The Outlook for Energy: A View to 2040

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December 9, 2014

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.
Energy Outlook Development

- 100 countries
- 15 demand sectors
- 20 fuel types
- Trade flows
- Technology & policy
Energy Measures and Units

1 log = 24,500 BTU

1 gallon gasoline = 5 logs

1 gallon gasoline = 36 kWh
13,000 AA batteries
4,000 smart phone batteries
2010 U.S. Daily Per Capita Energy Demand

- **Household Use**: 7
- **Personal Transportation**: 6
- **Commercial Buildings**: 6
- **Commercial Transportation**: 4
- **Industrial**: 11
- **Total**: 34

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2010 World Daily Energy Demand

U.S. Per Capita

34

7

World Per Capita

9

1.7

Times 7 billion people =

~12 billion gallons per day

260 MBDOE

525 QUADS
Global Progress Drives Demand

Population
Billion

GDP
Trillion 2010$

Energy Demand
Quadrillion BTUs

Rest of World
Key Growth
India
China
OECD*

*Mexico and Turkey included in Key Growth countries
Standards of Living Increase in the Non OECD

2040 GDP per Capita
PPP 2005$k

- OECD*
- China
- India
- Key Growth
- ROW

*Mexico and Turkey included in Key Growth countries
The Middle Class Continues to Grow

Middle Class per The Brookings Institution
Billion People

- Rest of World
- Key Growth
- China
- India
- Brazil
- OECD*

*Mexico and Turkey included in Key Growth countries
Electricity Generation Leads Growth

Primary Energy Demand by Sector
Quadrillion BTUs

- Electricity Generation
- Industrial
- Transportation
- Res/Comm

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Electricity Generation Leads Growth

Primary Energy Demand by Sector
Quadrillion BTUs

- Electricity Generation
- Industrial
- Transportation
- Res/Comm

Non OECD
OECD
Transportation
Transportation Demand

Sector Demand
MBDOE

2000 2020 2040

Light Duty
Heavy Duty
Aviation
Marine
Rail

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Light Duty Vehicle Fleet and Demand

2040 LDV Fleet
Million

- Improved Standard of Living
- Population Growth
- Base Fleet

World LDV Demand
MBDOE

*Mexico and Turkey included in Key Growth countries
Light Duty Vehicles

Fleet by Type

Million

- Elec/Plug-in/Fuel Cell
- Full Hybrid
- Natural Gas & LPG
- Diesel
- Gasoline

Year: 2010, 2015, 2020, 2025, 2030, 2035, 2040

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Heavy Duty Transportation

Heavy Duty Demand by Region
MBDOE

- OECD*
- Rest of World
- Key Growth
- India
- China
- Other

Heavy Duty Demand by Fuel
MBDOE

- Gas
- Diesel
- Gasoline
- Other

*Mexico and Turkey included in Key Growth countries
Industrial
Electricity Generation
Electricity Demand

Electricity Demand
Thousand TWh

Electricity Demand by Region
Thousand TWh

- Improved Standard of Living
- Population Growth
- Industrial Growth
- Base Demand

- United States
- China
- India
- Europe

Key Growth

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## Fuel Choices for Power Generation

### Relative benefit/impact

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Source: EPRI, Generation Technology Assessment

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Electricity Generation Fuel by Region

Quadrillion BTUs

OECD*
- Oil
- Gas
- Coal
- Nuclear
- Solar
- Wind
- Other

China

India

Key Growth

ROW

*Mexico and Turkey included in Key Growth countries
Global Demand

2040 By Fuel
Quadrillion BTUs

Average Growth / Yr.
2010 - 2040

0.8%  1.6%  0.1%  0.5%  2.3%  5.8%  1.8%
Oil  Gas  Coal  Biomass  Nuclear  Solar / Wind / Biofuels  Hydro / Geo
CO₂ Emissions
World Emissions

CO₂ Emissions by Region
Billion metric tonnes

- OECD*
- Rest of World
- Key Growth
- India
- China

Emissions per Capita
Tonnes / Person

- OECD
- Non OECD

*Mexico and Turkey included in Key Growth countries
Liquids Supply

World Supply by Type

MBDOE

- Developed Conventional Crude & Condensate
- New Conventional C&C Development
- Deepwater
- Oil Sands
- Tight Oil
- Natural Gas Liquids
- Biofuels
- Other

Crude & Condensate Resource Estimates

Trillion Barrels

Source: USGS and IEA historical estimates
Liquids Trade Balance by Region

MBDOE

North America

Biofuels
Other
Natural Gas Liquids
Tight Oil
Oil Sands
Deepwater
Conventional C&C Development
Conventional Crude & Condensate

Demand

'10 '20 '30 '40
Liquids Trade Balance by Region

MBDOE

- North America
- Latin America
- Africa
- Europe
- Russia/Caspian
- Middle East
- Asia Pacific

- Biofuels
- Other
- Natural Gas Liquids
- Tight Oil
- Oil Sands
- Deepwater
- Conventional C&C Development
- Conventional Crude & Condensate
- Demand
Gas Trade Balance by Region

BCFD

Unconventional Production
Conventional Production
Demand

North America
Latin America
Africa
Europe
Russia/Caspian
Middle East
Asia Pacific

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Energy Trade

Indicative trade flows
Developing Economies Dominate Growth

Demand by Region
Quadrillion BTUs

Rest of World
Key Growth
India
China
OECD*

*Mexico and Turkey included in Key Growth countries
Energy Use Evolves Over Time

Demand by Fuel
Quadrillion BTUs

- Biomass
- Coal
- Gas
- Oil
- Nuclear
- Hydro
- Other Renewables

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