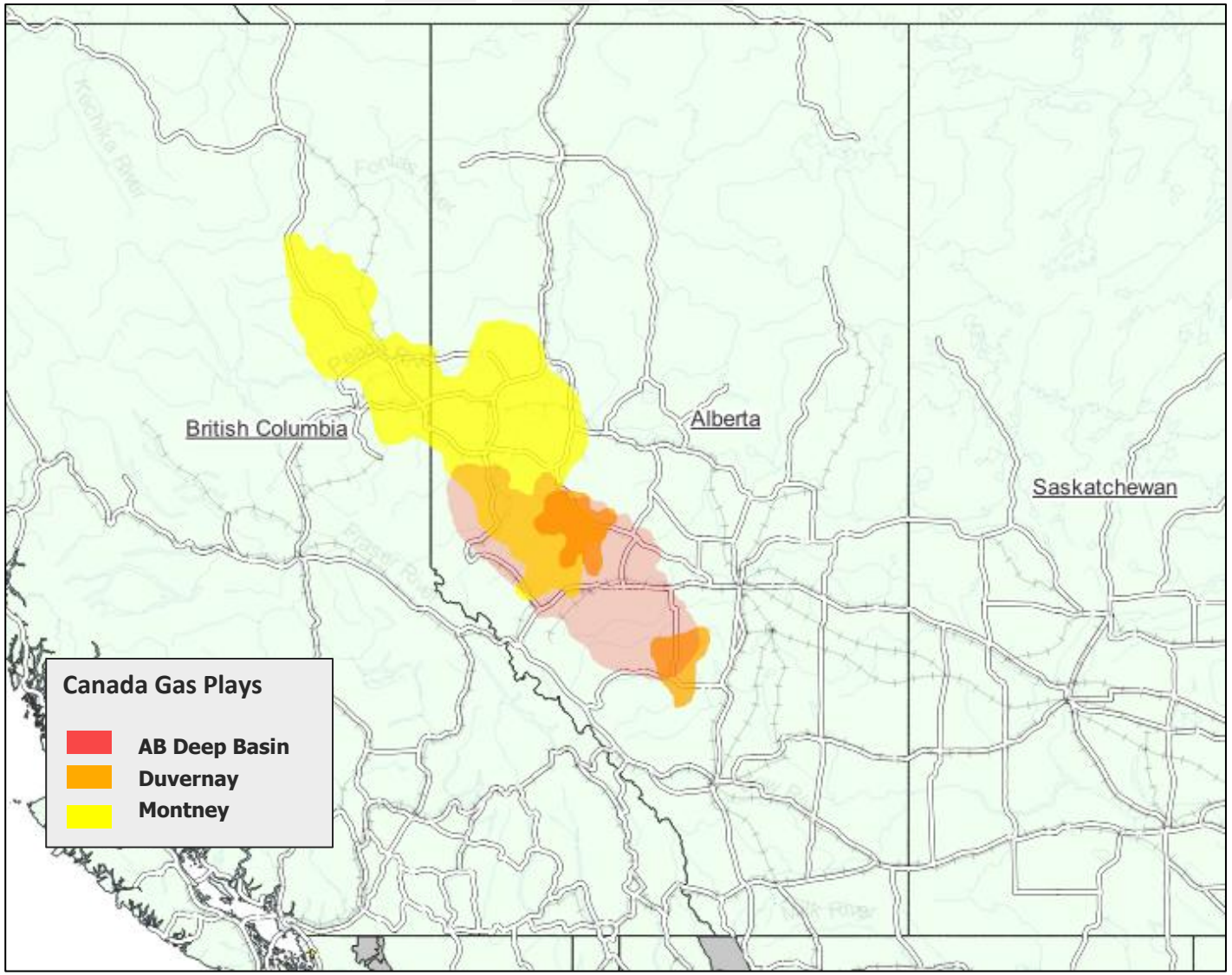
The report provides Incorrys' detailed natural gas production outlook for major gas supply plays in Westen Canada and an overall roll-up of Western Canadian dry gas production to 2040:

- Initial Well Productivity (IP), Estimated Ultimate Recovery (EUR), and well depth by basin.
- Historical rig counts by basin and trajectory (vertical and horizontal).
- Natural gas production for major gas plays: Montney, Duvernay, and Alberta Deep Basin.

## Forecast assumptions

- Natural gas production in Western Canada is demand driven.
- Natural gas supply required to satisfy demand is allocated to production basins based on Incorrys' proprietary models. The models consider full cycle costs, historical production data, rig count, geological data, and other relevant factors related to a particular basin.
- Marketable dry natural gas production is calculated based on raw gas production and NGL extraction data from Alberta and BC public sources and Incorrys' analysis.
- Areal extent of major formations is based on play or basin labels as defined by operators for individual wells.

## Major Natural Gas Producing Plays in Western Canada

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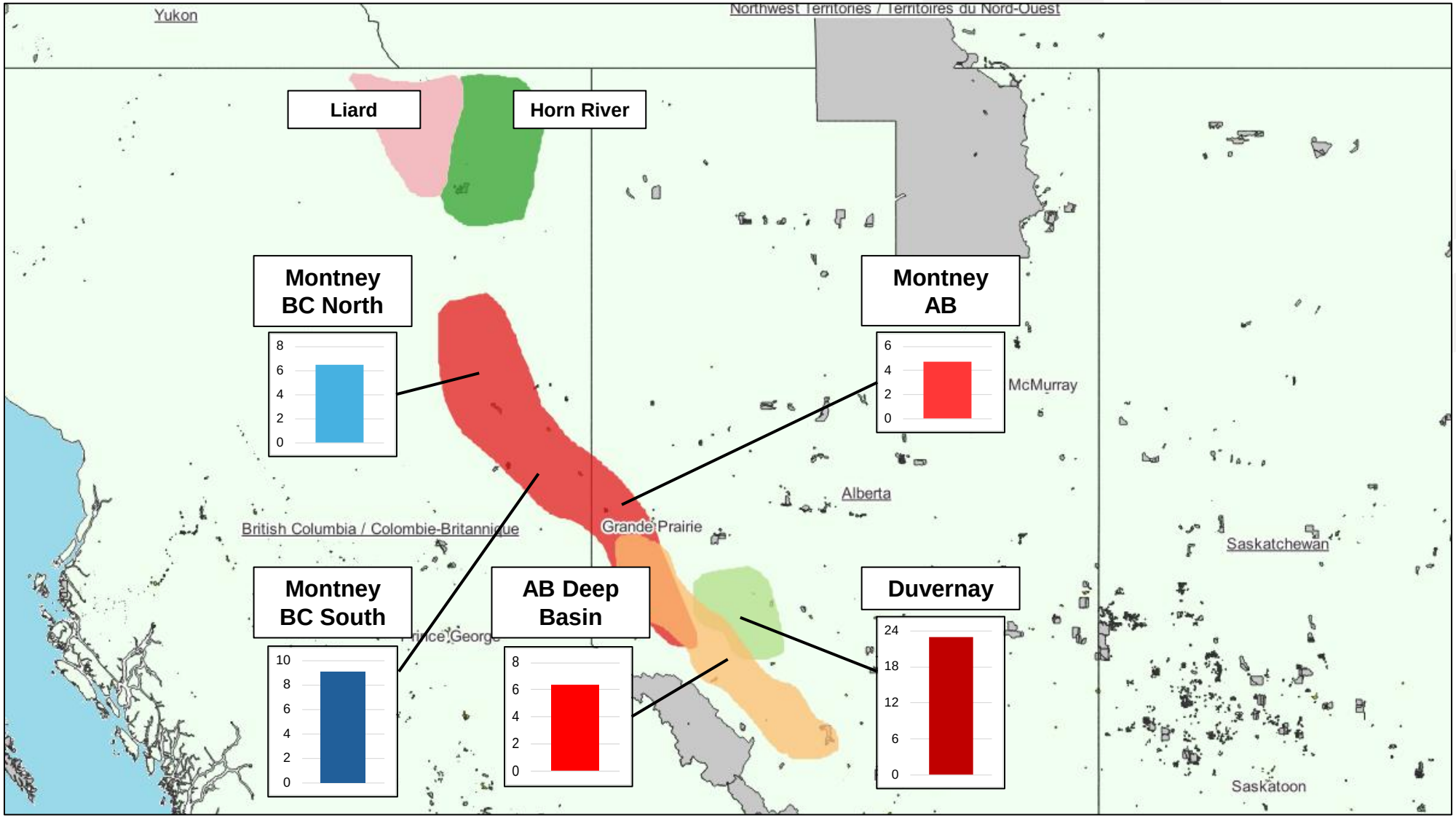
# INITIAL PRODUCTIVITY (IP) OF MAJOR CANADIAN GAS PLAYS 2024




*New well 30 days initial productivity (IP) in MMcf/d*

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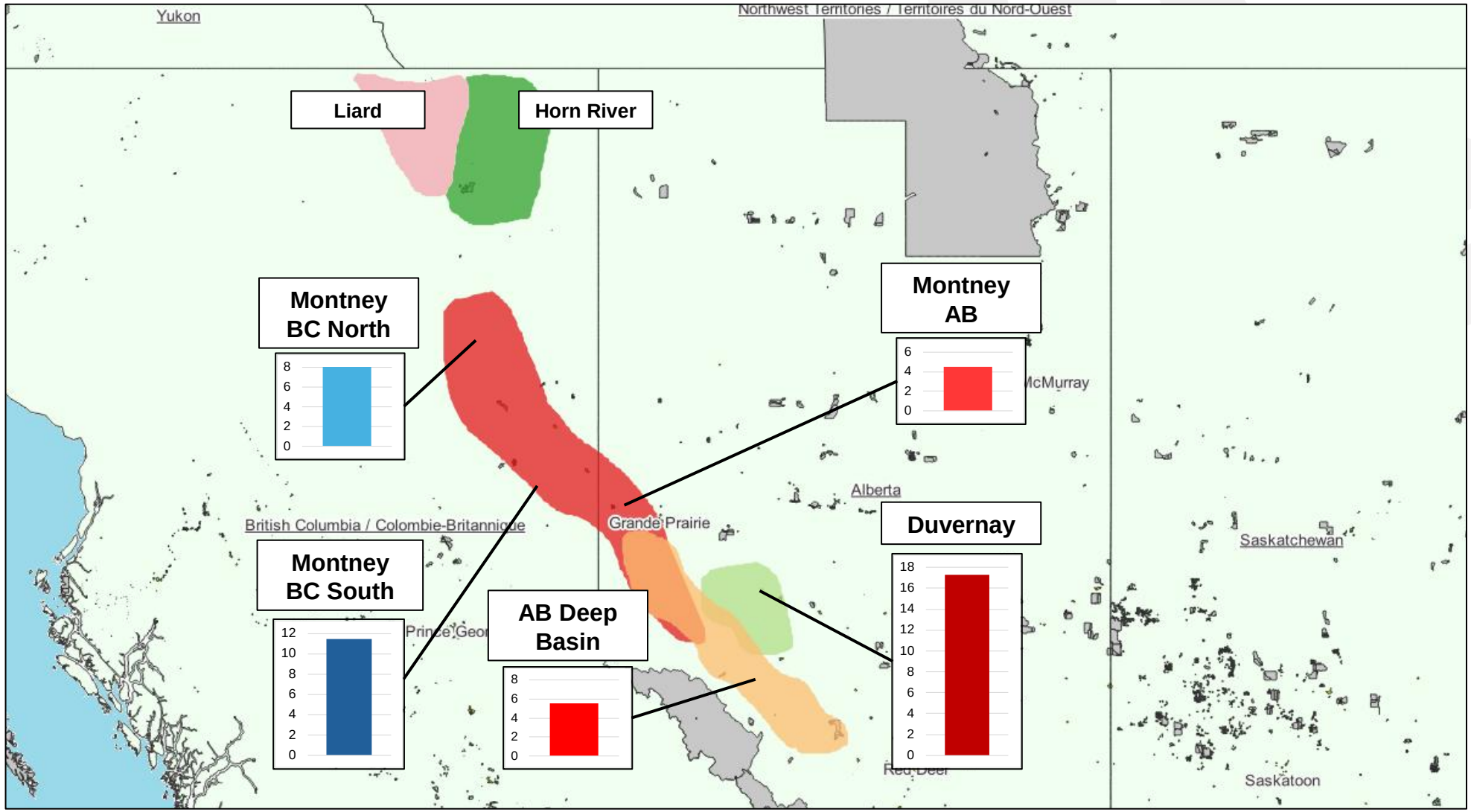
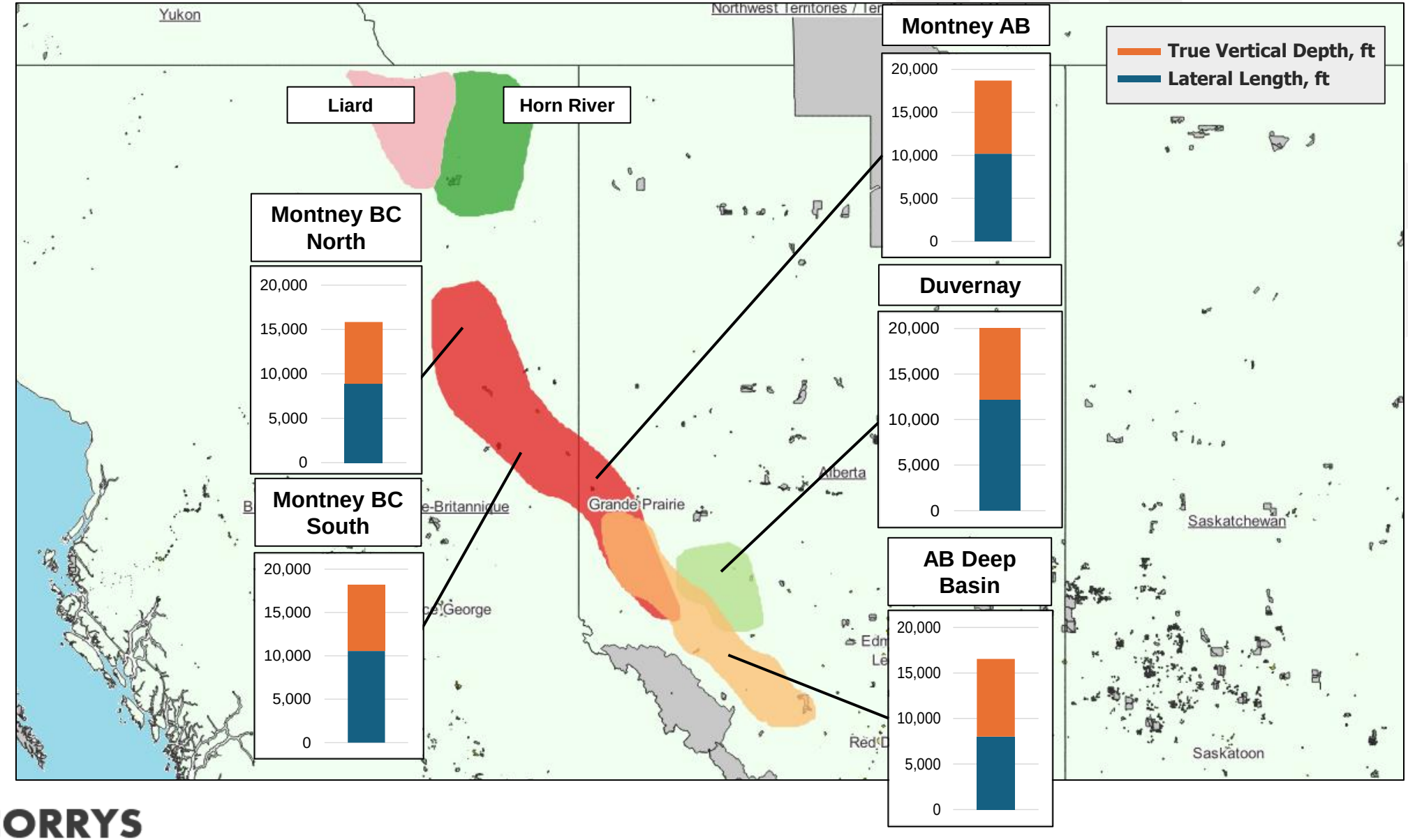
# ESTIMATED ULTIMATE RECOVERY (EUR) OF MAJOR CANADIAN GAS PLAYS 2024

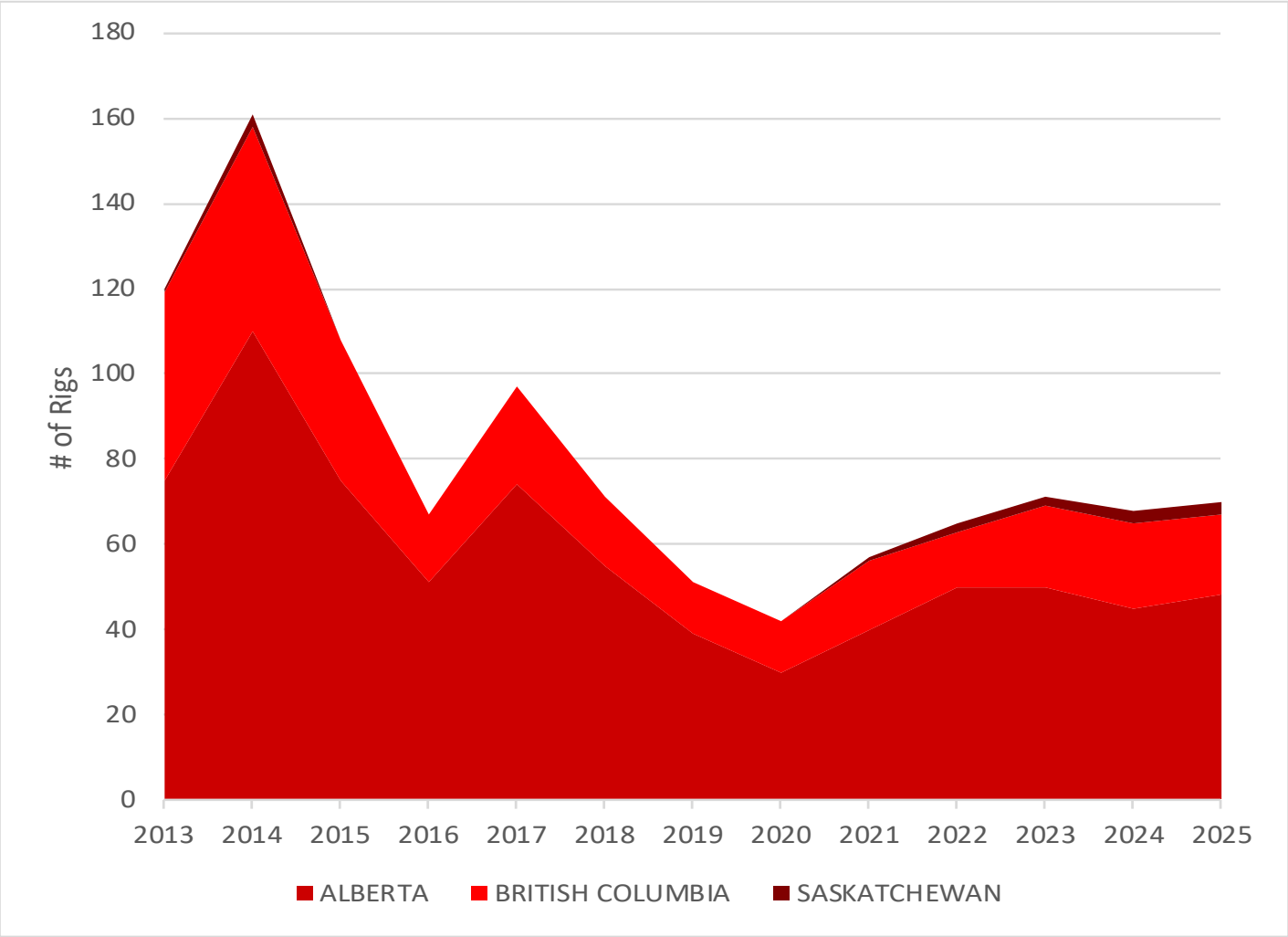



*New well estimated ultimate recovery (EUR) in Bcf*

# WELL DEPTH OF MAJOR CANADIAN GAS PLAYS 2024



# CANADIAN NATURAL GAS RIG COUNT BY PROVINCE 2013-2025




Source: Baker Hughes North America Rig Count, 2024

The chart provides rig counts for Alberta, British Columbia, and Saskatchewan from 2013 to 2025(1Q):

- Alberta: The average annual rig count in 2014 peaked at 110 rigs from 75 in 2013, reflecting higher drilling activity. The significant drop in 2020 to just 30 rigs was due to the COVID-19 pandemic. In 2025, a modest recovery to 48 rigs is still considerably lower than peak years.

- British Columbia: The rig count peaked In 2014 at 48 rigs, up slightly from 44 rigs in 2013. The pandemic also caused the BC rig count to bottom out In 2020 at just 12 rigs before rebounding slightly to 19 rigs into 2025.

- Saskatchewan: 2014 saw a slight increase to 3 rigs from just 1 rig in 2013. In 2015 the count dropped to basically no rigs which carried through the 2020 pandemic year. The rig count was just 1 in 2021 recovering to 2 rigs into 2025. Currently gas drilling in Saskatchewan is very limited.

One can see the significant impact of extraneous events including the oil price crash in 2016 and the COVID-19 pandemic in 2020.

Alberta has been the busiest driller over the 2013-2025 time period accounting for 71% of the total, with BC at 28% and Saskatchewan at just 1%.

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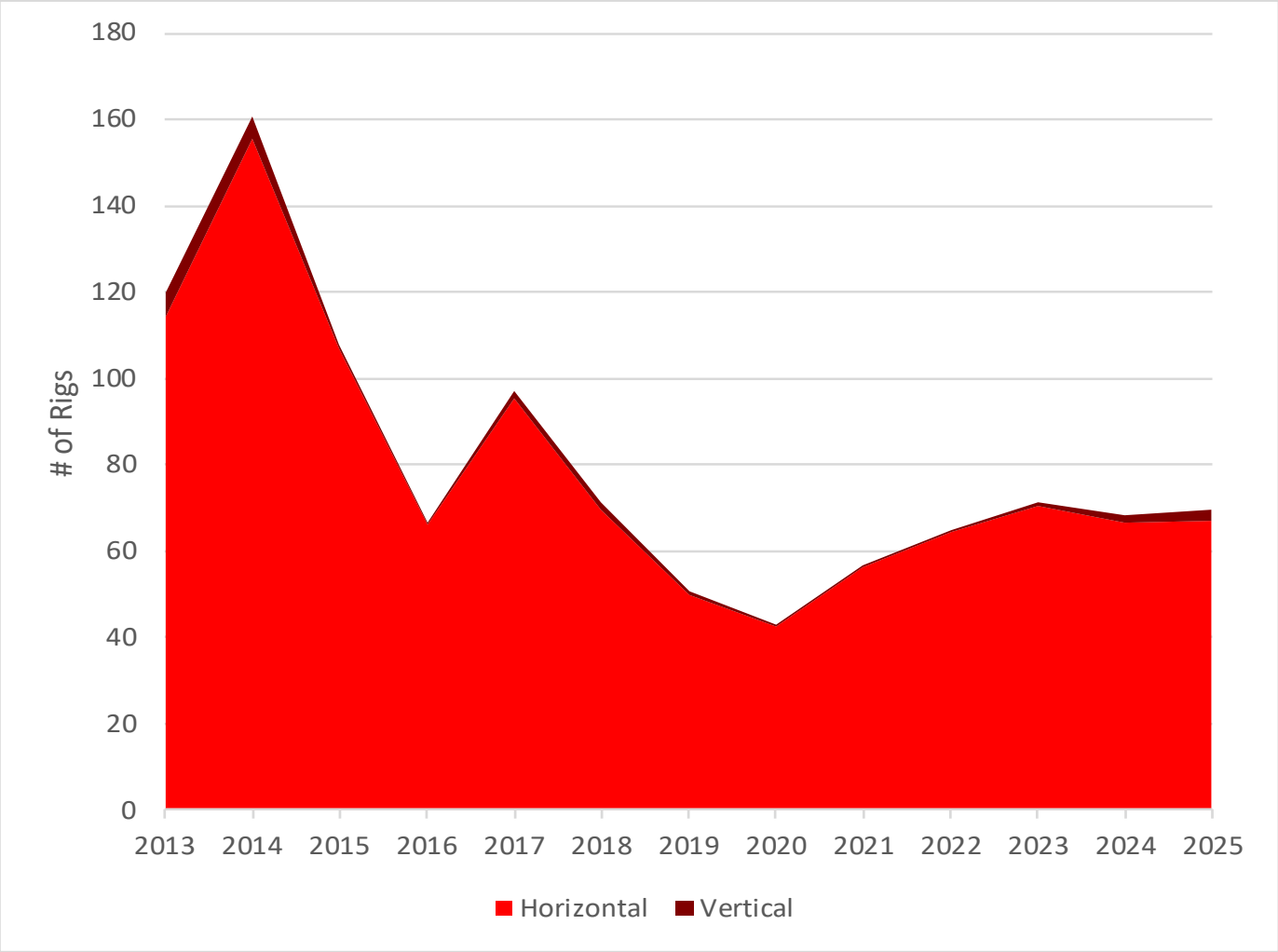
# CANADIAN NATURAL GAS RIG COUNT BY TRAJECTORY2013-2025




Source: Baker Hughes North America Rig Count, 2024

The chart tracks Canadian drilling and rig count trends from 2013 to 2025 (1Q) comparing horizontal and vertical drilling trajectories:

- Average Horizontal Drilling: In 2014, the rig count reached a peak of about 155 rigs. In 2020, the rig count dropped to 43 rigs due to the COVID-19 pandemic before recovering to 67 rigs into 2025.
- Average Vertical Drilling: In 2013-2014, there were 6 vertical rigs dropping to 0 rigs in 2020-2022. Into 2025, vertical rigs remained at around 3 rigs.

The data reflect the dominance and recovery of horizontal drilling, contrasted with the near disappearance of vertical drilling over the years.

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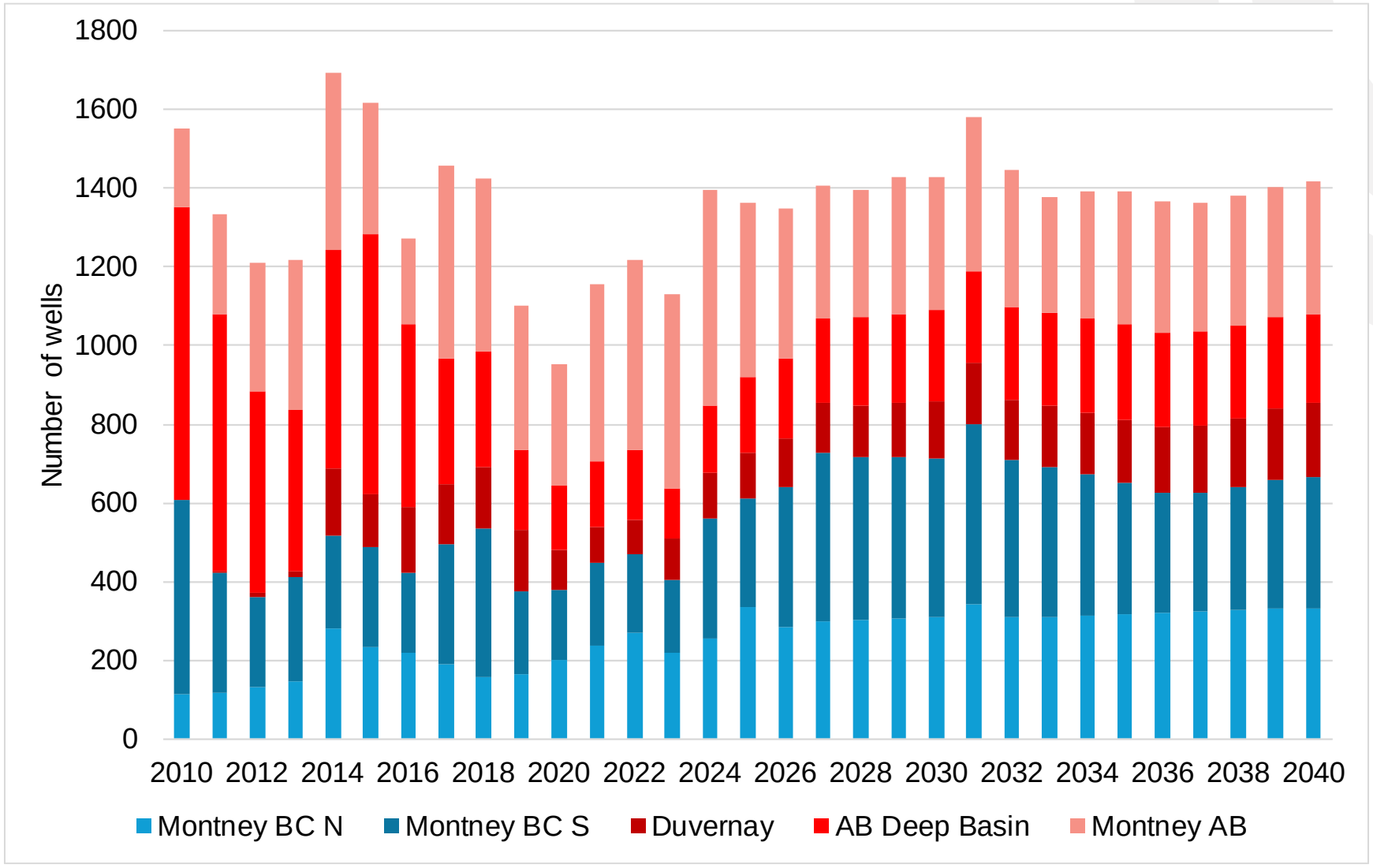
# WESTERN CANADIAN NEW WELL FORECAST TO 2040




The New Wells forecast is calculated using Incorrys' proprietary models that consider new well initial productivity and declines to calculate new drilling required to meet forecast demand.

The chart shows Incorrys' forecast Western Canada annual well count by major producing plays to 2040.

- The number of wells in the five major producing plays in Western Canada dropped from over 1700 in 2014 to almost 1400 in 2024 primarily due to technology improvements and increasing well productivity.
- The number of new wells is expected to be relatively flat through 2040 at about 1400 per year. The spike in 2031 is associated with the expected launch of the second phase of the LNG Canada Project in Kitimat BC.
- Some new drilling will continue in other plays in Western Canada, including Central and Northwestern Alberta, although the total number of new wells in these plays combined is not expected to exceed 300 per year.

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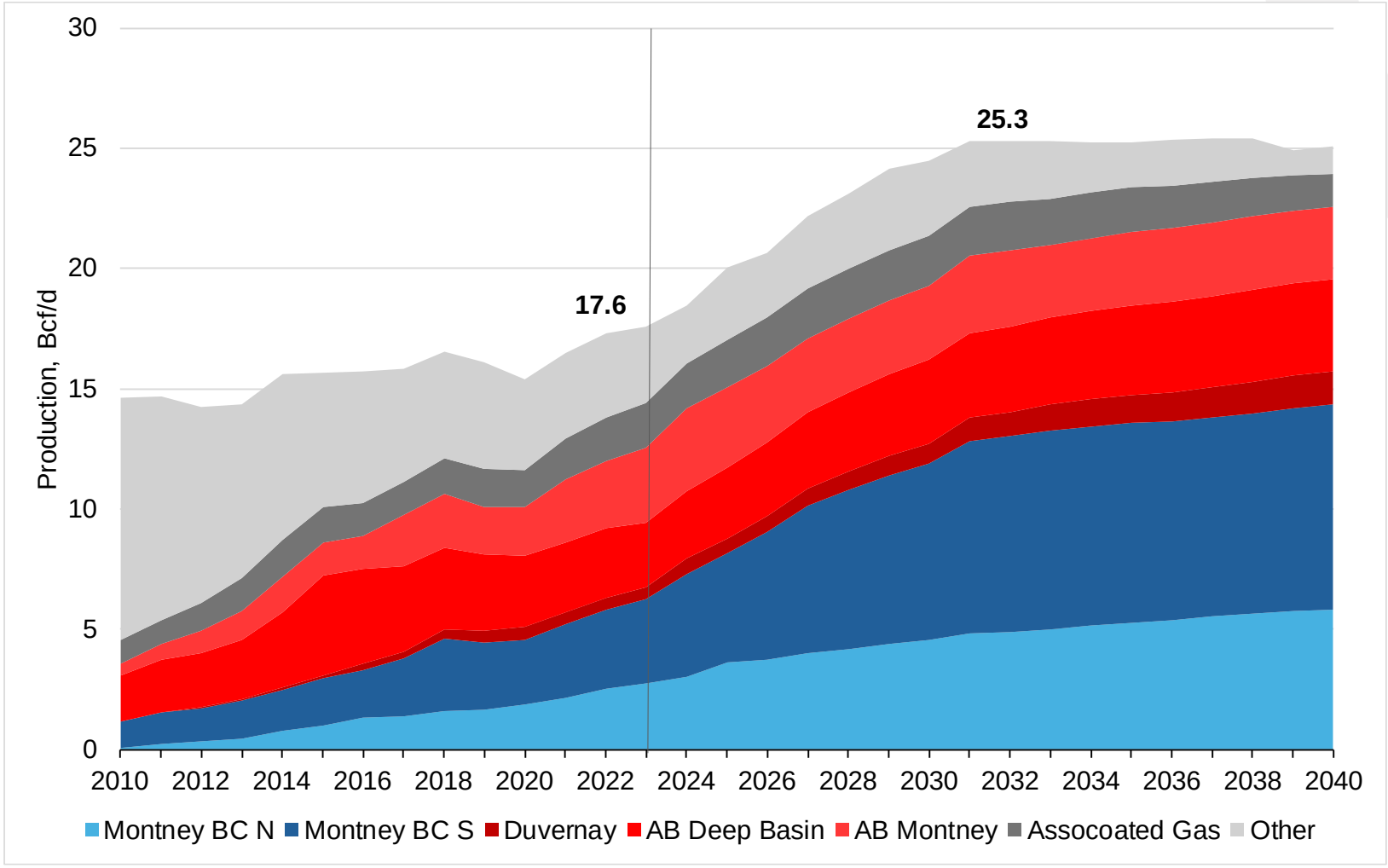
# WESTERN CANADIAN DRY NATURAL GAS PRODUCTION FORECAST TO 2040




The chart shows Incorrys forecast of Western Canada dry gas production to 2040.

- Gas production is expected to continue to grow to over 25 Bcf/d through 2032, driven mainly by LNG demand. Production remains relatively flat through 2040.
- Montney BC South is the fastest growing play in Western Canada. This area has significant resources at low full cycle costs due to high well productivity. Montney BC South production will reach 8.5 Bcf/d in 2040 up from 3.5 Bcf/d in 2023.
- Montney BC North also grows steadily reaching 5.8 Bcf/d in 2040, up from 3.5 Bcf/d in 2023. Combined, Montney BC South and North accounts for almost 60% of total dry natural gas production in Western Canada.
- Associated natural gas production grows slowly from 1.9 Bcf/d in 2023 to 2.1 Bcf/d in 2028 and then declines to 1.4 Bcf/d in 2040. Associated gas comes primarily from oil plays, such as Clearwater, Cardium, Duvernay and Montney.
- Other consists primarily of higher cost conventional and Coalbed Methane (CBM) production throughout Alberta from the following plays: Foothills, Southeastern Alberta, East Central Alberta, Central Alberta, Northeastern Alberta, Northwestern Alberta, as well Saskatchewan. Other also includes production from BC plays other then Montney and includes Horn River and Liard. Incorrys does not expect any significant drilling in these plays as existing production declines.

# MONTNEY GAS DRILLING

**Montney BC North**

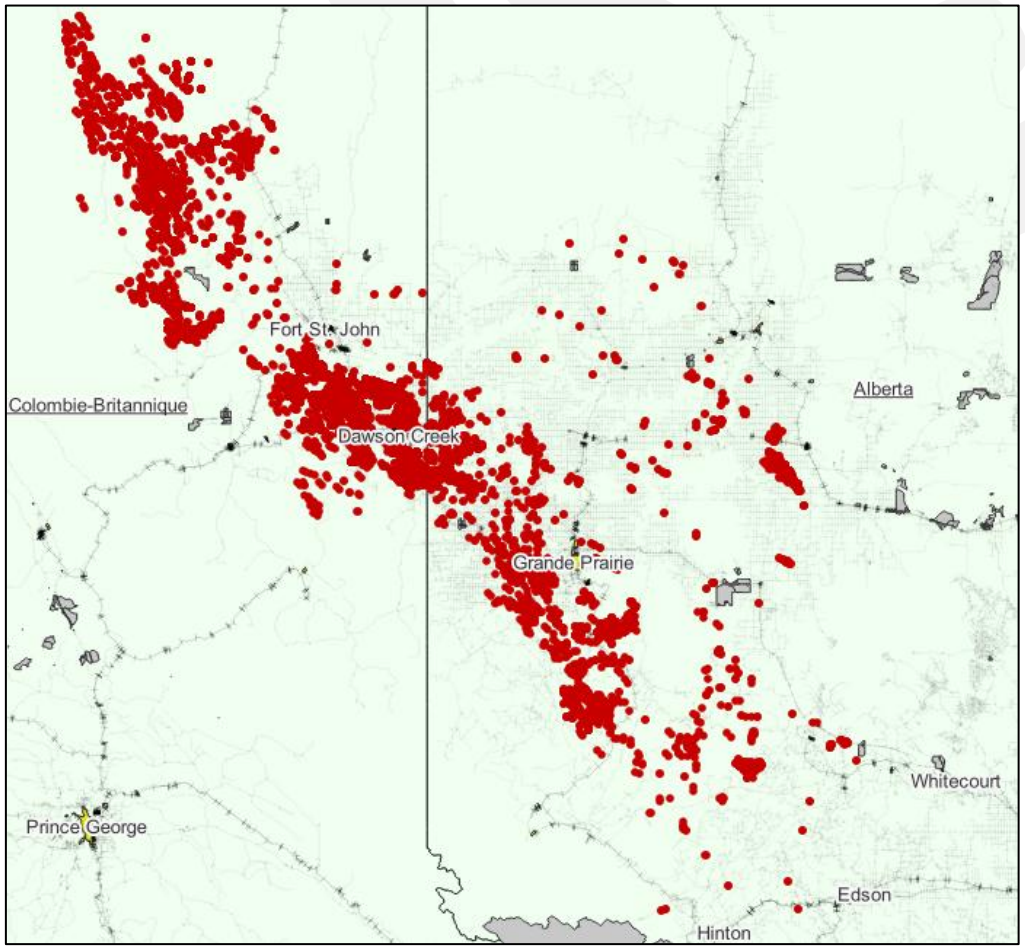
Number of gas wells drilled since 2010: ~ 2670
Average New Well Initial Productivity in 2023: ~ 6.5 MMcf/d
Peak Production: 2023 (2.7 Bcf/d)
Average Lateral Length, 2020-2024: ~ 8,800 ft
Average Total Depth, 2020-2024: 15,800 ft

**Montney BC South**

Number of gas wells drilled since 2010: ~ 3660
Average New Well Initial Productivity in 2023: ~ 9.1 MMcf/d
Peak Production: 2023 (3.9 Bcf/d)
Average Lateral Length, 2020-2024: ~ 10,500 ft
Average Total Depth, 2020-2024: 18,200 ft

**Montney Alberta**

Number of gas wells drilled since 2010: ~ 5200
Average New Well Initial Productivity in 2023: ~ 4.7 MMcf/d
Peak Production: 2023 (3.5 Bcf/d)
Average Lateral Length, 2020-2024: ~ 10,200 ft
Average Total Depth, 2020-2024: 18,700 ft




Montney gas wells 1990-2023

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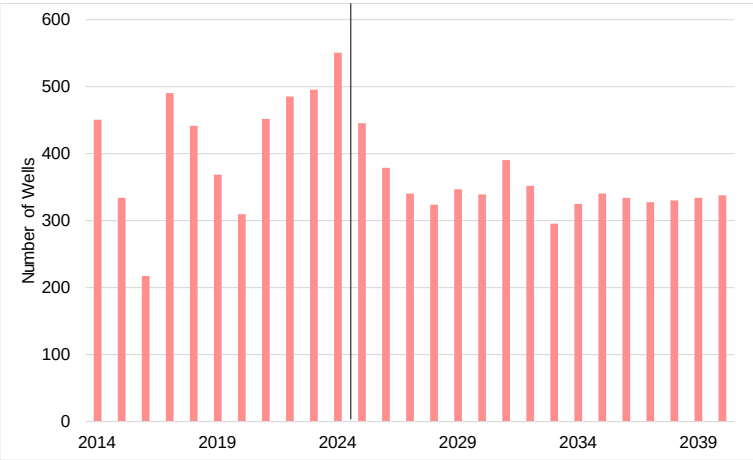
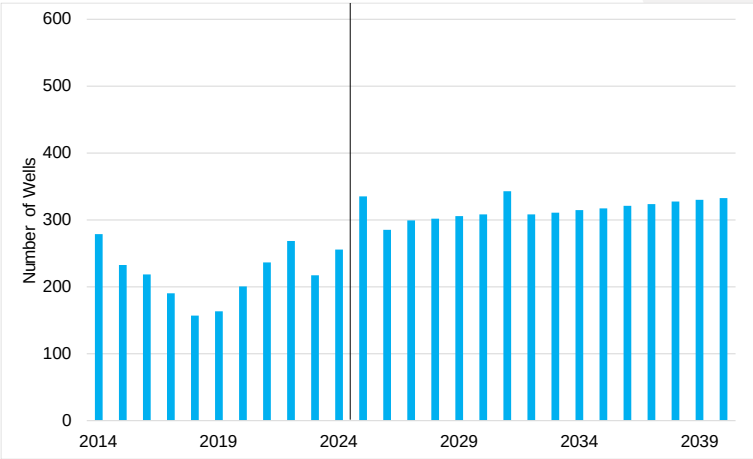
# MONTNEY DRILLING FORECAST TO 2040

**Montney Alberta**



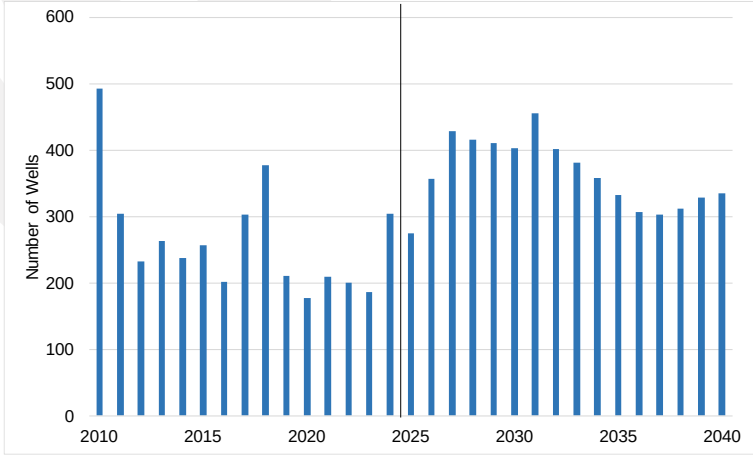

- The number of natural gas wells drilled in Montney AB grew from about 450 in 2014 to almost 500 in 2023. The number of new wells is expected to drop to around 330 in 2040.
- Incorrys is forecasting the number of new wells to fluctuate around 340 until 2030 and then remain relatively flat.

**Montney BC North**




- The number of natural gas wells drilled in Montney BC North grew from 114 in 2010 to almost 220 in 2023.
- Incorrys is forecasting New wells to spike in 2025 and 2031 to satisfy demand for LNG Canada – as Phases 1 and 2 come onstream.
- Outside of the two drilling peaks, the number of wells is expected to grow slowly reaching 330 per year in 2040.

**Montney BC South**




- The number of natural gas wells drilled in Montney BC South dropped from over 490 in 2010 to just over 180 in 2023.
- Incorrys is forecasting New wells to spike in 2025 and 2031 to satisfy demand for LNG Canada – as Phases 1 and 2 come onstream.
- Outside of the 2 LNG related peaks, the number of new wells drilled is expected to generally decline from over 400 currently to about 340 by 2040.

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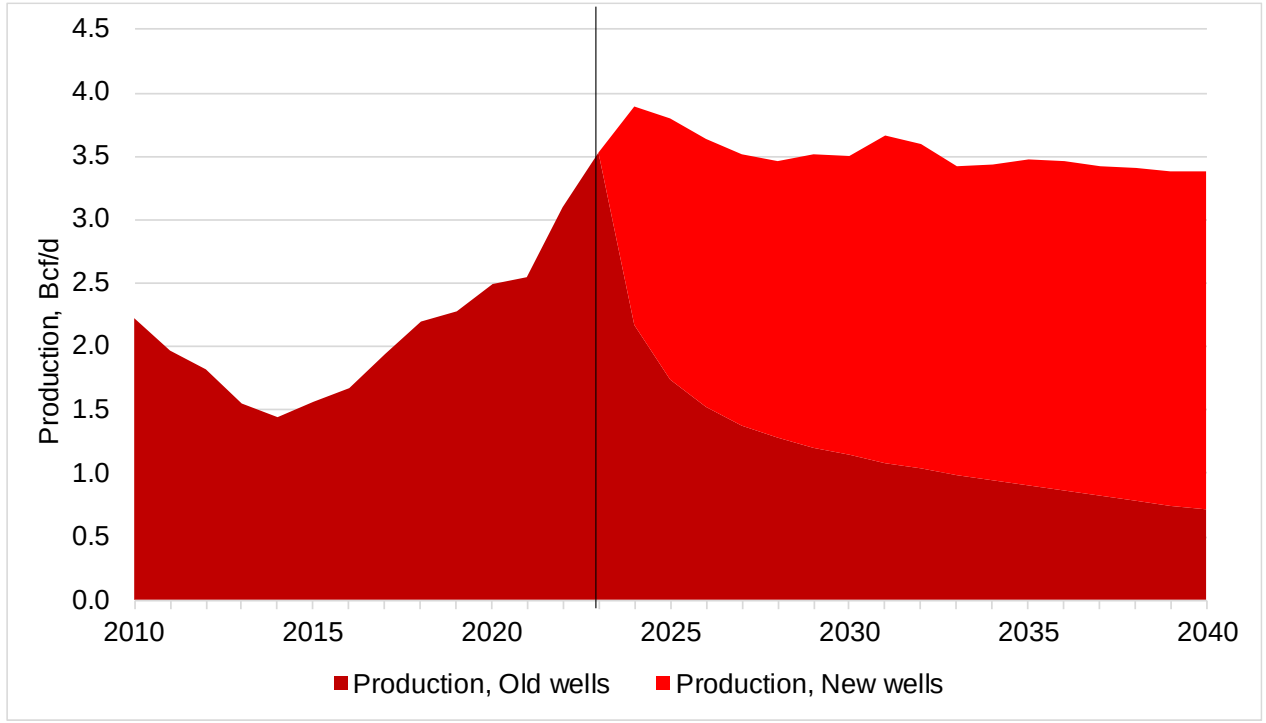
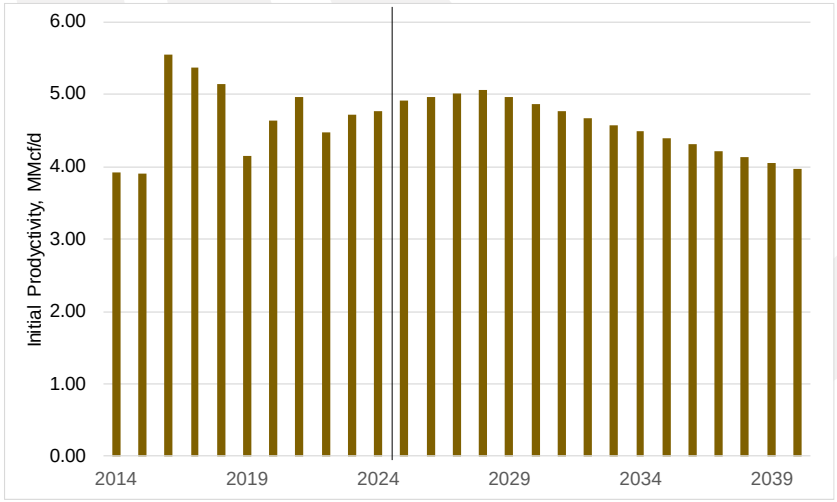
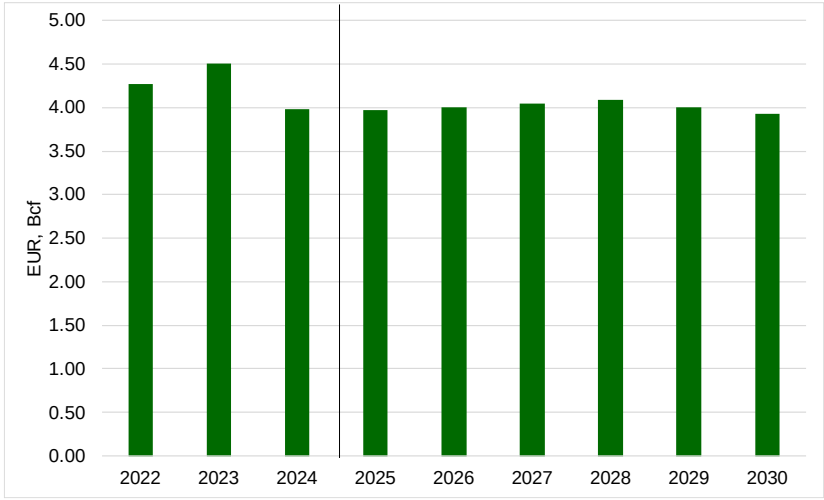
# MONTNEY AB GAS PRODUCTION FORECAST TO 2040




**Gas Well Initial Productivity (IP)**




**Well Estimated Ultimate Recovery (EUR)**




- Some areas in Montney AB are liquids rich, with liquids yield(s) ranging from 80-100 Bbl/MMcf. However, these areas are relatively small, and liquids production will slowly decline over the forecast period.
- Montney AB raw gas production was 3.5 Bcf/d in 2023 and is expected to reach over 3.9 Bcf/d in 2024. declining to 3.4 Bcf/d by 2040.
- In 2021, Montney AB new well Initial Productivity (IP) was around 5 MMcf/d and declined to 4.7 MMcf/d in 2023. IP will continue to fluctuate around 5 MMcf/d until 2029 and then begin to decline to about 4 MMcf/d by 2040. Although Montney AB new gas well IPs is lower than Montney BC, Montney AB competes well with Montney BC due to the economic uplift from liquids.
- Well Estimated Ultimate Recovery (EUR) reached around 4.27 Bcf in 2022 and grew to 4.5 Bcf in 2023. EUR is expected to decline to just under 4 Bcf in 2030.

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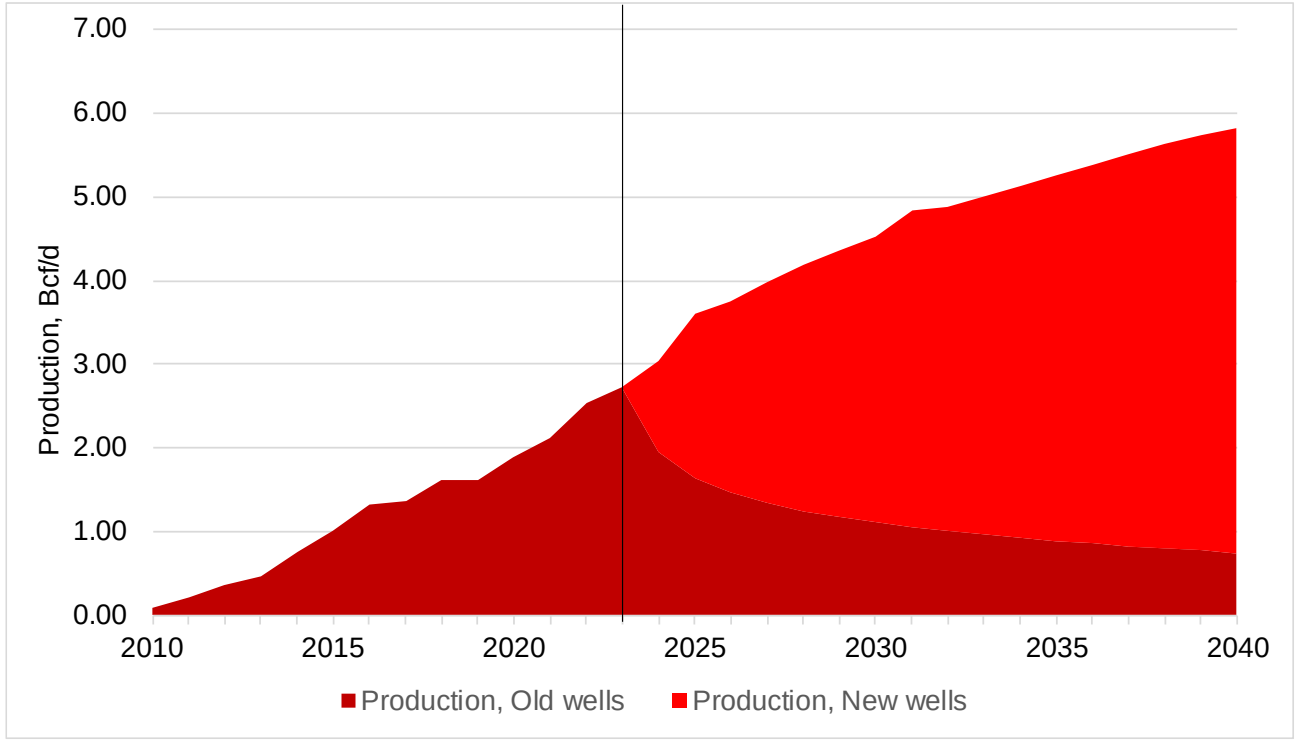
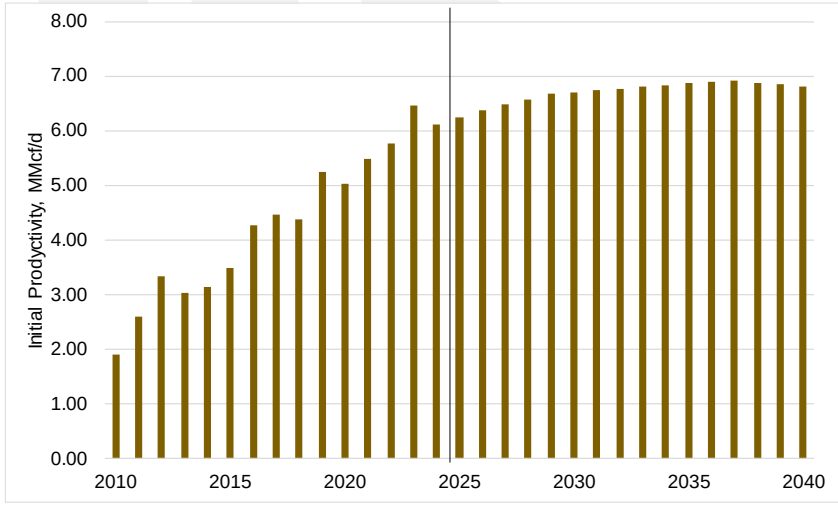
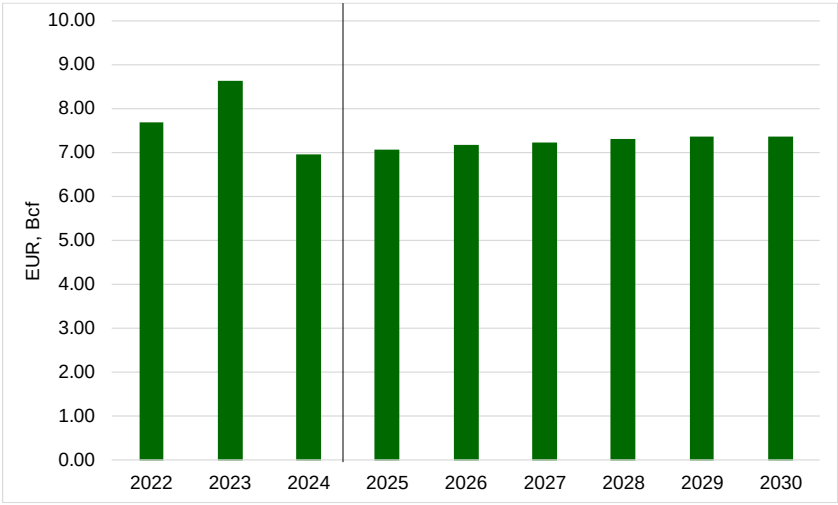
# MONTNEY BC NORTH GAS PRODUCTION FORECAST TO 2040




**Gas Well Initial Productivity (IP)**




**Well Estimated Ultimate Recovery (EUR)**




- Montney BC will become the primary source of gas for LNG Canada demand. Montney BC North production will have peaks in 2024-2025 and again in 2031 to satisfy this LNG demand.
- Montney BC North raw gas production was 2.7 Bcf/d in 2023 and is expected to reach over 5.8 Bcf/d by 2040.
- In 2021, Montney BC North new well Initial Productivity (IP) was over 5.48 MMcf/d and spiked to 6.5 MMcf/d in 2023 due to drilling in new sweet spots. Despite the small downturn in 2024, IP does continue to grow to about 6.8 MMcf/d by 2040.
- Well Estimated Ultimate Recovery (EUR) reached around 7.7 Bcf in 2022 and grew to 8.6 Bcf in 2023. EUR is expected to range at just over 7 Bcf through 2030.

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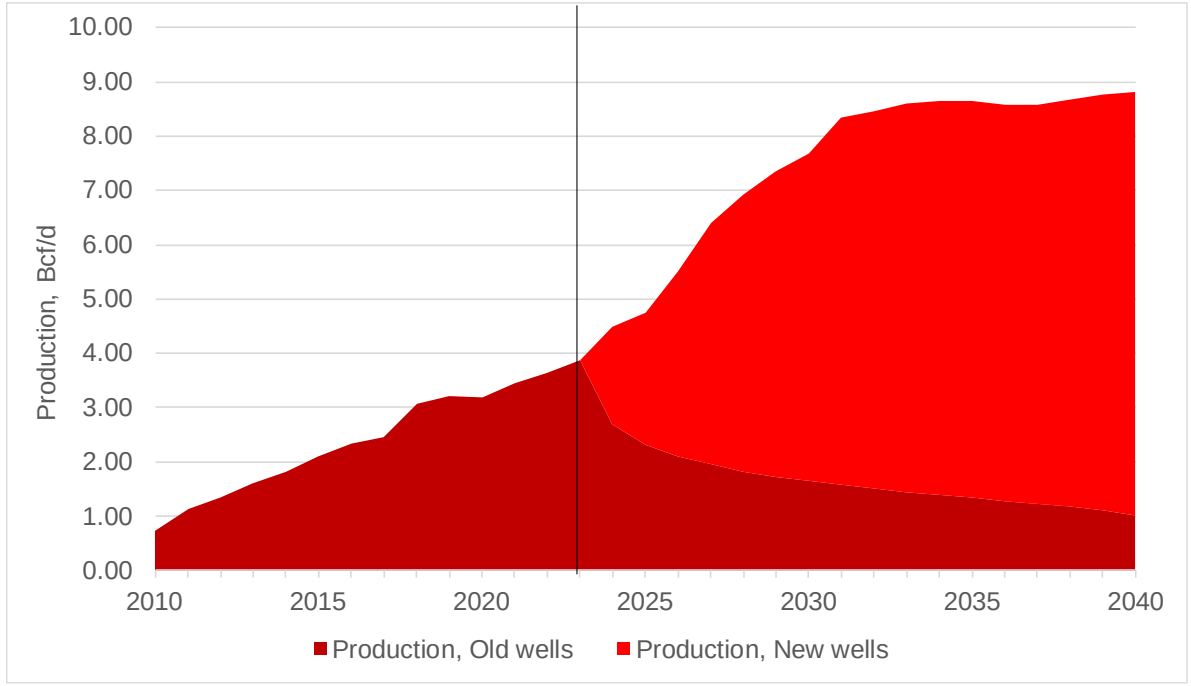
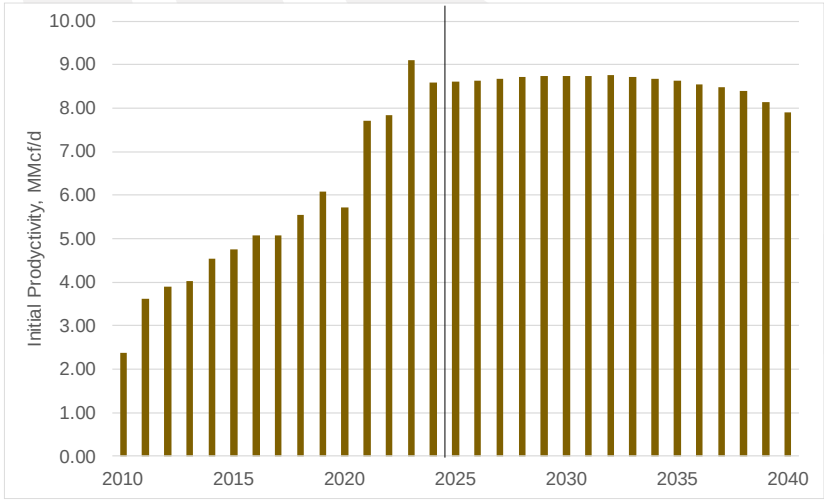
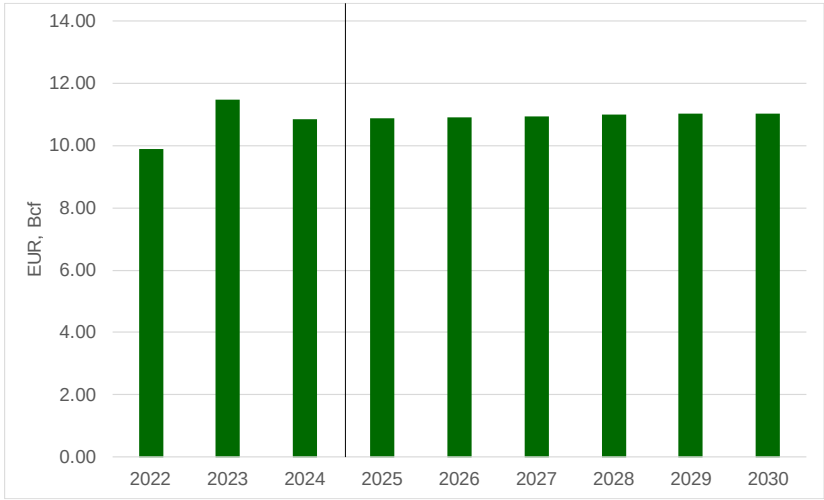
# MONTNEY BC SOUTH GAS PRODUCTION FORECAST TO 2040




**Gas Well Initial Productivity (IP)**




**Well Estimated Ultimate Recovery (EUR)**




- Montney BC is expected to be the primary source of gas for LNG Canada demand. Montney BC South production will have peaks in 2024-2025 and again in 2031 to satisfy this LNG demand.
- Montney BC South raw gas production was 3.9 Bcf/d in 2023 and is expected to reach over 8.3 Bcf/d by 2031. It is then forecast increase to just over 8.8 Bcf/d by 2040. Montney BC South has significant resources with low full cycle.
- In 2021, Montney BC South new well Initial Productivity (IP) was over 7.7 MMcf/d and increased to 9.1 MMcf/d in 2023. IP remains in the 8.5 MMcf/d range through 2034 and then declines to about 7.9 MMcf/d by 2040.
- Well Estimated Ultimate Recovery (EUR) reached around 9.9 Bcf in 2022 and grew to 11.5 Bcf in 2023. EUR is expected to fall slightly to 11 Bcf through 2030.

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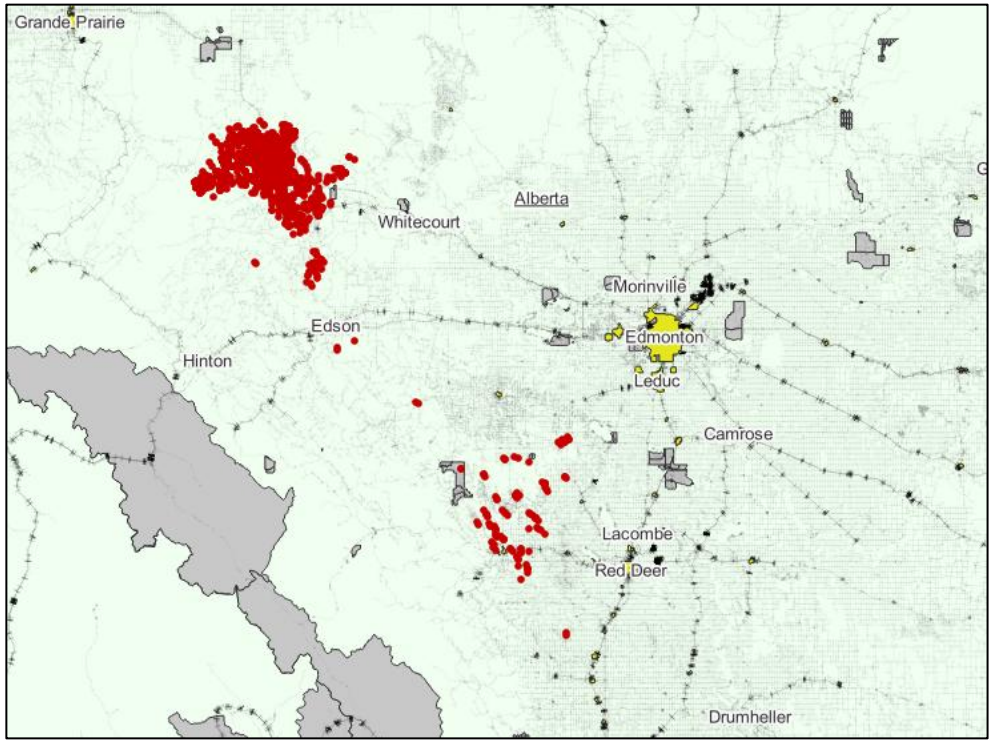
# DUVERNAY

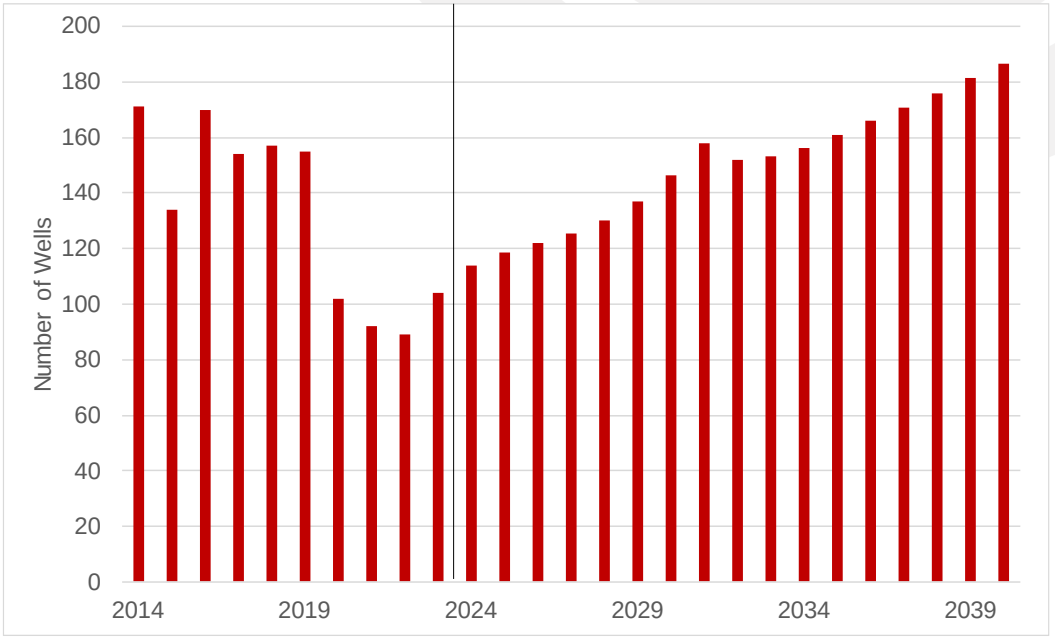



Duvernay gas wells 1990-2023

| | |
|---|---|
| Average Lateral Length, 2020-2023 | 12,200 ft |
| Average Total Depth, 2020-2023 | 23,000 ft |

Location: Alberta
Number of gas wells drilled since 2010: ~1,355
Average New Well Initial Productivity in 2022-2023: 23 MMcf/d
Peak Production: 2022-2023 (0.59 Bcf/d)

Number of New Wells




- The number of new wells in Duvernay dropped to around 90 in 2022, down from the peak of 170 in 2016.
- Incorrys is forecasting the number wells to grow to around 180 by 2040.

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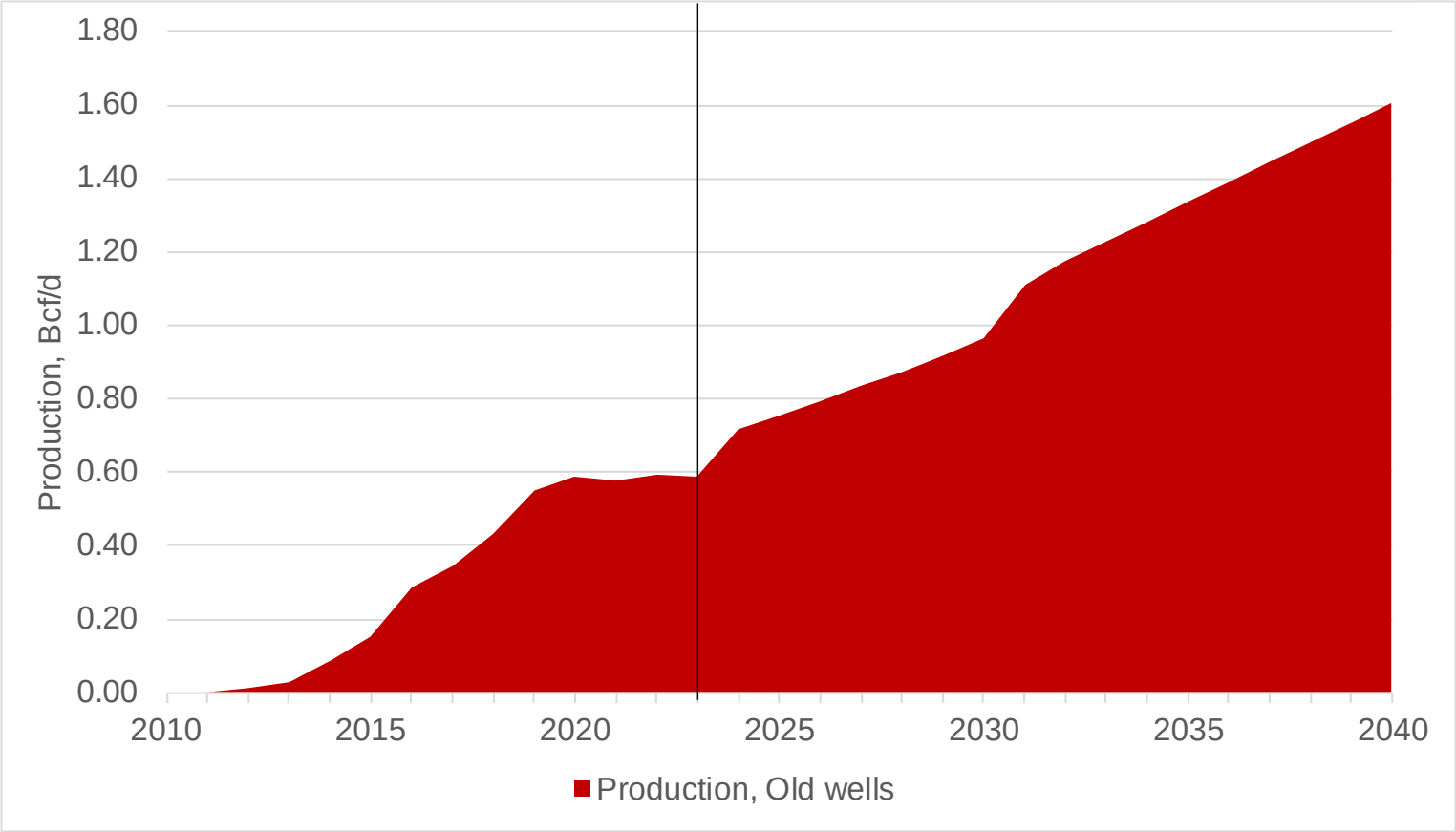
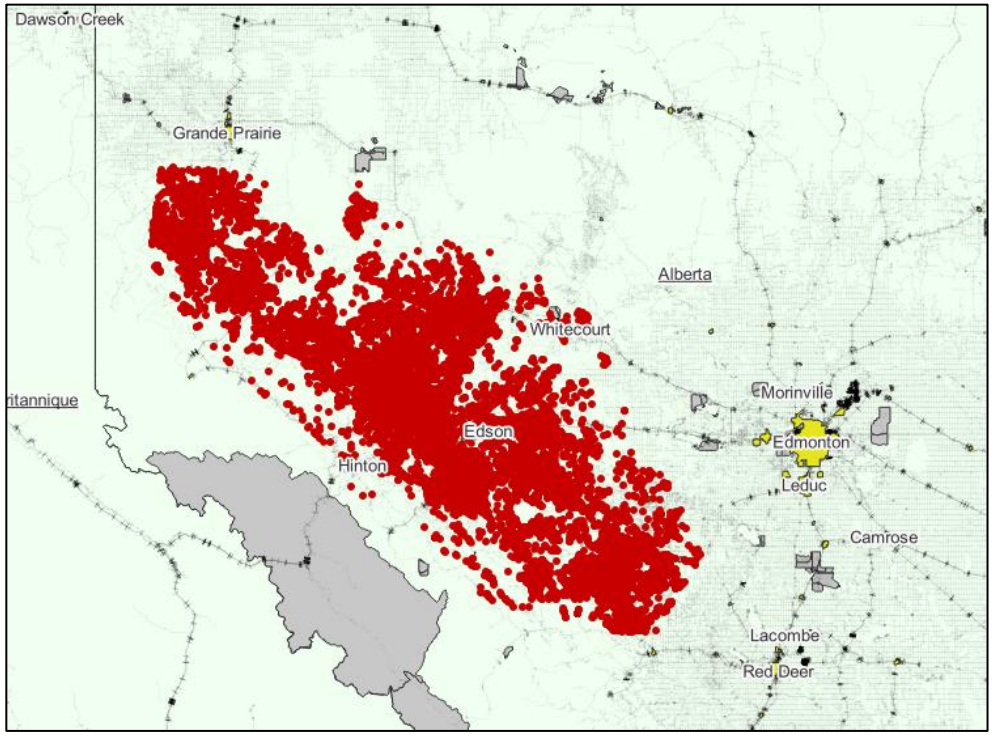
# DUVERNAY GAS PRODUCTION FORECAST TO 2040




- Duvernay wells are more expensive compared to Montney and Alberta Deep Basin
- Duvernay wells yield ~100 Bbl/MMcf, and higher, of natural gas liquids (NGLs).
- Liquids provide economic uplift to full cycle costs resulting in comparative costs to both the Montney and Alberta Deep Basin.
- Duvernay raw gas production was 0.59 Bcf/d in 2023 and is expected to reach about 1.6 Bcf/d by 2040.
- New well initial productivity (IP) and estimated ultimate recovery (EUR) varies significantly between different wells and year over year.
- Drilling in Duvernay is focused on a few sweet spots with high Initial Productivity. In 2022-2023, Duvernay new well Initial Productivity (IP) was around 23 MMcf/d. IP is expected to decline to about 19.3 MMcf/d by 2040.
- Well Estimated Ultimate Recovery (EUR) reached over 17.3 Bcf in 2022. EUR is expected to decline to just under 14.5 Bcf in 2040.

Since drilling in Duvernay is limited (around 100 wells per year in 2023-2024) the information is insufficient to present detailed Duvernay new well IP and EUR forecast.

# ALBERTA DEEP BASIN



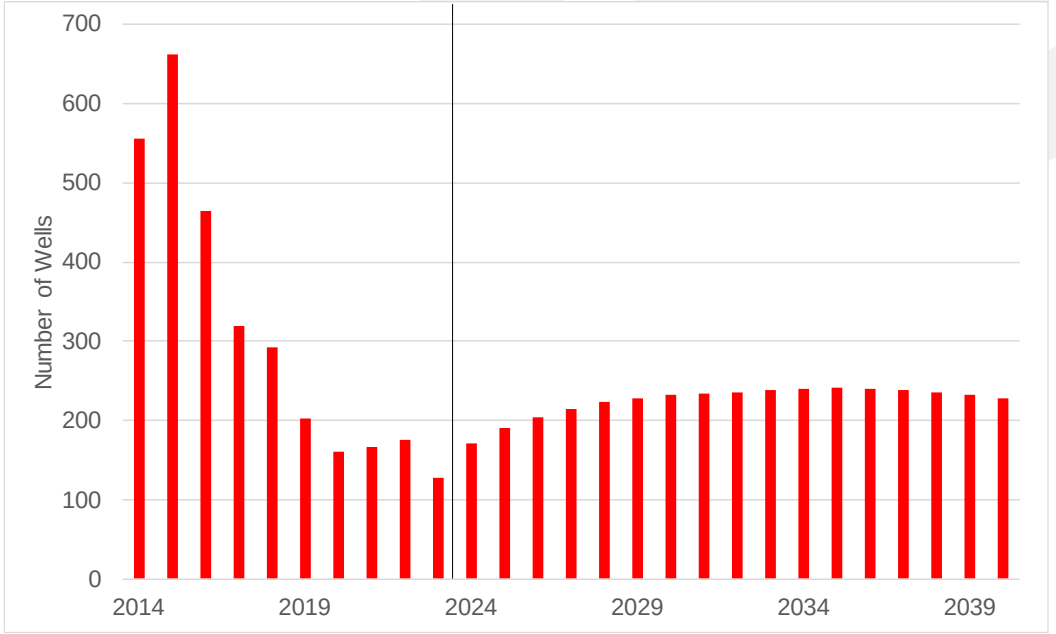

AB Deep Basin gas wells 1990-2023

| | |
|---|---|
| Average Lateral Length, 2020-2023 | 8,000 ft |
| Average Total Depth, 2020-2023 | 16,500 ft |

- Alberta Deep Basin includes the following formations: Bluesky/Gething, Cadomin, Cardium Sandstone, Glauconitic Sandstone, Spirit River, Falher, Notikewin, Wilrich, Nikanassin, Viking Sandstone
- A significant number of wells are commingled among formations.
- Other formations, including Alberta Montney and Duvernay are not included.

Location: Alberta
Number of gas wells drilled since 2010: ~5,450
Average New Well Initial Productivity in 2021: 6.75 MMcf/d
Peak Production: 2019 (3.3 Bcf/d)

Number of New Wells




- The number of new wells in Alberta Deep Basin dropped from over 660 in 2014 to about 130 in 2023 because of focus on drilling in productive Falher, Notikewin, and Wilrich formations rather than less productive formations, such as Blue Sky and Gething.
- Incorrys is forecasting the number of new wells to increase to 240 by 2034 and then decrease slightly into 2040.

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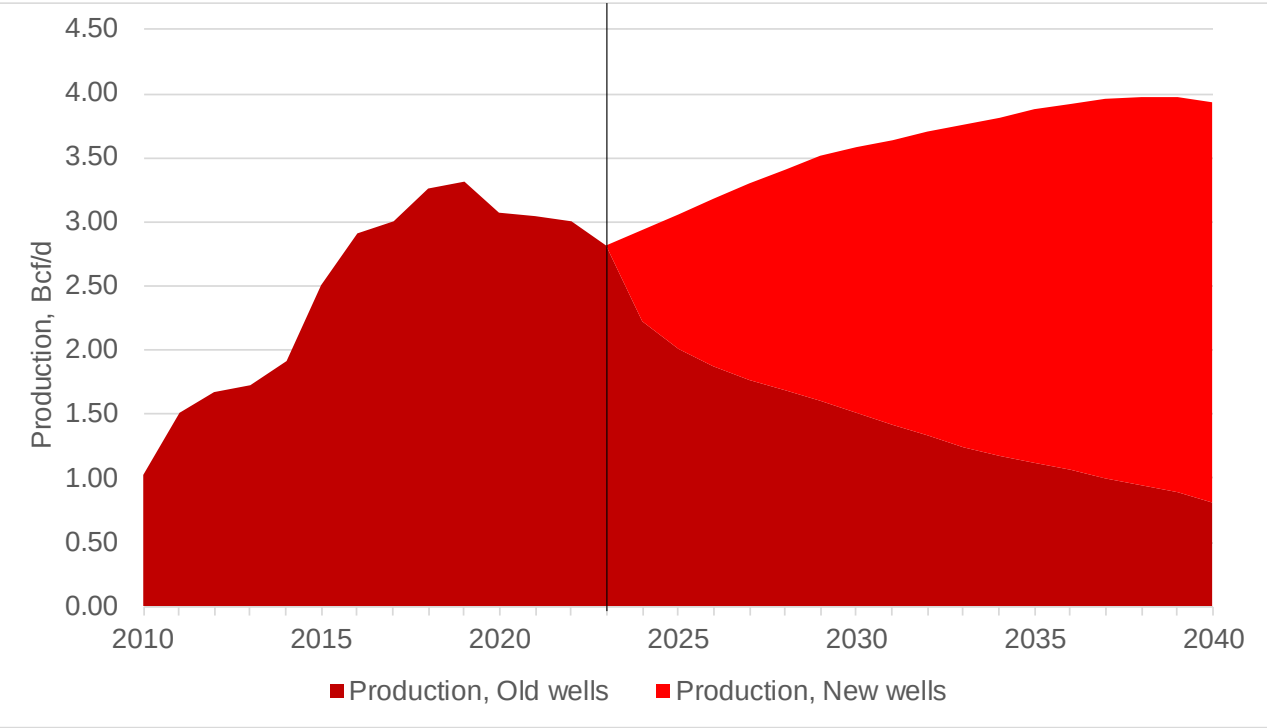
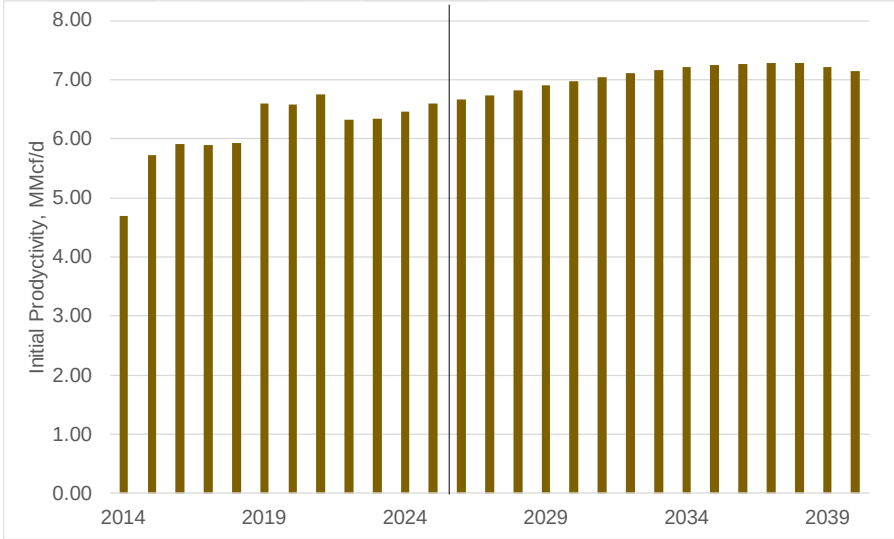
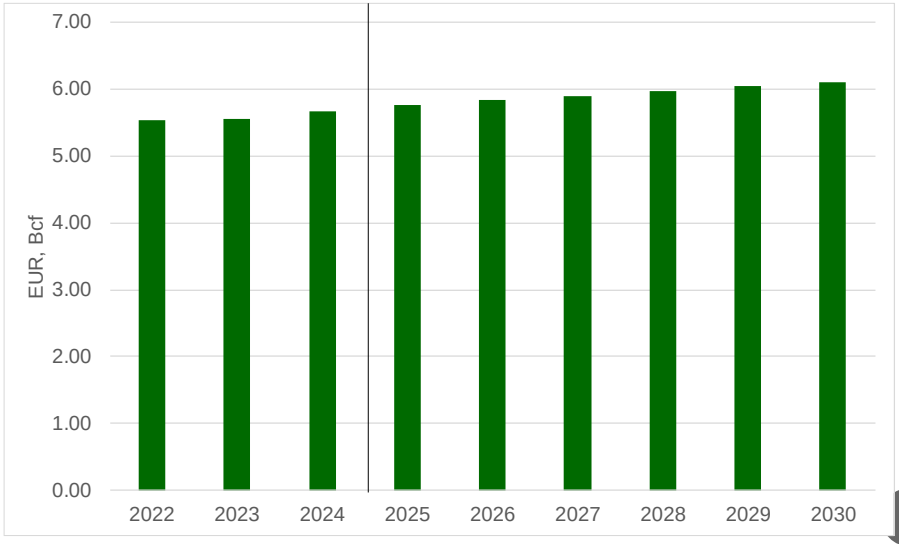
# ALBERTA DEEP BASIN GAS PRODUCTION FORECAST TO 2040




**Gas Well Initial Productivity (IP)**




**Well Estimated Ultimate Recovery (EUR)**




- The primary producing formations in Alberta Deep Basin include Falher, Notikewin, and Wilrich. These formations have the most productive wells.
- Alberta Deep Basin raw gas production was 2.8 Bcf/d in 2023 and 2024 and is expected to grow to about 4 Bcf/d towards the end of the forecast period.
- In 2023-2024, Alberta Deep Basin new well Initial Productivity (IP) was 6.4 MMcf/d. IP will continue to grow to about 7.3 MMcf/d by 2038.
- Well Estimated Ultimate Recovery (EUR) reached 5.6 Bcf in 2023-2024. EUR is expected to continue to grow reaching almost 6.4 Bcf in 2038.

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# WHY INCORRYS INFORMATION SYSTEM

## COMPREHENSIVE DATA

Incorrys constantly collects a huge amount of data from multiple public sources world-wide

## ADVANCED ANALYTICS

Incorrys performs data analysis to ensure quality and consistency among different industries and jurisdictions

## ACCURATE FORECASTS

Incorrys employs various forecasting methodologies to ensure accurate forecasts of trends in different industries.

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