16th IEA IEF OPEC
Symposium on Energy Outlooks

IEF Outlooks Comparison Report

February 2026

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Overview

Key Observations on Mixed Messages

IEA and OPEC Short-, Medium-, and Long-Term Outlooks

IEA and OPEC Outlooks in Context; Signal to Investors Facing Growing Uncertainty

Concluding Observations on Renewables, Oil, and Natural Gas Scenarios

Long-term outlooks have tremendous influence: New narratives look beyond emissions towards resilience and growth

Energy and climate policy and regulation

Investment decisions and shareholder demands

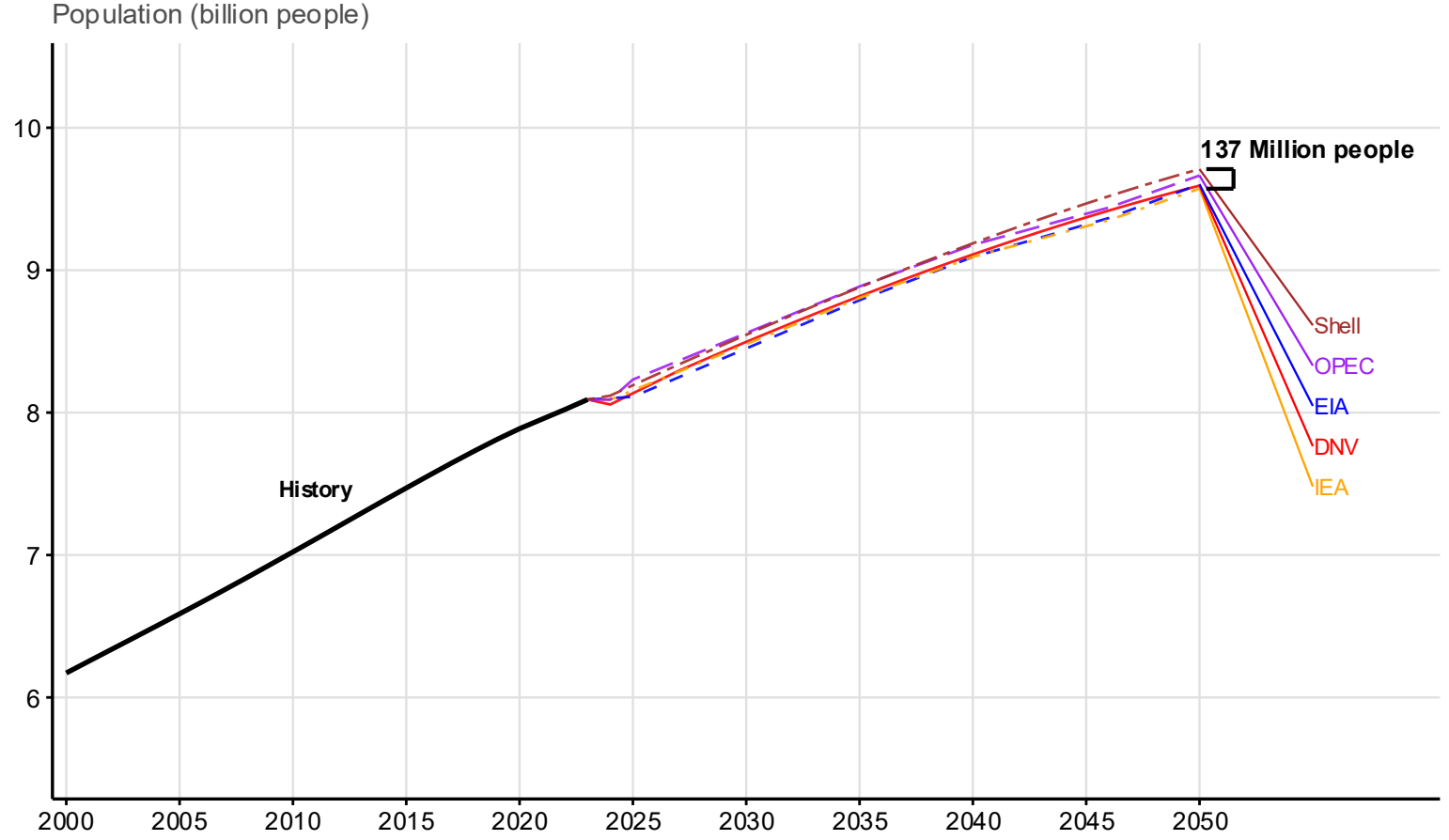
Public service obligations; reliability, cost of living, inflation, other.

Court rulings and financing terms

Public perceptions

Strong consensus on population growth; a key input to long-term energy projections, with minor differences in estimates, adding 2 billion by mid-century

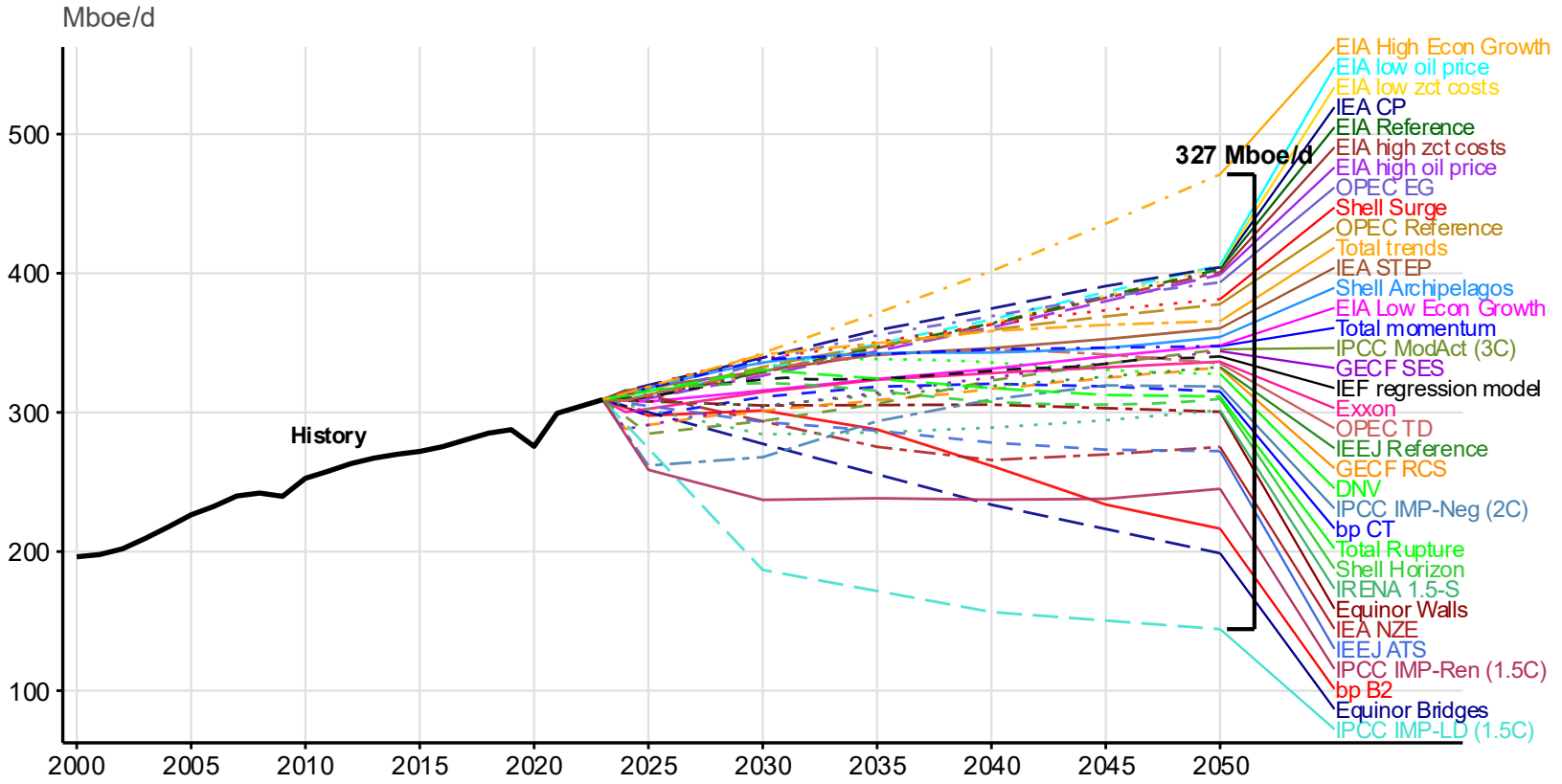
Global Population Projections to 2050, by Source



Sources: IEF, IEA WEO 2025, OPEC WOO 2025, DNV's Energy Transition Outlook 2025, EIA IEO 2023 and Shell Energy Security Scenarios 2025.

Though views on population growth align, total primary energy demand projections differ; ambitious scenarios show demand declines

Total Primary Energy Demand Scenarios Through 2050

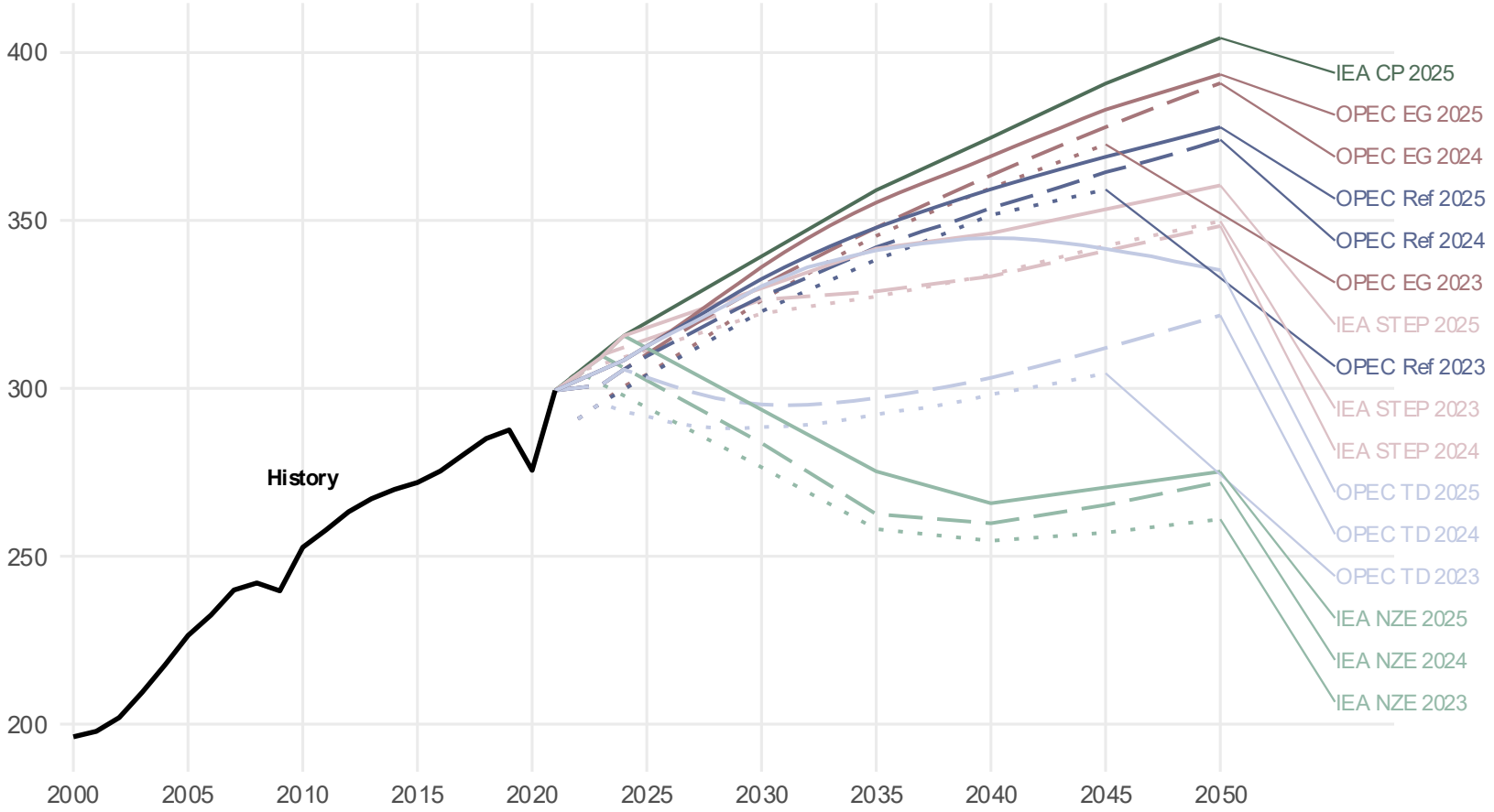


Sources: IEF, IEA WEO 2025, OPEC WOO 2025, bp Energy Outlook 2025, TotalEnergies Energy Outlook 2025, IRENA World Energy Transition Outlook 2024, GECF Global Gas Outlook 2025, DNV's Energy Transition Outlook2025, Equinor Energy Perspectives 2025, IEEJ Outlook 2024, EIA IEO 2023, Shell Energy Security Scenarios 2025, ExxonMobil Global Outlook 2025, and IPCC AR6. Note: Some scenarios start after the historical series ends; their curves therefore begin at the first year each outlook reports projections .

This is while agencies continue to revise their projections of global primary energy demand upward relative to previous editions

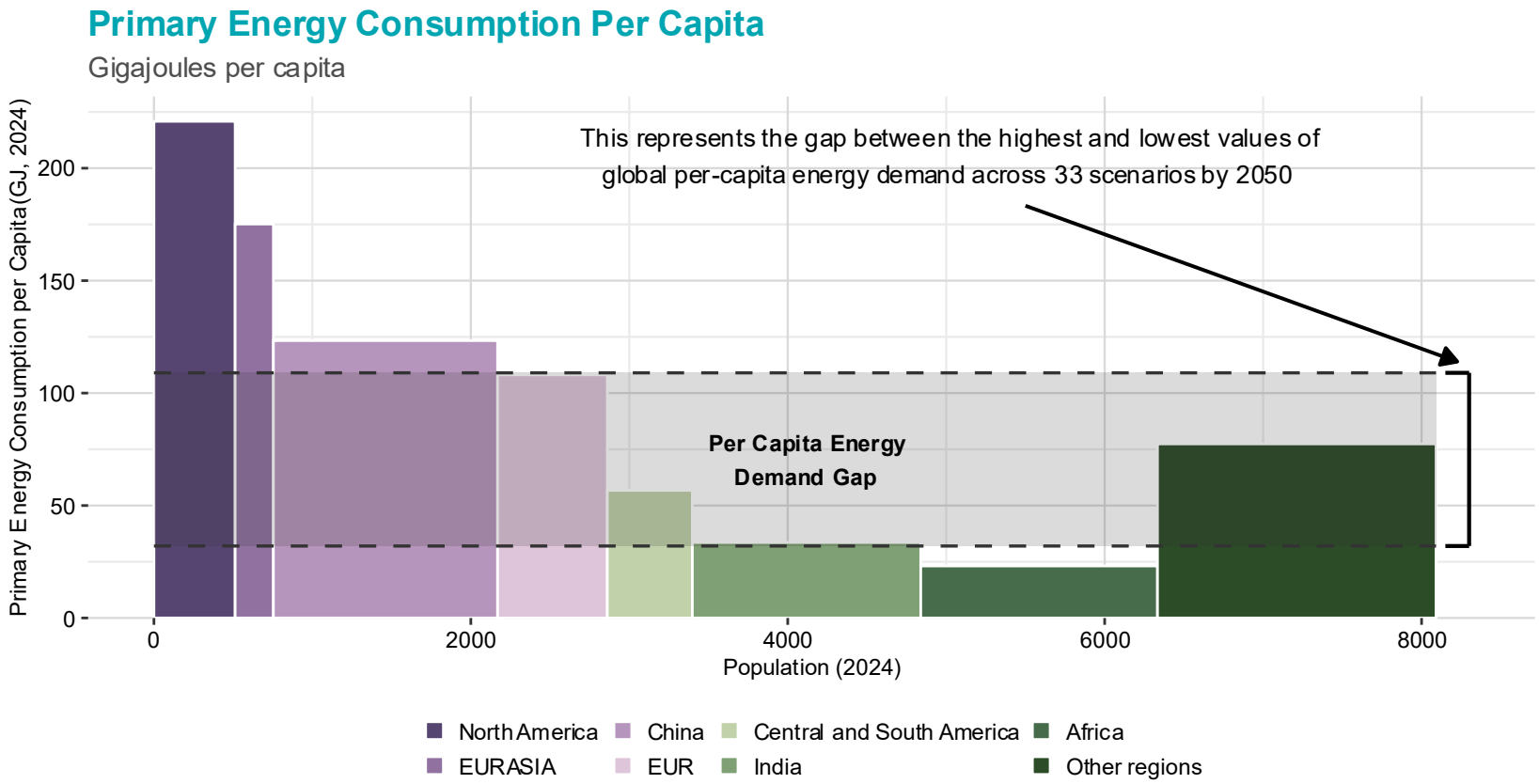
Total Primary Energy Demand by Scenario Vintage

Million barrels of oil equivalent per day



Source: IEF, IEA WEO 2025, and OPEC WOO 2025.

Differences in primary energy demand per capita across all compared scenarios reflect large energy investment needs to overcome inequality



The "*Per Capita Energy Demand Gap*" marks a critical energy access challenge, future energy demand growth requires substantial energy trade and investment to overcome global divisions

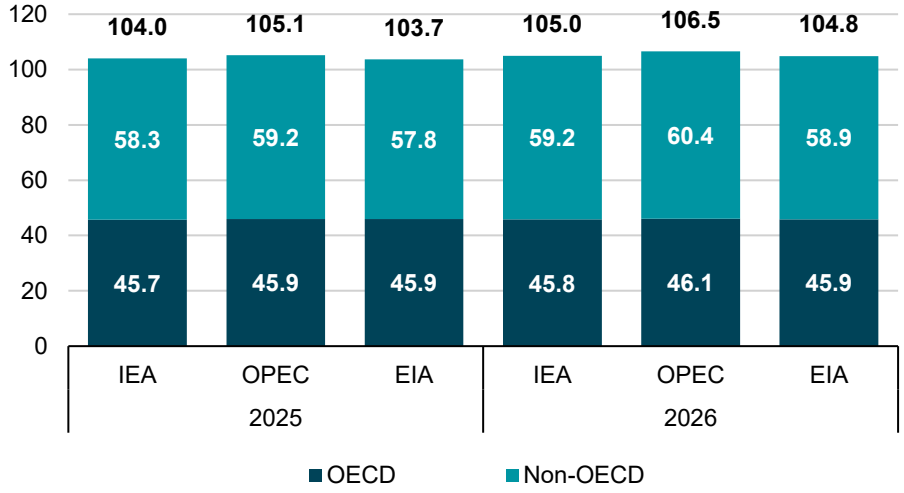
Sources: IEF, IEA WEO 2025, OPEC WOO 2025, bp Energy Outlook 2025, TotalEnergies Energy Outlook 2025, DNV's Energy Transition Outlook 2025, GECF Global Gas Outlook 2025, Equinor Energy Perspectives 2025, IEEJ Outlook 2024, EIA IEO 2023, Shell Energy Security Scenarios 2025, ExxonMobil Global Outlook 2025, and IPCC AR6.

Short Term Liquids Outlook
(IEA, OPEC, and EIA 2025-2026 as of January 2026)

Agencies are projecting an average growth in liquids demand of approximately 1.1 mb/d in both 2025 and 2026

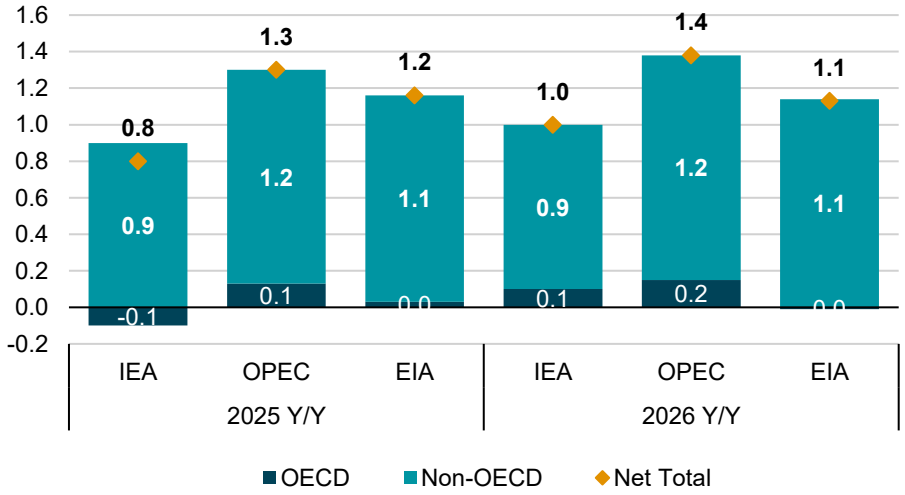
2025 & 2026 Liquid Demand Forecast By Agency

Million barrels per day



2025 & 2026 Liquid Demand Growth By Agency

Million barrels per day



The divergence between OPEC and IEA projections amounts to 0.5 mb/d in 2025 and 0.4 mb/d in 2026

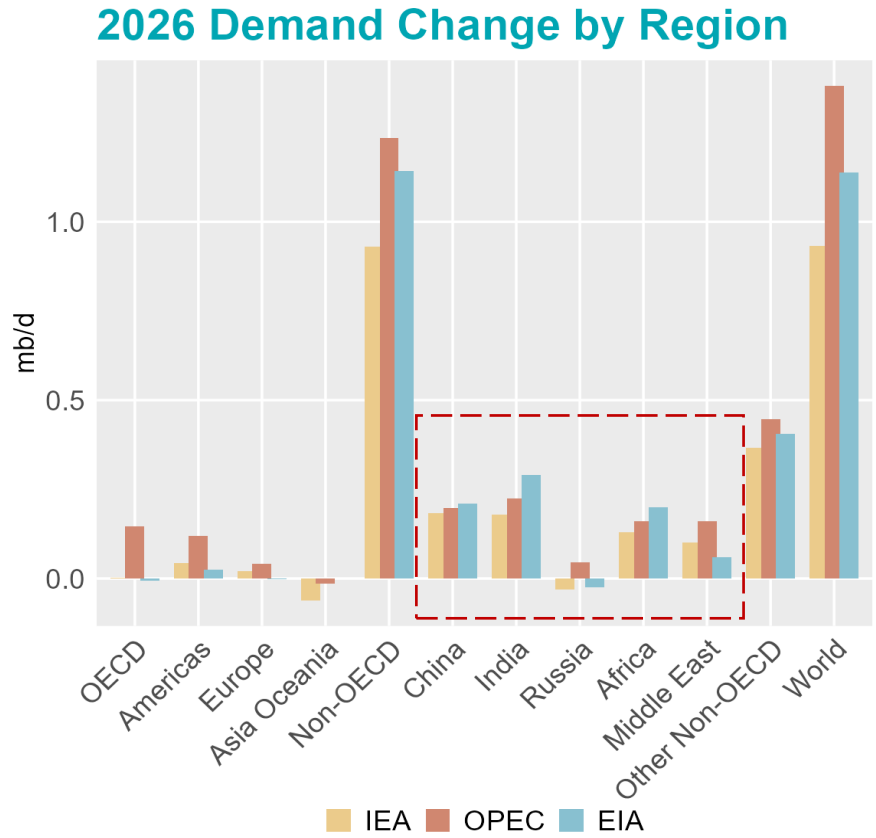
Source: IEF, IEA OMR Jan 2026, OPEC MOMR Jan 2026, and EIA STEO Jan 2026.

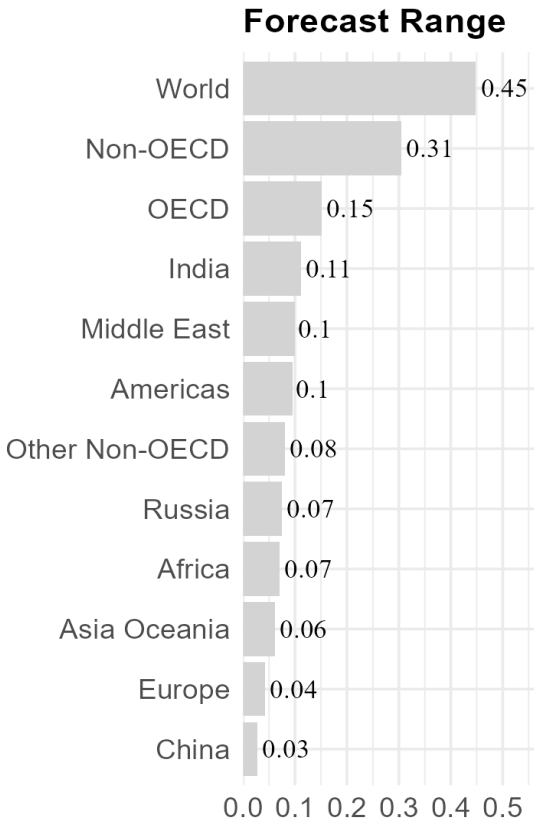
Around 1.7 mb/d divergence is observed across agencies' estimates of global oil demand in 2026, largely on account of non-OECD projections

2025-2026 Liquid Demand Forecast by Agency								
	2025				2026			
million barrels per day	IEA	OPEC	EIA	Range (high-low)	IEA	OPEC	EIA	Range (high-low)
Total OECD	**45.7**	**45.94**	**45.90**	**0.24**	**45.8**	**46.09**	**45.89**	**0.29**
Americas	25.3	25.40	24.84	0.56	25.3	25.52	24.87	0.65
Europe	13.4	13.44	13.46	0.06	13.4	13.48	13.46	0.08
Asia Oceania	7.0	7.10	7.6	0.6	7.0	7.08	7.56	0.56
Total Non-OECD	**58.3**	**59.20**	**57.79**	**1.41**	**59.2**	**60.43**	**58.93**	**1.5**
Asia	32.0	32.33	31.55	0.78	32.6	33.02	32.30	0.72
China	*16.8*	*16.87*	*16.60*	*0.27*	*17.0*	*17.06*	*16.81*	*0.25*
Middle East*	9.2	8.94	9.39	0.45	9.3	9.10	9.45	0.35
Latin America	6.6	6.88	6.97	0.37	6.7	7.01	7.11	0.41
Europe and Eurasia	5.7	6.18	5.89	0.48	5.6	6.27	5.88	0.67
Russia	*3.54*	*4.04*	*3.80*	*0.5*	*3.51*	*4.09*	*3.78*	*0.58*
Africa	4.8	4.87	4.79	0.08	5.0	5.03	4.99	0.04
World	**104.0**	**105.14**	**103.69**	**1.45**	**105.0**	**106.52**	**104.82**	**1.7**

Source: IEF, IEA OMR Jan 2026, OPEC MOMR Jan 2026, and EIA STEO Jan 2026. Note: The differences between the IEA and OPEC Middle East baselines relate to data sources.

India's oil demand growth is forecast to rise to 0.3 mb/d in 2026. The U.S. EIA sees highest regional growth, except in Russia and the Middle East





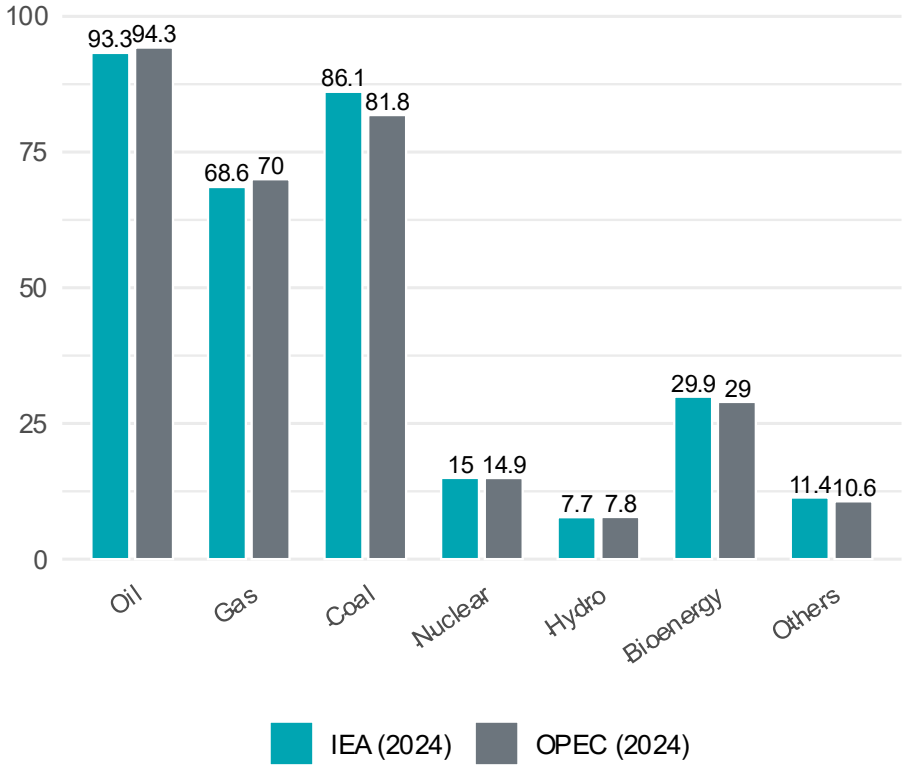
Source: IEF, IEA OMR Jan 2026, OPEC MOMR Jan 2026, and EIA STEO Jan 2026.

Baseline Energy Data
(IEA WEO and OPEC WOO)

IEA and OPEC show broad alignment in 2024 global primary energy demand, with differences largely concentrated in coal

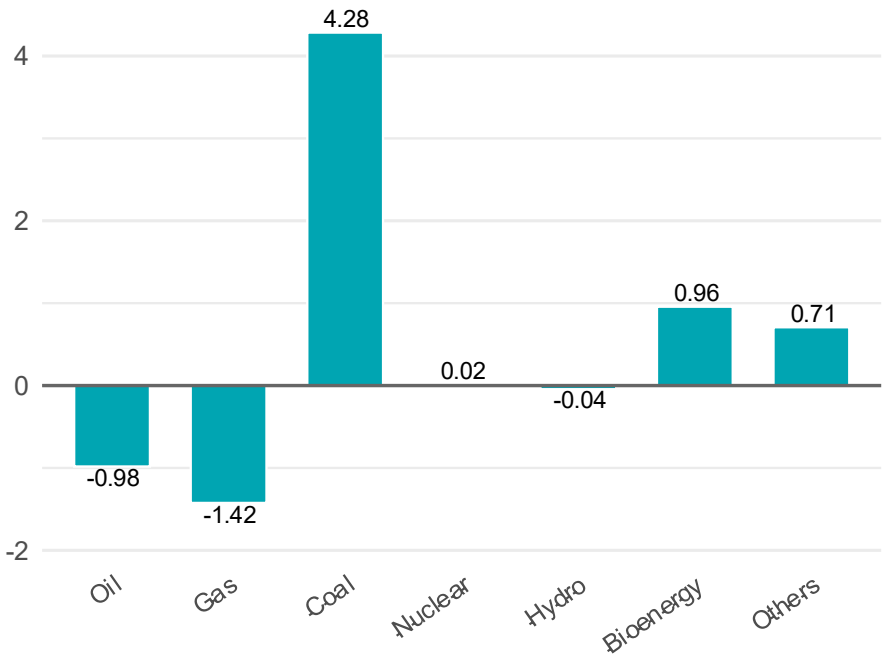
2024 World Primary Energy Demand

Million barrels of oil equivalent per day



IEA vs. OPEC: 2024 World Primary Energy Demand

Million barrels of oil equivalent per day

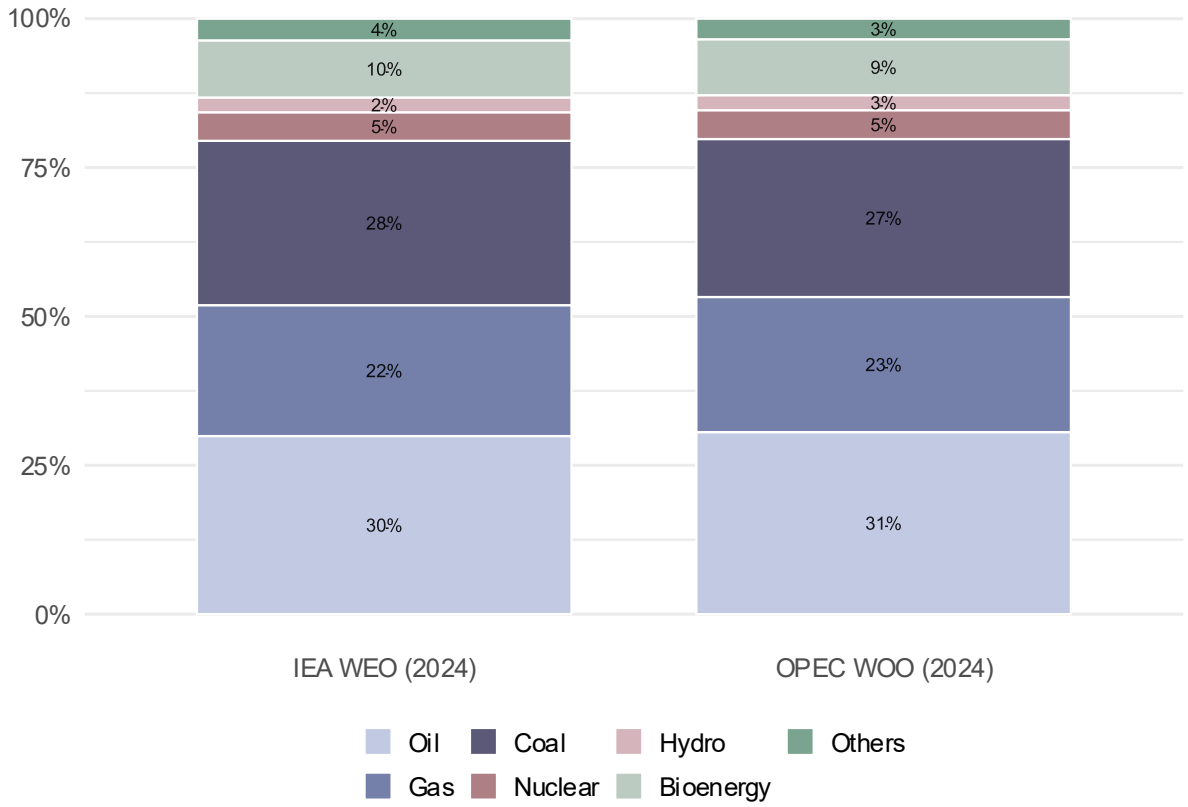


Source: IEF, IEA WEO 2025, and OPEC WOO 2025.

Global primary energy demand continues to rely on hydrocarbons accounting for ~80 percent and non-fossil at ~20 percent share in 2024

2024 World Primary Energy Demand Fuel Share

Percentage of total primary energy demand

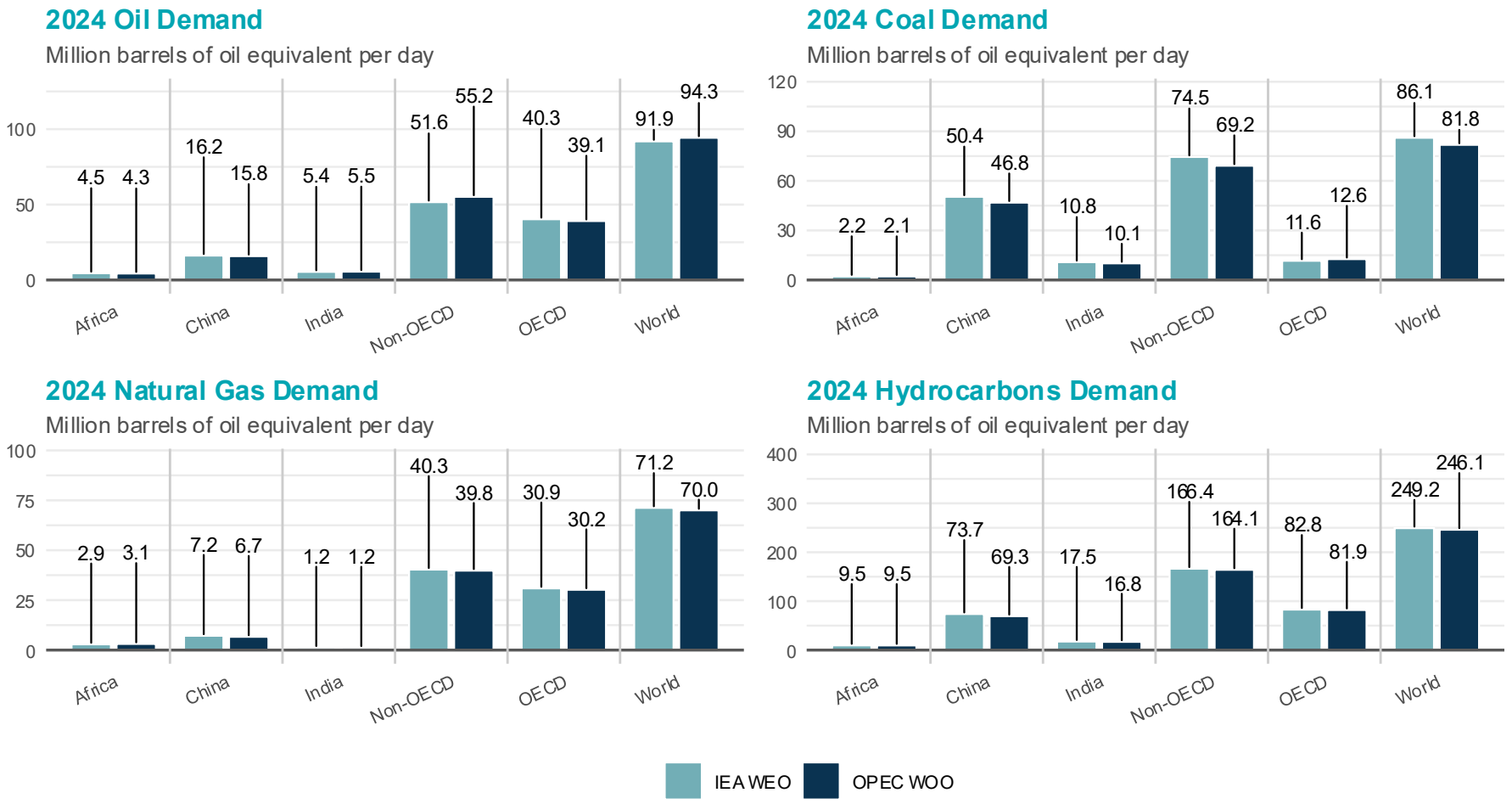


Source: IEF, IEA WEO 2025, and OPEC WOO 2025. Note: Oil excludes biofuels, coal-to-liquids, and gas-to-liquids (see appendix for more information).

Hydrocarbons account for more than four-fifths of global primary energy demand in 2024 in both the IEA WEO and OPEC WOO.

Renewables, nuclear, and hydropower combined account for less than one-fifth of global primary energy demand.

Coal consumption in non-OECD regions is more than sixfold higher than in the OECD; a key substitution and carbon abatement opportunity



Source: IEF, IEA WEO 2025, and OPEC WOO 2025. Note: Oil excludes biofuels, coal-to-liquids, and gas-to-liquids (see appendix for more information).

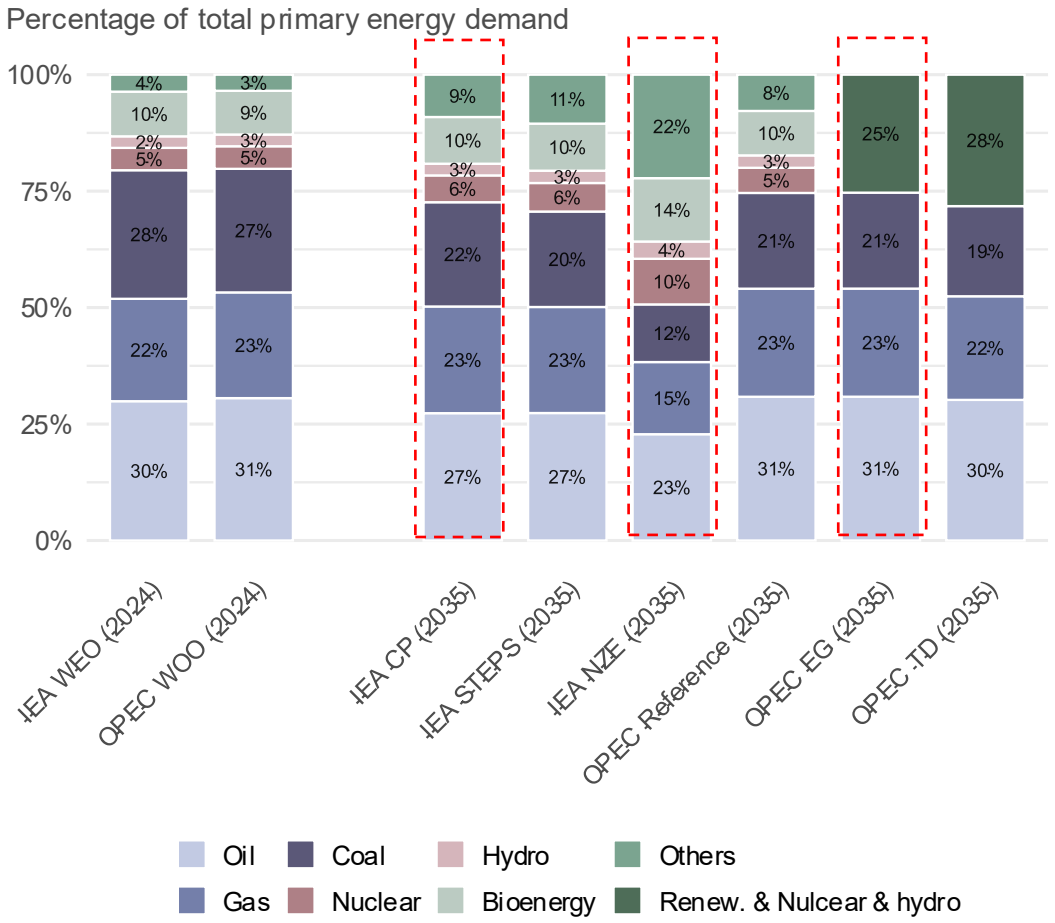
Outlooks to 2035 and 2050 Highlights (IEA and OPEC)

IEA and OPEC Scenario Descriptions and Assumptions

IEA WEO 2025 Scenarios	OPEC WOO 2025 Scenarios
Current Policies Scenario (CP): Represents a counterfactual baseline in which the evolution of the global energy system and associated emissions is determined solely by energy and climate policies that are already enacted and legally binding at the time of assessment, without assuming the strengthening, acceleration, or full realization of announced targets or future policy commitments.	**Reference Case:** This scenario assumes the continued implementation of announced and enacted energy policies, to the extent that they are technically feasible and financially viable. In this scenario, all primary fuel types, except for coal, are expected to increase over the outlook period.
Stated Policies Scenario (STEPS): "This scenario provides a sense of the prevailing direction of travel for the energy sector based on a detailed reading of the latest policy settings in countries around the world."	**Technology-Driven Mitigation Scenario (TD):** This scenario presents an alternative approach to the prevalent emissions reduction narrative, which aims to limit the global temperature rise to well below 2°C. The scenario focuses on greater deployment of CCUS, hydrogen, and increased adoption of the Circular Carbon Economy (CCE).
Net Zero Emissions by 2050 (NZE): "This scenario portrays a pathway for the global energy sector to achieve net zero CO_2 emissions by 2050 which is consistent with limiting long-term global warming to 1.5 °C with limited overshoot (with a 50% probability)."	**Equitable Growth Scenario (EG):** This scenario outlines a strategic framework aimed at fostering a fairer and more prosperous economic landscape for developing countries. It emphasizes a tailored approach to achieving emission reduction goals, considering the unique circumstances and timelines of each nation. Consequently, this framework anticipates an increase in overall energy consumption, with a specific rise in oil demand.

The IEA Current Policies and OPEC Equitable Growth scenarios show the highest hydrocarbon shares of total primary energy demand in 2035

World Primary Energy Demand Fuel Share Outlook to2035



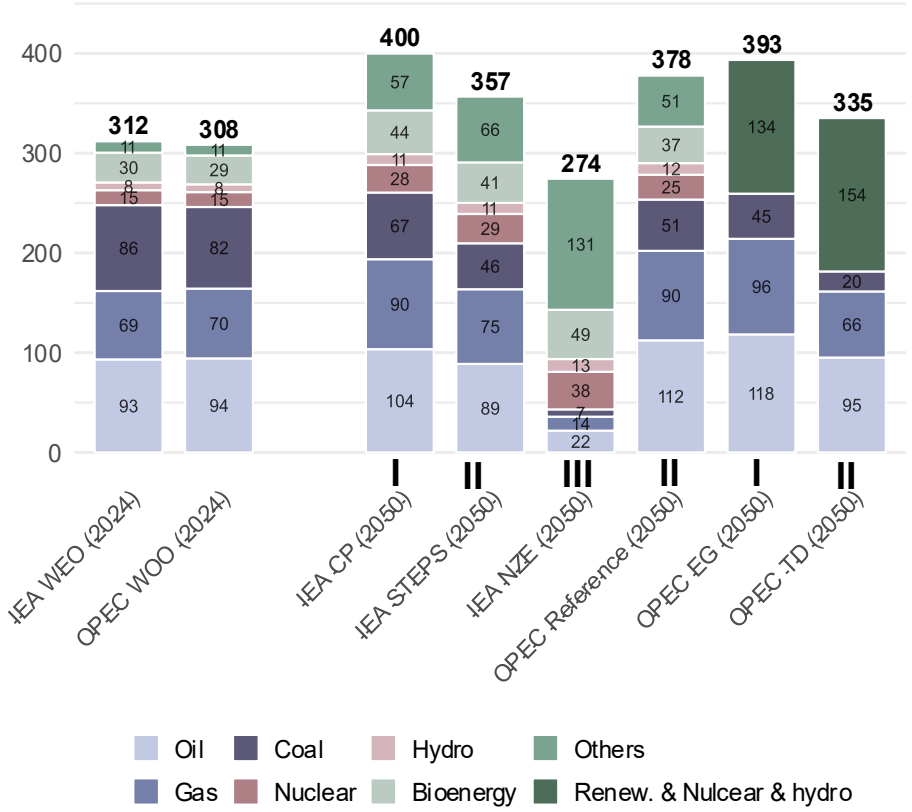
Renewables, nuclear, and hydropower reach ~50 percent in the IEA Net Zero scenario

Source: IEF, IEA WEO 2025, and OPEC WOO 2025.

Modest variations in policy, technology, and demand settings translate into structurally different energy systems over the outlook period to 2050

World Primary Energy Demand Outlook to 2050

Million barrels of oil equivalent per day



Source: IEF, IEA WEO 2025, and OPEC WOO 2025.

Three energy systems emerge:
I shows large energy infrastructure expansion

II sustains current and evolving trends

III shows climate policy driven energy demand contraction: "degrowth"

Additional Context: IEA and OPEC Scenarios Alongside Other Industry and Agency Outlooks

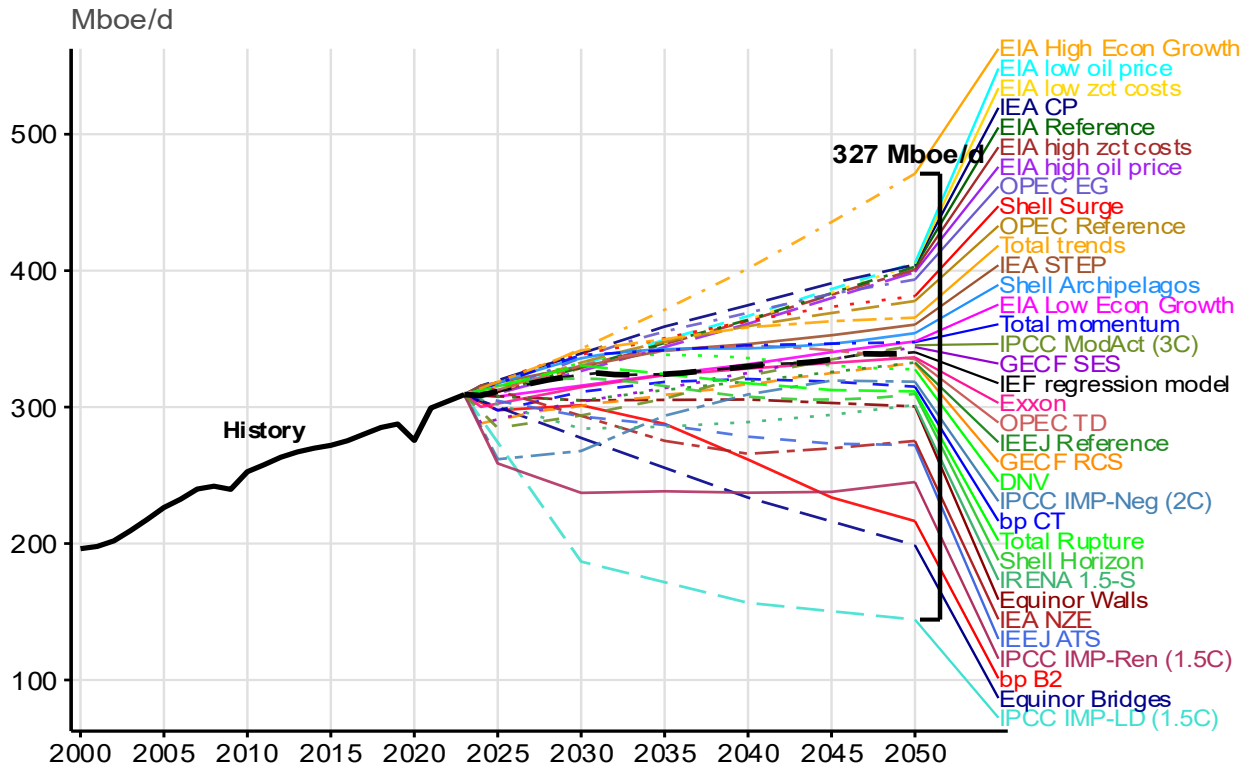
Additional Scenario Descriptions and Assumptions

Total	Trends**	The Trends scenario projects a global temperature increase of 2.6-2.7°C by 2100, incorporating current technological and policy trajectories.	**GECF**	Reference (RCS)**	Projects the most likely path for global energy and gas markets through 2050, based on current trends and assuming continuation of present economic and demographic patterns.
	Momentum**	Integrates decarbonization strategies of NZ50 countries and others' NDCs.		Sustainable Energy Scenario (SES)**	Emphasizes natural gas's potential to address energy poverty, promote economic growth, and contribute to environmental protection through decarbonization, highlighting its role as an affordable, reliable, and cleaner energy source.
	Rupture*	Aims to limit global temperature rise through aggressive global decarbonization efforts.			
BP	Current Trajectory **	In this scenario, greenhouse gas emissions, measured in carbon dioxide equivalents, reach their highest point in the mid-2020s and subsequently decrease to approximately 75% of 2022 levels by 2050.	**IEEJ**	Reference**	Mirrors historical patterns in technological advancements and existing energy strategies, without implementing bold initiatives for carbon reduction measures.
	Net Zero*	The Net Zero scenario envisions a substantial strengthening of environmental regulations.		Advanced Technology (ATS)*	Energy and environmental technologies are feasible and fully implemented.
IPCC AR6 WGIII	ModAct**	NDCs are implemented. Current trajectory leads to >2°C warming.	**EIA**	Reference **	Reflects current energy trends and existing laws and regulations. Assumes global GDP growth averages 2.6% from 2022-2050.
	IMP-Neg (2C)*	Limits warming to 2C with a higher reliance on net negative emissions.		High and Low Economic Growth**	The High Economic case assumes global GDP growth for 2022-2050 averages 3.4% while the low case assumes 1.8%.
	IMP-Ren (1.5)*	Limits warming to 1.5C with greater emphasis on renewables.		Oil Price Cases (High & Low)**	Explore how sustained deviations in international crude oil prices from the Reference trajectory, either higher or lower, alter global energy demand, fuel substitution patterns, and production incentives.
	IMP-LD (1.5)*	Limits warming to 1.5C with greater emphasis on demand reduction.		Zero-Carbon Technology Cost Cases (High & Low) **	Examine how alternative assumptions on the future capital costs of low- and zero-carbon power technologies influence their deployment rates, the competitiveness of fossil fuels, and the pace of decarbonisation in the global energy system.
Equinor	Walls**	Current trends in the market, technology, and policies show that the energy transition is accelerating slowly but is not reaching climate goals.	**IRENA**	Planned**	Reference case based on planned targets and government policies.
	Bridges*	Broadly consistent with IPCC 1.5°C.		1.5-S*	Describes an energy transition pathway aligned with a 1.5C climate goal. It prioritizes readily available technology solutions that can be scaled up.
ExxonMobil	Reference **	Current trends in market, technology and policies.	**Shell**	Surge**	A high-growth, technology-driven world in which rapid innovation and AI deployment boost productivity and energy demand.
DNV	Reference **	Current trends in market, technology and policies.		Archipelagos **	A fragmented, geopolitically divided world prioritizing energy security and national resilience.
				Horizon*	A cooperative, policy-driven pathway consistent with achieving net-zero emissions by mid-century through rapid decarbonization and system transformation.

Note: *Included in “Ambitious Climate Scenarios” group in the following slides; **Included in the “Reference Cases and Evolving Policies” group in the following slides;
See descriptions of IEA and OPEC scenarios.

Growing divergence across scenarios reflects fundamentally different assumptions and policy narratives, amplifying uncertainty for investors

Total Primary Energy Demand Scenarios Through 2050



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IEF identifies a median trajectory across all published outlooks to capture the key trend emanating from the scenario ensemble.

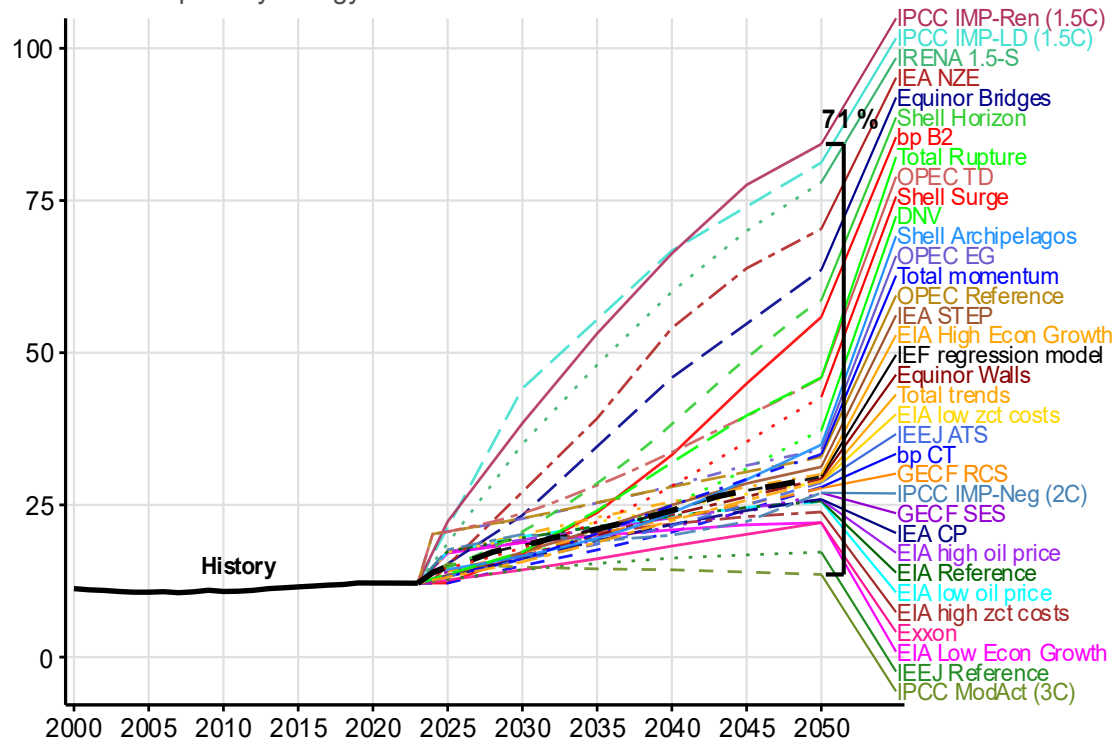
This eliminates noise or outliers to provide a signal to investors.

Concluding Observations on Scenario Projections

The share of renewables in total primary energy demand ranges between 14 and 84 percent by 2050 showing wide uncertainties

Renewable Demand Share of Total Primary Energy Demand Scenarios to 2050

Share of primary energy demand



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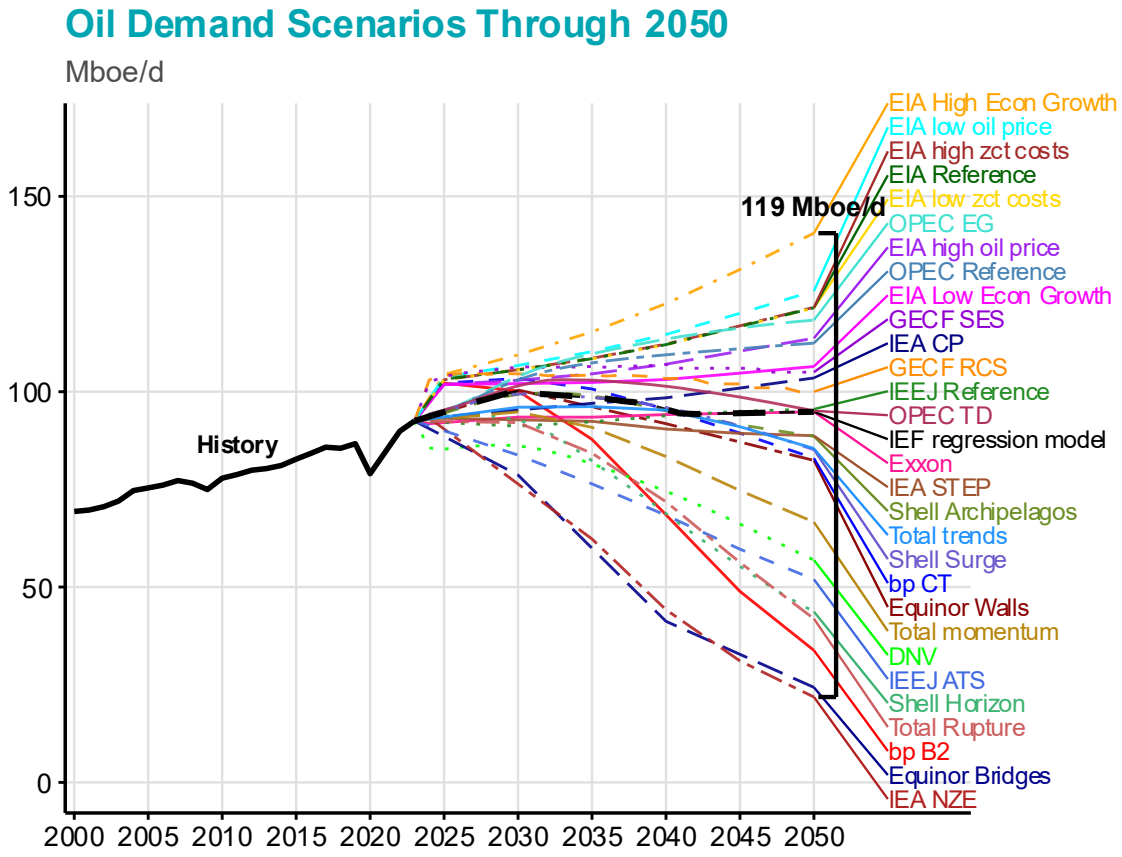
Renewable deployment remains a function of policy conditions rather than market incentives.

Most scenarios show renewables share range between 22 and 30 percent by 2050.

Scenarios show a 50/50 outlook for oil demand: Half projects sustained growth and half shows oil demand decline



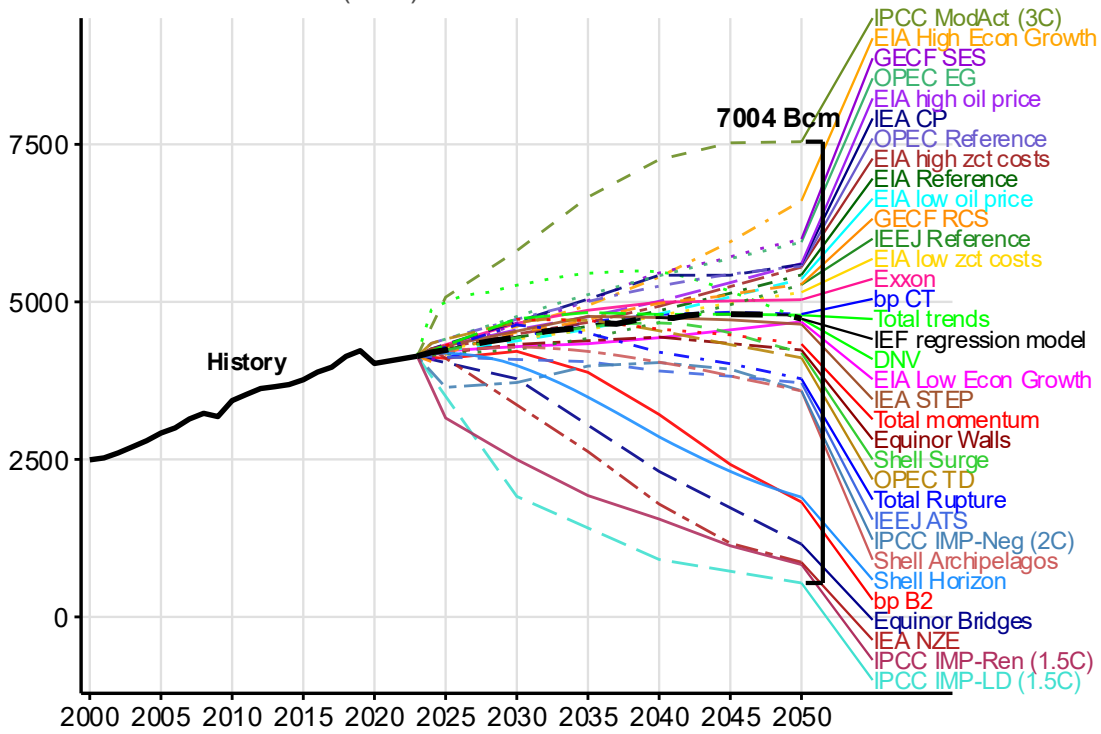
Despite strong demand fundamentals there is no convergence on oil demand trajectories across scenarios

Sources: IEF, IEA WEO 2025, OPEC WOO 2025, bp Energy Outlook 2025, TotalEnergies Energy Outlook 2025, DNV's Energy Transition Outlook 2025, GECF Global Gas Outlook 2025, Equinor Energy Perspectives 2025, IEEJ Outlook 2024, EIA IEO 2023, Shell Energy Security Scenarios 2025, and ExxonMobil Global Outlook 2025. Note: Some scenarios start after the historical series ends; their curves therefore begin at the first year each outlook reports projections.

Most scenarios see natural gas demand grow with the median showing 14 percent growth in natural gas demand by 2050

Natural Gas Demand Scenarios Through 2050

Billion cubic metres (Bcm)



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Natural gas demand increases by around 1.3% to more than 80% across growth scenarios.

Large uncertainties prevail over the projection period, also in growth markets.

Conclusions

New narratives look beyond emissions to resilience and growth

Though views on population growth align, total primary energy demand projections differ strongly

Demographic and other market trends conflict with energy demand declines of ambitious scenarios

The "*Per Capita Energy Demand Gap*" marks a critical energy access challenge

The IEF median of all 40 compared scenarios can help guide decisions under growing uncertainty

Thank you for your attention

This report was prepared in support of the 16th IEA IEF OPEC Symposium on Energy Outlooks