IEA-IEF-OPEC Outlook Comparison

Richard Newell, Director, Duke University Energy Initiative

Gendell Professor of Energy and Environmental Economics, Nicholas School of the Environment

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Overview

- Highlights from comparison of recent IEA and OPEC outlooks
  - Recent progress on data quality and comparability
  - Baseline 2013 liquids data
  - Global liquids demand outlook
  - Global liquids supply outlook
  - Oil price assumptions
- IEA and OPEC in the context of other long-term outlooks
- This presentation focuses on differences, but similarities of approach and results are far more common
- IEA-IEF-OPEC Technical Meeting tomorrow to discuss opportunities for improved comparability

IEA and OPEC outlooks covered in the report

	IEA		OPEC	
Report type	Report name	Publication date	Report name	Publication date
Short-term	Oil Market Report (OMR)	Dec. 2014	Monthly Oil Market Report (MOMR)	Dec. 2014
Medium-term	Medium-Term Oil Market Report (MTOMR)	June 2014	World Oil Outlook (WOO2014)	Nov. 2014
Long-term	World Energy Outlook (WEO)	Nov. 2014	World Oil Outlook (WOO)	Nov. 2014

Examples of recent progress on data quality and comparability of outlooks

IEA	OPEC
✓ Published biofuels consumption by country breakdown in its monthly and medium-term oil reports, allowing better comparisons	✓ Incorporated more comprehensive evaluation of unconventional oil plays in North America, resulting in convergence with IEA projections
✓ Improved methodology for estimating historical non-OECD demand in monthly oil reports, exposing larger differences	✓ Redefined “tight oil” into “tight crude” and “unconventional NGLs”, allowing better comparability

Baseline 2013 liquids data

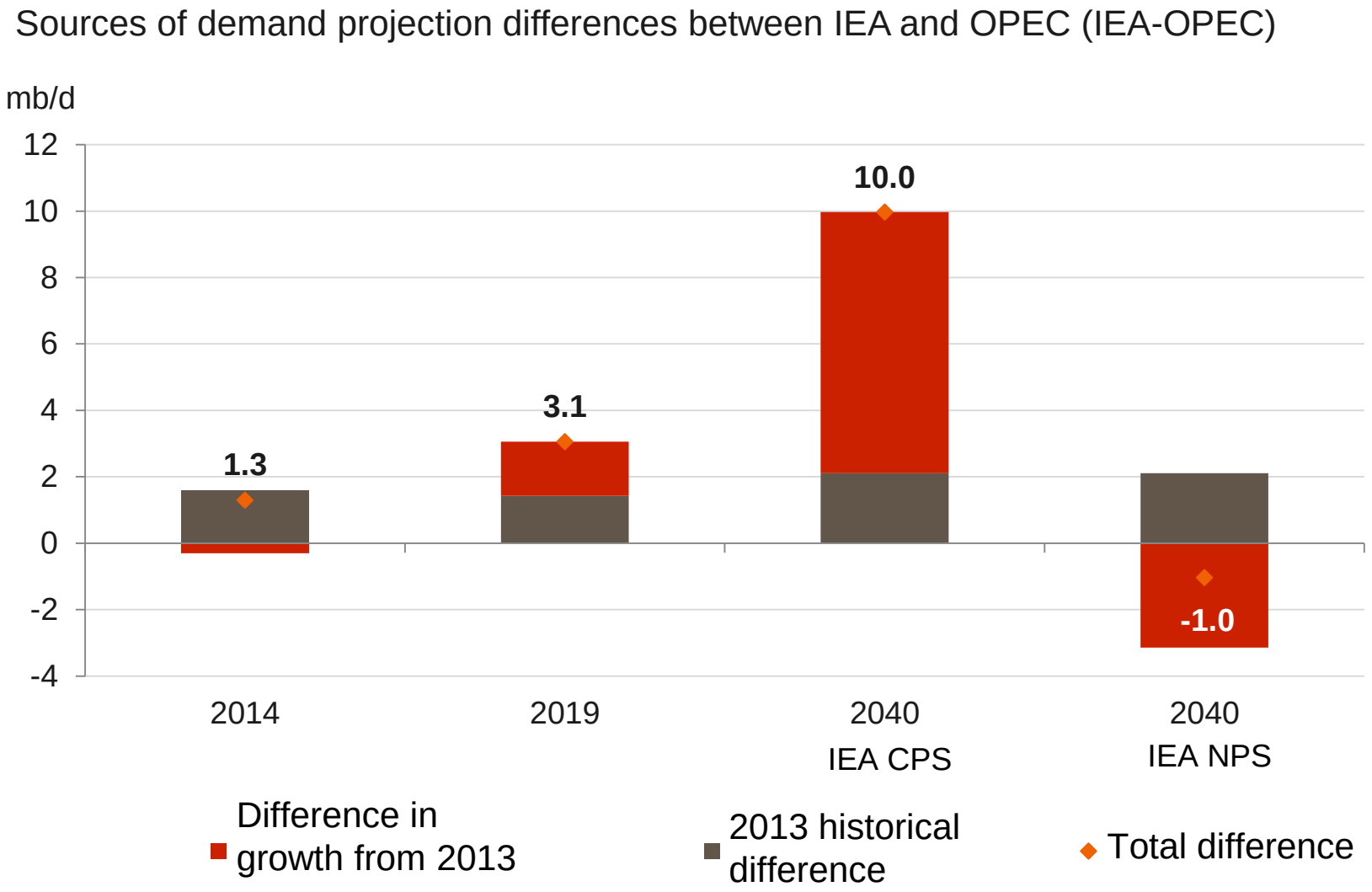
1.6 mb/d difference between IEA and OPEC in 2013 baseline data is due to differences in non-OECD nations, particularly Asia outside of China

2013 liquids demand (mb/d)	IEA	OPEC	Difference (IEA-OPEC)
Total OECD	**46.1**	**46.0**	**0.1**
OECD Americas	24.1	24.1	0.0
OECD Europe	13.6	13.6	0.0
Asia Oceania	8.3	8.3	0.0
Total Non-OECD	**45.6**	**44.2**	**1.4**
Asia	22.0	21.1	0.9
China	10.1	10.1	0.0
Other non-OECD Asia	11.9	11.1	0.8
Middle East	7.9	7.8	0.1
Latin America	6.6	6.5	0.1
FSU	4.7	4.5	0.2
Non-OECD Europe	0.6	0.6	0.0
Africa	3.8	3.6	0.2
World	**91.8**	**90.2**	**1.6**

1.3 mb/d difference in 2013 IEA-OPEC liquids supply associated with FSU & OPEC supply

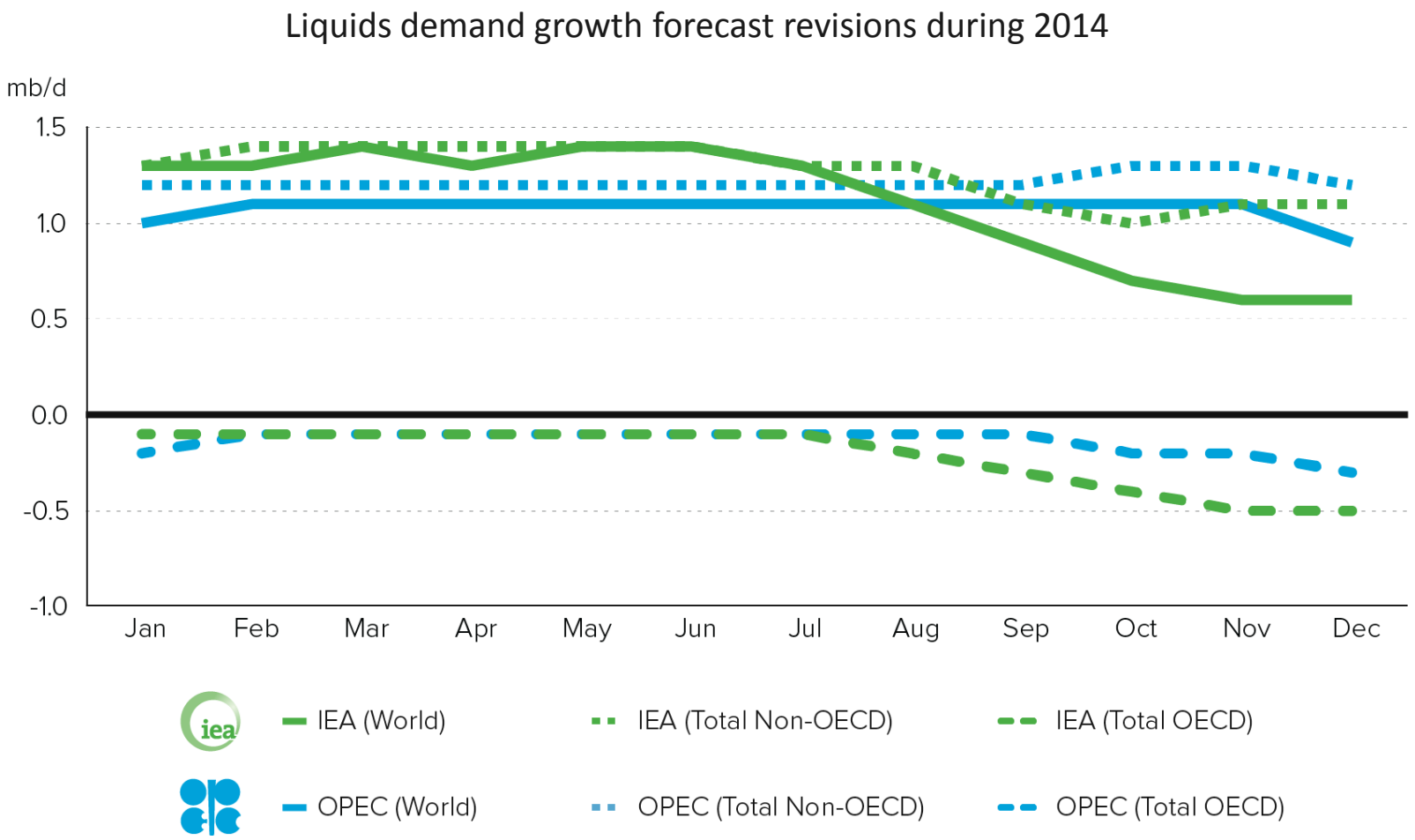
2013 liquids supply (mb/d)	IEA	OPEC	Difference (IEA-OPEC)
Total OECD	22.1	22.2	-0.1
OECD Americas	18.1	18.1	0.0
OECD Europe	3.5	3.6	0.0
Asia Oceania	0.5	0.5	0.0
Total Non-OECD	30.4	29.9	0.4
Non-OECD Asia	7.8	7.8	0.0
China	4.2	4.2	0.0
Other non-OECD Asia	3.6	3.6	0.0
Middle East	1.4	1.4	0.0
Latin America	4.8	4.8	0.0
FSU	13.9	13.4	0.5
Non-OECD Europe	0.1	0.1	0.0
Africa	2.3	2.4	-0.1
Processing gains	2.2	2.1	0.1
Total Non-OPEC	**54.7**	**54.2**	**0.5**
Total OPEC	**36.7**	**35.8**	**1.0**
OPEC crude	30.5[b]	30.2	0.3
OPEC NGLs + unconventionals	6.3	5.6	0.7
World	**91.4**	**90.0**	**1.4**

A 1-2 mb/d difference in base year 2013 demand contributes to a significant portion of projected demand differences for IEA-OPEC

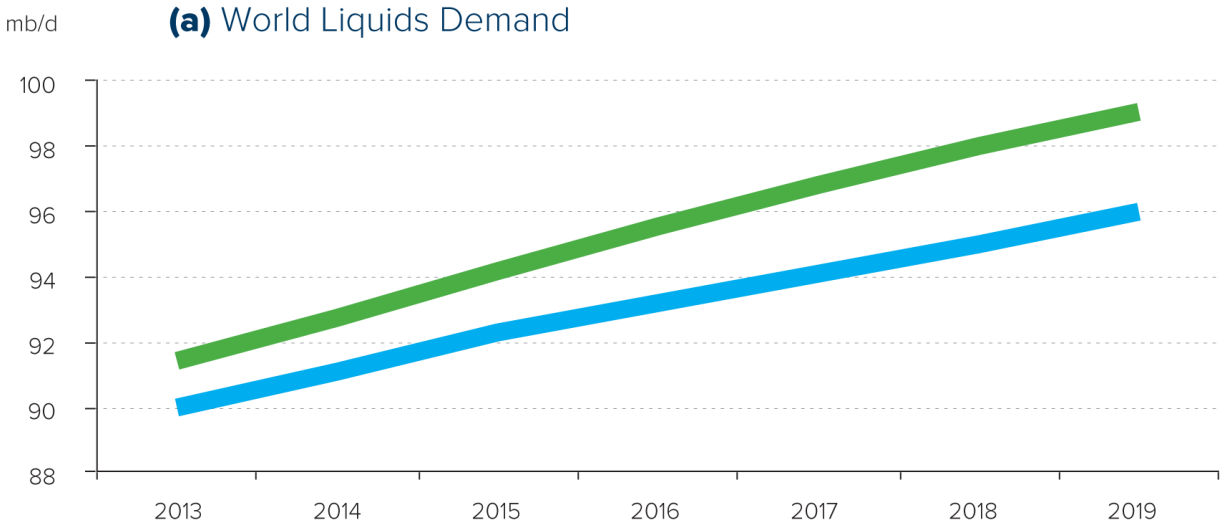


Global liquids demand outlook

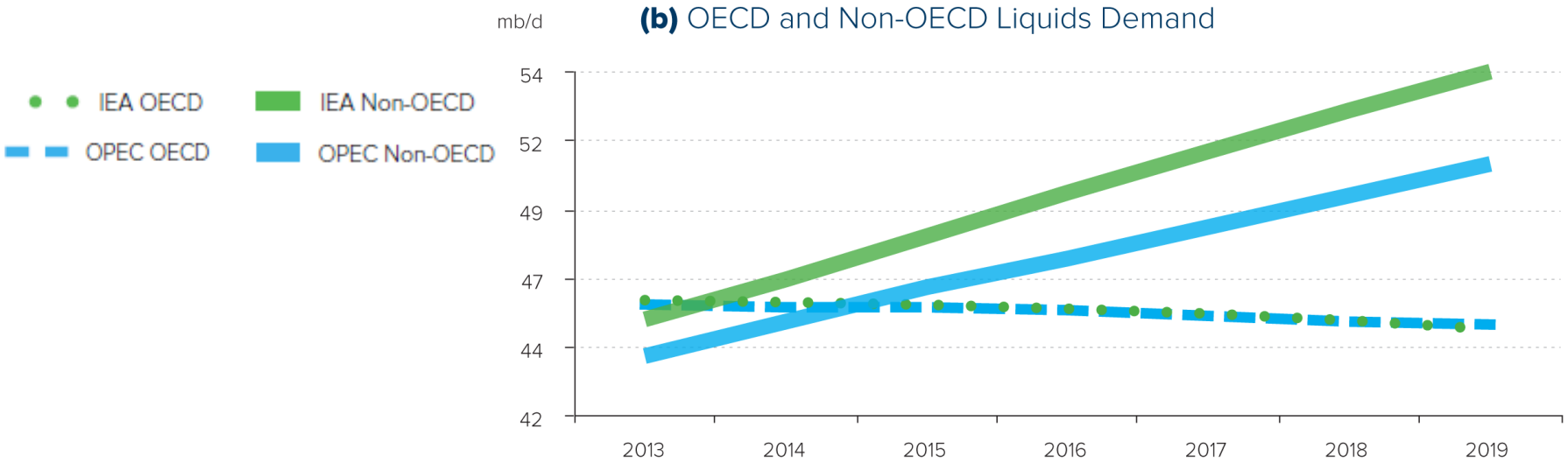
IEA adjusted world liquids demand downward by 0.7 mb/d during 2014 while OPEC's growth forecasts remained mostly constant



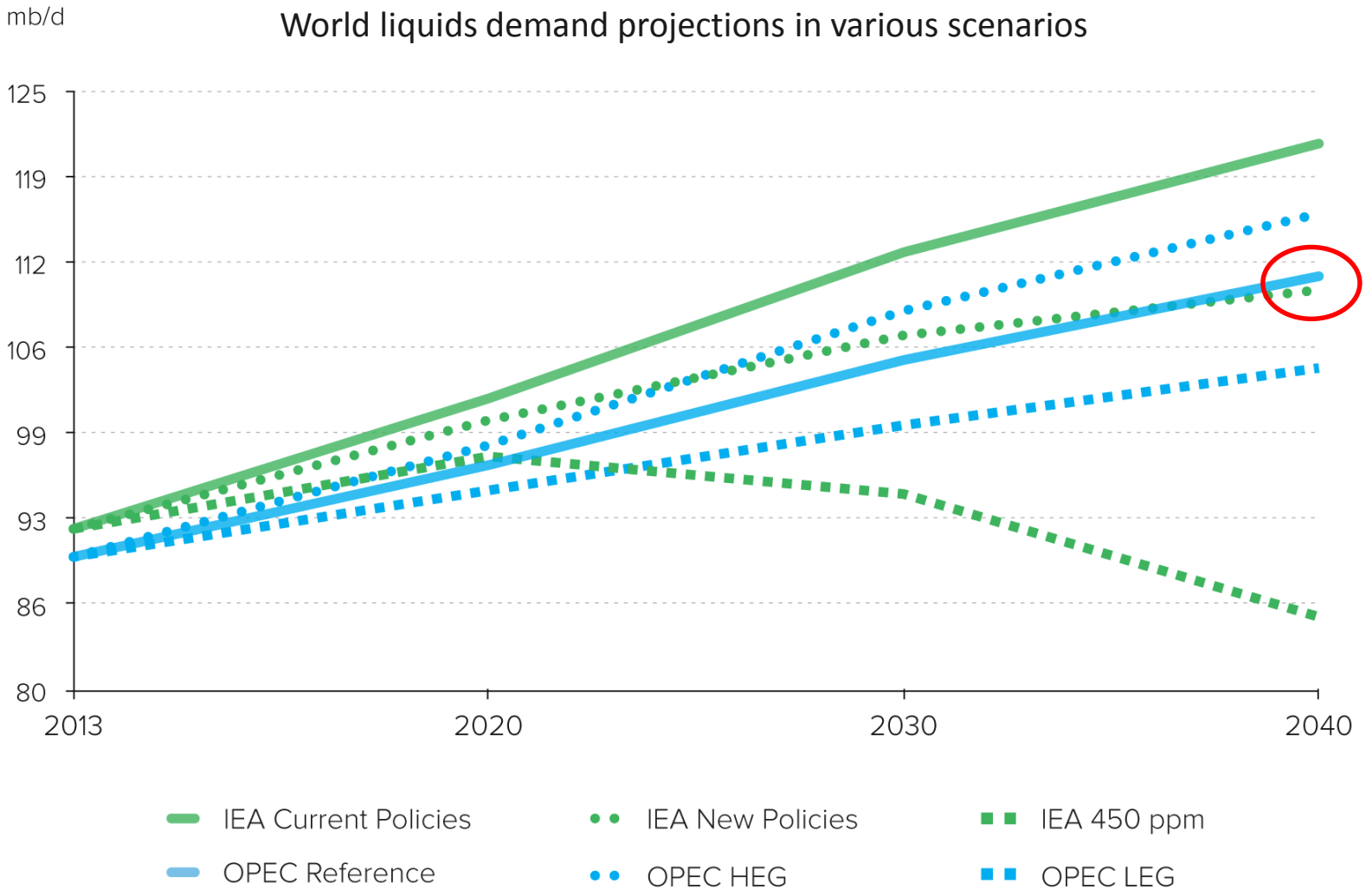
Medium-term demand projection difference mainly comes from Non-OECD regions



Note: IEA 2015 MTOMR revised demand growth downward along with GDP growth

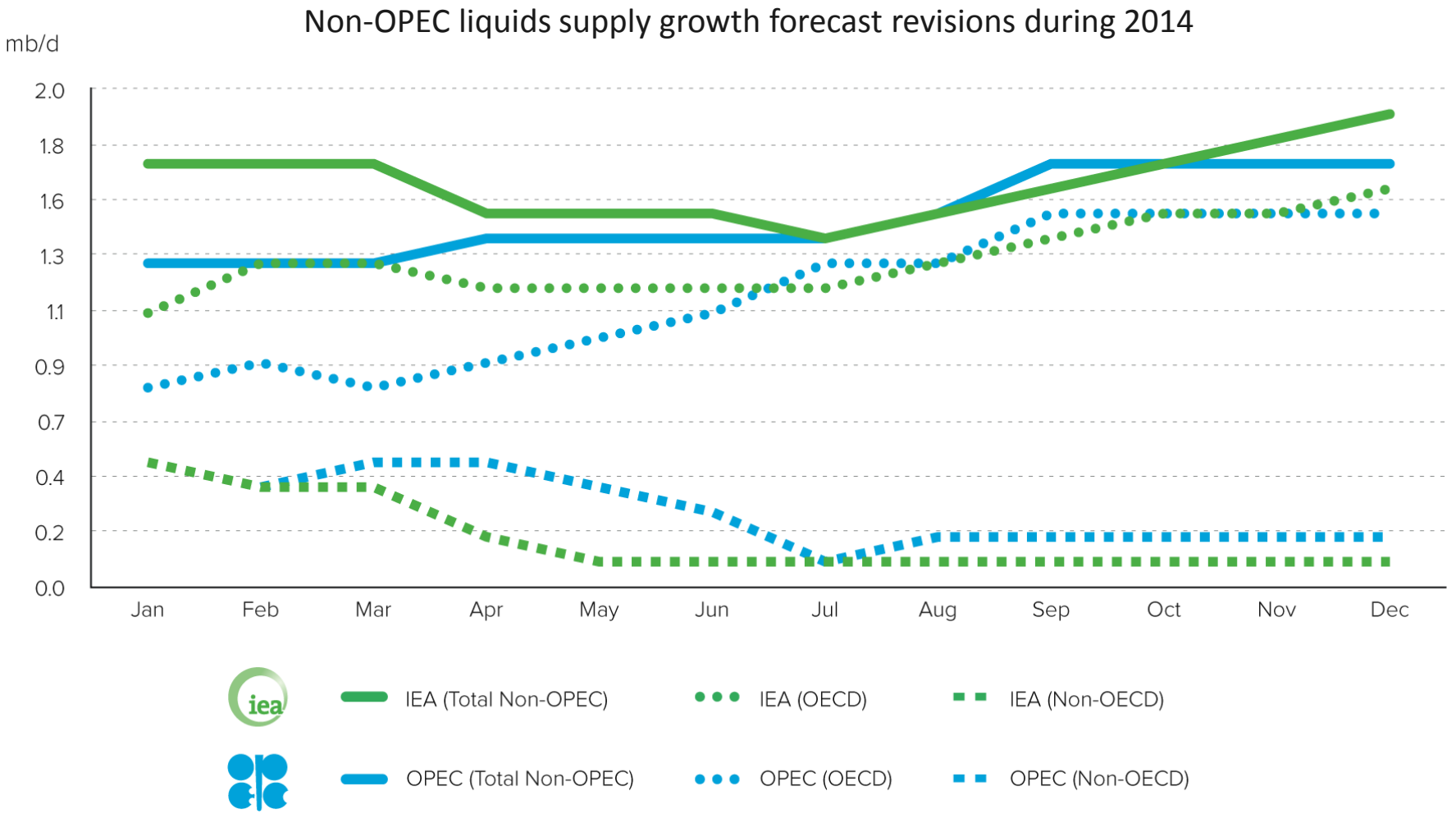


Long-term liquids projections vary widely, yet OPEC Reference and IEA New Policy scenarios are within 1 mb/d in 2040

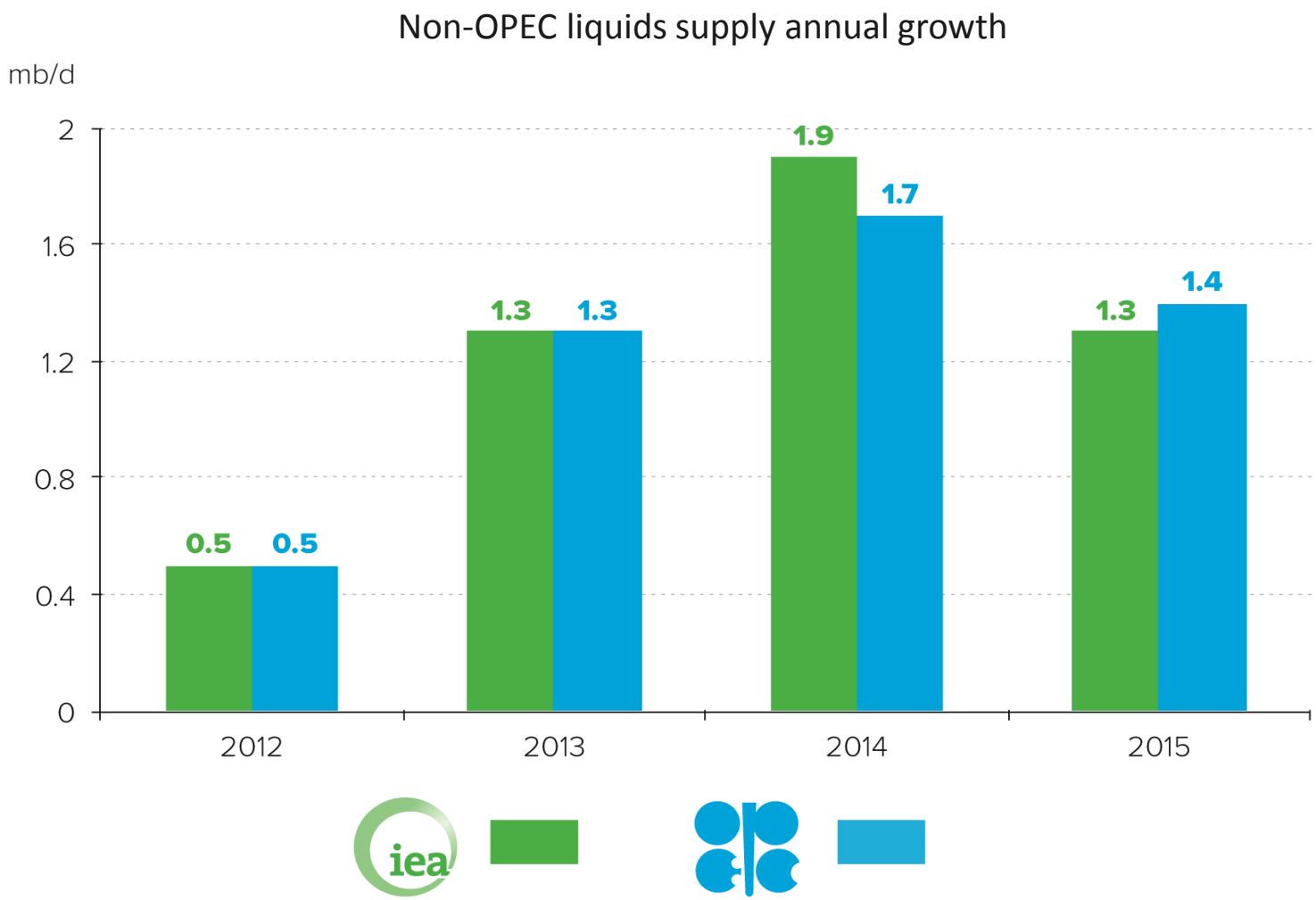


Global liquids supply outlook

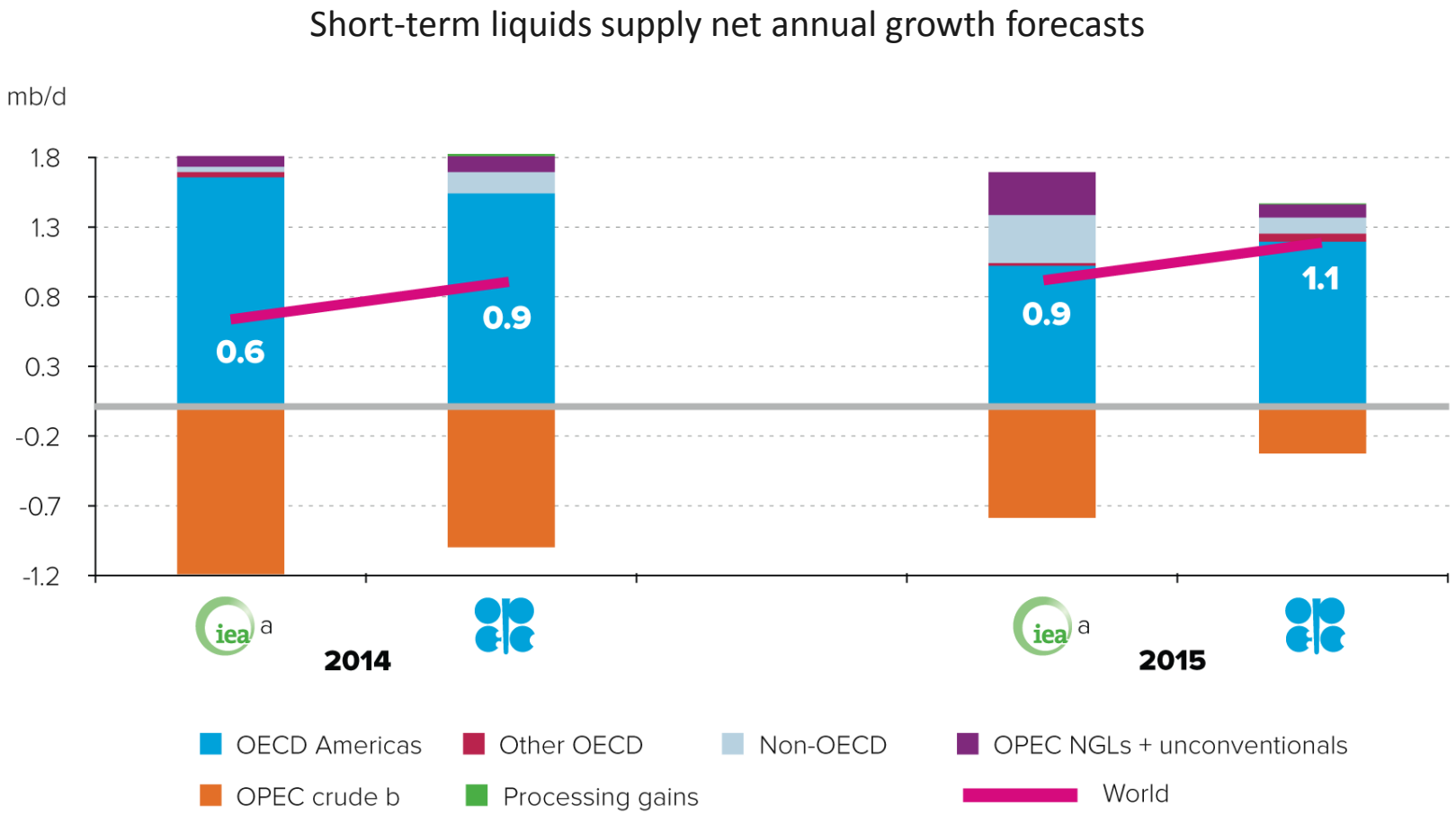
Non-OPEC liquids supply adjusted upward in 2014, as N. American tight oil production exceeded expectations



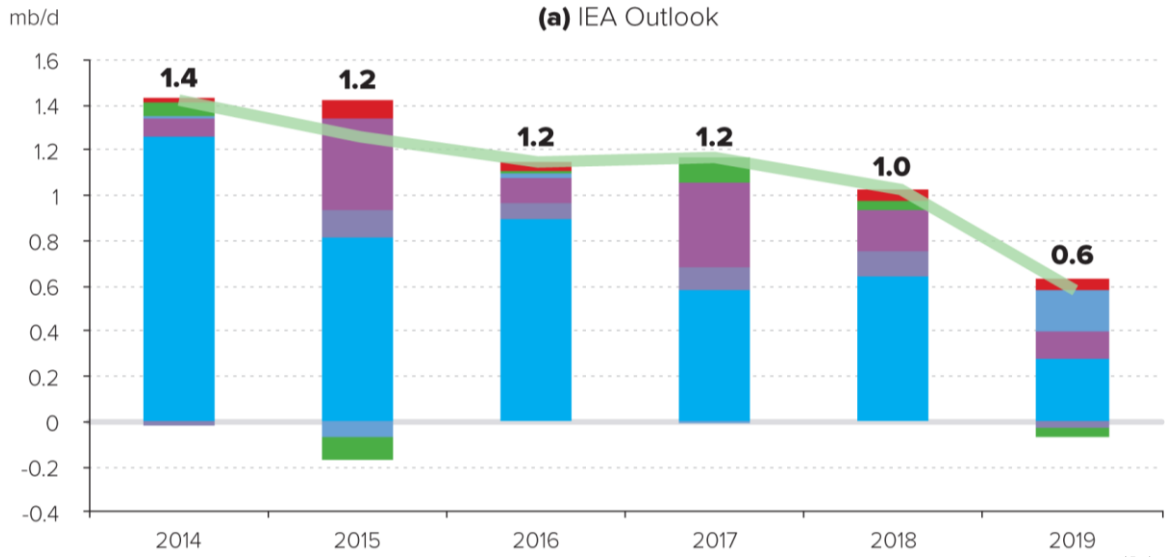
Short-term IEA and OPEC projections show slowing non-OPEC liquids supply growth *(revised downward since December 2014)*



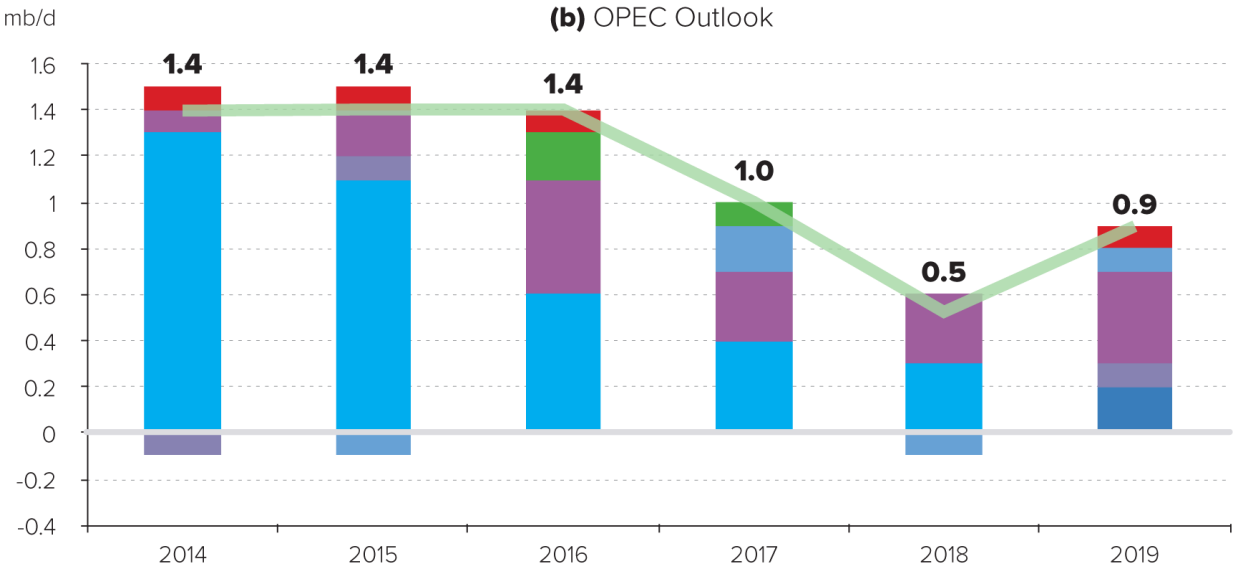
Short-term liquids supply growth is still led by OECD American production, while OPEC crude supply continues declining



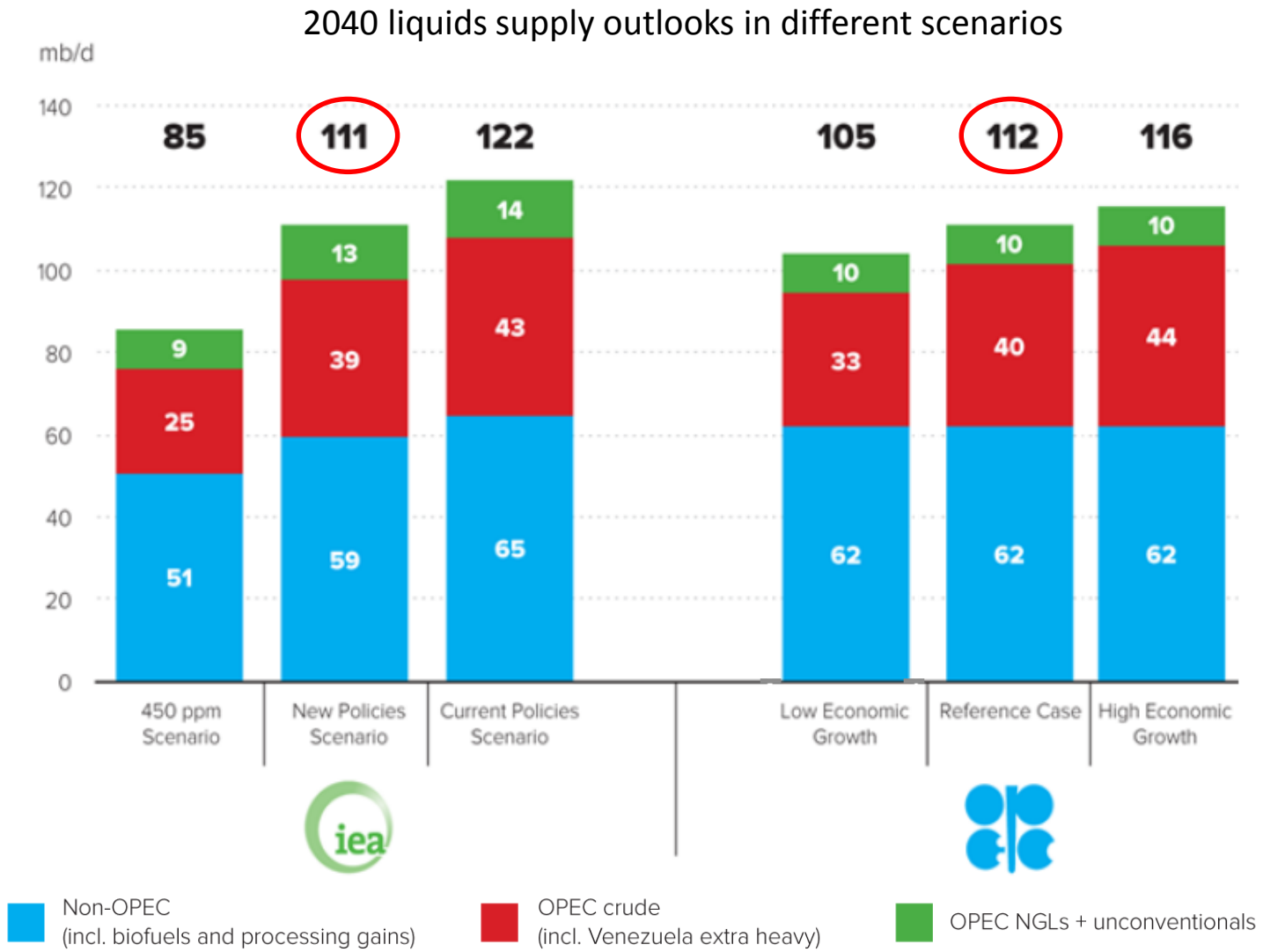
Medium term Non-OPEC liquids supply growth forecasts show continued, but slowing growth



Note: IEA revised 2015-2018 Non-OPEC growth downward in 2015 MTOMR

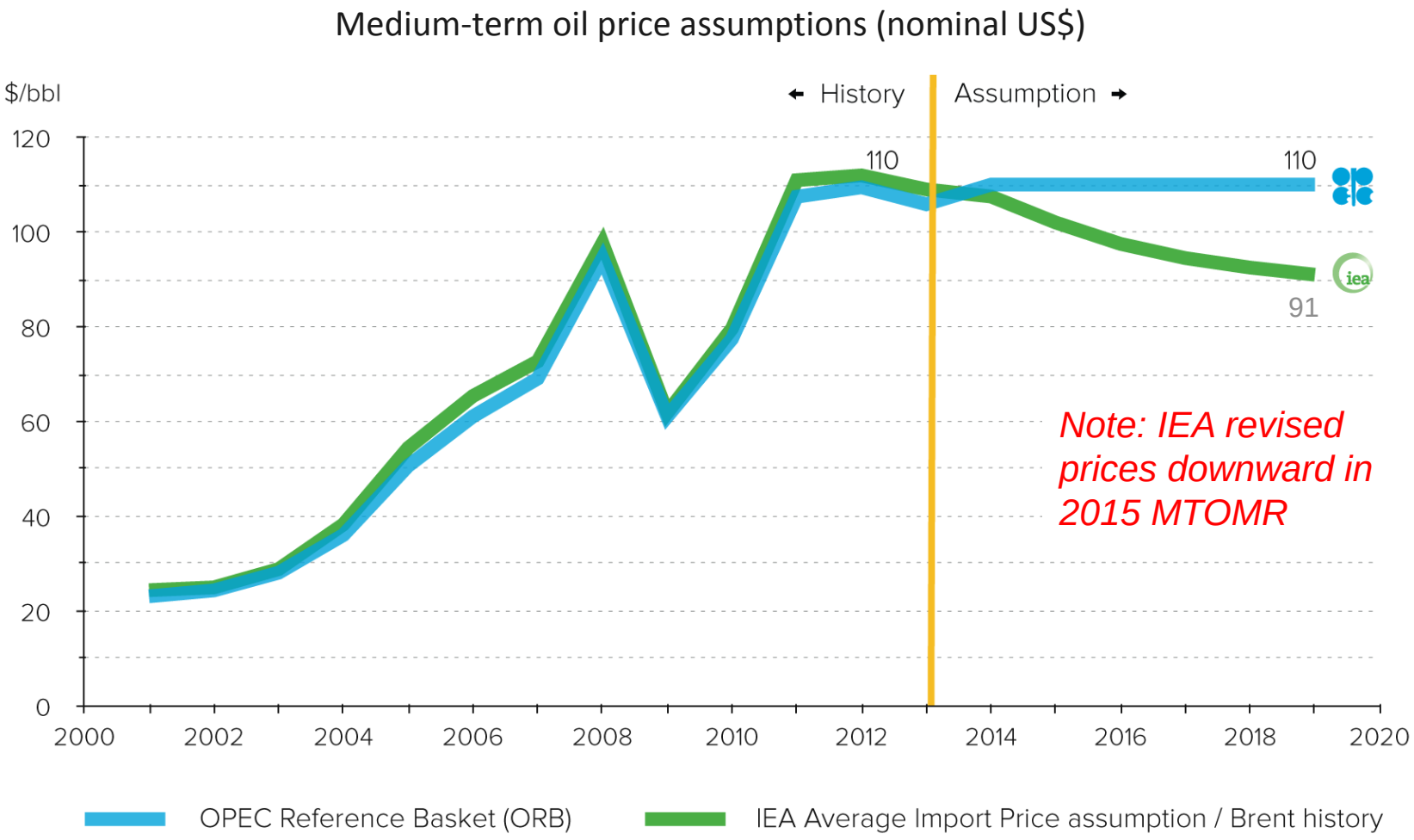


Long-term oil supply scenarios vary widely, yet similar projections for OPEC Reference and IEA New Policies scenarios

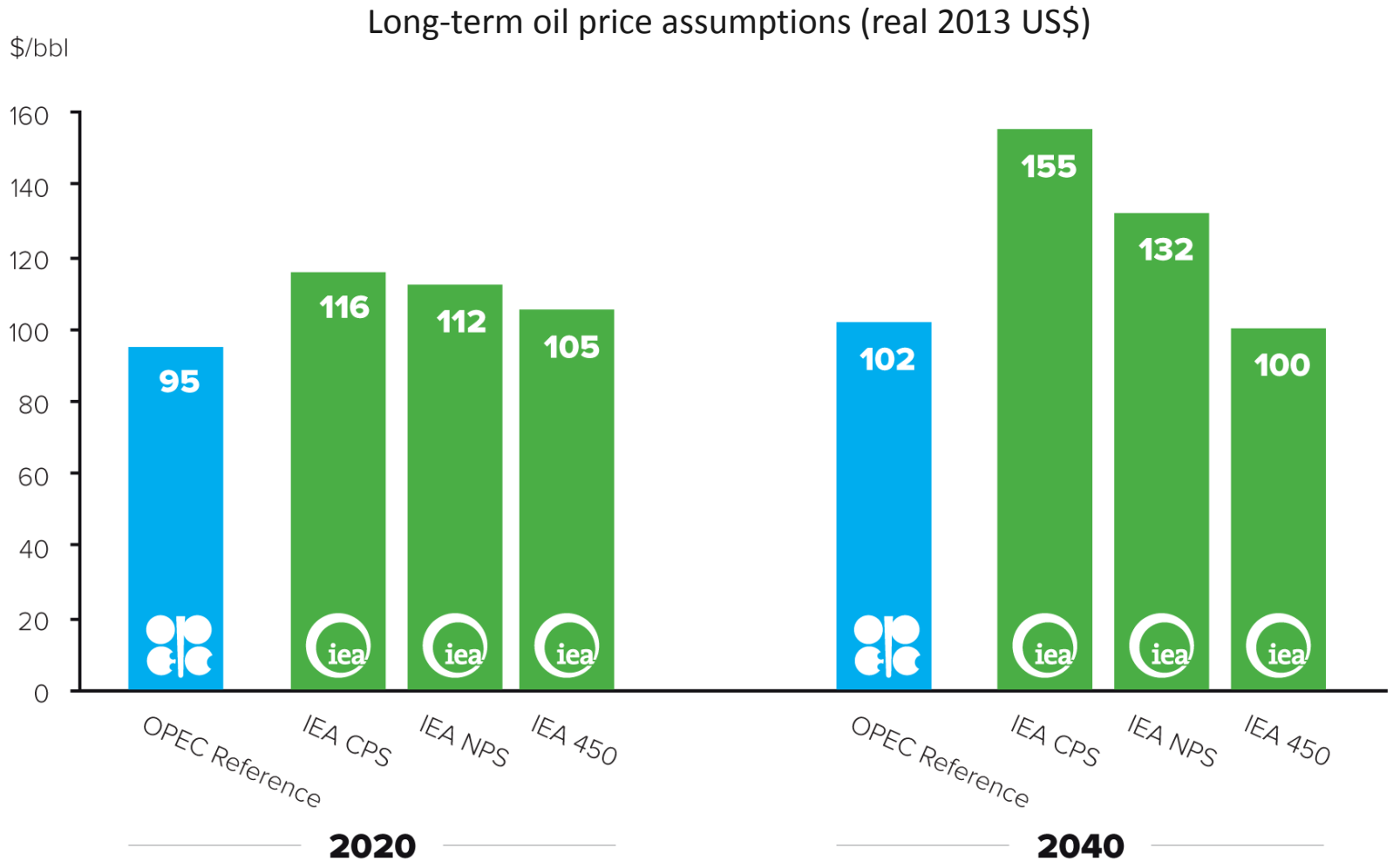


Oil price assumptions

Significant difference in medium-term price assumptions



IEA's long-term oil price assumptions are substantially higher than OPEC's



Key remaining challenges in comparing IEA and OPEC energy outlooks

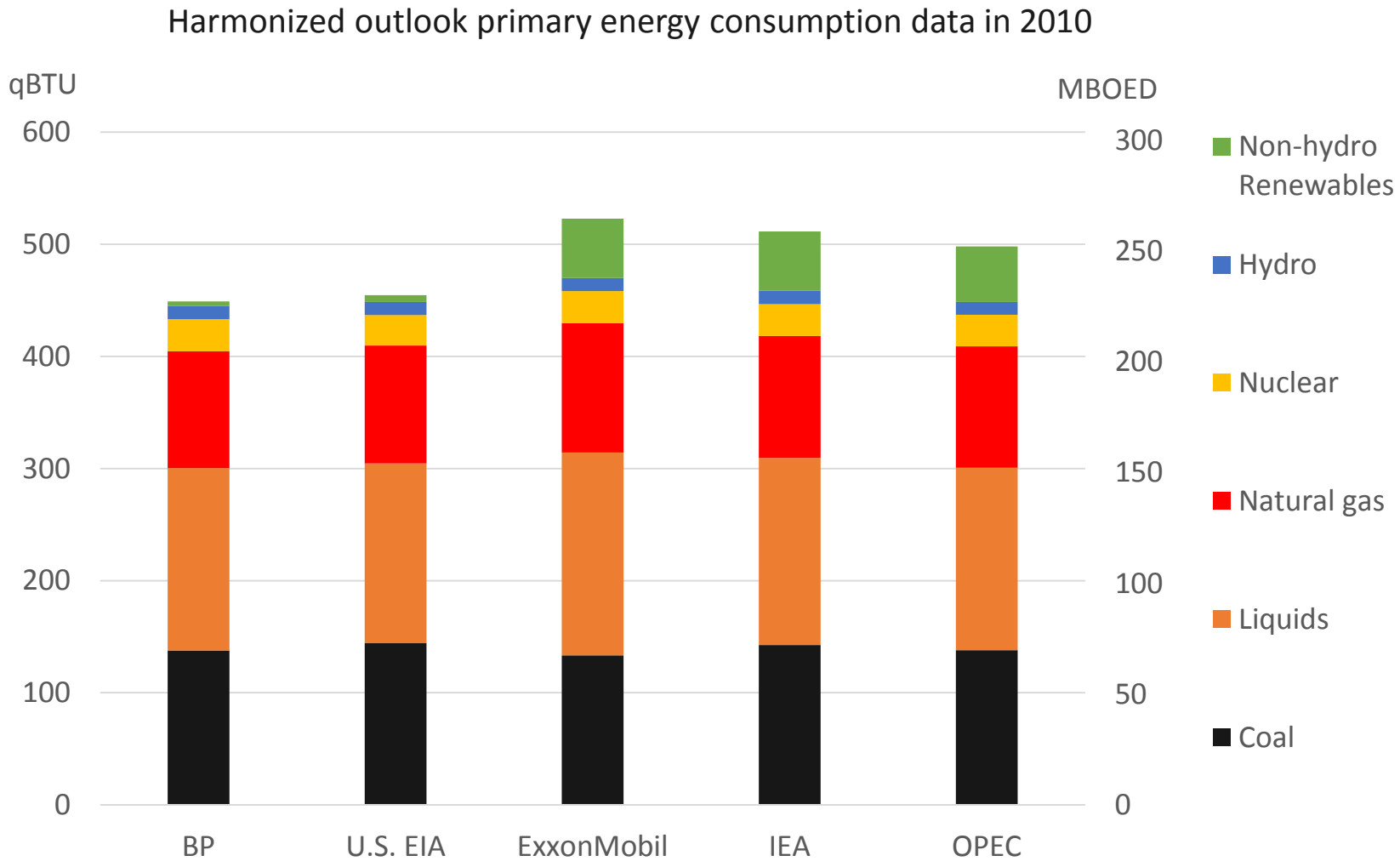
- Different units (mb/d, mboe/d, mtoe), and sometimes unclear conversion factors between units
- Different treatment of biofuels/bunkers within global versus regional liquids supply
- Different liquids categorization: e.g., definition of “crude oil”
- Different regional groupings, in particular separate OPEC treatment of member country demand in World Oil Outlook
- Different baseline data for IEA short- and long-term outlooks, and between IEA and OPEC
- Different conception of “central” policy scenarios
- Oil price assumptions

IEA and OPEC in the context of other long-term energy outlooks

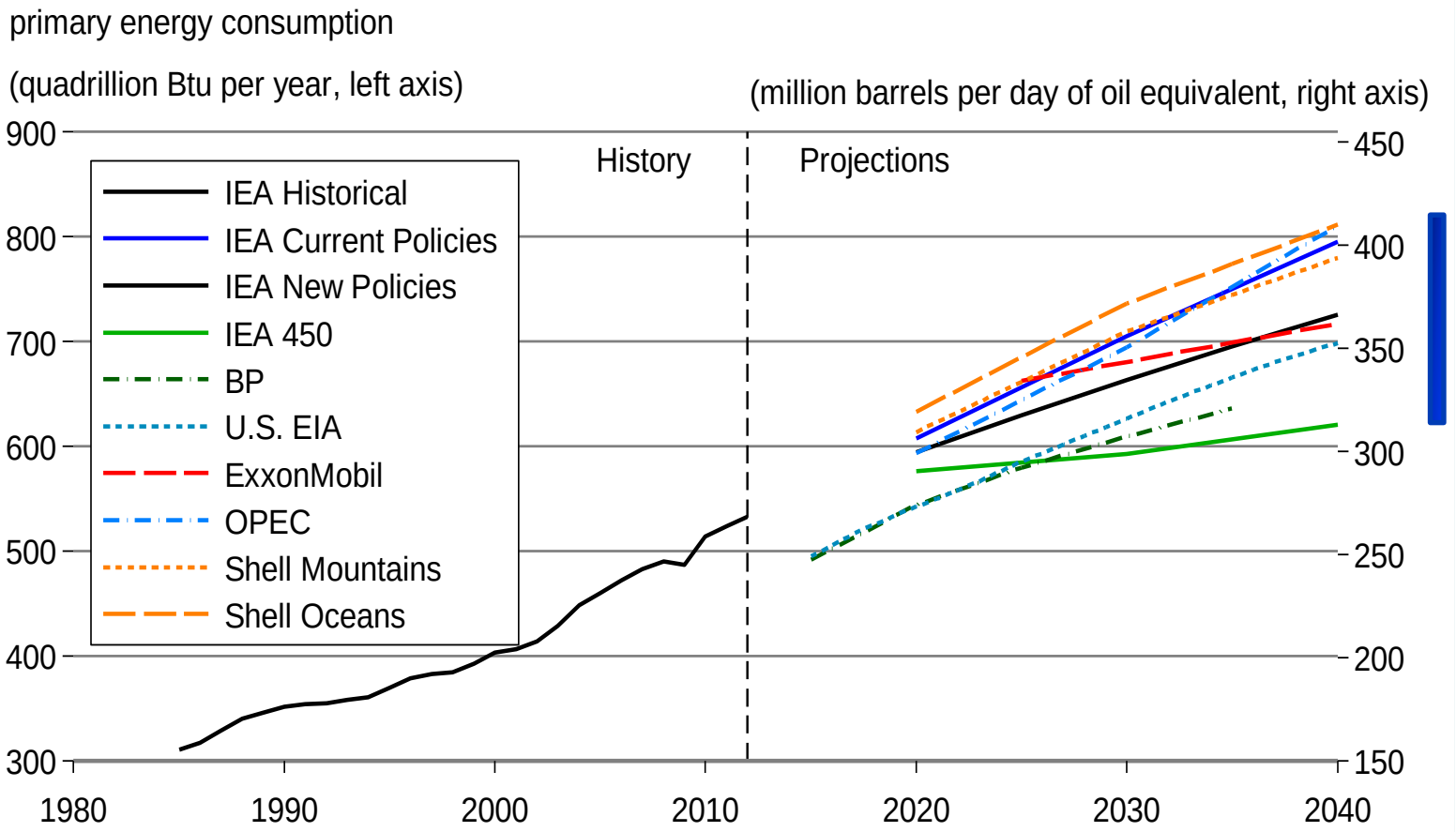
Challenges in comparing IEA and OPEC projections to other energy outlooks

- Some challenges similar to comparison of IEA and OPEC
  - Different primary energy units and fuel-specific physical units
  - Different categorization of liquids and renewable fuels
  - Different regional groupings
  - Different assumptions for policy and about economic growth
- Plus, several additional challenges
  - Assumptions about energy content of fossil fuels can vary by 2-12%
  - Different conversion factors for renewables and nuclear can alter primary energy estimates for these sources by -65% to +153%
  - Omission of traditional non-marketed biomass by U.S. EIA and BP leads to primary energy consumption estimates that are 10-14% lower than other outlooks

Differences in historical energy consumption data exist among various long-term outlooks (2010 shown here)

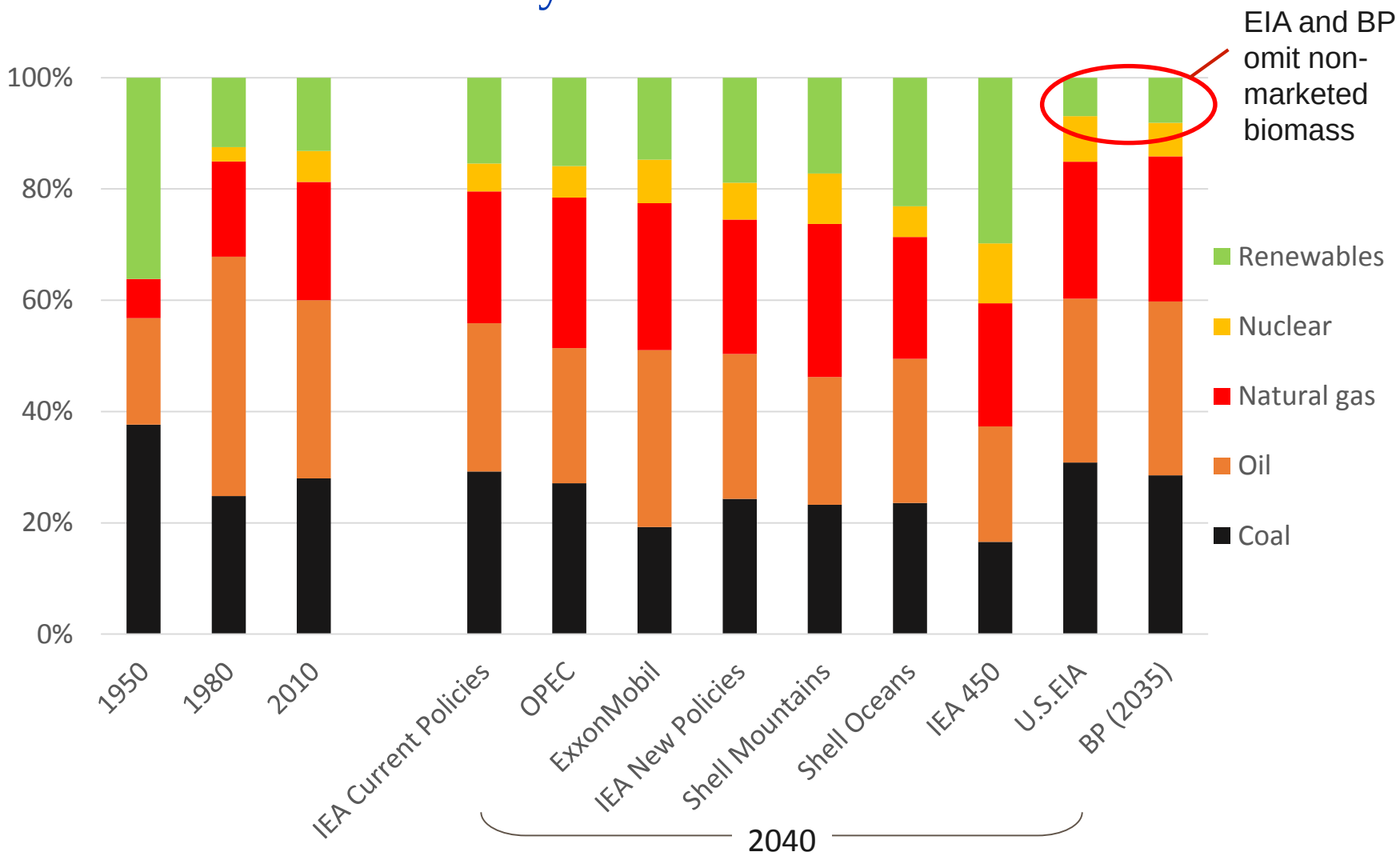


Primary energy consumption projections in various global energy outlooks

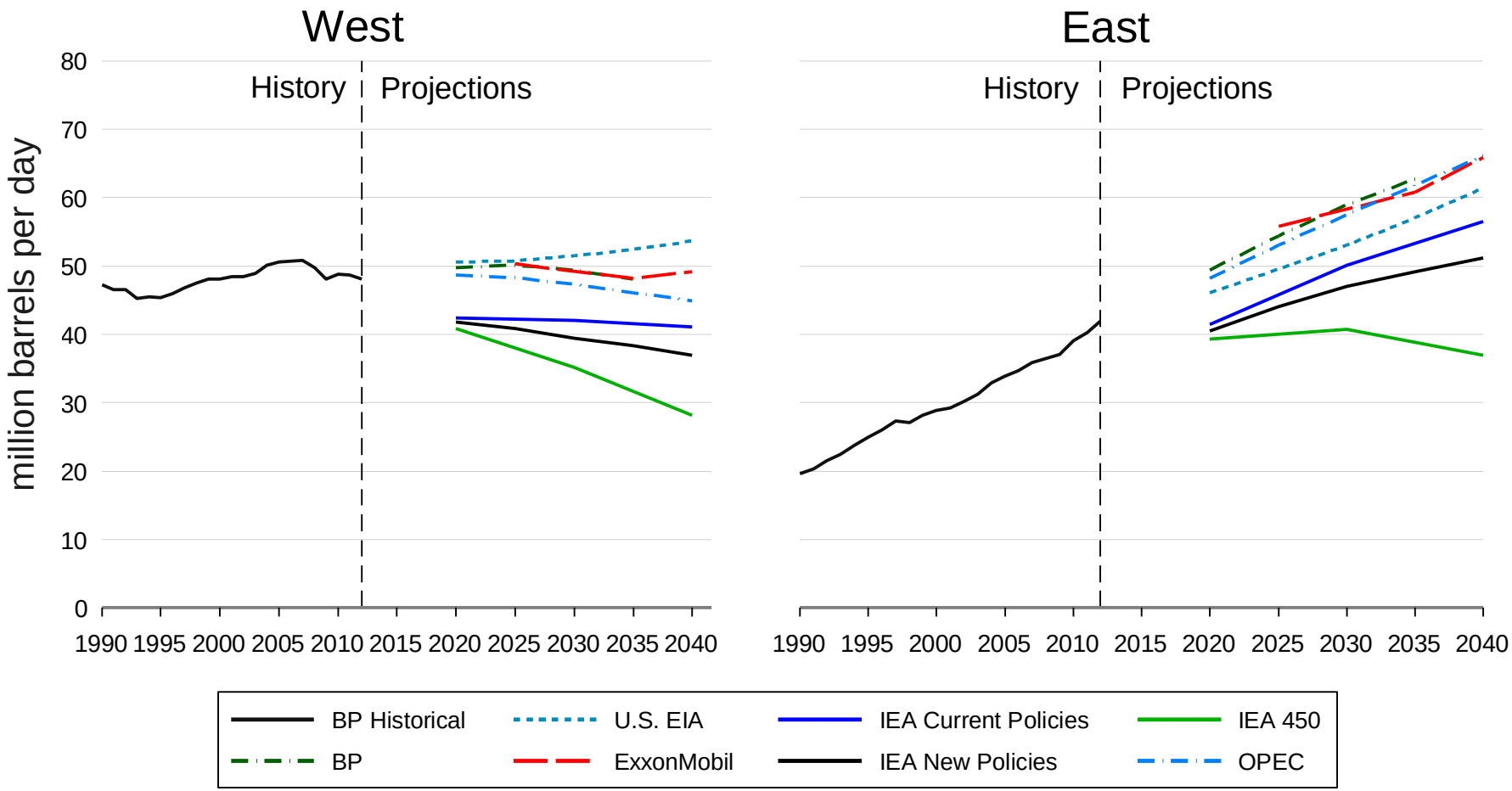


Note: U.S. EIA and BP estimates omit non-marketed biomass.

Global fuel shares: history and future scenarios



Liquids consumption shifts decisively to the East



For more information

Richard Newell

Duke University Energy Initiative

energy.duke.edu

richard.newell@duke.edu

001-919-681-8663