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

Case studies
Each case changes how India’s economy grows by 2040

- Consumption share grows to 67% of the economy
- Investment share grows to 38% of the economy
- Export share grows to 55% of the economy

In each test case, 2040 GDP increases from US $32 trillion to $41 trillion PPP, exceeding that of the United States.

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

Energy use
Compared with the IEO2018 Reference case, energy use is highest in Export-led case in 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)

EIA tested two high-economic growth cases

**GDP (gross domestic product)**

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

**Case studies**

Each case changes China’s transition to a consumption-led economy by 2040

- **No Transition case**
  - Investment share increases to 51% of the economy
  - Consumption share increases to 60% of the economy

- **Fast Transition case**

**Energy use**

Supply chain links lead to changes in other countries

**Trade**

Higher growth in China results in more Chinese trade

<table>
<thead>
<tr>
<th>Year</th>
<th>Fast Transition Case</th>
<th>No Transition Case</th>
<th>IEO2018 Reference Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>5.0</td>
<td>5.0</td>
<td>5.0</td>
</tr>
<tr>
<td>2020</td>
<td>5.5</td>
<td>5.5</td>
<td>5.5</td>
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<tr>
<td>2030</td>
<td>6.0</td>
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<td>6.0</td>
</tr>
<tr>
<td>2040</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
</tr>
</tbody>
</table>

**Increase in energy use from the IEO2018 Reference case**

Supply chain links lead to changes in other countries

**Source:** International Energy Outlook 2018 (IEO2018)
**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)

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**EIA tested a case with higher economic growth**

**GDP (gross domestic product)**

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.

**Case study**

<table>
<thead>
<tr>
<th>Country</th>
<th>Africa IEO2018 Reference case</th>
<th>Africa High Growth case</th>
<th>IEO2018 Reference case</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>17</td>
<td>22</td>
<td>43</td>
</tr>
<tr>
<td>(million Btu per person)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>India</td>
<td>Brazil</td>
<td>China</td>
</tr>
<tr>
<td>(quadrillion Btu)</td>
<td>17</td>
<td>22</td>
<td>43</td>
</tr>
</tbody>
</table>

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**Industrial sector**

- **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.

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