The Outlook for Energy: A View to 2040

Todd Onderdonk
Corporate Strategic Planning

USAEE / IAEE North American Conference
November 2012 – Austin

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 publically-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.
Global Progress Drives Demand

- **Population**
  - Billion
  - Avg. Annual Growth 2010 to 2040:
    - 0.8% - ROW
    - 0.7% - U.S.

- **GDP**
  - Trillion 2005$
  - Avg. Annual Growth 2010 to 2040:
    - 3.0% - ROW
    - 2.4% - U.S.

- **Energy Demand**
  - Quadrillion BTUs
  - Avg. Annual Growth 2010 to 2040:
    - 1.1% - ROW
    - -0.2% - U.S.

- Energy Saved ~500

**United States**

**Rest of World**
The Tale of Two Worlds

OECD Energy Demand
Quadrillion BTUs

Non OECD Energy Demand
Quadrillion BTUs

Rest of OECD
Europe OECD
North America
Rest of Non OECD
Russia/Caspian
Africa
Middle East
Latin America
India
China

ExxonMobil 2012 Outlook for Energy
By 2040, 90% of transportation will run on liquid petroleum-based fuels.
Commercial Transportation Drives Demand Growth

- Commercial MBDOE
- Personal MBDOE

- Heavy Duty Vehicles
- Aviation
- Marine
- Rail
- Light Duty Vehicles
Transportation Fuel Demand Shifts to Diesel

**OECD**
- MBDOE
- 1990, 2015, 2040

**Non OECD**
- MBDOE
- 1990, 2015, 2040

- Fuel Oil
- Jet Fuel
- Biodiesel
- Diesel
- Ethanol
- Gasoline

ExxonMobil 2012 Energy Outlook
Refining Converts Oil Into Many Products

Refining: Link between crude oil production and products demand

Crude Oil Input → Refinery

- LPG / Propane
- Gasoline
- Aviation fuels
- Diesel
- Fuel oil
- Lubes/Other
- Wax/Asphalt

Source: U.S. Department of Labor
By 2040, worldwide electricity demand will be 80% higher.
Global Electricity Generation Mix Evolves

Global Capacity Utilized
GW

By Generation
k TWh

Wind & Solar
Gas
Coal
Nuclear
Other Renewables
Oil
Energy Mix Continues to Evolve

Average Growth / Yr. 2010 - 2040: 0.9%

- Oil: 0.7% growth
- Gas: 1.6% growth
- Coal: -0.2% growth
- Nuclear: 2.2% growth
- Biomass/Other: 0.3% growth
- Wind / Solar / Biofuels: 6.0% growth
- Hydro / Geo: 1.6% growth

Quadrillion BTUs
Supply

By 2040

60% of global demand will be supplied by oil & gas.
Unconventional Gas Contribution Increases

Production by Type

- Conventional
- Unconventional

Demand by Region

- Rest of Non OECD
- Russia/Caspian
- Middle East
- AP Non OECD
- Rest of OECD
- North America

ExxonMobil 2012 Outlook for Energy
Global Gas Demand Growth 2010 to 2040

BCFD

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

Electricity Generation
Liquids Supply Continues to Diversify

Liquids Supply
MBDOE

Conventional Crude and Condensate

Biofuels
NGLs
Deepwater
Tight Oil
Oil Sands

Remaining Resource
Cumulative Production

* Source: Total resource from IHS Inc. The use of this content was authorized in advance by IHS.
Energy Use Evolves Over Time

Global Percent Mix of Fuels

Conclusions