ThomasLloyd

COUNTRY REPORT INDIA 2018

SUMMARY

India is the 7th largest country in the world, with a total land area of 3,287,263km². Located in Southern Asia, it has a coastline of more than 7,000km, facing the Arabian Sea to the west and the Bay of Bengal to the east. It has land borders with six countries: Bangladesh, China, Pakistan, Nepal, Bhutan and Afghanistan.

When measured by population, India is the world's second largest country with a population of more than 1.3bn. The United Nations estimates the population will increase by more than 300 million over the next 25 years and in 2024 it will overtake China to become the world's most populous nation.

The Indian economy has grown impressively over the past 25 – 30 years and though the pace of growth fell to a low of 3.9% in 2008, the country avoided the recession which gripped most of the developed world during the Global Financial Crisis (GFC). Since 2010, Indian GDP has expanded at an average annual pace of 7.3%.

After growing almost 7% in 2017, supranational organisations such as the World Bank and OECD forecast the Indian economy will grow at an average annual pace of nearly 7.3% over the next two years.

Standard & Poor's sovereign credit rating for India, most recently updated in November 2017, stands at BBB- with stable outlook. Moody's credit rating for India was last set at Baa2 with stable outlook. Fitch's credit rating for India was last reported at BBB-, also with stable outlook. S&P has long maintained a more cautious approach than Moody's, having kept India at the current rating of "BBB-minus", the lowest investment-grade, since 2007 although the agency did upgrade its outlook to "stable" from "negative" in 2014, several months after Prime Minister Narendra Modi was elected.

India is the world's largest democracy, currently led by Prime Minister Narendra Modi whose Bharatiya Janata Party (BJP) scored a landslide victory in the May 2014 parliamentary elections. This was the first time in 30 years that a single party had won a parliamentary majority on its own.

India's Central Bank, the Reserve Bank of India has been in existence since 1935. Its mandate requires it to maintain, "a modern

monetary policy framework to meet the challenge of an increasingly complex economy, to maintain price stability while keeping in mind the objective of growth." RBI policies helped bring CPI inflation down to just 3.2% in 2017 and it is expected to average around 4.6% over the next two years.

When measured using market exchange rates as at end-December 2017, India's economy is the 6th largest in the world. It has recently overtaken France and assuming a constant exchange rate is likely to overtake the United Kingdom into 5th place by the end of 2018 with an economy around 75% of the size of Germany.

In October 31, 2017, the World Bank published its 'Doing Business 2018' report, which takes stock of business regulations and reforms implemented in the previous 12 months in 190 countries. The report presents various indicators that measure, among others, the ease of starting a business, registering a property, obtaining construction permits, getting credit, paying taxes, enforcing contracts and resolving insolvency. India's rank improved from 130 to 100 and it was recognised for being one of the top 10 improvers amongst the 190 countries that are studied annually.

Back in 2008, India launched its National Action Plan on Climate Change. "Our vision is to make India's economic development energy-efficient. Over a period of time, we must pioneer a graduated shift from economic activity based on fossil fuels to one based on non-fossil fuels and from reliance on non-renewable and depleting sources of energy to renewable sources of energy. In this strategy, the sun occupies centre-stage, as it should, being literally the original source of all energy. We will pool our scientific, technical and managerial talents, with sufficient financial resources, to develop solar energy as a source of abundant energy to power our economy and to transform the lives of our people. Our success in this endeavour will change the face of India. It will also enable India to help change the destinies of people around the world."

„India gives a great scope and opportunity to all kinds of ideas and concepts to flourish and investments to fructify."
Prime Minister Modi
at the World Economic
Forum on 23.01.2018

According to the Ministry of New and Renewable Energy, as of March 31st 2018, India had grid connected installed capacity of about 69.02 GW renewable technologies-based electricity capacity; exceeding the capacity of major hydroelectric power for the first time in history.

BTI 2018

The Bertelsmann Stiftung Transformation Index (BTI, scale 1 to 10) analyses and evaluates the quality of the democracy, market economy and political management in 129 developing and transitioning countries. Progress and regress is measured on a path to constitutional democracy and a market economy accompanied by social policy.

Status Index

7.0 **#26** || 129
India

5.4
Asia/Oceania*

Democracy Status

7.6 **#24** || 129
India

5.1
Asia/Oceania*

Market Economy Status

6.3 **#40** || 129
India

5.7
Asia/Oceania*

Governance Index

6.0 **#24** || 129
India

4.7
Asia/Oceania*

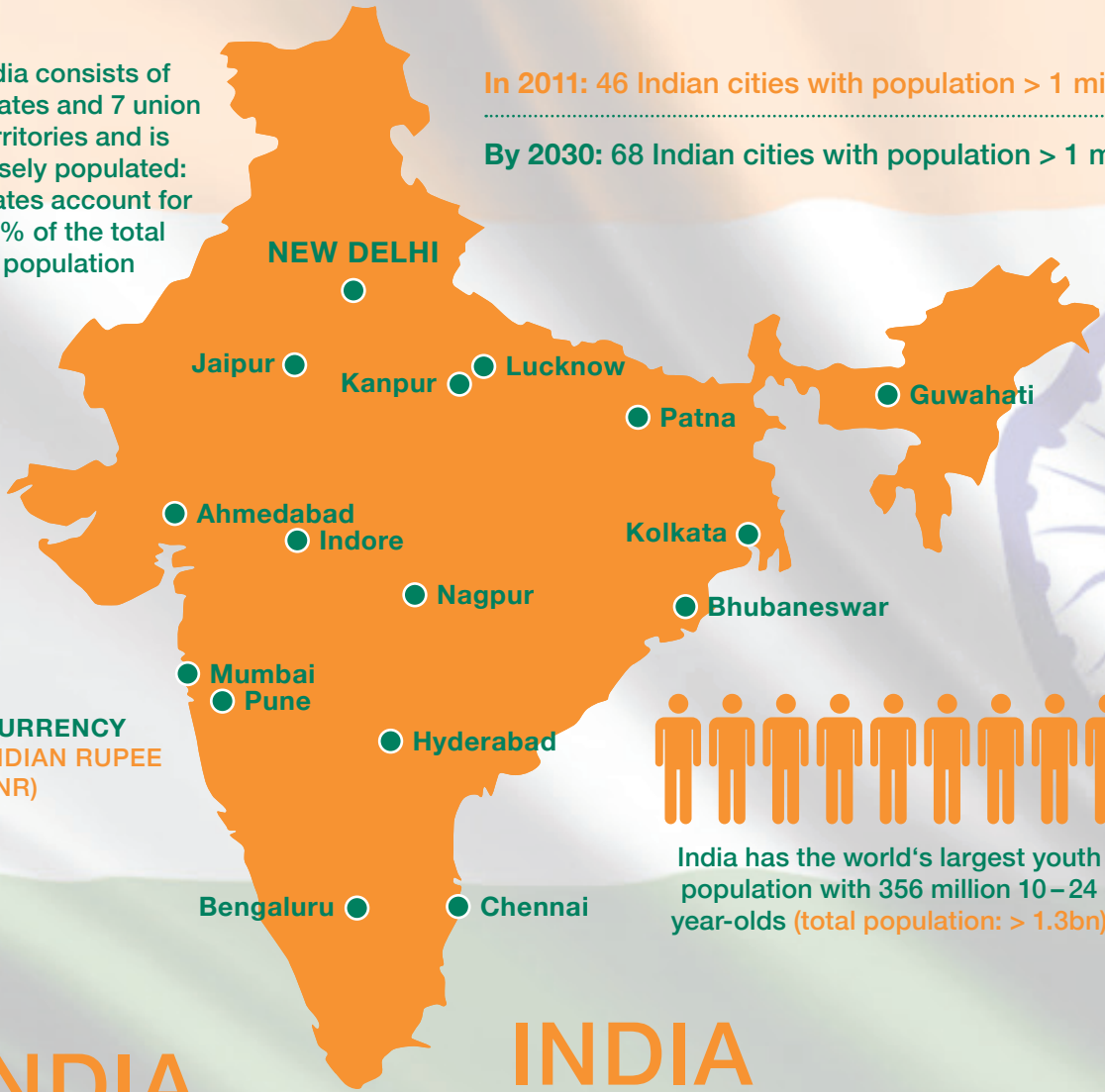
*Regional average

INDIA
AN OVERVIEW

India consists of 29 states and 7 union territories and is densely populated: 9 states account for 71% of the total population

In 2011: 46 Indian cities with population > 1 million

By 2030: 68 Indian cities with population > 1 million



CURRENCY
INDIAN RUPEE (INR)

India has the world's largest youth population with 356 million 10–24 year-olds (total population: > 1.3bn)

INDIA
ACCOUNTS FOR...

2.4%
of the world's surface

17.6%
of the world's population

INDIA
IS THE LARGEST...

Democracy in the world, and English speaking nation in the world

+44%

POPULATION GROWTH
from 2000 – 2030

+94%

GDP GROWTH
from 2014 – 2022

+89%

POWER CONSUMPTION
from 2006 – 2015

BBB-
WITH STABLE OUTLOOK

CREDIT RATING
Standard & Poor's

SEVENTH
largest economy in the world, set to rise to fifth behind Germany by 2018

BUT

66TH
of 137 countries in the world by infrastructure quality

163 MILLION
people without electricity access

SECOND
largest solar market in the world, after China in 2018

125
BILLION US$

India plans to set up renewable energy capacities to the tune of 175 GW by 2022 of which about 100 GW is planned for solar. Therefore it will need investments of around US$ 125 billion to reach this target.

GEOGRAPHY

The land of India — together with Bangladesh and most of Pakistan — forms a well-defined subcontinent, separated from the rest of Asia by the imposing northern mountain rampart of the Himalayas and by adjoining mountain ranges to the west and east.

Due to India's vast land area, its climate varies across different regions. Most parts of the country experience a hot, tropical climate. To the north, near the Himalayas, the climate can be described as alpine tundra, while it has a desert climate to the west of the country. India has four seasons; winter (January and February), summer (March to May), monsoon season (June to September) and post-monsoon season (October to December).

6,750

With the Himalayas and Karakorum, India possesses two of the world's most impressive mountain landscapes with some of the tallest mountains in the world. A whopping 67 mountain peaks exceed a height of 6,750 metres.

The monsoon period can vary by several weeks; not only from one region of India to another, but also from year-to-year. The wet season occurs from early-June to late-September, causing heavy rainfall and often widespread flooding. Around three-quarters of the country's annual rainfall comes during these three months. Temperatures are generally warmest in May or June, just prior to the cooling monsoon rains, and the country can be prone to deadly heatwaves. India suffers several types of natural disasters, such as droughts, flash floods and hurricanes.

Almost 10% of the world's agricultural land is in India. The total cultivable area is 1,269,219 km² (56.78% of total land area), which is decreasing due to constant pressure from an ever-growing population and increased urbanization. India has a total water surface area of 360,400 km² and around 14,500 km of inland navigable waterways.

The substantial year-to-year variability of monsoon rain brings much uncertainty to India's agricultural sector. Good years of rain bring substantial crop yields, though poor rainfall can lead to total crop failure, especially in those areas where man-made irrigation is not well-developed.

Around half of all Indians derive their livelihood directly from agriculture and food crops account for more than 60% of the total area under cultivation. Rice is the main crop in areas with more than 1,000mm of average annual rainfall, as well as in some irrigated areas. Wheat is grown mainly in northern and north-western parts of the country where average annual rainfall is between 380 – 1,000mm. Globally, India is the world's

Total land area:
3,287,263km², 7th largest in the world, 90% land, 10% water

Capital:
New Delhi

Time zone:
UTC + 5:30

Currency:
Indian rupee (abbreviated as INR)

Continent:
Asia

Coordinates:
28.6139° N, 77.2090° E

Highest point:
Kangchenjunga (3rd highest mountain in the world), 8,586m

Lowest point:
Kuttanad (region known for its paddy fields), -2.2m (below sea level)

Longest river:
Brahmaputra-Tsangpo, 3,848km

Largest lake:
Wular Lake, surface area varies between 30km² to 260km² (based on the season)

second largest producer of rice and wheat. Other important cereals include sorghum, millet and corn, whilst amongst the pulse crops, chickpeas is by far the most important.

Around a quarter of India's land is forested, although this figure is reducing rapidly as a result of population growth, agriculture, urbanisation and industrialisation. Moreover, some areas officially classified as forest have been over-exploited for timber and firewood and are little more than scrubland, with substantial amounts of woodland used for the production of charcoal.

The flora of India vary from region to region according to the respective patterns of rainfall. Evergreen forests are found in areas of high precipitation (more than 2,000mm annually) with deciduous and mixed forests, grassland and desert vegetation as the rainfall gradually diminishes. Hardwoods such as teak and rosewood are grown commercially, with large mangrove forests along the river deltas and more than 100 species of palm trees in the tropical areas. Many types of bamboo grow over much of the country. There are around 17,000 species of flowering plants, some of which are native only to India and 1,300 of which are considered to be endangered.

The fauna of India are both numerous and highly diverse. Native mammals include the Indian elephant and rhinoceros as well as bison, buffalo, antelope and several species of deer. Primates such as the rhesus monkey and langur are found both in wooded areas and near human settlements whilst amongst the carnivores, the Asiatic lion is the only extant subspecies of lion found outside of Africa. The Bengal tiger is the national animal of India. Once on the verge of extinction, Indian tigers have increased to several thousand, thanks largely to Project Tiger, which has established reserves in various parts of the country.

India has more than 1,200 species of birds, estimated at around one-eighth of the world's total, although some migratory species are found in the country only during the winter. Birds of prey include hawks, vultures, and eagles. Peacocks are also common, especially in Gujarat and Rajasthan, where they are kept as pets and are often seen as India's national bird.

Crocodiles inhabit the country's rivers, swamps, and lakes and of the 400 species of snakes, around 20% are poisonous, with the python and cobra the most widespread and deadly. There are 2,000 species of fish in India, one-fifth of which live in freshwater, whilst sharks are found in coastal waters and delta estuaries.

India's vast and varied geography gives it a huge variety of mineral resources and fossil fuel. Coal is abundant and relatively easy to mine and the country is the world's 3rd largest producer behind only China and the USA. Virtually all of India's petroleum comes from the offshore Bombay High Field as well as Gujarat and Assam but it produces only a small proportion of its domestic needs. There are huge deposits of minerals such as iron ore, manganese and chromite along with copper, bauxite, zinc, lead, gold and silver. Non-metallic and non-fuel minerals include limestone, dolomite, rock phosphate, building stones, ceramic clays, mica, gypsum, fluorspar, magnesite, graphite, and diamonds.

For a long time the widespread use of pesticides was considered the panacea for Indian agriculture. However, attitudes have since shifted. Today India has the largest number of organic farmers worldwide, with organic supermarkets booming in its towns and cities.

DEMOGRAPHICS

India is the world's second largest country by population with more than 1.3bn. The United Nations estimates the population will increase by more than 300m over the next 25 years and in 2024 it will overtake China to become the world's most populous nation.

The population is quite young, with a median age of just 27.6 years of which male is 26.9 years and female is 28.3 years. Average life expectancy is around 68.3 years and is ranked 125th in the world according to the World Health Organisation. The birth rate for every 1,000 of the population is 19.3 and the death rate for every 1,000 of the population is 7.3.

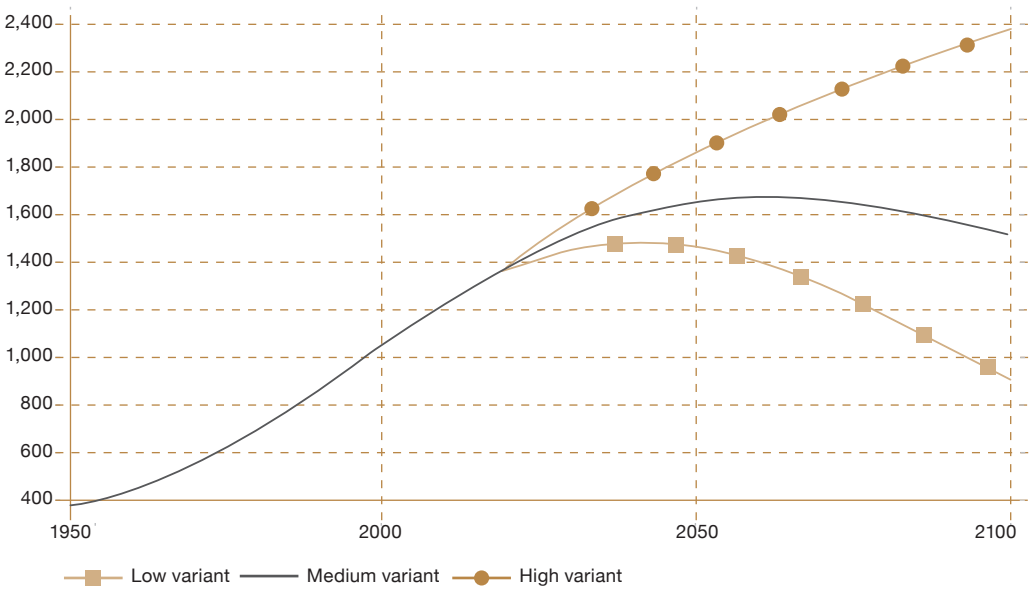
India has a total of 46 cities that each has populations exceeding one million residents. Of these cities, two have populations that exceed 10 million. Delhi, the national capital, is the largest city both by area and population (10.9m) in North India. Mumbai, the financial capital, is the most populous (12.7m) and also the wealthiest city in India. Bengaluru (5.1m), formerly known as Bangalore, and Chennai (4.3m), formerly known as Madras, are the largest cities in South India. Kolkata (4.6m), the cultural capital, is the largest city in East India whilst Ahmedabad and Hyderabad both have more than 3m people.

The country also has many smaller but still very populated cities, including 397 with between 100,000 and 1 million people, and 2,483 cities with populations between 10,000 and 100,000. The overall urban population rate is around 32.7% whilst just over 67% are in rural areas. This is down from 82% in the early 1960's but the decline has not been as dramatic as in many Asian countries.

The World Health Organisation (WHO) in May 2018 released its study of air pollution in 795 cities across 67 countries. 14 of the top 20 most polluted cities in the world (as measured by fine particulate matter PM2.5 such as sulfate, nitrates and black carbon) are in India: Delhi, Varanasi, Kanpur, Faridabad, Gaya, Patna, Lucknow, Agra, Muzaffarpur, Srinagar, Gurgaon, Jaipur, Patiala and Jodhpur. The WHO reports, "Around 3 billion people – more than 40% of the world's population – still do not have access to clean cooking fuels and technologies in their homes, the main source of household air pollution," whilst more than 90% of air pollution-related deaths occur in low and middle-income countries (including India), mainly in Asia and Africa.

100 million people come to India's Kumbh Mela Festival, the world's biggest gathering of humans.

India Population Prospects
(Total population in million)



Source: United Nations (https://esa.un.org/unpd/wpp/Graphs/DemographicProfiles/)

POLITICS

India is a federal republic with 29 states and six union territories. It has a parliamentary democracy which operates under the constitution of 1950. There is a bicameral federal parliament: the Rajya Sabha or council of states (upper house) and the Lok Sabha or house of the people (lower house).

The Lok Sabha has 545 members, 543 representing the states and union territories and two additional seats reserved for the Anglo-Indian community. Members are elected, on a first-past-the-post system in single-member constituencies, every five years or less, based on universal suffrage.

Swatantrata Diva

On the 15th of August each year, the Indian people celebrate one of their three national holidays: Swatantrata Divas, the Indian Independence Day. India became independent of the British crown when the Mountbatten Plan took effect in 1947.

The Rajya Sabha has 245 members, 12 of whom are presidential appointments and 233 are elected indirectly by the assemblies of the states and union territories for a six-year term, with one-third retiring every two years. Legislation may be introduced in either house, but the Lok Sabha has final say in financial matters.

The Prime Minister is elected by the members of the Lok Sabha and appoints and heads the Council of Ministers. The President is elected for five years by an electoral college consisting of members of the federal parliament and state assemblies. India's presidency is largely ceremonial but can play a significant role if, for example, no party wins an outright majority in national elections.

The last General Election was held between April and May 2014. The BJP secured 282 seats in the Lok Sabha (with 31.0 per cent of the votes cast); INC 44 seats (19.3 per cent), All India Anna Dravida Munnetra Kazhagam 37 and All India Trinamool Congress 34. On May 26th 2014, BJP leader Narendra Modi, the Chief Minister of Gujarat State, 2001–14, was sworn in as Prime Minister; the first ever Prime Minister to be born after India attained independence.

General elections are due to be held in India in April or May 2019 to constitute the seventeenth Lok Sabha, although debate continues as to whether the date could be advanced to coincide with state elections in Chhattisgarh, Rajasthan and Madhya Pradesh.

Prime Minister Narendra Modi has promoted the idea of holding simultaneous elections as this would allow a government to work the entire five years of its term without any interruptions posed by frequent elections. It is argued that simultaneous elections would also save a lot of money and unnecessary expenditure, although the decision may be a more political calculation around anti-incumbency votes in States where the BJP hopes to gain support.

In a report presented to the Rajya Sabha in December 2015, the Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice said, "Almost all political parties who appeared before the Committee felt that simultaneous elections to Lok Sabha and State Legislative Assemblies is a cost-effective noble proposition but difficult to implement because of our Constitutional arrangement."

The latest published national opinion polls conducted in January 2018 would translate into between 301 and 335 seats for the centre-right alliance of 13 constituent parties led by the BJP. This, in turn, would suggest an overwhelming parliamentary majority of between 174 and 216 seats.

The 2014 Indian parliamentary election – the world's largest ballot

814,000,000
Voters

11,000,000
Election officials

930,000
Polling stations

ECONOMY

The recent evolution of India's economy is best characterised in three distinct phases. As a result of structural reforms in the early 1990's, GDP grew at an average annual rate of 5.4% per annum between 1991 and 2003; an acceleration of more than 1 percentage point per annum over the previous two decades.

From 2004 – 2008, growth was further boosted by the rapid growth in the world economy and plentiful liquidity which helped lift previously-shunned emerging markets around the globe. There was a rapid increase in the rate of investment, financed by high credit growth and a surge in capital flows and bank lending. The average rate of GDP growth accelerated to 8.8%.

After the Global Financial Crisis (GFC) in 2008 – 09, growth continued at a somewhat more moderate pace, in part due to tighter global liquidity conditions and in part also due to a slowdown in domestic credit creation resulting from a high level of bad debts within the banking sector. Since 2010, Indian GDP has expanded at an average annual pace of 7.3% and its growth compares very well against other countries in Asia.

In November 2016, India announced the 'demonetisation' of all 500 and 1000 Rupee banknotes. The government claimed that the action would curtail the shadow economy and crack down on the use of illicit and counterfeit cash to fund illegal activity and terrorism. The sudden nature of the announcement and the prolonged cash shortages in the weeks that followed created significant disruption throughout the economy and is arguably one of the reasons GDP growth slowed from 8% the previous year to just 7.1% in 2016 and 6.7% in 2017.

10^{12}

With a growth rate of 6 – 8 per cent, India's GDP will grow to approximately US$10 trillion in 20 years, making it the world's third largest.

Annual Change in Gross Domestic Product (GDP)														Forecast				
	´05	´06	´07	´08	´09	´10	´11	´12	´13	´14	´15	´16	´17	´18	´19	´20	´21	´22
China	11.3	12.7	14.2	9.6	9.2	10.6	9.5	7.9	7.8	7.3	6.9	6.7	6.8	6.5	6.3	6.2	6.0	5.8
India	9.3	9.3	9.8	3.9	8.5	10.3	6.6	5.5	6.4	7.5	8.0	7.1	6.7	7.4	7.8	7.9	8.1	8.2
Indonesia	5.7	5.5	6.3	7.4	4.7	6.4	6.2	6.0	5.6	4.0	4.9	5.0	5.2	5.3	5.5	5.5	5.5	5.5
Thailand	5.2	5.0	5.4	1.7	-0.7	7.5	0.8	7.2	2.7	0.9	2.9	3.2	3.7	3.5	3.4	3.1	3.0	3.0
Philippines	4.8	5.2	6.6	4.1	1.1	7.6	3.7	6.7	7.1	6.1	6.1	6.9	6.6	6.7	6.8	6.8	6.8	6.8
Malaysia	5.0	5.6	6.3	4.8	-1.5	7.5	5.3	5.5	4.7	6.0	5.0	4.2	5.4	4.8	4.8	4.9	4.9	4.9
Pakistan	6.3	6.9	6.5	5.5	5.3	6.0	6.4	6.3	6.0	6.3	6.8	7.2	7.1	7.0	7.0	7.0	7.0	7.0
Bangladesh	7.5	7.0	7.1	5.7	1.7	-0.7	7.5	0.8	7.2	2.7	0.9	2.9	3.7	3.5	3.4	3.1	3.0	3.0
Vietnam	7.5	7.0	7.1	5.7	5.4	6.4	6.2	5.2	5.4	6.0	6.7	6.2	6.3	6.3	6.2	6.2	6.2	6.2
Sri Lanka	6.2	7.7	6.8	5.9	3.5	8.0	8.4	9.1	3.4	5.0	4.8	4.4	4.7	4.8	4.9	5.0	5.1	5.3

Detailed breakdown of GDP, actual and forecast (in %)					Forecast	
	2014	2015	2016	2017	2018	2019
GDP at market prices	7.5	8.0	7.1	7.0	7.3	7.4
Private consumption	6.2	6.1	8.7	8.0	7.8	7.5
Government consumption	9.6	3.3	20.8	15.6	11.2	10.0
Gross fixed investment	3.3	6.5	2.4	2.8	5.3	6.7
Exports of goods & services	1.8	-5.3	4.5	5.0	5.8	6.9
Imports of goods & services	0.9	-5.9	2.3	4.9	5.3	6.4
Consumer Price Inflation	5.8	4.9	4.5	3.2	4.6	4.2
Government deficit (% of GDP)	-6.9	-6.8	-6.0	-5.9	-5.8	-5.6
Current account balance (% of GDP)	-1.2	-1.1	-0.7	-0.9	-1.2	-1.4

Former Reserve Bank of India Governor Raghuram Rajan said in a speech at Harvard in April 2018 that, "Demonetisation I think was not a well-planned, well thought-out useful exercise. And I told the government that when the idea was first mooted… At the time of demonetisation, it was 87.5 per cent of the currency value. Any macro economist would say that when you are demonetising 87.5 per cent of the currency, better make sure that you print 87.5 per cent or pretty-much close to that. India went into it without having done that."

Mr. Rajan argues that, "The costs of demonetisation vary between 1.5 – 2 per cent of GDP… I do not think there is huge amount of dispute about it. I don't think even the government necessarily challenges that and it would be a really die-hard government advocate who would say that growth benefits of demonetisation were immediate."

Along with demonetisation came the introduction of a Goods & Services Tax (GST) which took effect from July 1st 2017. This new tax (whose passage into law took fully 17 years) is a comprehensive, multi-stage, destination-based tax that will be levied on every value addition and replaces a whole series of indirect taxes at the State and Central Government levels. The new GST is also mainly technologically driven. All activities such as registration, return filing, applications for refunds and responses to notices need to be done online on the GST Portal.

Given these two genuine 'shocks' to the Indian system, recent economic performance has been pretty resilient. The World Bank estimates that GDP growth will pick up from 6.7% in 2017 to 7.3% in 2018 and 7.4% in 2019, with the OECD forecasting a somewhat lower 7.0% in 2018 but sharing the 7.4% outlook for 2019. Private sector forecasts generally agree, with consensus expectations of 7.3% and 7.4% respectively for each of the next two years.

In terms of monetary policy, India's Central Bank – the Reserve Bank of India (RBI) – is tasked, "to regulate the issue of Bank notes and keeping of reserves with a view to securing monetary stability in India and generally to operate the currency and credit system of the country to its advantage; to have a modern monetary policy framework to meet the challenge of an increasingly complex economy, to maintain price stability while keeping in mind the objective of growth."

Under the RBI Act, its Monetary Policy Committee (MPC) is required to meet at least four times a year. Each member of the MPC has one vote, and in the event of an equality of votes, the Governor has a second or casting vote. The resolution adopted by the MPC

10^9

One billion Indians have a mobile or fixed telephone, while the number of Internet users is growing by 8 million every month.

is published after the conclusion of every meeting of the MPC in accordance with the provisions of Chapter III F of the Reserve Bank of India Act, 1934. On the 14th day, the minutes of the proceedings of the MPC are published which include:

- the resolution adopted by the MPC
- the vote of each member on the resolution, ascribed to such member
- the statement of each member on the resolution adopted.

Once every six months, the Reserve Bank is required to publish a document called the Monetary Policy Report to explain:

- the sources of inflation
- the forecast of inflation for 6–18 months ahead.

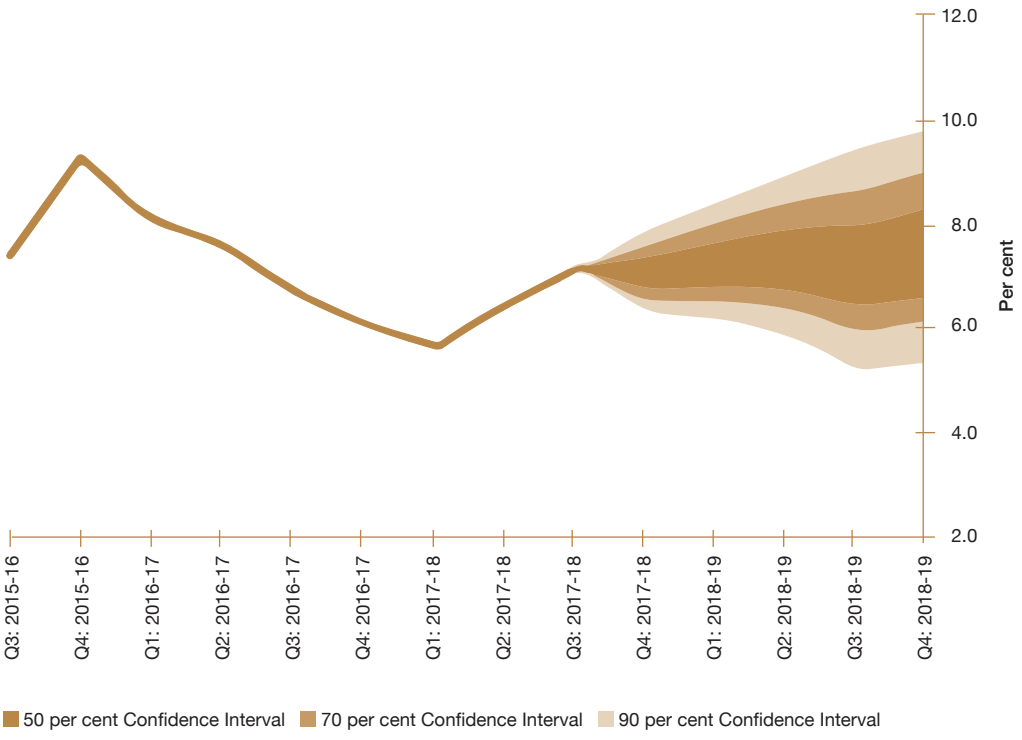
The RBI raised the repo rate to 8.0% in January 2014, and left interest rates at that level for just two weeks short of a full year. After a 25bp cut to 7.75% in January 2015, there were then six further reductions (five of 25bp and one of 50bp) including two made under the current MPC framework which has been operational since October 2016. The repo rate was last cut to 6.0% in August 2017 but on June 6th 2018, official rates were raised by 25bp; the first increase in rates for over 4 years, with the 6-person MPC voting unanimously for the rate hike.

The RBI's Statement at the conclusion of its June 2018 MPC meeting noted that, "With improving capacity utilisation and credit offtake, investment activity is expected to remain robust even as there has been some tightening of financing conditions in recent months. Global demand has also been buoyant, which should encourage exports and provide a further thrust to investment… Consumption, both rural and urban, remains healthy and is expected to strengthen further." The statement also highlighted volatile crude oil prices and global financial market developments as risks to its outlook. Oil is India's biggest import and rising prices not only push up inflation, but also the trade deficit too. CPI inflation has risen from 1.46% in June 2017 to a current level of 4.58%. Updated forecasts put CPI inflation at 4.6% in H1 2018–19 and 4.7% in H2.

Looking forwards, the authorities' hope will be that a more stable currency resulting from the rate hike and oil prices down 10% from their recent peak will soon begin to cap the rise in inflation. Were this to happen, then by moving in a timely and decisive fashion, the RBI might avoid the need for greater rate hikes further down the track. In this context, the first rate hike in more than four years could be a positive from both a financial stability and real economy perspective.

Indian households hold 11 per cent of the world's gold. This is more than the gold reserves held by the International Monetary Fund (IMF), Germany, the USA and Switzerland collectively.

Quarterly Projection of Real GDP Growth (y-o-y)



ECONOMIC DEVELOPMENT

The World Bank Group (WBG) notes that, "its partnership with India is strong and enduring, spanning nearly six decades". The WBG's financing, analytical work and advisory services have contributed to the country's development since the first International Bank for Reconstruction and Development (IBRD) loan to Indian Railways in 1949.

The WBG partners with India to help provide platforms for growth, harness benefits from the country's spatial transformation and increase its human development potential. The Group's lending portfolio consists of 106 operations with $26.7 billion in commitments, of which $15.0 billion is IBRD, $11.6 billion is IDA, and $0.1 billion is from other sources, primarily the Global Environment Fund. Reflecting a strong, deepening partnership, overall lending commitments have grown by 19% over the past five years."

Number of Projects of which:	106
IDA	55
IBRD	40
IDA & IBRD blend	5
Global Environment Fund	6
Commitments, of which:	$ 26.7 billion
IDA	$ 11.6 billion
IBRD	$ 15.0 billion
Global Environment Fund	$ 0.1 billion

The 'India Development Update' is the World Bank's flagship publication. Its latest biennial report published in March 2018 notes that, "Economic growth has been increasingly driven by consumption (private and public) since 2009, while two important engines of growth, private investment and exports, have consistently underperformed. This trend is particularly concerning as investments and exports are not just important direct sources of growth and productivity, they also determine the technological capability, as well as the competitiveness of a country's production structure."

WBG outlines, "The investment rate has declined and remains low despite the fact that macroeconomic stability is much higher, public investment has picked up and its quality has improved; the business environment has improved; global liquidity has continued to remain benign; the Indian equity markets have done well, offering good valuations to the companies looking to raise money; and as per some indicators, economic uncertainty has not worsened."

WBG argues for a "Maximizing Finance for Development" approach that necessitates an efficient mix of public and private resources to finance India's long-term investment. This approach aims at leveraging public instruments (such as investments or guarantees) to crowd-in private financing or address binding constraints to private sector participation.

WBG's Systematic Country Diagnostic (SCD) for India highlights priority areas for reform to achieve a long-run ambition of raising the income of at least 50 percent of Indians to a level that is comparable to the global middle class. It notes, "A fundamental constraint to India's long-run growth is the scarcity of natural resources. Thus, sustained high growth is only possible on a resource efficient growth path which uses resources more efficiently within each sector, and allocates them more efficiently across sectors".

THE WORLD BANK

The WBG's major financial engagements in India are in the sectors of transport ($6.9bn), water and sanitation ($5.2bn), and energy ($2.6bn). Its main focus is now on bringing financing and cutting-edge global knowledge to bear in eight priority areas:

- rejuvenating the Ganga river
- developing smart cities and improving urban service delivery
- improving rural sanitation and ending open defecation
- providing 24/7 electricity
- an ambitious push on solar energy
- providing youth with training and skills development
- modernizing India's massive railway system
- improving the country's business climate

IBRD – The *International Bank for Reconstruction and Development* is an international financial institution that offers loans to middle-income developing countries.

IDA – The *International Development Association* provides loans and advice on concessional terms to middle-income and credit-worthy poor countries.

ECONOMIC AND BUSINESS ENVIRONMENT

The Indian Government is publicly committed to an ongoing process of reform in the context of the United Nations' 17 Sustainable Development Goals (SDG's) for 2030 adopted by its 193 Member States in September 2015, and the Addis Ababa Action Agenda that came out of the Third International Conference on Financing for Development in July 2015.

The National Institute for Transforming India Aayog (NITI) is the body charged to monitor, coordinate and ensure implementation of the globally accepted SDG's; bringing the 17 development goals into action across India. It is the premier policy 'Think Tank' of the Government of India which provides both directional and policy inputs, and replaces the Planning Commission instituted in 1950. While designing strategic and long term policies and programmes for the Government of India, NITI Aayog also provides relevant technical advice to the Centre and States to act together in the national interest, thereby fostering 'Cooperative Federalism'. It is chaired by Prime Minister Narendra Modi.

Building on the work of the Government towards the 17 SDG's, Mr. Modi gave a keynote speech to the plenary session of the World Economic Forum in Davos 2018 in which he said:

- "The Indian government has resolved a number of regulatory and policy issues facing businesses, investors and companies. In this direction, we have undertaken bold FDI (foreign direct investment) reforms. More than 90 percent of the FDI approvals have been put on the automatic approval route. As a result of these changes, there has been a sharp rise in FDI in the past three years – from $36 billion in 2013 – 14 to $60 billion in 2016 – 17."

- "Our objective on infrastructure development is to reduce the logistics cost transaction time for various activities. Also, improvements in infrastructure have already enthused people as they are beginning to see a qualitative change in their lives."

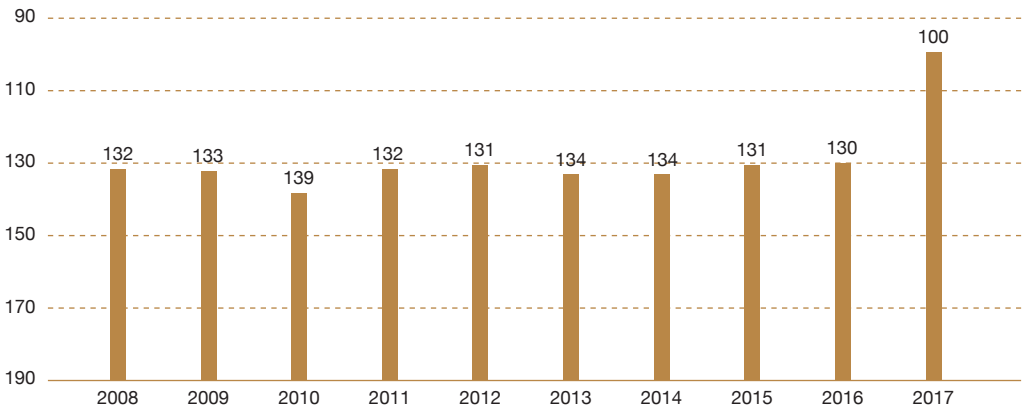
- "India needs to be fully integrated with the world in major policy areas. Maybe it is the regime of entry and exit of businesses, for IPRs (intellectual property rights), or arbitration and commercial adjudication, we have moved very decisively to brush up the framework to bring them in line with global best practices."

- "The biggest reason for fracture within the countries is inequality and disparity leading to divide and distrust. Personally, I have always said that development process should be inclusive and encompassing. We have tried in our own way to bridge the income and opportunity divide."

SUSTAINABLE DEVELOPMENT GOALS

The 17 sustainable development goals (SDGs) are political objectives set by the United Nations (UN) with the aim of ensuring sustainable development economically, socially and ecologically. The goals were defined akin to the development process for the millennium development goals (MDGs) and took effect on 1 January 2016 for a period of 15 years (running until 2030). Unlike the MDGs, which were only for developing countries, the SDGs apply to all countries.

Ease of doing business in India (ranking 190 countries)



As for independent and robust monitoring and measurement of progress in the economic and business environment, the World Bank has been publishing its "Doing Business" report since 2004. As part of this study, project teams compile two measures for 10 indicators thought to influence the ease of doing business in a country. The first indicator is the Distance to Frontier Score, measured on a scale from 0 to 100, which quantifies the distance of the country's business environment to the best environment observed since 2005 ('the global best practice', which is given a score of 100). Second, using the distance to frontier scores, it calculates a ranking of scores among all participating countries.

"We do understand that our systems need to change. Hence, we are persisting with far-reaching structural reforms. Our mantra is reform, perform and transform."

Prime Minister Modi at the World Economic Forum on 23.01.2018

Doing Business 2018 recognized India for being one of the top 10 improvers amongst the 190 countries that are studied annually. India is the only South Asian and BRICS country to be included in the list of top improvers. On aggregate, India achieved a Distance to Frontier score of 60.76 (out of 100) against 56.05 last year, placing it on the 100th place in the ranking, an improvement from 130 in Doing Business 2017. India's Distance to Frontier score improved in all 10 areas, demonstrating that its movement towards global best practices is across the board, and not just confined to a single area. India improved its Doing Business ranking in 6 out of 10 indicators.

Compared to 2017, India's ranking in Doing Business has improved significantly. While this indicates an improving business environment, the ranking does not give an absolute overview of the ease of doing business in India compared to other emerging economies. To address this, the World Bank analysis compares India to a group of emerging market economies, the EM7 countries comprised of Brazil, Russia, South Africa, Indonesia, Mexico, Malaysia and Turkey.

India outperforms the median EM7 country in three areas of Doing Business: Protecting Minority Investors, Getting Credit and Getting Electricity. However, it ranks last among the EM7 with regards to Dealing with Construction Permits, Registering Property, and in Enforcing Contracts.

The World Bank concludes that, "By building on existing reforms, India can improve its investment climate further. While the overall policy and legal environment for business in India are improving rapidly, it appears to be doing well with regards to the quality of regulations, but not equally well in areas that capture the implementation of laws. This discrepancy highlights the importance of emphasizing effective implementation of reforms in addition to improving the legal framework."

INFRASTRUCTURE

India has traditionally had significant expertise in engineering and a feature of both its colonial past and post-independence development has been its extensive government bureaucracy. Combining these two great traditions, much of the country's infrastructure has been undertaken by government-managed construction agencies such as the Central Public Works Department which was founded back in 1854.

Most large-scale building activities – such as the construction of railroads, national and state highways, harbours, hydroelectric and irrigation projects, stadiums, auditoriums and government-owned factories and hotels – have been public sector projects.

India's rail system, entirely government-owned and operated by the Ministry of Railways, has 121,407 kilometres of total track over a 67,368-kilometre route and is the fourth largest network in the world. Indian Railways runs more than 13,000 passenger trains daily, on both long-distance and suburban routes, from 7,349 stations across the country. Measured by the distance travelled each year by passengers it is the world's most heavily used system. In 1989, South Asia's first subway line began operation in Kolkata. Delhi followed with a new system which opened in 2002. With a total length of 277 kilometres and 202 stations, it is now the world's 11th longest metro system and 16th largest by passenger usage.

According to the Ministry of Roads, Transport & Highways, the total road-network is 5,603,293km; the second largest in the world although this total includes many narrow and

1.3 Mio.

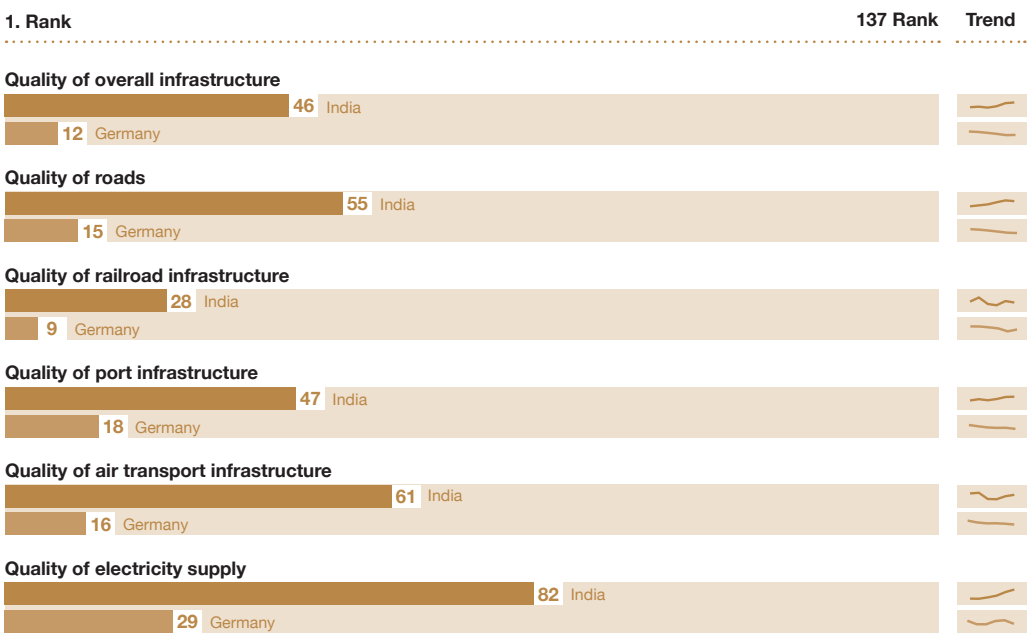
With approximately 1.3 million employees, Indian Railways is one of the largest employers in the world.

unpaved roads. As of May 2017, India had completed and placed in use over 28,900 kilometres of recently built 4 or 6-lane highways connecting many of its major manufacturing centres, commercial and cultural centres. The length of national highways in India increased from 70,934km in 2010–11 to 101,011km in 2016. At 1.70 km of roads per square kilometre of land, the quantitative density of India's road network is higher than that of Japan (0.91) and the United States (0.67), and far higher than that of China (0.46), Brazil (0.18) or Russia (0.08).

Civil aviation was nationalized in 1953 into two government-owned companies: Air India, for major international routes from airports at New Delhi, Mumbai, Kolkata, and Chennai; and Indian Airlines, for routes within India and neighbouring countries. The two companies merged in 2011 and as a result of subsequent deregulation, IndiGo, Jet Airways, Air India, Spicejet, GoAir and Vistara are now the major carriers in order of their market share. India is the third-largest civil aviation market in the world. It recorded air traffic of 131 million passengers in 2016, of which 100 million were domestic passengers.

India has a coastline of 7,516 kilometres, forming one of the biggest peninsulas in the world. According to the Ministry of Shipping, around 95 per cent of India's trading by volume and 70 per cent by value is done through maritime transport. It is serviced by 12 major ports with 200 notified minor and intermediate ports. There are also 7 shipyards under the control of the central government of India, 2 shipyards controlled by state governments, and 19 privately owned shipyards.

The Global Competitiveness Index for Infrastructure



Source: The Global Competitiveness Report 2017-2018, World Economic Forum

Note: Trend lines depict evolution in values since the 2012-2013 edition (or earliest edition available)

India also has an extensive network of inland waterways in the form of rivers and canals. Their total navigable length is 14,500km, of which about 5,200km of the rivers and 4,000km of canals can be used by mechanized crafts. Freight transportation by waterways is highly under-utilized in India compared to other large countries and geographic areas like the United States, China and the European Union. The total cargo moved by inland waterways is just 0.1 percent of the total inland traffic in India, compared to 6.7% in the European Union.

The telecommunications sector has traditionally been dominated by the state although the industry underwent a high pace of market liberalisation in the 1990s and has now become one of the world's most competitive and fastest growing telecom markets. India's telecoms network is the second largest in the world by number of telephone users (both fixed and mobile phone). As of March 2018, it has 1.206 billion telephone and 412.60 million internet subscribers.

Whilst the quantitative data is impressive and demonstrates rapid growth over the past 10–20 years, we still need to factor in the overall poor quality of much of the existing infrastructure and the need for substantial further investment merely to keep up with the rapid pace of demographic change. The World Bank, for example, notes that, "most highways in India are narrow and congested with poor surface quality, and 40 percent of India's villages do not have access to all-weather roads." Almost one-third of the country's villages remain cut off during the monsoon season; a problem which is more acute in India's northern and north-eastern states which are poorly linked to the country's major economic centres.

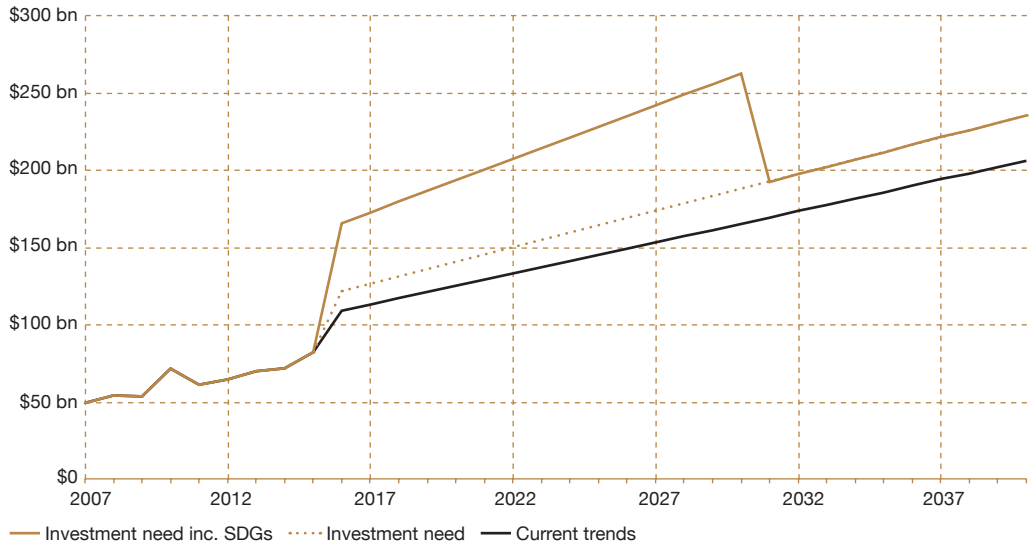
As for the railways, only 60% of the network is currently electrified although plans are underway to raise this to 100% by 2021 in order to save on imported fuel costs. A €3.5bn partnership is in place with Alsthom of France to build and supply 800 electric locomotives between 2018 and 2028, from its state-of-the-art locomotive facility at Madhepura in the State of Bihar.

Even with the considerable increases in current investment spending, however, India ranks only number 66 of 144 countries for Infrastructure in the World Economic Forum's 2017–18 Global Competitiveness Report. A detailed breakdown shows it ranks 28 for railroads, 47 for ports, 55 for roads and 61 for air transport. Indeed, its overall rank of 66 was up just two places on the previous year; a period in which its population increased by over 16 million people; almost the entire current population of the Netherlands.

Just as India's impressive bureaucracy has contributed to the country's relative economic and political stability, it has historically been a source of frustration and weakness. Contract negotiations could be complex and protracted, and the sometimes conflicting priorities of State and National governments created delays in execution. Prime Minister Modi has characterised India's bureaucracy as a 19th century administration struggling to tackle 21st century challenges. The great hope is that he is eventually able to remove or lower some of the bureaucratic hurdles.

Demographic change and population growth mean that India must run, merely in order to stand still. There is no doubting the political will to embrace technological change and modernise the country's infrastructure. The scale of the task reflects the scope of the investment opportunity.

Infrastructure investment at current trends and need (total across all sectors)



INVESTMENT ESTIMATES FOR INDIA

$ 3.9 Trillion
Investment current trends

$ 5.3 Trillion
Investment needed

$ 1.4 Trillion
Investment gap

Sustainable Development Goals (SDGs): Includes the additional investment needed for countries that have not yet met the SDGs

ENERGY MARKET

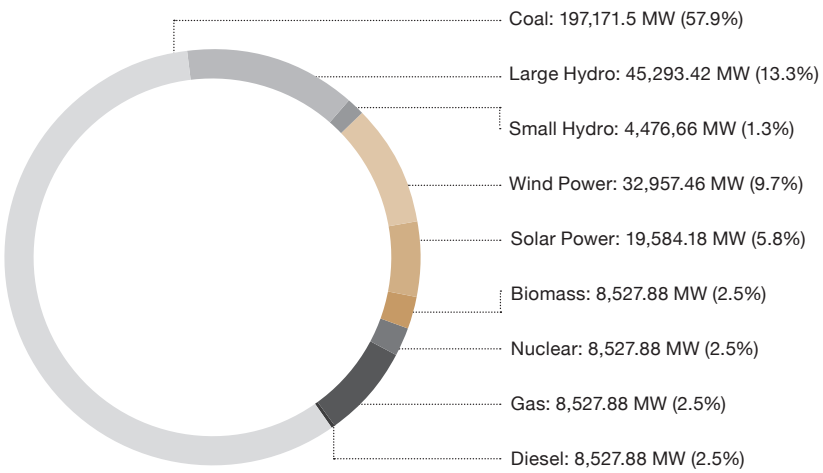
Figures from the Central Electricity Authority show that total installed power capacity in India currently amounts to just over 344,000 MW; a figure which has increased almost four-fold since 2000.

COAL: Coal and fossil fuels still account for more than three-quarters of all electricity supplied in India with 197 GW. The country has the third-largest hard coal reserves in the world (roughly 12% of the world total), and the mining sector is dominated by big state-owned companies, of which Coal India Limited (CIL) is the largest, accounting for 80% of India's output. At present, more than 90% of coal in India is produced by open cast mining. This method has relatively low production costs and is less dangerous than deep mining, but has a large, adverse environmental footprint in the form of land degradation, deforestation, erosion and acid water runoff.

According to the International Energy Association, "Among the other problems facing the Indian coal sector is a mismatch between the location of hard coal reserves and mines, which are concentrated in eastern and central India, and the high-demand centres of the northwest, west and south. A tonne of coal must travel on average more than 500 kilometres (km) before it is converted to electricity, straining the country's rail network."

Installed Capacity as on		Thermal (MW)				Renewable (MW)			Total (MW)	% Growth (on yearly basis)
	Coal	Gas	Diesel	Sub-Total Thermal	Nuclear (MW)	Hydro	Other Renewable	Sub-Total Renewable		
31-Mar-1990	41,236	2,343	165	43,764	1,565	18,307	–	18,307	63,636	9.89%
31-Mar-1997	54,154	6,562	294	61,010	2,225	21,658	902	22,560	85,795	4.94%
31-Mar-2002	62,131	11,163	1,135	74,429	2,720	26,269	1,628	27,897	105,046	4.49%
31-Mar-2007	71,121	13,692	1,202	86,015	3,900	34,654	7,760	42,414	132,329	5.19%
31-Mar-2012	112,022	18,381	1,200	131,603	4,780	38,990	24,503	63,493	199,877	9.00%
31-Mar-2017	192,163	25,329	838	218,330	6,780	44,478	57,260	101,138	326,841	10.31%
31-Mar-2018	197,171	24,897	838	222,906	6,780	45,293	69,022	114,315	344,002	5.25%

Installed capacity by source in India as on 31 March 2018



HYDROELECTRICITY: : India currently has around 45 GW of installed hydroelectric capacity (of which over 90% is large hydro) which represents a little under a third of the assessed resource. A further 14 GW are under construction, although some of these plants have been delayed by technical or environmental problems and public opposition. Hydroelectric power development has lagged well behind thermal generation capacity, leading to a consistent decline in its share of total electricity output. Capacity additions and generation have routinely fallen short of the targets set in successive government programmes, while the objective of bringing in private investors has likewise proved difficult to realise.

NUCLEAR: India has 21 operating nuclear reactors at seven sites, with a total installed capacity close to 6 GW. Another six nuclear power plants are under construction, which will add around 4 GW to the total. Though the current share of nuclear power in the generation mix is relatively small at 3%, India has ambitious plans to expand its future role, including a long-term plan to develop more complex reactors that utilise thorium – a potential alternative source of fuel for nuclear reactors.

NATURAL GAS: Natural gas has a relatively small share (6%) of the domestic energy mix totalling around 24 GW. Optimism about the pace of expansion, fuelled by some large discoveries in the early 2000s, has been dashed by lower than expected output from offshore domestic fields and many of these power stations are shut down throughout the year for lack of natural gas supply.

BIOENERGY: Bioenergy accounts for roughly a quarter of India's energy consumption, by far the largest share of which is the traditional use of biomass for cooking in households. There was around 7 GW of power generation capacity fuelled by biomass in 2014, the largest share is based on bagasse (a by-product of sugarcane processing) and a smaller share is cogeneration based on other agricultural residues.

WIND: India has the fifth-largest amount of installed wind power capacity in the world. As of March 31st 2018, the installed capacity of wind power was 34.05 GW, spread across many states. The largest wind power generating state is Tamil Nadu accounting for nearly 23% of installed capacity, followed in decreasing order by Gujarat, Maharashtra, Rajasthan and Karnataka. Wind power accounts for 9.7% of India's total installed power capacity, and 3.7% of the total power output. India targets installation of 60 GW of wind power capacity by 2022.

SOLAR: As of 31 March 2018, the installed capacity of solar electricity was 21.65 GW, meeting almost 2% of the utility electricity generation; twice the amount of the previous year.

Breathing the air in Mumbai, India, for just one day is equivalent to smoking 100 cigarettes.

FUTURE ENERGY DEMAND & SUPPLY

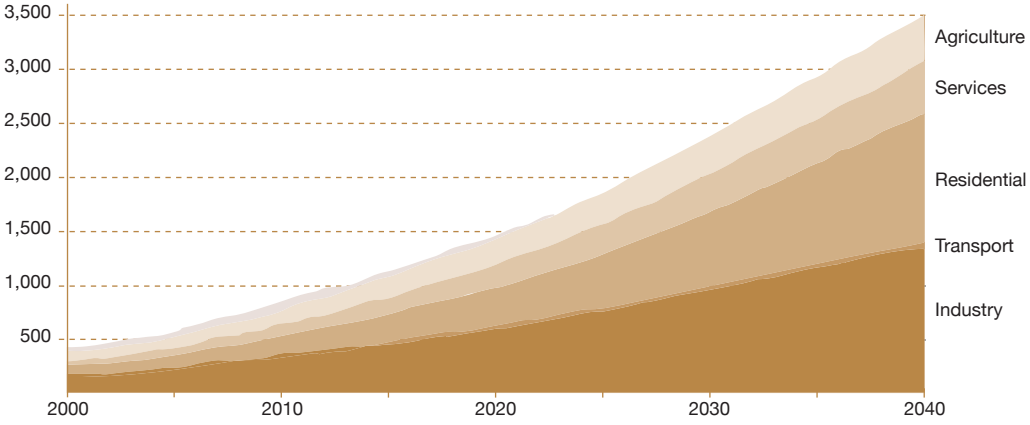
The International Energy Agency's Special report on India forecasts energy demand is propelled upwards to 2040 by an economy that grows to more than five-times its current size and population growth that makes it the most populous country in the world. Energy consumption almost triples by 2040, with the rise in coal use making India by far the largest source of growth in global coal demand.

With rising incomes and 580 million additional electricity consumers by 2040, electricity demand in the residential sector increases by more than five-times. Meantime, industry remains the largest among the end-use sectors, as India's strong demand for infrastructure and consumer goods boosts the outlook for manufacturing.

The IEA notes that industry is the largest consumer of electricity in India and demand more than triples over the period to 2040, though the overall share of industry in electricity consumption falls slightly from 42% in 2013 to 39%. The largest increases come from the steel and aluminium sub-sectors, which are responsible for 18% and 9% respectively of the rise in consumption. In the buildings sector (which includes residential and services), consumers take advantage of the improved quality of electricity supply to steadily increase their demands on the system, by an average of 5.8% per year.

The share of electricity in residential energy consumption rises very quickly, from 10% in 2013 to 41% by 2040, in line with rising incomes, appliance ownership and demand for cooling. Peak demand for electricity, driven by residential demand, is expected to remain an evening phenomenon; a development that is reinforced by the increased reliability of power supply and the diminishing role for batteries and inverters.

Electricity demand by sector in India in the New Policies Scenario



Installed power capacity is set to surge from below 300 GW today to over 1 000 GW in 2040. Nearly half of the net increase in coal-fired generation capacity worldwide will occur in India, although the rapid rise in renewables, led by solar and wind power, together with a large increase in nuclear capacity, means that these sources account for more than 50% of new additional capacity brought online over the period. Indeed, by 2040, the total capacity of renewables at 462 GW will be greater than that of coal (438 GW).

Under the IEA forecast scenario, by 2035 power output in India is larger than power generation in the European Union. In terms of output, by 2040 India will have the third-largest power system in the world, after China and the United States. Today, almost three-quarters of all power generated comes from coal-fired power plants. By 2040, even though capacity almost doubles (and only China produces more electricity from coal than India), coal's share of overall energy output will fall to 41%, with renewable energy capacity tripling and solar capacity increasing almost ten-fold.

2,225 MW

Five of the world's largest under-construction solar parks are located in India. These are:

Bhadla Industrial Solar Park
2,225 MW – No 1

Pavagada Solar Park
2,000 MW – No 2

Ananthapuramu – I Solar Park
1,500 MW – No 5

Kadapa Ultra Mega Solar Park
1,000 MW – No 7

Rewa Solar Park
750 MW – No 9

Electricity demand by sector in the IEA's New Policies Scenario (TWh)

						2013-2040	
	2000	2013	2020	2030	2040	Change	CAAGR*
Demand	**376**	**897**	**1,351**	**2,241**	**3,288**	**2,390**	**4.9%**
Industry	158	375	565	904	1,277	902	4.6%
Residential	79	207	329	647	1,115	908	6.4%
Services	46	133	207	332	450	318	4.6%
Transport	8	15	20	24	30	14	2.5%
Agriculture	85	160	222	324	401	241	3.5%
Other energy sector	0	6	8	10	13	7	2.7%
TD losses	**150**	**220**	**313**	**452**	**613**	**393**	**3.9%**
PG own usw	**40**	**82**	**107**	**160**	**229**	**147**	**3.9%**
Gross generation**	**570**	**1,193**	**1,766**	**2,848**	**4,124**	**2,930**	**4,7%**

*Compound average growth rate, ** Gross generationincludes own usw by power generators (PG), demand in final uses (industry, residential, transport and other) and transmission and distribution (T&D) network losses but does not include import, which are minimal

Power generation capacity by type in India in the IEA's New Policies Scenario (GW)

						Shares		CAAGR*
	2000	2014	2020	2030	2040	2014	2040	2014-2040
Fossil fuels	**84**	**204**	**280**	**419**	**576**	**71%**	**53%**	**4.1%**
Coal	66	174	230	329	438	60%	41%	3.6%
Oil	11	23	41	76	122	8%	11%	6.6%
Gas	7	7	9	13	15	3%	1%	2.9%
Nuclear	**3**	**6**	**10**	**24**	**39**	**2%**	**4%**	**7.6%**
Renewables	**27**	**79**	**147**	**304**	**462**	**27%**	**43%**	**7.0%**
Hydro	25	45	58	83	108	15%	10%	3.5%
Wind	1	23	50	102	142	8%	13%	7.2%
Solar PV	0	3	28	100	182	1%	17%	16.4%
Other	0	7	11	18	30	3%	3%	5.5%
Total	**113**	**289**	**436**	**746**	**1,076**	**100%**	**100%**	**5.2%**

*Compound average annual growth rate

SOLAR ENERGY POLICY

Back in 2008, the then Prime Minister of India, Dr. Manmohan Singh launched the National Action Plan on Climate Change.

He said, "Our vision is to make India's economic development energy-efficient. Over a period of time, we must pioneer a graduated shift from economic activity based on fossil fuels to one based on non-fossil fuels and from reliance on non-renewable and depleting sources of energy to renewable sources of energy. In this strategy, the sun occupies centre-stage, as it should, being literally the original source of all energy. We will pool our scientific, technical and managerial talents, with sufficient financial resources, to develop solar energy as a source of abundant energy to power our economy and to transform the lives of our people. Our success in this endeavour will change the face of India. It will also enable India to help change the destinies of people around the world."

Renewable energy installed in India
(as of 31. March 2018)

Type	Capacity (in MW)
Grid Connected Power	
Wind	34,046.00
Solar	21,651.48
Small Hydro Power Projects	4,485.81
Biomass Power & Gasification and Bagasse Cogeneration	8,700.00
Waste to Power	138.30
Total – Grid Connected Power	**69,022,39**

India's strong emphasis on solar development was demonstrated in 2010 with the launch of the Jawaharlal Nehru National Solar Mission which targeted 20 GW of solar energy by 2022. This target in turn was dramatically upgraded by the Narendra Modi government in the 2015 Union budget of India to 100 GW of solar installations by 2022; of which 40 GW of rooftop solar photovoltaics (PV) and 60 GW of large- and medium-scale grid-connected PV projects.

The National Solar Mission clearly stated, "From an energy security perspective, solar is the most secure of all sources, since it is abundantly available. Theoretically, a small fraction of the total incident solar energy (if captured effectively) can meet the entire country's power requirements… India is endowed with vast solar energy potential. About 5,000 trillion kWh per year energy is incident over India's land area with most parts receiving 4 – 7 kWh per square metre per day. Hence both technology routes for conversion of solar radiation into heat and electricity, namely, solar thermal and solar photovoltaics, can effectively be harnessed providing huge scalability for solar in India. Solar also provides the ability to generate power on a distributed basis and enables rapid capacity addition with short lead times".

In December 2014, the Government of India rolled out a scheme for development of Solar Parks and Ultra Mega Solar Power Projects which envisaged setting up at least 25 Solar Parks and Ultra Mega Solar Power Projects targeting over 20,000 MW of solar power installed capacity within a span of 5 years starting from 2014 – 15. The solar parks would have suitable developed land with all clearances, transmission system, water access, road connectivity, communication network, etc. This scheme would facilitate and speed up installation of grid connected solar power projects for electricity generation on a large scale. In February 2017, the Union Cabinet increased the total number of planned solar parks to 50 with a total capacity of 40 GW.

At the India Africa Summit, and a meeting of member countries ahead of the United Nations Climate Change Conference in Paris in November 2015, the International Solar Alliance (ISA) was launched. This was first proposed by Indian Prime Minister Narendra Modi in a speech in November 2015 at Wembley Stadium in London, in which he referred to

	Year-wise Targets (in MW)							
Category	**2015 – 16**	**2016 – 17**	**2017 – 18**	**2018 – 19**	**2019 – 20**	**2020 – 21**	**2021 – 22**	**Total**
Rooftop Solar	200	4,800	5,000	6,000	7,000	8,000	9,000	**40,000**
Ground Mounted Solar projects	1,800	7,200	10,000	10,000	10,000	9,000	8,500	**57,000**
Total	**2,000**	**12,000**	**15,000**	**16,000**	**17,000**	**17,500**	**17,500**	**97,000**

Decreasing electricity generation costs in previous years have benefited photovoltaic power most of all. According to IRENA, photovoltaic power costs sank by 73 per cent worldwide between 2010 and 2017 whereas wind energy only decreased by a quarter. As a result, the two technologies are now both at the same level as fossil fuels in terms of electricity generation costs or are even cheaper.

countries which lie either completely or partly the Tropic of Cancer and the Tropic of Capricorn as Suryaputra ("Sons of the Sun")

The primary objective of the alliance – a treaty-based inter-governmental organization – is to work for efficient exploitation of solar energy to reduce dependence on fossil fuels. The framework agreement of the International Solar Alliance opened for signatures in Marrakech, Morocco in November 2016, and 121 countries have subsequently joined.

In January 2016, Narendra Modi, and the then French President François Hollande jointly laid the foundation stone of the ISA Headquarters and inaugurated the interim Secretariat at the National Institute of Solar Energy (NISE) in Gwalpahari, Gurugram, India. The Indian government has dedicated five acres of land on the NISE campus for its future headquarters; it also has contributed ₹1.75 billion (US $27 million) to the fund to build a campus and for meeting expenditures for the first five years.

On June 30, 2016, the ISA entered into an understanding with the World Bank for accelerating mobilization of finance for solar energy. The Bank will have a major role in mobilizing more than US $1,000 billion in investments that will be needed by 2030, to meet ISA's goals for the massive deployment of affordable solar energy. Thus far, 48 countries have signed and 26 countries have ratified the Framework Agreement of the ISA.

In a speech to the World Future Energy Summit (WFES) held in Abu Dhabi in January 2018,

Growth of utilities' installed solar capacity

Year	Installed capacity (MW)	Annual growth (MW)	Annual growth ((%)
2010	161	N/A	N/A
2011	461	300	186.34
2012	1,205	744	161.39
2013	2,319	1,114	92.45
2014	2,632	313	13.50
2015	3,744	1,112	42.25
2016	6,763	3,019	80.63
2017	12,289	5,526	81.71

Indian Energy Minister RJ Singh announced that the Government would achieve its target of 175GW of installed renewable energy capacity well before 2020 and would set up a $350 million fund to finance solar projects. It expects renewable energy to make up 40% of installed power capacity by 2030, compared to 18.2% at the end of 2017.

According to the Ministry of New and Renewable Energy, as of March 31st 2018, India had grid connected installed capacity of about 69.02 GW renewable technologies-based electricity capacity; exceeding the capacity of major hydroelectric power for the first time in history.

India now has a proven track record of success in solar energy. It is a now well-established and highly regarded investment destination with huge positive momentum. The future opportunities are as large as its ambition, driven by the twin dynamics of technological and demographic change.

Investment in solar energy in India is a compelling proposition.

Climate protection gathering pace

- The Indian government drew attention with its plan to only allow new registrations for electric vehicles from 2030.
- The plan does not allow for the construction of any new coal-fired power stations in the future.
- A solid 6.6 million trees were planted in 12 hours in the state of Madhya Pradesh.
- India has made it its task to reforest approximately 95 million hectares of land.

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Sources: The World Bank, www.worldbank.org/en/country/india; Ministry of new and renewable energy, www.mnre.gov.in; NITI Aayog (National Institution for Transforming India), Government of India, www.niti.gov.in; Reserve Bank of India, www.rbi.org.in; Encyclopaedia Britannica, www.britannica.com/place/India; The Commonwealth, www.thecommonwealth.org/our-member-countries/india; The World Bank, India´s Growth Story, March 2018; Bertelsmann Stiftung, BTI Country Report India; Internatinal Energy Agency, India Energy Outlook, November 2015; wikipedia, Electricity sector in India; BP, BP Energy Outlook India 2018; Ministry of road transport and highways transport research wing, Basic road statistics of India 2015-16; International Renewable Energy Agency (IRENA), Renewable energy and jobs, annual review 2018; International Labour Organization (ILO), Greening with jobs, 2018; Institute for energy economics and financial analysis, Solar is driving a global shift in electricity markets, May 2018; United Nations, Climate Change, www.unfccc.int; www.mercomindia.com; www.spiegel.de; www.idealismprevails.at; www.srf.ch; World Economic Forum; www.factslides.com/s-India