



India | New Delhi

Plenary Session 1: Global Shifts: The Future of Energy Security: Finding New Balances

Background Paper



Disclaimer

The observations presented herein are meant as background for the dialogue at the 16th International Energy Forum. They have been prepared in collaboration with The Boston Consulting Group and should not be interpreted as the opinion of the International Energy Forum or The Boston Consulting Group on any given subject.

Introduction

Market Context

- Fossil fuels will continue to be a major source of energy in future
- Renewables are expected to rise sharply but may only cater to ~15% of global energy demand by 2040
- Consumers could be strained due to a supply demand gap in oil markets
- Producers are expected to see more strain on gas (due to rising demand) and coal (due to flattening demand)



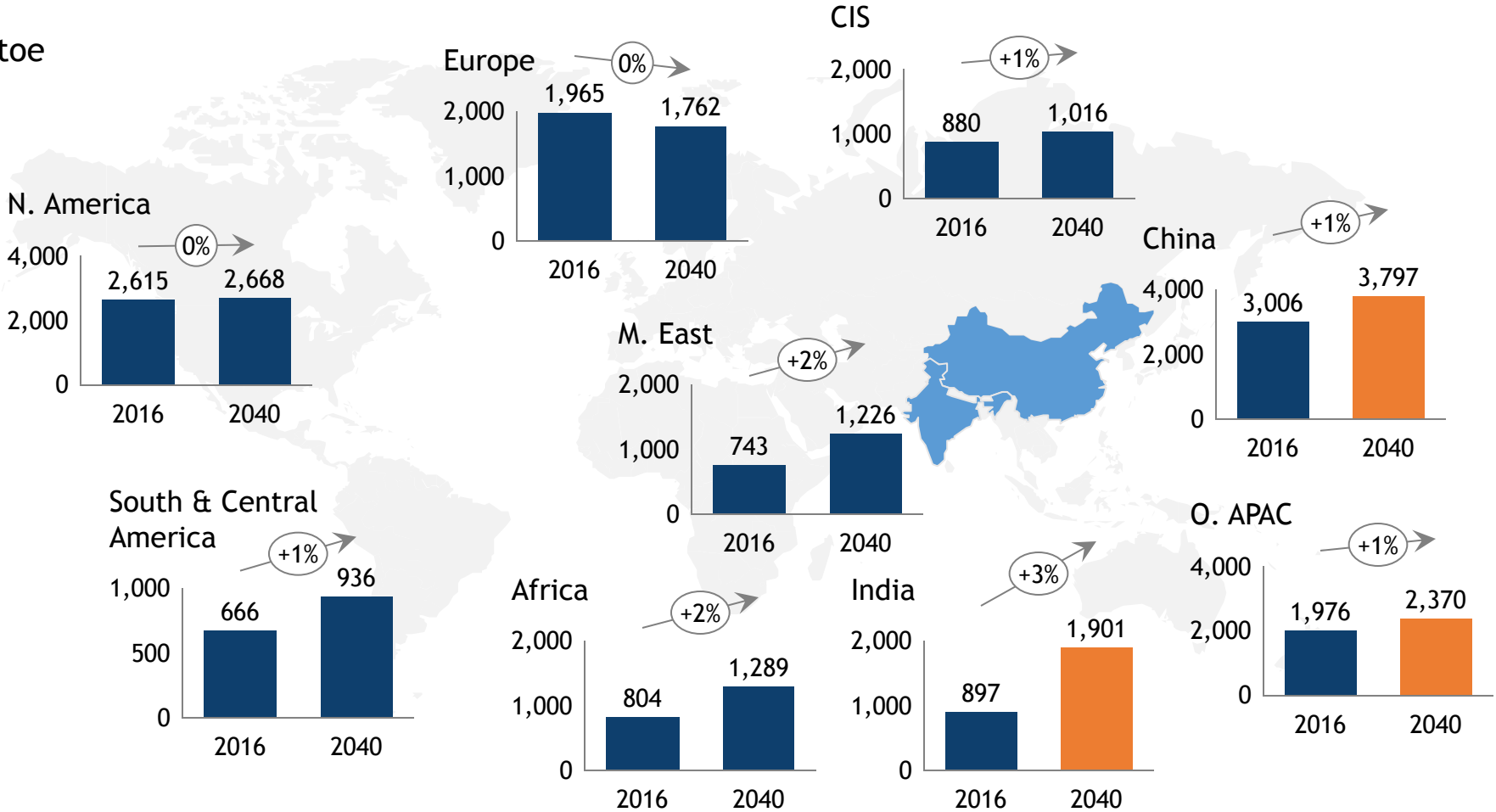
Session Objectives

- How will global and regional demand of different energy fuels evolve in future?
- To develop an overview on demand and supply drivers behind these energy market and technology trends
- To try and understand the changing relations of producers and consumers in the global energy arena

Key Question: How do global market shifts and transition policies affect producer consumer relations and cooperation on global energy security?

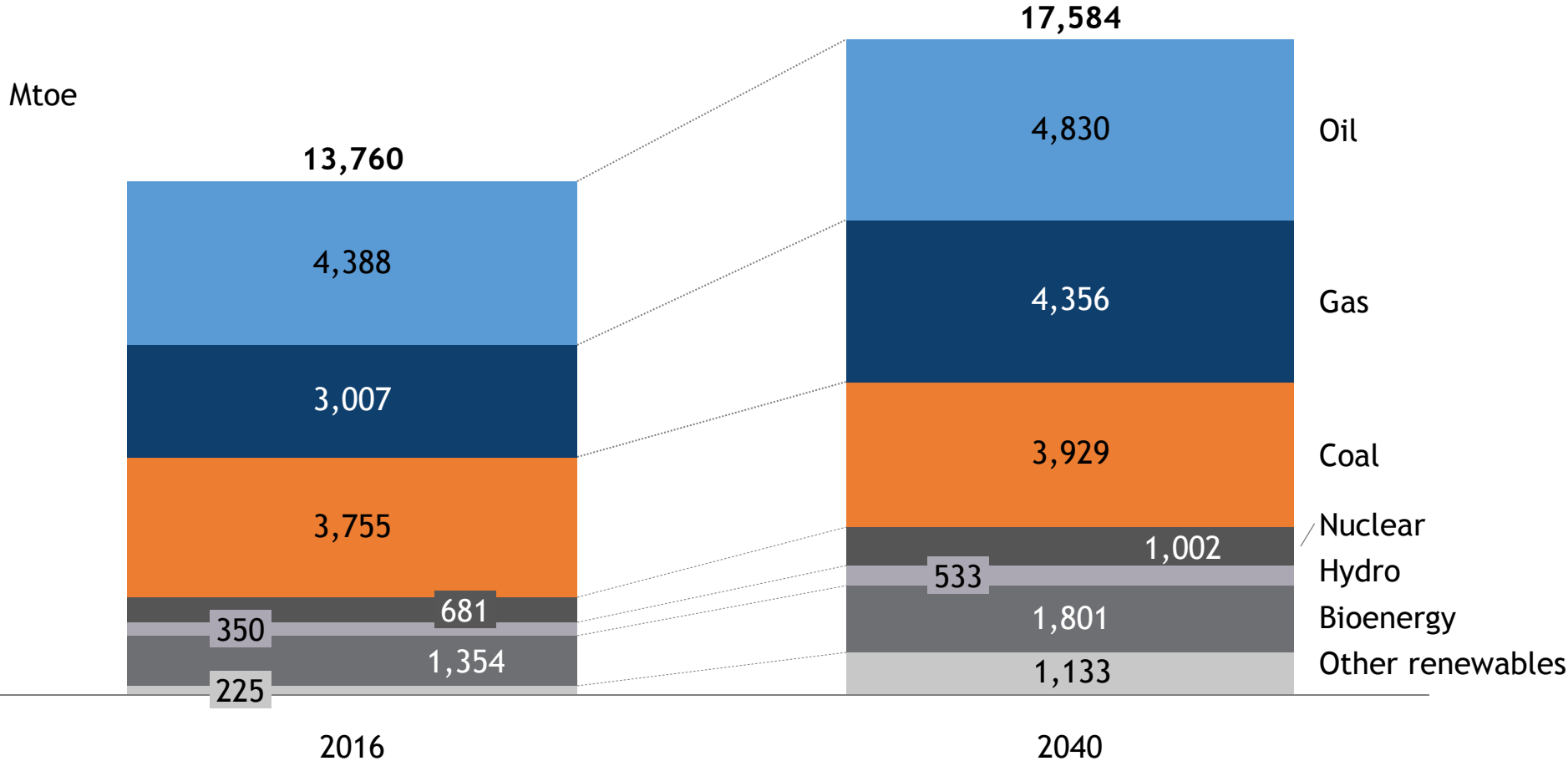
World Energy demand to grow primarily driven by Asia

Mtoe



Source: IEA Energy Outlook 2017
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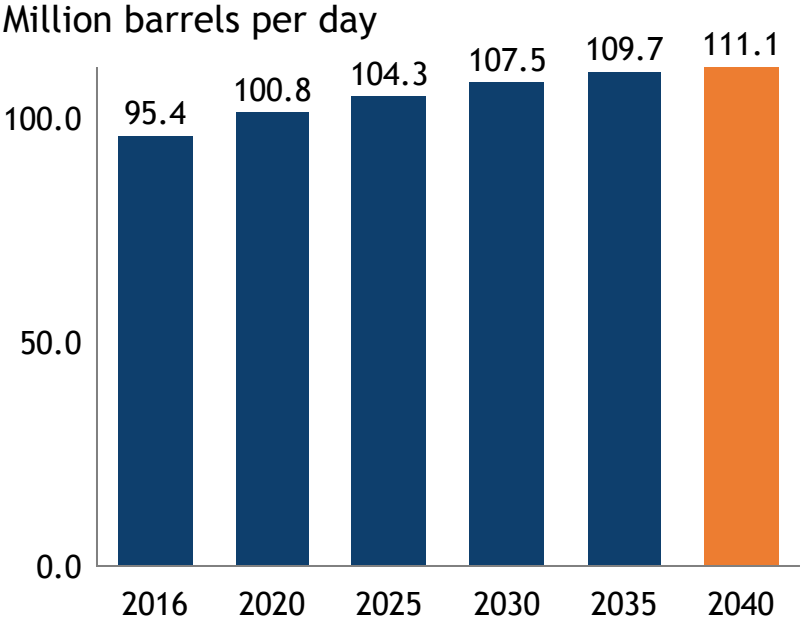
Fossil fuels are expected to remain the main energy source in future



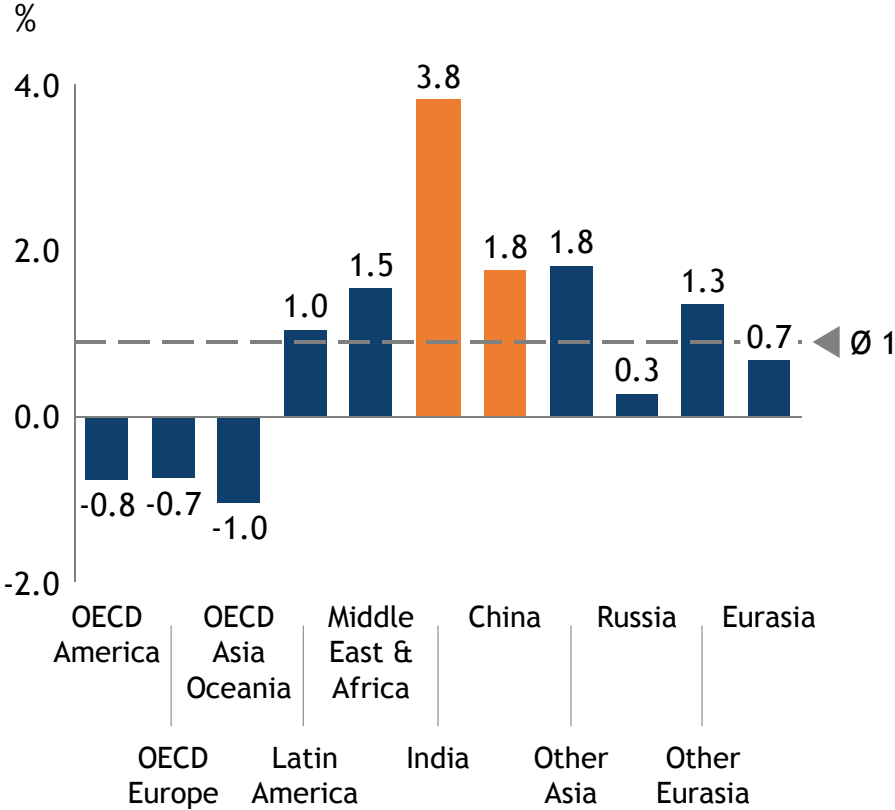
Source: IEA Energy Outlook 2017
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Crude oil demand will remain robust driven by rising demand from fast developing India and China

Global oil demand during 2015-2040



China and India to drive global oil demand (2015-2040)

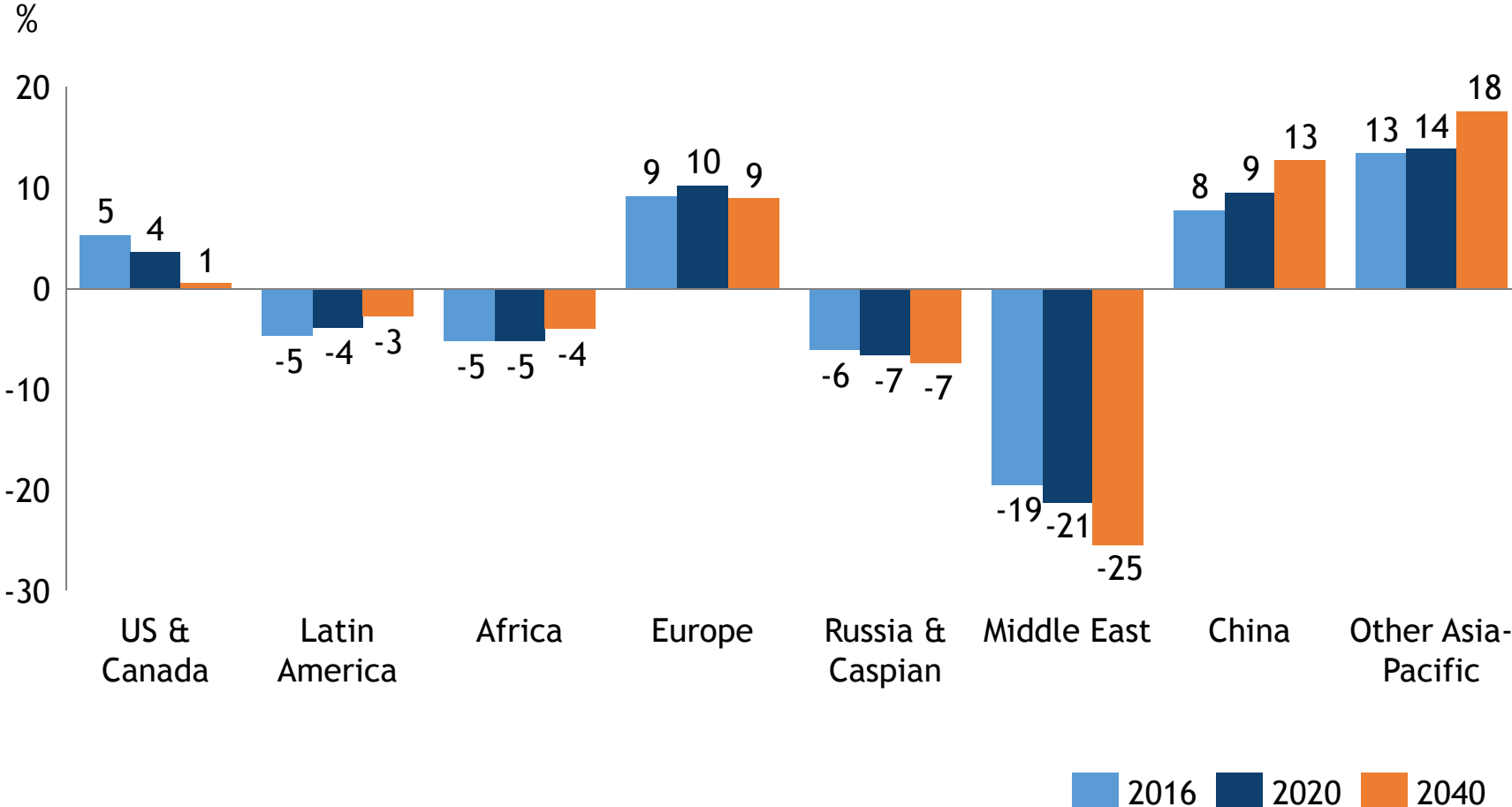


Source: OPEC
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Asian growth engines China and India will continue to remain dependent on crude oil imports

Regional net crude oil imports, 2016, 2020 and 2040

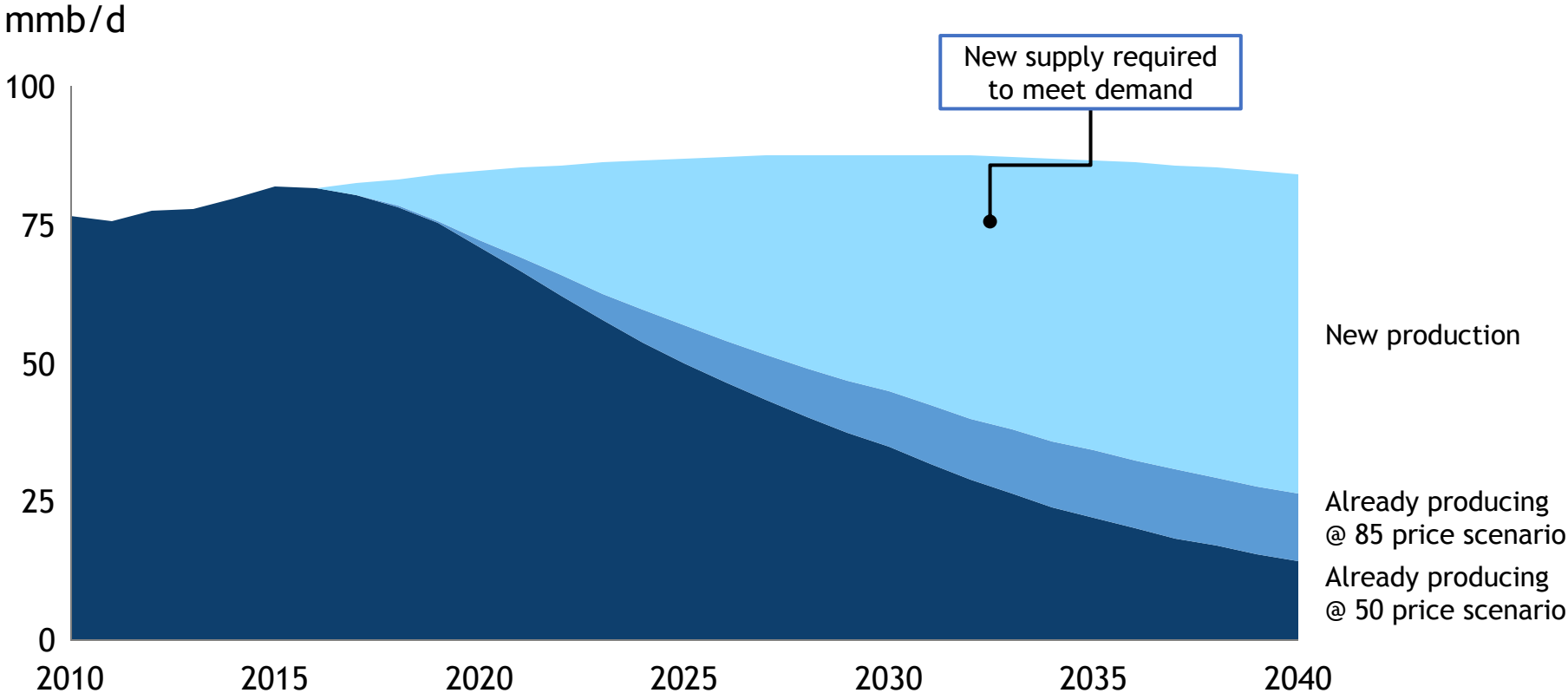


Source: OPEC
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Robust oil demand will face a supply gap that could surprise consumers

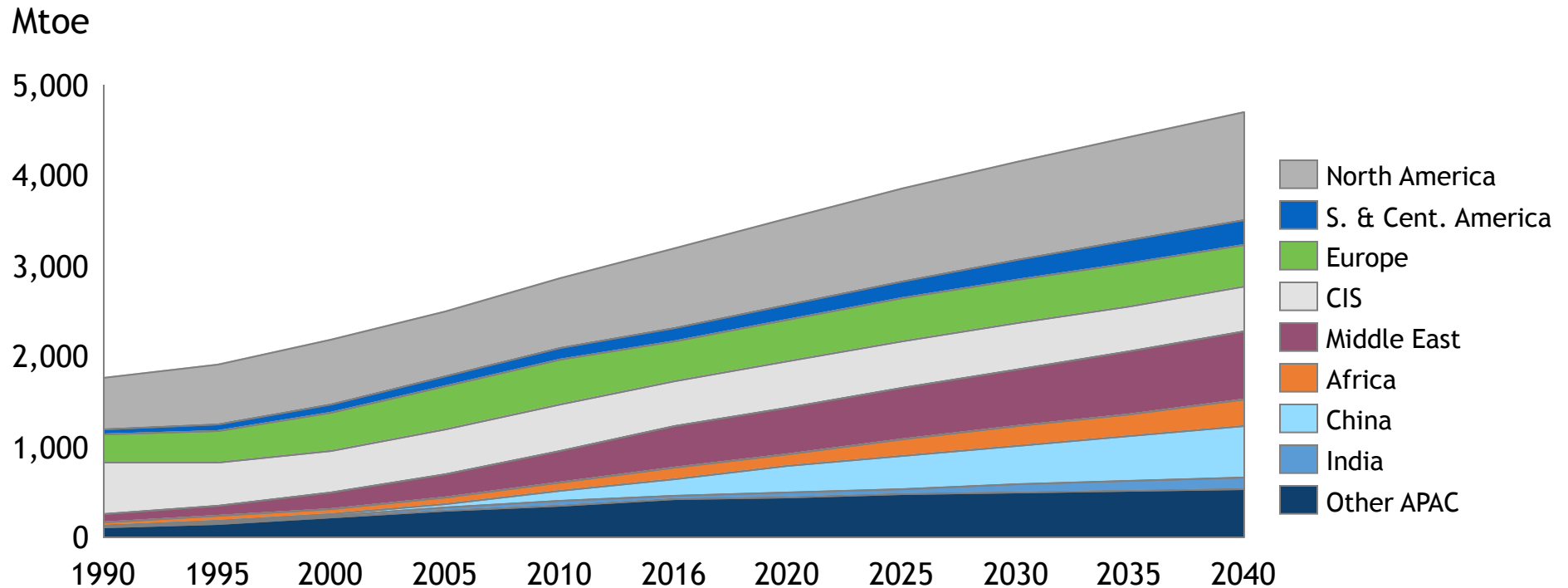
Supply perspective for fields producing at or greater than \$50/bbl break even price



Source: Vaclav Smil's Energy Transitions, Rystad Energy, BCG analysis
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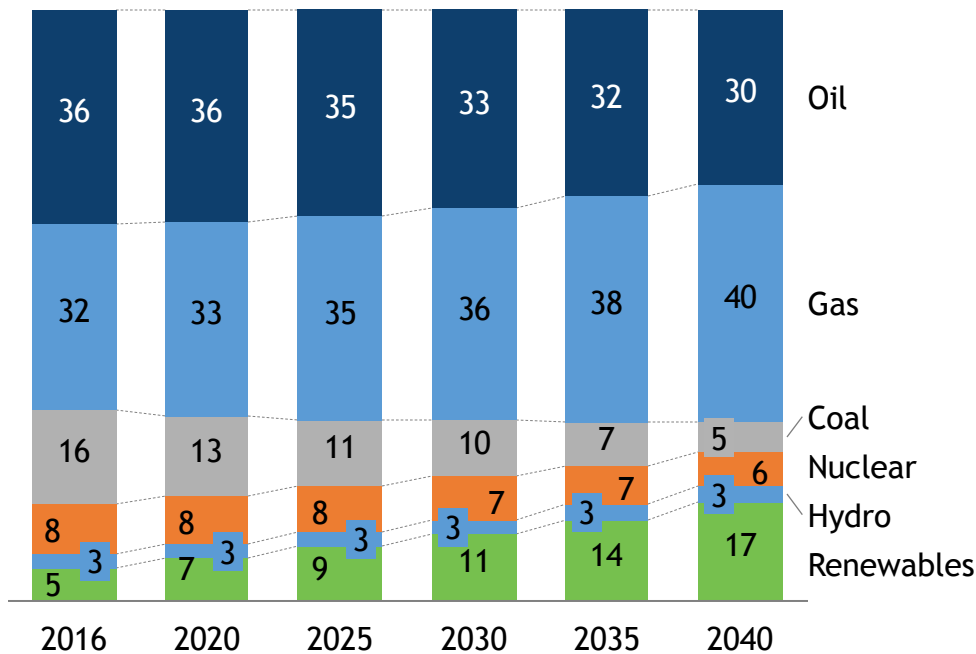
Gas is here to stay and is entering into its golden period

Region-wise gas consumption from 2016 to 2040



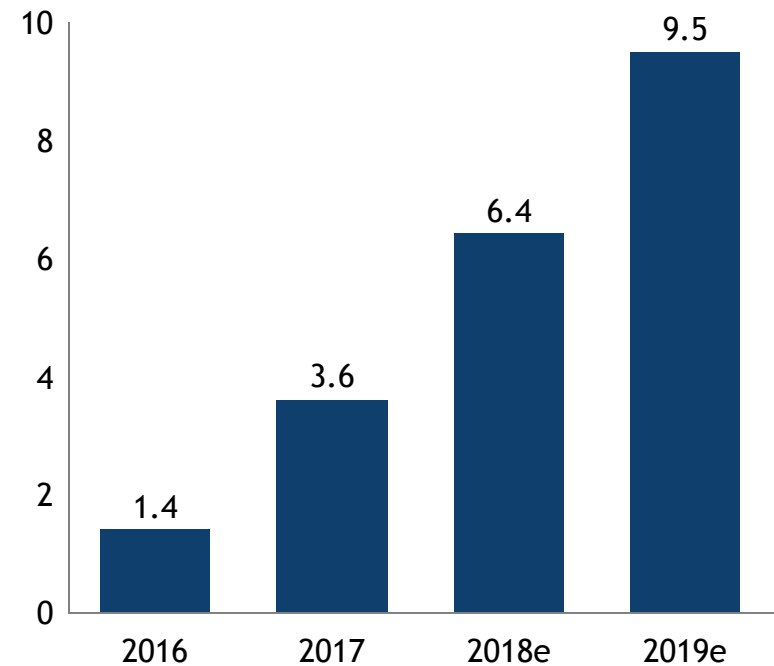
US will lead on switch to gas from other fossil fuel sources and is quickly becoming a major producer/exporter of fuel

US fuel demand mix in % (2016-2040)



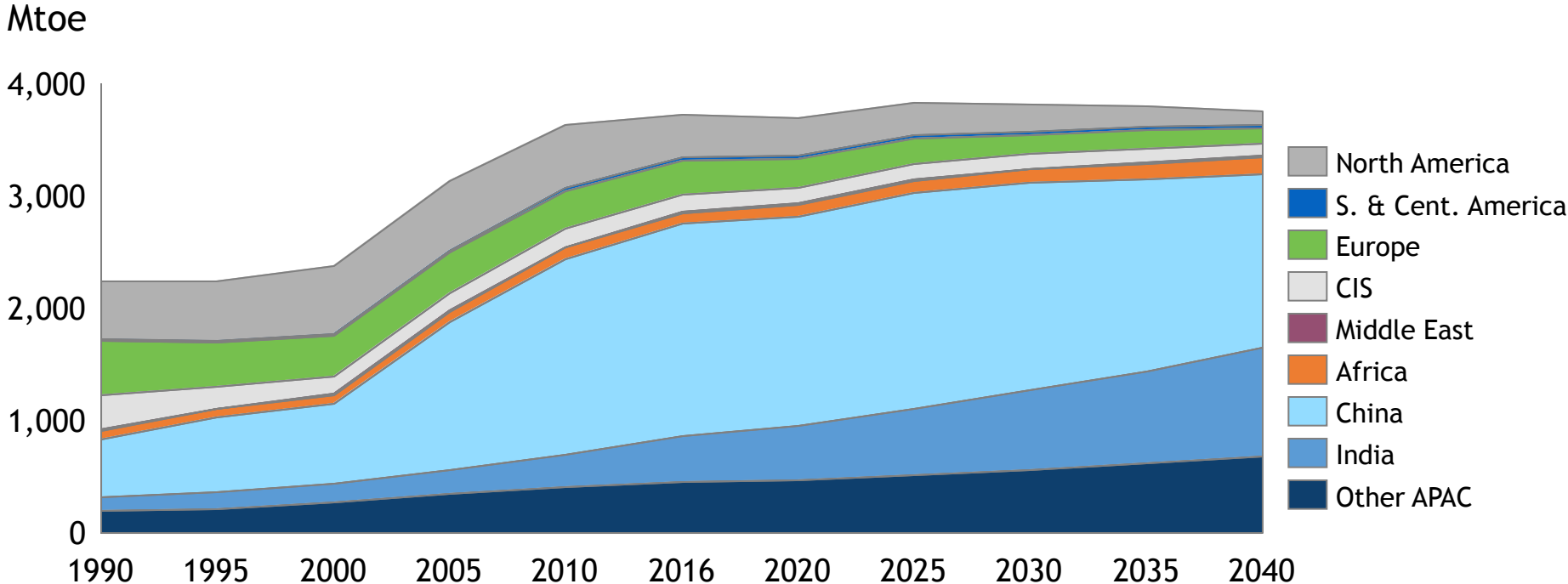
Natural Gas Liquefaction capacity in US

Billion cubic feet per day



Global Coal demand flattens and falls in China and the OECD

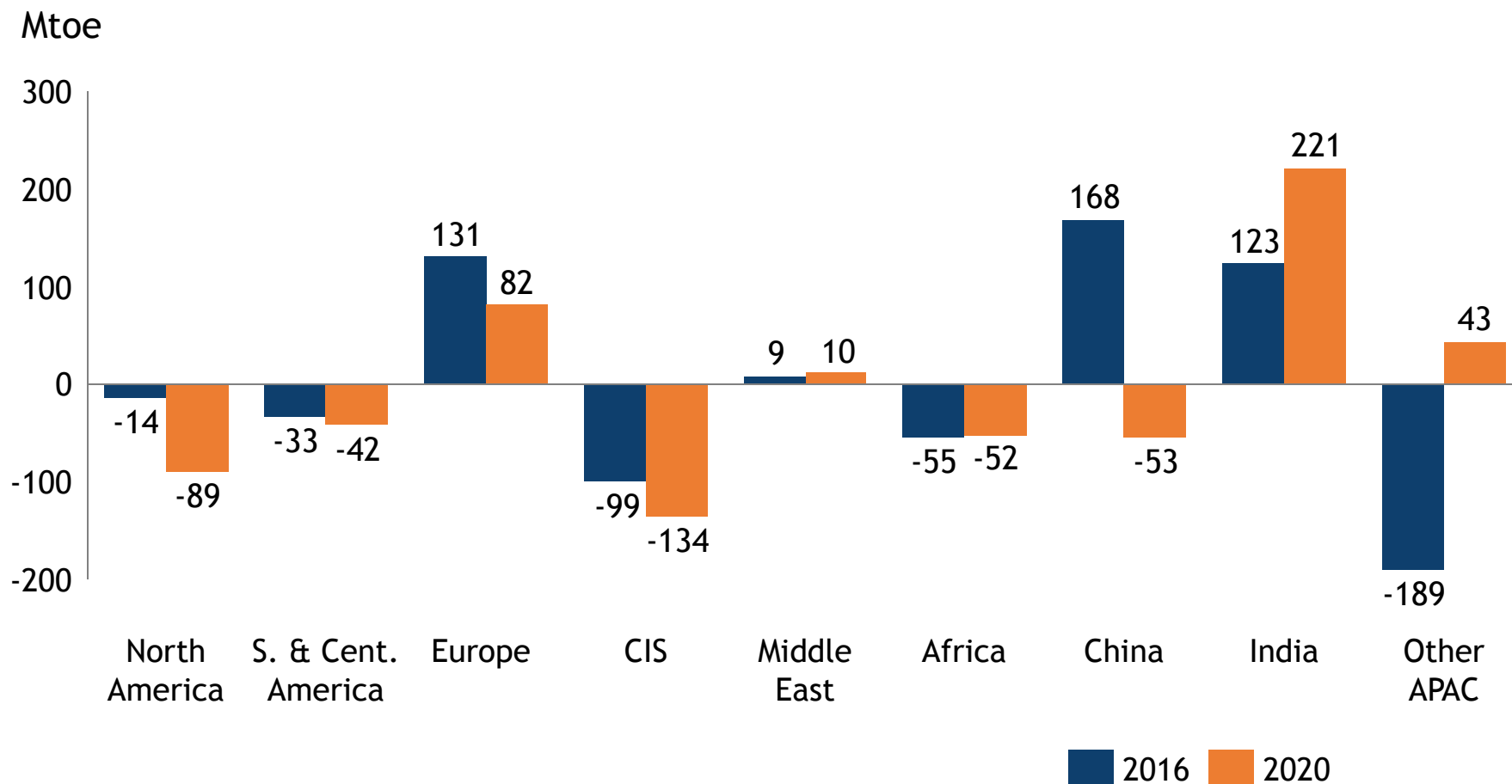
Region-wise coal consumption from 2016 to 2040



Source: BP Energy Outlook 2018
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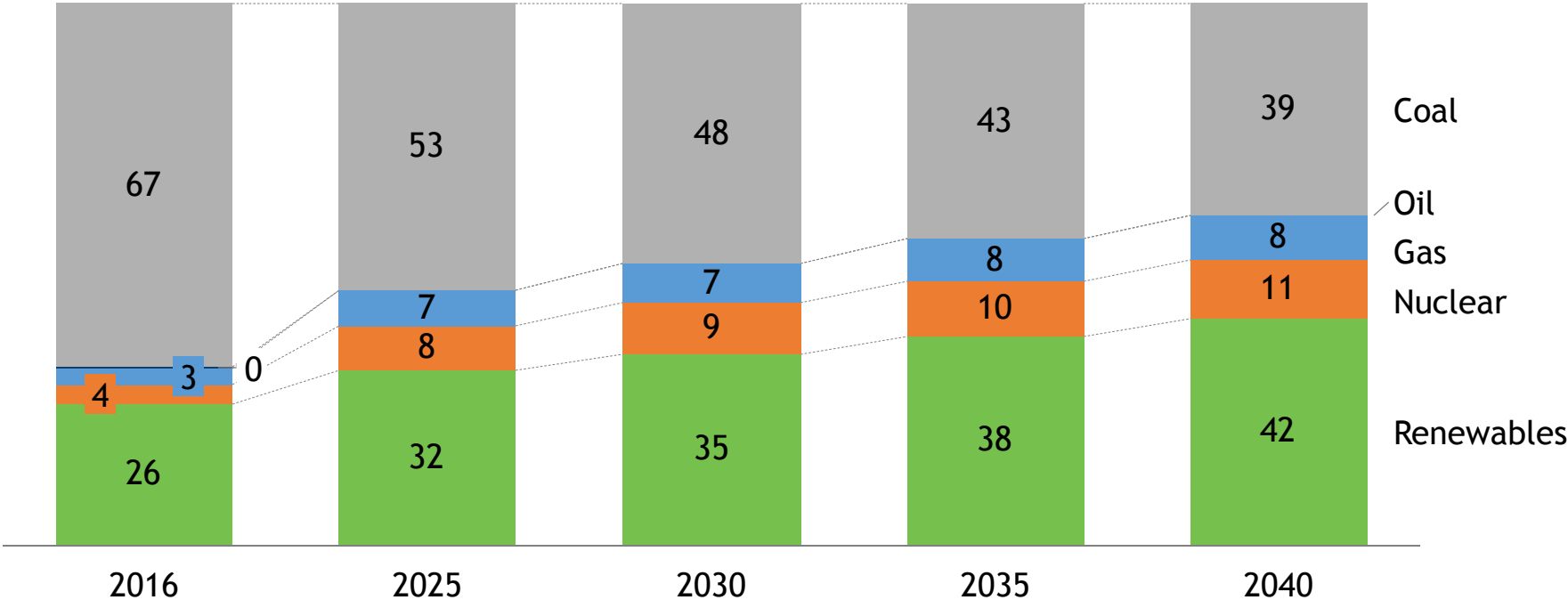
India might continue to import more coal but there could be a sharp decline from China

Region-wise net coal imports in 2016 and 2020



Lower coal demand in Chinese Power could imply challenges for domestic and international exporters to China

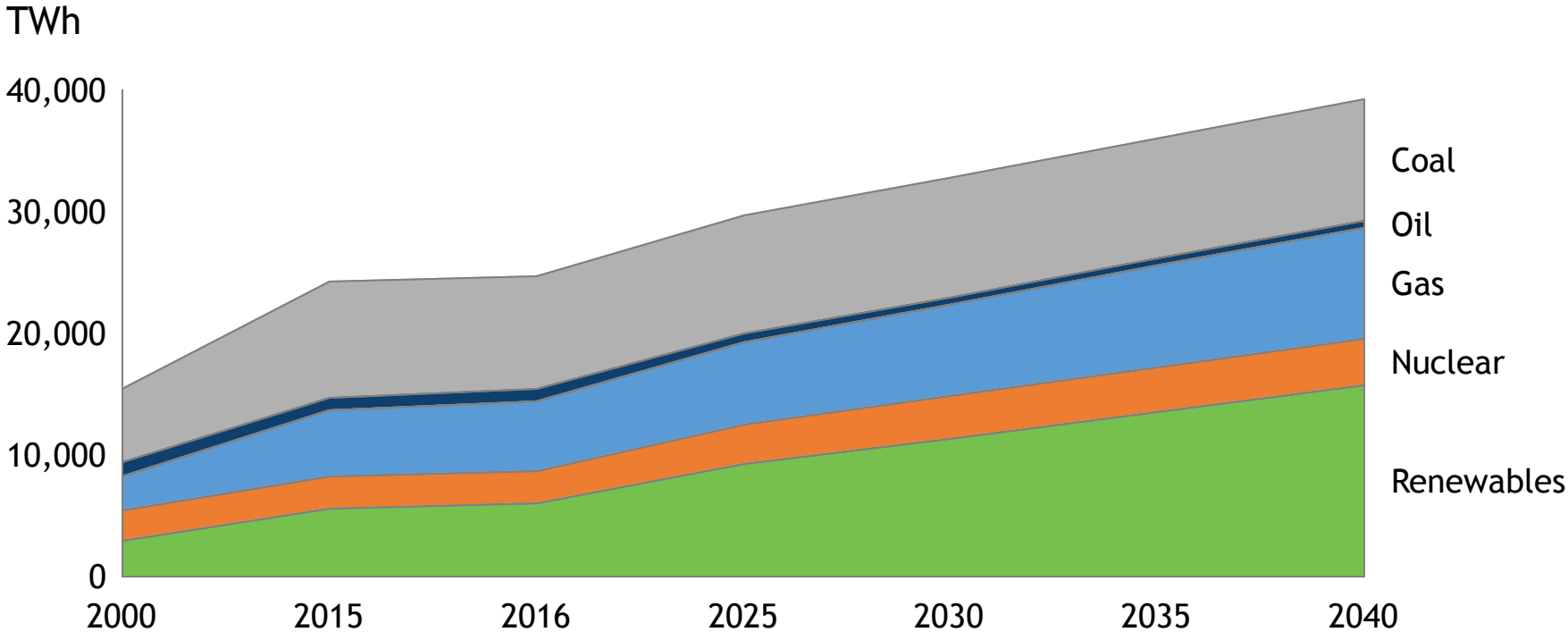
China Electricity generation mix (in %)



Source: IEA
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Renewables would see the highest growth driven by push from all major governments on clean energy

World power generation mix by source from 2000 to 2040

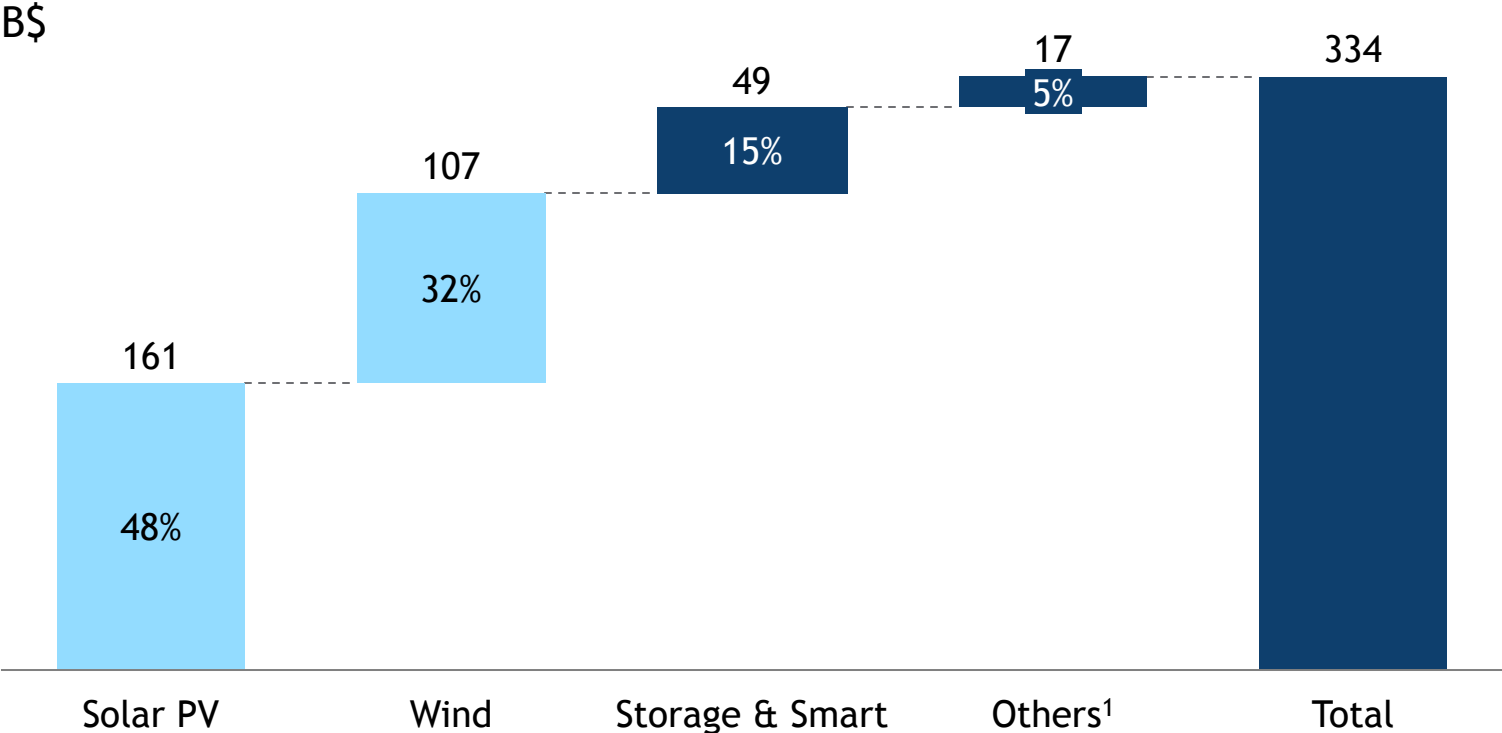


Source: IEA
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Focus on clean energy and storage leads to new alliances between traditional and new producers and consumers

Wind and Solar reported 80% of total renewables investments in 2017



1. Biomass, biofuels, marine, geothermal, small hydro
Source: BNEF 2017
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Key Questions

- 1 Faced with changes in the energy demand mix of consumers, how can traditional energy producers ensure that they stay relevant in a market?
- 2 What measures can consumers consider to ensure more diverse supplies and reliably maintain energy security to balance energy demand growth?
- 3 How does investing in new clean energy technologies help both consumers and producers maintain energy security and achieve shared goals together?

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