

WORLD ENERGY OUTLOOK 2015 FACTSHEET

India

- ▶ **India is in the early stages of a major transformation, bringing new opportunities to its 1.3 billion people.** Energy use has almost doubled since 2000, and economic growth and targeted policy interventions have lifted millions out of extreme poverty; but energy consumption per capita is still only around one-third of the global average and some 240 million people have no access to electricity. Three-quarters of Indian energy demand is met by fossil fuels, a share that has been rising as households gradually move away from the traditional use of solid biomass for cooking. Coal is the backbone of the Indian power sector, accounting for over 70% of generation, and is the most plentiful domestic fossil-fuel resource.
- ▶ **Indian energy demand grows by more than any other country in the period to 2040,** propelled by an economy that grows to more than five-times its current size and by population growth that makes it the world's most populous country. Indian energy consumption more than doubles to 2040, accounting for 25% of the rise in global energy use to 2040, and the largest absolute growth in both coal and oil consumption. Oil use increases by 6 mb/d as new passenger vehicles are added to the stock and as LPG substitutes for fuelwood as a cooking fuel in households. Industry remains the largest among the end-use sectors, as India's strong demand for infrastructure and consumer goods boosts the outlook for manufacturing. Putting industry at the heart of India's growth model means a large rise in the energy needed to fuel development, at least 10-times more energy per unit of value added compared with growth led by the services sector. Demand growth on this scale brings new environmental strains, including the risk of worsening air quality.
- ▶ **The power sector is pivotal for India's energy and economic outlook** but the poor financial health of the distribution sector has created a cycle of uncertainty for generators, under-investment in infrastructure and poor quality of service in many regions. Strong growth in manufacturing and an additional 580 million consumers boost electricity demand by 4.9% per year, reaching almost 3 300 TWh in 2040. Installed capacity surges from 290 GW today to nearly 1 100 GW in 2040 – about the same as Europe's current capacity. Nearly half of the net increase in coal-fired generation capacity worldwide occurs in India, where coal is set to remain key in the electricity system. However, rapid growth in renewables, together with a large increase in nuclear capacity, means that these sources account for more than 50% of new capacity brought online.
- ▶ **India has ambitious plans to expand the deployment of wind and solar power.** The targeted levels of deployment (160 GW by 2022, of which 100 GW is solar) are a powerful statement of intent, though a challenging set of issues related to land acquisition, remuneration, network expansion and financing means that these are not met within the announced timeframe. By 2040, however, some 340 GW of wind and solar capacity are added, making India the world's second-largest solar market. In our projections, India achieves its climate pledge that 40% of the installed power generation capacity in 2030 is non-fossil fuel.
- ▶ **The sheer size of the increase in energy demand in India means that it mobilises its energy supply resources on all fronts.** The increase in domestic energy production is far below India's consumption needs, and by 2040 more than 40% of primary energy supply is imported, up from 32% in 2013. Coal production increases to 930 Mtce in 2040 (+4% per year), making India second only to China among global producers. India becomes the largest importer of coal in the current decade and imports rise to over 400 Mtce by 2040. India's oil production tails off to around 700 kb/d, as limited resources and relatively high costs constrain new oil projects. The result is a rapid rise in net oil imports, to 9.3 mb/d by 2040, boosting the country's oil import dependency to over 90%, with high reliance on the Middle East. Gas production rises to 90 bcm in 2040 with the balance being filled by rising imports, mainly LNG.
- ▶ **India requires a cumulative \$2.8 trillion in investment, an average of \$110 billion per year,** to meet the supply projections in the New Policies Scenario, 75% of which is in the power sector, and an additional \$0.8 trillion to improve energy efficiency. In an Indian Vision Case, we examine the implications of accelerated realisation of key Indian policy targets, notably the "Make in India" campaign to promote manufacturing, and universal, round-the-clock electricity supply. Investment in energy supply is held at similar levels in the Indian Vision Case, mainly because of an 80% increase in efficiency spending.