

Insights from the International Energy Outlook 2018



For

Central European Energy Conference

November 19, 2018 | Bratislava, Slovakia

By

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Independent Statistics & Analysis U.S. Energy Information Administration

Annual Energy Outlook 2018 with projections to 2050



U.S. Energy Information Administration
#AEO2018

India

India has one of the fastest growing economies, but it is not projected to reach the level of energy consumption seen in other major economies. As of 2015...

- 4th largest energy consumer (will soon become the 3rd)
- 3rd largest economy (measured in purchasing power parity (PPP))
- 2nd largest population (will become the largest country by 2025)

EIA tested three high-economic growth cases

GDP (gross domestic product) Case studies Each case changes how India's economy grows by 2040



Manufacturing Indian energy-intensive manufacturing output does not reach historical Chinese levels until after 2035



West Texas Intermediate (WTI) crude oil price and NYMEX confidence intervals



Information for the five trading days ending Sep 14, 2018
and CME Group

International Energy Outlook



U.S. Energy Information Administration
#IEO2017

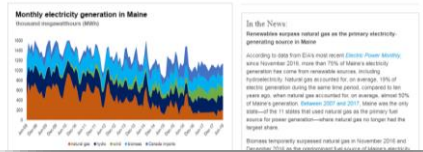
September 14, 2017
www.eia.gov/ieo

NATURAL GAS

Summary Page

Natural Gas Weekly Update

for the week ending September 24, 2018 | Release date: September 27, 2018 | Most recent: October 24, 2018 | Previous weeks



In the News Renewable sources natural gas as the primary electricity-generating source in Maine

Annual Energy Outlook 2016
Early Release with summary of Reference case projections through 2040

What's New

- AEO2016 Early Release: Summary of Two Cases | May 17
- 2012 CBECs consumption and expenditures, detailed tables, and public use microdata | May 17
- International Energy Outlook 2016 | May 11

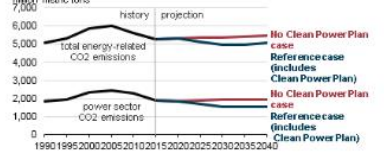
Today in Energy

Posted May 18, 2016

Future power sector carbon dioxide emissions depend on status of Clean Power Plan

Trends in carbon dioxide (CO2) emissions from electricity generation through 2040 depend significantly on whether or not the Clean Power Plan (CPP) rule issued last August by the U.S. Environmental Protection Agency (EPA) is implemented. Analysis in EIA's Annual Energy Outlook 2016 (AEO2016) examines what the CPP could mean for the fuels used to generate electricity, especially coal. More.

U.S. energy-related carbon dioxide (CO2) emissions (1990-2040)



Data Highlights

- WTI crude oil futures price 5/17/2016: \$48.31/barrels
- ↑ \$3.65 from week earlier
- ↓ \$11.12 from year earlier
- Natural gas futures price 5/17/2016: \$2.048/MMBtu
- ↓ \$0.110 from week earlier
- ↓ \$0.962 from year earlier
- Retail gasoline price 5/16/2016: \$2.242/gal
- ↑ \$0.022 from week earlier
- ↓ \$0.502 from year earlier
- Crude oil inventories 5/13/2016: 541.3 million barrels
- ↑ 1.3 million barrels from week earlier
- ↓ 0.1 million barrels from year earlier
- Weekly coal production 5/7/2016: 10.949 million tons
- ↓ 0.310 million tons from week earlier
- ↓ 5.104 million tons from year earlier

Source: EIA, Annual Energy Outlook 2016



Ari Kahan, Central European Energy Conference, November 19, 2018

EIA and IEA produce complementary global outlooks

Technical and macroeconomic assumptions

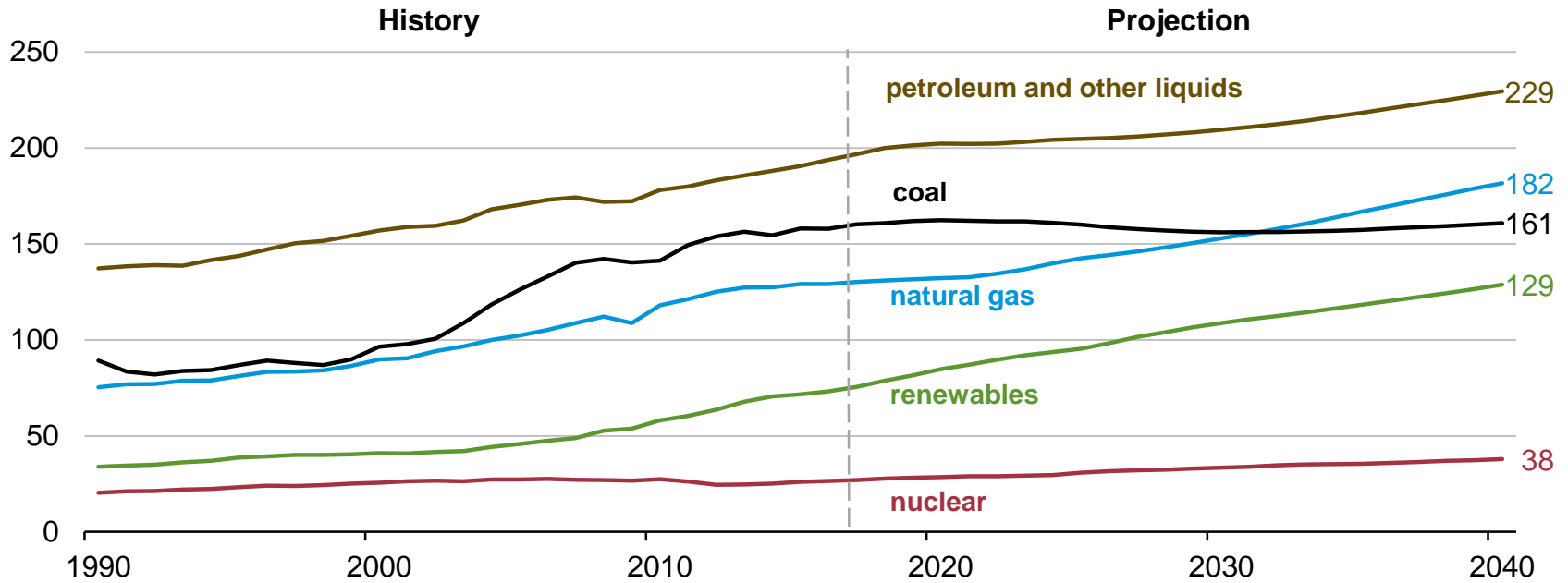
Higher	High Macro High Oil Price		
Expected	Current Policies Reference	New Policies	Sustainable Development
Lower	Low Macro Low Oil Price		
	Current laws and regulations	Potential new laws	More new laws and policies

Policy assumptions

WEO Scenarios (IEA)
IEO Cases (EIA)

The International Energy Outlook focuses on a “current laws and regulations” Reference case

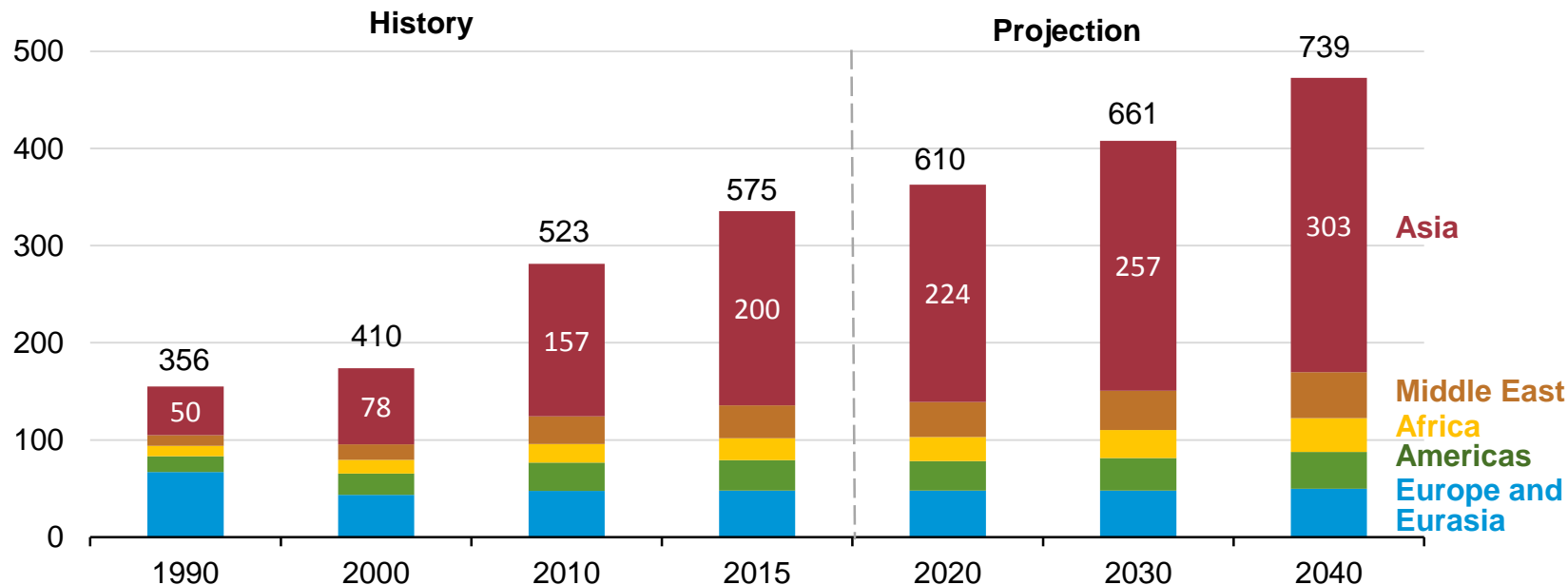
world energy consumption by source
quadrillion Btu



Source: EIA, International Energy Outlook 2018

As in the WEO, the IEO2018 reference case projects that Asia will have the largest increase in energy use

Non-OECD world energy consumption by region
quadrillion Btu



Source: EIA, International Energy Outlook 2018

IEO2018 examined growth in India, China and Africa

India

India has one of the fastest growing economies, but it is not projected to reach the level of energy consumption seen in other major economies.

As of 2015...

- 4th largest energy consumer (will soon become the 3rd)
- 3rd largest economy (measured in Purchasing Power Parity (PPP))
- 2nd largest population (will become the largest country by 2025)

Source: International Energy Outlook 2018 (IEO2018)

EIA tested three high-economic growth cases

GDP (gross domestic product) Case studies
Each case changes how India's economy grows by 2040

China

Faster economic growth in China means greater energy use, especially if it does not transition to a consumption-based economy.

As of 2015...

- 132 quadrillion Btu energy use (much higher than in the past 35 years)
- Largest economy (measured in Purchasing Power Parity (PPP))
- Largest population (fourth-largest region in 2040)

Source: International Energy Outlook 2018 (IEO2018)

EIA tested two high-economic growth cases

GDP (gross domestic product) Case studies
Each case changes China's transition to a consumption-led economy by 2040

Africa

A higher economic growth case for Africa leads to more industrial sector energy use.

As of 2015...

- 8th largest regional energy consumer (23 quadrillion Btu)
- 6th largest regional GDP (measured in Purchasing Power Parity (PPP))
- 4th largest regional population (projected to be the largest in all cases)

Source: International Energy Outlook 2018 (IEO2018)

In each test case, 2040 GDP increases from US \$54 trillion to \$73 trillion PPP, which is double the U.S. GDP.

Energy use
Supply chain links lead to...

In this test case, 2040 GDP increases from US \$14 trillion to \$18 trillion PPP, which is slightly more than one-third of China's GDP.

Industrial sector

Case study

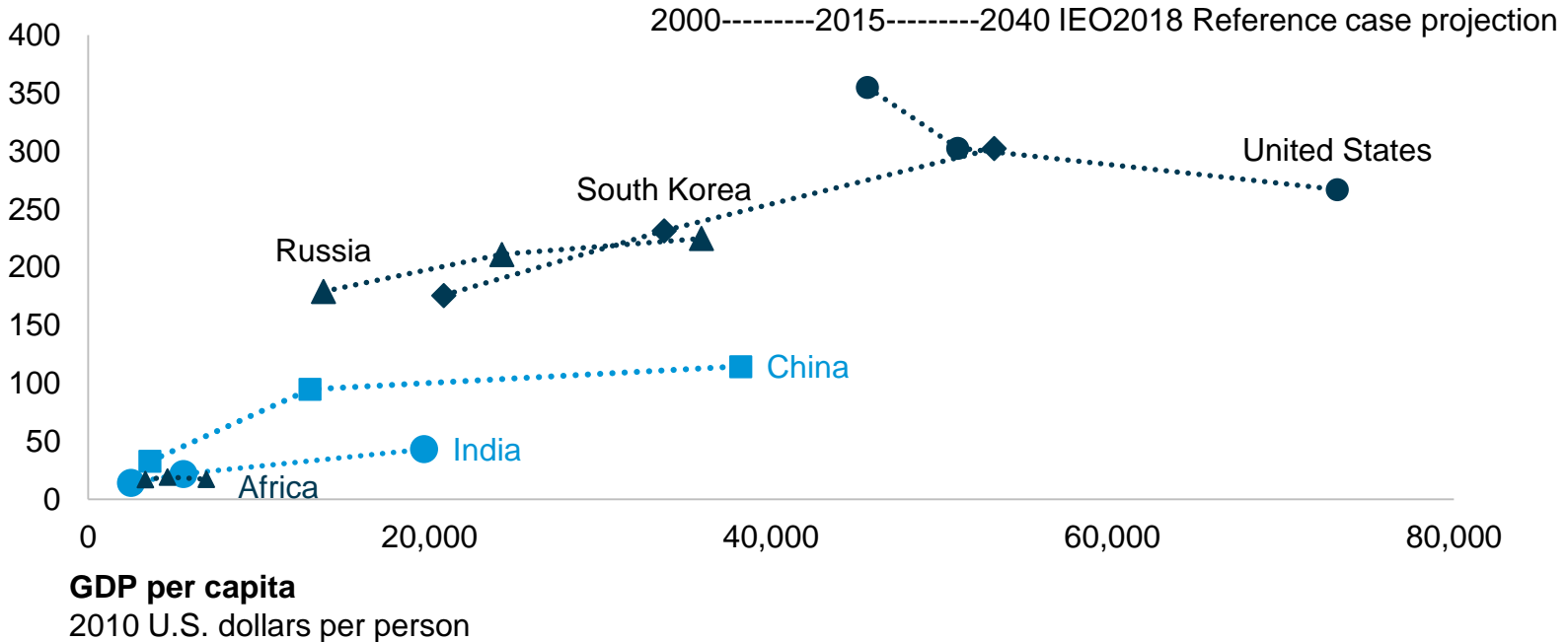
Manufacturing
African manufacturing is currently 16% of the economy, which is lower than India (33%) and China (51%).
With higher economic growth, African manufacturing increases from 19% to 24% of the economy in 2040.

India's per capita income and energy consumption continue to lag other major economies

IEO2018 Reference case

energy consumption per capita

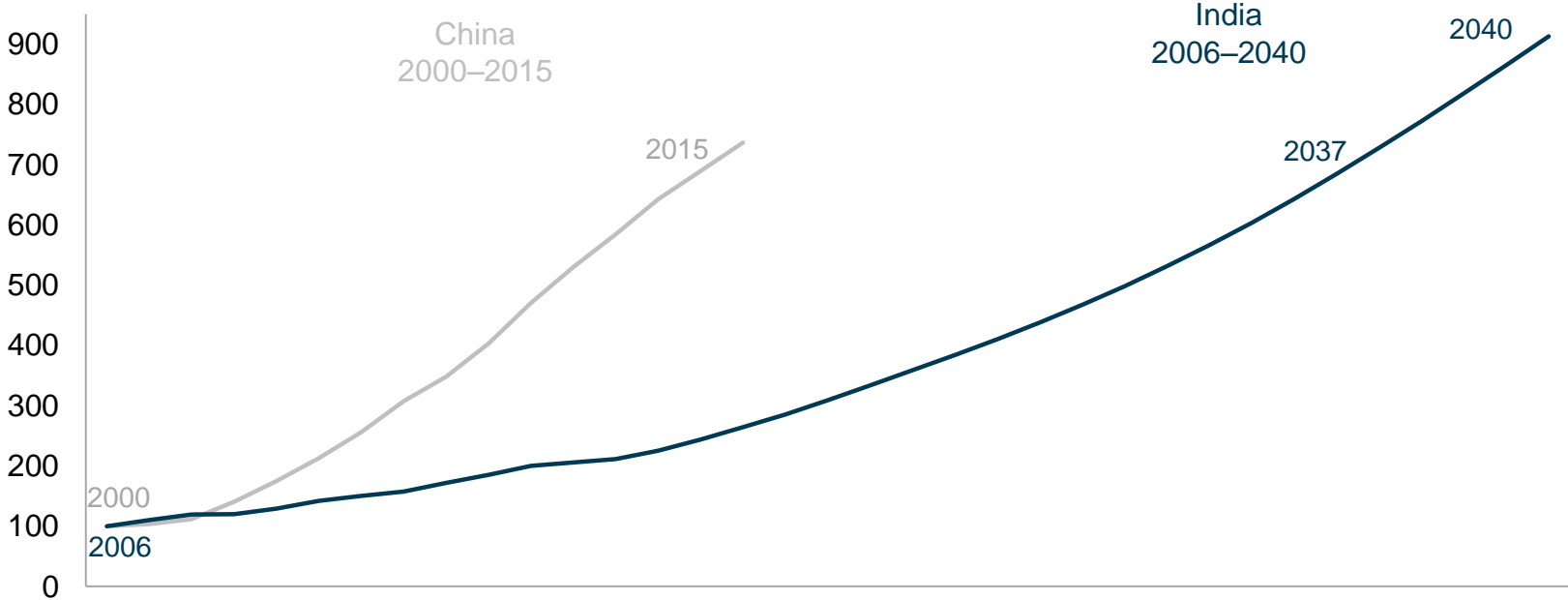
million Btu per person



Source: EIA, International Energy Outlook 2018

India's energy-intensive production does not reach historic Chinese production levels until after 2035

energy-intensive manufacturing gross output
2010 U.S. dollar index, selected start year = 100



Source: EIA, International Energy Outlook 2018

For more information

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International Energy Outlook | www.eia.gov/ieo

Short-Term Energy Outlook | www.eia.gov/steo

Annual Energy Outlook | www.eia.gov/aeo

Today in Energy | www.eia.gov/todayinenergy

U.S. Energy Information Administration homepage | www.eia.gov