September 2023

IEF Comparative Analysis

Of Monthly Oil Market Reports

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Oil Market Context

Crude and product markets continue to tighten on robust demand

Near-record global demand, in addition to OPEC+ production cuts, helped drive global visible oil inventories lower by nearly 2.5 mb/d in August. Global inventories fell to a 13-month low led by steep declines of oil on the water and inventories in China.

Tightening markets have caused crude oil prices to continue to rally into September, with Brent exceeding $92/bbl for the first time since November.

Notably, diesel prices are rising even faster than crude, surging more than 40% in the US and Europe since May. Tightness in refining capacity, exasperated by unplanned outages and under-investment, has driven refining margins to an 8-month high. Diesel markets could face additional pressure in upcoming months as refinery maintenance season ramps up and refinery yields of diesel remain reduced due to limited access to medium and heavy crude grades.

Chinese demand remains resilient despite economic concerns

Chinese demand in July reached an all-time seasonal high for the third-time this year despite weakening economic data. Oil demand in China has averaged up ~1.6 mb/d y/y so far this year. Growth has been driven by the ramp-up of new and expanded petrochemical facilities and increased mobility. Jet/Kerosene demand topped 1 mb/d for the first time in July after slumping to as low as 0.4 mb/d during lockdowns last year. Over the summer period, domestic flight numbers were nearly 33% above pre-COVID levels while international flights were still ~15% below pre-pandemic levels.

Saudi Arabia and Russia extend voluntary production cuts through December

On September 5th, Saudi Arabia announced an extension of its voluntary 1 mb/d production cut through December. The press release noted that the decision would be reviewed monthly, and the cuts could be deepened or reversed. Russia also announced it would extend its voluntary 300 kb/d cut through end-year.

2023 Forecast Highlights:

- **Global demand**:
  - IEA and OPEC remain fairly aligned on global demand growth (~2.2-2.4 mb/d) following marginal revisions this month. EIA sees lower growth (1.8 mb/d) despite a slight 0.1 mb/d upward revision this month.
  - IEA continues to see ~0.8 mb/d higher Chinese demand growth this year vs. EIA and OPEC. Meanwhile, OPEC sees more robust demand in Russia, Africa, the Middle East and other non-OECD countries compared to IEA and EIA.
  - EIA and IEA's demand estimates incorporated a ~0.3 mb/d downward adjustment to historical and forecasted US demand due to a reclassification of natural gasoline and unfinished oils from product supplied to crude oil supply. This revision impacted historic and forecasted demand levels but did not materially impact demand growth.
- **Non-OPEC and OPEC NGL supply**:
  - OPEC and IEA revised up 3Q23 non-OPEC supply by 0.4 mb/d primarily on higher supply in Russia and Brazil. EIA's forecast remained largely unchanged from last month.
  - IEA and EIA both now see non-OPEC supply growing this year by 2.0-2.1 mb/d. OPEC sees lower growth at 1.6 mb/d.
  - The largest divergence in supply forecasts is for Russian production. OPEC sees a 0.58 mb/d decline in Russian output this year vs. IEA's forecast of a 0.16 mb/d annual decline and EIA's forecast of a 0.30 mb/d decline.
  - All three outlooks expect the US to be the largest driver of non-OPEC supply growth, adding around 1.1-1.3 mb/d of supply this year.
- **"Call on OPEC"**:
  - All three forecasts show the 2H23 "call on OPEC" will exceed recent OPEC production levels. OPEC's forecast shows that the call on OPEC will rise to 30.7 mb/d by 4Q23, implying a 3.2 mb/d supply deficit if OPEC production remains at August levels (27.5 mb/d).
- **August OPEC production**:
  - OPEC secondary sources show OPEC production rose by 0.11 mb/d in August to 27.45 mb/d led by a 143 kb/d increase from Iran. IEA estimates show OPEC crude production rose by 0.09 mb/d to 27.96 mb/d. IEA estimates a higher production figure for UAE and Iran vs. OPEC secondary sources.
- **OECD inventories**:
  - IEA estimates OECD commercial inventories rose by 27.7 mb in July to 2,814 mb and stood 102.6 mb below the five-year average. OPEC estimates OECD commercial stocks fell by 7.9 mb in July to 2,779 mb and stood 138 mb below the latest five-year average and 190 mb below the 2015-2019 average.

2024 Forecast Highlights:

- **Global demand:**
  - EIA revised down its 2024 global demand growth forecast by 0.3 mb/d to 1.4 mb/d y/y. IEA and OPEC's demand growth forecast remained largely unchanged from last month at 1.0 mb/d and 2.2 mb/d, respectively.
  - IEA sees OECD demand *declining* by 0.4 mb/d next year while EIA now sees flat growth and OPEC expects 0.3 mb/d growth. Additionally, OPEC sees 0.2 mb/d stronger demand growth in the Middle East next year compared to both IEA and EIA.
  - Notably, OPEC shows quarterly demand reaching 105.3 mb/d by 4Q24 – which is 4 mb/d higher than the most recent quarter, 2Q23.
  - Despite having a lower y/y demand growth forecast, IEA sees higher demand levels than EIA for most of 2024 due to a higher 2023 baseline forecast. IEA sees quarterly demand rising to 103.5 mb/d by 4Q24 vs. EIA's 102.8 mb/d.
- **Non-OPEC and OPEC NGL supply:**
  - IEA, OPEC, and EIA all see 1.3-1.4 mb/d of non-OPEC supply growth next year.
  - All three forecasts both see US production growth slowing to 0.4-0.6 mb/d next year from >1.1 mb/d this year. Despite a significant slowdown, the US is still the strongest driver of non-OPEC supply growth in 2024.
  - Other drivers of non-OPEC supply growth include Brazil, Guyana, and Canada.
- **"Call on OPEC":**
  - The "call on OPEC" for next year ranges from 27.8 mb/d (EIA) to 30.0 mb/d (OPEC). IEA falls in the middle at 28.4 mb/d. All three implied figures are above August's actual OPEC production of 27.5 mb/d, implying 0.3-2.5 mb/d of global inventory draws if OPEC production remained constant. Notably, Saudi Arabia's voluntary cut of 1 mb/d is currently expected to expire at the end of 2023 along with the 1.66 mb/d of voluntary cuts that were announced by several OPEC+ members on April 2nd.
  - OPEC's 2024 balance is ~1.6 mb/d tighter than IEA's and 2.2 mb/d tighter than EIA's primarily due to OPEC's higher demand forecast.

2023 Outlook Comparison

Summary of 2023 Balances and Revisions

- The most significant revisions this month include (1) EIA and IEA's 0.3 mb/d historical downward revisions to US demand due to a reclassification of natural gasoline and unfinished oils that impacted demand levels but not demand growth; and (2) IEA and OPEC's 0.4 mb/d upward revision to 3Q23 non-OPEC supply on stronger production in Brazil and Russia.
- IEA's "call on OPEC" was revised lower by 0.6 mb/d due the downward revisions to US demand levels and upward revision to non-OPEC supply.

		2023 Balance Summary											
		Updated Forecast						*Revisions to Last Month's Forecast*					
		1Q23	2Q23	3Q23	4Q23	2023	2023 Y/Y	*1Q23*	*2Q23*	*3Q23*	*4Q23*	*2023*	*2023 Y/Y*
Global Demand	**IEA**	100.4	101.7	102.6	102.5	101.8	2.2	*-0.2*	*-0.2*	*-0.3*	*-0.6*	*-0.4*	*0.0*
	OPEC	101.7	101.3	102.1	103.2	102.1	2.4	*0.1*	*0.1*	*0.1*	*0.0*	*0.1*	*0.0*
	EIA	99.8	100.8	101.5	101.8	101.0	1.8	*-0.3*	*-0.2*	*-0.1*	*-0.2*	*-0.2*	*0.1*
OECD Demand	**IEA**	45.4	45.7	46.2	45.9	45.8	0.1	*-0.2*	*-0.2*	*-0.5*	*-0.4*	*-0.3*	*0.0*
	OPEC	45.6	45.7	46.9	46.2	46.1	0.1	*0.1*	*0.2*	*0.1*	*0.1*	*0.1*	*0.0*
	EIA	45.2	45.4	46.2	46.4	45.8	0.1	*-0.3*	*-0.2*	*-0.2*	*-0.2*	*-0.2*	*0.0*
Non-OECD Demand	**IEA**	54.9	56.0	56.4	56.6	56.0	2.2	*-0.1*	*-0.1*	*0.2*	*-0.2*	*0.0*	*0.1*
	OPEC	56.1	55.5	55.2	57.0	55.9	2.3	*0.0*	*-0.1*	*0.0*	*-0.1*	*0.0*	*0.0*
	EIA	54.6	55.4	55.4	55.3	55.2	1.7	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Non-OPEC Supply* and OPEC NGLs	**IEA**	72.5	72.9	73.4	73.5	73.1	2.1	*0.1*	*0.3*	*0.4*	*0.2*	*0.2*	*0.2*
	OPEC	73.2	72.9	72.8	72.5	72.8	1.6	*0.0*	*0.0*	*0.4*	*0.0*	*0.1*	*0.1*
	EIA	72.5	72.9	73.7	74.0	73.3	2.0	*0.0*	*-0.1*	*0.1*	*0.0*	*0.0*	*0.0*
OPEC Crude**	**IEA**	29.4	28.9					*0.0*	*0.0*				
	OPEC	28.9	28.3					*0.0*	*0.0*				
	EIA	28.5	28.4	27.3	27.5	27.9	-0.8	*0.0*	*0.0*	*-0.2*	*-0.4*	*-0.1*	*-0.1*
Call on OPEC	**IEA**	27.9	28.8	29.3	29.0	28.7	0.2	*-0.3*	*-0.5*	*-0.7*	*-0.9*	*-0.6*	*-0.1*
	OPEC	28.6	28.4	29.2	30.7	29.2	0.8	*0.1*	*0.0*	*-0.3*	*0.0*	*-0.1*	*-0.1*
	EIA	27.3	27.9	27.9	27.8	27.7	-0.2	*-0.3*	*-0.1*	*-0.3*	*-0.2*	*-0.3*	*0.1*
Global Stock Change and Miscellaneous to Balance**	**IEA**	1.5	0.1					*0.3*	*0.5*				
	OPEC	0.3	-0.1					*0.0*	*0.0*				
	EIA	1.2	0.5	-0.6	-0.2	0.2		*0.3*	*0.1*	*0.1*	*-0.1*	*0.1*	

* Includes biofuels and processing gains

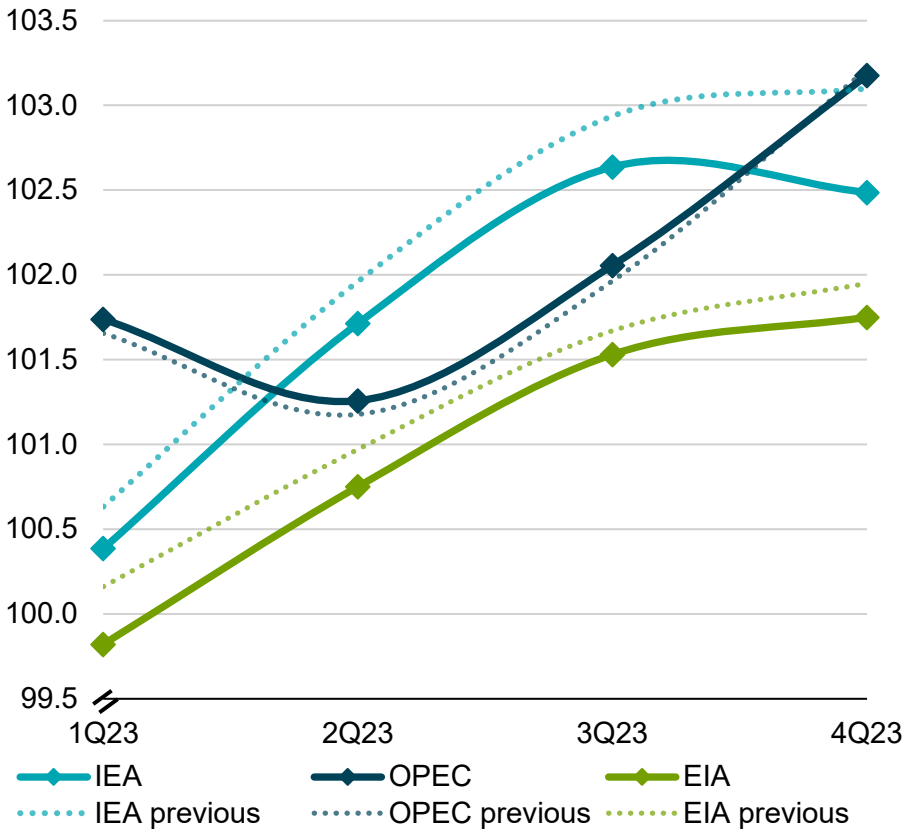
** Only EIA publishes a forecast of OPEC crude production and global stock change

Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

All three forecasts show demand averaging >1 mb/d higher in 2H23 vs 1H23; OPEC sees non-OPEC supply falling in 2H23

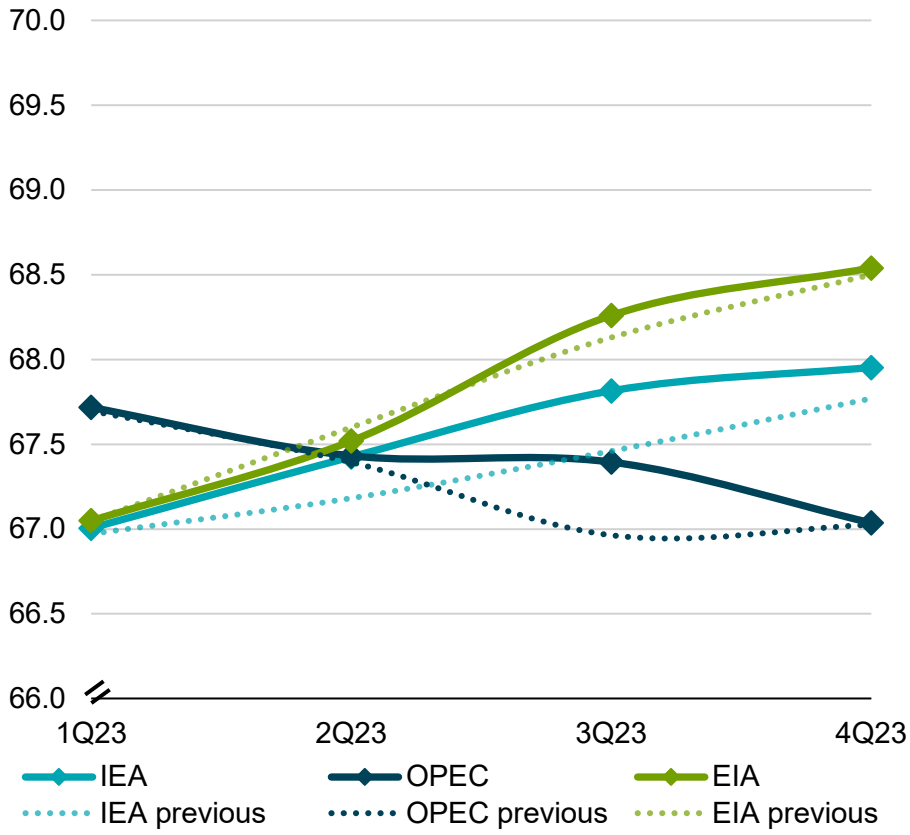
Global Demand

demand in million barrels per day



Non-OPEC Supply

supply in million barrels per day

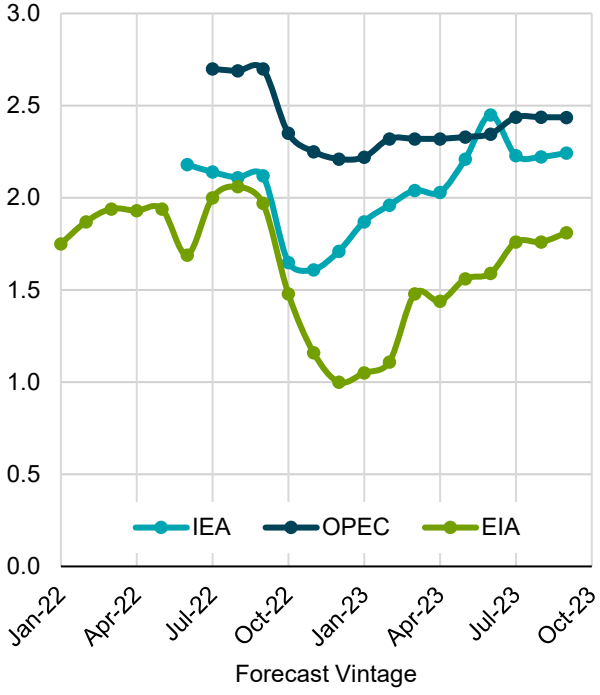


Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

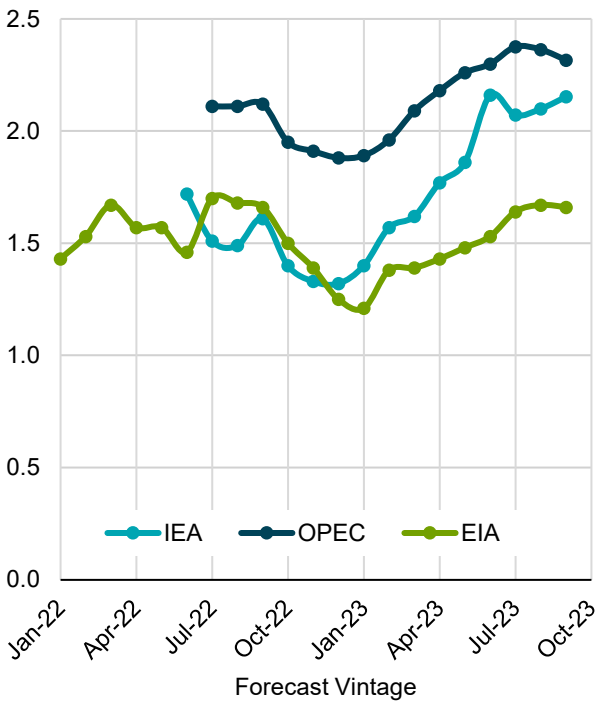
Evolution of 2023 Demand Growth Forecasts

- Annual global demand growth forecasts were largely unchanged this month.
- EIA continues to see the weakest demand growth this year, driven by a lower non-OECD demand forecast.
- OECD demand growth forecasts are converging at ~0.1 mb/d.

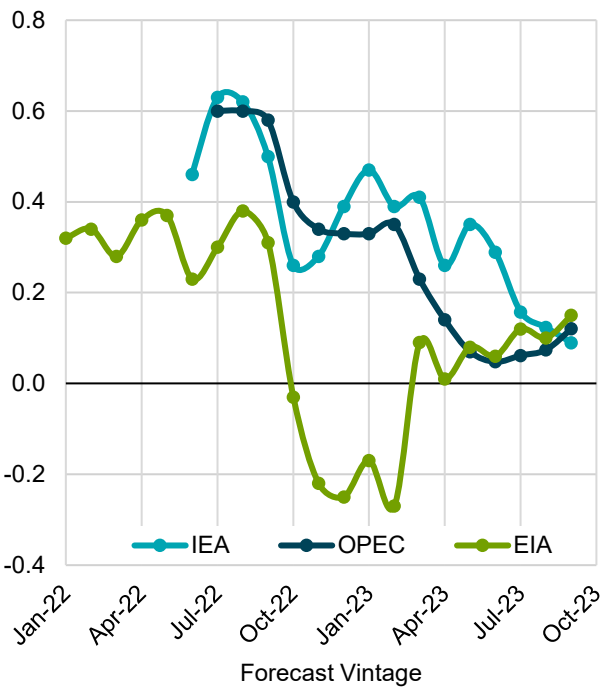
Global Demand Growth
Evolution of 2023 Forecasts
y/y growth in million barrels per day



Non-OECD Demand Growth
Evolution of 2023 Forecasts
y/y growth in million barrels per day



OECD Demand Growth
Evolution of 2023 Forecasts
y/y growth in million barrels per day

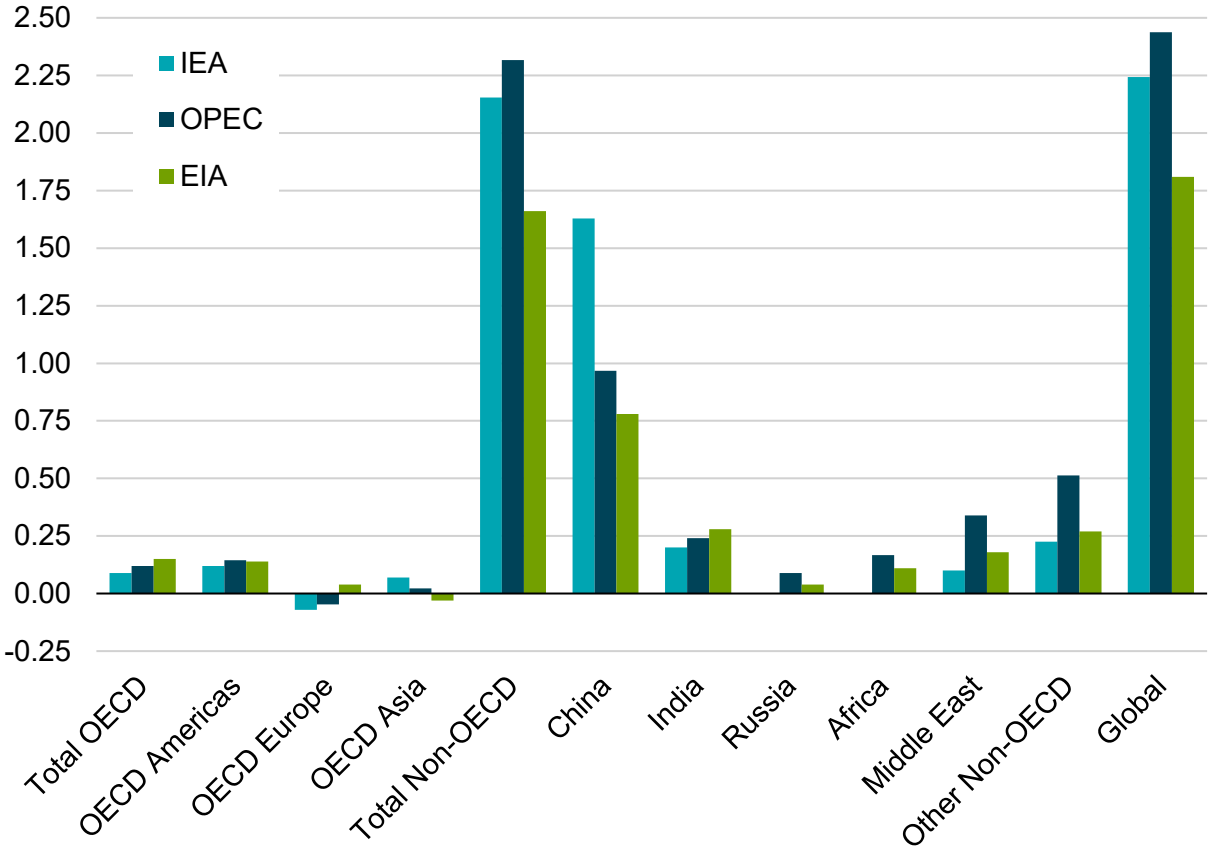


Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

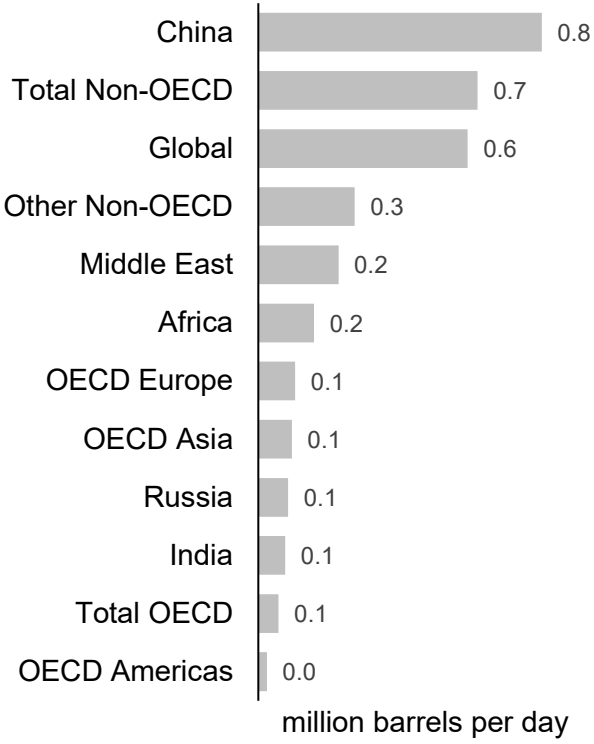
China drives the largest demand growth forecast divergence with IEA seeing the most robust growth

2023 Demand Growth Forecasts by Region

y/y growth in million barrels per day



Range in 2023 Demand Growth Forecasts



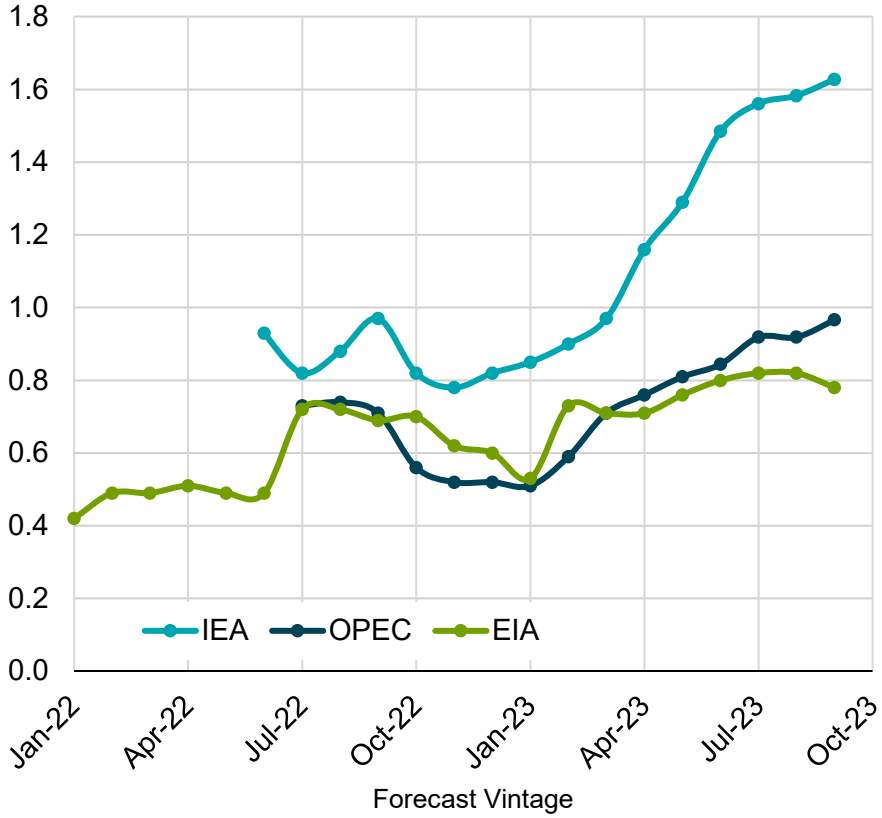
Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

IEA sees ~0.7-0.8 mb/d stronger Chinese demand growth this year compared to OPEC and EIA

Chinese Annual Average Demand Growth

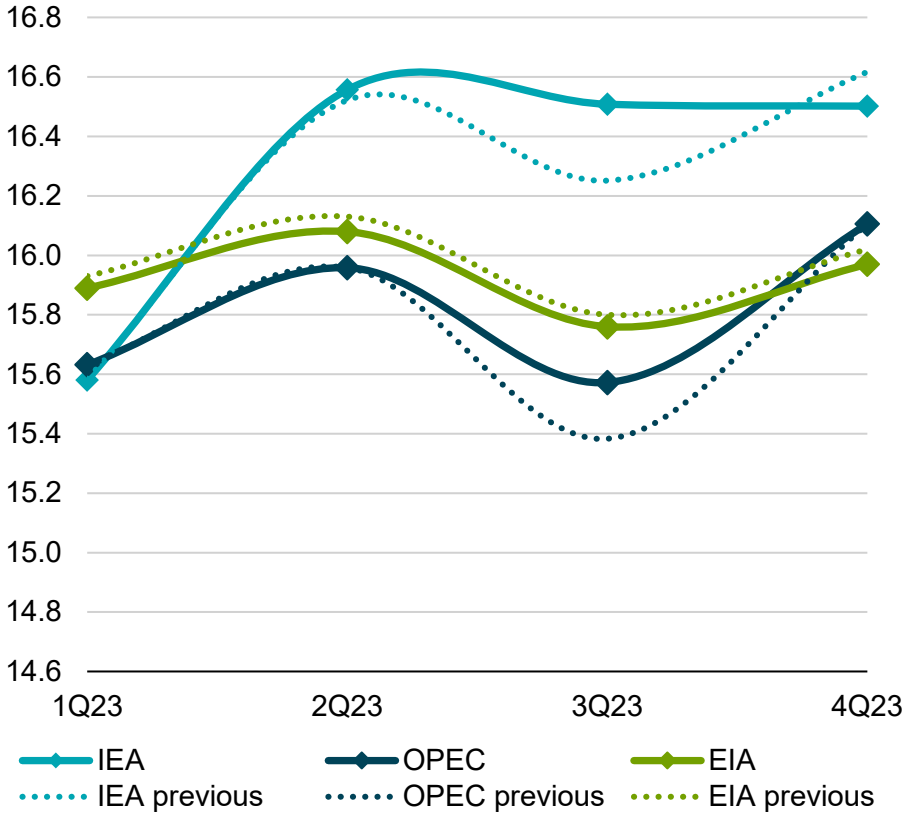
Evolution of 2023 Forecasts

y/y growth in million barrels per day



Chinese Quarterly Demand

million barrels per day

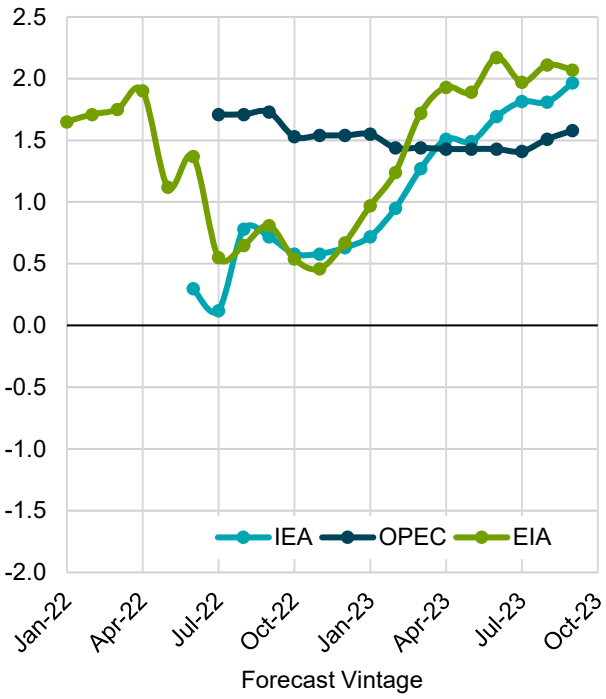


Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

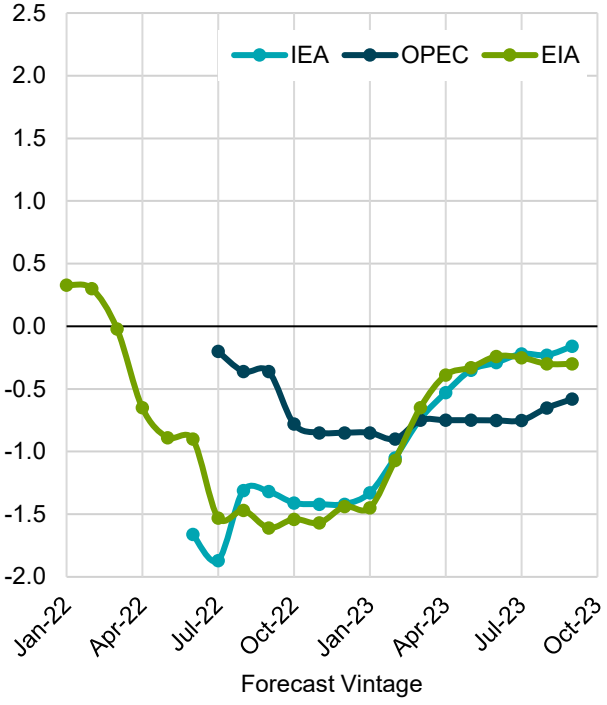
Evolution of 2023 Non-OPEC Supply Growth Forecasts

- IEA revised up non-OPEC supply growth by 0.2 mb/d on a stronger Russia, Brazil and Norway outlook.
- OPEC revised up non-OPEC supply growth by 0.1 mb/d on higher Russian supply. Despite the upward revision, OPEC continues to see the weakest non-OPEC growth this year largely due to a lower Russia forecast.

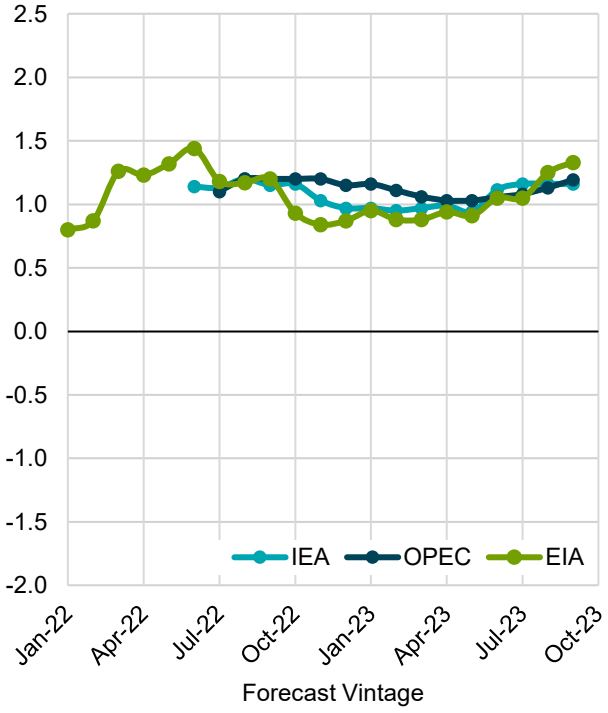
Non-OPEC Supply Growth
Evolution of 2023 Forecasts
y/y growth in million barrels per day



Russia Supply Growth
Evolution of 2023 Forecasts
y/y growth in million barrels per day



US Supply Growth
Evolution of 2023 Forecasts
y/y growth in million barrels per day

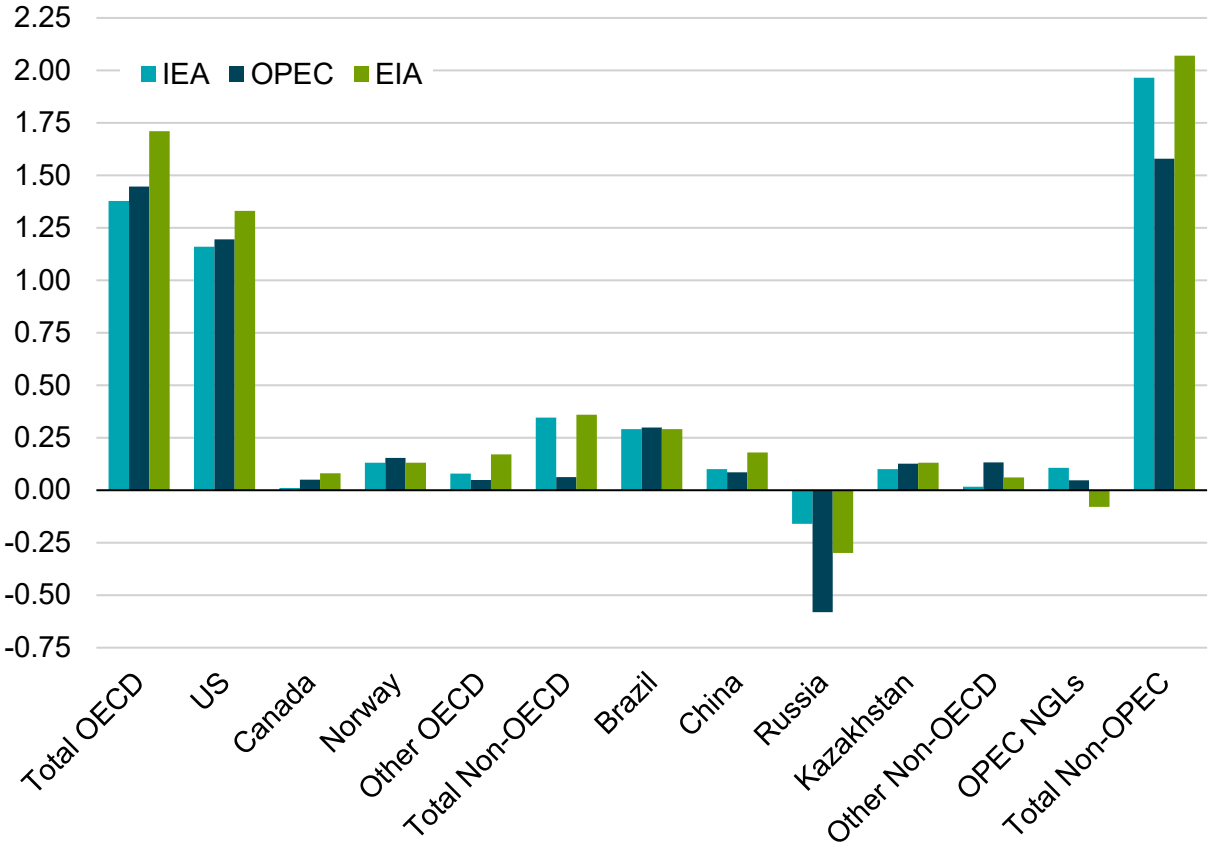


Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

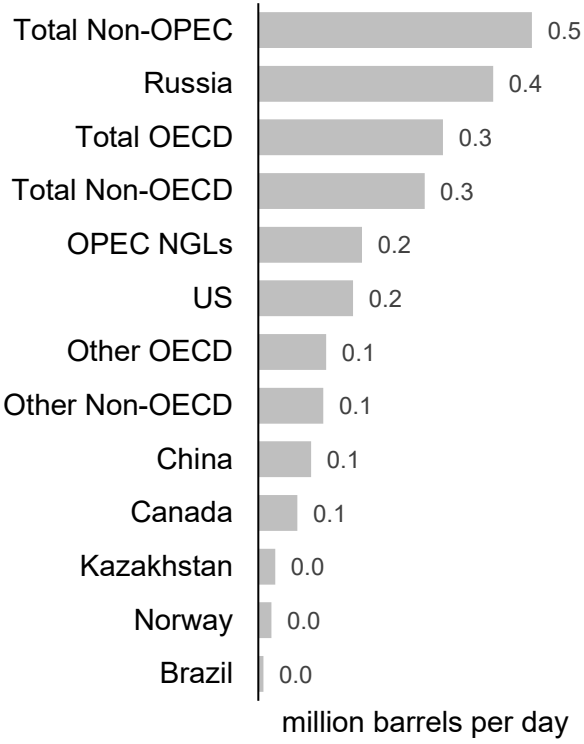
Russia drives the largest supply growth forecast divergence with OPEC seeing the steepest decline

2023 Supply Growth Forecasts by Region

y/y growth in million barrels per day



Range in 2023 Supply Growth Forecasts



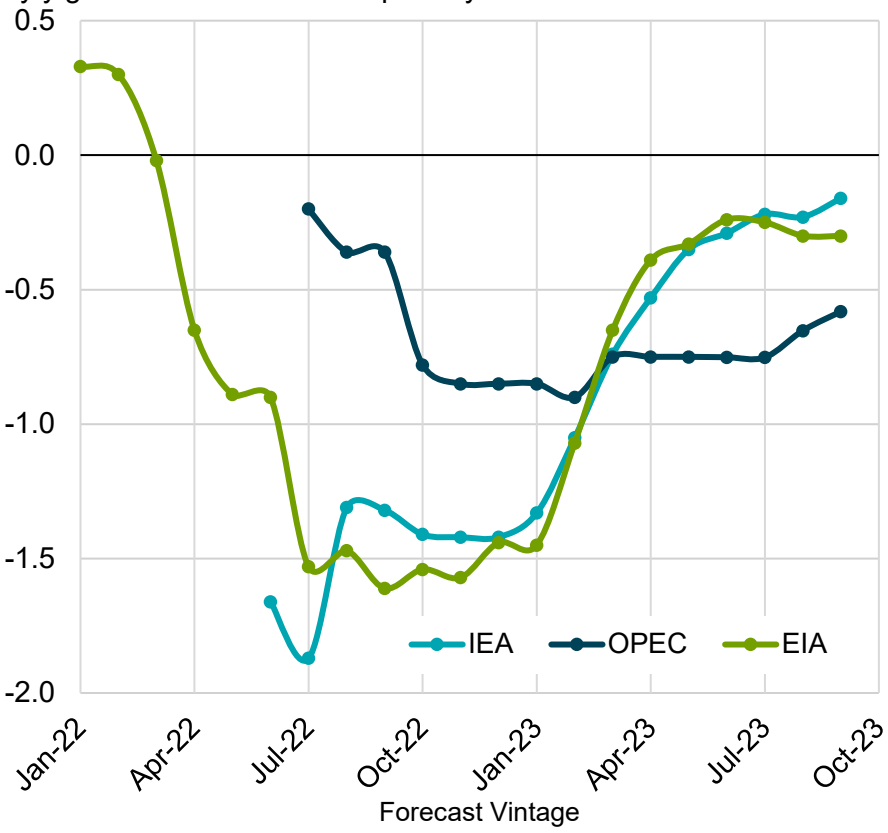
Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

OPEC continues to see a much steeper drop in Russian supply in 2H23 despite an upward revision to its 3Q23 forecast

Russia Supply Growth

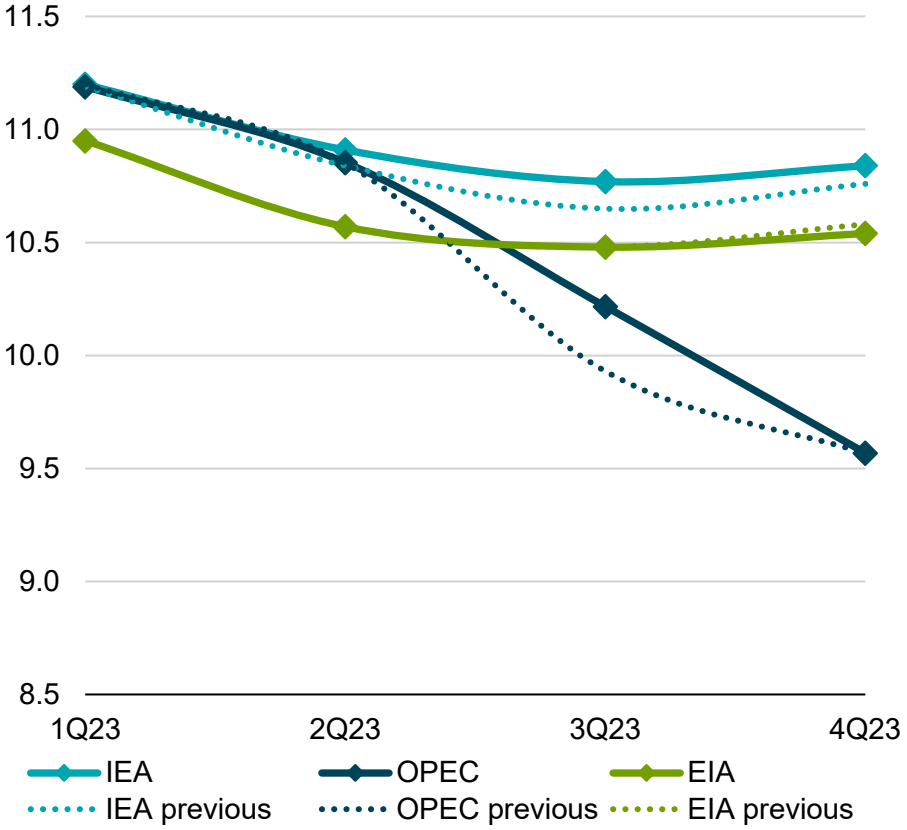
Evolution of 2023 Forecasts

y/y growth in million barrels per day



Russia Quarterly Production

million barrels per day

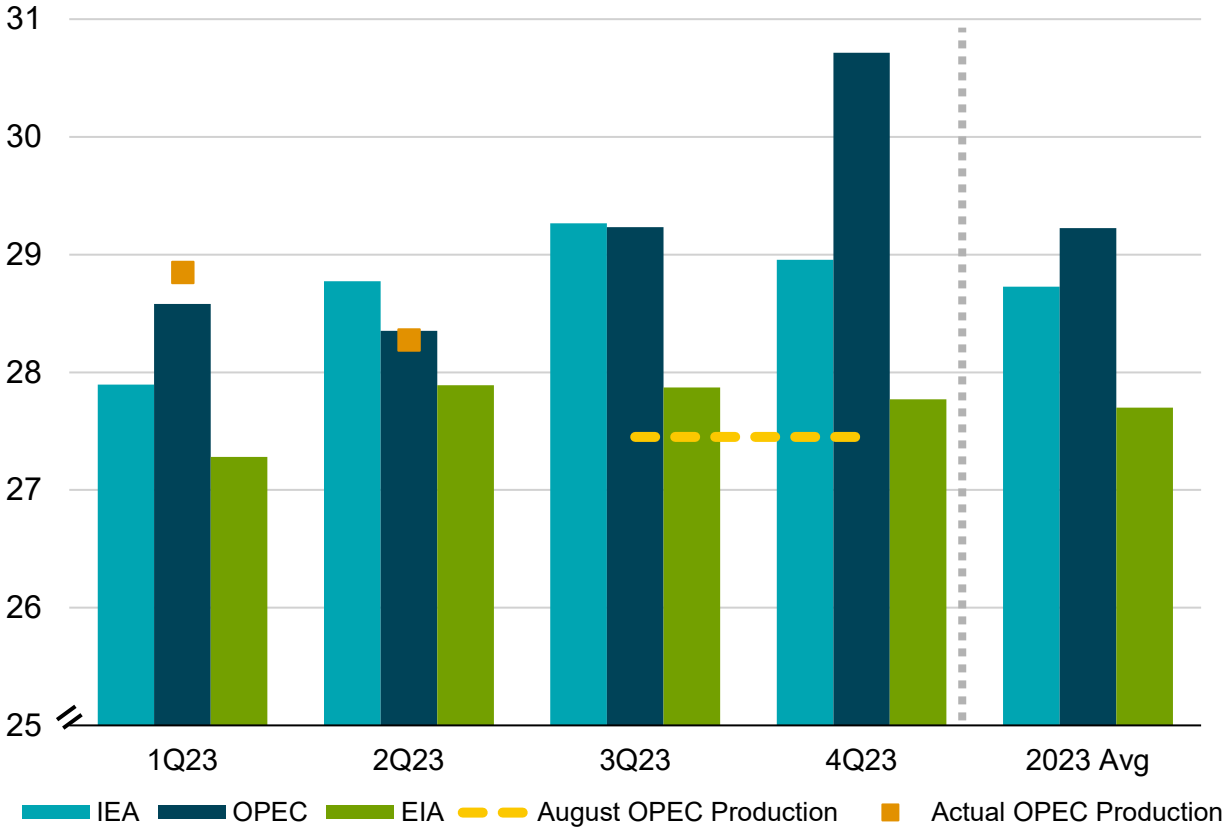


Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

OPEC balances imply a >3.0 mb/d global supply shortfall in 4Q23 if OPEC production were to remain at August levels

2023 Call on OPEC and Recent OPEC Production Levels

million barrels per day



- The “call on OPEC crude” is a calculation and not a forecast of actual OPEC production.
- The “call on OPEC” estimates what OPEC would need to produce to balance global supply and demand.
- It is estimated by subtracting a forecast for non-OPEC production and OPEC NGLs from global demand.

Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

2024 Outlook Comparison

Summary of 2024 Balances and Revisions

- IEA, OPEC, and EIA continue to see similar non-OPEC supply growth next year of 1.3-1.4 mb/d.
- Demand forecasts continue to diverge sharply. IEA continues to see only 1.0 mb/d of global demand growth while OPEC continues to see 2.2 mb/d. EIA revised down its forecast by 0.3 mb/d and now sees 1.4 mb/d y/y growth.

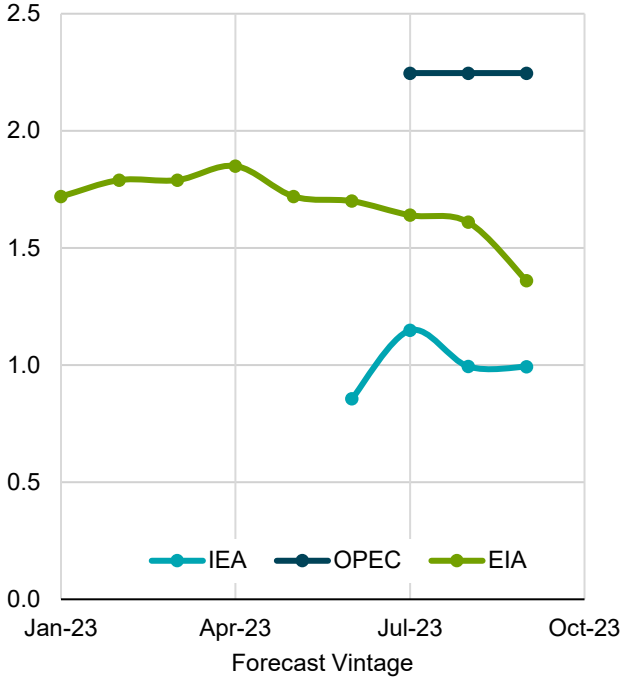
		2024 Balance Summary											
		Updated Forecast						*Revisions to Last Month's Forecast*					
		1Q24	2Q24	3Q24	4Q24	2024	2024 Y/Y	*1Q24*	*2Q24*	*3Q24*	*4Q24*	*2024*	*2024 Y/Y*
Global Demand	**IEA**	101.1	102.6	104.0	103.5	102.8	1.0	*-0.4*	*0.0*	*-0.2*	*-0.8*	*-0.4*	*0.0*
	OPEC	103.8	103.4	104.7	105.3	104.3	2.2	*0.1*	*0.1*	*0.1*	*0.0*	*0.1*	*0.0*
	EIA	101.8	101.9	102.8	102.8	102.3	1.4	*-0.5*	*-0.5*	*-0.5*	*-0.5*	*-0.5*	*-0.3*
OECD Demand	**IEA**	44.8	45.3	46.1	45.5	45.5	-0.4	*-0.2*	*0.1*	*-0.5*	*-0.5*	*-0.3*	*0.0*
	OPEC	45.9	46.0	47.2	46.4	46.4	0.3	*0.1*	*0.2*	*0.1*	*0.1*	*0.1*	*0.0*
	EIA	45.6	45.2	46.1	46.2	45.8	0.0	*-0.5*	*-0.4*	*-0.5*	*-0.4*	*-0.4*	*-0.2*
Non-OECD Demand	**IEA**	56.3	57.2	57.9	58.0	57.3	1.3	*-0.2*	*-0.1*	*0.4*	*-0.3*	*-0.1*	*0.0*
	OPEC	57.9	57.4	57.5	58.9	57.9	2.0	*0.0*	*-0.1*	*0.0*	*-0.1*	*0.0*	*0.0*
	EIA	56.2	56.7	56.7	56.6	56.6	1.4	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Non-OPEC Supply* and OPEC NGLs	**IEA**	73.6	74.4	74.8	74.7	74.4	1.3	*0.1*	*0.2*	*0.2*	*0.2*	*0.2*	*-0.1*
	OPEC	73.7	73.8	74.4	75.1	74.3	1.4	*0.1*	*0.2*	*0.1*	*0.1*	*0.1*	*0.0*
	EIA	74.0	74.3	74.8	75.3	74.6	1.3	*0.1*	*0.0*	*0.1*	*0.1*	*0.1*	*0.0*
OPEC Crude**	**IEA**												
	OPEC												
	EIA	28.2	28.4	28.4	28.1	28.3	0.4	*-0.2*	*-0.2*	*-0.2*	*-0.2*	*-0.2*	*-0.1*
Call on OPEC	**IEA**	27.5	28.2	29.2	28.8	28.4	-0.3	*-0.6*	*-0.2*	*-0.4*	*-1.0*	*-0.5*	*0.1*
	OPEC	30.0	29.6	30.3	30.2	30.0	0.8	*0.0*	*-0.1*	*0.0*	*-0.2*	*-0.1*	*0.0*
	EIA	27.8	27.6	28.0	27.5	27.8	0.0	*-0.6*	*-0.5*	*-0.6*	*-0.6*	*-0.5*	*-0.3*
Global Stock Change and Miscellaneous to Balance**	**IEA**												
	OPEC												
	EIA	0.4	0.8	0.4	0.6	0.6		*0.4*	*0.3*	*0.4*	*0.4*	*0.3*	

* Includes biofuels and processing gains
** Only EIA publishes a forecast of OPEC crude production and global stock change
Source: IEF, IEA OMR, OPEC MOMR, EIA STEO

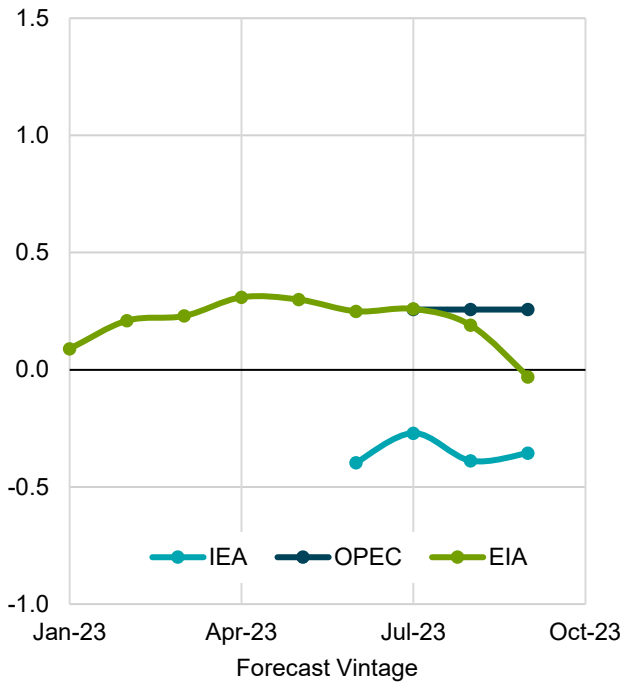
Evolution of 2024 Annual Demand Growth Forecasts

- OPEC's 2024 global demand growth forecast is more than double IEA's due to a higher OECD, Middle East, and Russian forecasts.
- IEA sees OECD demand declining by 0.4 mb/d next year, while OPEC sees 0.3 mb/d growth.

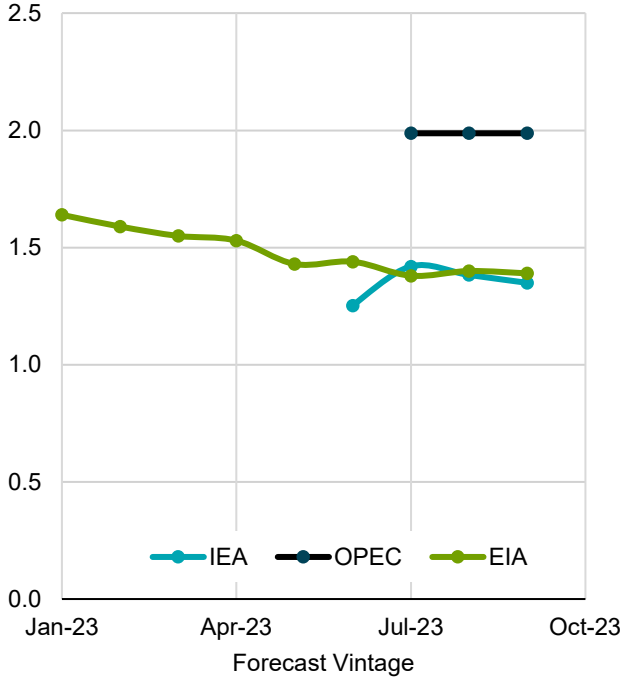
Global Demand Growth
Evolution of 2024 Forecasts
y/y growth in million barrels per day



OECD Demand Growth
Evolution of 2024 Forecasts
y/y growth in million barrels per day



Non-OECD Demand Growth
Evolution of 2024 Forecasts
y/y growth in million barrels per day

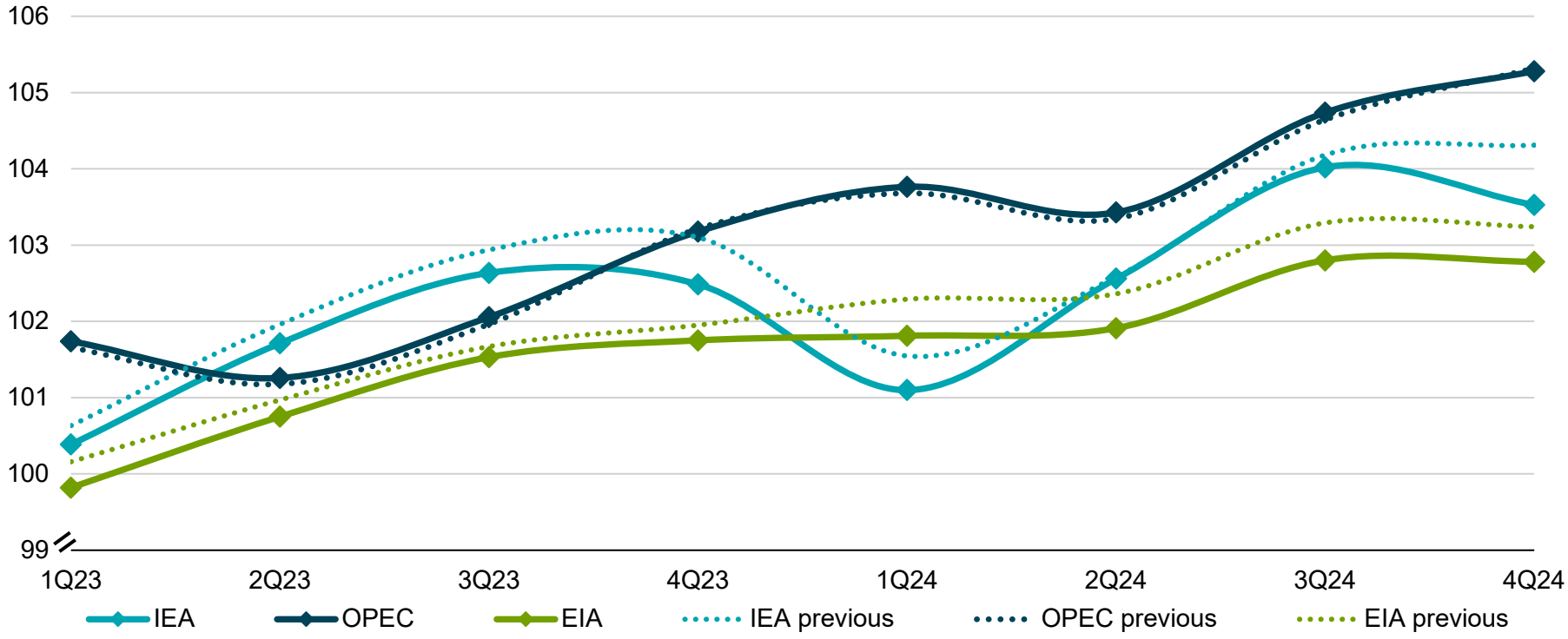


Source: IEF, IEA OMR, EIA STEO, OPEC MOMR

OPEC sees global demand climbing to >105 mb/d by the end of next year – soaring ~4 mb/d above the most recent quarterly estimate (2Q23)

2023-24 Global Demand

demand in million barrels per day

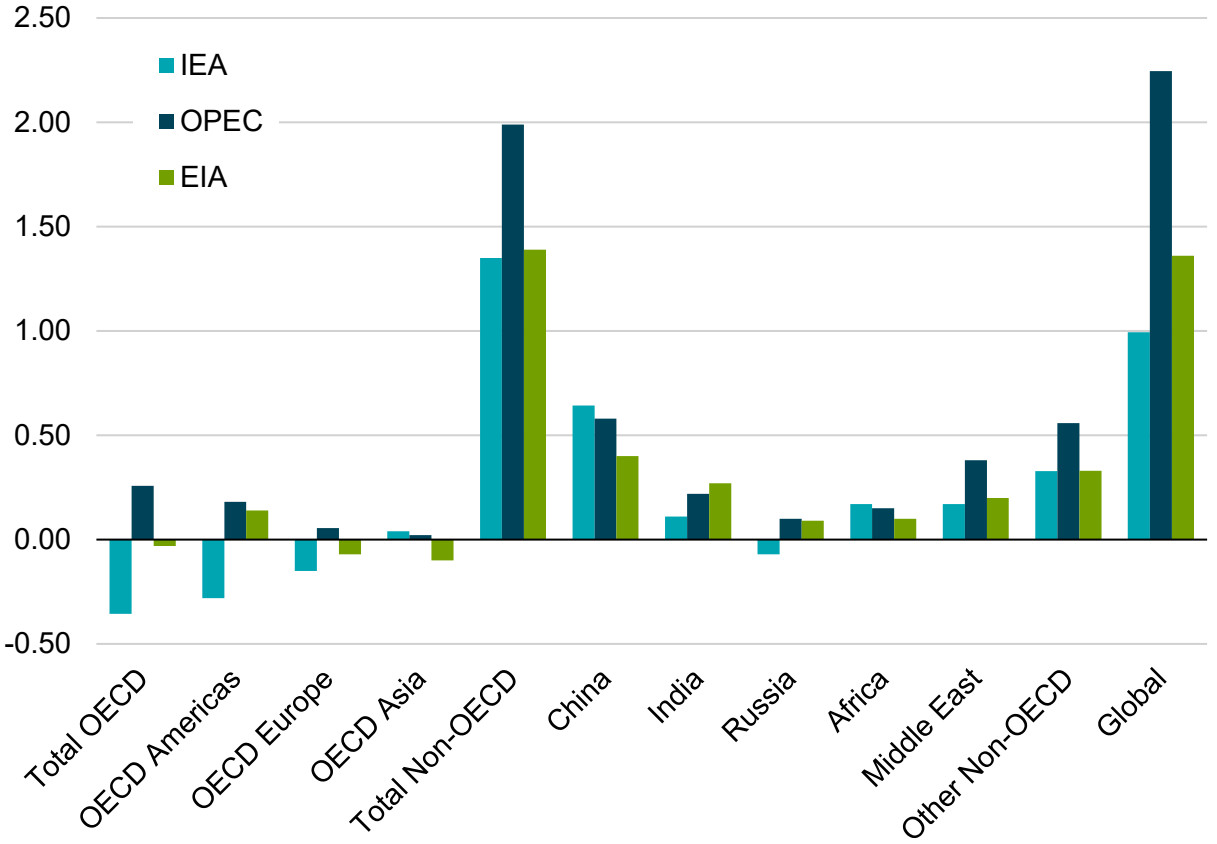


Source: IEF, IEA OMR, EIA STEO, OPEC MOMR

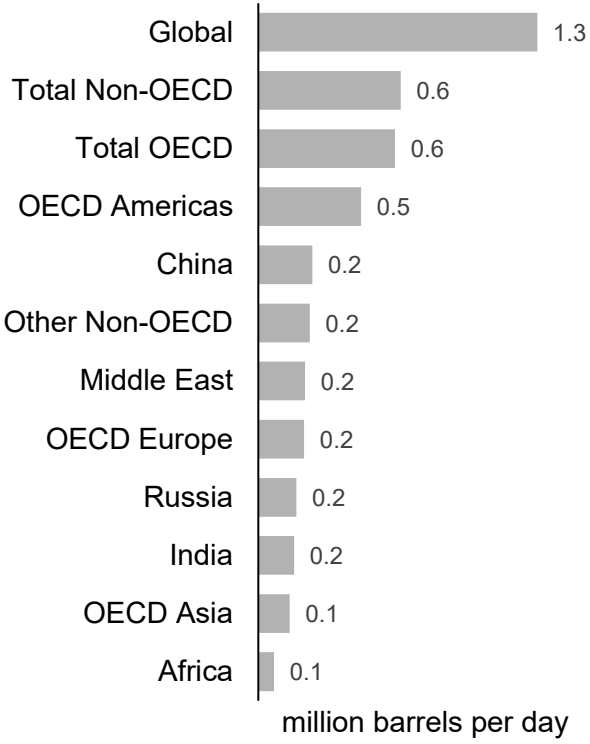
OPEC sees more robust demand growth than IEA in the OECD, India, Russia, and the Middle East

2024 Demand Growth Forecasts by Region

y/y growth in million barrels per day



Range in 2024 Demand Growth Forecasts

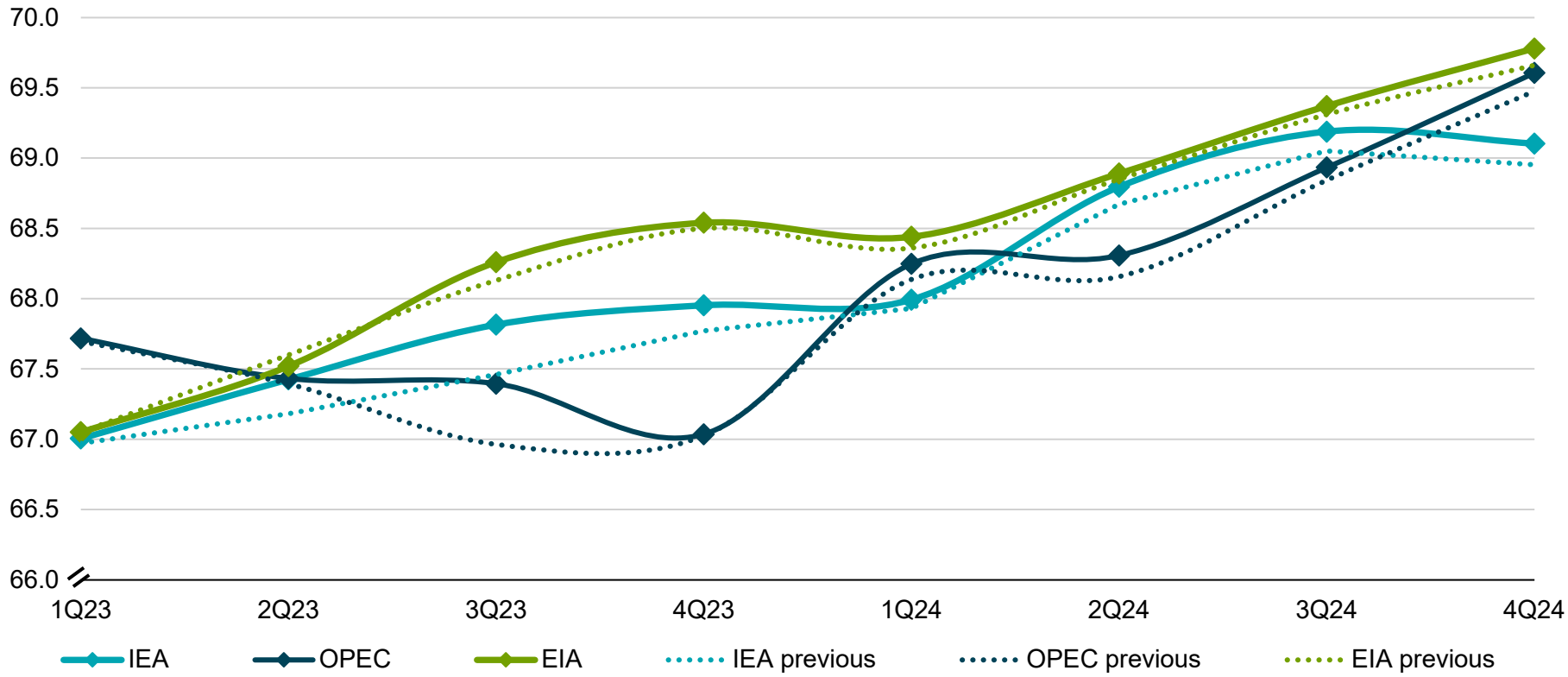


Source: IEF, IEA OMR, EIA STEO, OPEC MOMR

Non-OPEC supply forecasts for 2024 are significantly more aligned than 2H23 projections

2023-24 Non-OPEC Supply

supply in million barrels per day

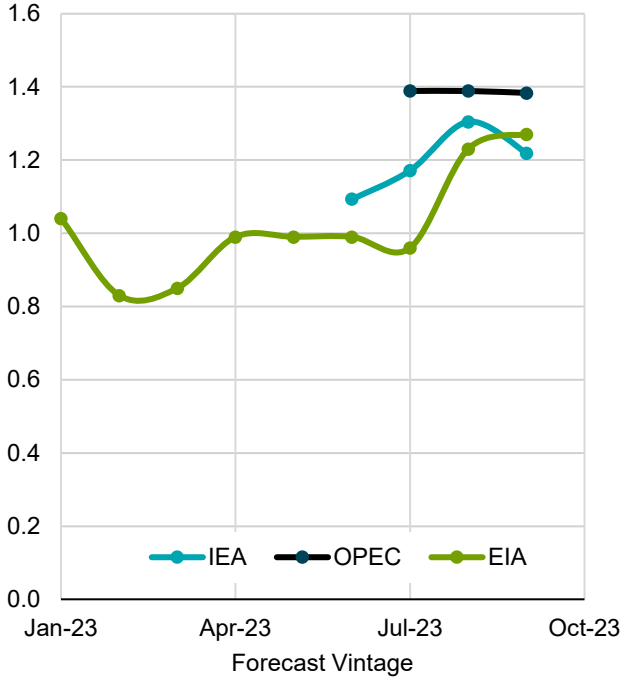


Source: IEF, IEA OMR, EIA STEO, OPEC MOMR

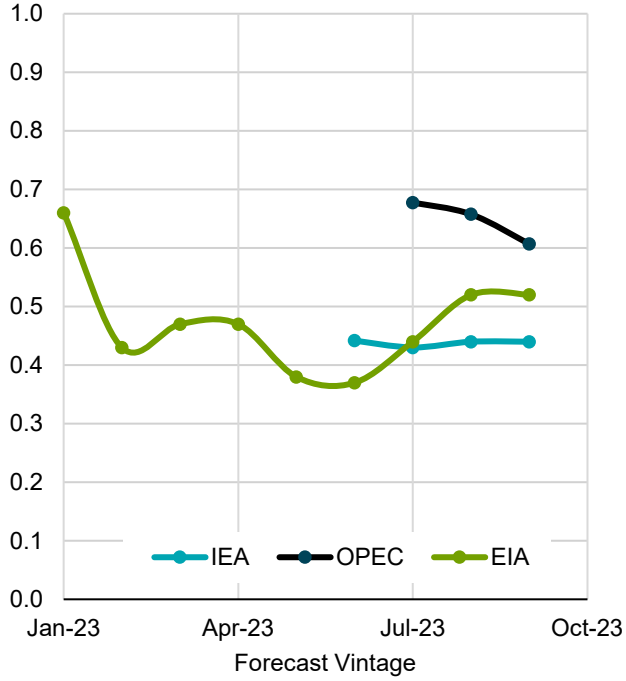
Evolution of 2024 Annual Non-OPEC Supply Growth Forecasts

- OPEC sees the most robust growth due primarily to a higher US and Russia forecast.
- While all three forecasts see US supply growth slowing substantially from 2023's >1 mb/d growth, the US is still expected to be the largest contributor to non-OPEC growth next year.

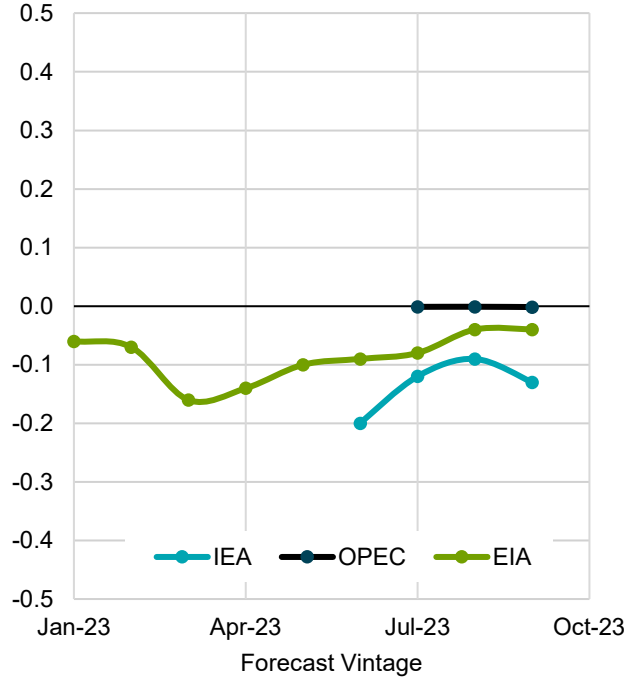
Non-OPEC Supply Growth
Evolution of 2024 Forecasts
y/y growth in million barrels per day



US Supply Growth
Evolution of 2024 Forecasts
y/y growth in million barrels per day



Russia Supply Growth
Evolution of 2024 Forecasts
y/y growth in million barrels per day

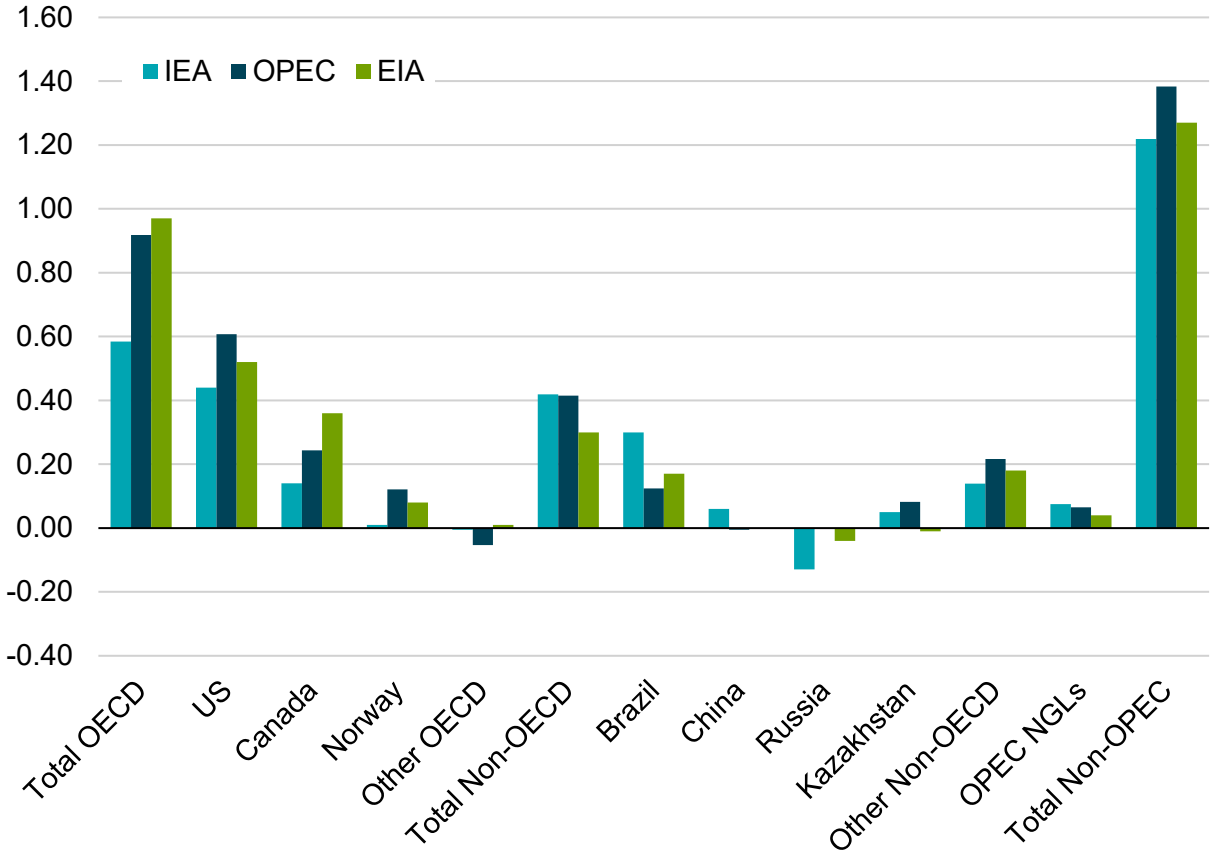


Source: IEF, IEA OMR, EIA STEO, OPEC MOMR

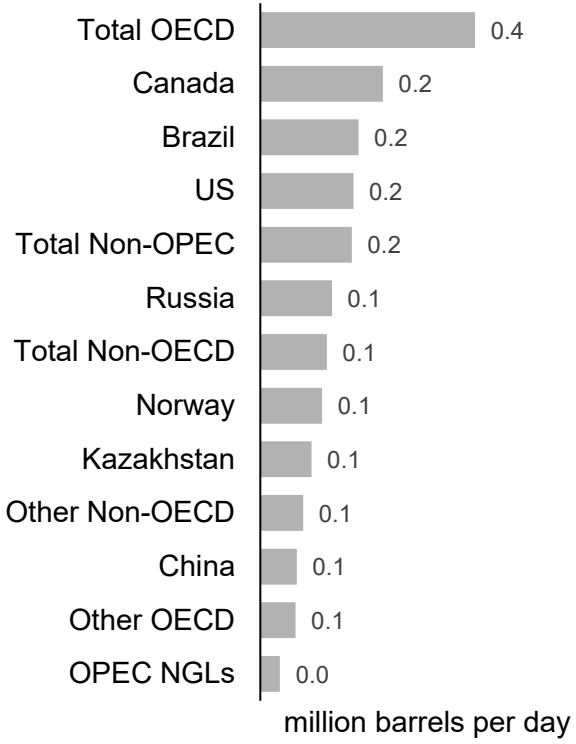
OPEC sees the strongest non-OPEC supply growth in 2024 due largely to a higher US forecast

2024 Supply Growth Forecasts by Region

y/y growth in million barrels per day



Range in 2024 Supply Growth Forecasts

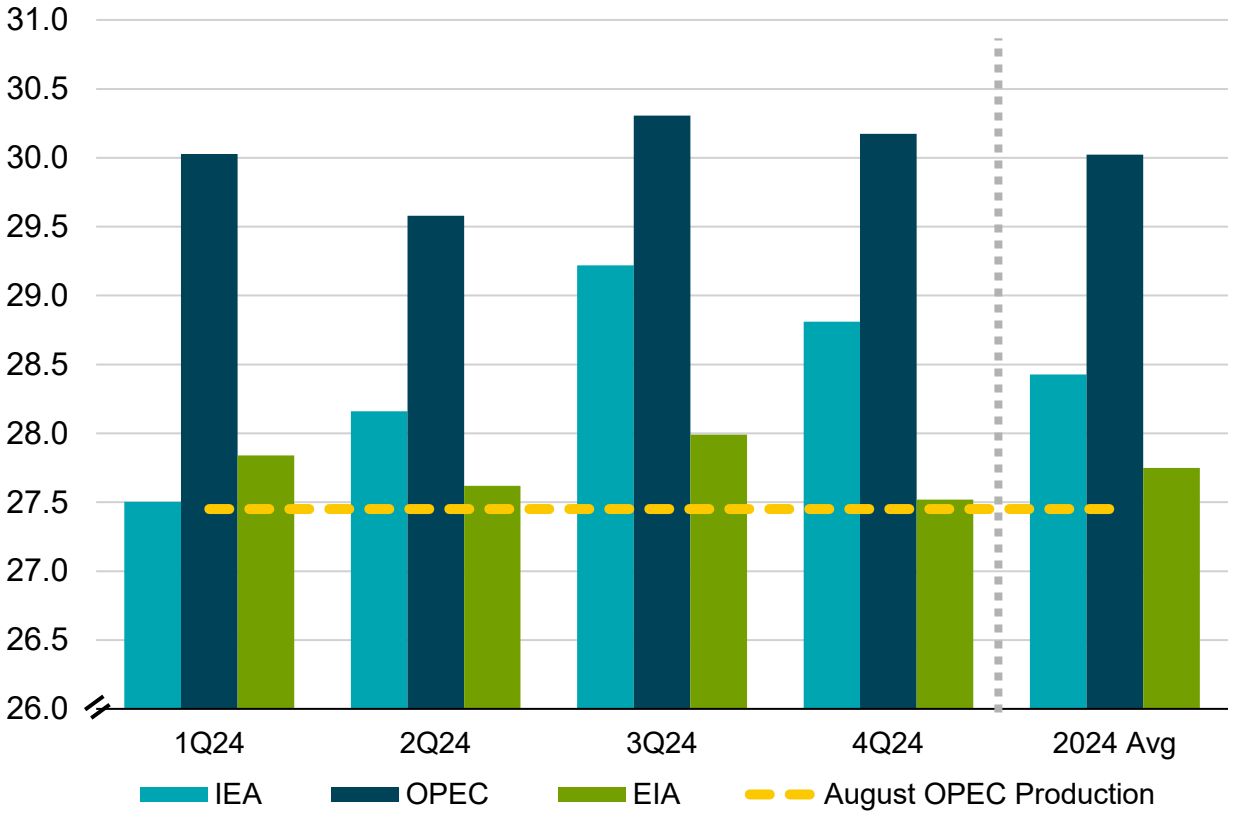


Source: IEF, IEA OMR, EIA STEO, OPEC MOMR

All three balances show the “Call on OPEC” exceeding August 2023 OPEC production levels by 0.3-2.6 mb/d

2024 Call on OPEC and Recent OPEC Production Levels

million barrels per day



- The “call on OPEC crude” is a calculation and not a forecast of actual OPEC production.
- The “call on OPEC” estimates what OPEC would need to produce to balance global supply and demand.
- It is estimated by subtracting a forecast for non-OPEC production and OPEC NGLs from global demand.
- OPEC’s balance is tighter than IEA and EIA’s primarily due to a stronger demand outlook.
- Notably, August OPEC production includes a 1.0 mb/d voluntary cut from Saudi Arabia which may be extended to rescinded in 2024.

Source: IEF, IEA OMR, EIA STEO, OPEC MOMR

Appendix

Notes:

- The IEF conducts a comprehensive comparative analysis of the short-, medium-, and long-term energy outlooks of the IEA, OPEC, and the EIA to inform the IEA-IEF-OPEC Symposium on Energy Outlooks that the IEF hosts annually in Riyadh as part of the trilateral work program.
- To inform IEF stakeholders on how perspectives on the oil market of both organizations evolve over time regularly, this monthly summary provides a snapshot overview of data points gained from comparing basic historical data and short-term forecasts of the IEA Oil Market Report, the OPEC Monthly Oil Market Report, and the EIA Short-term Energy Outlook.
- Data in tables and charts may not sum due to rounding.
- Some differences in regional/country supply figures may stem from different conventions in reporting processing gains and biofuels. EIA country-level data includes biofuels and processing gains, while OPEC only includes biofuels and IEA excludes both. All total non-OPEC production figures include biofuels and processing gains.

Upcoming Publication Dates

	IEA OMR	OPEC MOMR	EIA STEO	JODI
September	*13th (Wednesday)*	*12th (Tuesday)*	*12th (Tuesday)*	18th (Monday)
October	12th (Thursday)	12th (Thursday)	11th (Wednesday)	16th (Monday)
November	14th (Tuesday)	13th (Monday)	7th (Tuesday)	16th (Thursday)
December	14th (Thursday)	13th (Wednesday)	12th (Tuesday)	18th (Monday)

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