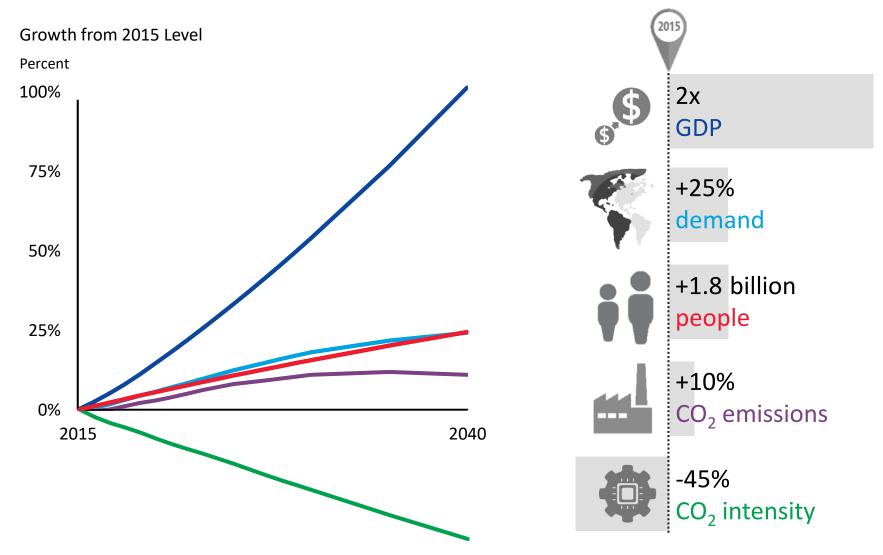
## 2017 Outlook for Energy: A View to 2040 **Bill Colton** May 2017 **中国大事業**個日

The Outlook for Energy includes Exxon Mobil Corporation's internal estimates and forecasts of energy demand, supply, and trends through 2040 based upon internal data and analyses as well as publicly available information from external sources including the International Energy Agency. Work on the report was conducted throughout 2016. This presentation includes forward looking statements. Actual future conditions and results (including energy demand, energy supply, the relative mix of energy across sources, economic sectors and geographic regions, imports and exports of energy) could differ materially due to changes in economic conditions, 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 <u>www.exxonmobil.com</u>. This material is not to be used or reproduced without the permission of Exxon Mobil Corporation. All rights reserved.

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### **Global Trends Continue to Evolve**



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### Key Energy Outlook Themes



### Energy is fundamental to standards of living

Developing nations lead gains in GDP and living standard

Economics and policies impact the energy mix

O il remains the world's primary fuel through 2040

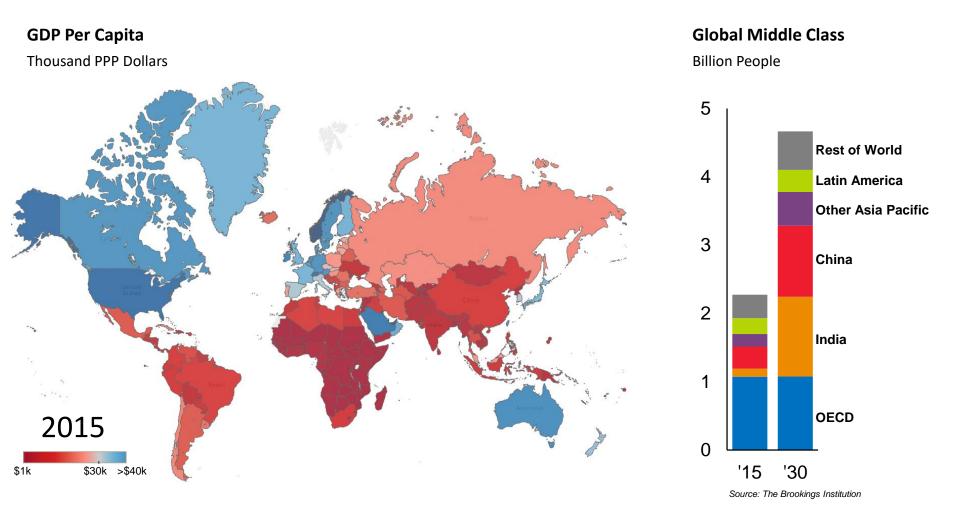


Natural gas grows more than any other energy source

Technology has the highest potential and greatest uncertainty

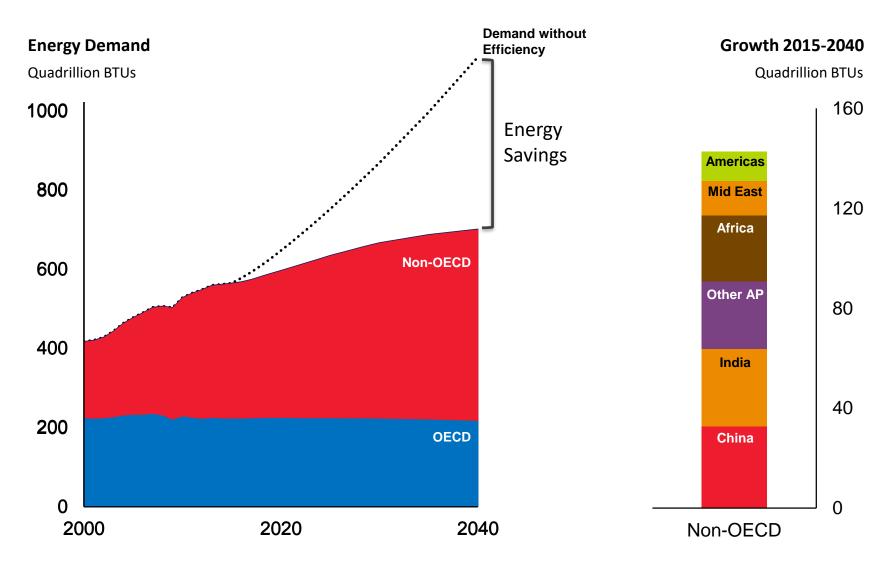


### Purchasing Power and Middle Class Grow



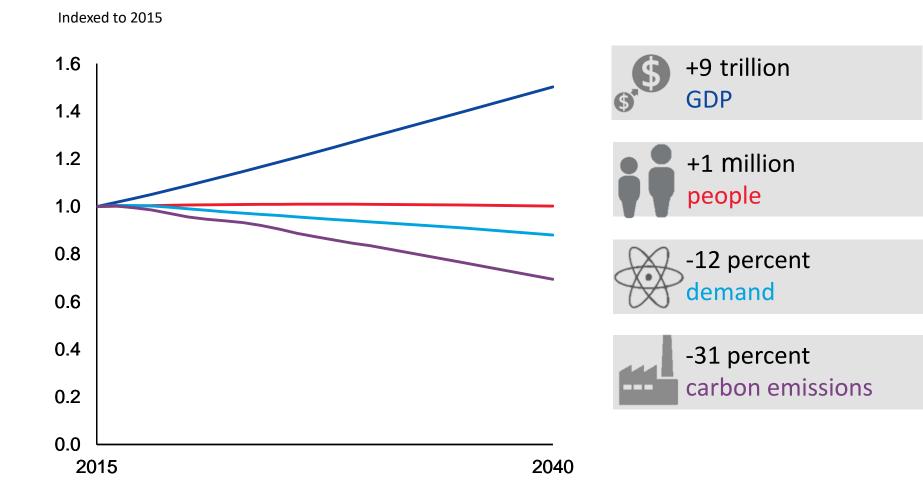
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### **Demand Growth From Developing Nations**



ExxonMobil 2017 Outlook for Energy

### E.U. Energy Trends



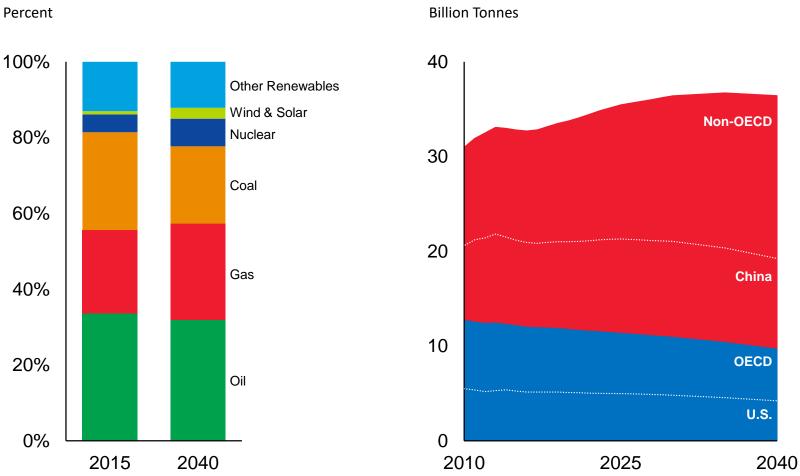


# Economics and policies impact the energy mix.



### **Energy Mix Shifts to Lower-Carbon Fuels**

**Energy-Related CO<sub>2</sub> Emissions by Region** 



#### **Global Energy Mix**

Percent

#### **E**%onMobil

#### ExxonMobil 2017 Outlook for Energy



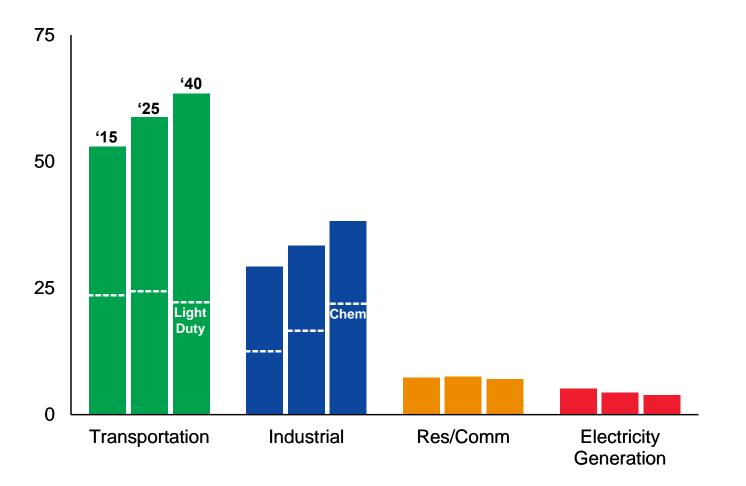
# Oil remains the world's primary fuel through 2040.



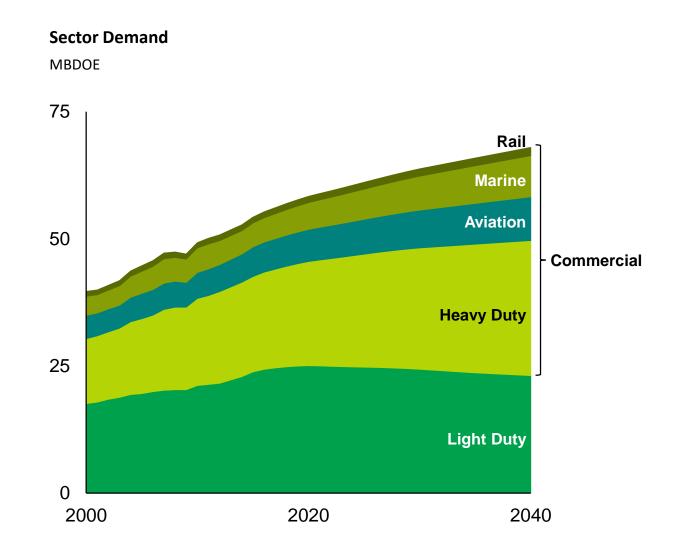
### **Transportation and Chemicals Drive Growth**

#### Liquids Demand by Sector

MBDOE

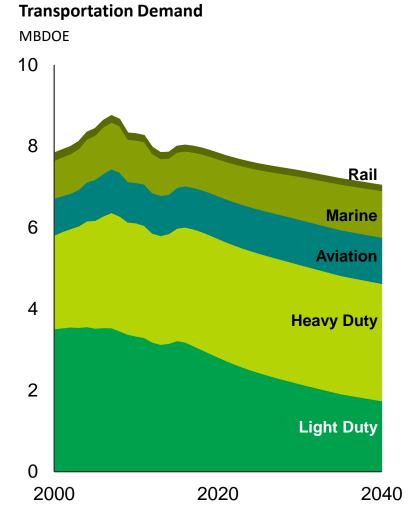


### **Transportation Demand Driven by Commerce**

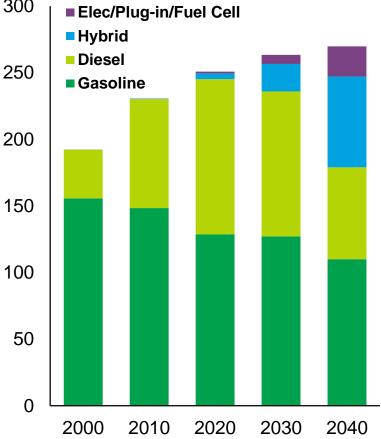


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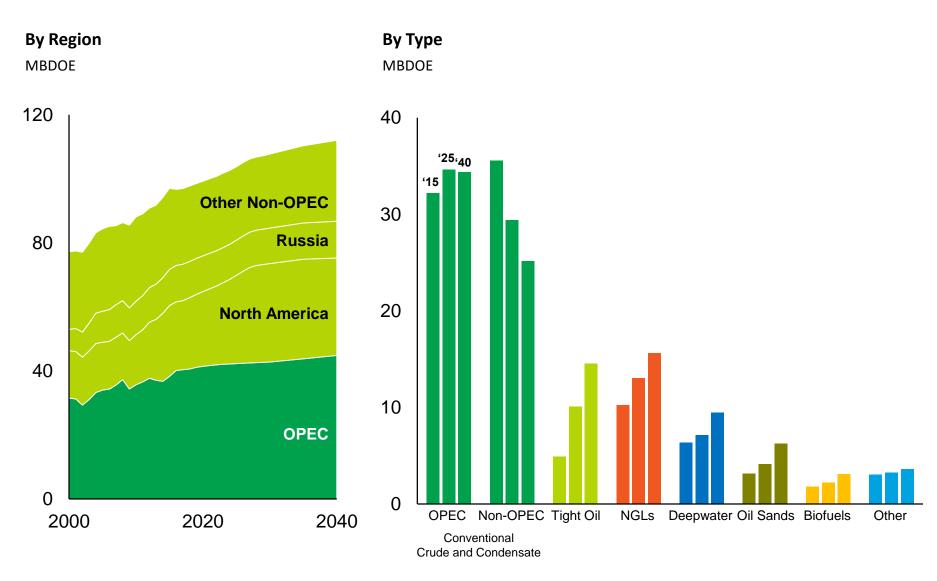
### E.U. Transportation Demand & Fleet Shift



Light Duty Vehicles Million 300 | ■Elec/Plug-in



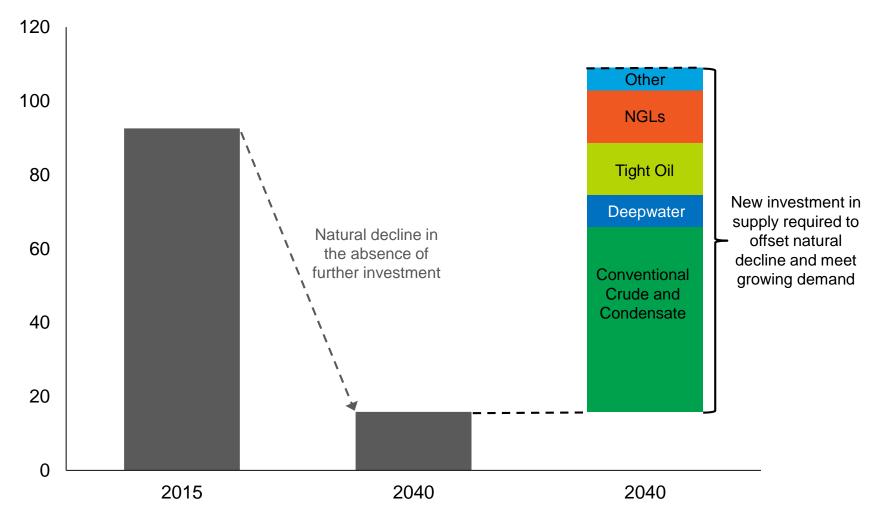
### Liquids Supply Highlights Technology Gains



### All Scenarios Require Ongoing Development

#### Liquids Supply/Demand

MBDOE

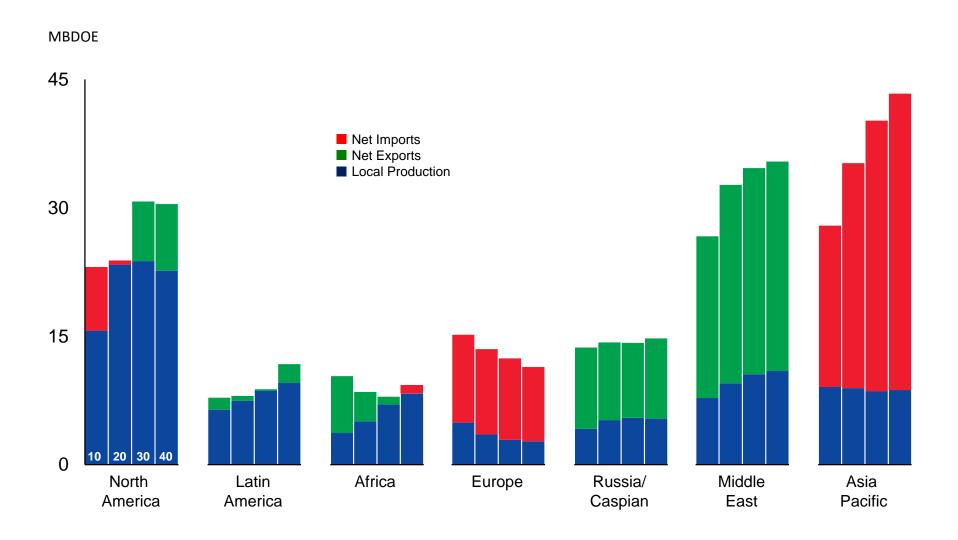


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Excludes biofuels; based on natural decline rates from IEA World Energy Outlook 2015

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### Liquids Trade Balance by Region





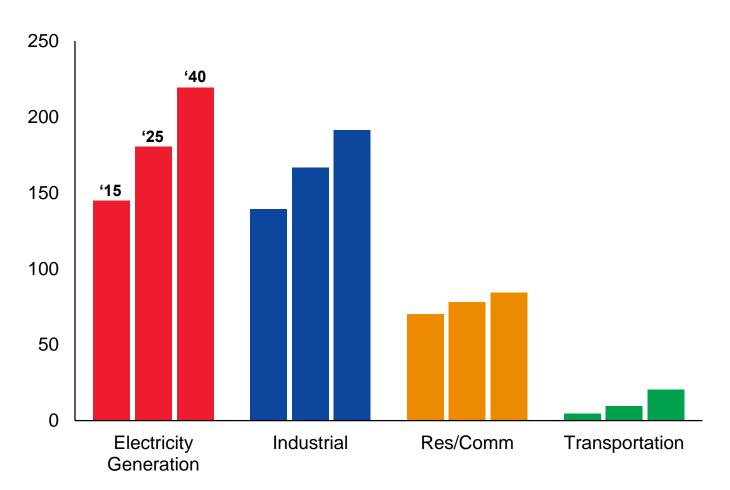
### Natural gas grows more than any other energy source.

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### Gas Demand Grows in All Sectors

#### **Gas Demand by Sector**

BCFD



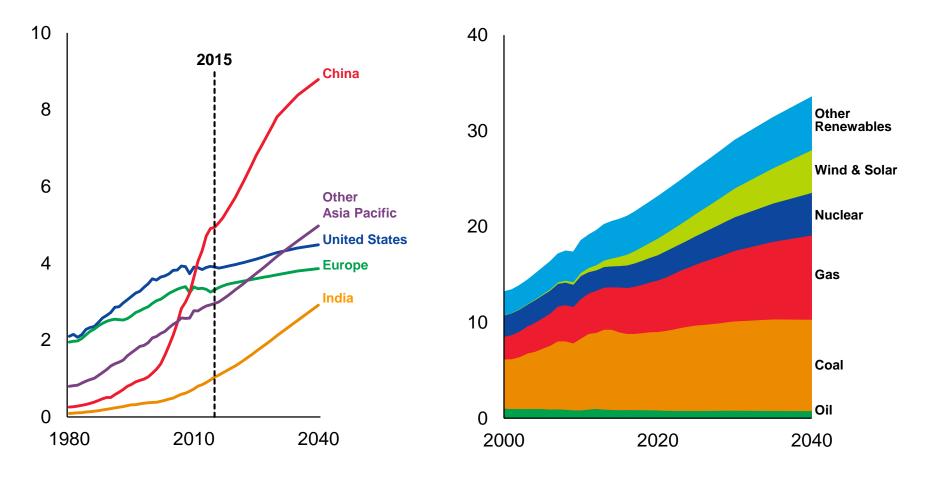
### **Electricity Demand Continues to Surge**

#### **Electricity Demand by Region**

Thousand TWh

#### **Electricity Net Delivered by Type**

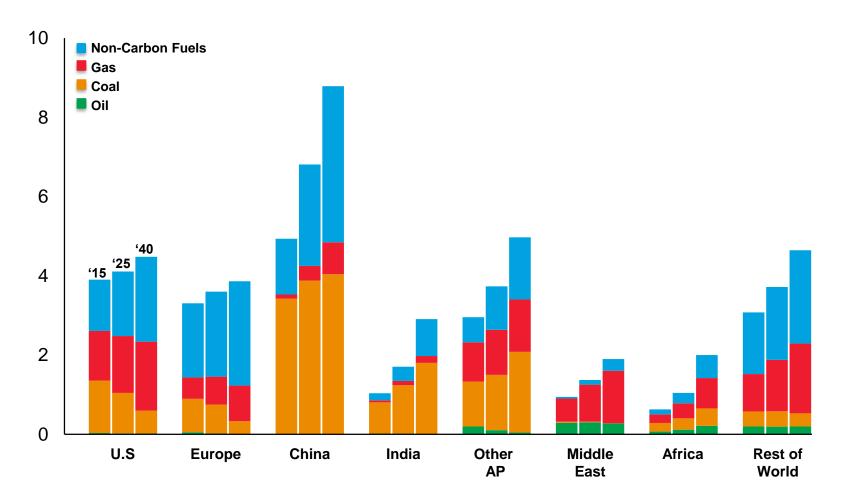
Thousand TWh



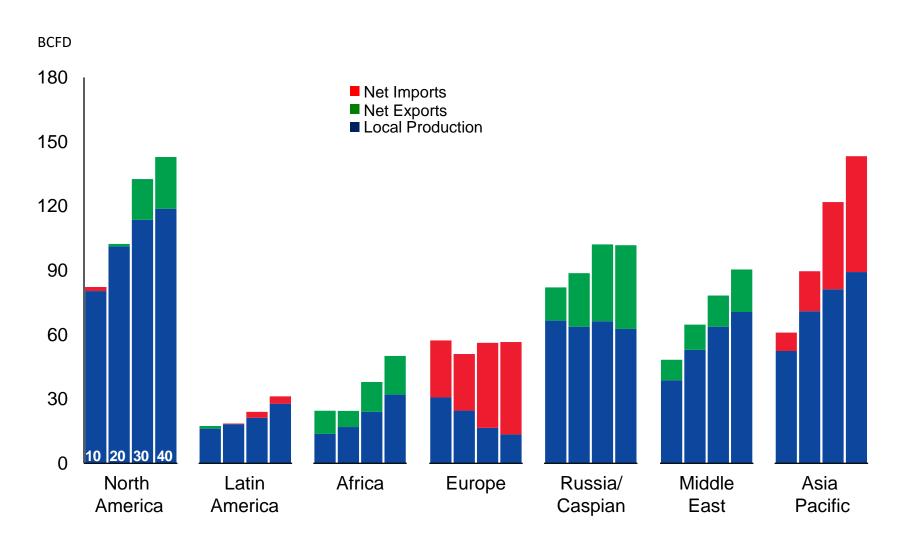
### **Fuel for Electricity Transitions**

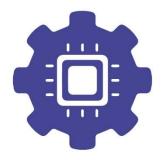
#### Net Delivered Electricity 2015-2040

Thousand TWh



### Gas Trade Balance by Region

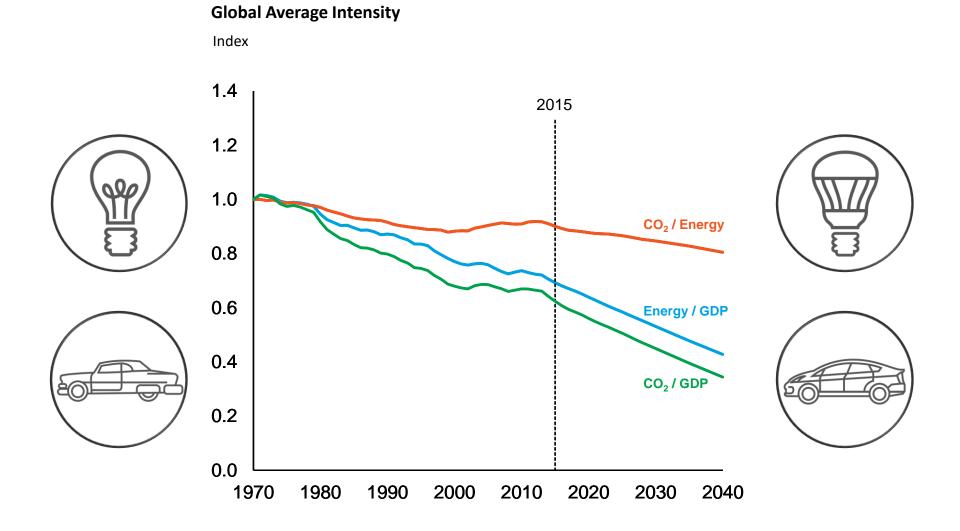




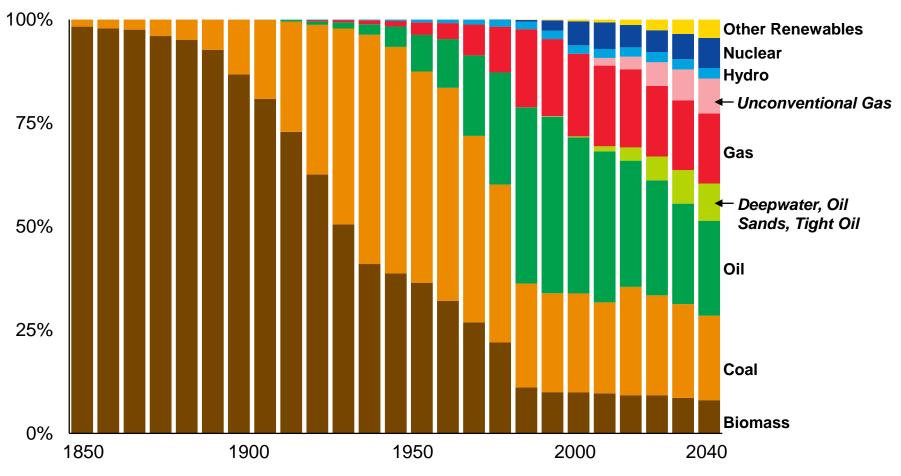
Technology has the highest potential and greatest uncertainty.



### Technology Helps Us Do More With Less



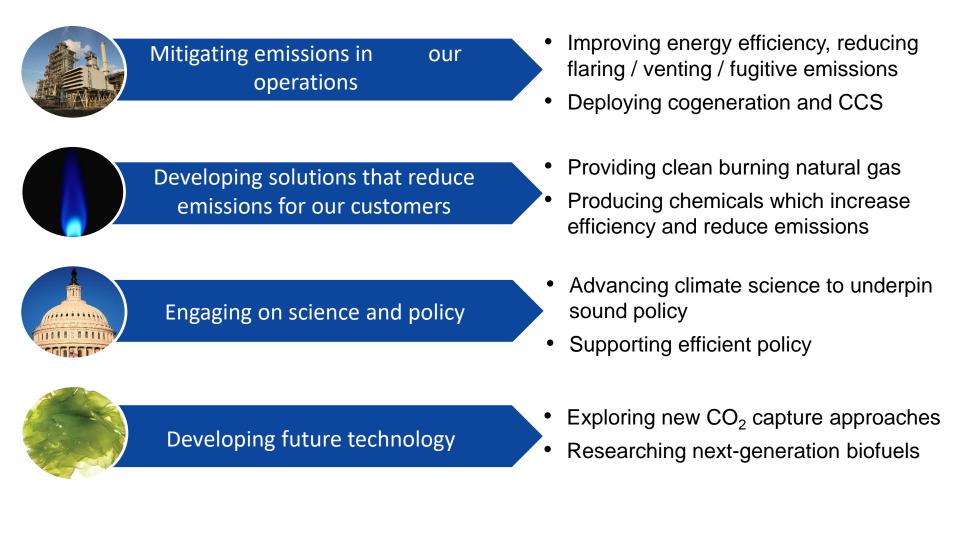
### Technology Contributes to the Fuel Mix



#### **Global Mix of Fuels**

Source: Smil, Energy Transitions (1800-1960)

## Managing the Risks of Climate Change

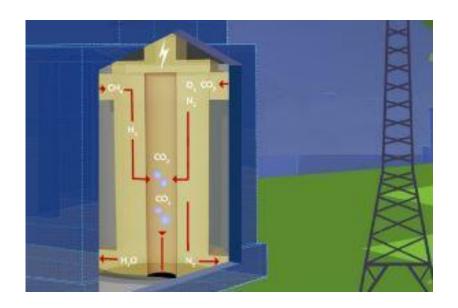


### **Research and Development**

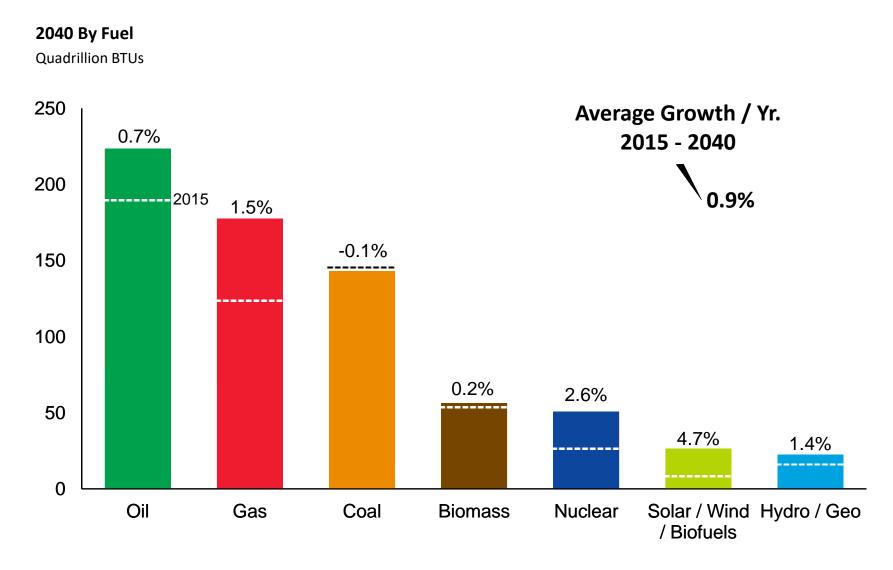


Next-gen Biofuels

### Carbon Capture Fuel Cells



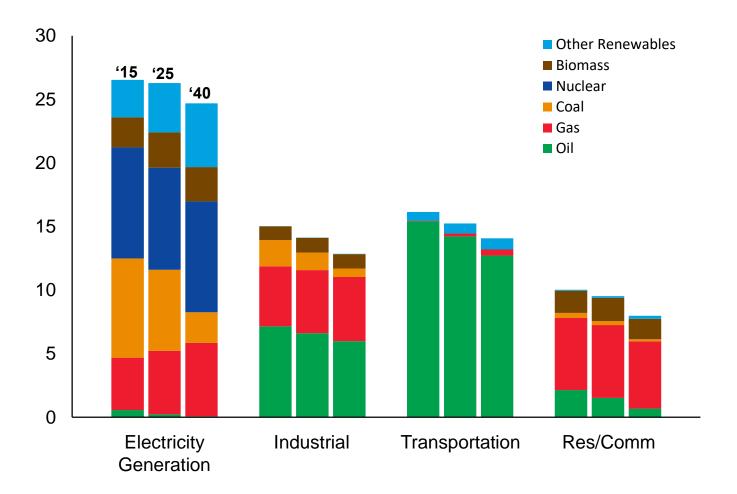
### **Global Demand**



### E.U. Energy Demand

#### Primary Energy Demand by Sector

Quadrillion BTUs



### For more information, visit exxonmobil.com/energyoutlook or download the ExxonMobil app

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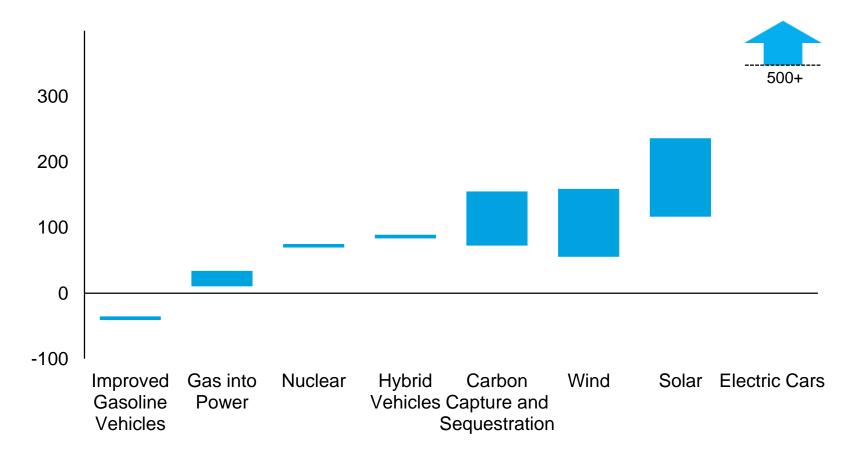




## Clarifying Options to Reduce CO<sub>2</sub> Emissions

#### Average U.S. CO<sub>2</sub> Abatement Costs

2016 - Dollars per tonne



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