

ENERGY IN INDIA

KEY STATISTICS

As recognised in the IEA's World Energy Outlook 2015, India is currently undergoing a profound transformation. Demand for energy, specifically coal, will increase as a result of economic and population growth, as well as the various structural trends from growing urbanisation and industrialisation.

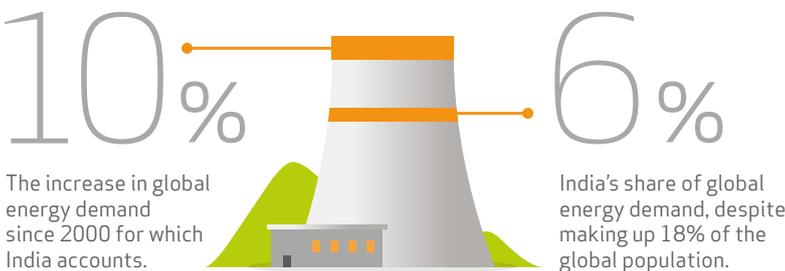


“We will be expanding our coal-based thermal power. That is our baseload power. All renewables are intermittent. Renewables have not provided baseload power for anyone in the world”

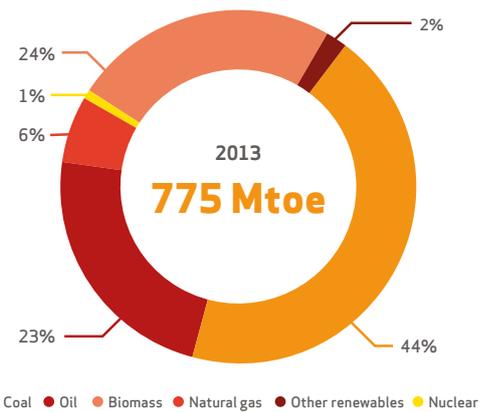
Piyush Goyal, Minister of State with Independent Charge for Power, Coal, New and Renewable Energy in the Government of India.

KEY ENERGY FACTS

India's energy mix has developed significantly since 2000. Industrialisation and the transition away from traditional biomass (i.e. dung, fuelwood and straw) has resulted in a more diverse energy mix.

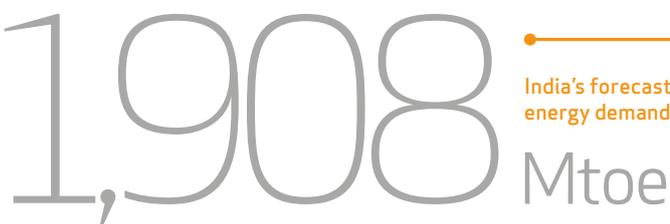


Primary energy demand in India by fuel



Source: IEA, World Energy Outlook (2015), p.431

BY 2040:



A growth bigger than any other country.



India will account for 25% of the rise in global energy use.



India will account for the largest absolute growth in coal consumption.

Over the next three decades, India's economy will grow 5 times its current size and is forecast to overtake China's position as the world's largest population.

ELECTRICITY

15%

Percentage that electricity represents in final energy consumption.



1/20th

Global electricity output for which India accounts for, even though around 1/6 of the world's population lives in the country.

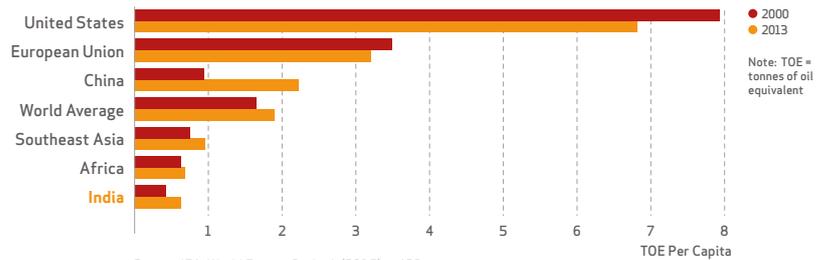
6.9%

Annual average growth in electricity demand between 2000-2013, from 376 TWh to 897 TWh.



- By 2040, India's electricity demand is forecast to be almost 3300 TWh. The equivalent to today's power consumption of Japan, the Middle East and Africa combined.
- India's government recognises that the provision of electricity will be a central component of the country's economic and social development. As such, the government's energy policy is focussed on developing large-scale coal-fired power plants.

Per-capita energy consumption in India and selected regions



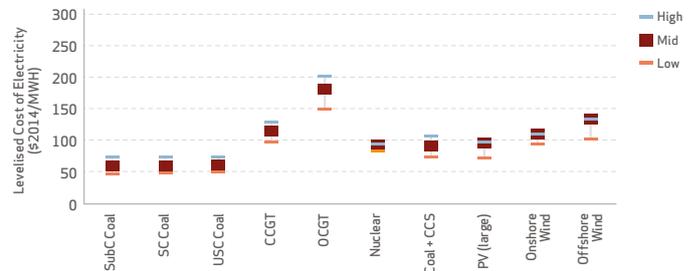
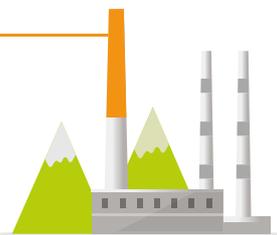
Source: IEA, World Energy Outlook (2015), p.429

COAL IN THE ENERGY MIX

The dominance of coal in India's energy mix can be attributed to two factors: affordability and access. Coal is expected to remain the most affordable option through to 2035, driven by low domestic coal prices and limited gas availability.

60%

Percentage of India's current power generation capacity (290 GW) that is satisfied by coal.



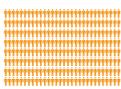
Source: WCA, India's Energy Trilemma (2015), p.2

ENERGY POVERTY IN INDIA

India's disproportionately low energy consumption is due to the large population without modern and reliable energy.

240 million

Number of Indians without access to electricity



Many of those that have access to electricity experience regular supply disruptions that necessitate expensive diesel back-up generators.

- India's residential electricity consumption - for those that have power - lags behind the world average and is according to the IEA ten-times lower than OECD levels. For instance, average residential consumption in Bihar, at around 50 kilowatt-hours (kWh) per capita per year, is consistent with an average household use of a fan, a mobile telephone and two compact fluorescent light bulbs for less than five hours per day.
- Progress in resolving energy challenges will undeniably result in greater demand for coal.

INDIA'S NDC

Coal will continue as a driver of the economy with the India's NDC stating: "In order to secure reliable, adequate and affordable supply of electricity, coal will continue to dominate power generation in future".

India has pledged to transition to use supercritical and ultra-supercritical high efficiency low emissions (HELE) technologies for its coal based power plants.