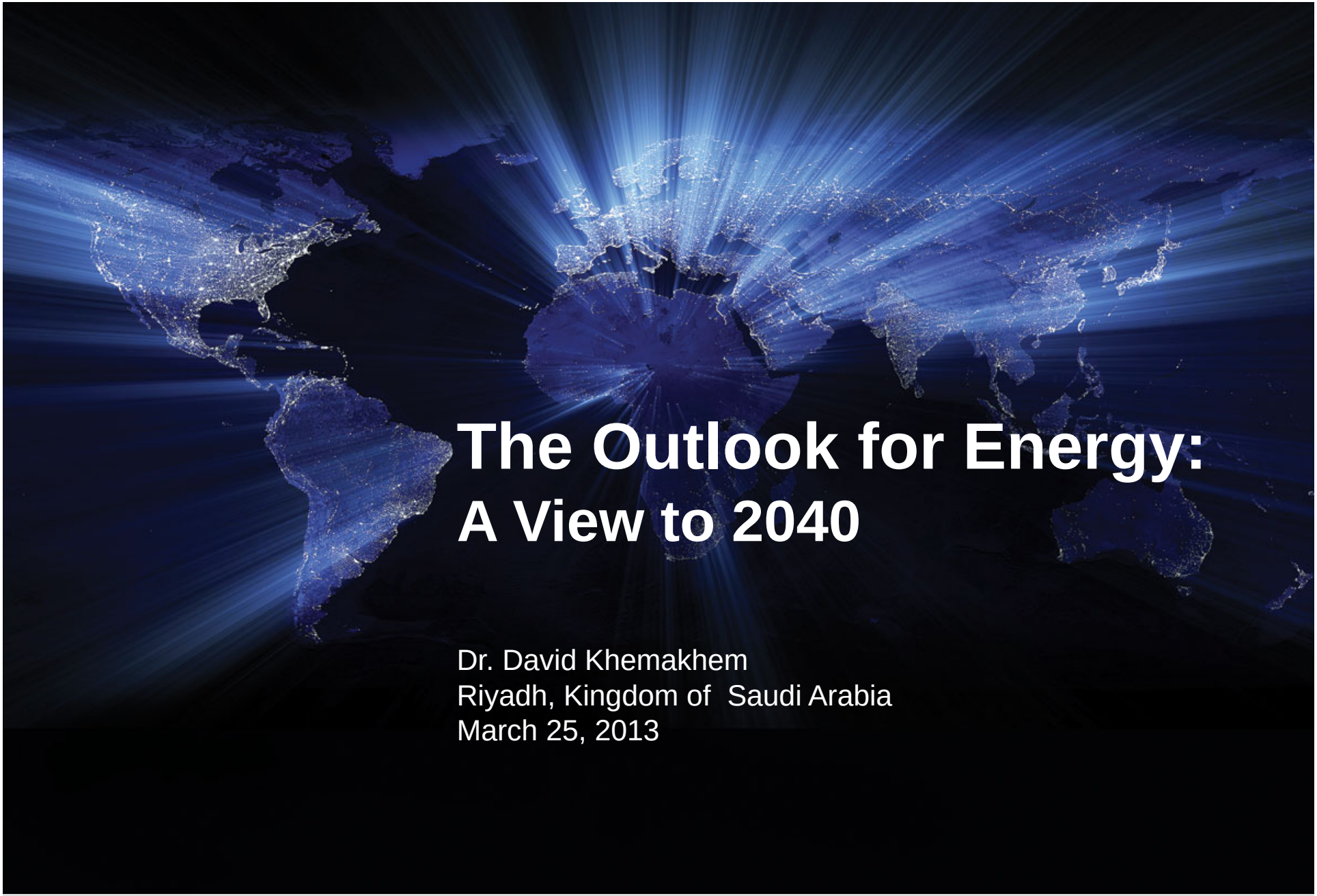
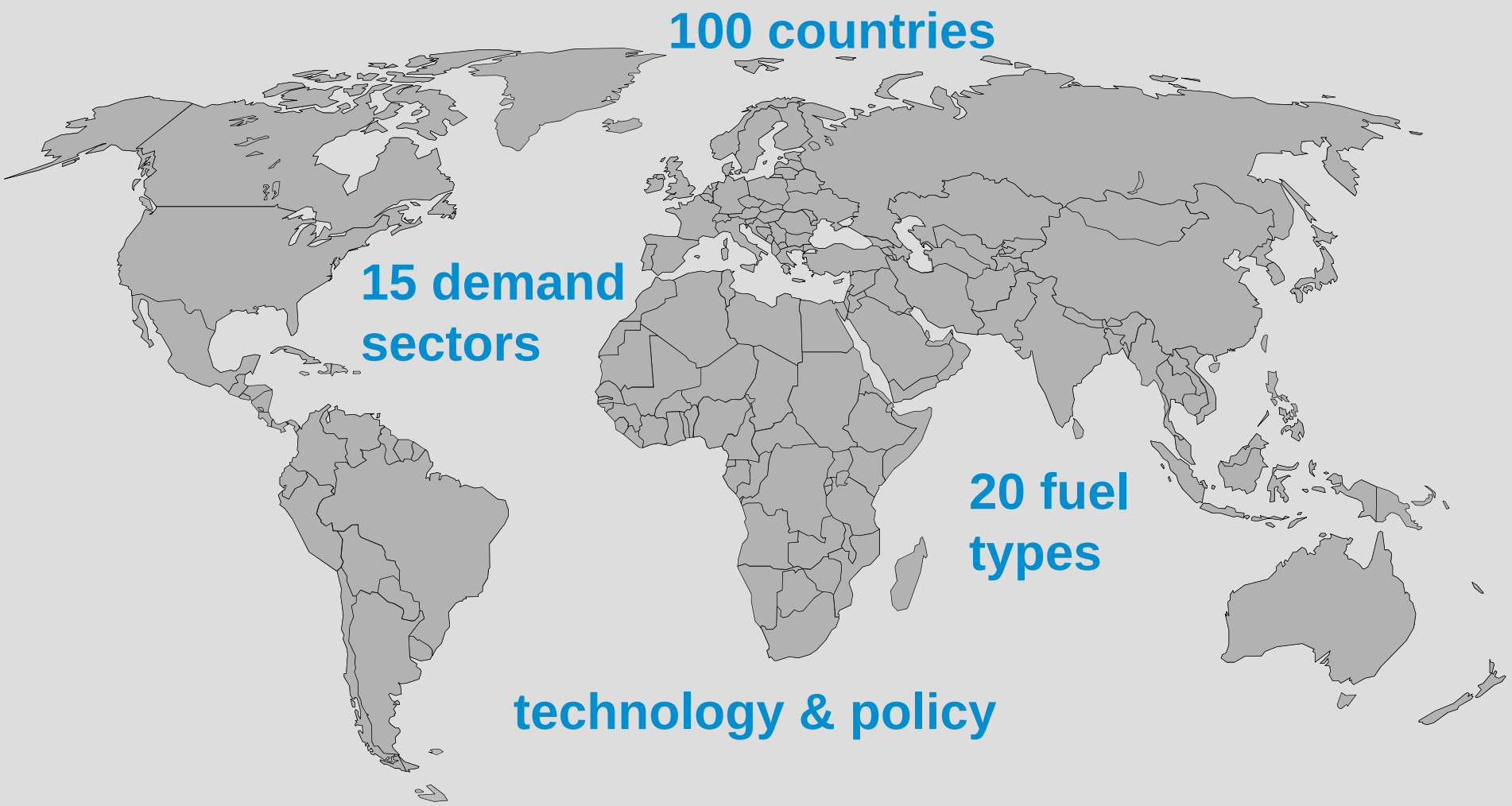


The Outlook for Energy: A View to 2040

Dr. David Khemakhem
Riyadh, Kingdom of Saudi Arabia
March 25, 2013

ExxonMobil

Energy Outlook Model



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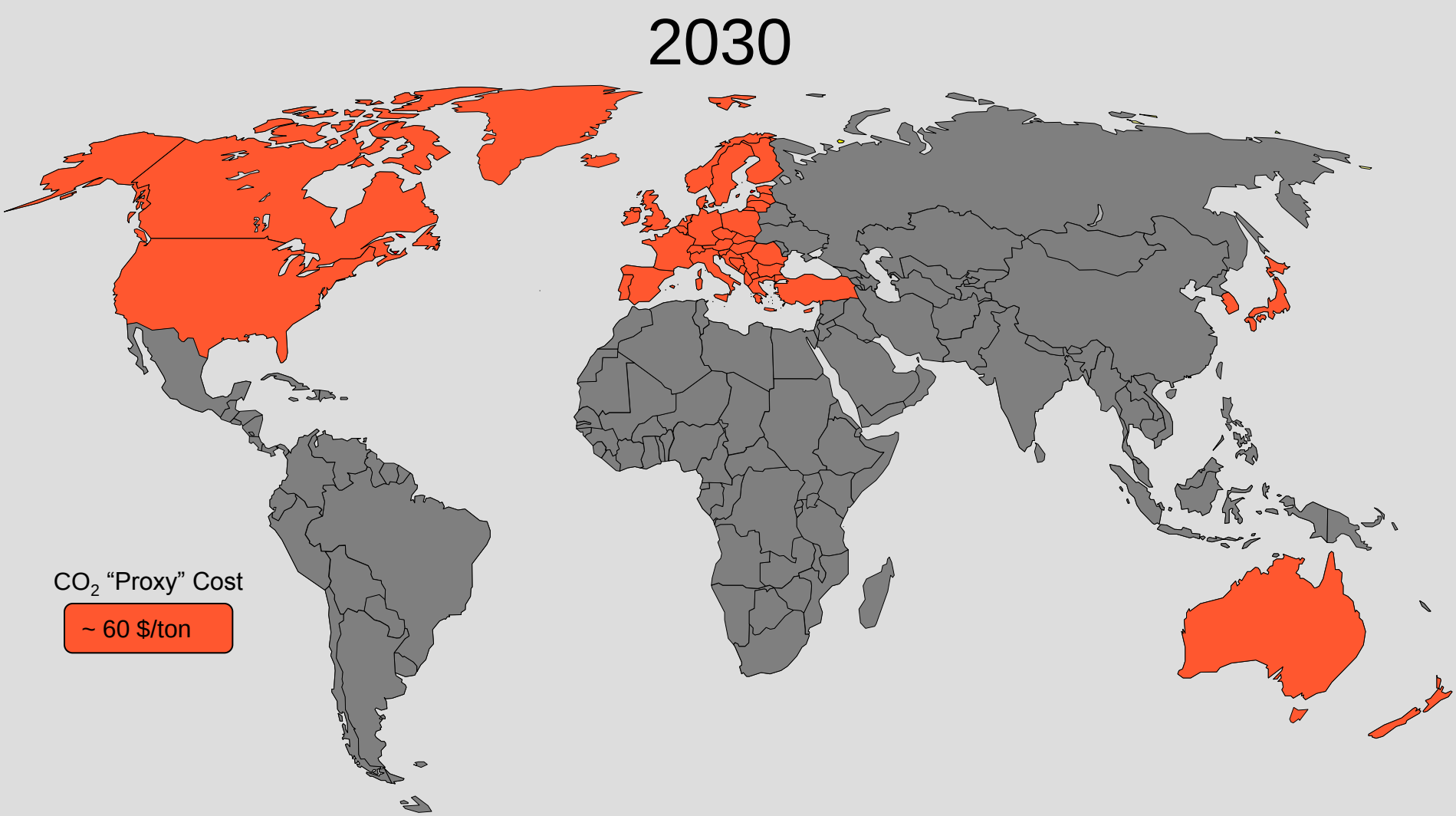
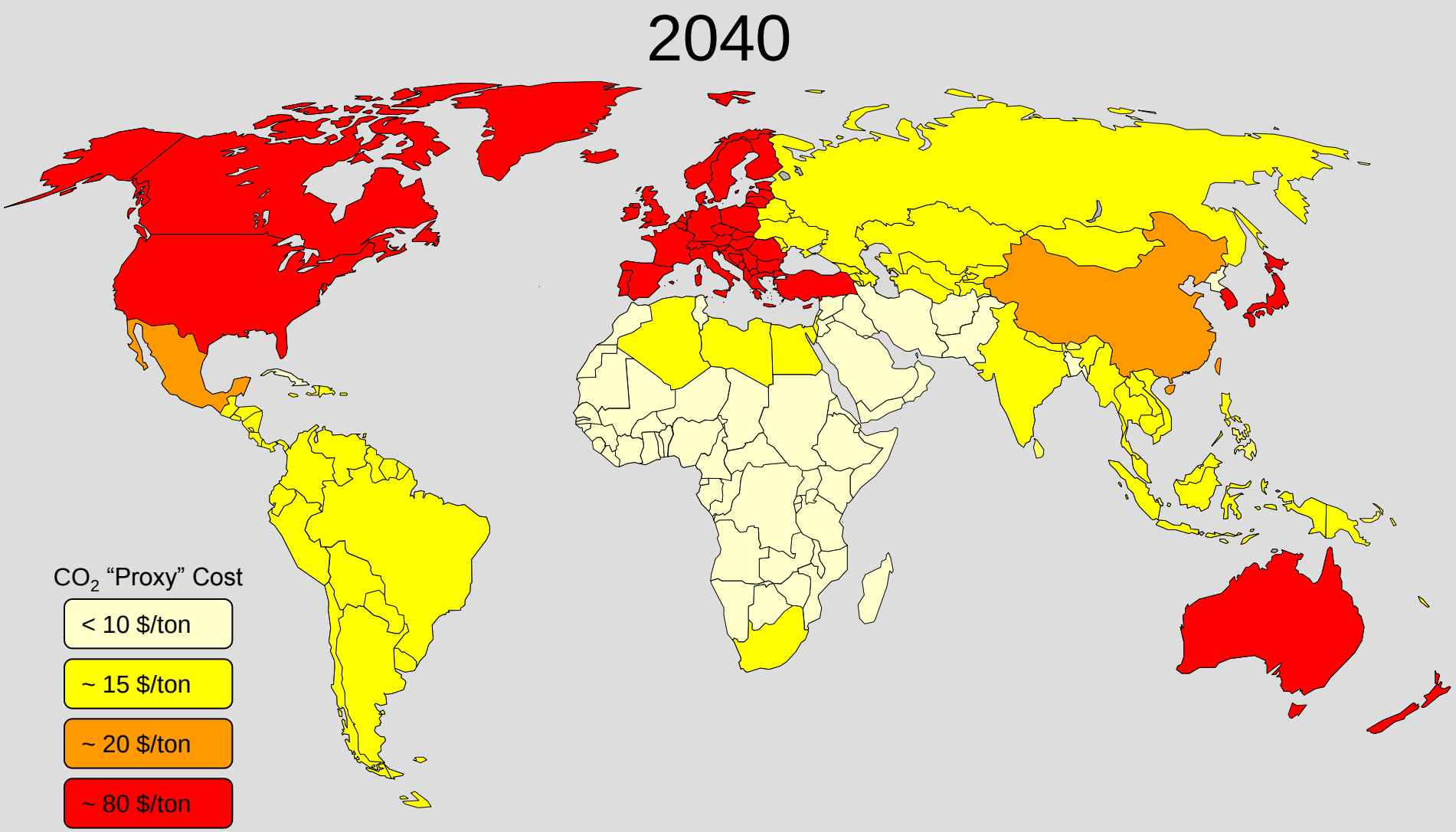
CO_2 Policies



CO_2 Policies

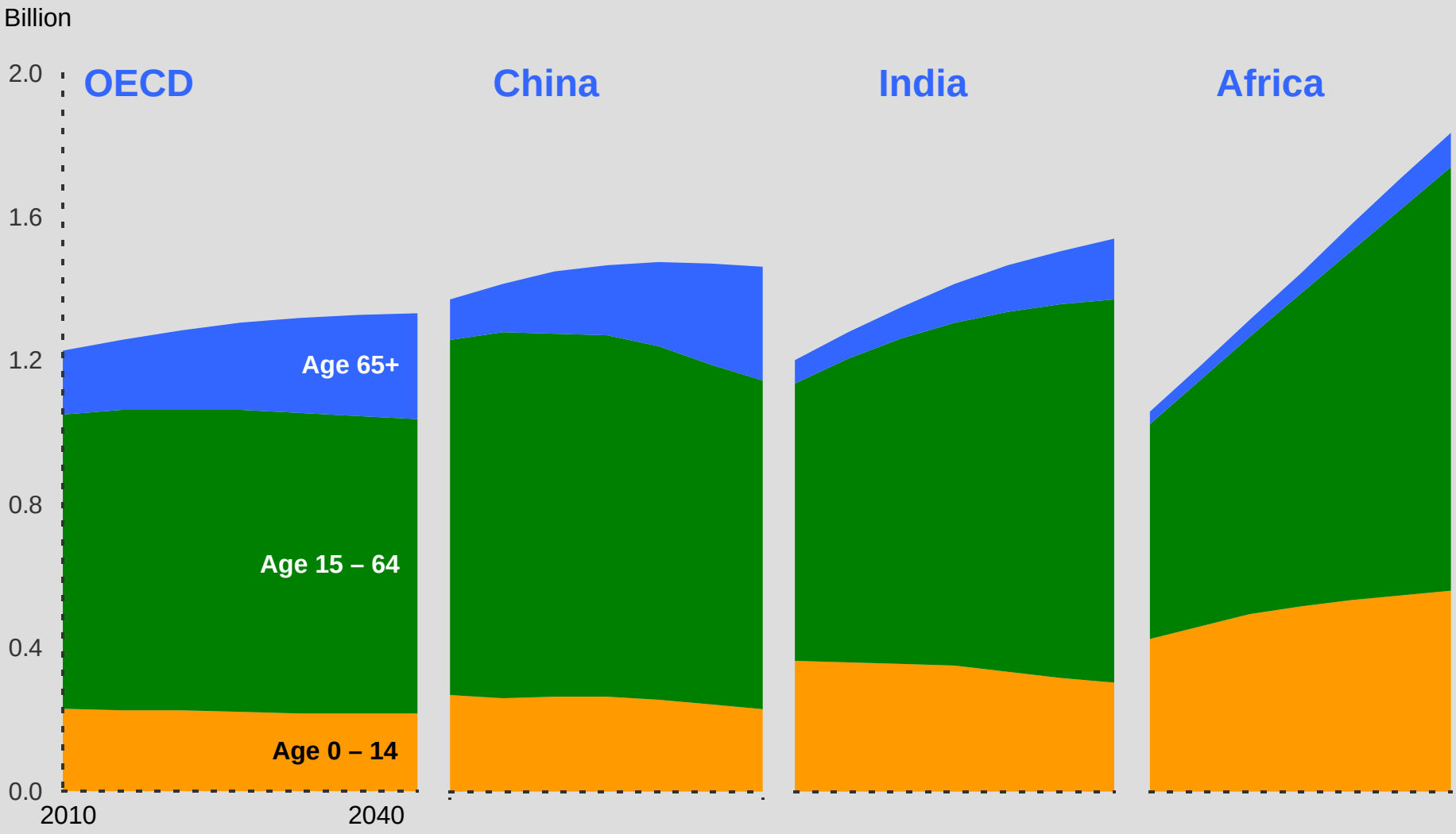


Global fundamentals

9 billion

The world's population will rise by more than 25 percent from 2010 to 2040, reaching nearly 9 billion.

Demographic Shifts Alter Demand Profile



Source: World Bank

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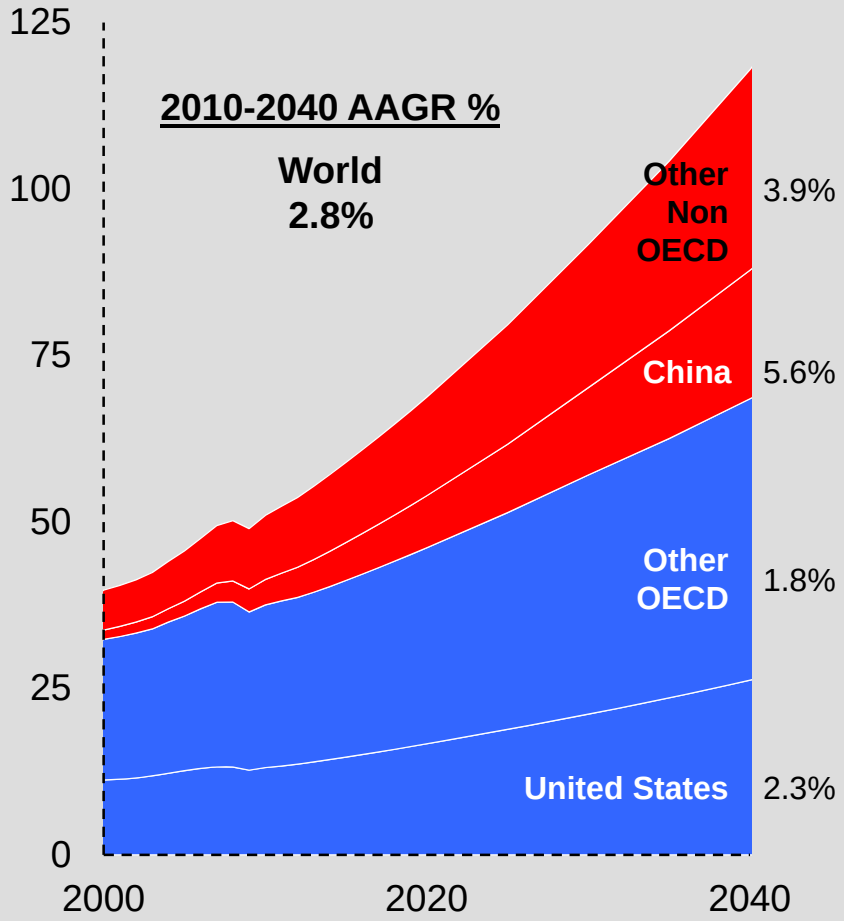
Economic Growth Drives Energy Demand

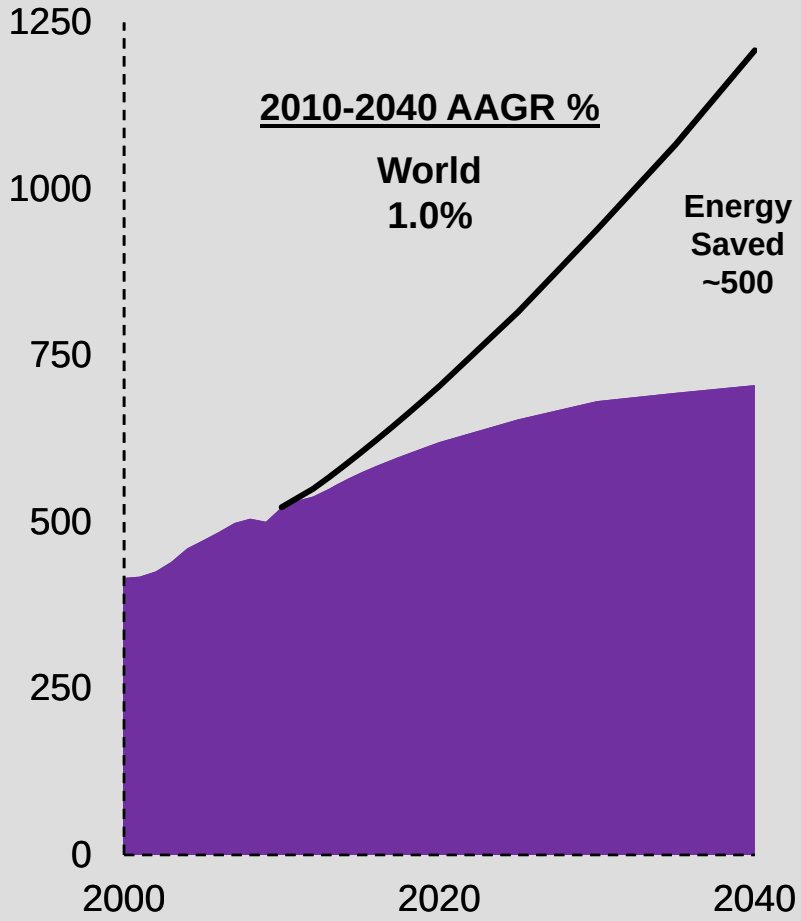
GDP

Trillion 2005$



Energy Demand

Quadrillion BTUs



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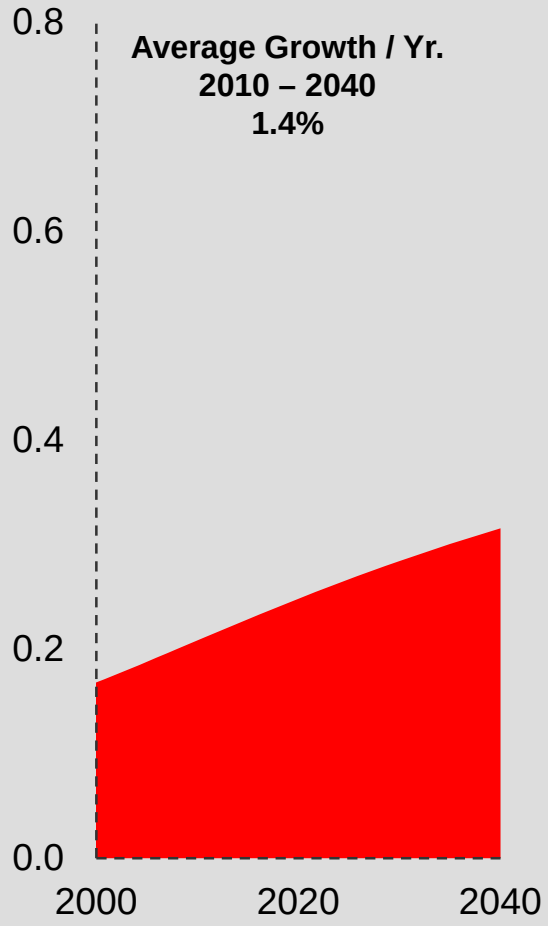
Middle East Energy Trends

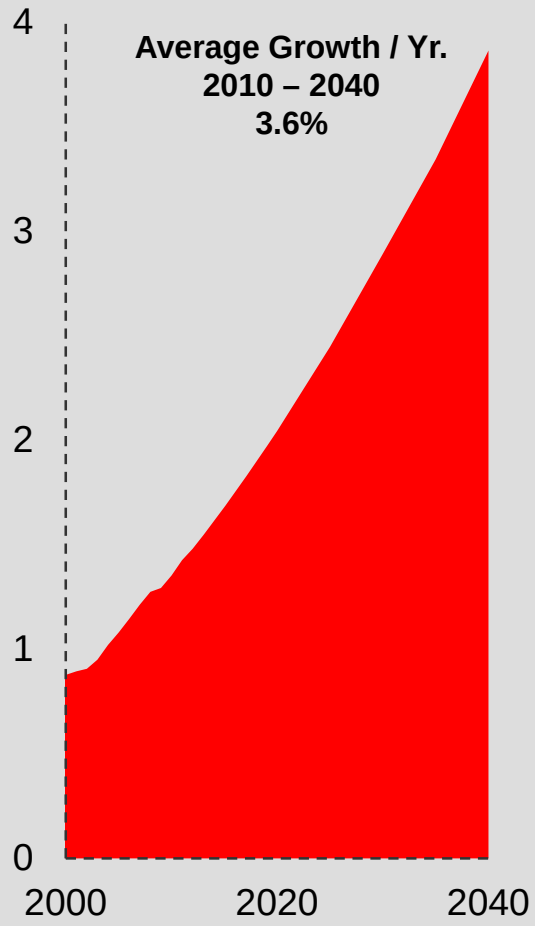
Population

Billion



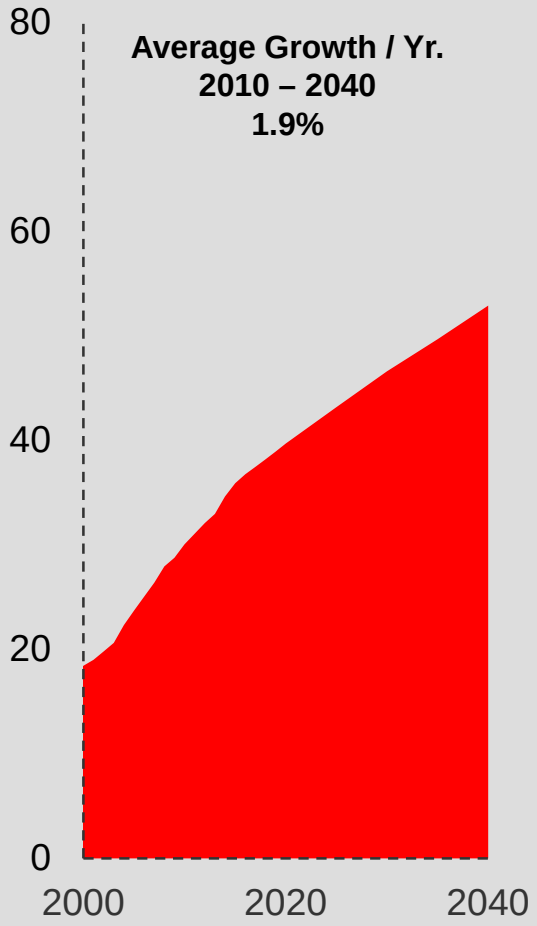
GDP

Trillion 2005$



Energy Demand

Quadrillion BTUs



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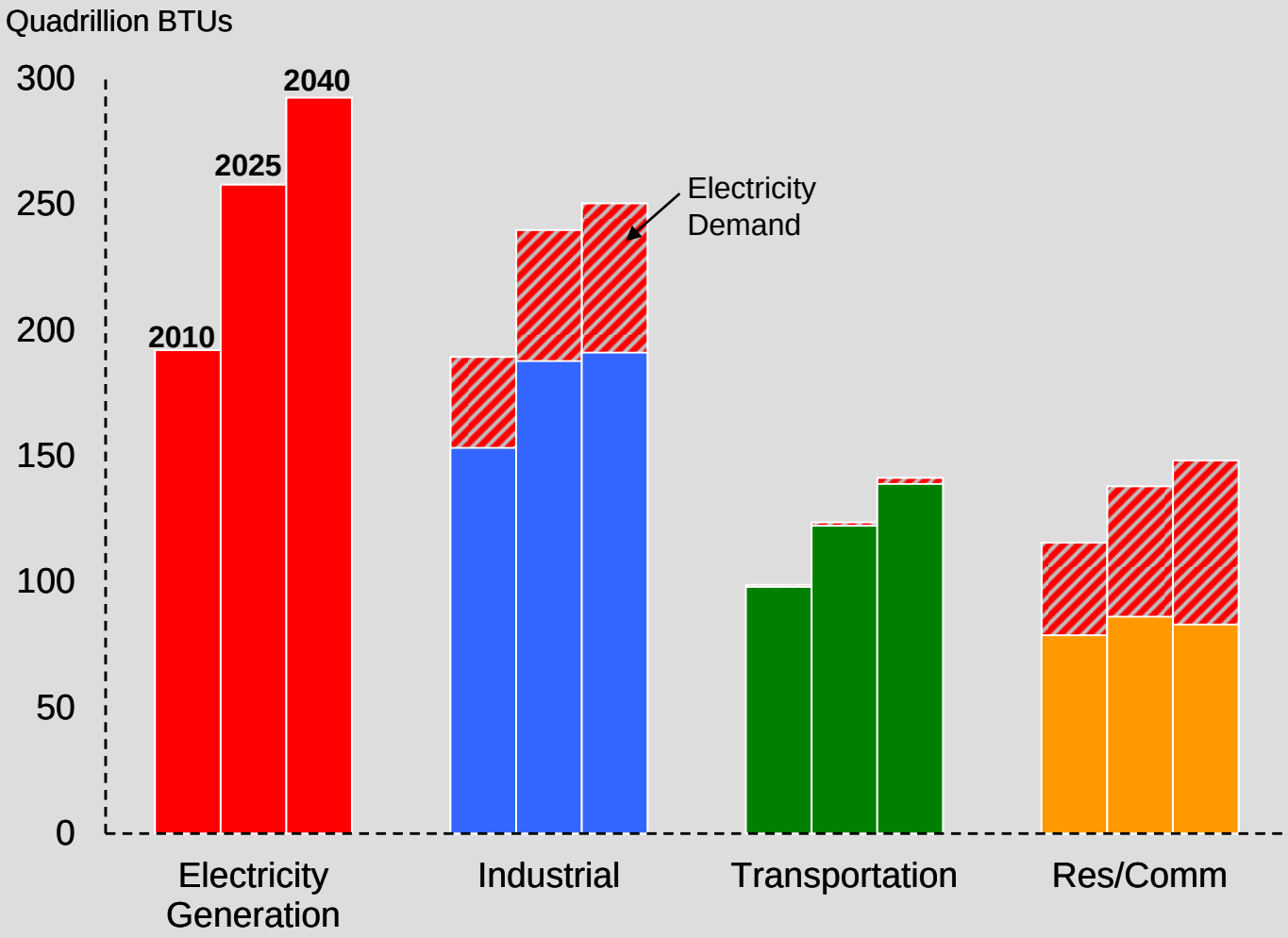
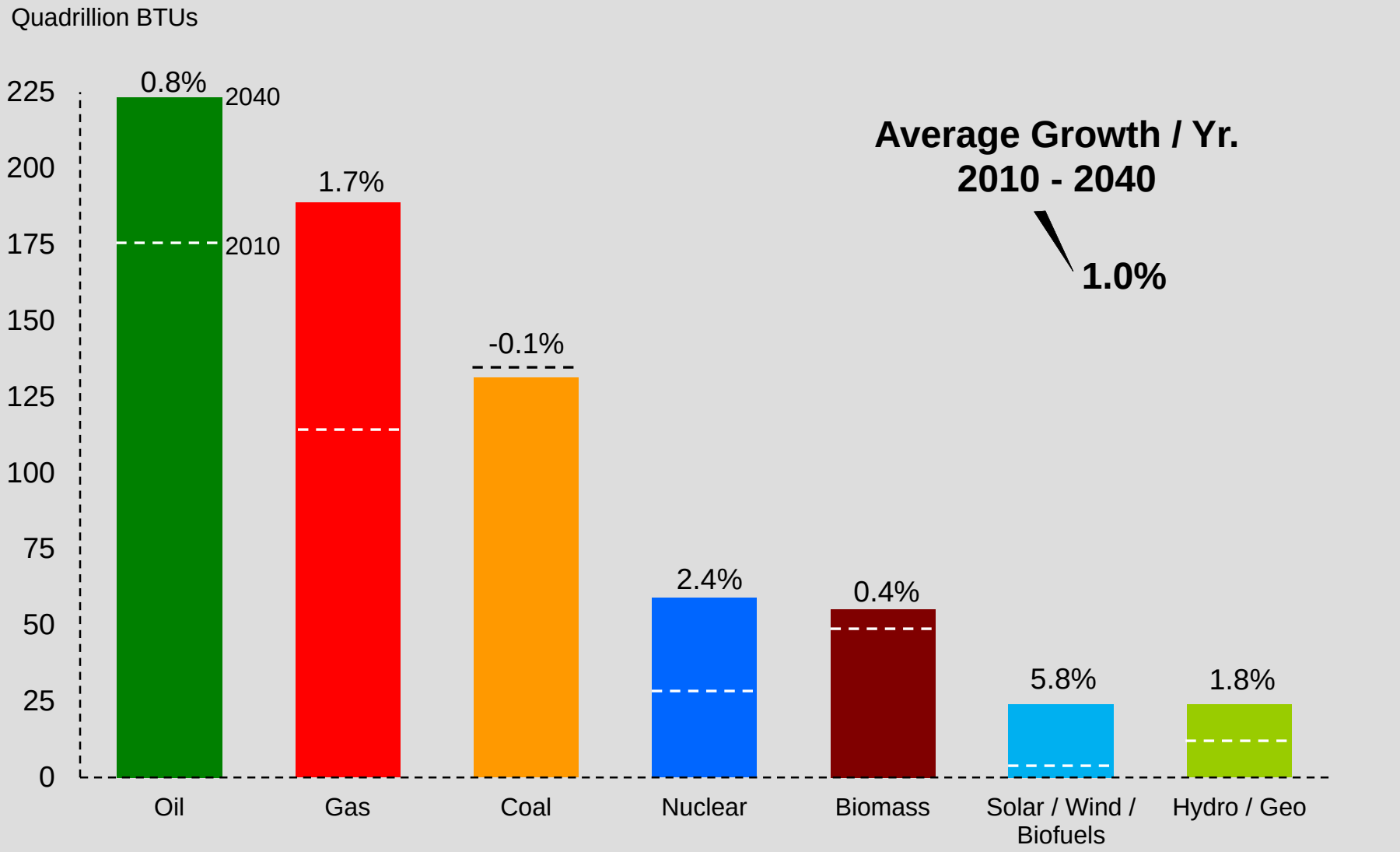
Electricity Generation Leads Growth

Energy Demand by Sector



Energy Mix Continues to Evolve



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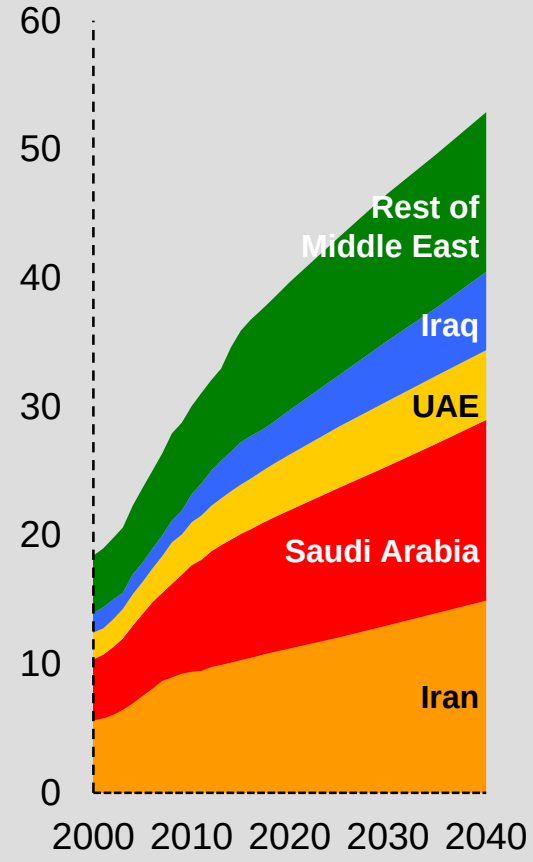
Middle East Energy Demand

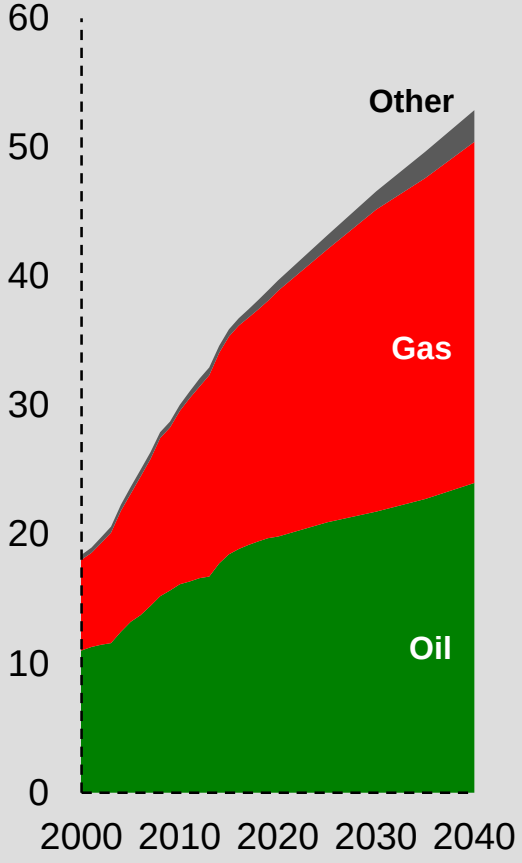
By Country

Quadrillion BTUs



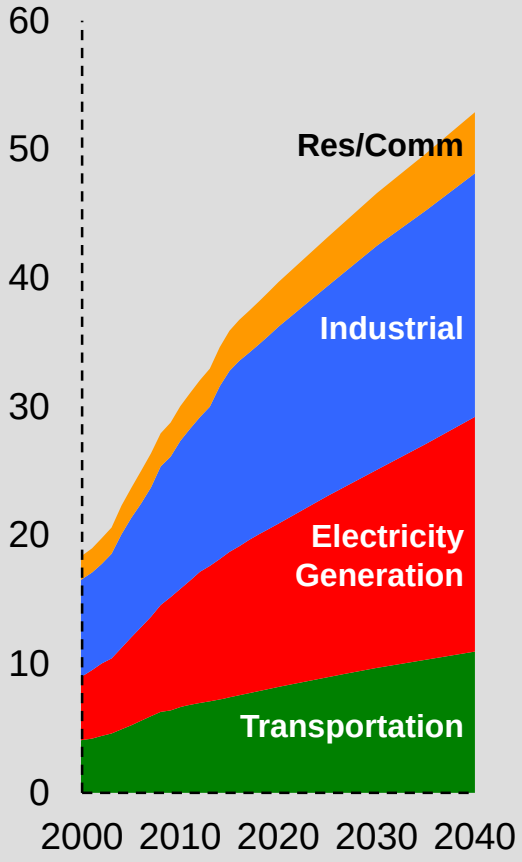
By Fuel

Quadrillion BTUs



By Sector

Quadrillion BTUs



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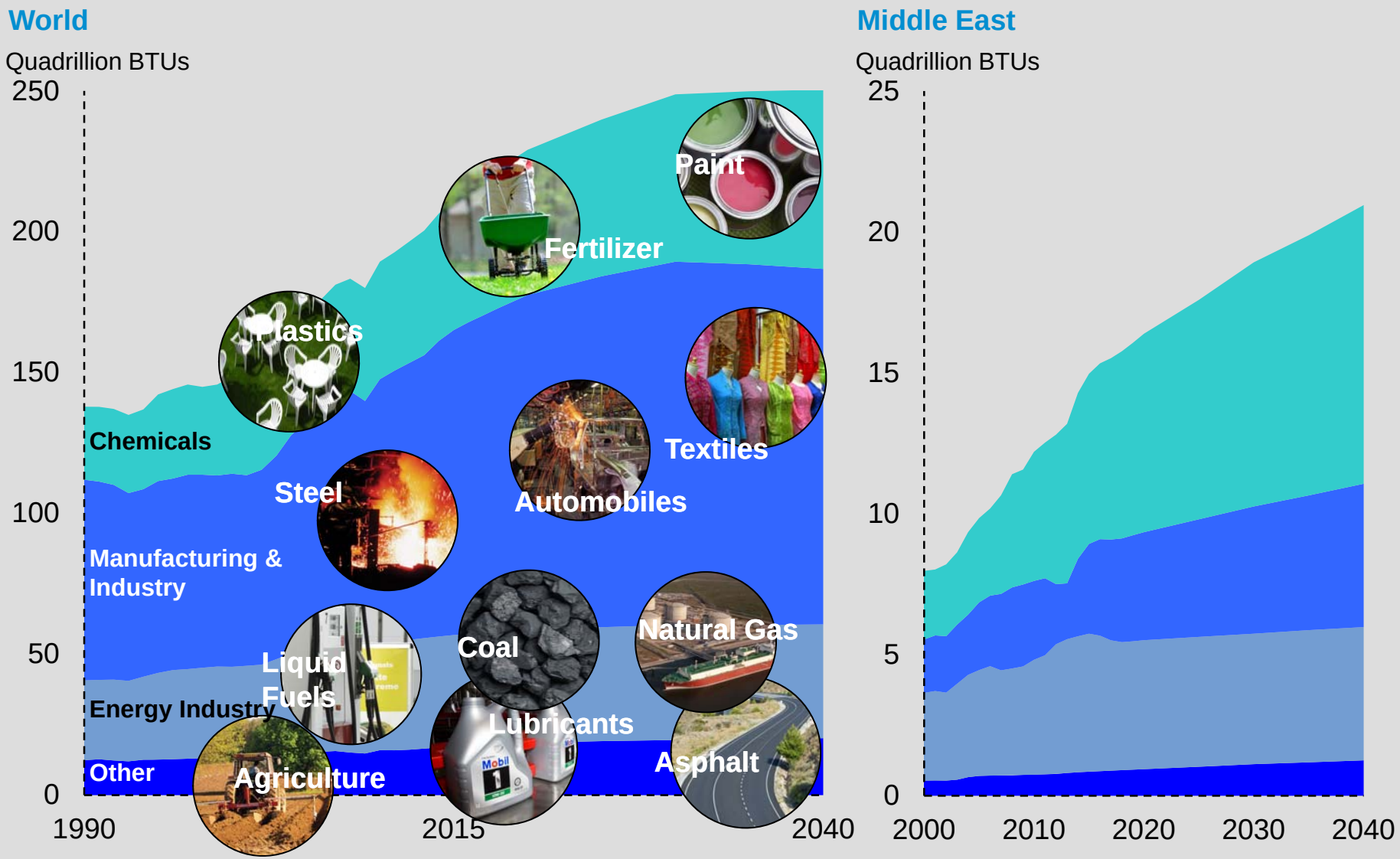
Industrial

50%

Energy demand, including feedstocks, for chemical production grows by 50 percent.

2010 2040

Industry Energy Demand Increases

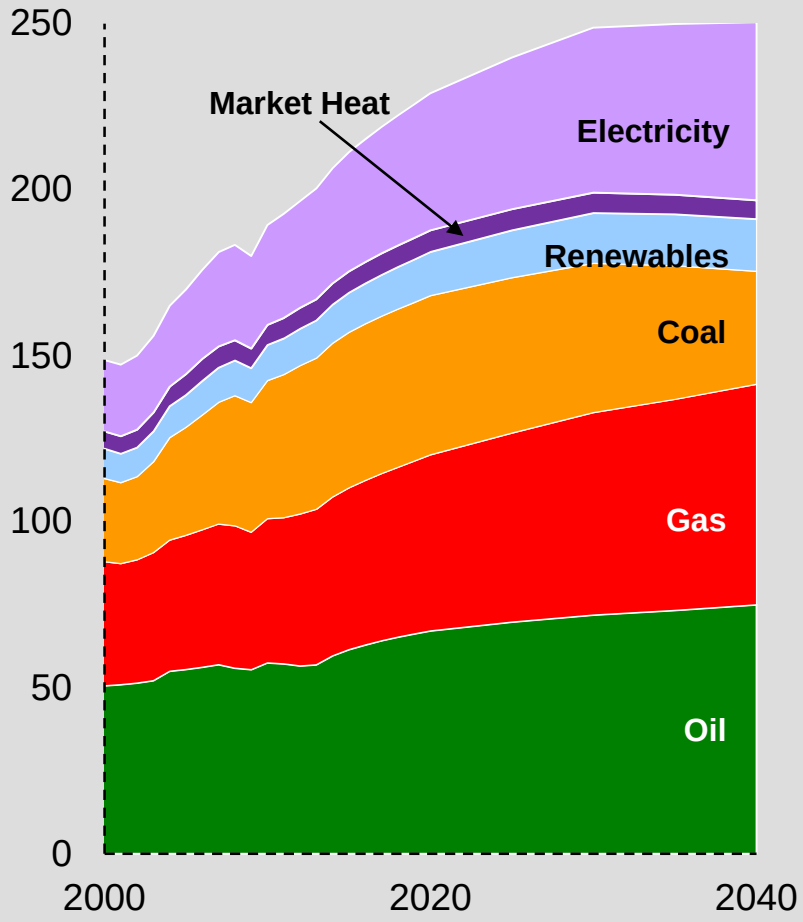


ExxonMobil 2013 Outlook for Energy

Industrial Energy Demand

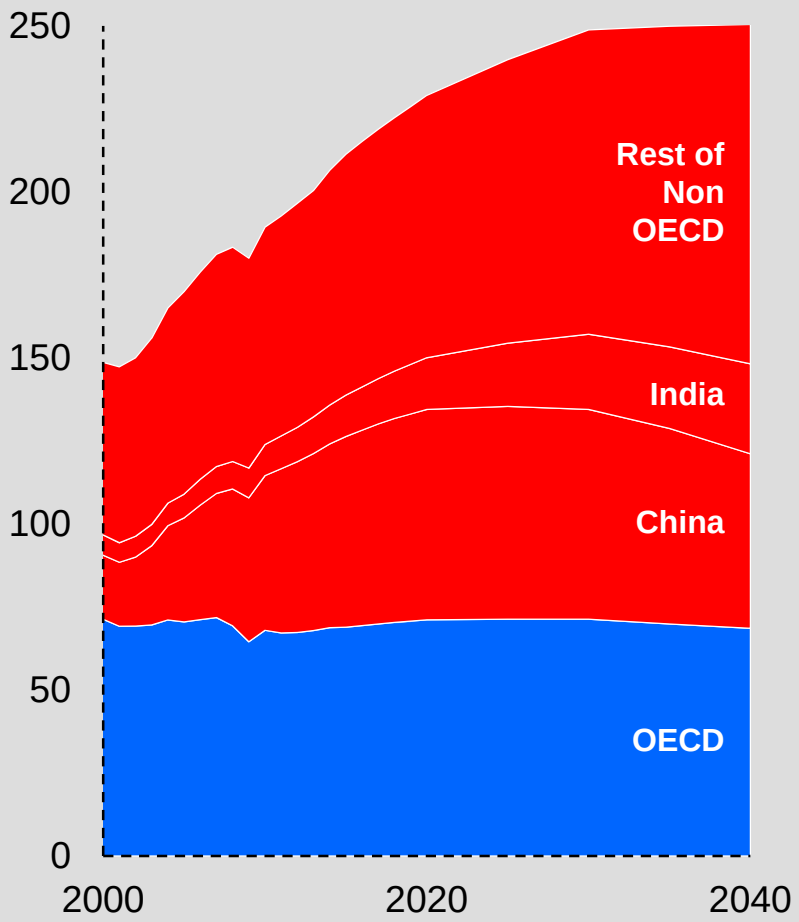
By Fuel

Quadrillion BTUs



By Region

Quadrillion BTUs



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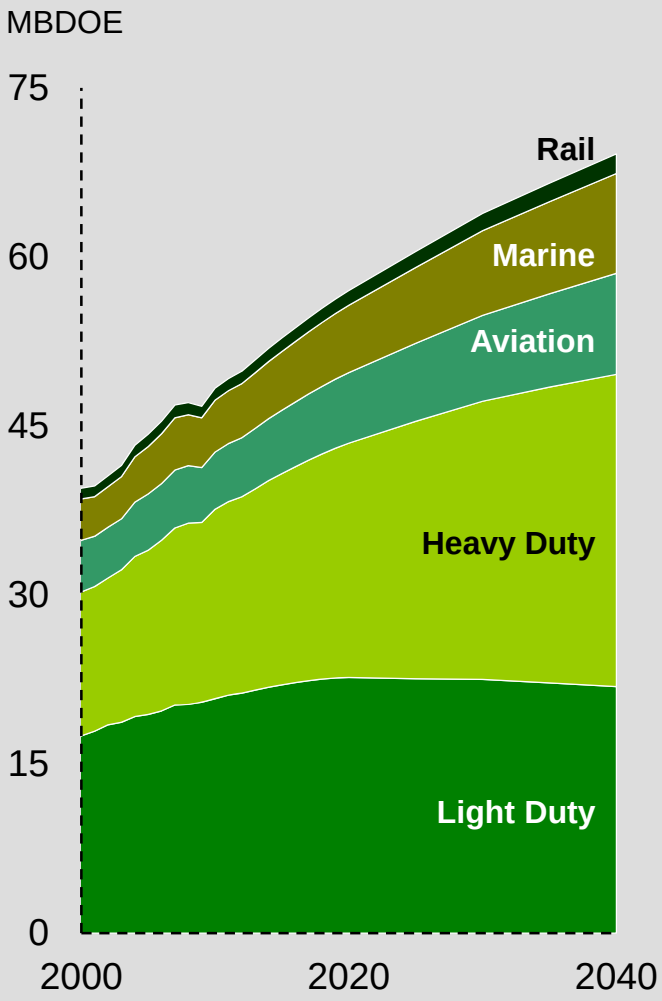
Transportation

65%

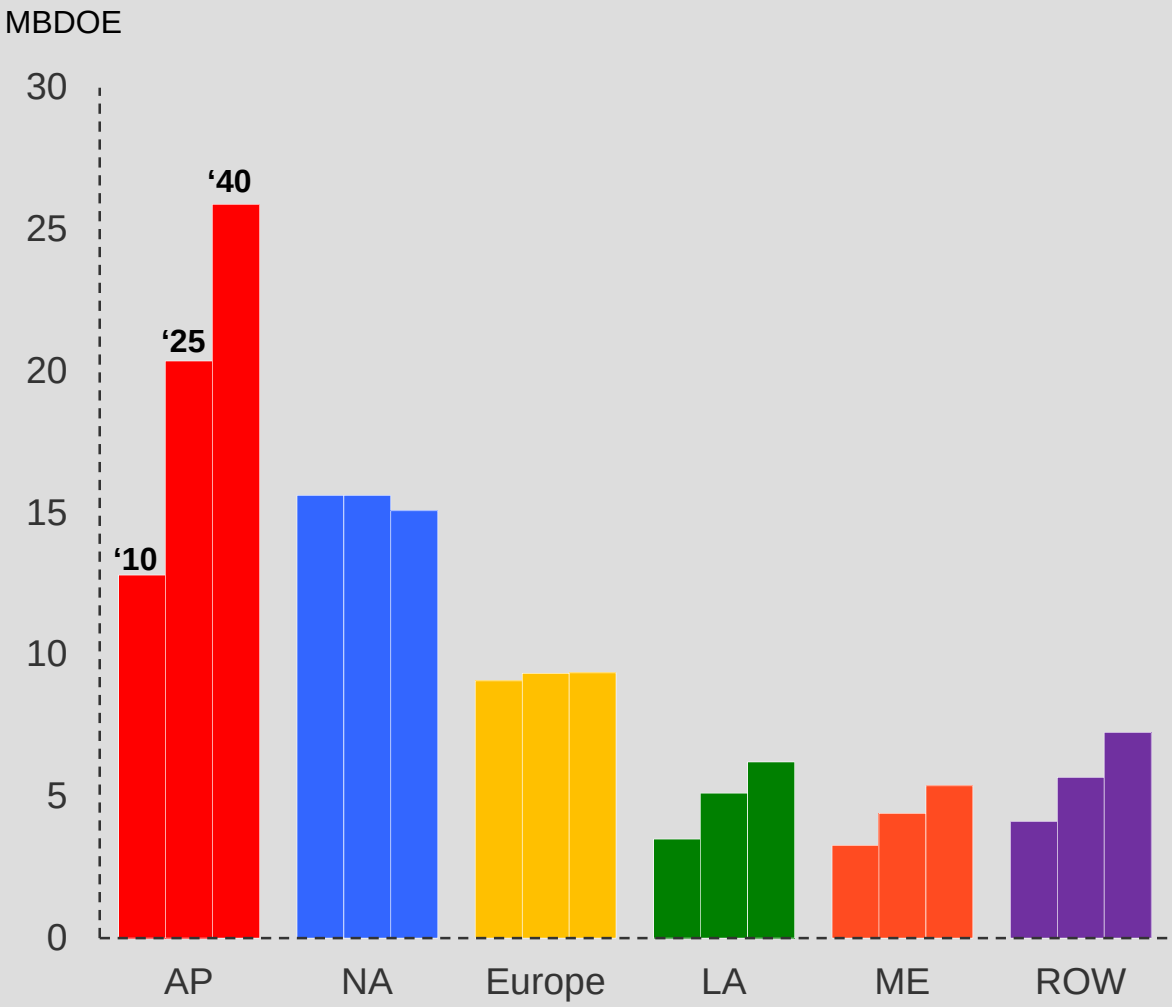
Heavy duty transportation demand grows 65 percent by 2040.

Transportation Demand

Sector Demand



Demand by Region



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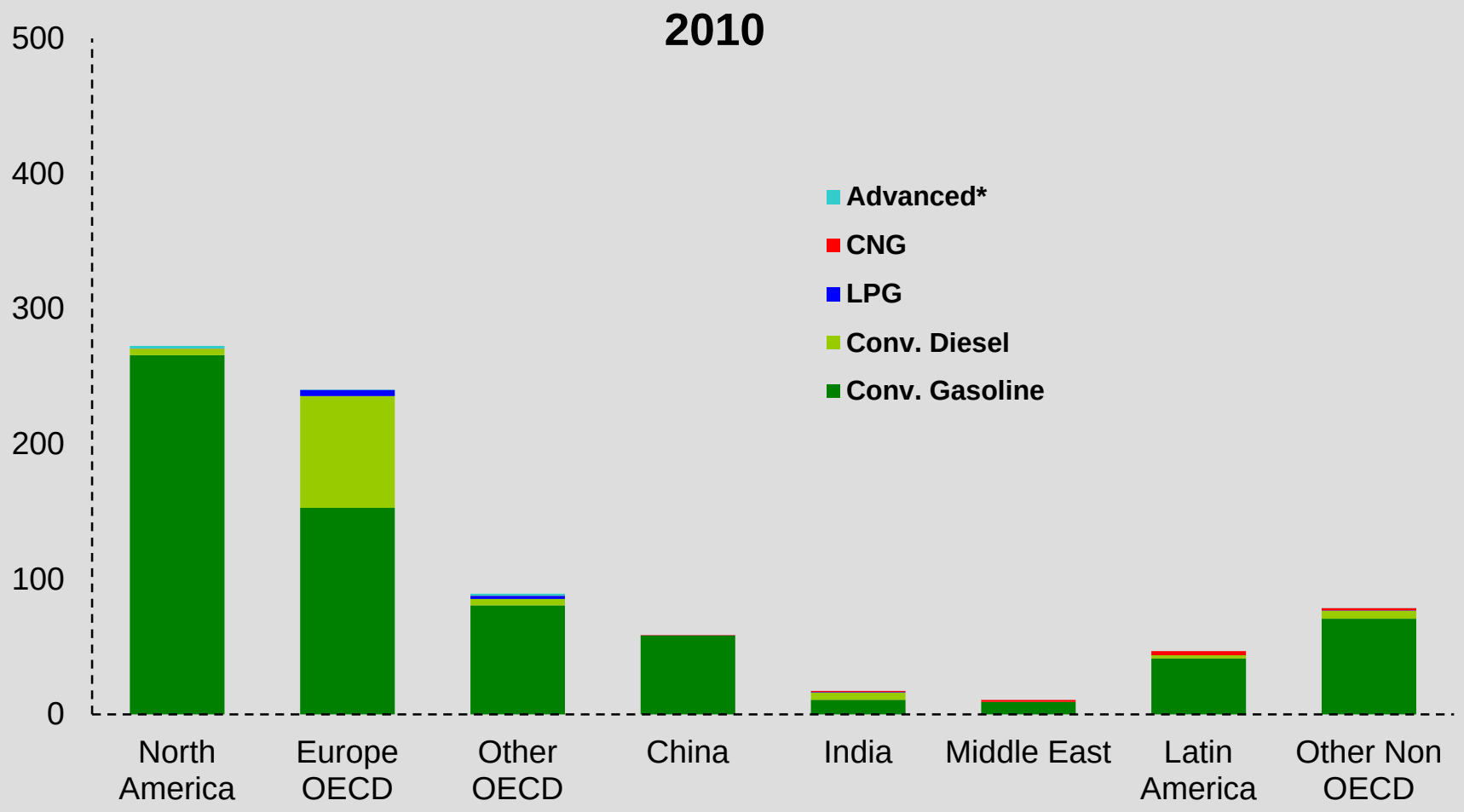
Light Duty Vehicle Fleet Grows, Mix Changes

Powertrain Technology

Millions of Vehicles



Full Hybrid, Plug-in Hybrid, Electric Vehicles

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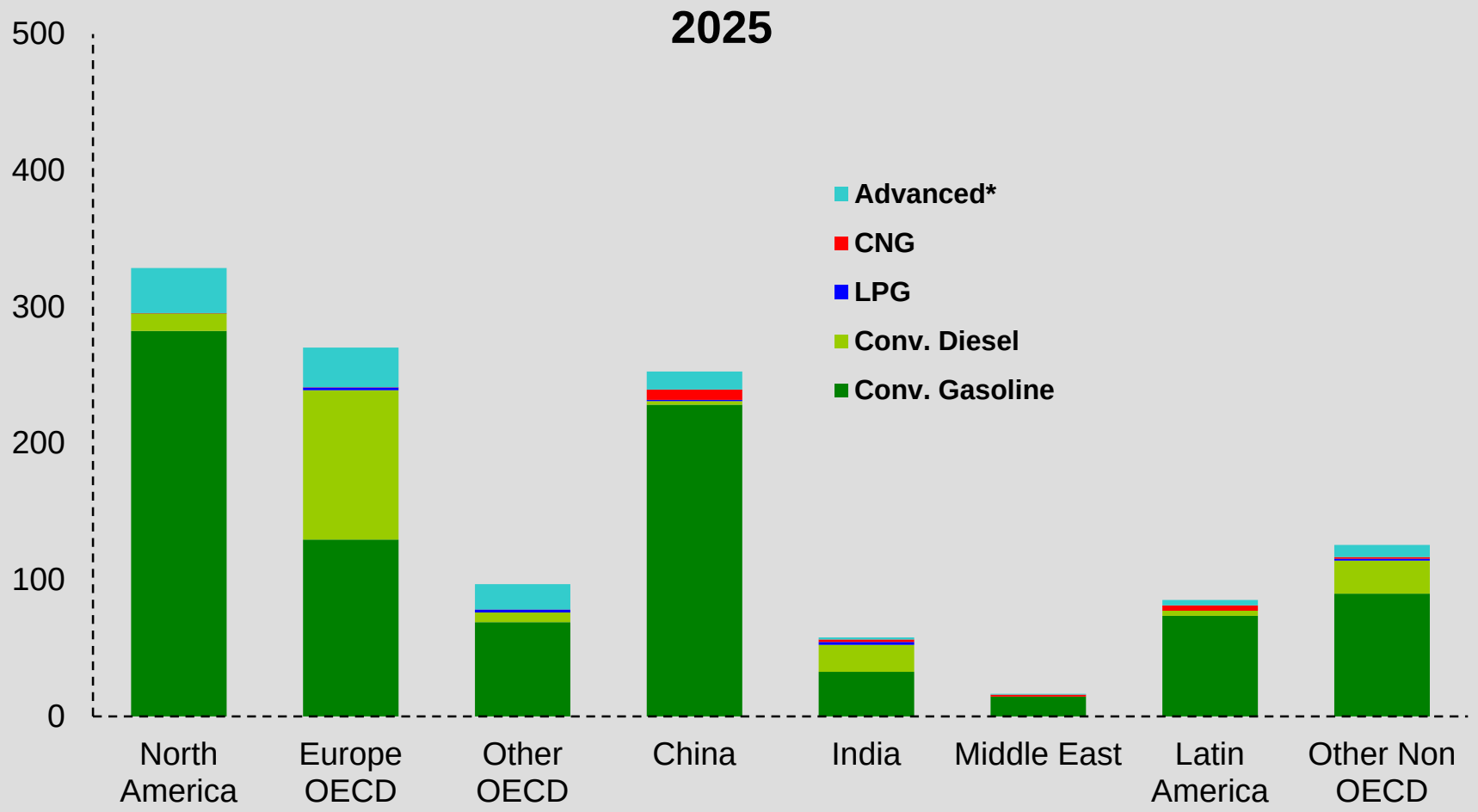
Light Duty Vehicle Fleet Grows, Mix Changes

Powertrain Technology

Millions of Vehicles

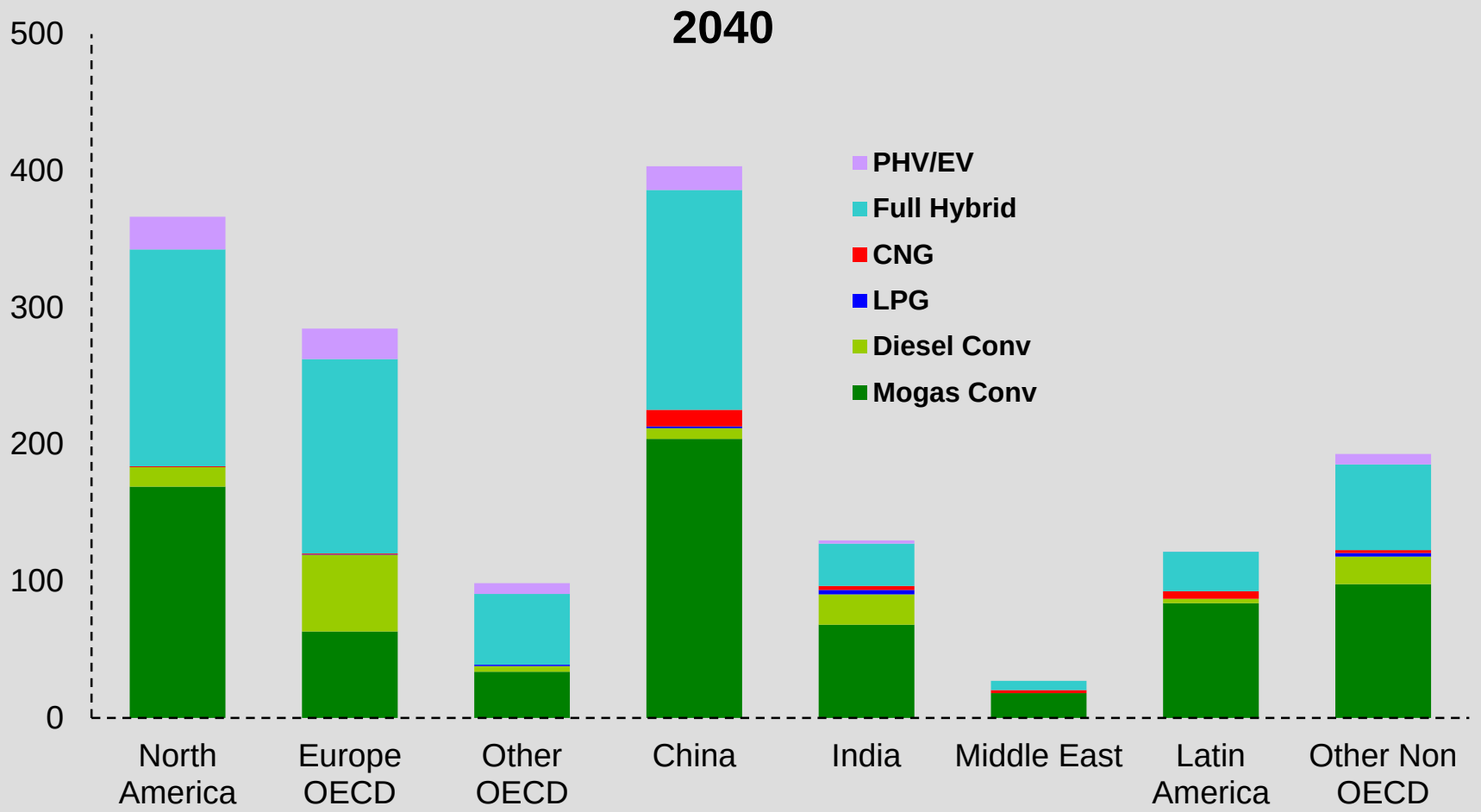


Full Hybrid, Plug-in Hybrid, Electric Vehicles

Light Duty Vehicle Fleet Grows, Mix Changes

Powertrain Technology

Millions of Vehicles



*Full Hybrid, Plug-in Hybrid, Electric Vehicles

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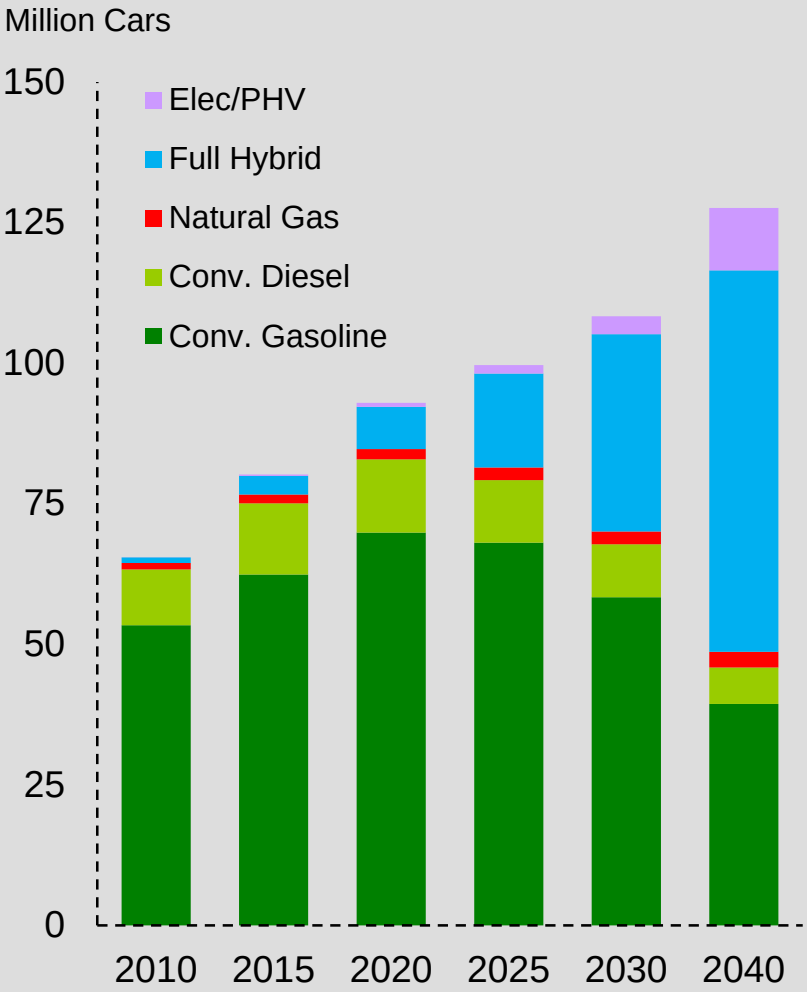
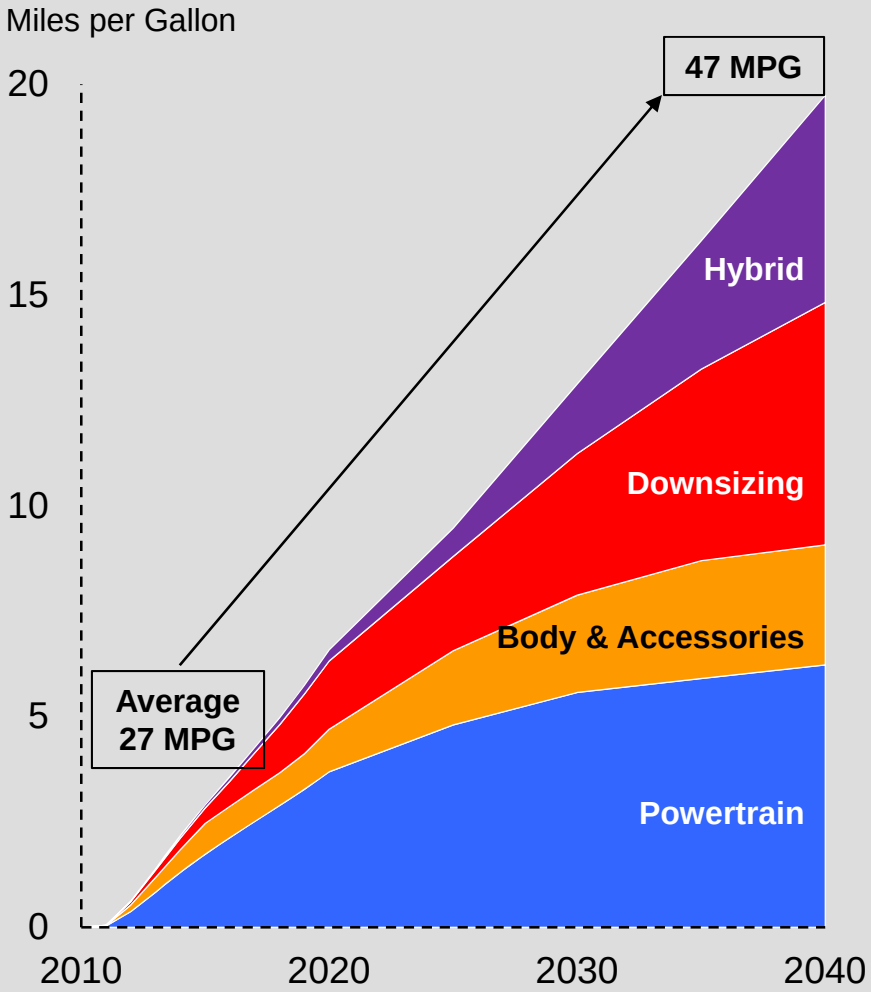
Light Duty Vehicle Sales & Efficiency

Annual New Car Sales by Type



Incremental Vehicle Efficiency Gains



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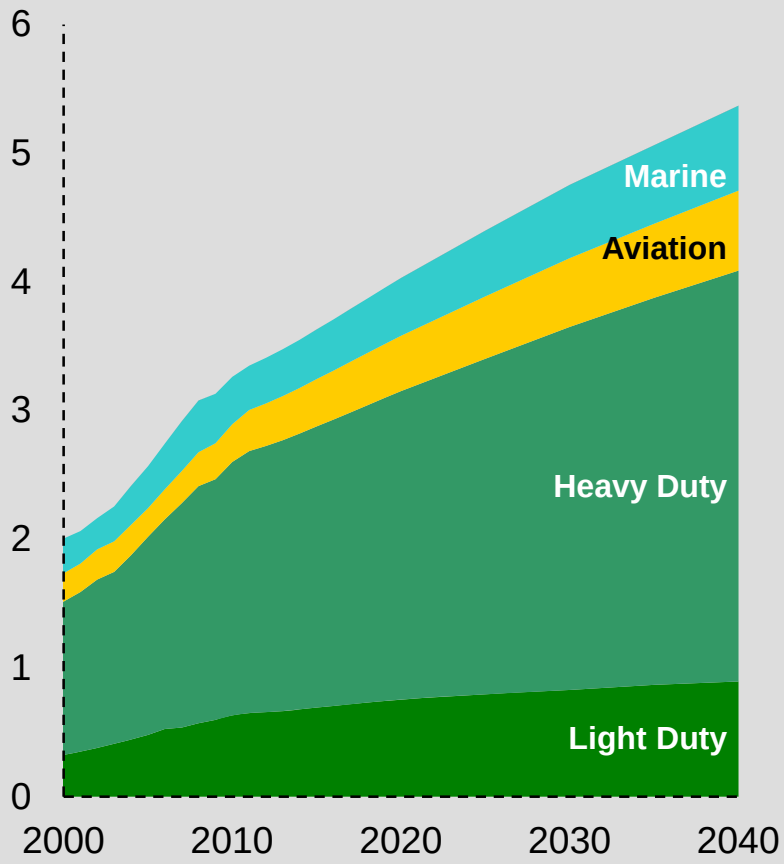
Middle East Transportation Demand

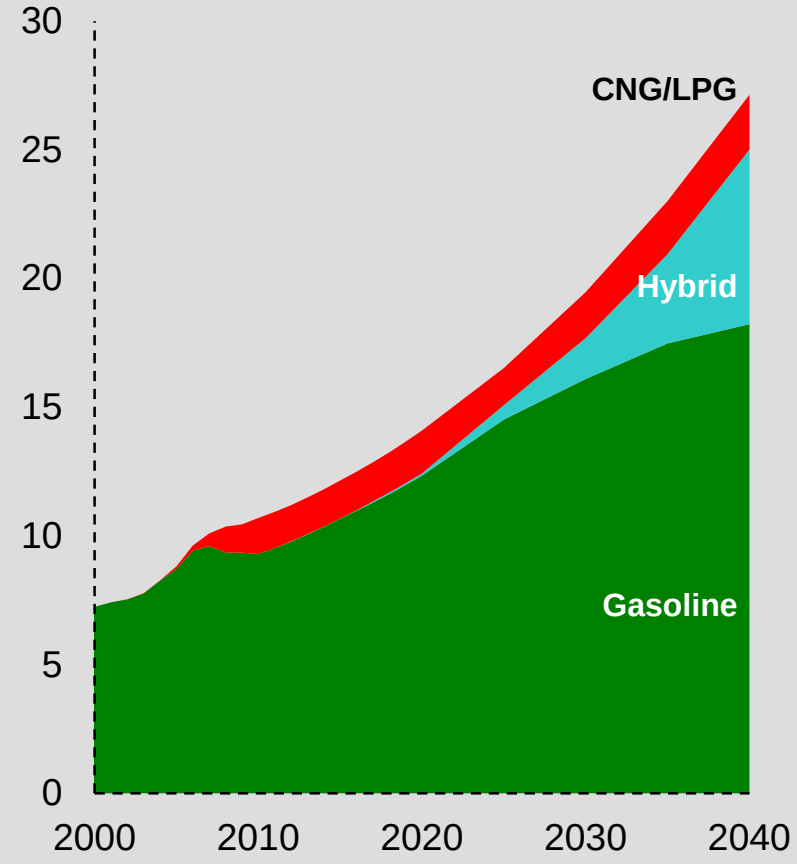
Transportation

MBDOE



Light Duty Vehicle Fleet

Million Cars



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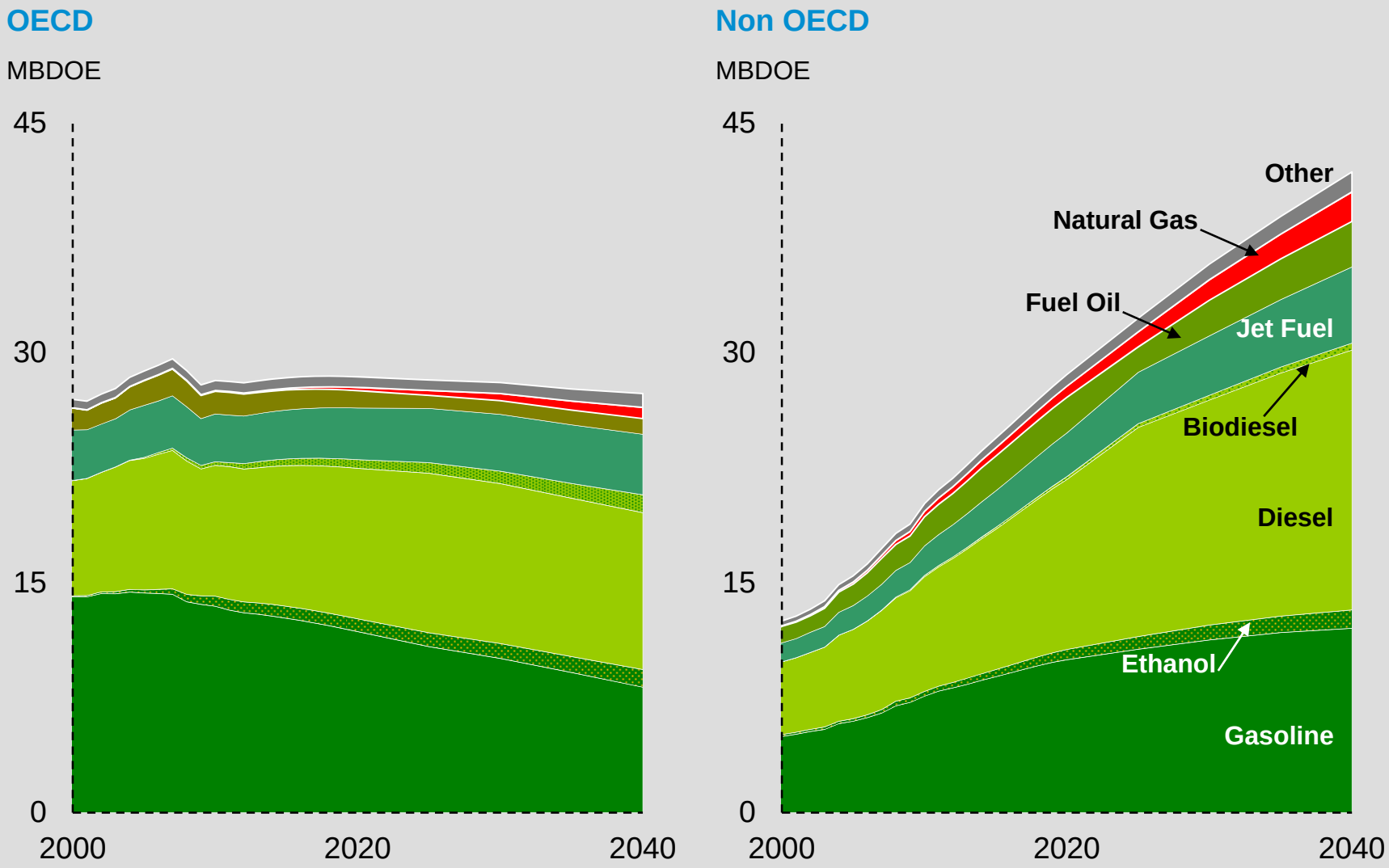
Transportation Fuel Demand Shifts to Diesel



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ExxonMobil 2013 Outlook for Energy

Electricity generation

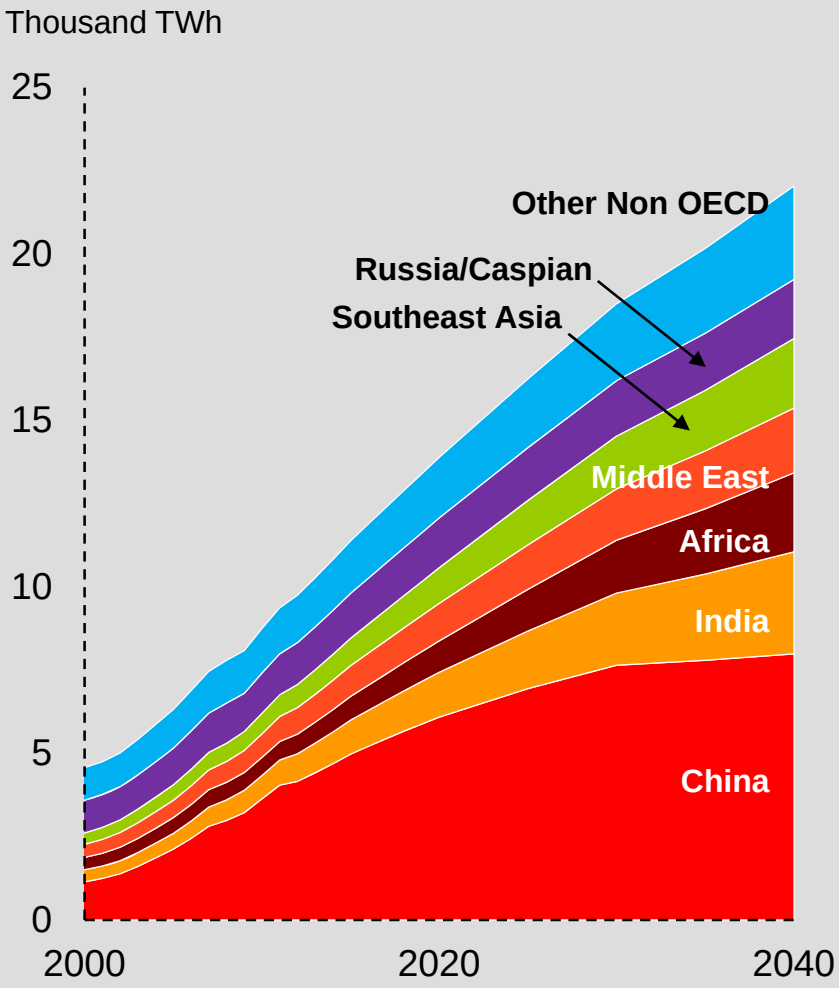
85%

Global electricity demand will grow by 85 percent over the *Outlook* period.

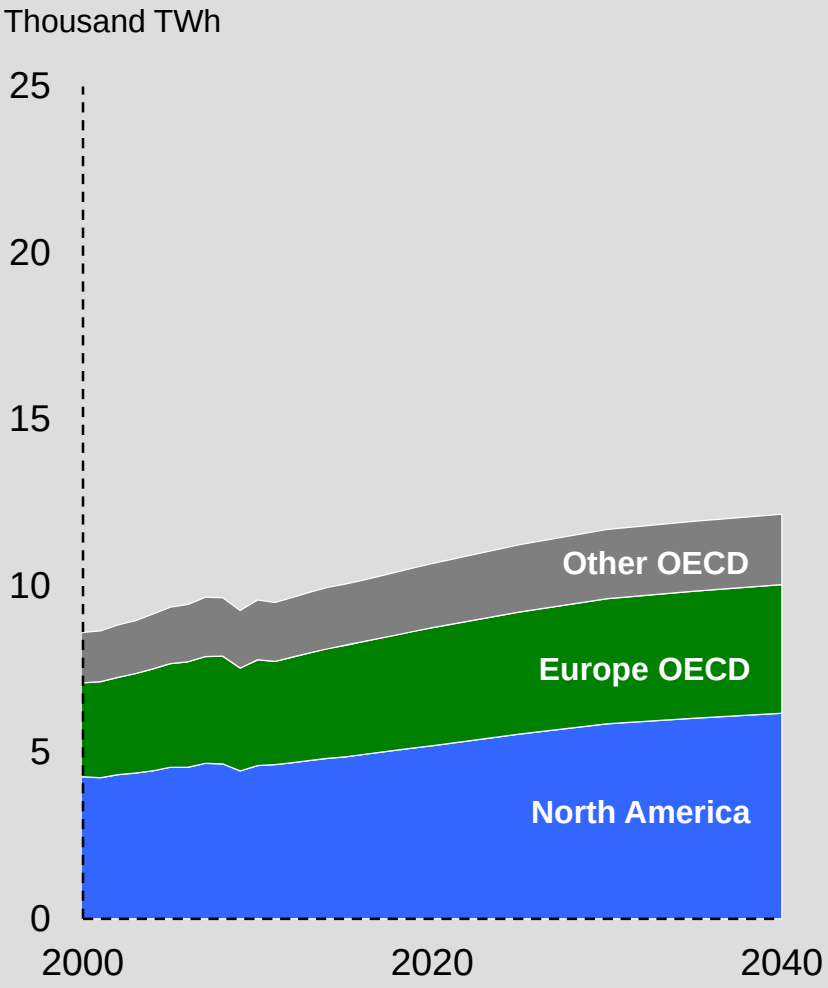
2010 2040

Electricity Demand by Region

Non OECD



OECD



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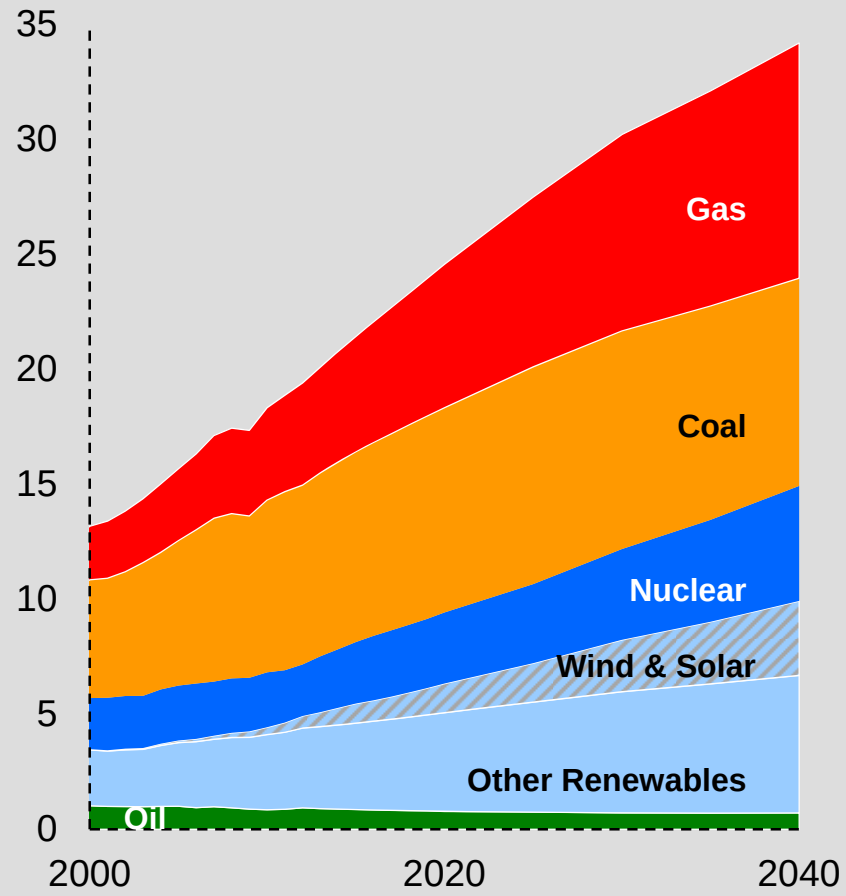
Global Electricity Generation Mix Evolves

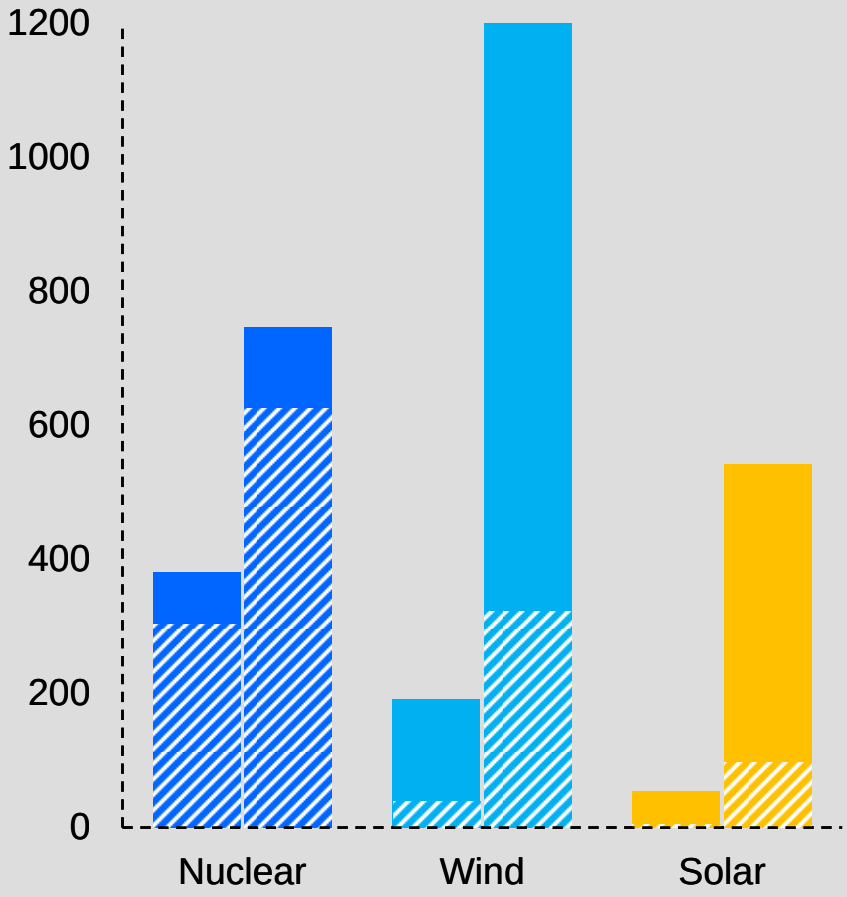
By Generation

k TWh



Global Capacity Utilized

GW



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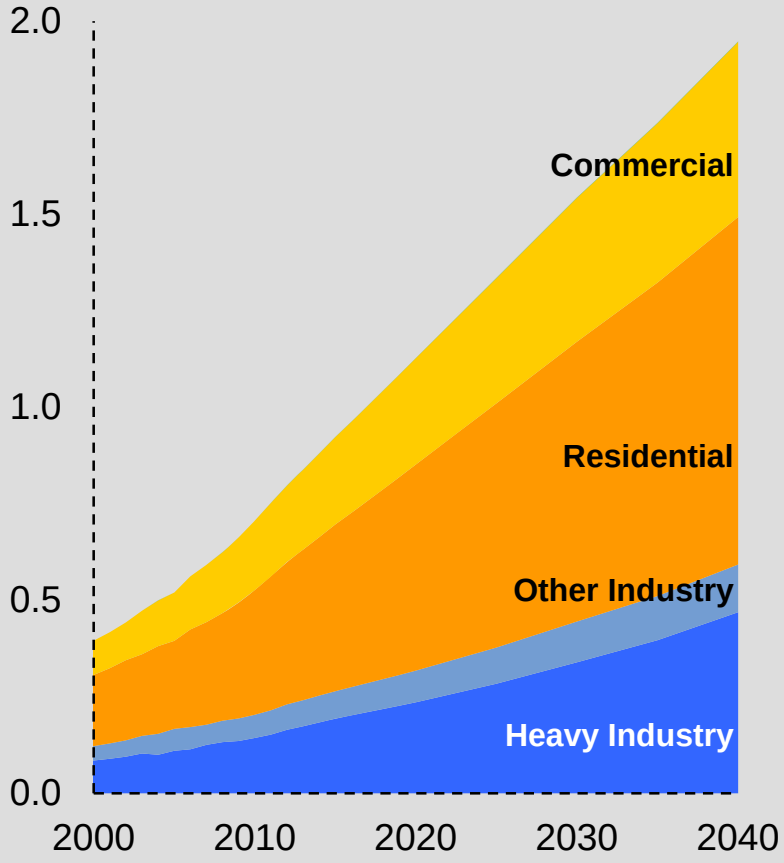
Middle East Electricity Demand

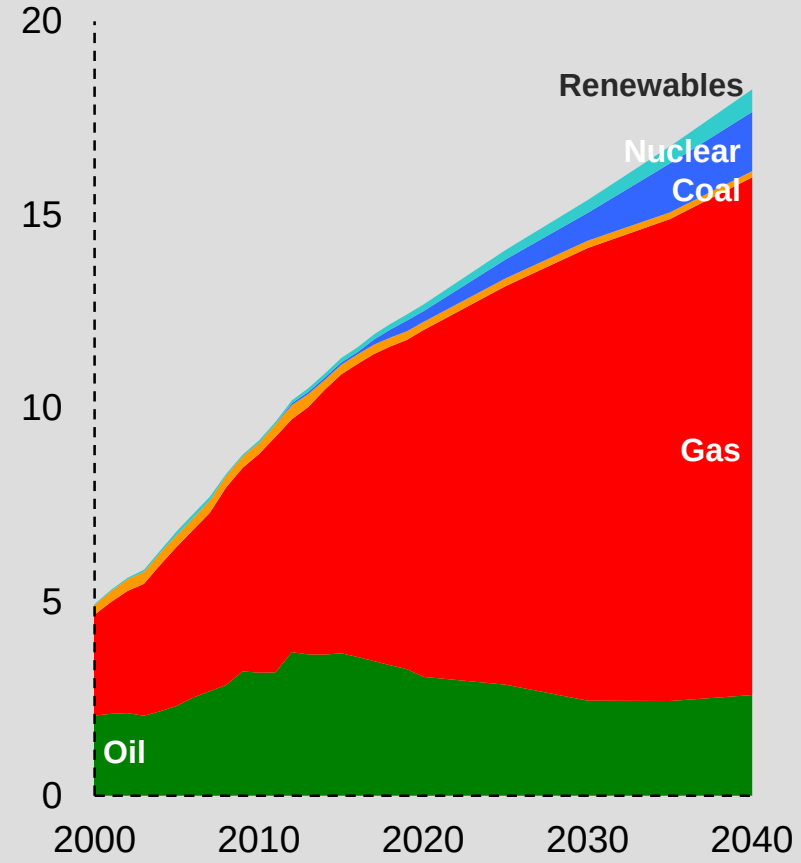
Electricity Demand

Thousand Terawatt Hour



Electricity Generation Fuel Consumption

Quadrillion BTUs



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Supply

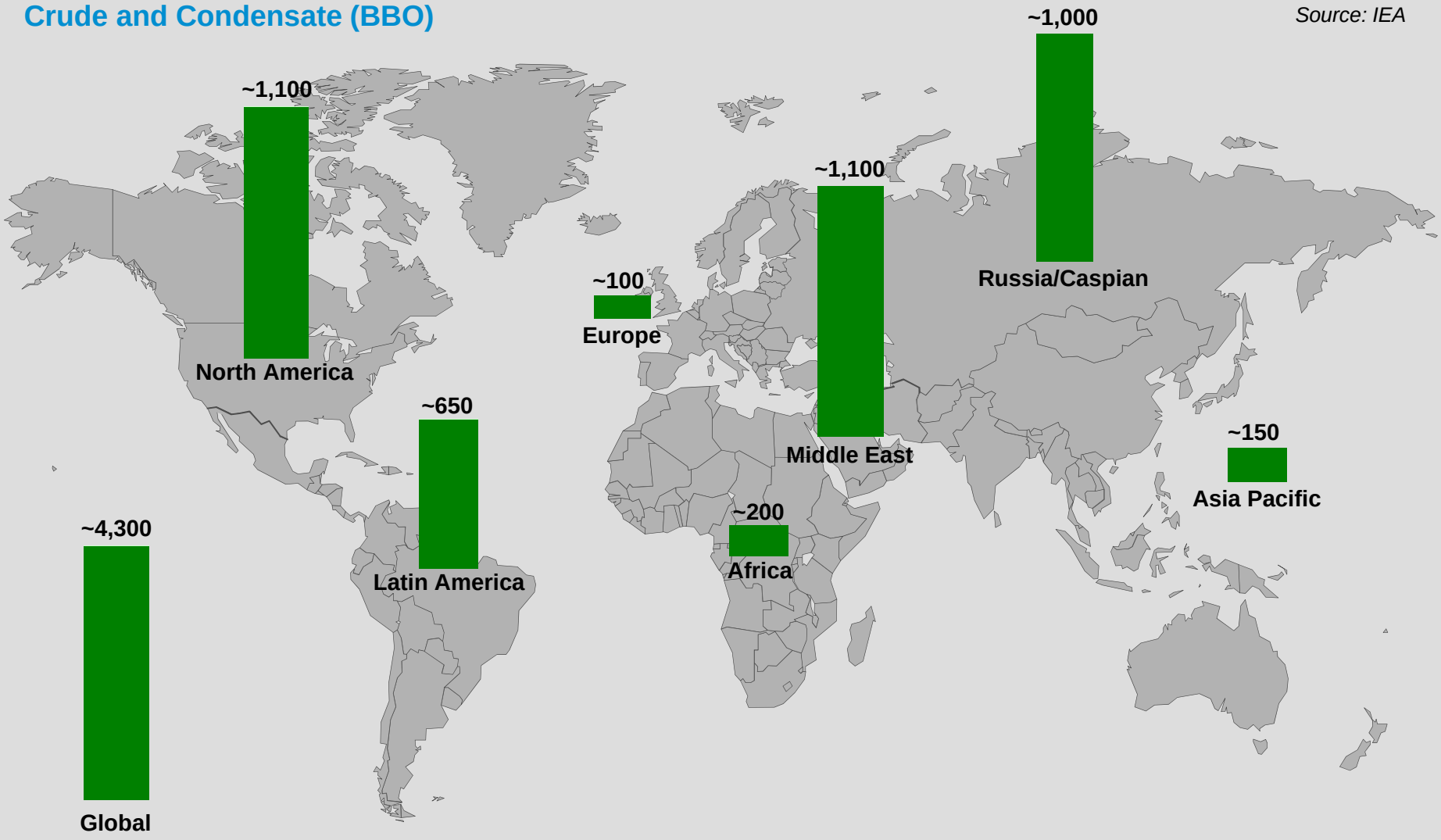
60%

Oil and gas will supply about 60 percent of global energy demand in 2040, up from 55 percent in 2010.

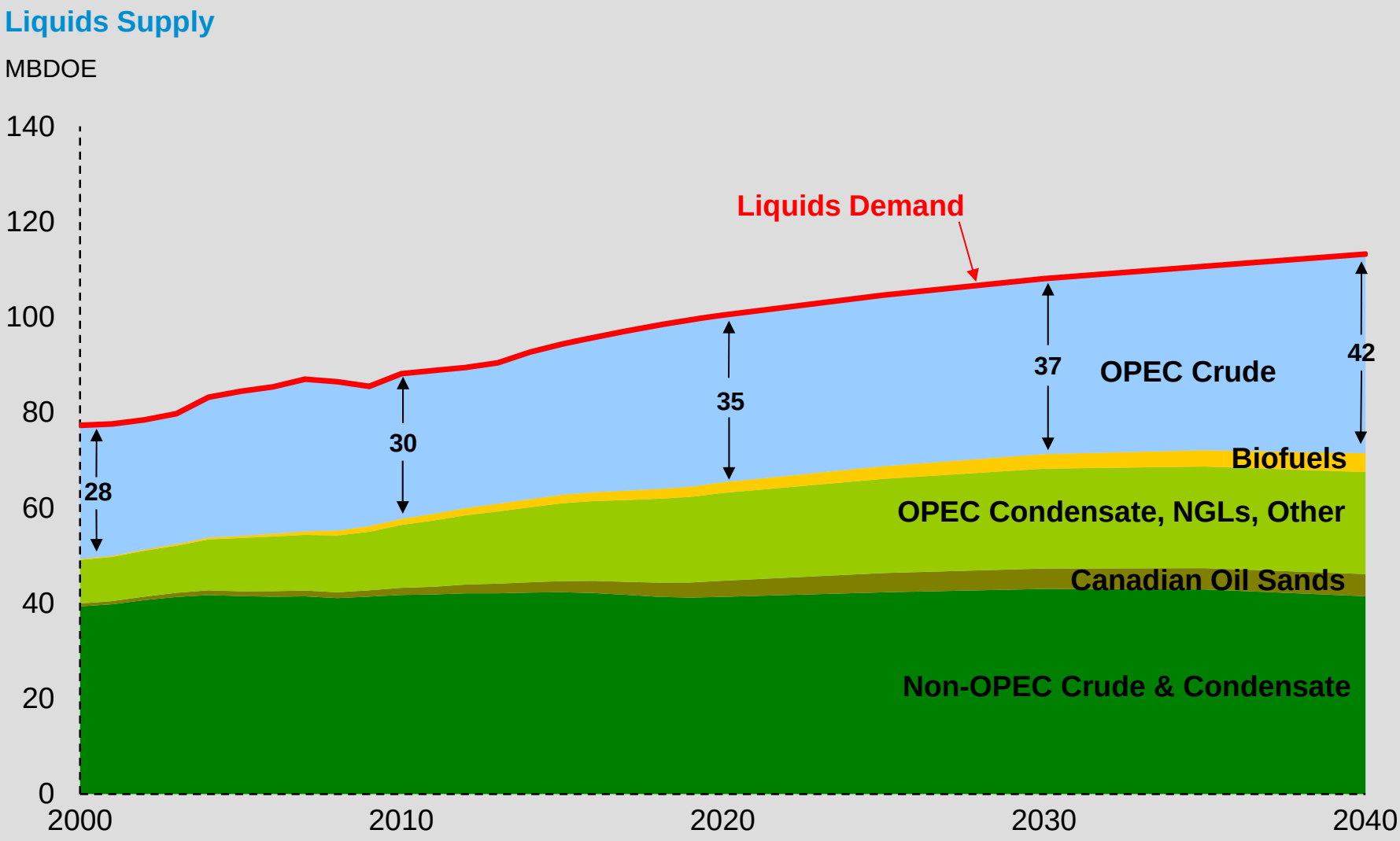
Remaining Oil Resource

Crude and Condensate (BBO)

Source: IEA

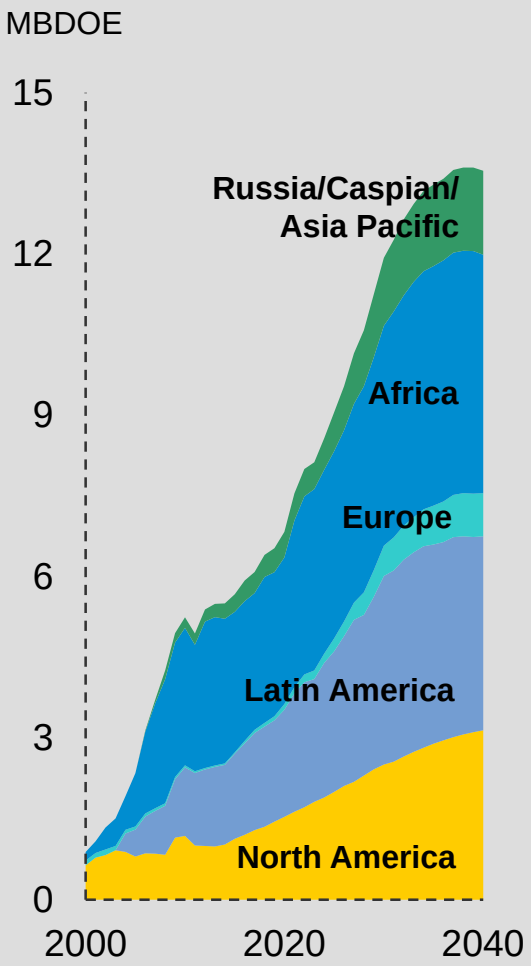


Liquids Supply & Demand Outlook

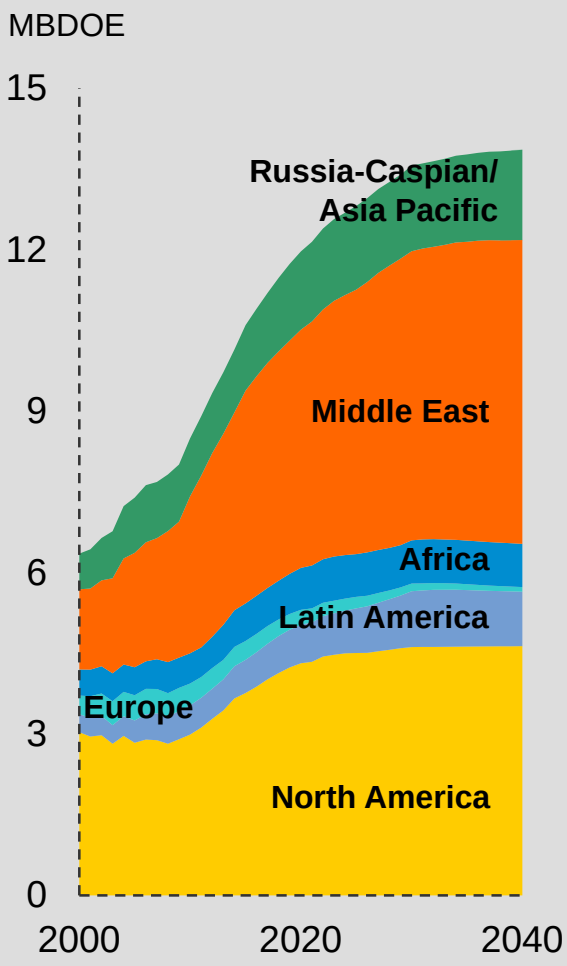


Technology Driven Supplies Expand Globally

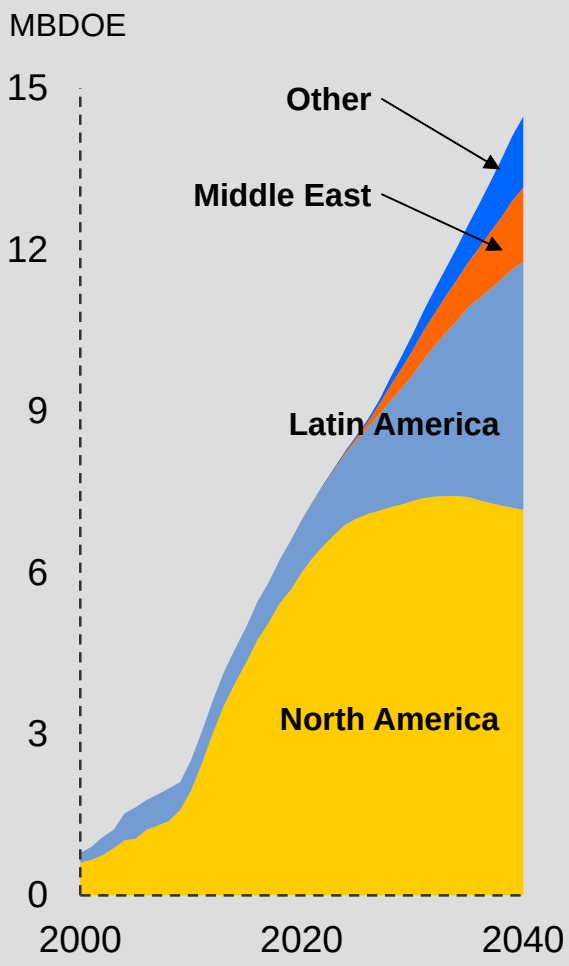
Deepwater by Region



NGL by Region



Unconventional Oil by Region



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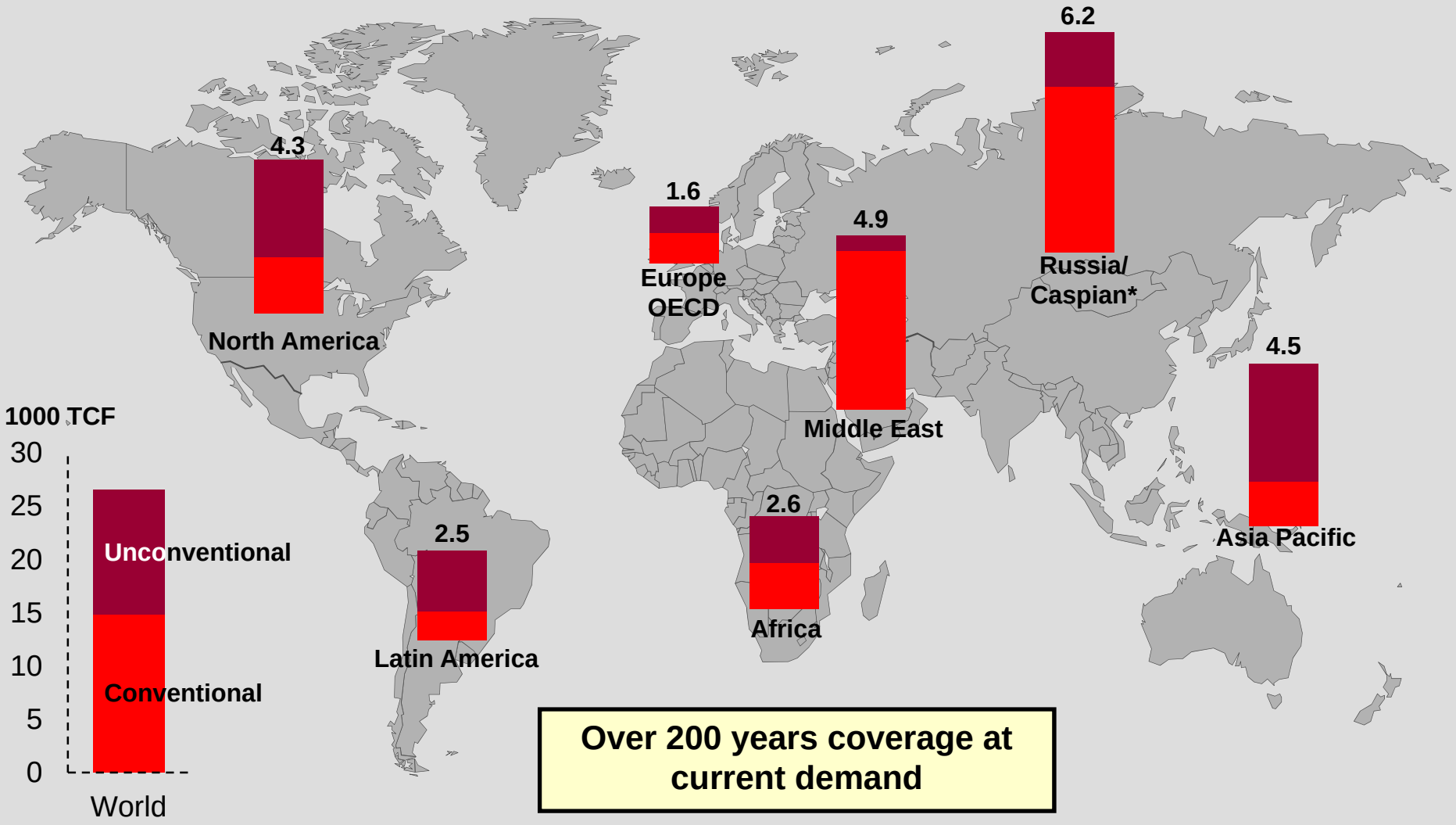
Global Gas Resource

*Source: IEA; *Includes Europe Non OECD*



Over 200 years coverage at current demand

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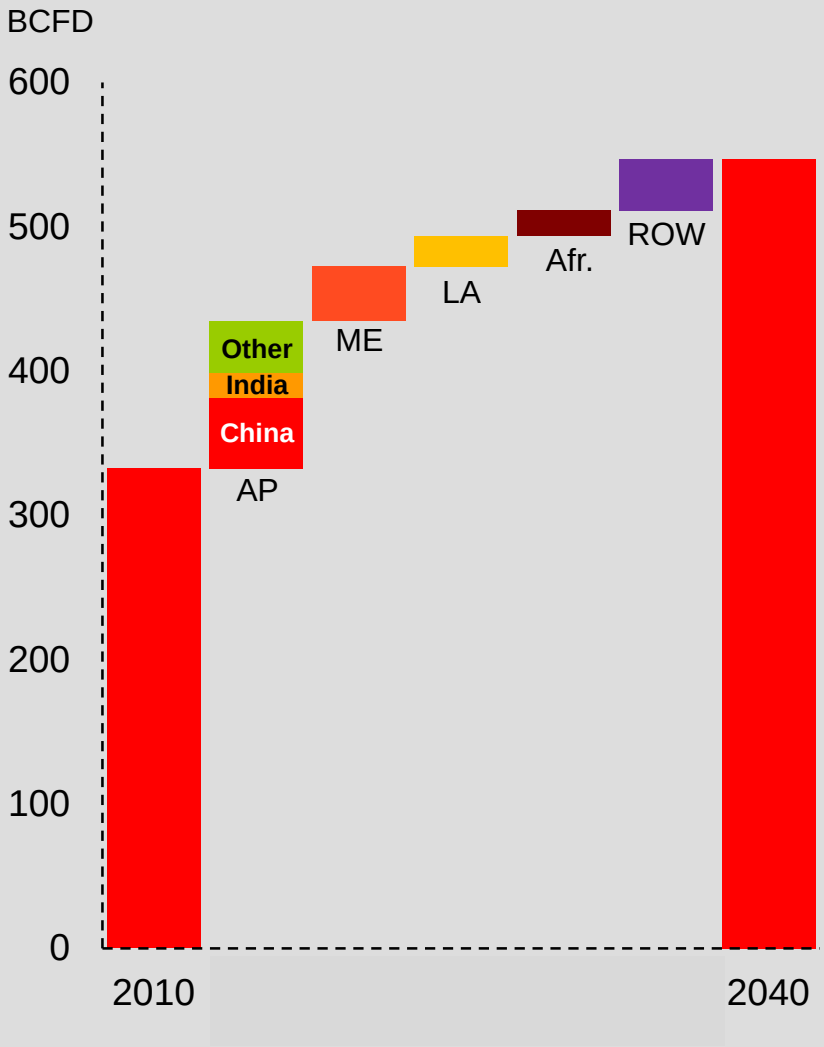
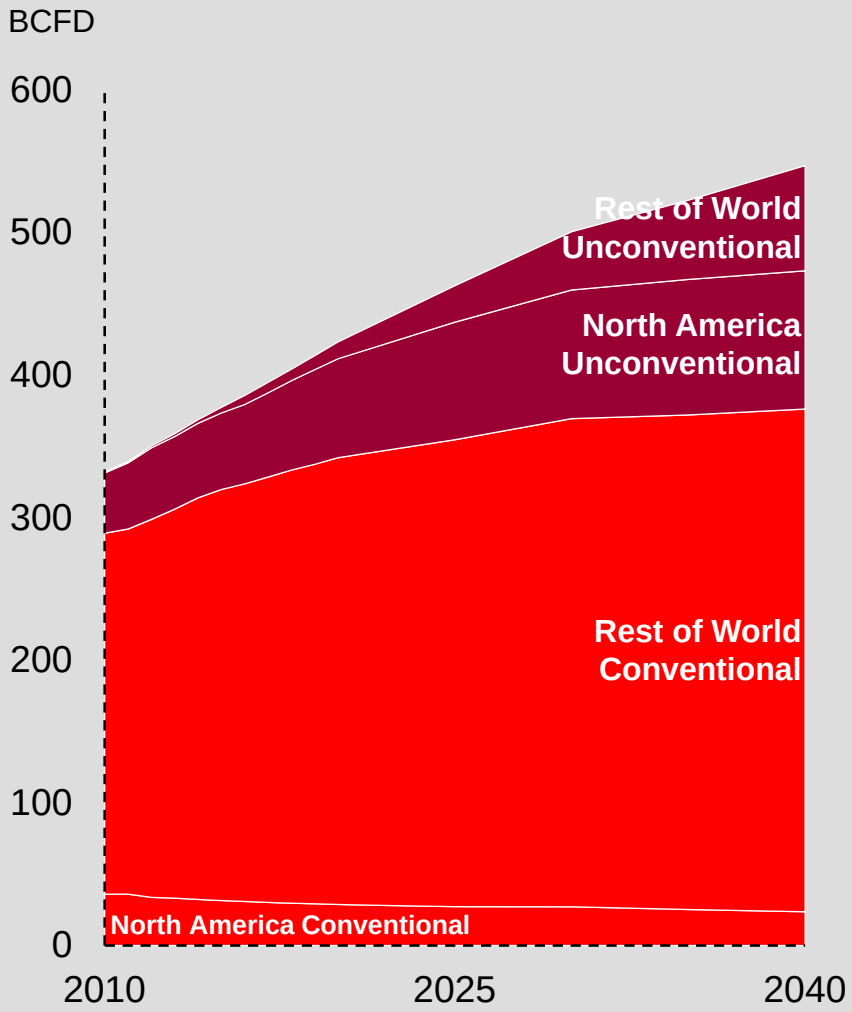
Natural Gas Supply and Demand Shifts

Global Gas Demand



Global Gas Supply



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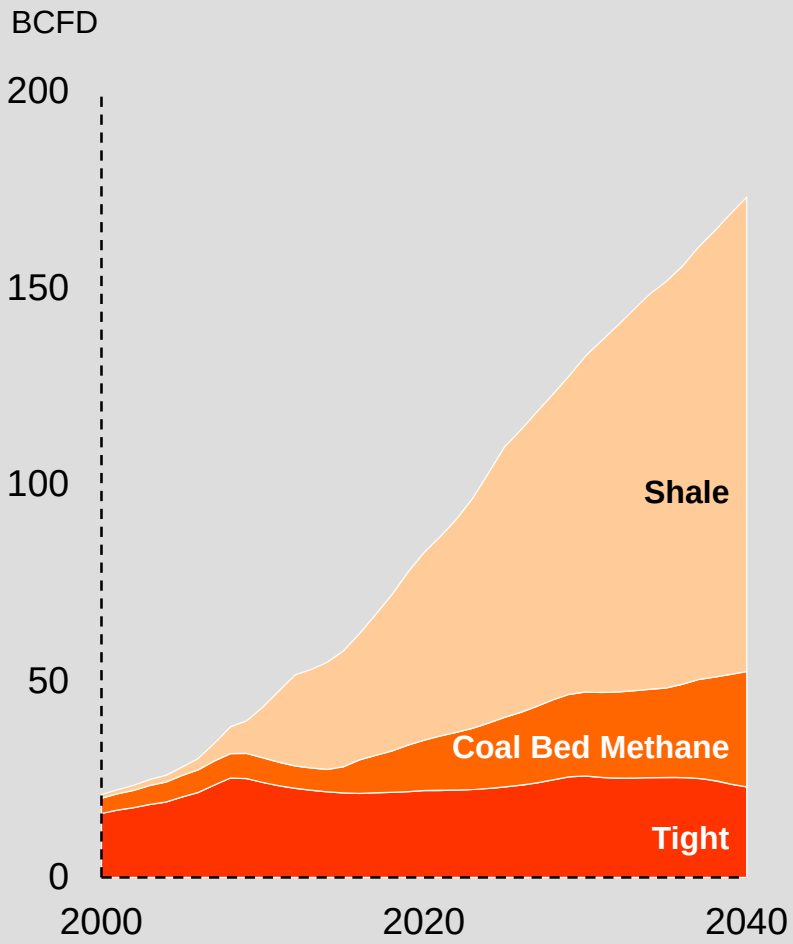
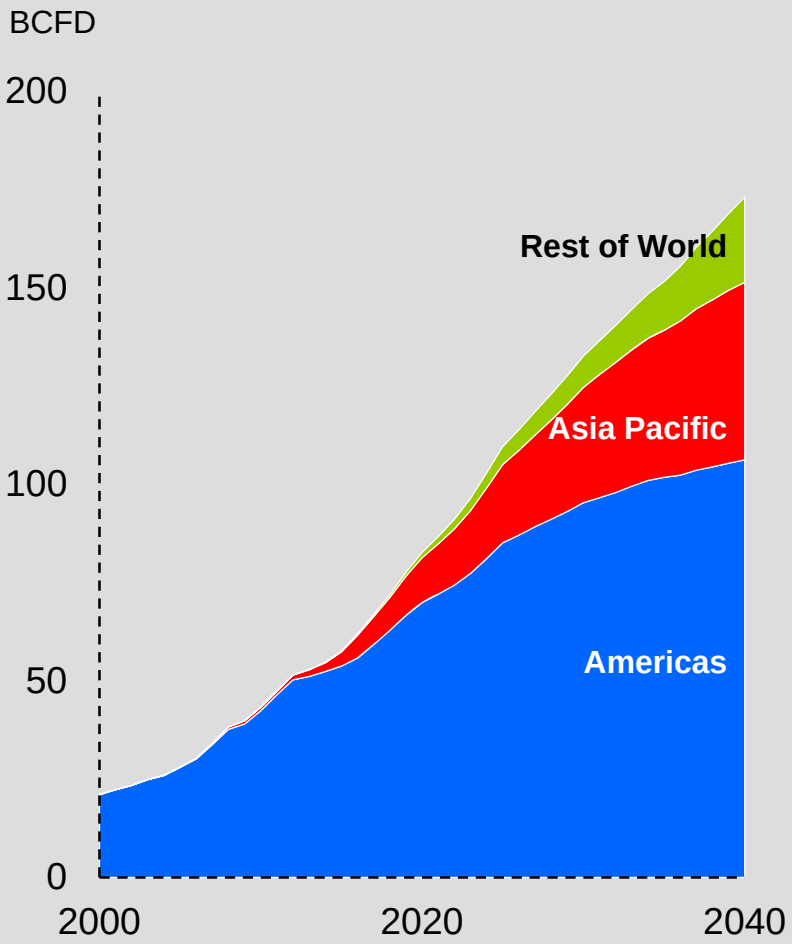
Growth in Unconventional Production

Production by Type



Production by Region



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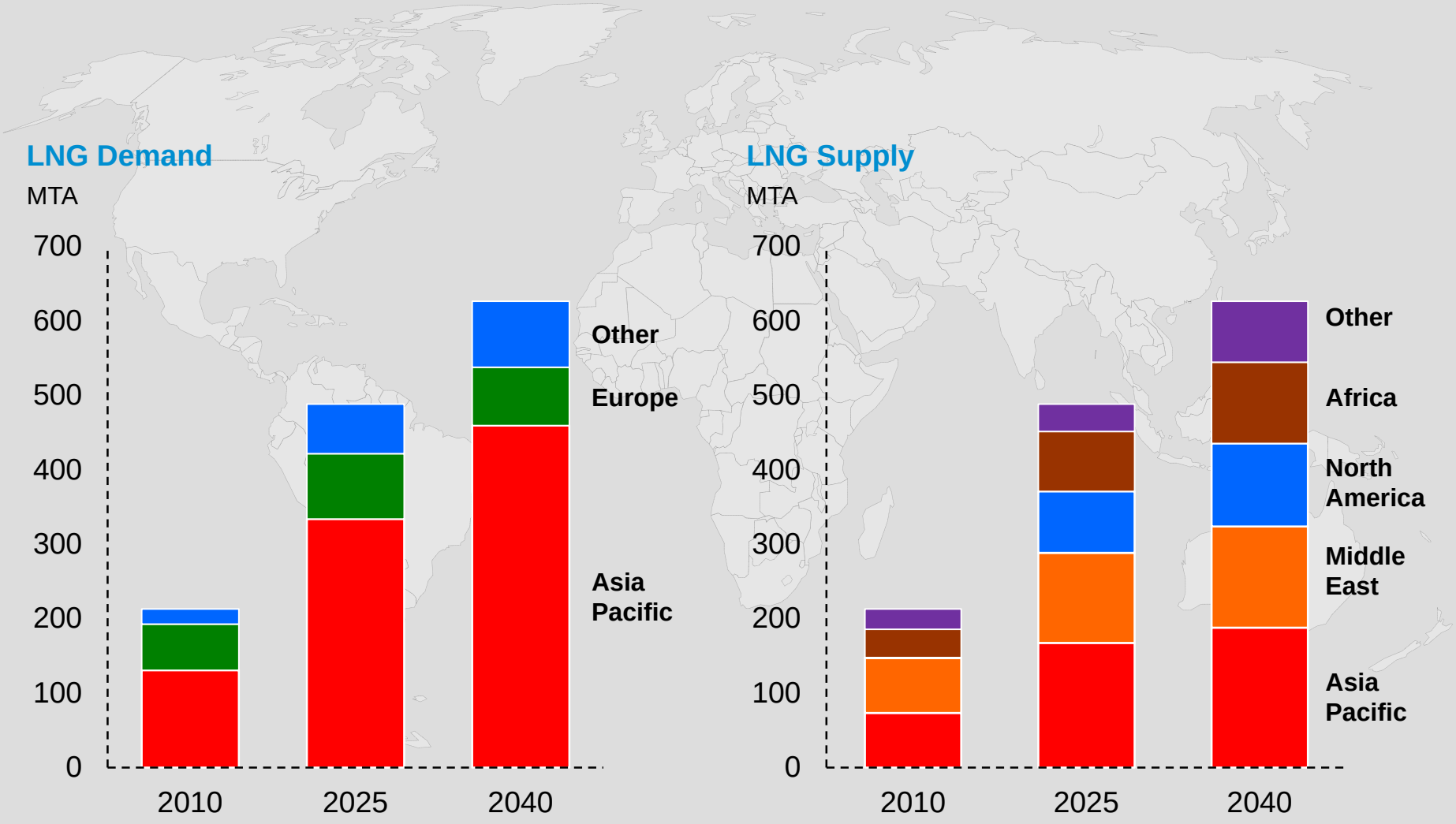
Global LNG Supply and Demand



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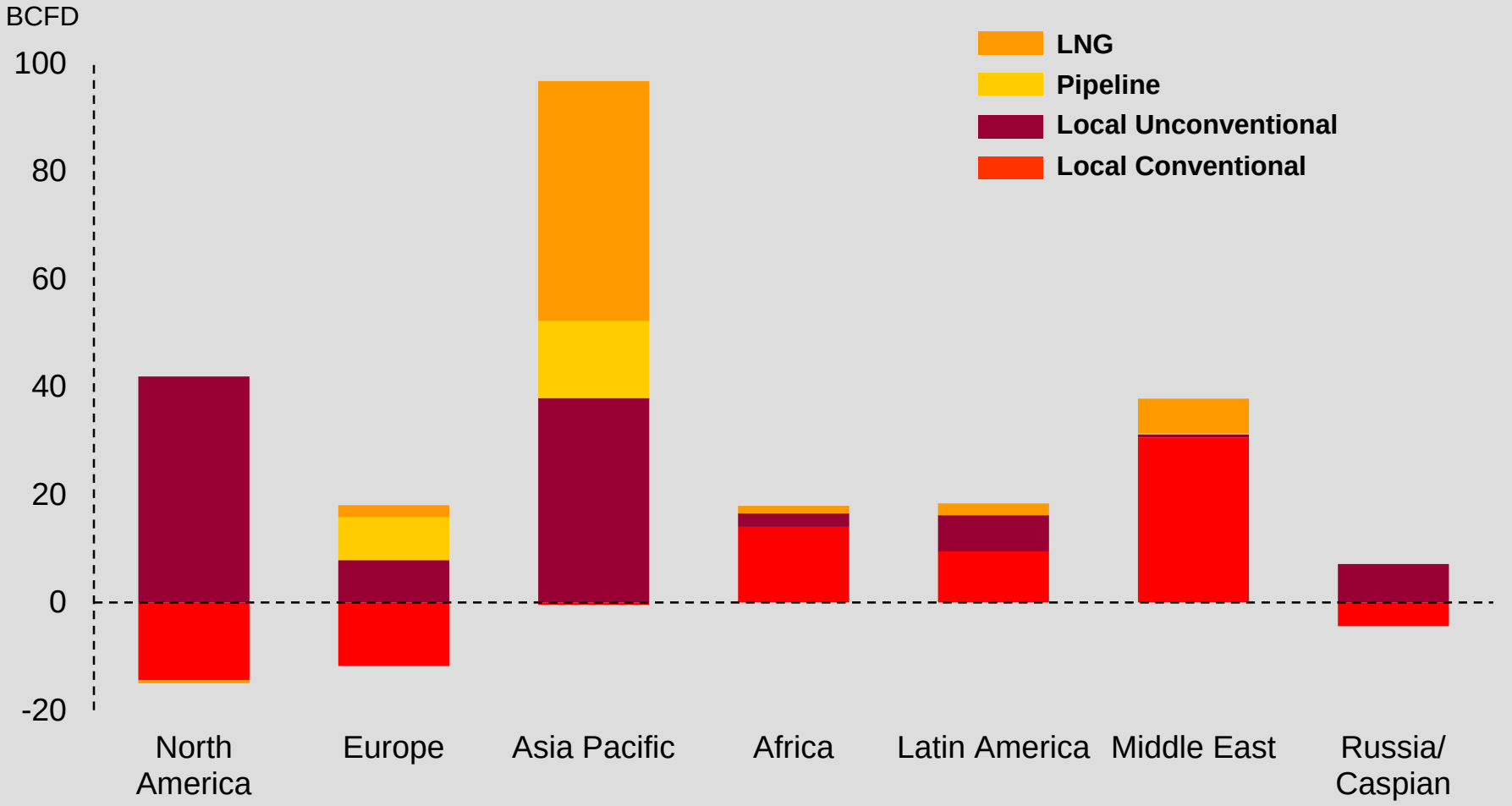
Global Gas Supply Growth 2010 to 2040

By Type



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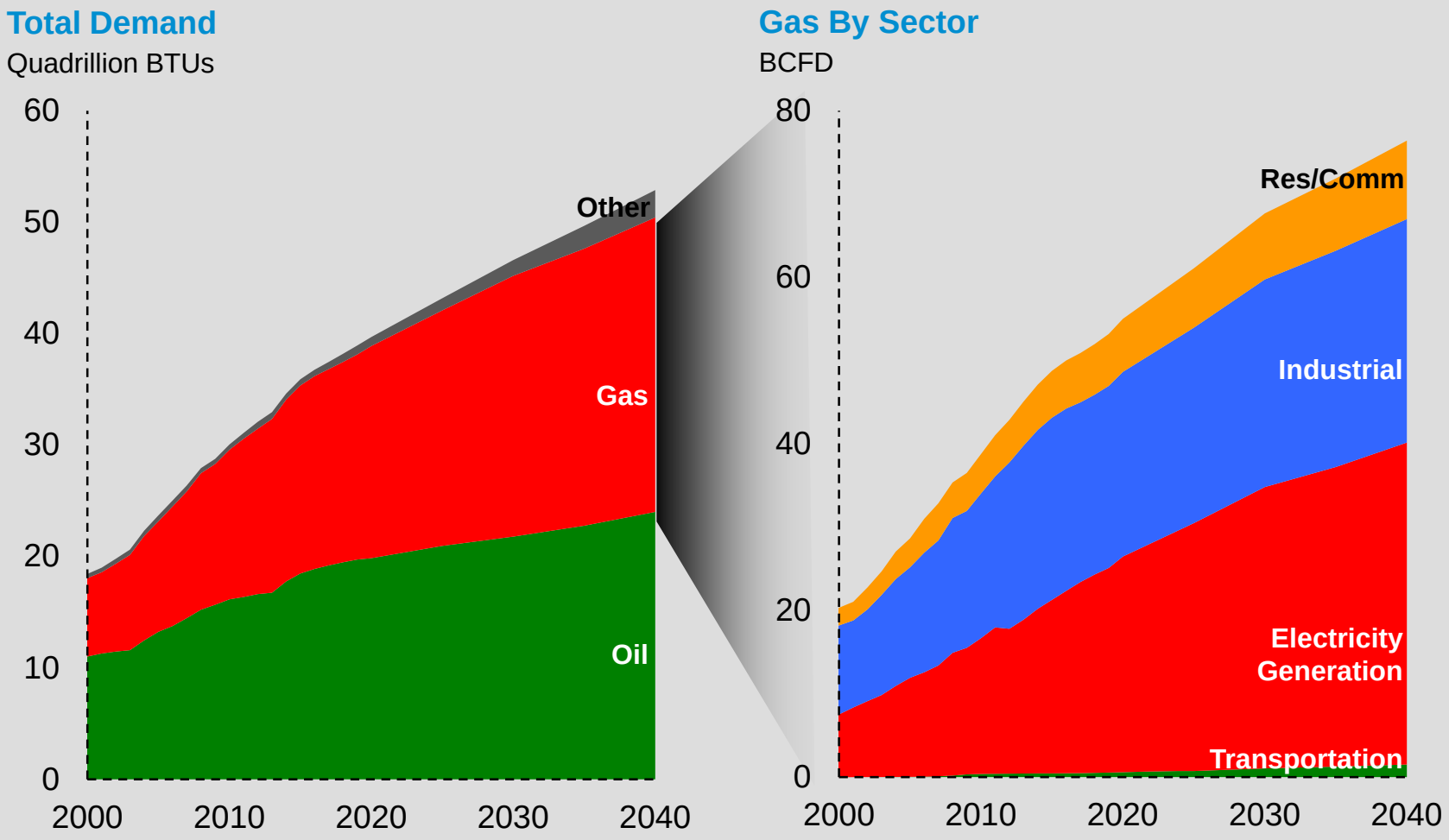
Middle East Natural Gas Demand



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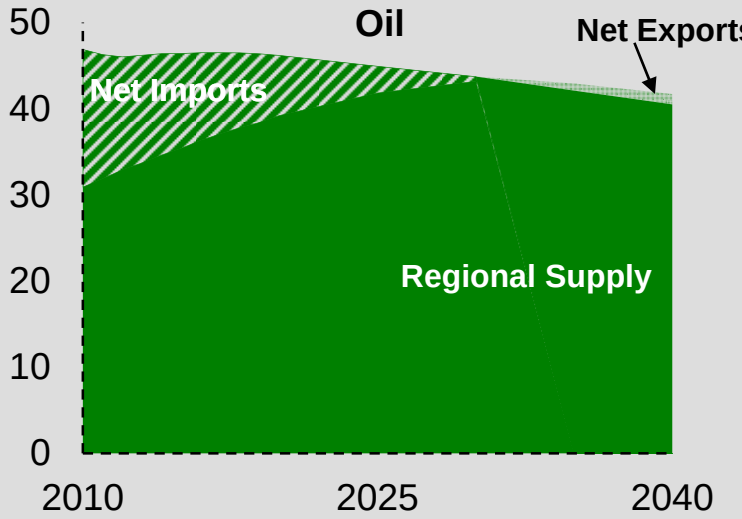
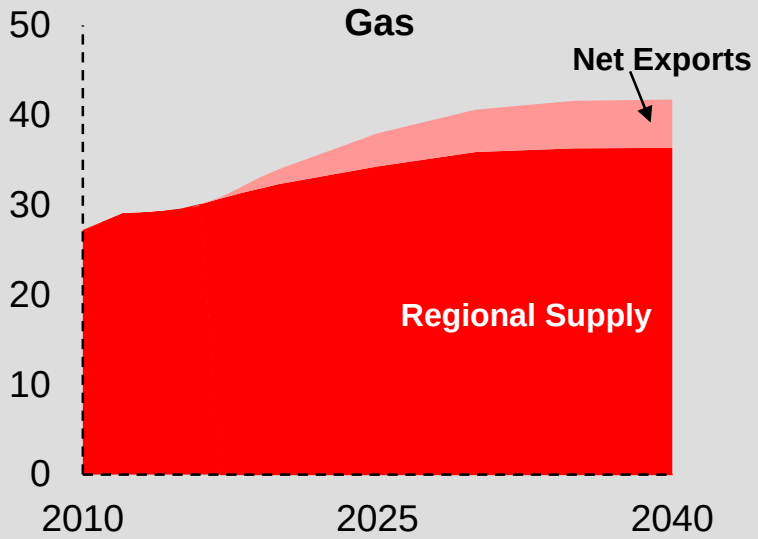
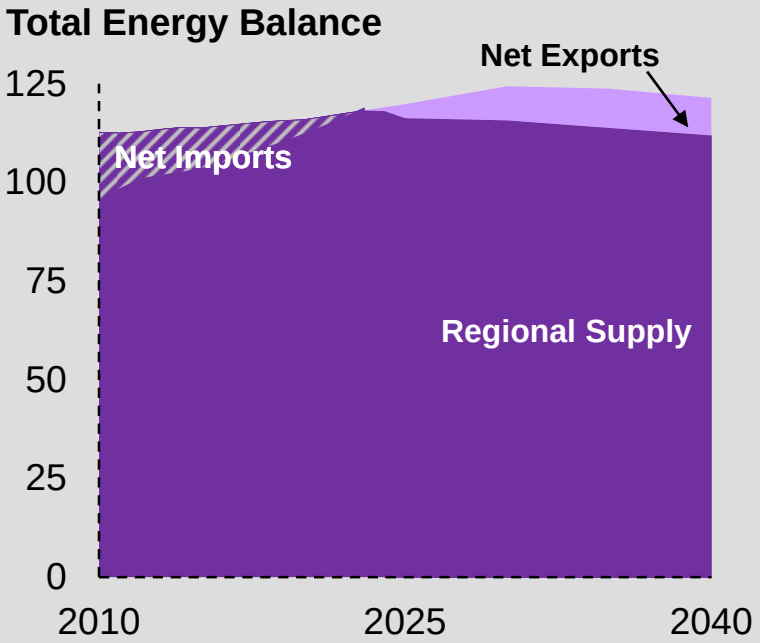
North America Energy Balance

Quadrillion BTUs







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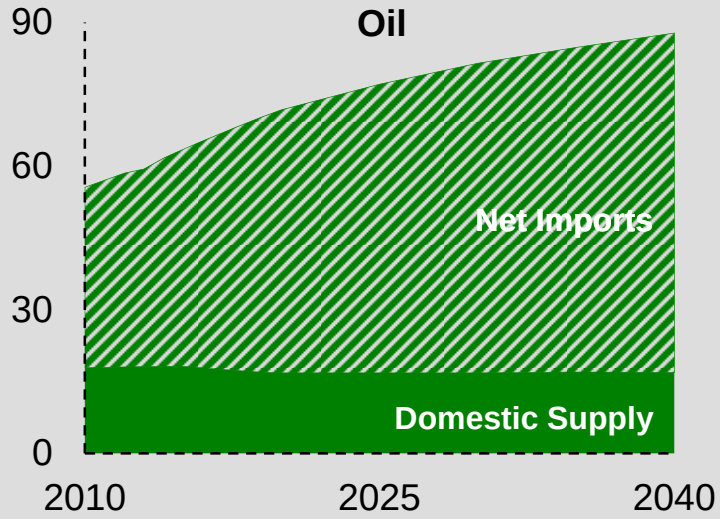
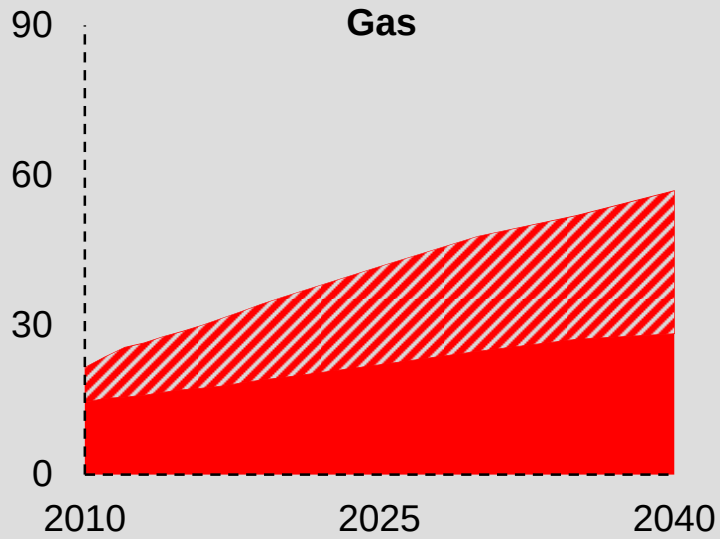
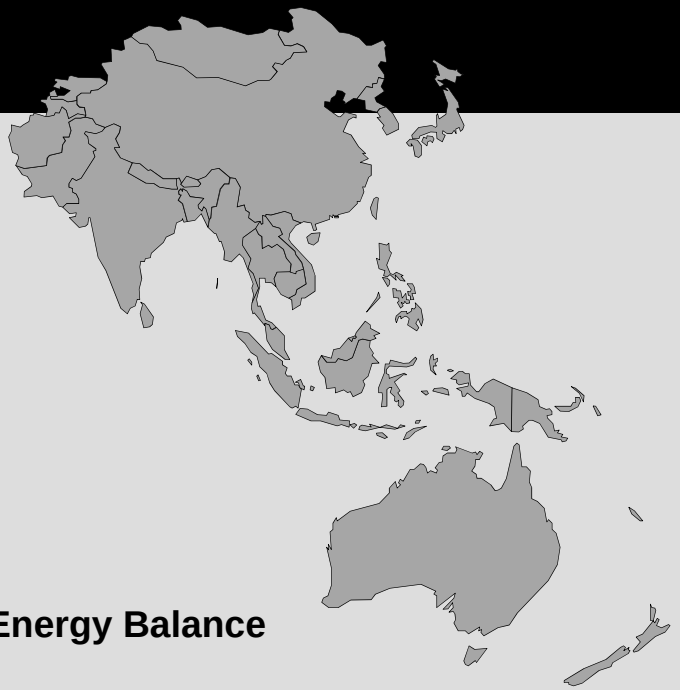
ExxonMobil 2013 Outlook for Energy

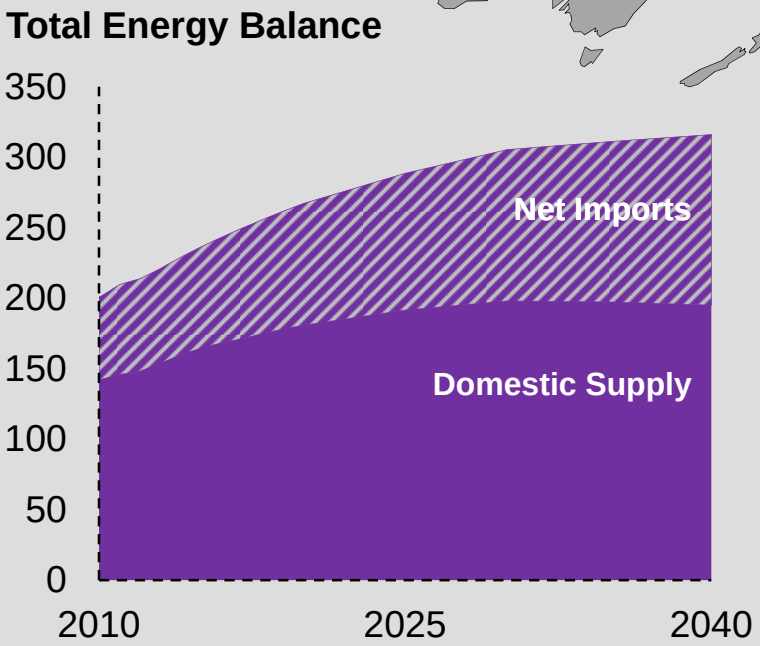
Asia Pacific Energy Balance

Quadrillion BTUs









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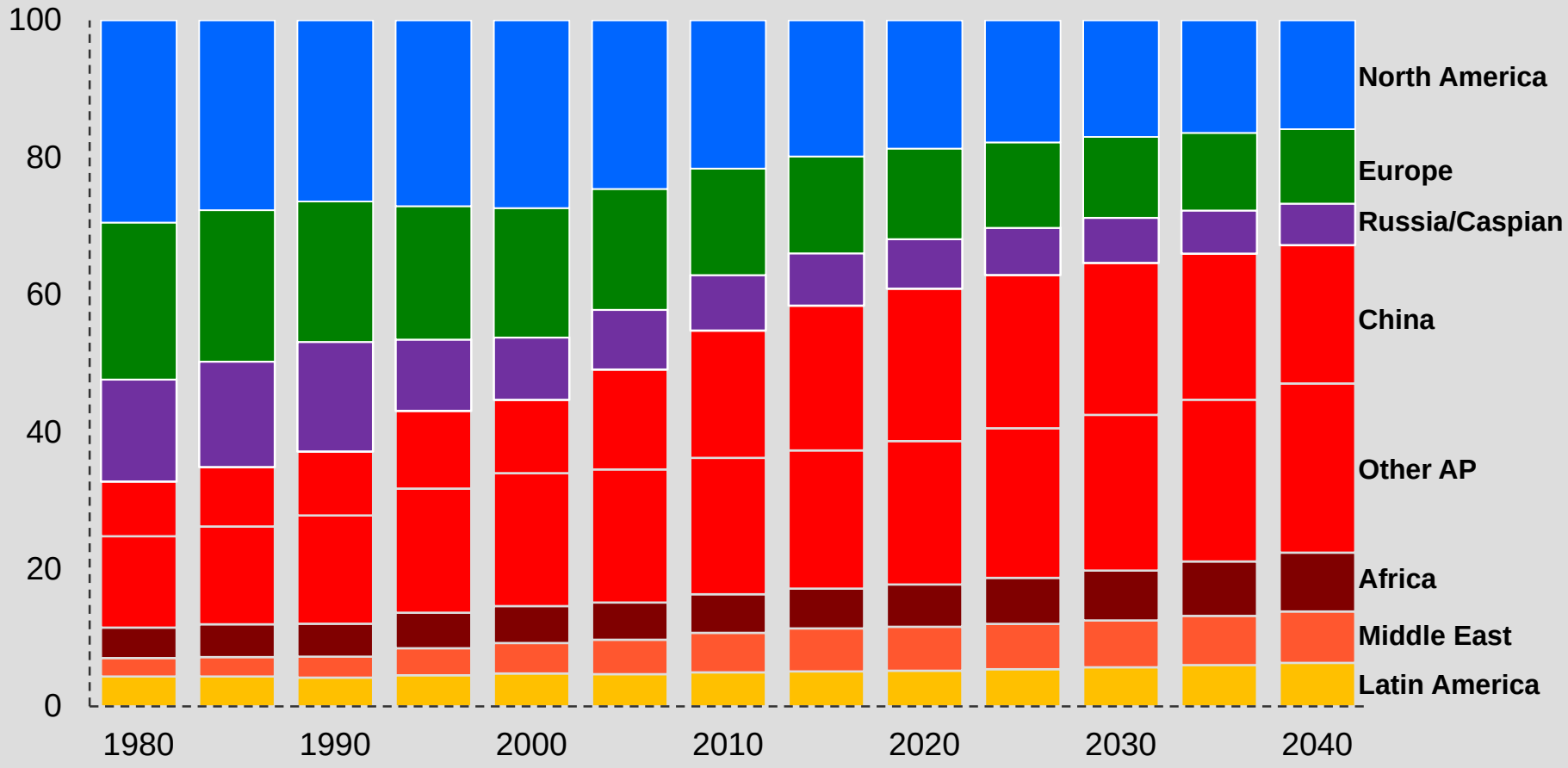
ExxonMobil 2013 Outlook for Energy

Regional Energy Trends Evolve

By Region

Percent of World Total



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Conclusions

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Bio for David Khemakhem (k'mak'm)

- David Khemakhem is an Energy and Technology Advisor at ExxonMobil. He is a member of the Corporate Strategic Planning Department, where he is responsible for assessing energy trends, emerging energy technologies, and related market and public policy issues around the world. He is one of the principal contributors to ExxonMobil's long-term global Energy Outlook. He is also active in communicating ExxonMobil's view of the future of energy to a wide variety of audiences.
- David has worked with Exxon then ExxonMobil since 1997 in numerous technical and management assignments covering activities in the United States and around the world.
- He started his career with Exxon Production Research Company in the area of Wellbore Design and eventually became Team Lead for the Well Integrity Group at ExxonMobil Upstream Research.
- In 2001, he transferred to ExxonMobil Production Company as a Subsurface Engineer overseeing completion and workover operations in Colorado, Wyoming, California and South Texas.
- In 2003, David relocated to Qatar, where he spent six years in a variety of assignments, including Drilling and Completions Engineering Manager. In this role he led a team of engineers working on RasGas's 14 drilling rigs during the development of the North Field.
- In 2009, David transferred back to Houston, joining the ExxonMobil Upstream Research Company as Well Performance Manager and then in 2010, he became the Unconventional Gas Recovery Manager.
- The following year, in 2011, David moved to ExxonMobil Headquarters to join the Corporate Strategic Planning team where he is helping in the development of the Energy Outlook for 2013 and beyond.
- David holds a Ph.D. in Mechanical Engineering from the University of Minnesota.

Text in Box: Short Bio

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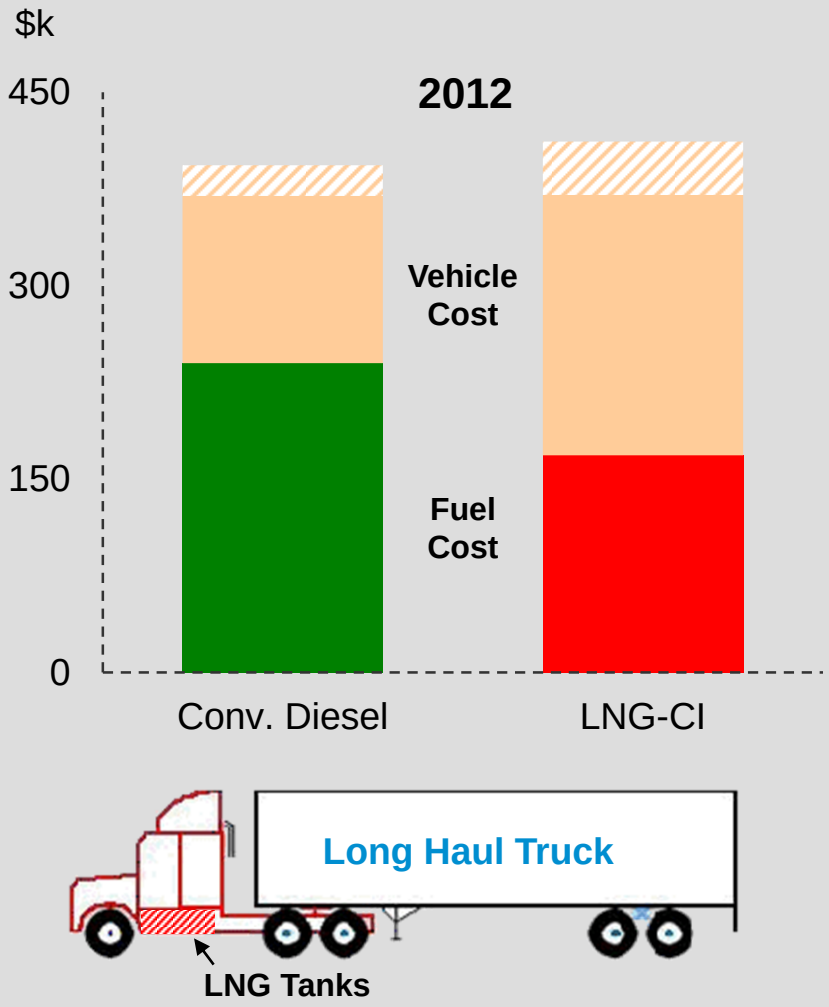
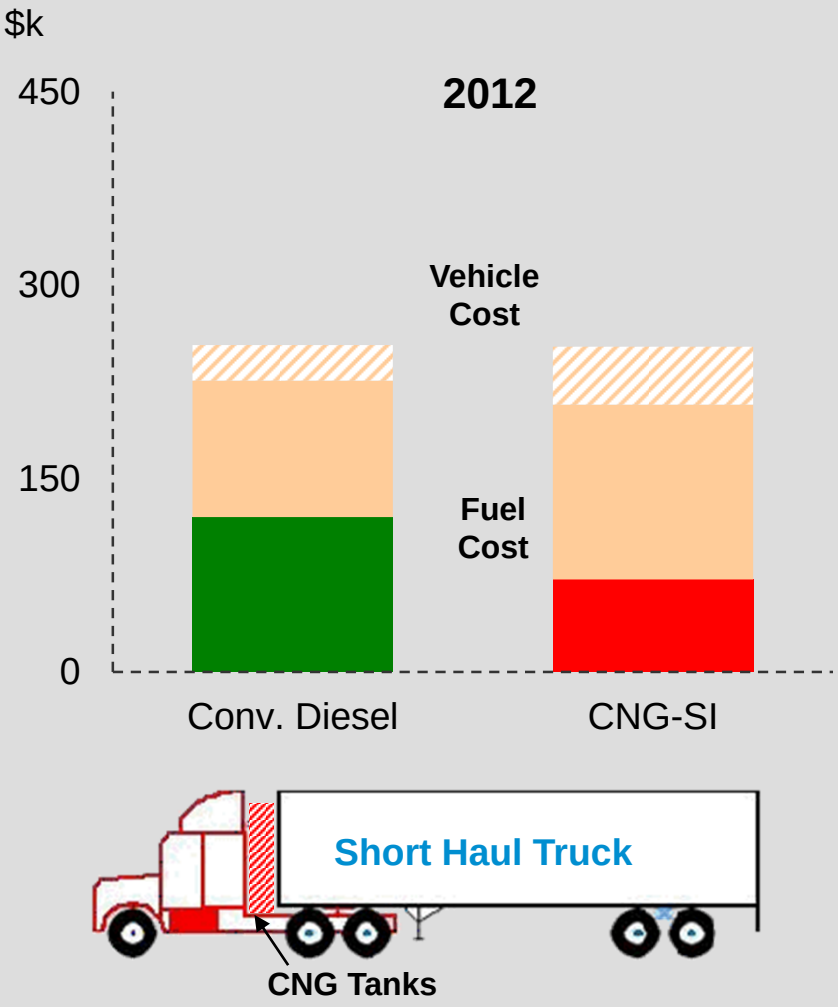
Costs Impact U.S. Heavy Duty Choices

3-Year Cost of Ownership



5-Year Cost of Ownership



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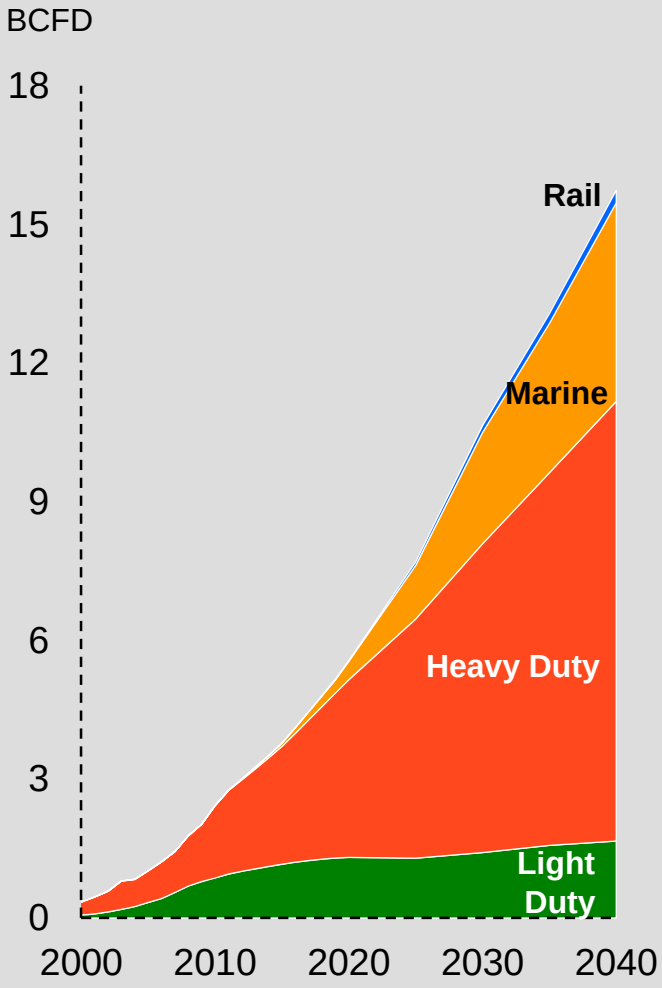
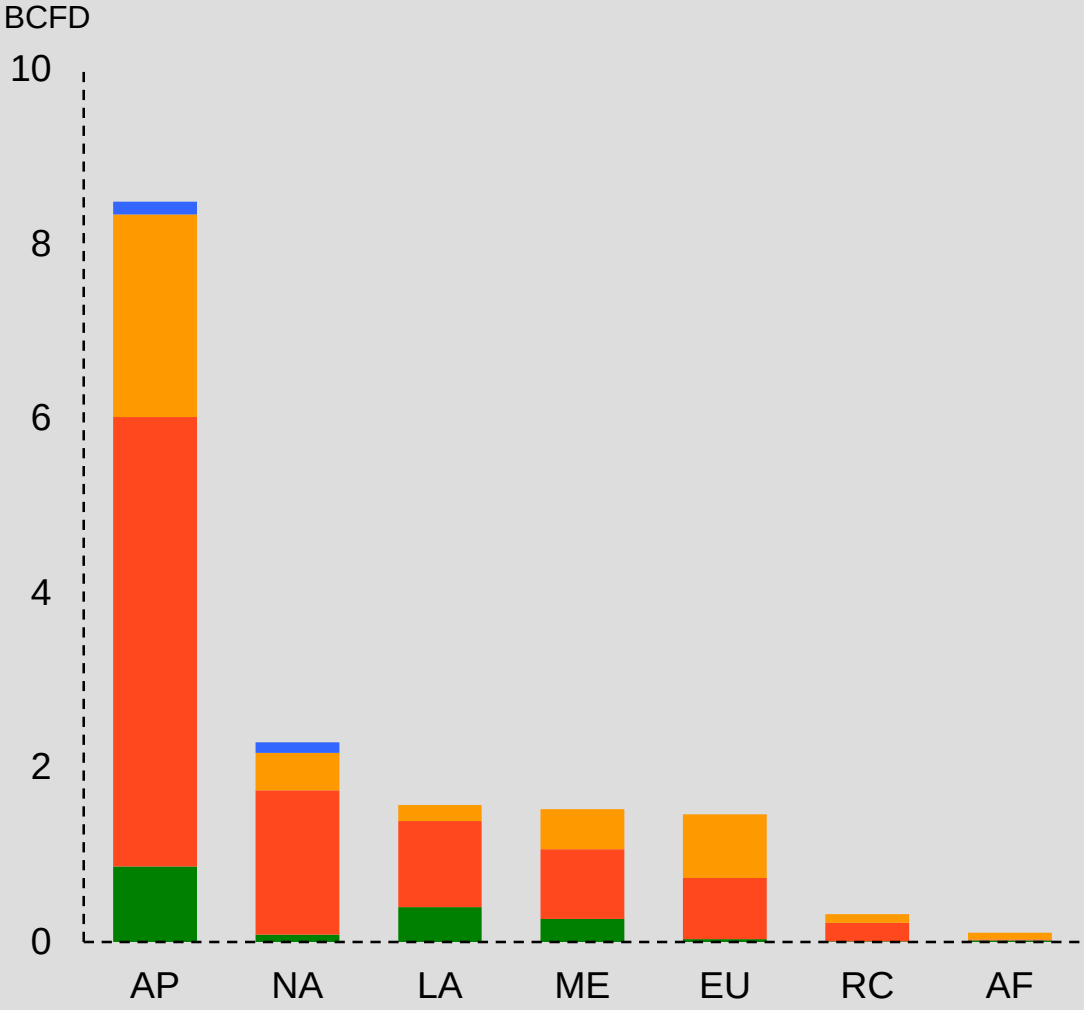
ExxonMobil 2013 Outlook for Energy

Gas Into Transportation

By Sector



2040 by Region



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