



**9<sup>th</sup> IEA-IEF-OPEC Outlook Symposium**  
**Comparative Analysis Findings**

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# Flow

1. Short-term IEA and OPEC outlooks
2. Medium-term IEA and OPEC outlooks
3. Long-term IEA and OPEC outlooks
4. Distinct Views in IEA and OPEC Outlooks
5. Remarks on outlook comparability

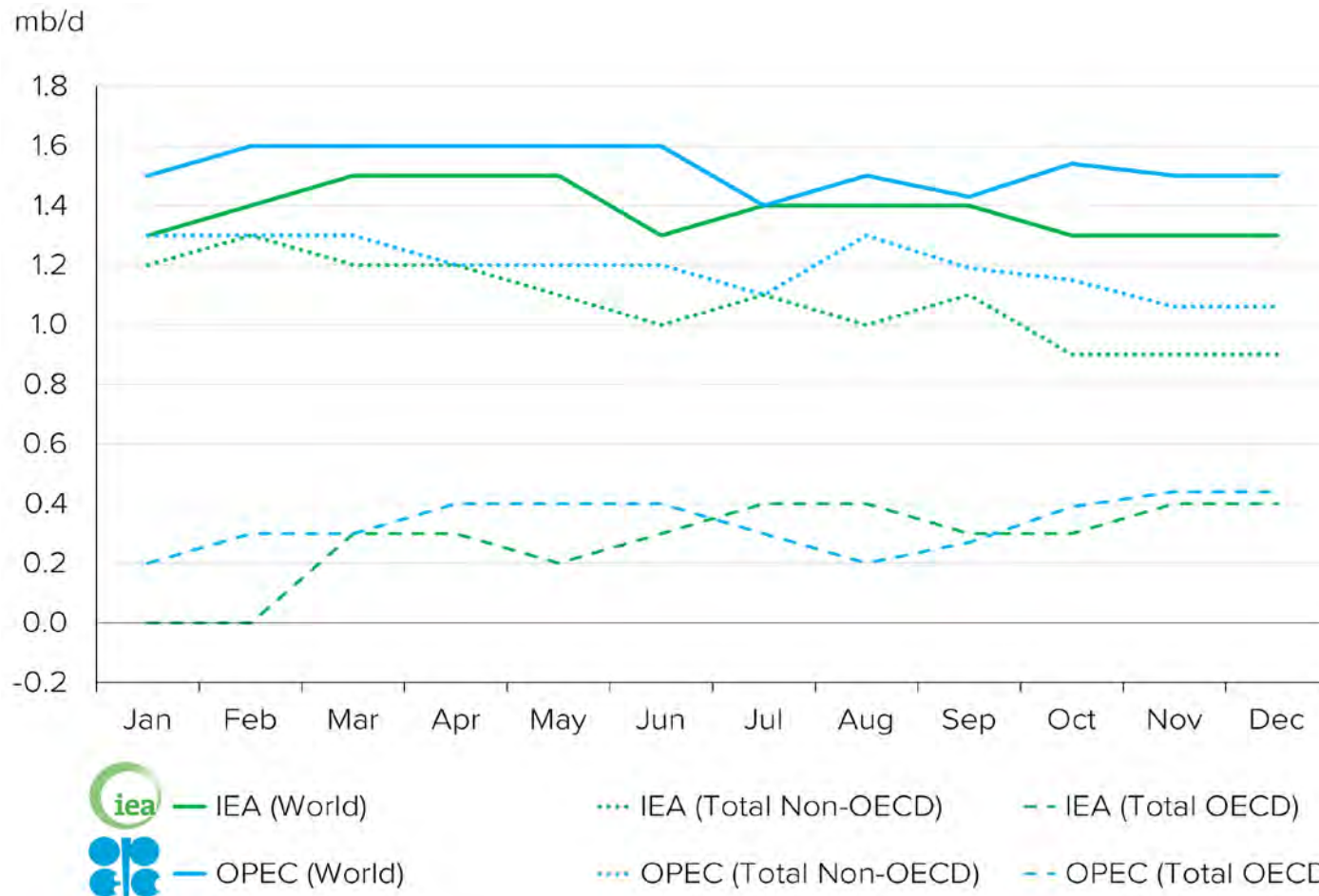


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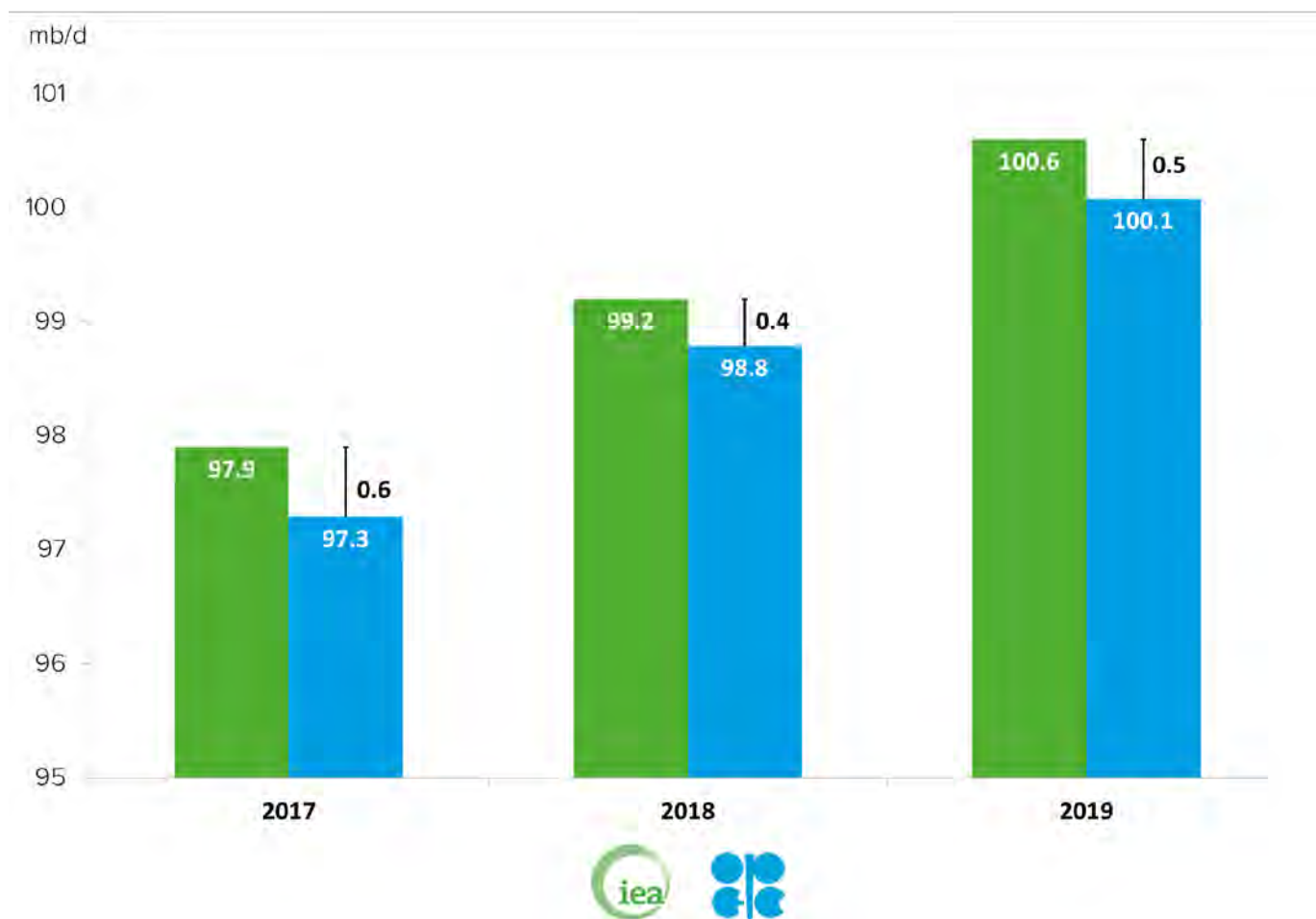
# IEA and OPEC revised non-OECD demand down and note an upswing in OECD demand growth

Monthly Revisions of Annual Estimates for 2018 World, OECD, and Non-OECD Liquids Demand Growth



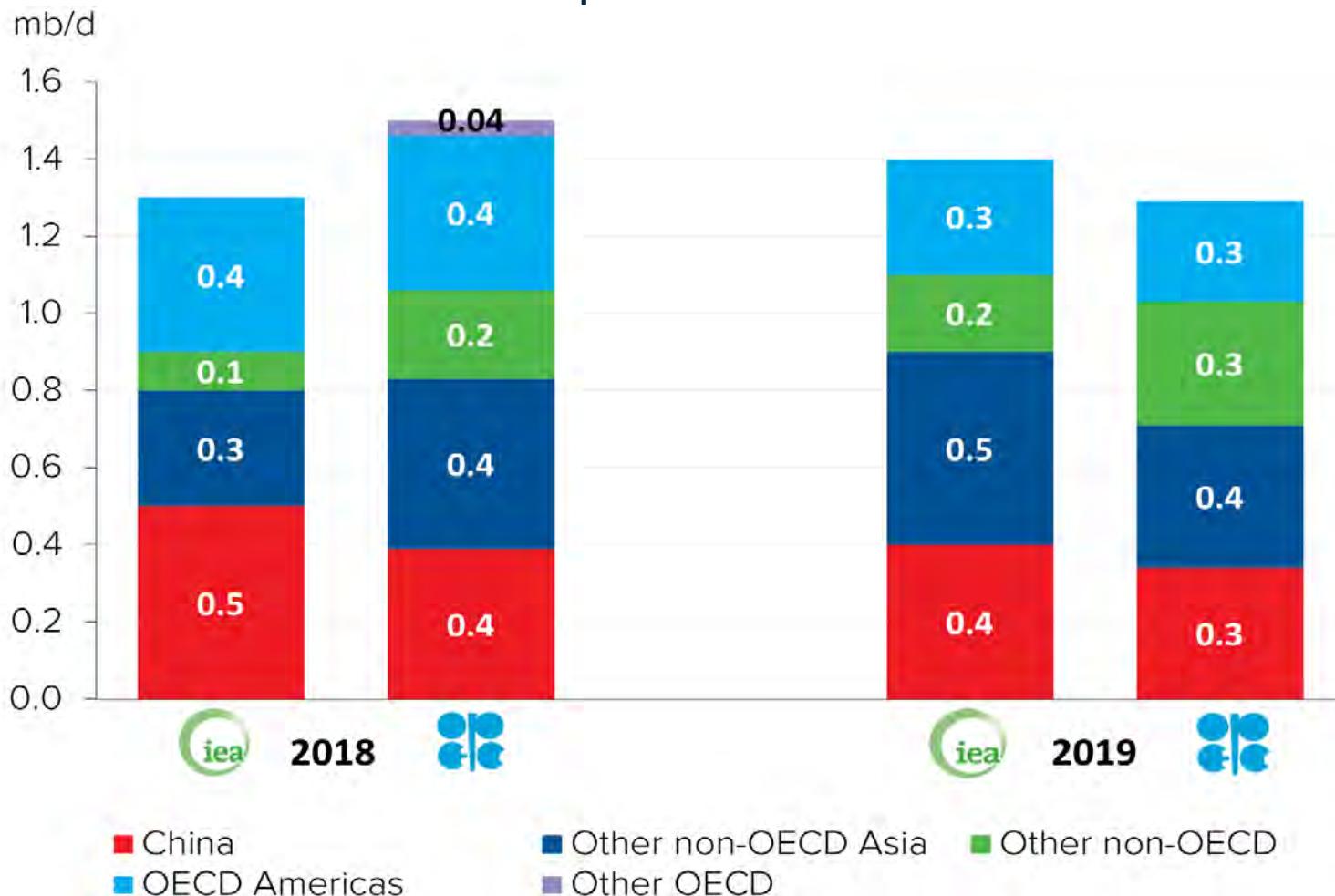
# Global oil demand continues to grow but at a slower pace, differences in base year liquids demand data are smaller

Short-term World Liquids Demand: 2017-2019



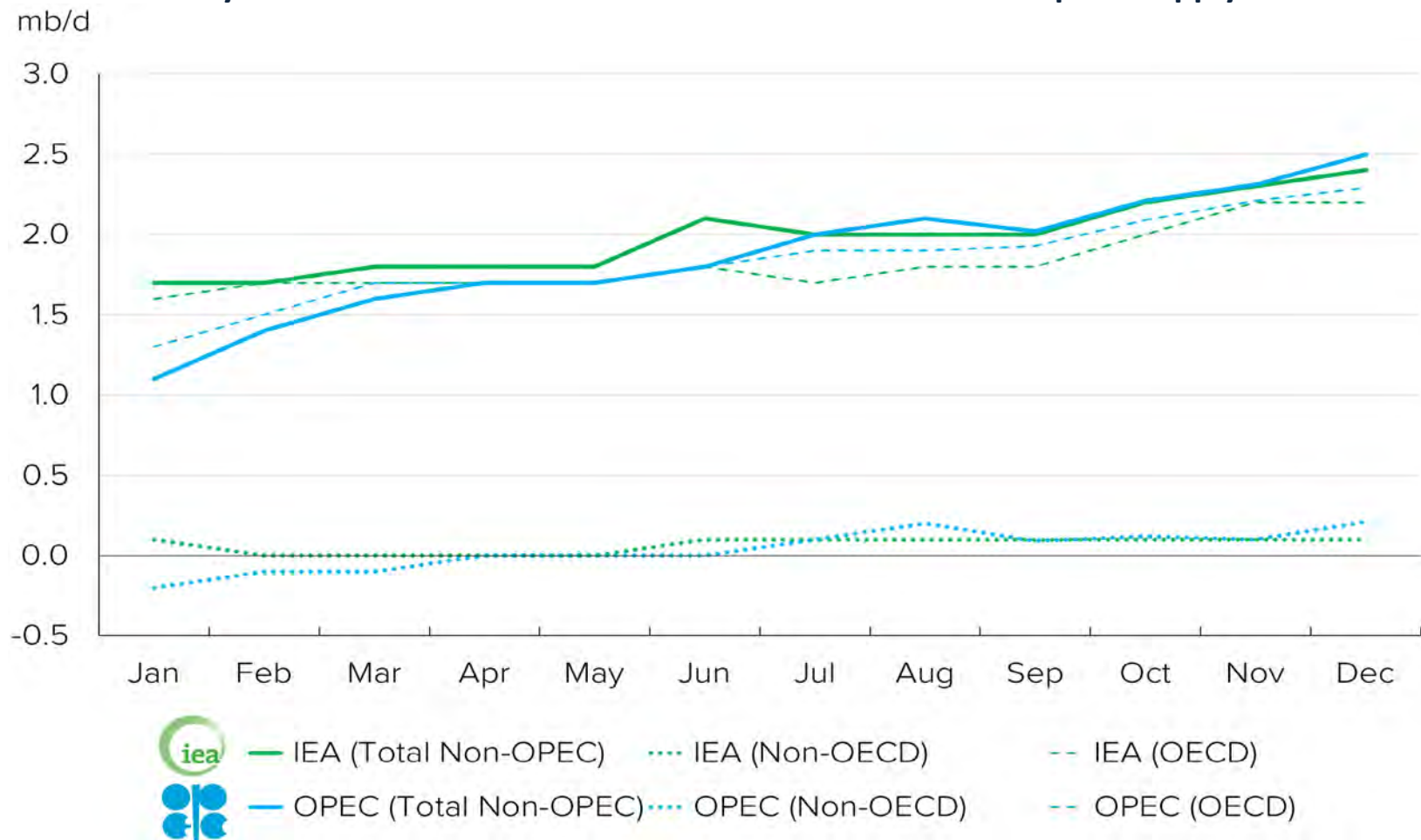
# The IEA is more bullish on demand growth in China and Latin America than OPEC

Short-term World Liquids Demand Annual Growth



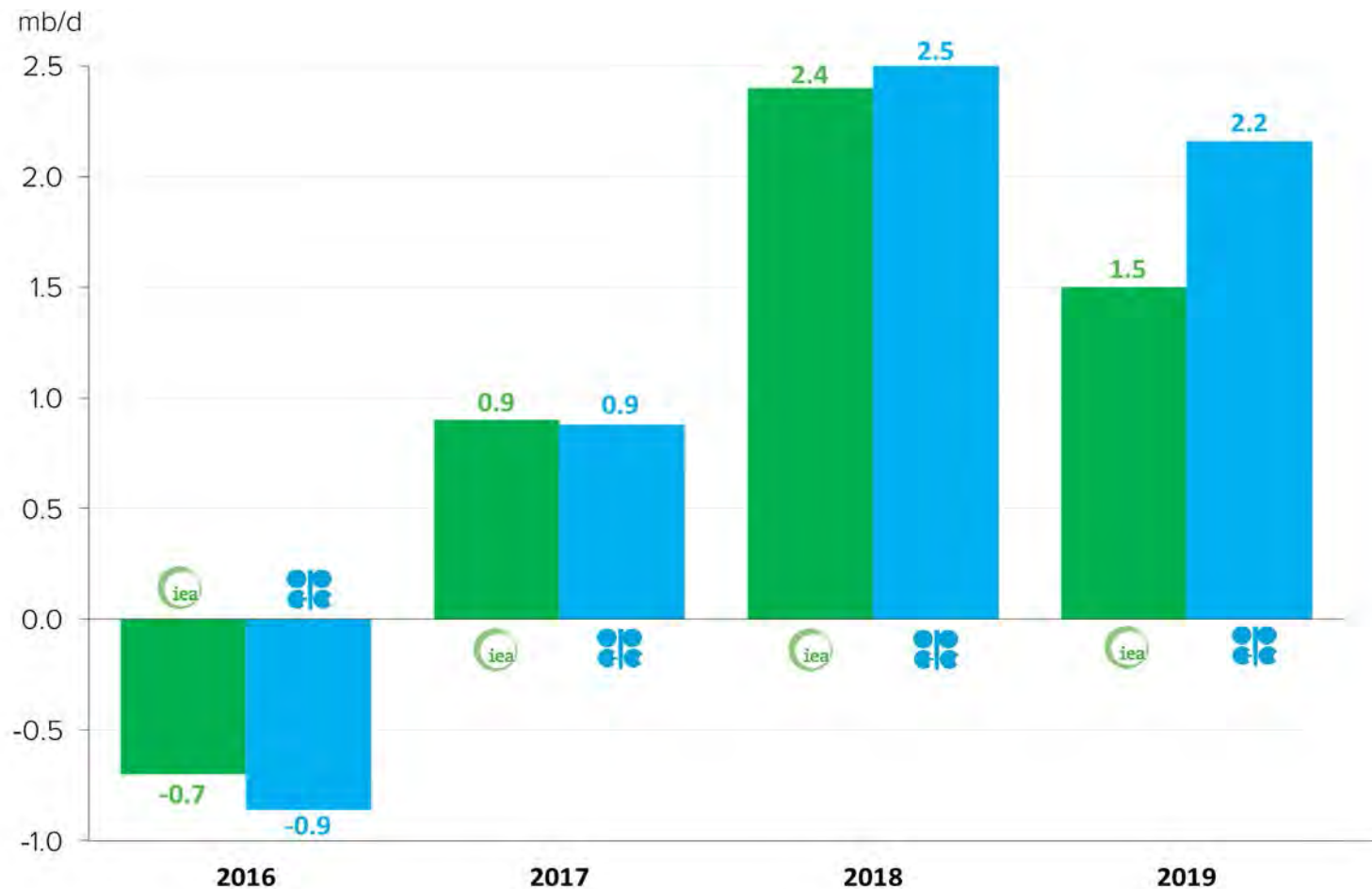
# Large revisions in Non-OPEC liquids projections in 2018 show the world is still on a tight oil learning curve

Monthly Revisions of Annual Estimates for 2018 Non-OPEC Liquids Supply Growth



# Non-OPEC supplies will increase further still in 2019 when assessments differ by 0.7 mb/d in 2019

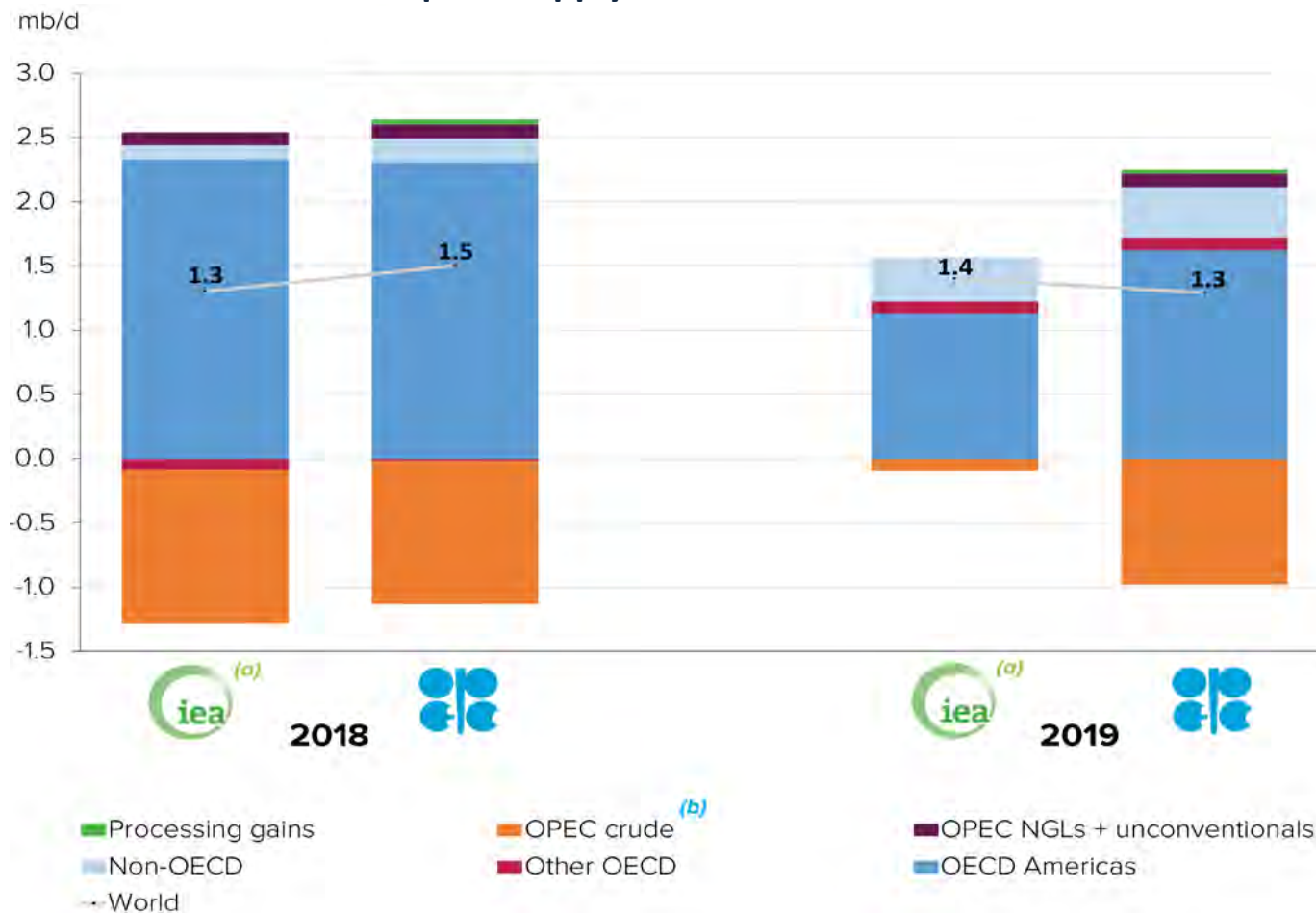
## Short-term Non-OPEC Liquids Supply Annual Growth





# Different views on OECD Americas growth and OPEC supply adjustments determine 2018 and 2019 supply

Short-term Liquids Supply Net Annual Growth Forecasts

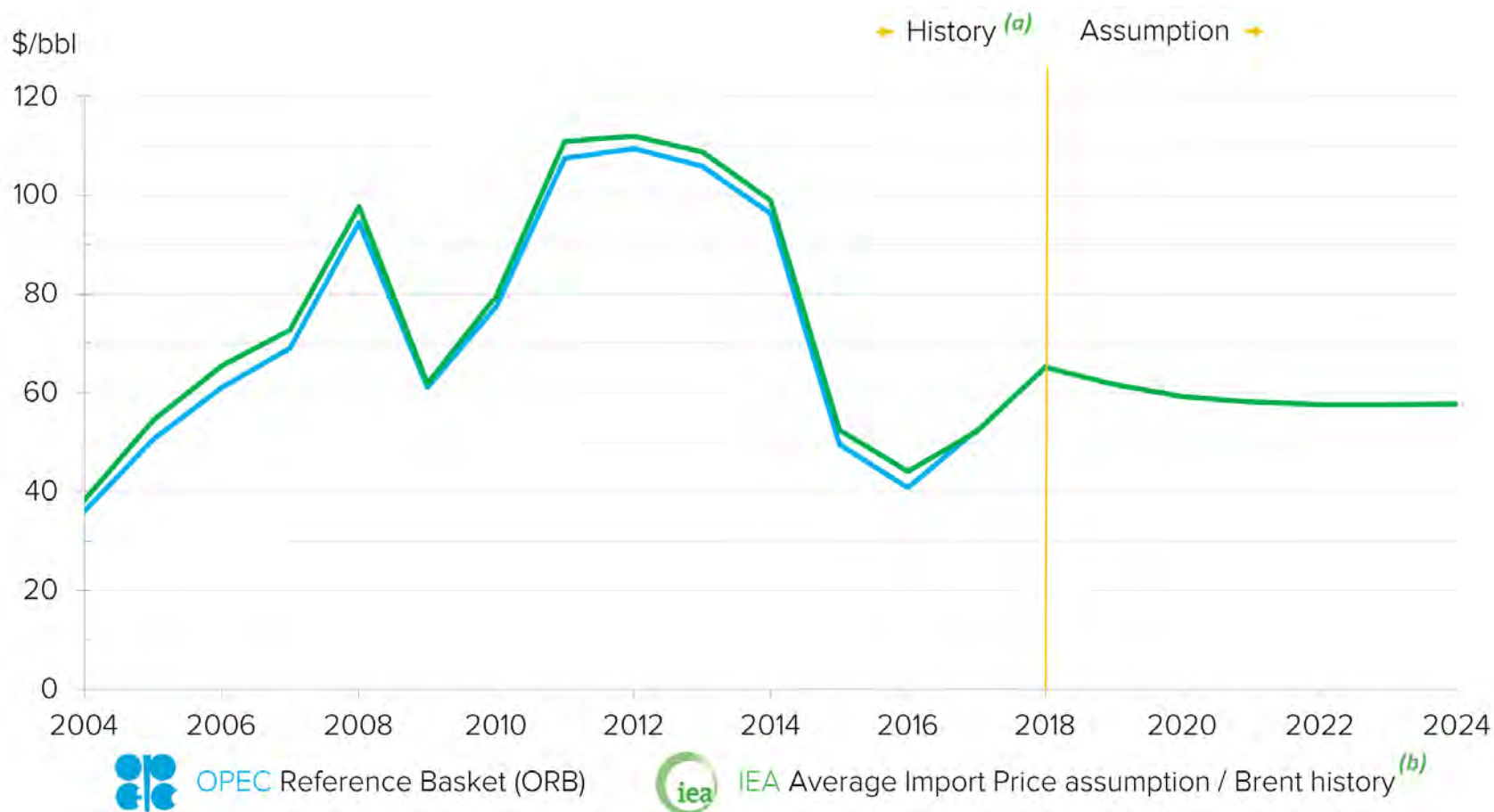


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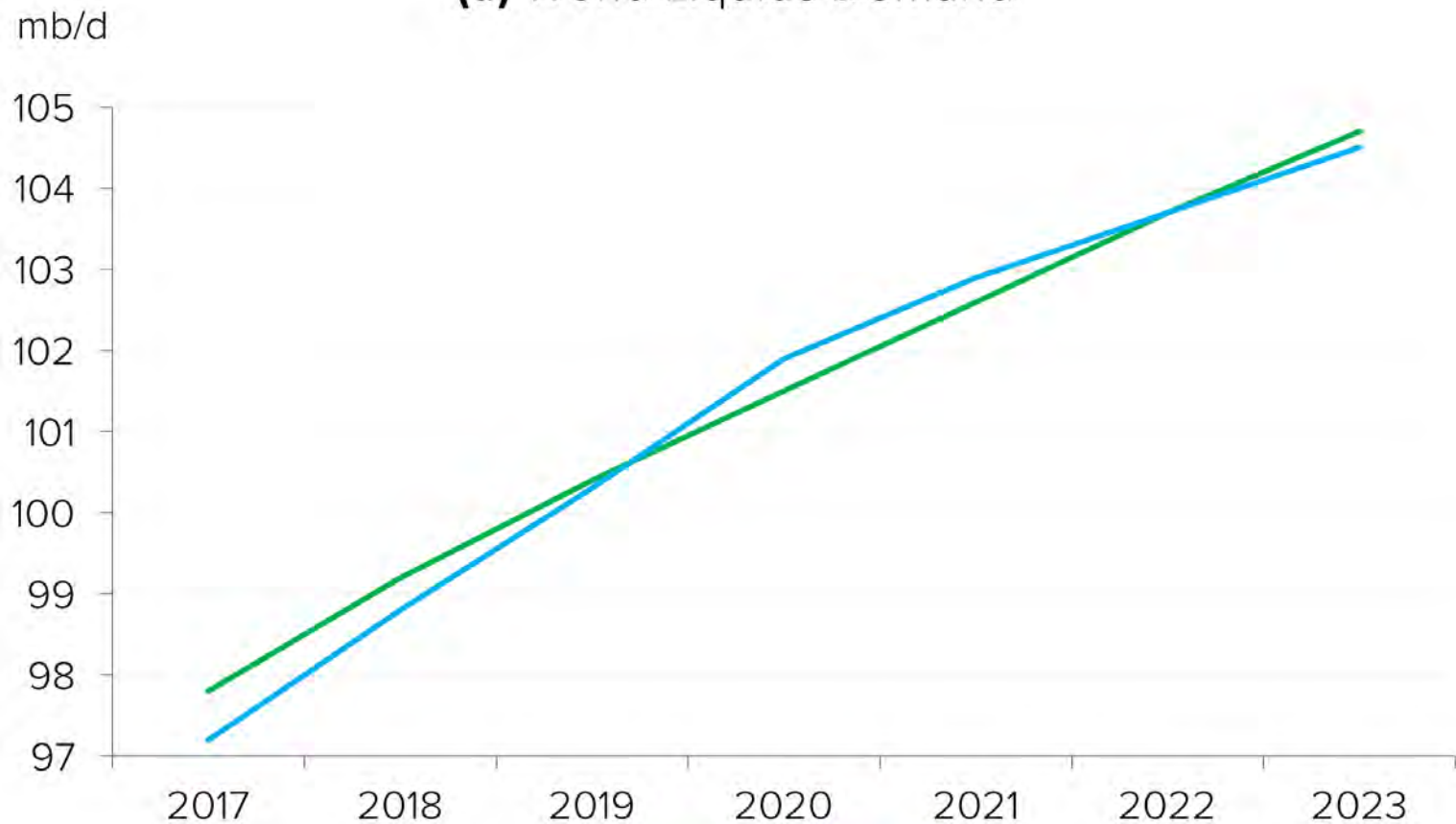
# IEA has kept medium-term price assumptions unchanged, OPEC does not publish price assumptions since 2017

## Medium-term Oil Price Assumptions (nominal US\$)



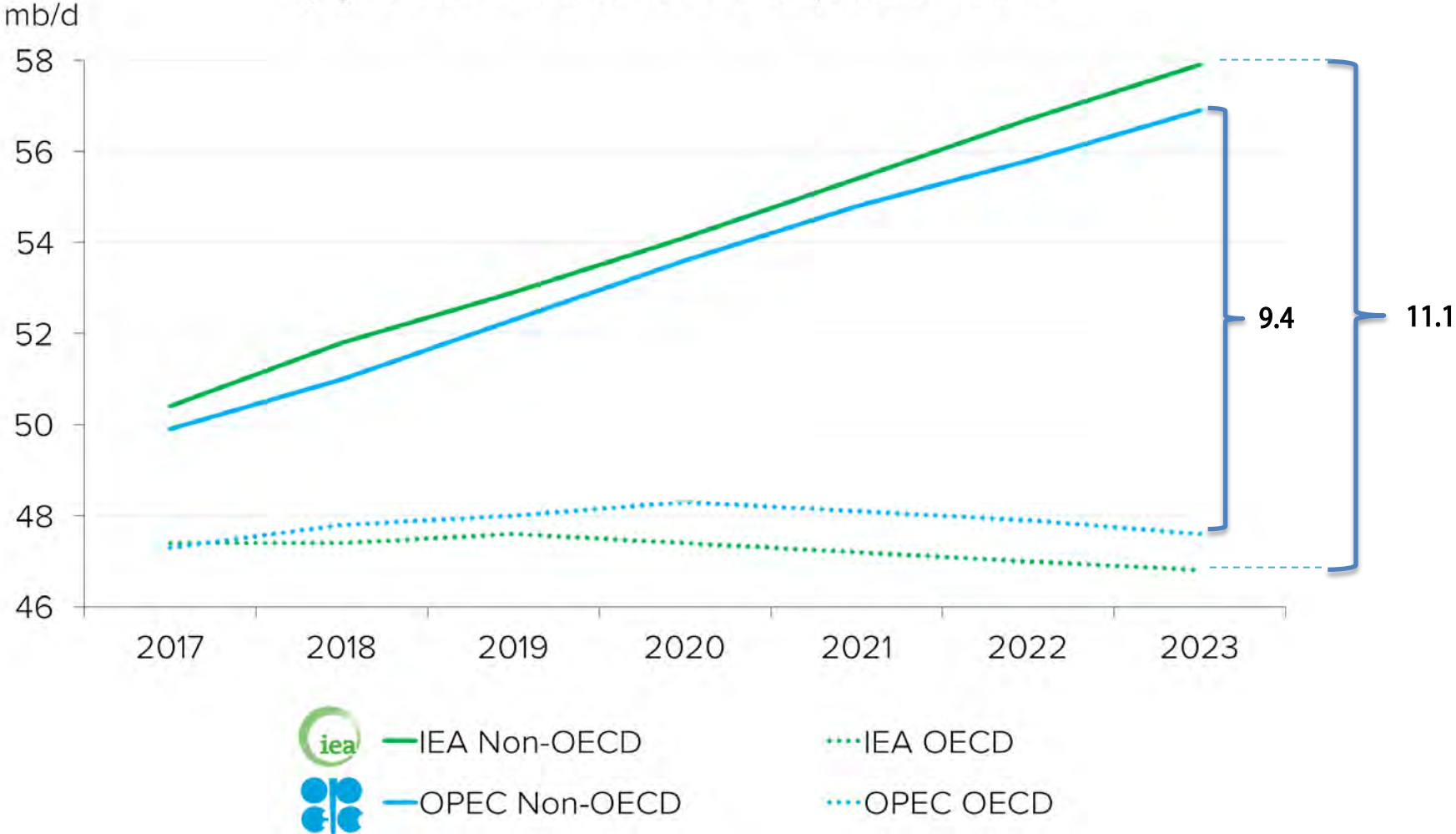
# Both the IEA and OPEC project annual average growth of 1.2 mb/d in global liquids demand

(a) World Liquids Demand



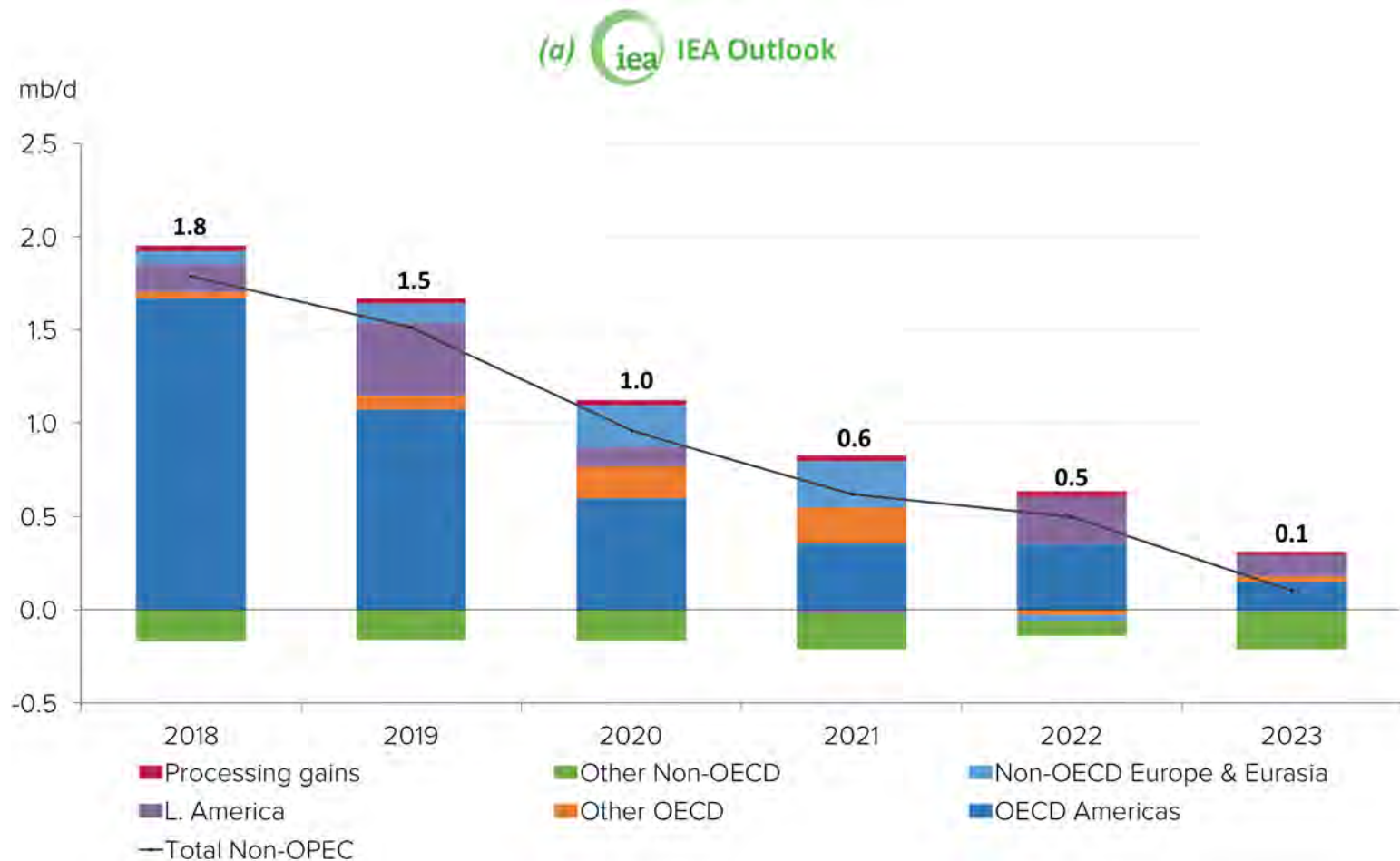
# By 2023 the non-OECD consumes 9.4 mb/d and 11.1mb/d more than the OECD under OPEC and IEA projections

(b) OECD and Non-OECD Liquids Demand



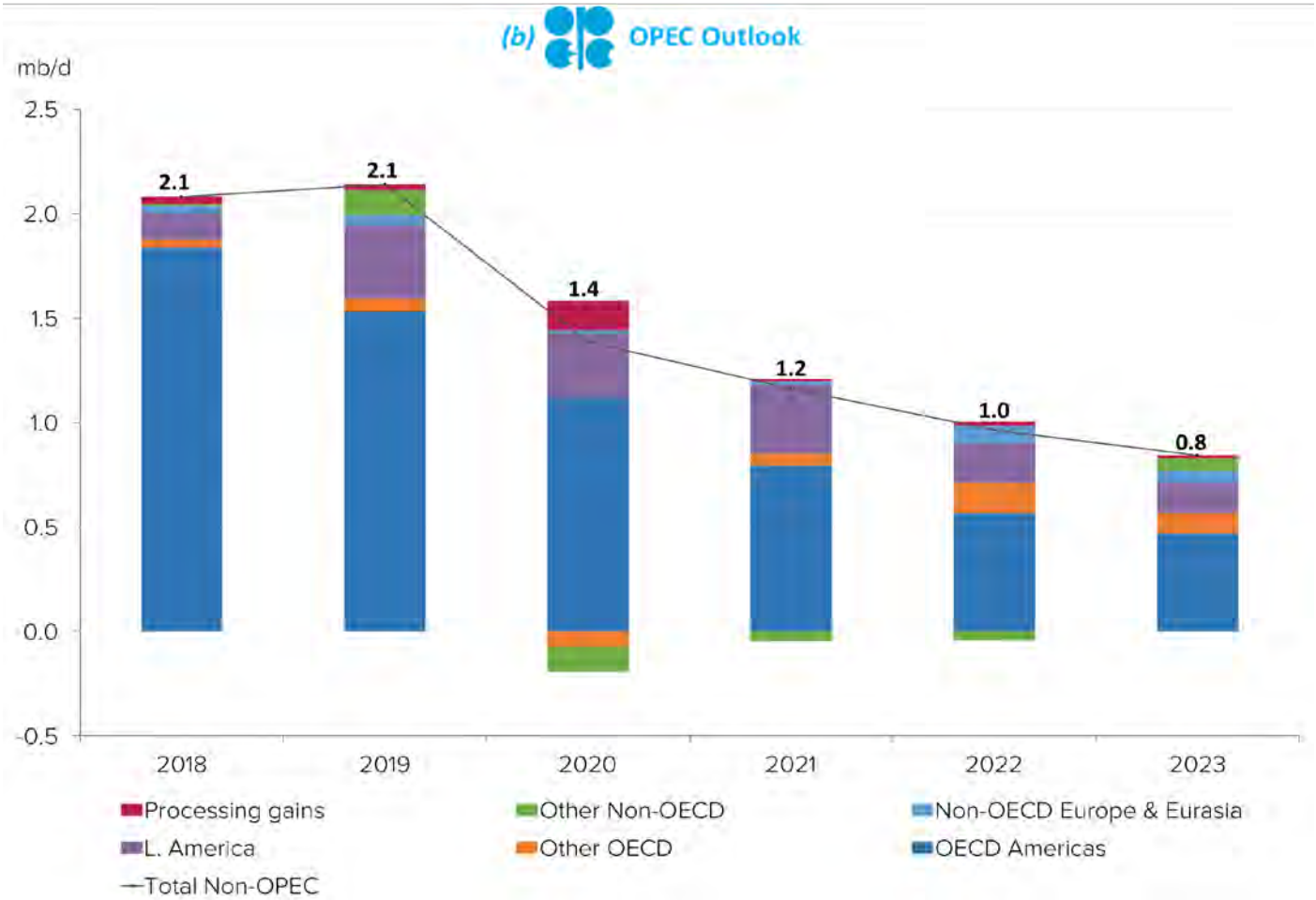
# IEA projects non-OPEC growth slows to a cumulative net increase of 5.5 mb/d to 2023 (but higher than last year)

## Medium-term Non-OPEC Liquids Supply Annual Growth



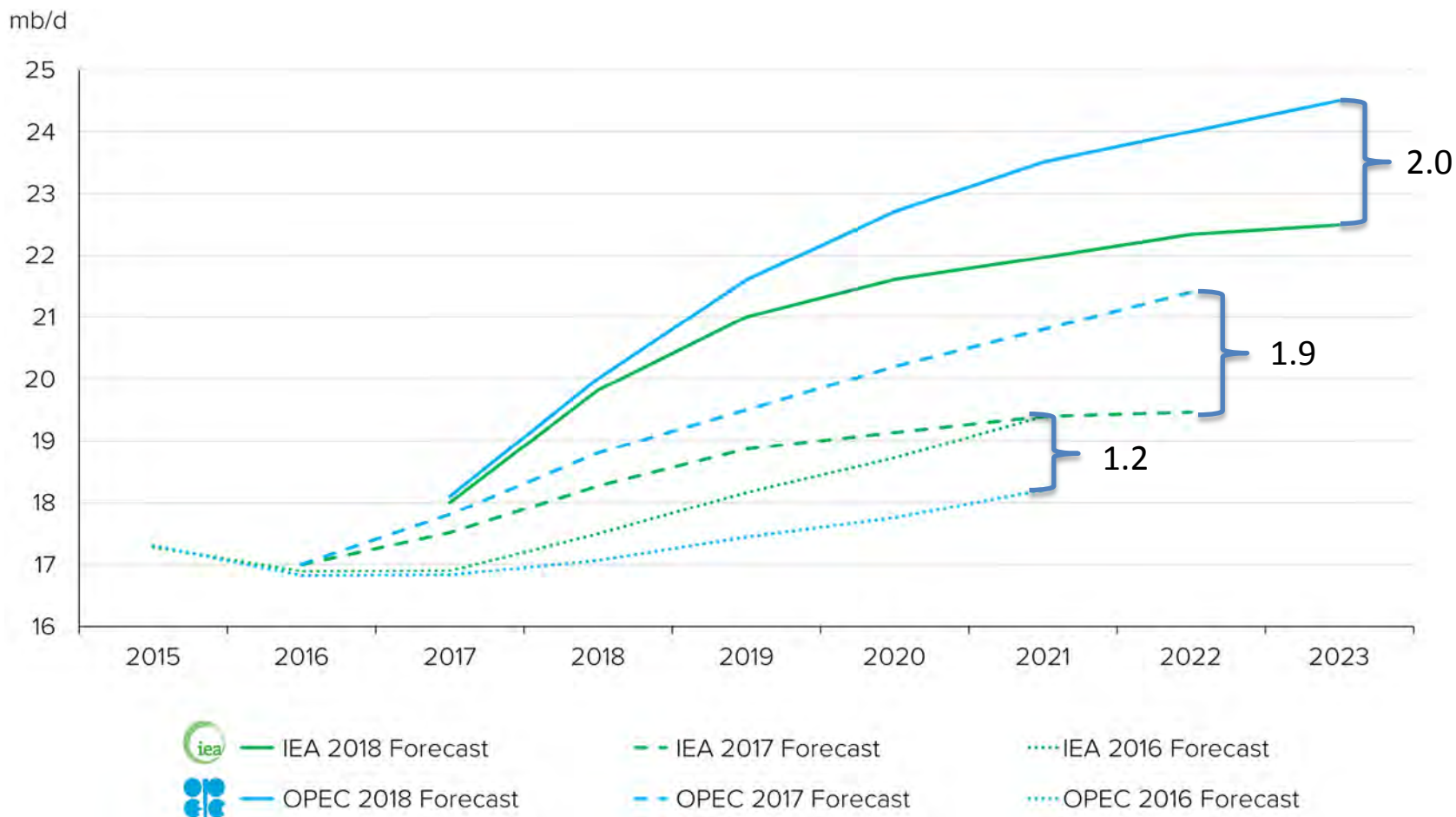
# OPEC projects non-OPEC growth to slow to a cumulative net increase of 8.6 mb/d (but higher than last year)

Medium-term Non-OPEC Liquids Supply Annual Growth



# IEA and OPEC difference on US and Canadian supply grows to 2.0 mb/d in 2023

Medium-term US and Canadian Oil Supply (excluding biofuels)





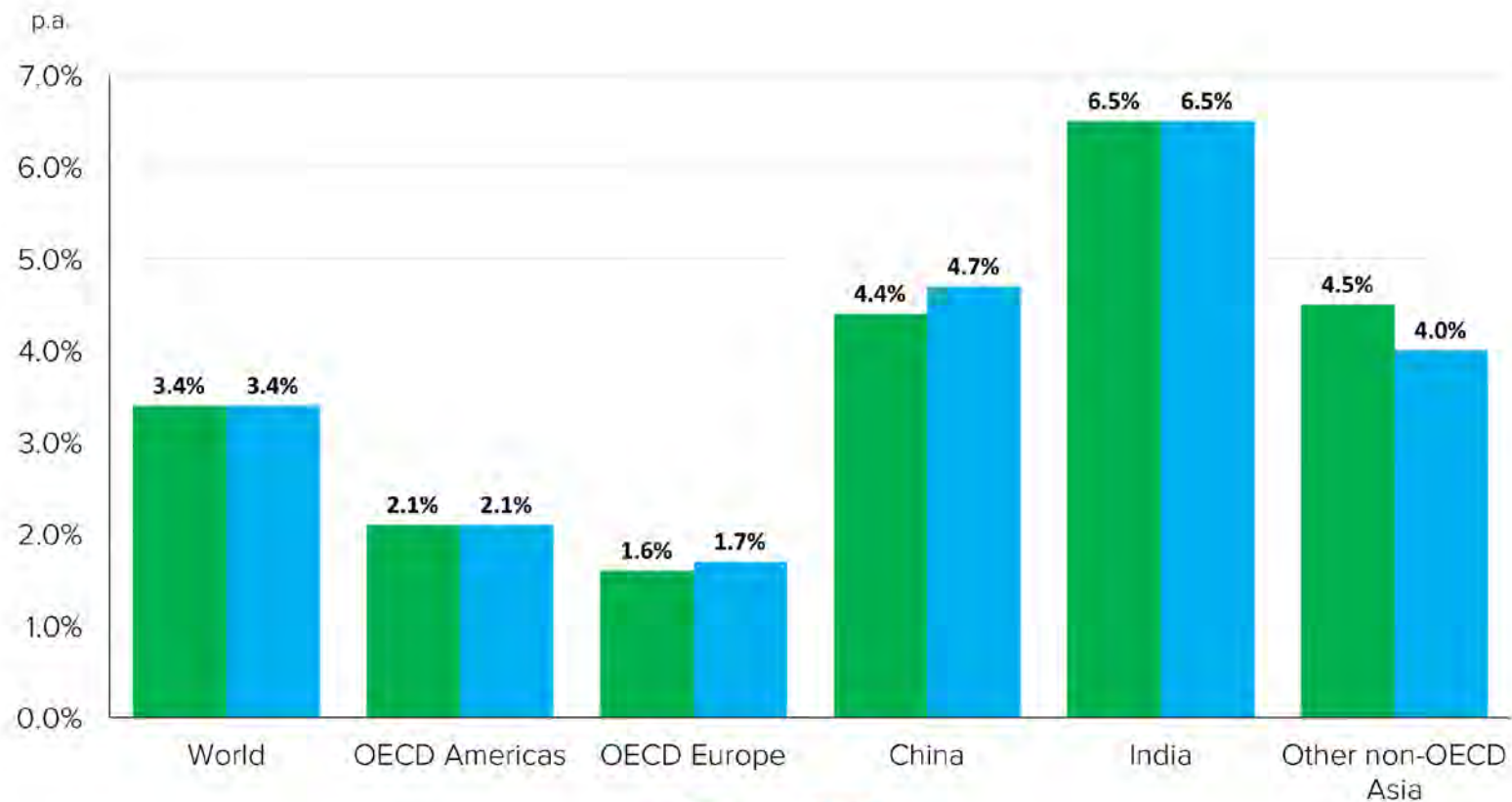
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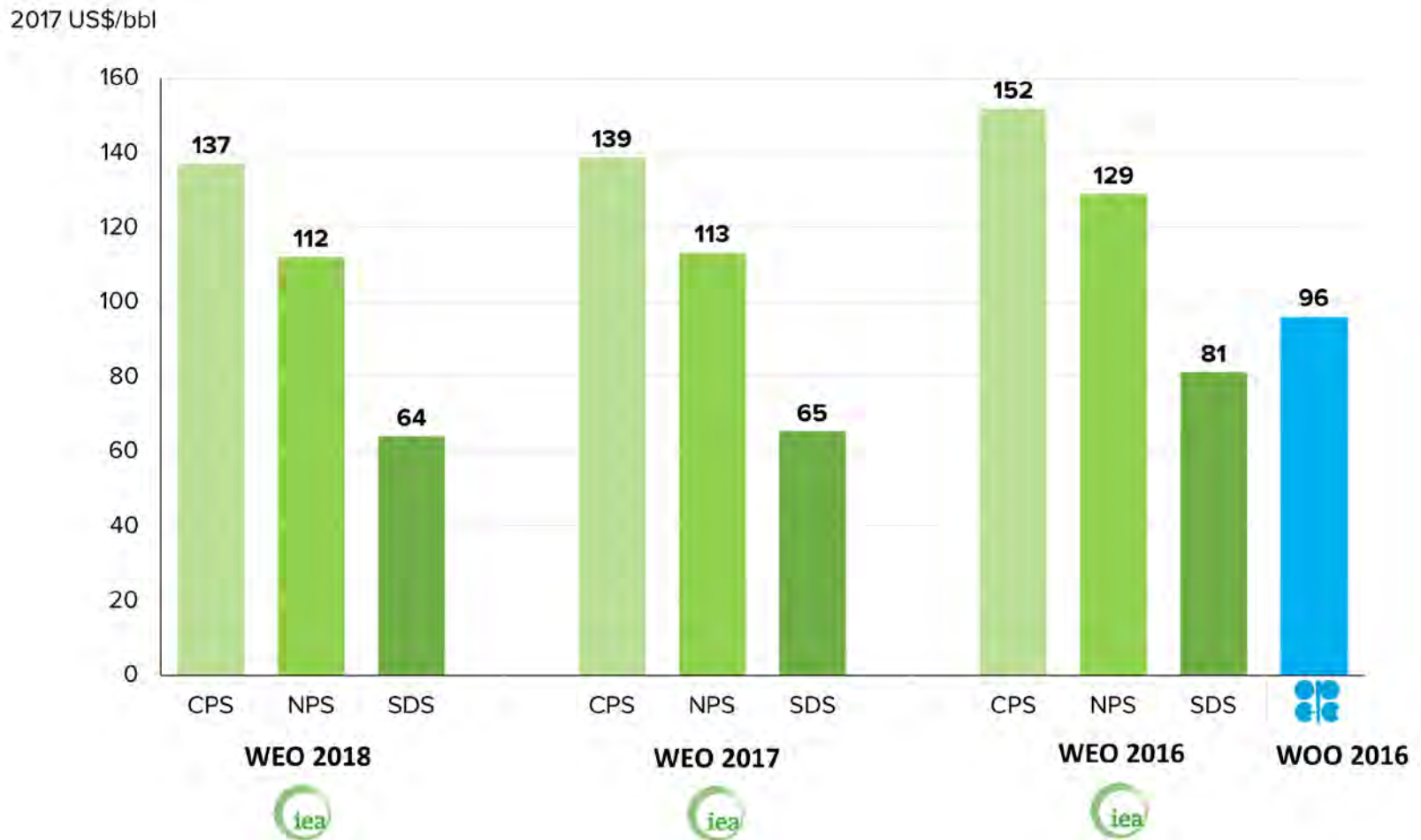
# OPEC projects stronger GDP growth in OECD Europe and China while IEA is more bullish on Other non-OECD Asia

Long-term GDP Growth Assumptions for Selected Regions



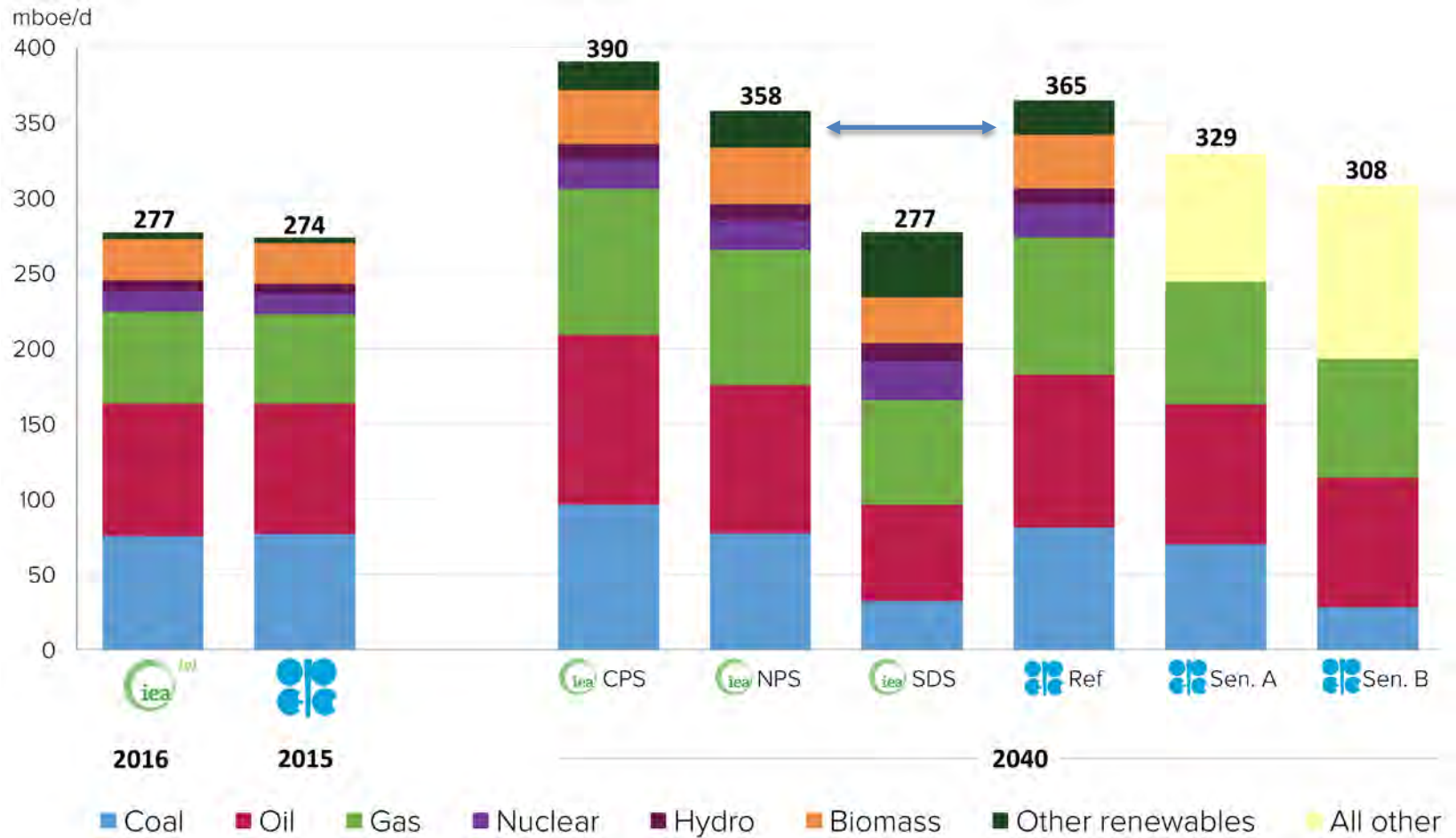
# IEA's long-term oil price assumptions are highest in the current policies scenario, similar to last year, but below 2016 estimates

Long-Term Oil Price Assumptions (real 2017 US\$/bbl)



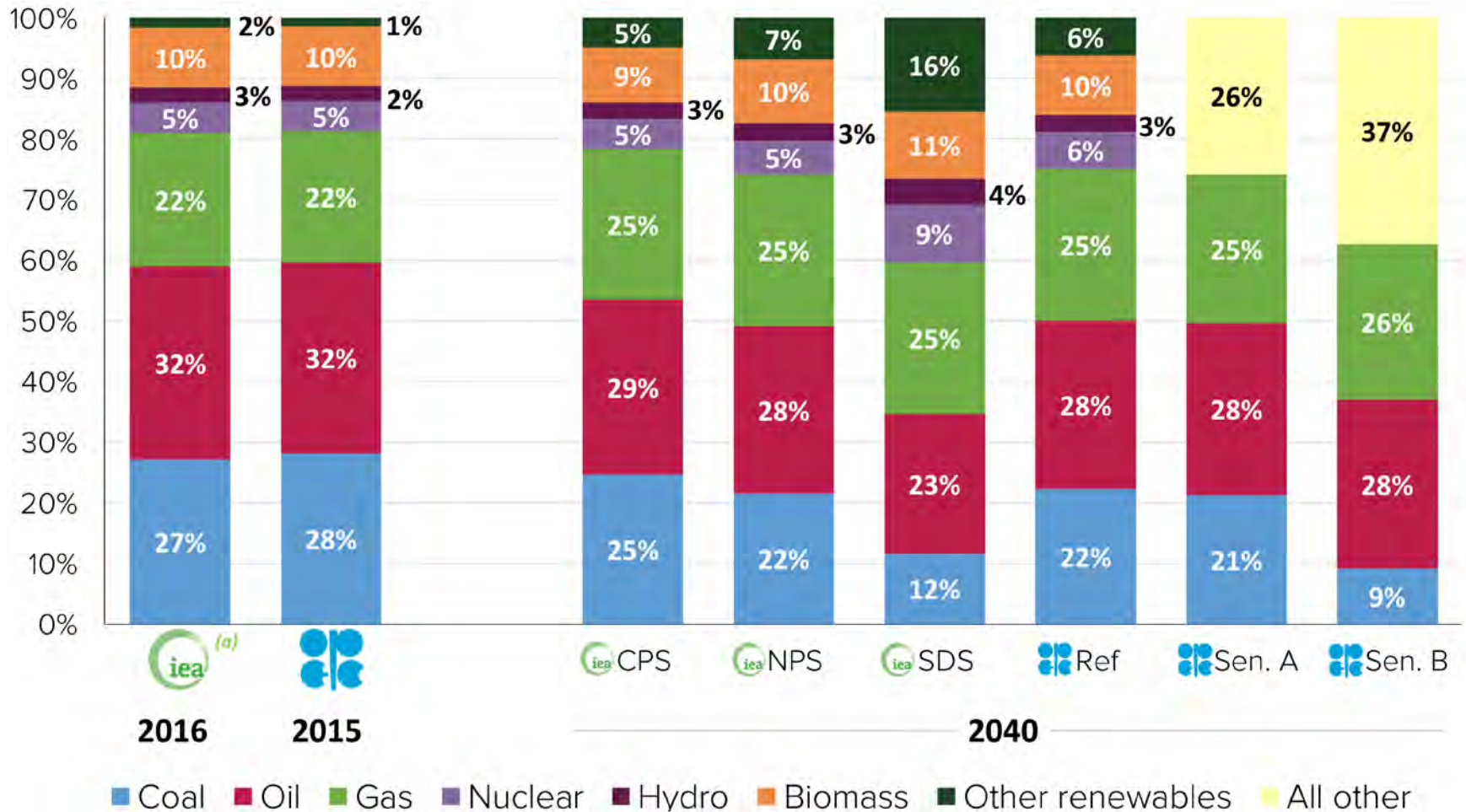
# OPEC's Reference Case is close to IEA's New Policy Scenario, alternate scenarios show lower hydrocarbon demand

World Primary Energy in 2015/16 and Outlook for 2040 (mboe/d)



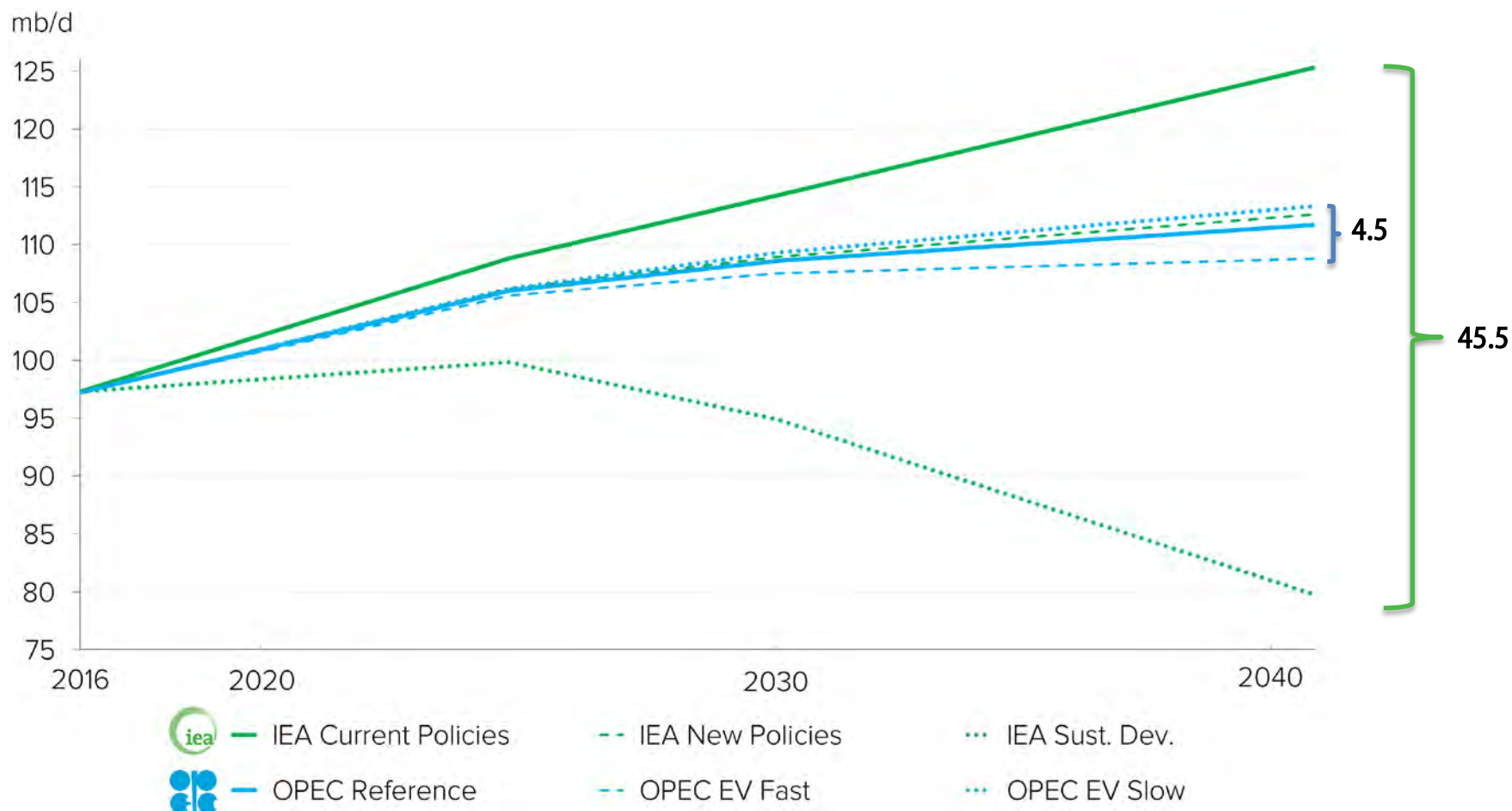
# Oil shares remain unchanged in OPEC scenarios, IEA's SDS corresponds with OPEC Sensitivity B Analysis

World Primary Energy Fuel Shares in 2015/16 and Outlook for 2040



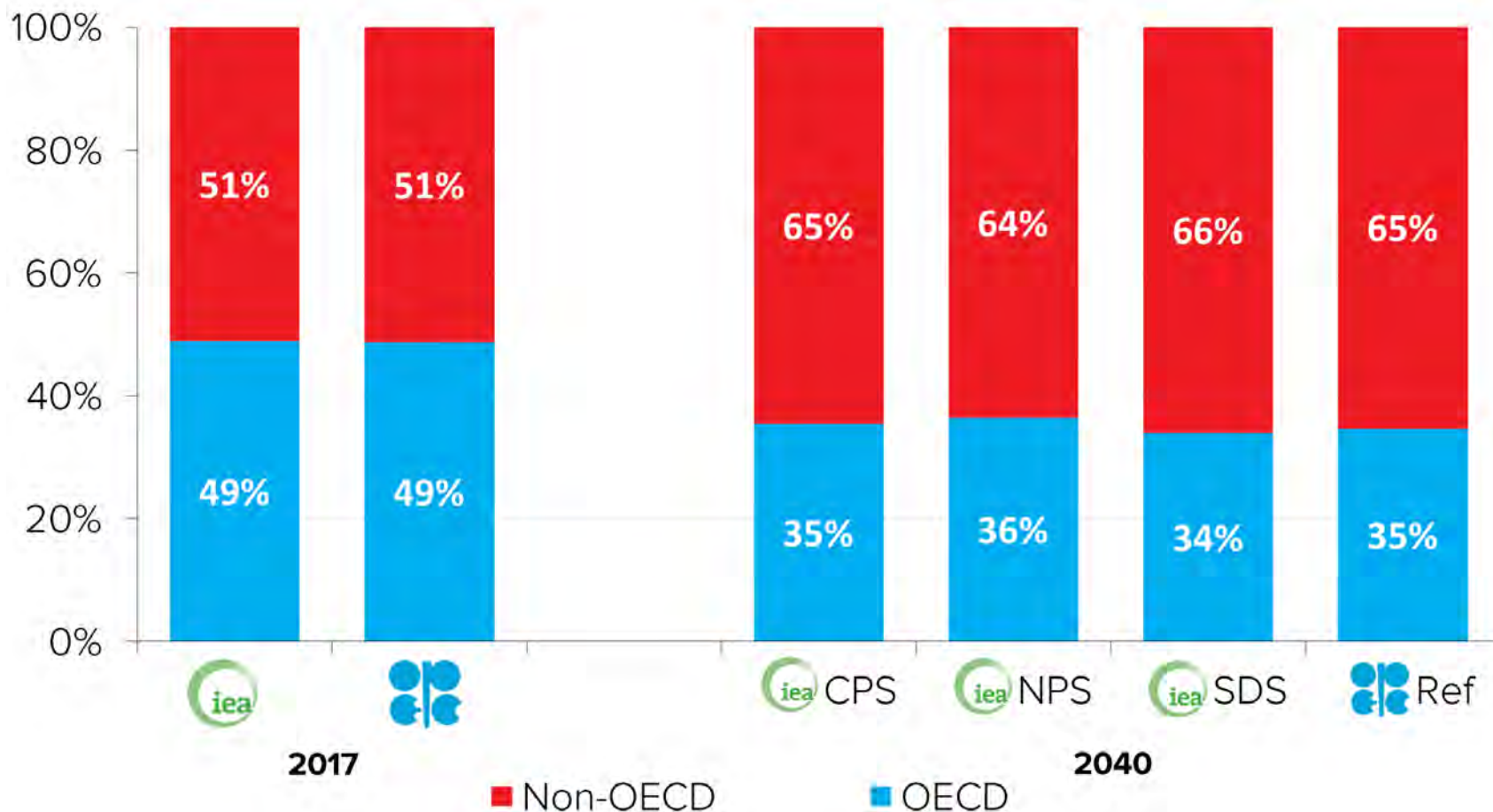
# IEA projections vary by 45.5 mb/d compared to 42 mb/d last year OPEC's scenarios range within 4.5 mb/d

World Liquids Demand Projections in Various Scenarios (mb/d)



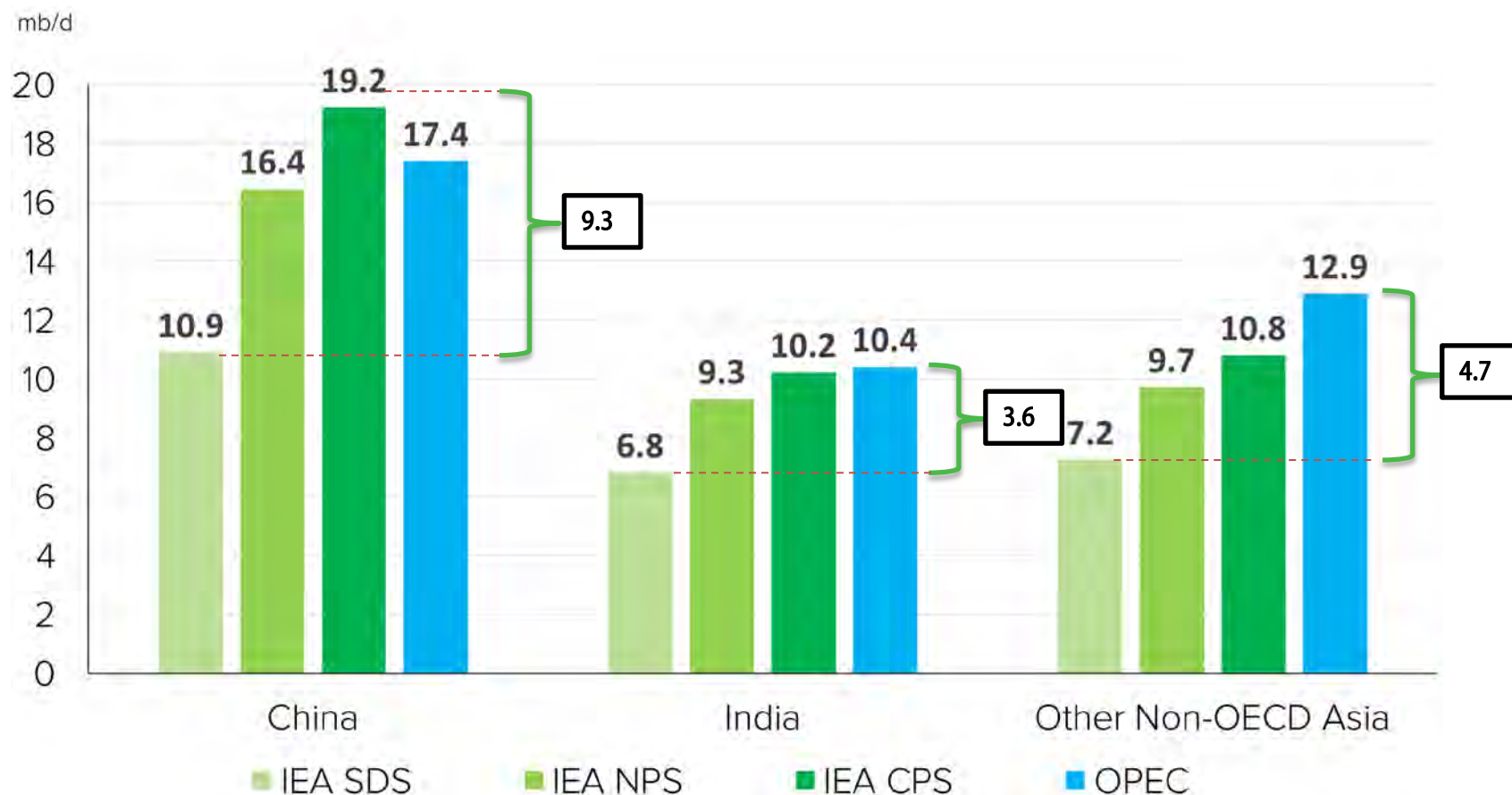
# IEA and OPEC agree that OECD oil demand declines are more than offset by robust demand growth in the Non-OECD

OECD and Non-OECD Shares of Liquid Demand



# But IEA and OPEC liquids demand projections vary; most for China and non-OECD Asia, by 9.3 and 4.7 mb/d respectively

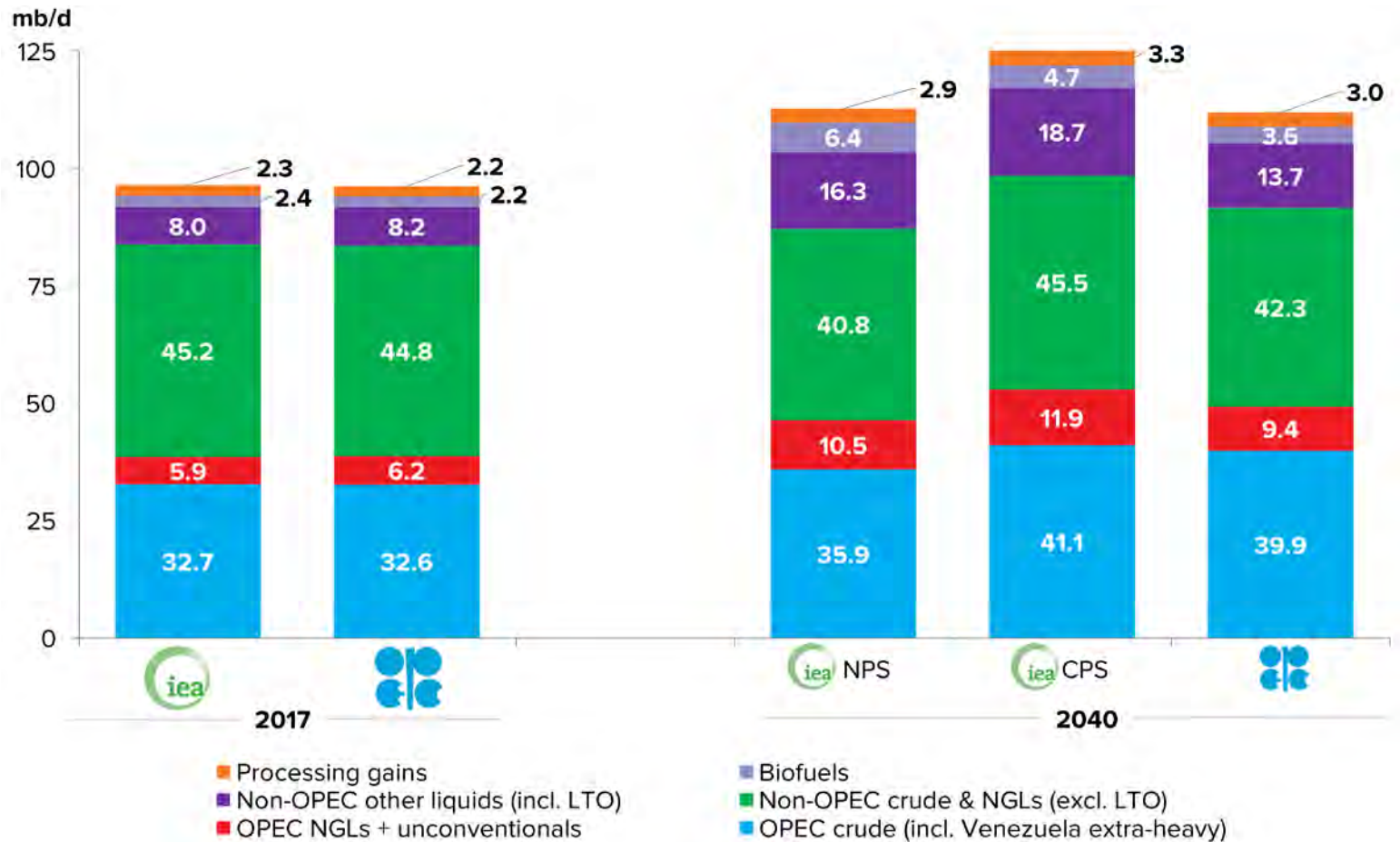
Non-OECD Asia Liquids Demand Projections in Various Long-Term Scenarios (mb/d)





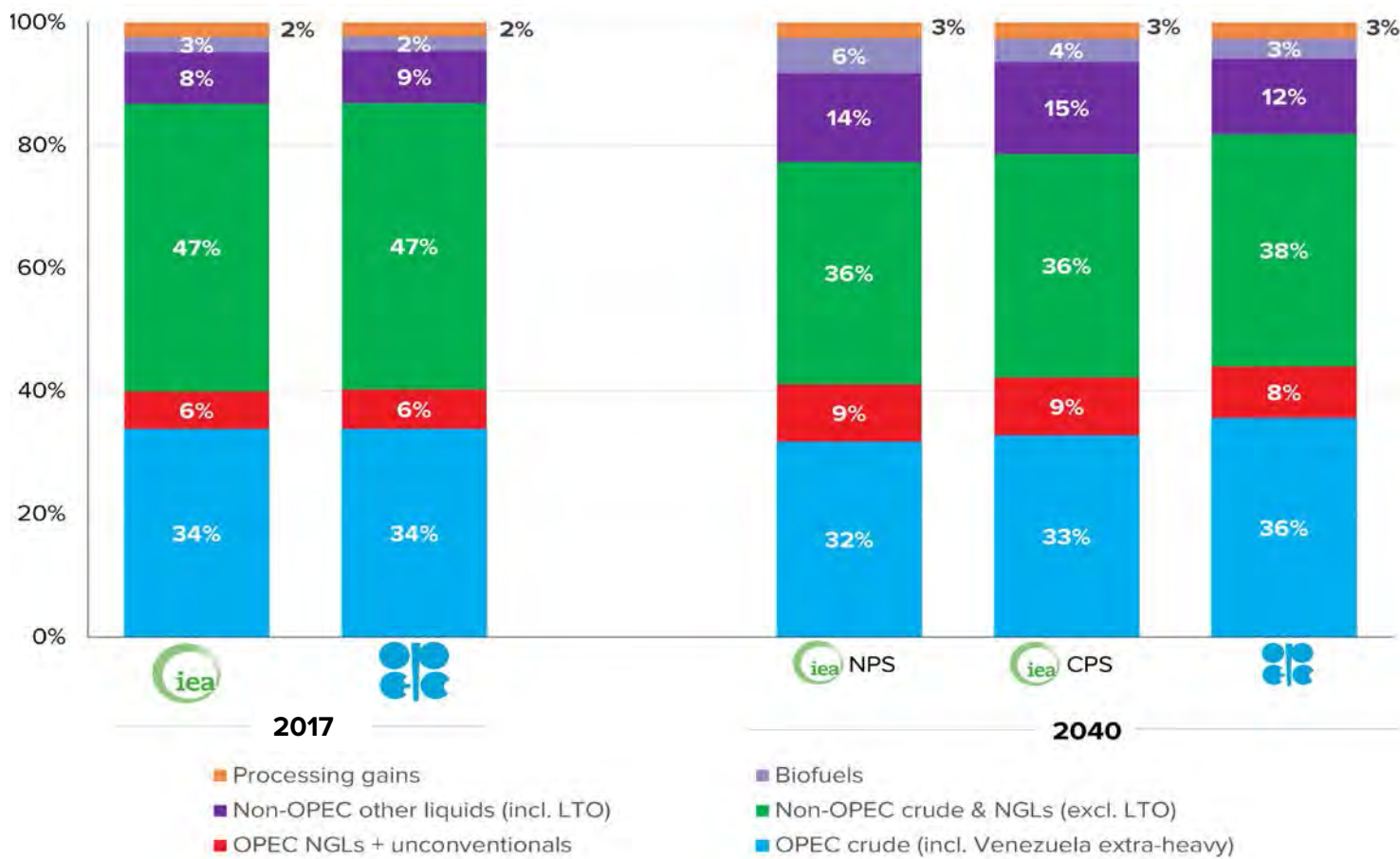
# OPEC and IEA project the majority of growth to come from LTO, Non-OPEC crude and NGLs, and OPEC production

Liquids Supply Sources in 2017 and Outlook for 2040 (mb/d)



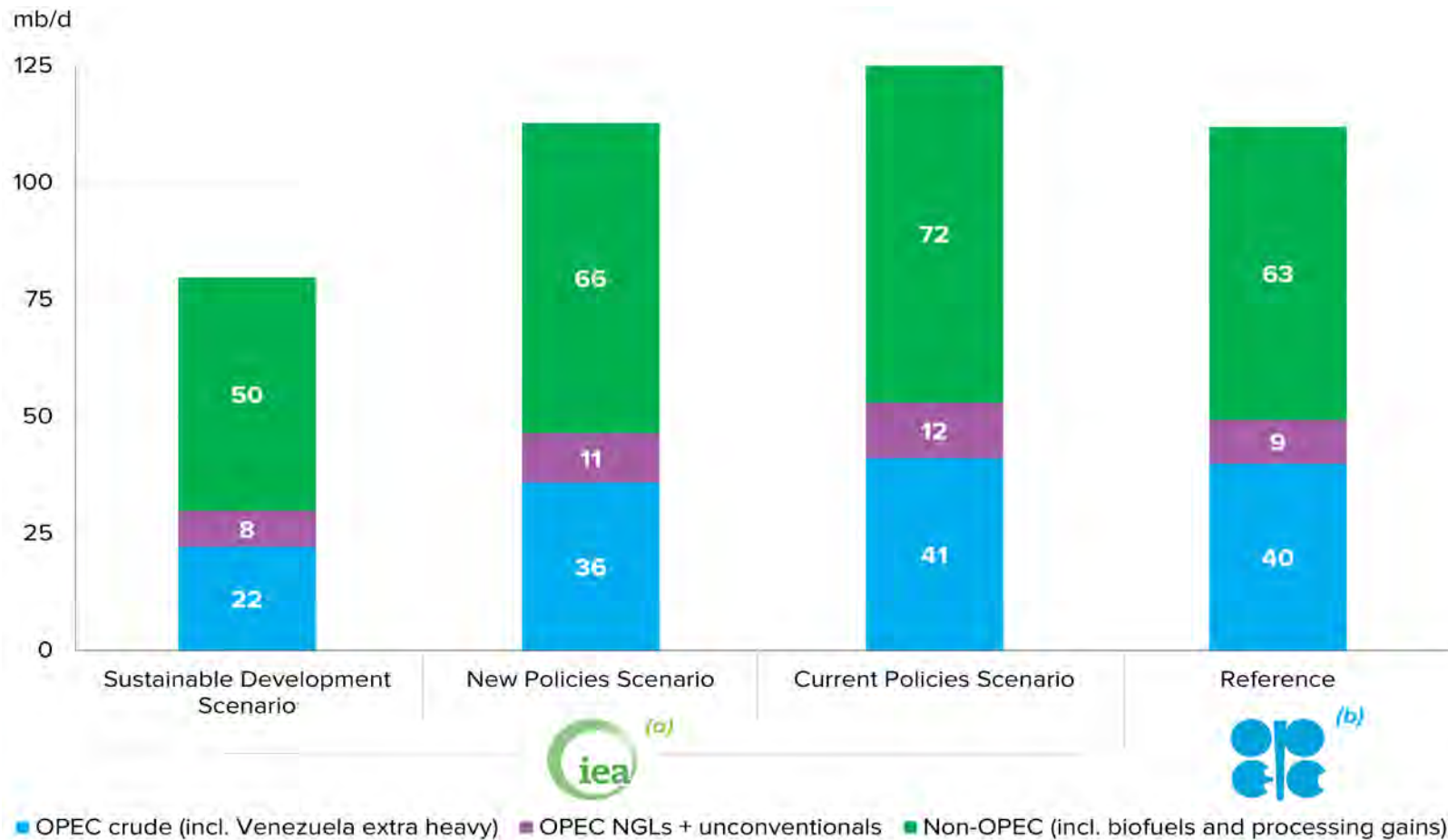
# The IEA steadies OPEC's share, but OPEC shows growth. Other categories compensate fall in Non-OPEC crude & NGLs

Share of Liquids Supply by Types in 2017 and Outlook for 2040



# IEA and OPEC long-term oil supply scenarios vary strongly from the highlighting differences in scenario assumptions

2040 Liquids Supply Outlook in Different Scenarios (mb/d)



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## 10 Distinct Views in IEA OPEC Outlooks (1/2)

1. Both the IEA and OPEC project world liquids demand and supply to cross the 100 mb/d threshold in 2019.
2. Global oil demand continues to grow, though at a slightly lower pace than in recent years; IEA and OPEC project 1.4 mb/d, and 1.3 mb/d in 2019.
3. Liquids supply assessments diverge by 0.4 mb/d in 2018 and 0.5 mb/d in 2019 largely on account of OECD Americas and the FSU.
4. OPEC and the IEA project non OPEC liquids supply to increase by 2.2 mb/d and 1.5 mb/d in 2019 respectively driven by OECD Americas.
5. US tight oil has continued to surprise to the upside over the past two years.



## 10 Distinct Views in IEA OPEC Outlooks (2/2)

6. IEA and OPEC difference on US and Canadian supply growth outlooks reaches 2.0 mb/d in 2023.
7. OPEC projects non-OPEC production to increase by 8.6 mb/d while the IEA forecasts a rise of 5.5 m/d by 2023.
8. Alternative IEA and OPEC scenarios show hydrocarbon demand's resilience over the longer term.
9. Renewables' shares lie far apart, ranging from 17% to 31% across scenarios to 2040.
10. Security of demand weakens over the longer term as variance between baseline and alternative scenarios widens.

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# Remarks on comparability of IEA and OPEC outlooks

## Key Achievements and Issues

1. IEA and OPEC generally use similar baselines and projection periods, yet this year the IEA uses 2016 as a baseline year and provides estimates for 2017 for both primary energy and oil, while OPEC uses 2015 for both.
2. The U.S. EIA has continued its participation in the joint IEA-IEF-OPEC Technical Meetings
3. Differences in non-OECD Historical Baseline Data were reduced and are regularly reviewed to control for unexplained discrepancies.
4. 2017 HBLD demand differences concern:
  - Asia (0.4 mb/d), of which China (0.3)
  - Middle East (0.3 mb/d), FSU (0.2 mb/d), and Africa (0.1 mb/d)
5. 2017 HBLD supply differences concern
  - FSU (0.3 mb/d)
  - OPEC supply (0.7 mb/d) on account OPEC NGLs and unconventional



# Remarks on comparability of IEA and OPEC outlooks

## Key Achievements and Issues

6. IEA no longer groups regions according to OECD, non-OECD status while OPEC does. OPEC aggregates Middle East with Africa, complicating comparison
7. But progress is being made in the categorisation of regions and fuel types (biofuels, bunkers and NGLs), and dialogue continues on a technical level
8. On biofuels IEA has published additional data, while OPEC includes biofuels in each region's total liquids supply, the IEA only includes global fuels supply in monthly reports
9. While the IEA reports international marine and aviation as a distinct bunker group OPEC includes both in each region's oil demand together with biofuels.
10. Different units (OPEC mboe/d) (IEA mtoe) and assumptions also make comparisons less transparent





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