

The Outlook for Energy: A View to 2040

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This presentation includes forward-looking statements. Actual future conditions (including economic conditions, energy demand, and energy supply) could differ materially due to changes in technology, the development of new supply sources, political events, demographic changes, and other factors discussed herein and under the heading "Factors Affecting Future Results" in the Investors section of our website at www.exxonmobil.com. The information provided includes ExxonMobil's internal estimates and forecasts based upon internal data and analyses as well as publicly-available information from external sources including the International Energy Agency. This material is not to be used or reproduced without the permission of Exxon Mobil Corporation. All rights reserved.



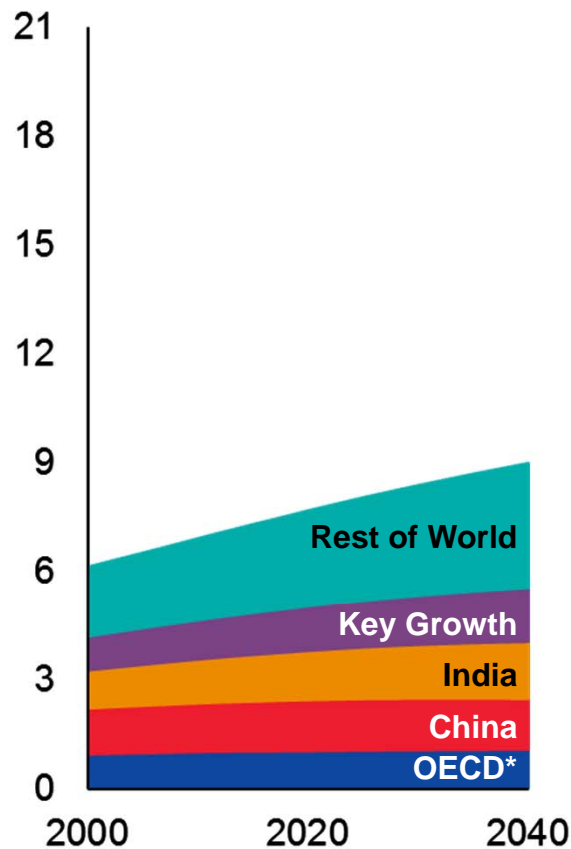
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Energy lives here™

Global Progress Drives Demand

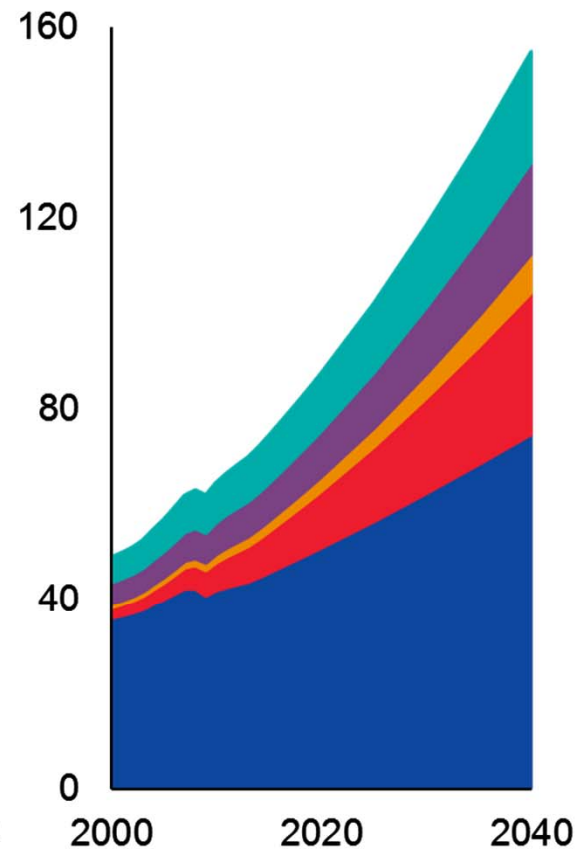
Population

Billion



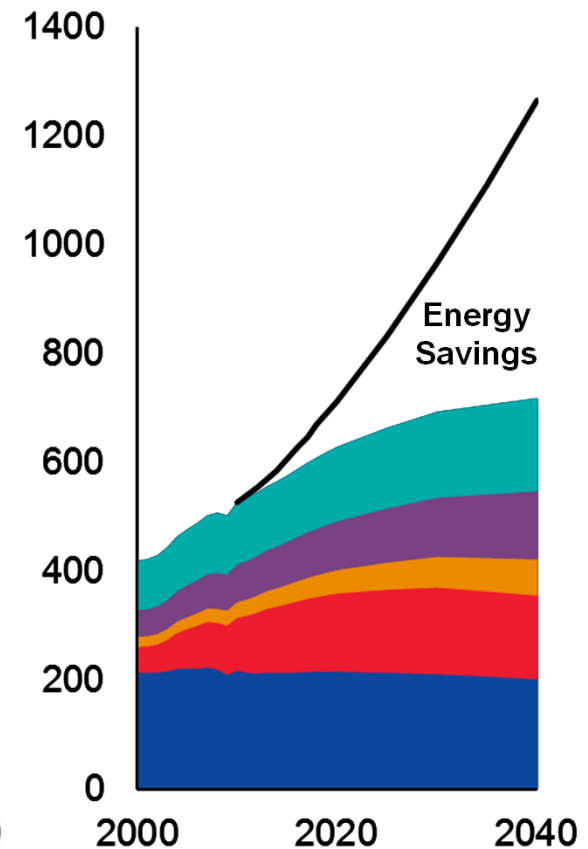
GDP

Trillion 2010\$



Energy Demand

Quadrillion BTUs

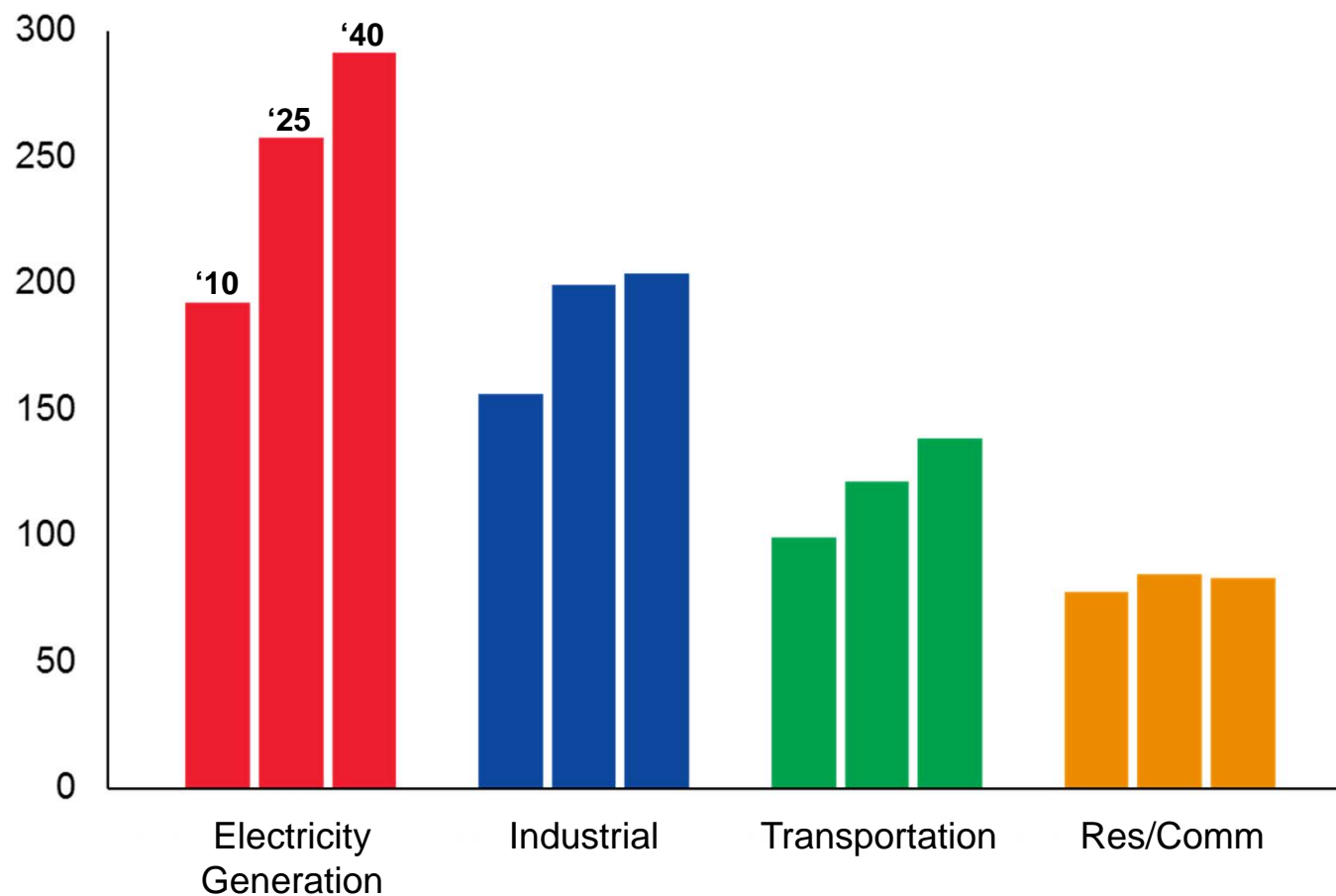


**Mexico and Turkey included in Key Growth countries*

Electricity Generation Leads Growth

Primary Energy Demand by Sector

Quadrillion BTUs

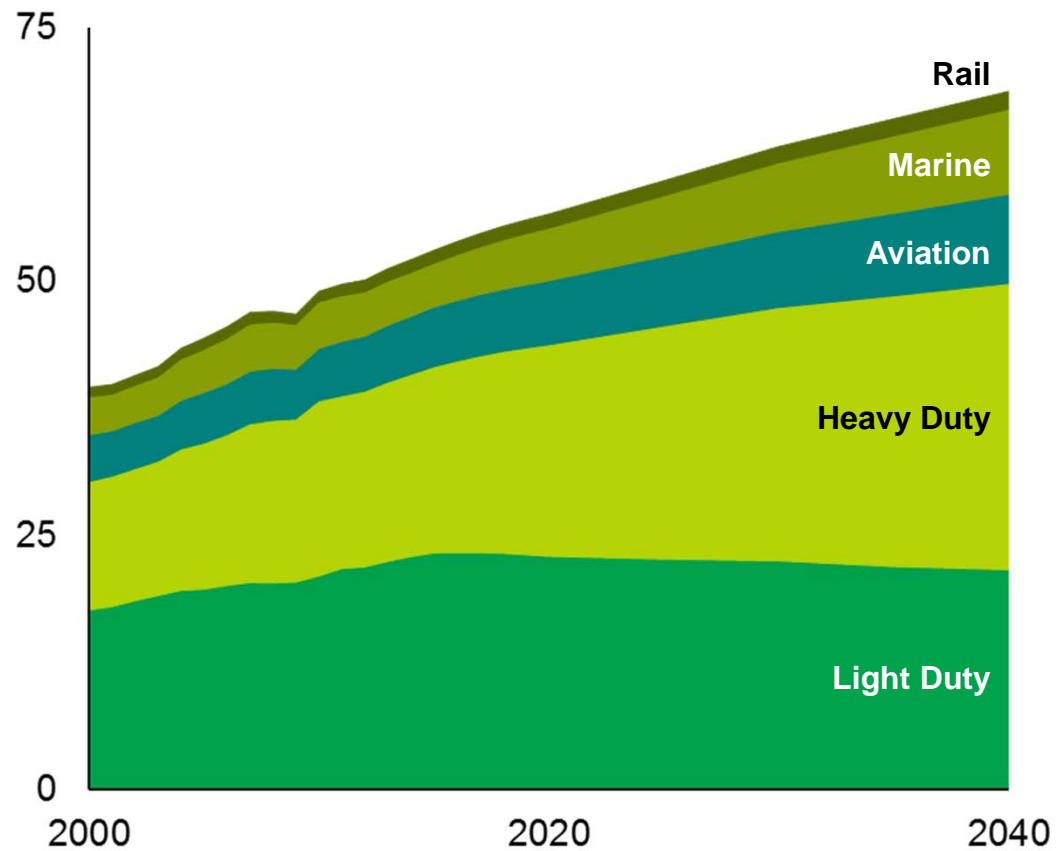


Transportation

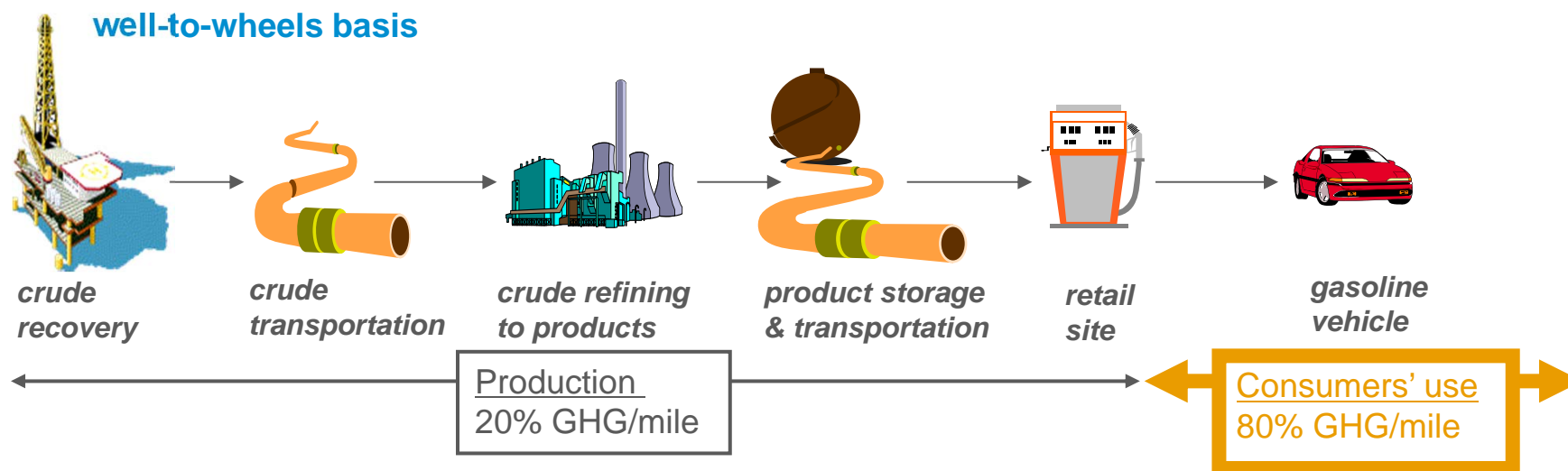


Transportation Demand

Sector Demand
MBDOE



Technologies for Light Duty Transport



technologies for fuel production

shorter-term

- energy efficiency
- flare reduction
- cogeneration

longer-term

- second generation bio-fuels
- Carbon Capture and Storage (CCS)

technologies for consumers' use of fuel

shorter-term

- conventional vehicle technology improvements
- advanced vehicles – hybrid, advanced diesel, CNG

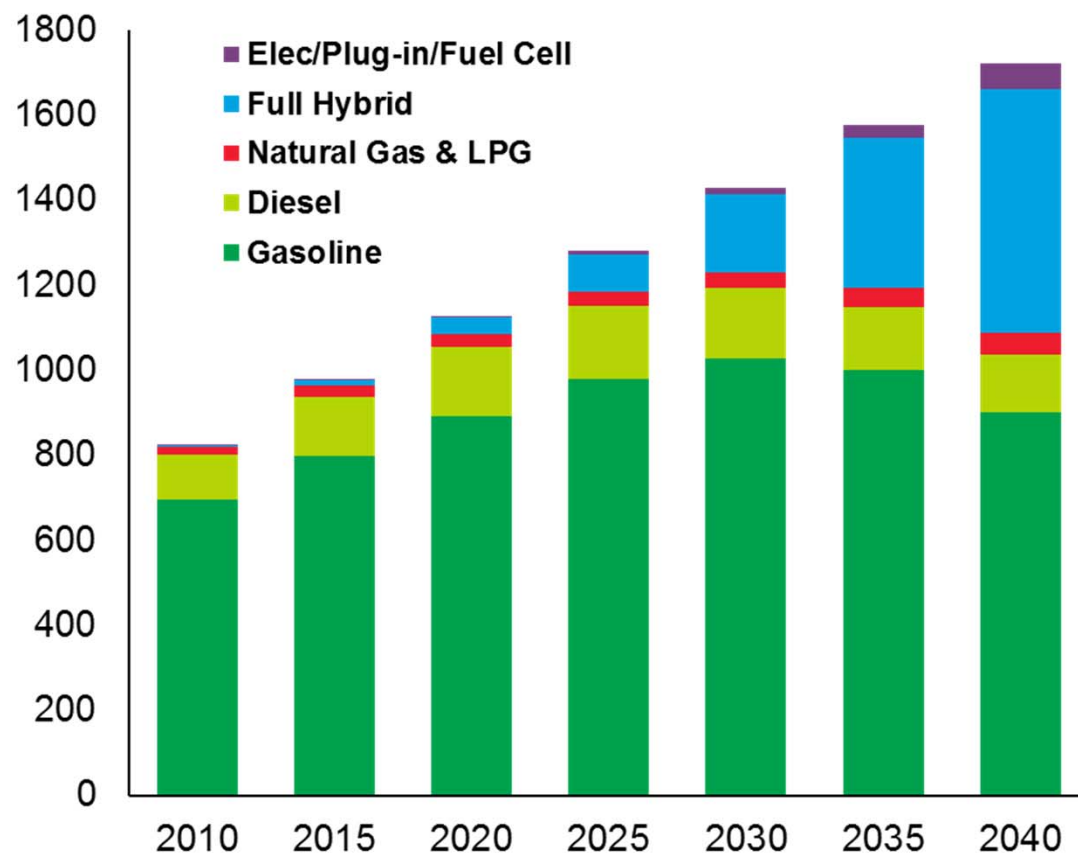
longer-term

- breakthrough vehicles – fuel cell, PHEV/EVs, HCCI

Light Duty Vehicles

Fleet by Type

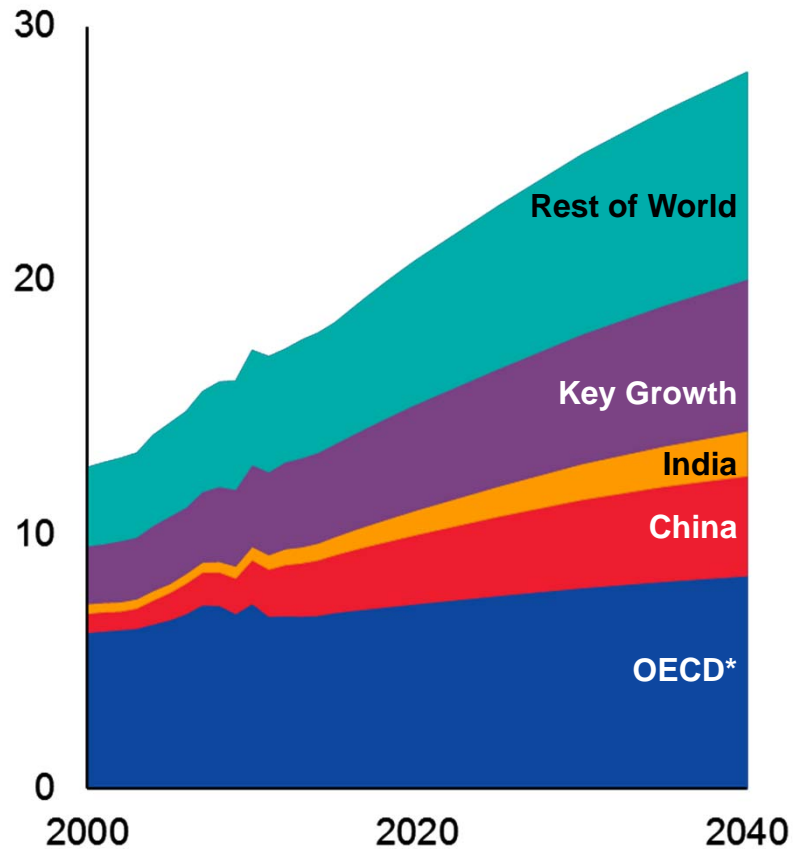
Million



Heavy Duty Transportation

Heavy Duty Demand by Region

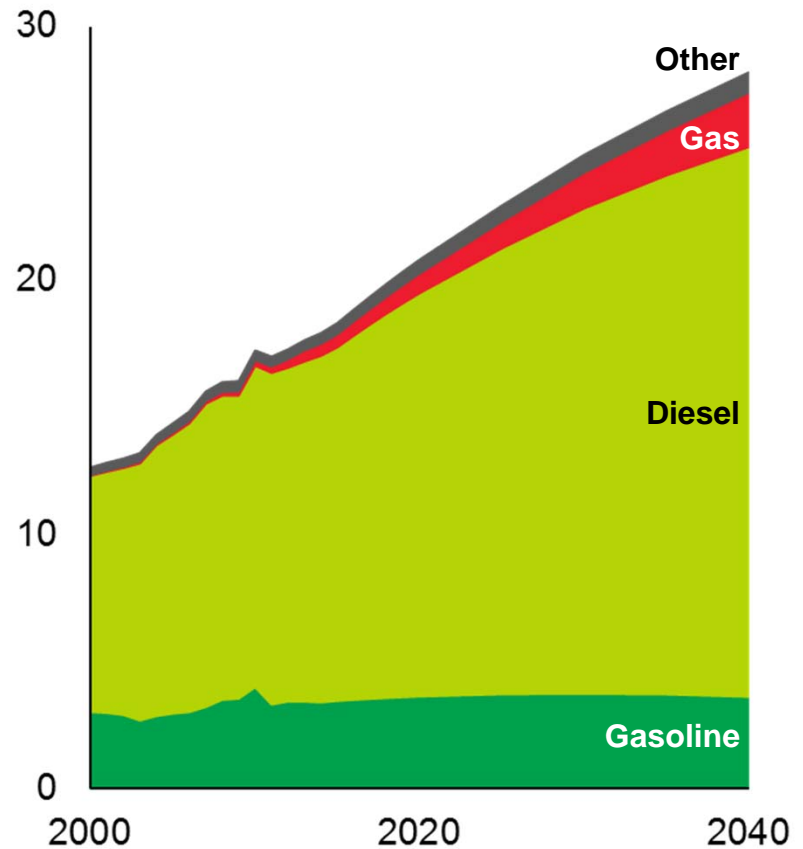
MBDOE



**Mexico and Turkey included in Key Growth countries*

Heavy Duty Demand by Fuel

MBDOE



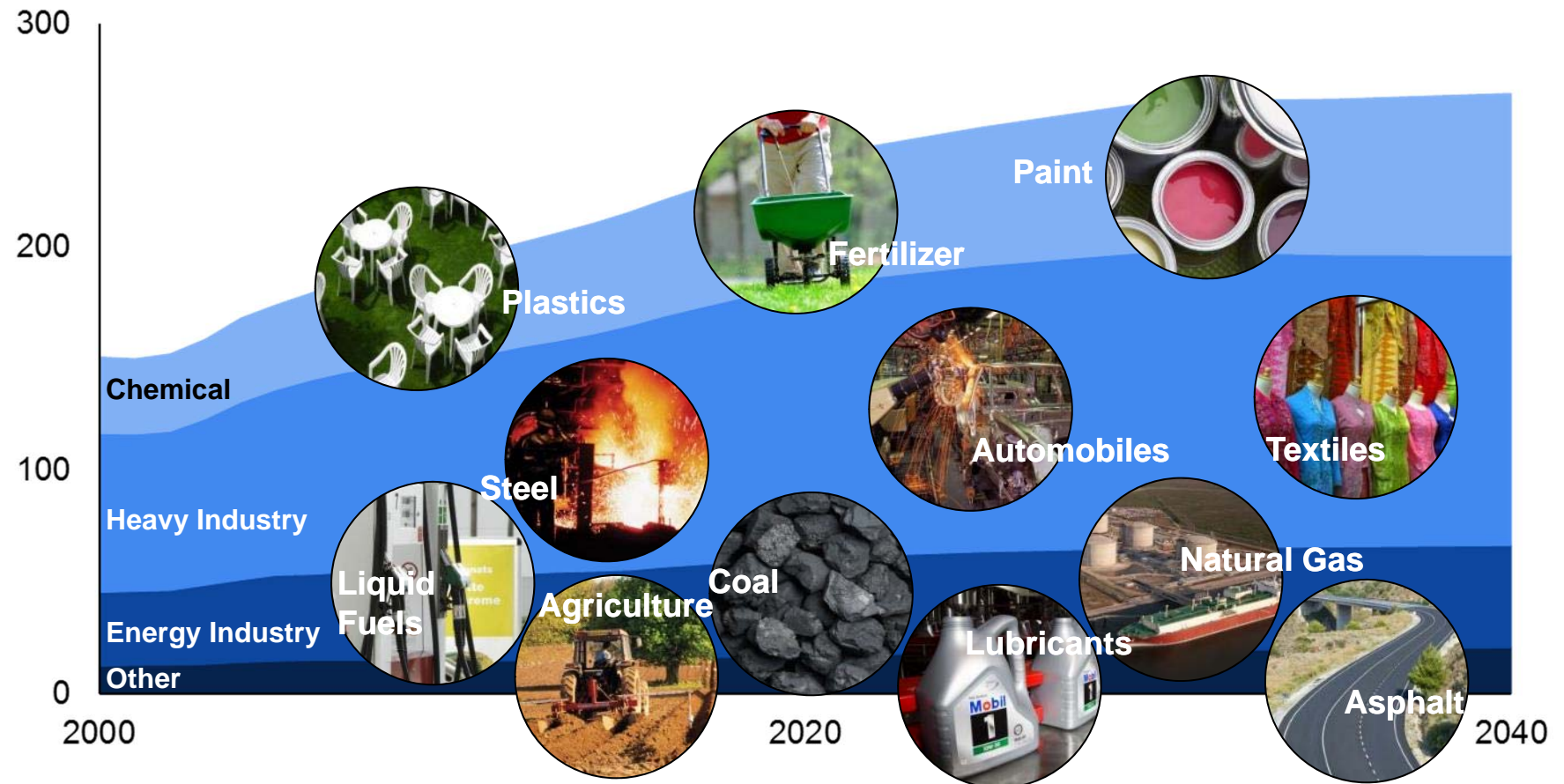
A photograph of an industrial car body assembly line. Two car chassis are visible, one above the other, both in a light blue-grey metallic finish. They are positioned on a conveyor system within a factory setting. To the right, a large orange robotic arm is partially visible, equipped with various cables and hoses. The background is filled with industrial machinery, structural beams, and other components of the manufacturing process. The word "Industrial" is overlaid in white text on the left side of the image.

Industrial

Industrial Demand

Industrial Demand by Sector

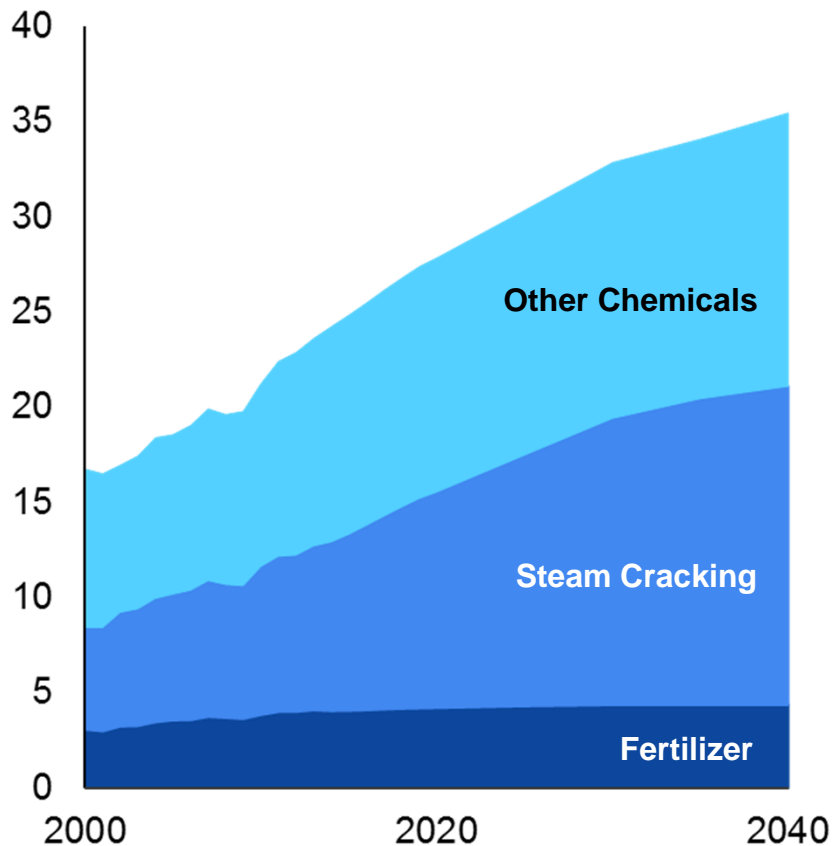
Quadrillion BTUs



Chemicals Demand Sees Significant Growth

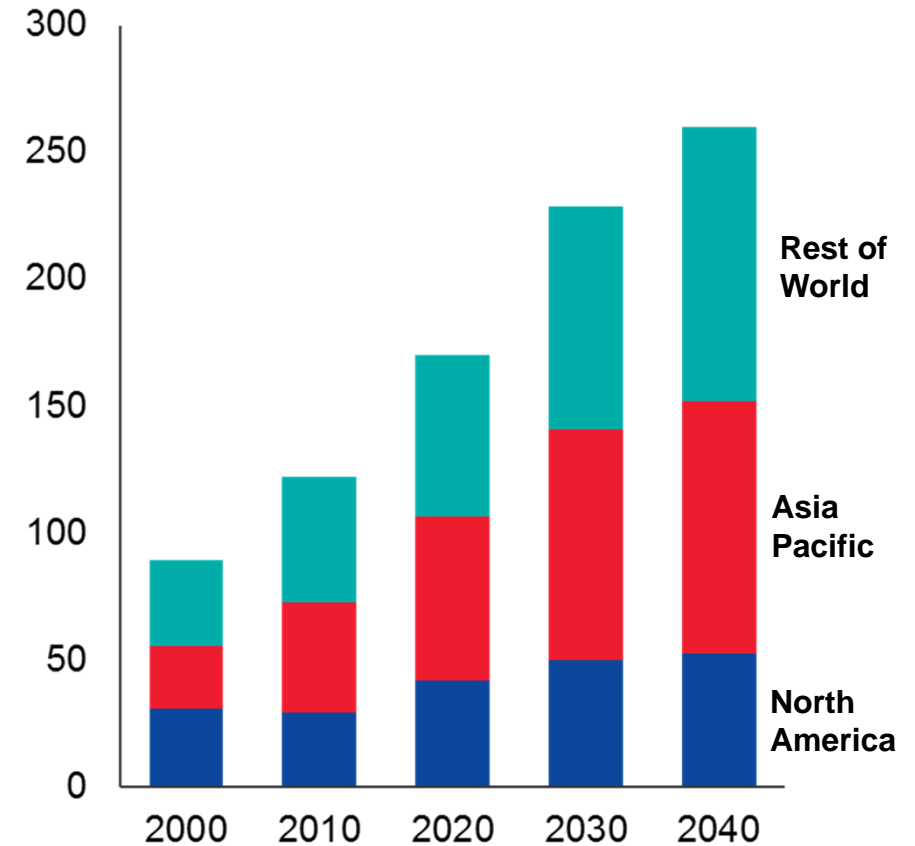
By Sector

MBDOE



Ethylene Production

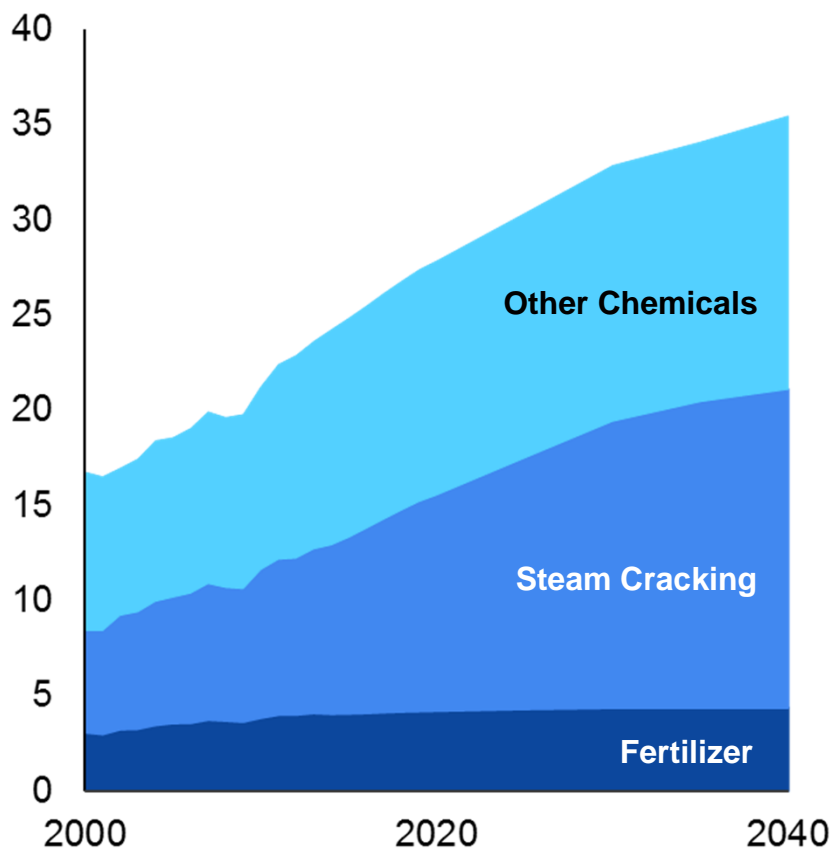
MTA



Chemicals Demand Grows Globally

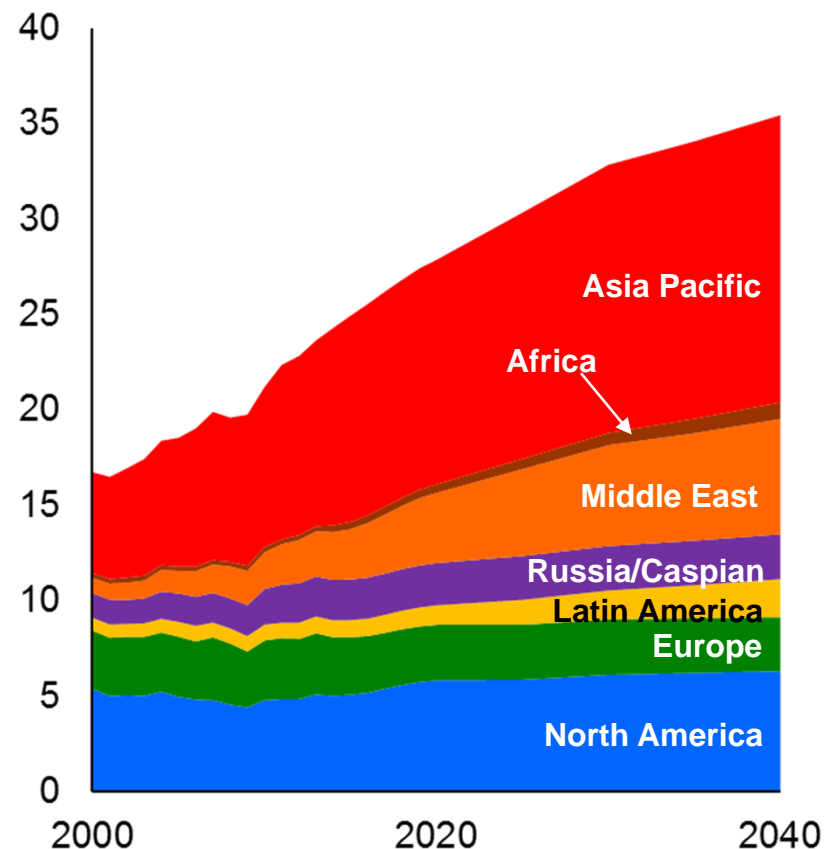
By Sector

MBDOE



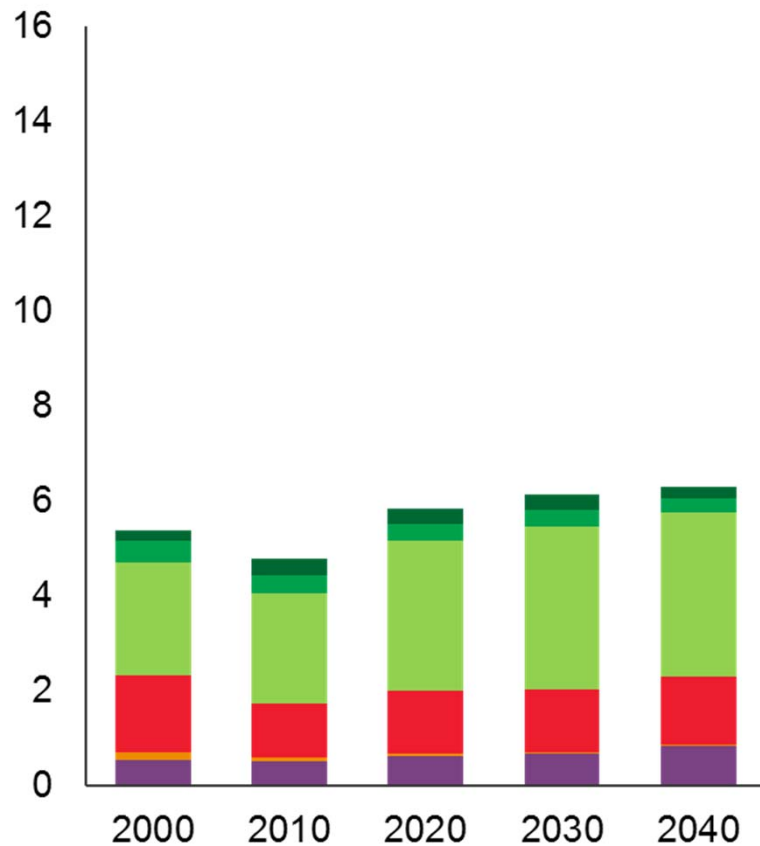
By Region

MBDOE

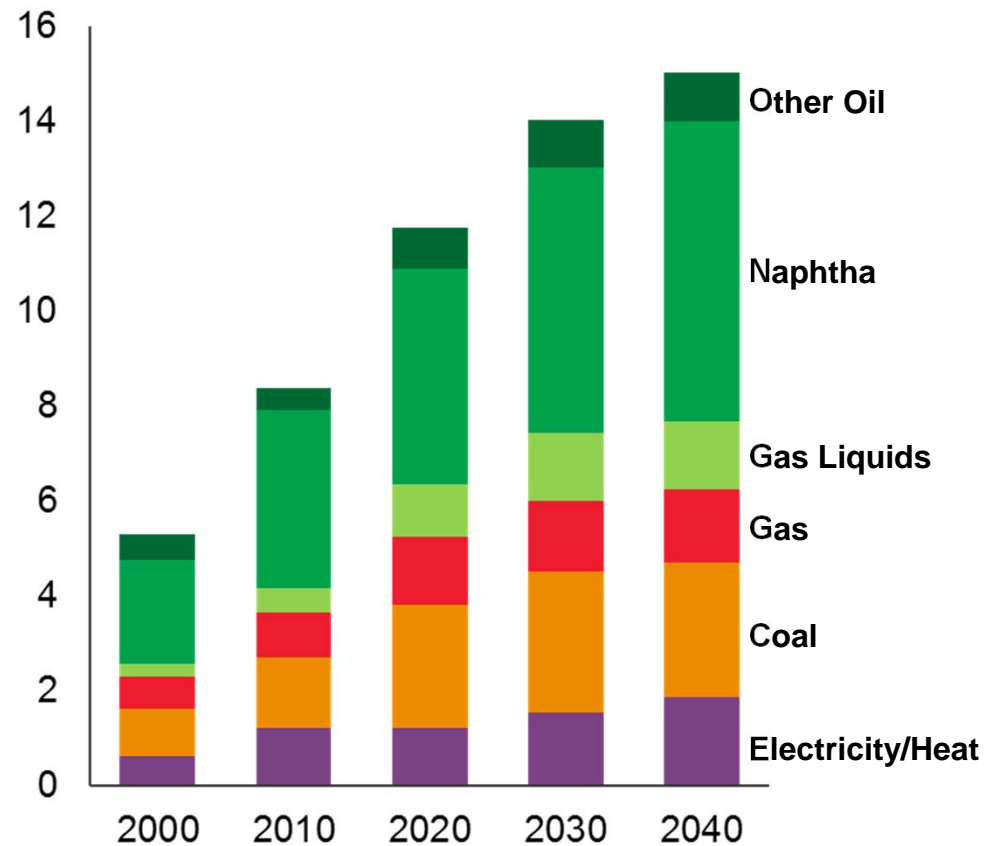


Chemical Feedstocks Vary Among Regions

North America
MBDOE



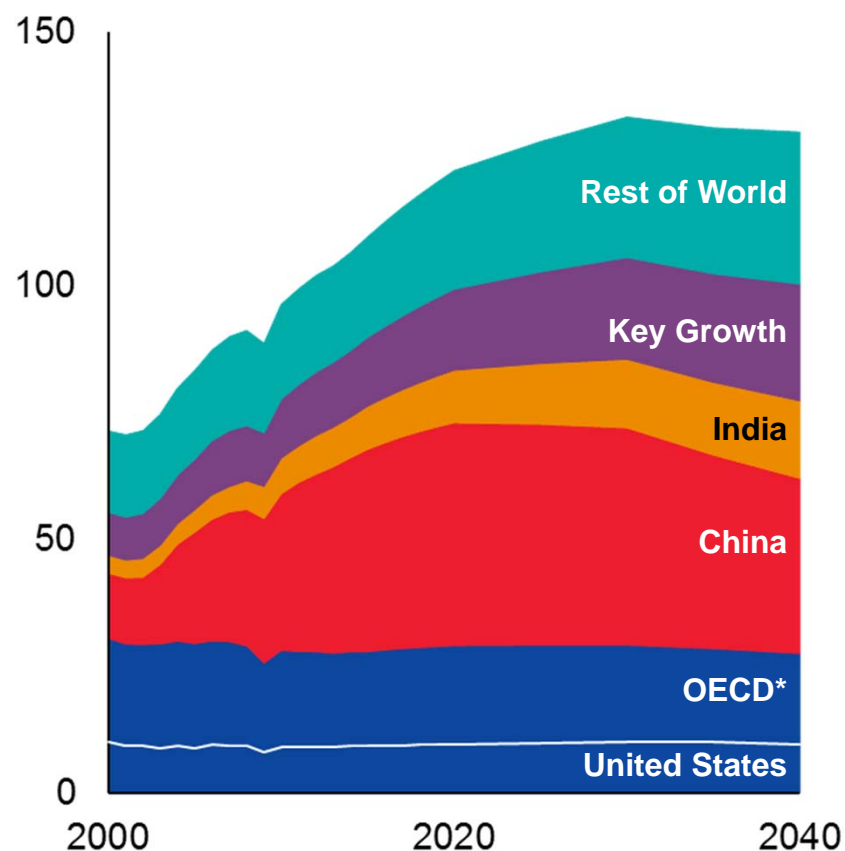
Asia Pacific
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Heavy Industry Demand

Heavy Industry by Region

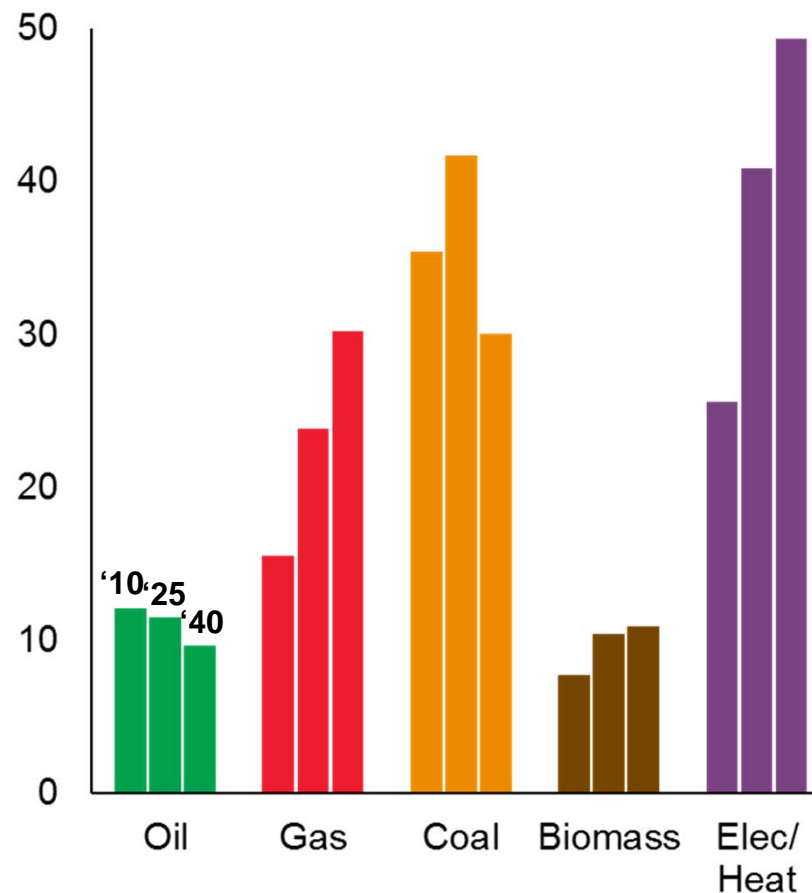
Quadrillion BTUs



**Mexico and Turkey included in Key Growth countries*

Heavy Industry by Fuel

Quadrillion BTUs



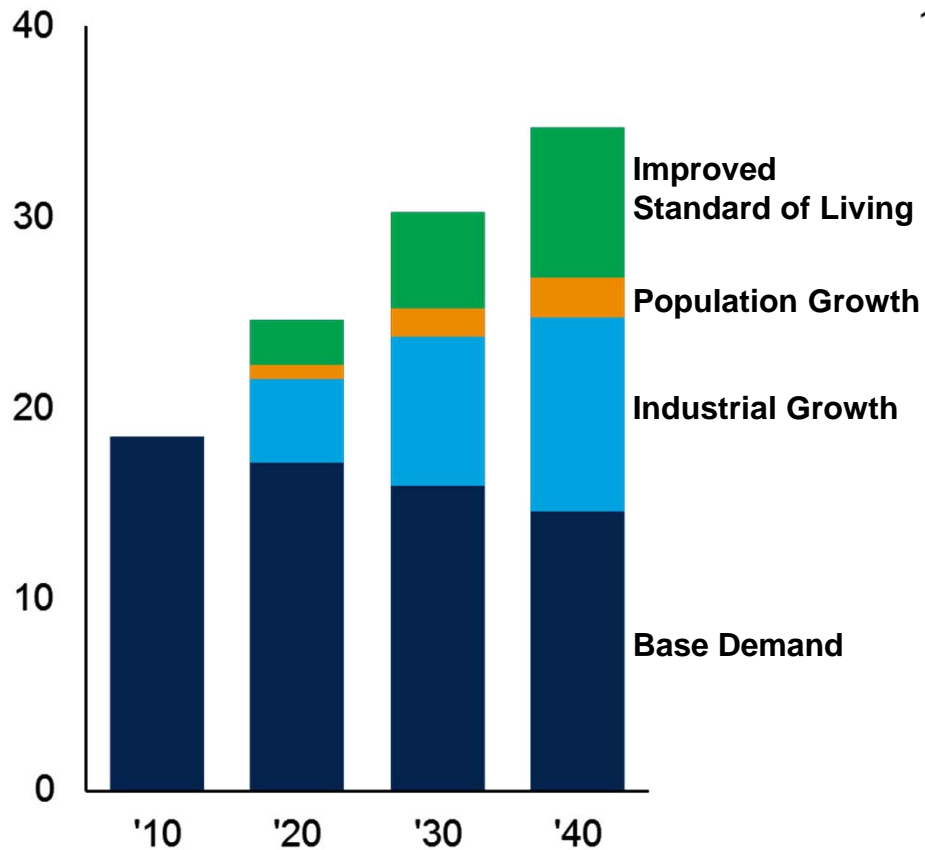


Electricity Generation

Electricity Demand

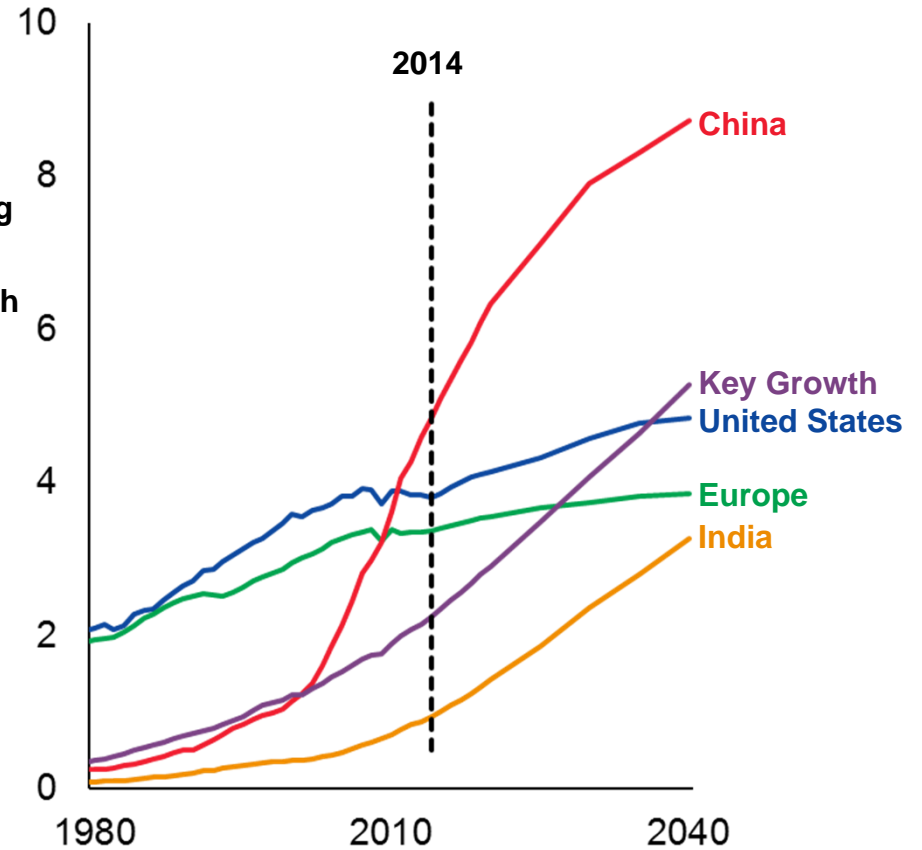
Electricity Demand

Thousand TWh

























































Electricity Demand by Region

Thousand TWh



Fuel Choices for Power Generation

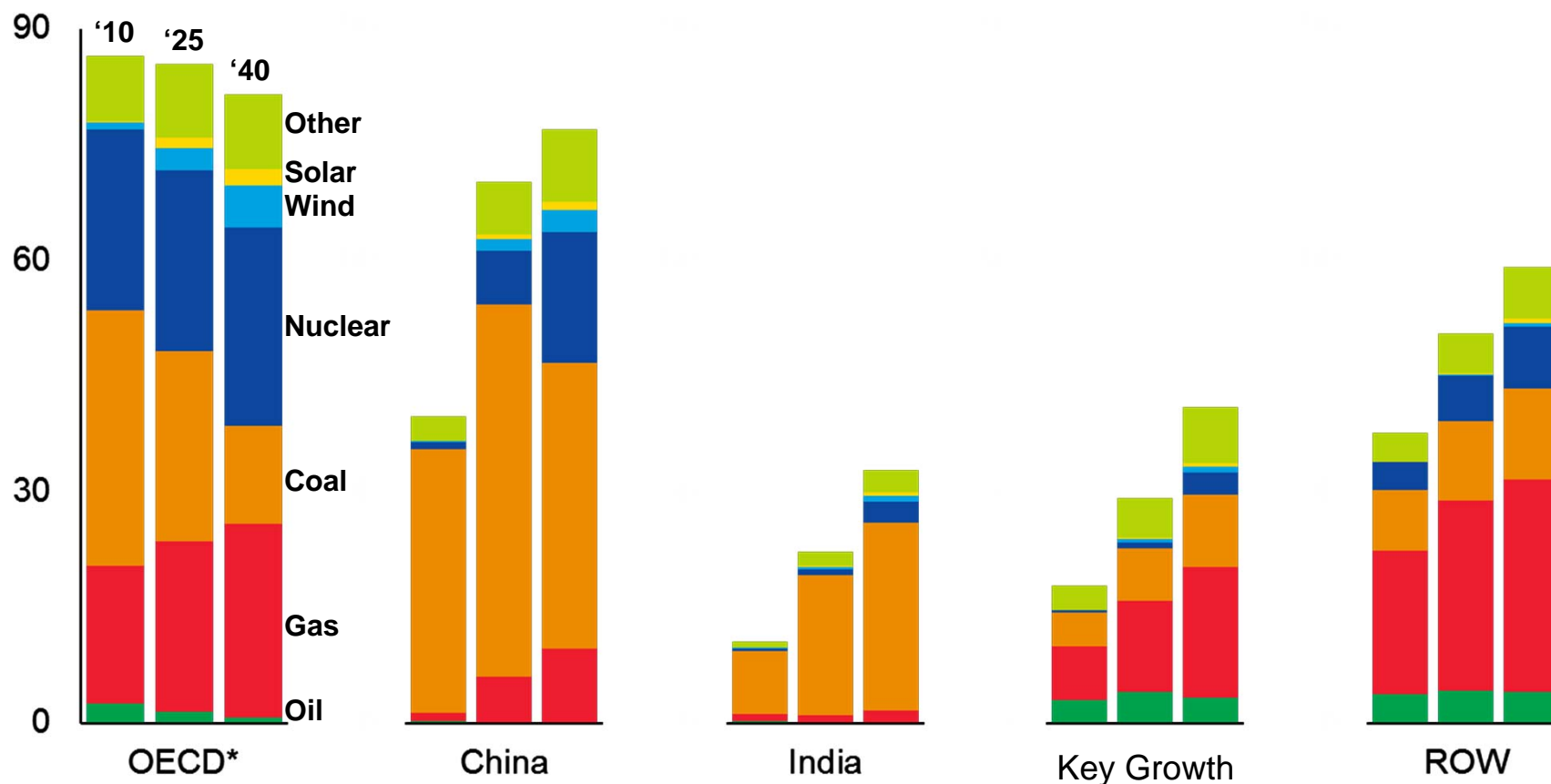
| Relative benefit/impact | Coal | Coal w/ CCS | Natural Gas | Nuclear | Wind | Solar Photovoltaic |
|-------------------------------|---|---|---|---|---|---|
| Construction Cost |  |  |  |  |  |  |
| Electricity Cost |  |  |  |  |  |  |
| Land Use |  |  |  |  |  |  |
| Water Requirements |  |  |  |  |  |  |
| CO ₂ Emissions |  |  |  |  |  |  |
| Non-CO ₂ Emissions |  |  |  |  |  |  |
| Waste Products |  |  |  |  |  |  |
| Availability |  |  |  |  |  |  |
| Flexibility |  |  |  |  |  |  |

More Favorable ←      → Less Favorable

Source: EPRI, Generation Technology Assessment

Electricity Generation Fuel by Region

Quadrillion BTUs



**Mexico and Turkey included in Key Growth countries*

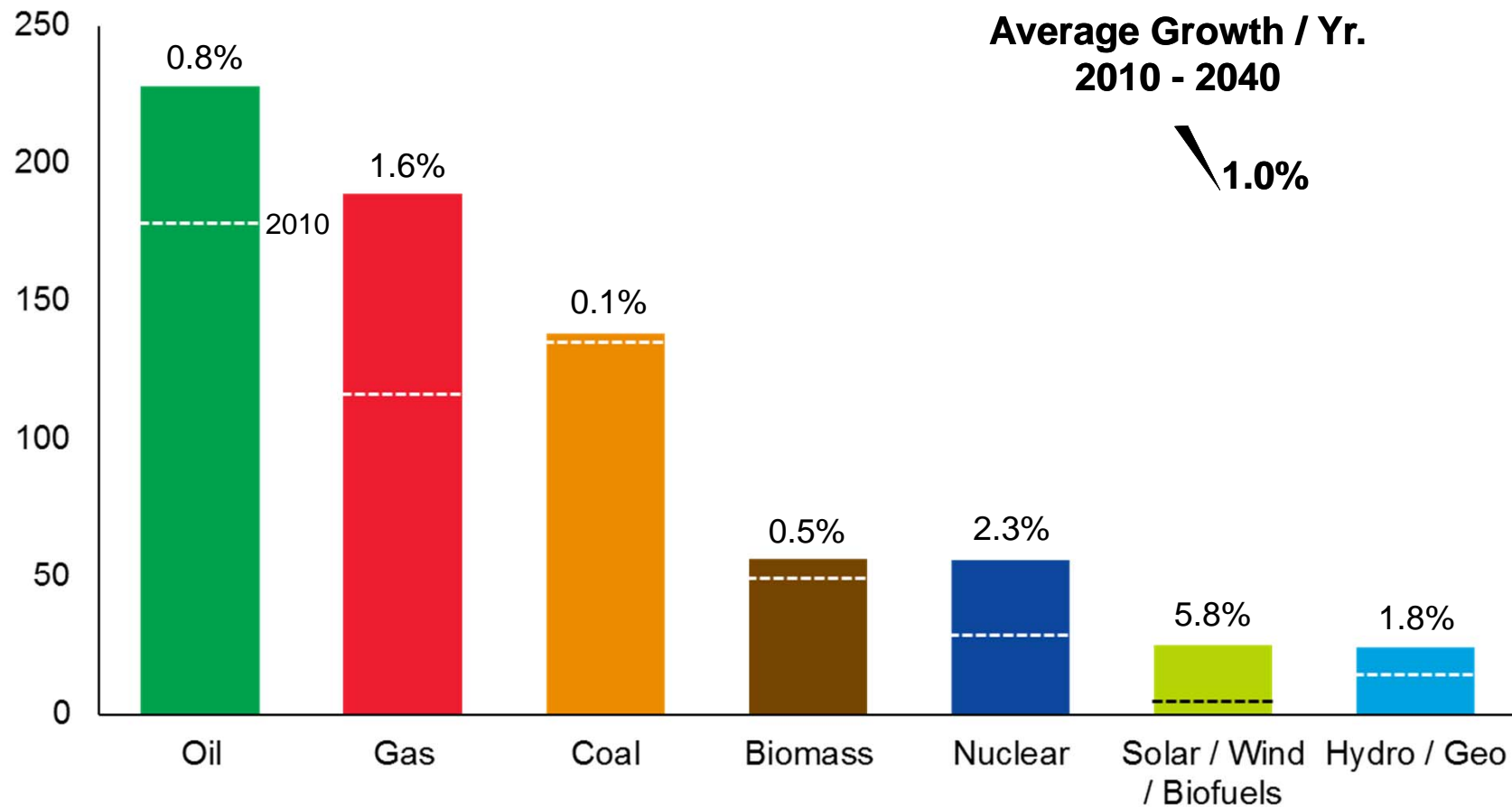
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Global Demand

2040 By Fuel

Quadrillion BTUs



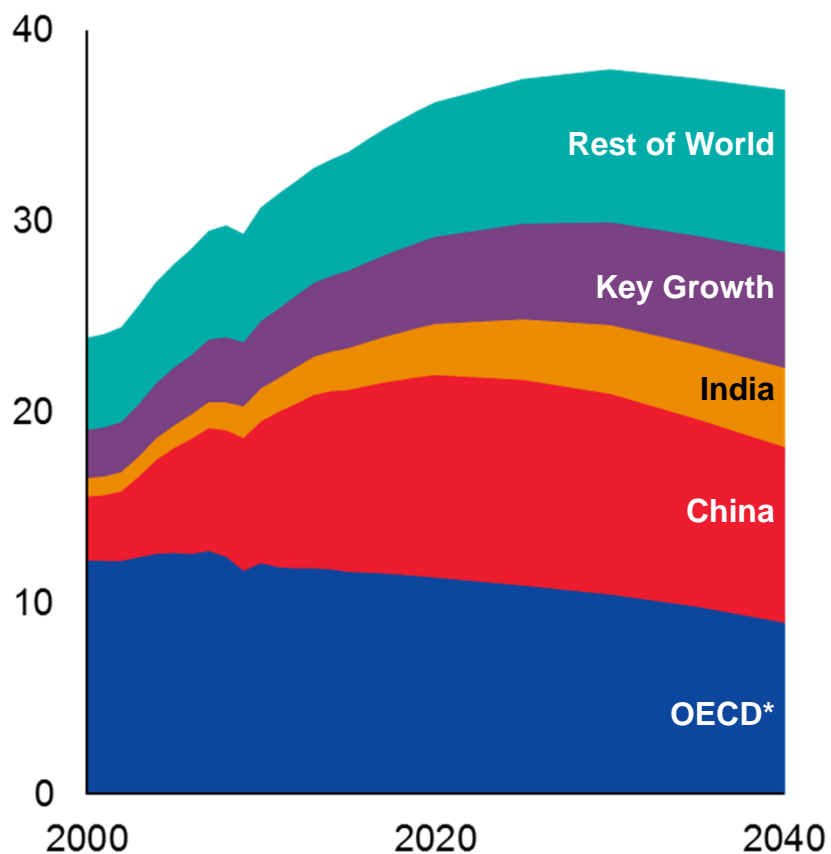
CO₂ Emissions



World Emissions

CO₂ Emissions by Region

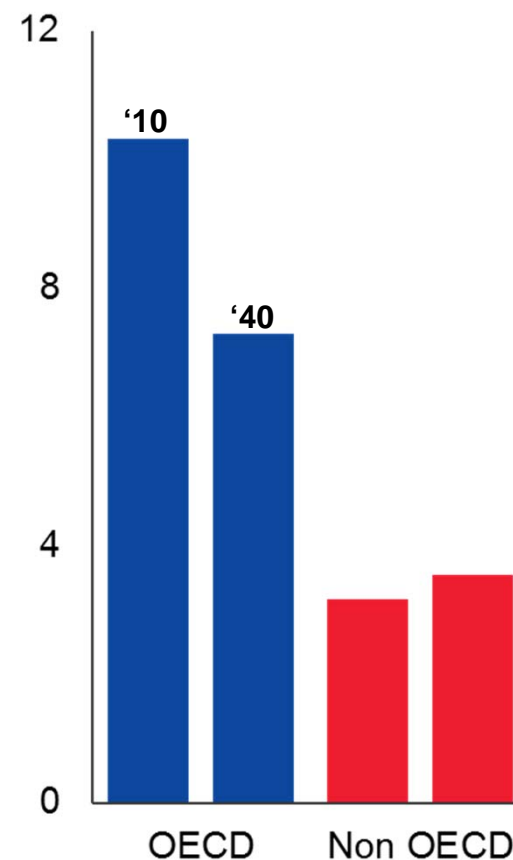
Billion metric tonnes



**Mexico and Turkey included in Key Growth countries*

Emissions per Capita

Tonnes / Person



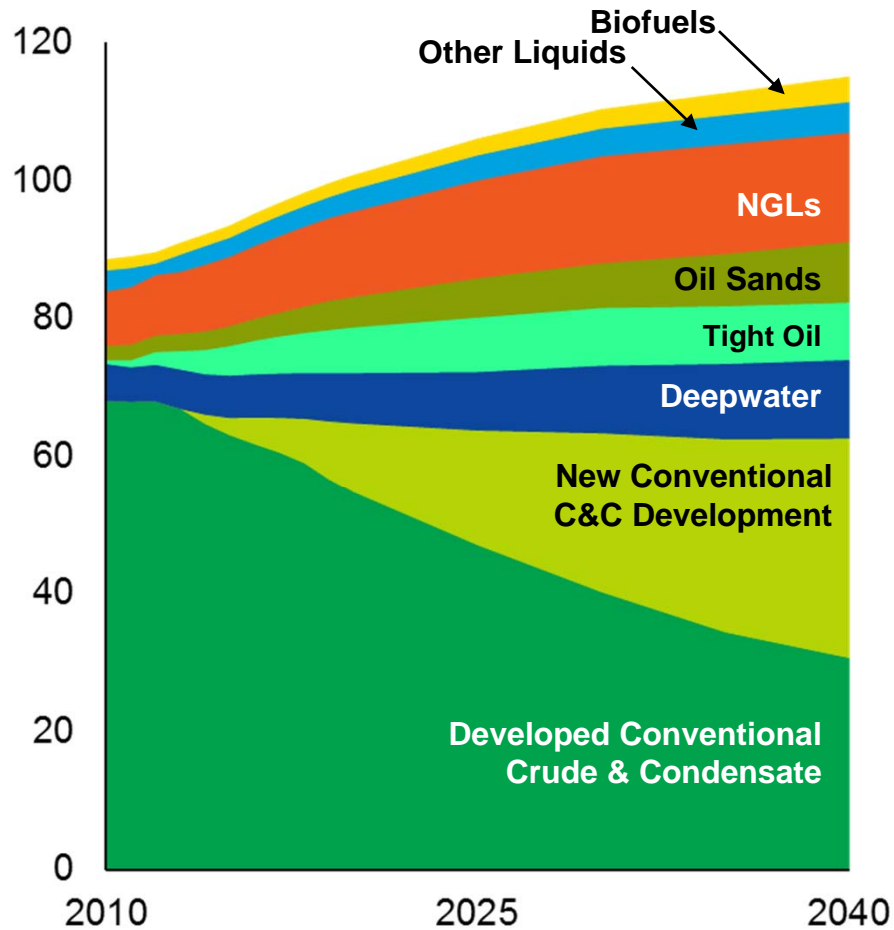
Supply



Global Liquids and Gas Supply

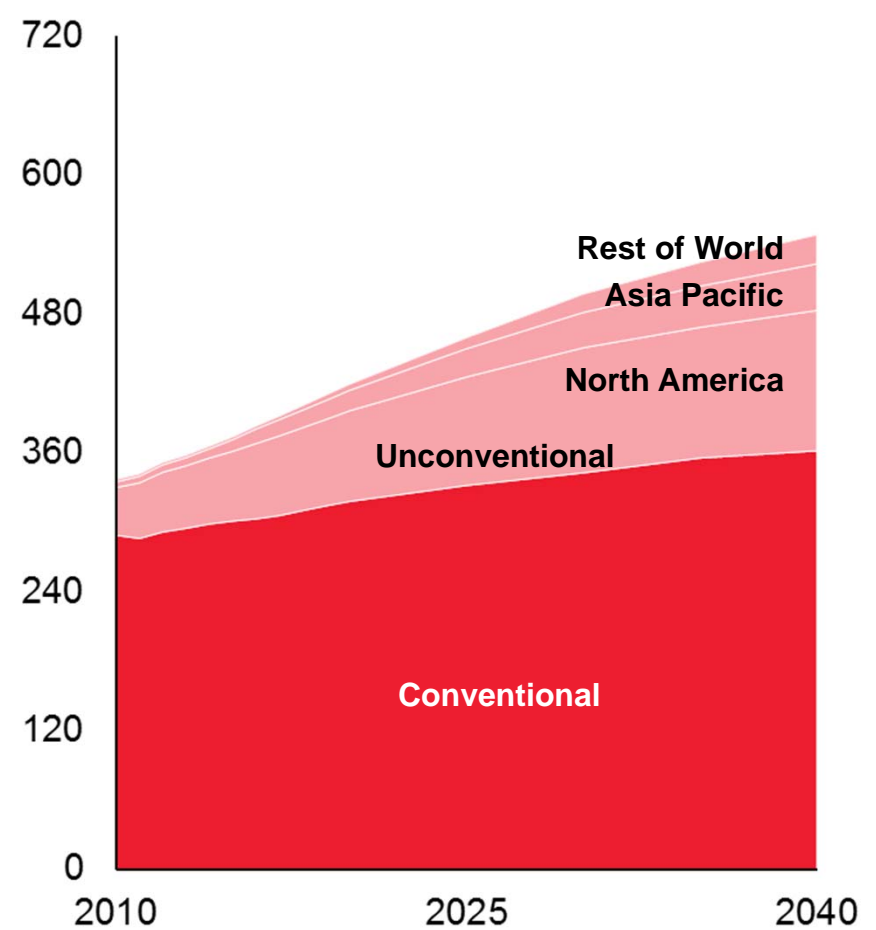
Supply by Type

MBDOE



Global Gas Supply

BCFD



Closing Comments – Technology Evolution

- Global progress drives energy demand. Technology drives changes in energy system
- Technology development requires longer-term focus and is unpredictable
 - Benefits from a portfolio approach; Learning from failure advises future projects
 - May require business model innovation, especially in “new-to-world” applications
 - Sometimes driven by science and technology developments in other unrelated areas
 - Extent, pace, and source of future cost reduction cannot be precisely predicted
- Technologies evolve “Bottoms-up” or “Top-down”

Top-down: Technologies are likely commercialized in higher value segments before they are used in lower value segments

 - CCS – NG separation/EOR > Power plants/storage > Refineries/storage
 - Butanol: Bio-n-butanol – displaces chemical n-butanol > fuel additive > neat fuel

Bottoms-up: Technologies enter less-demanding, un-bundled segments
- Global widespread technology adoption is driven by long-term economic fundamentals
- Market driven selection of the solutions will ensure longer-term viability

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