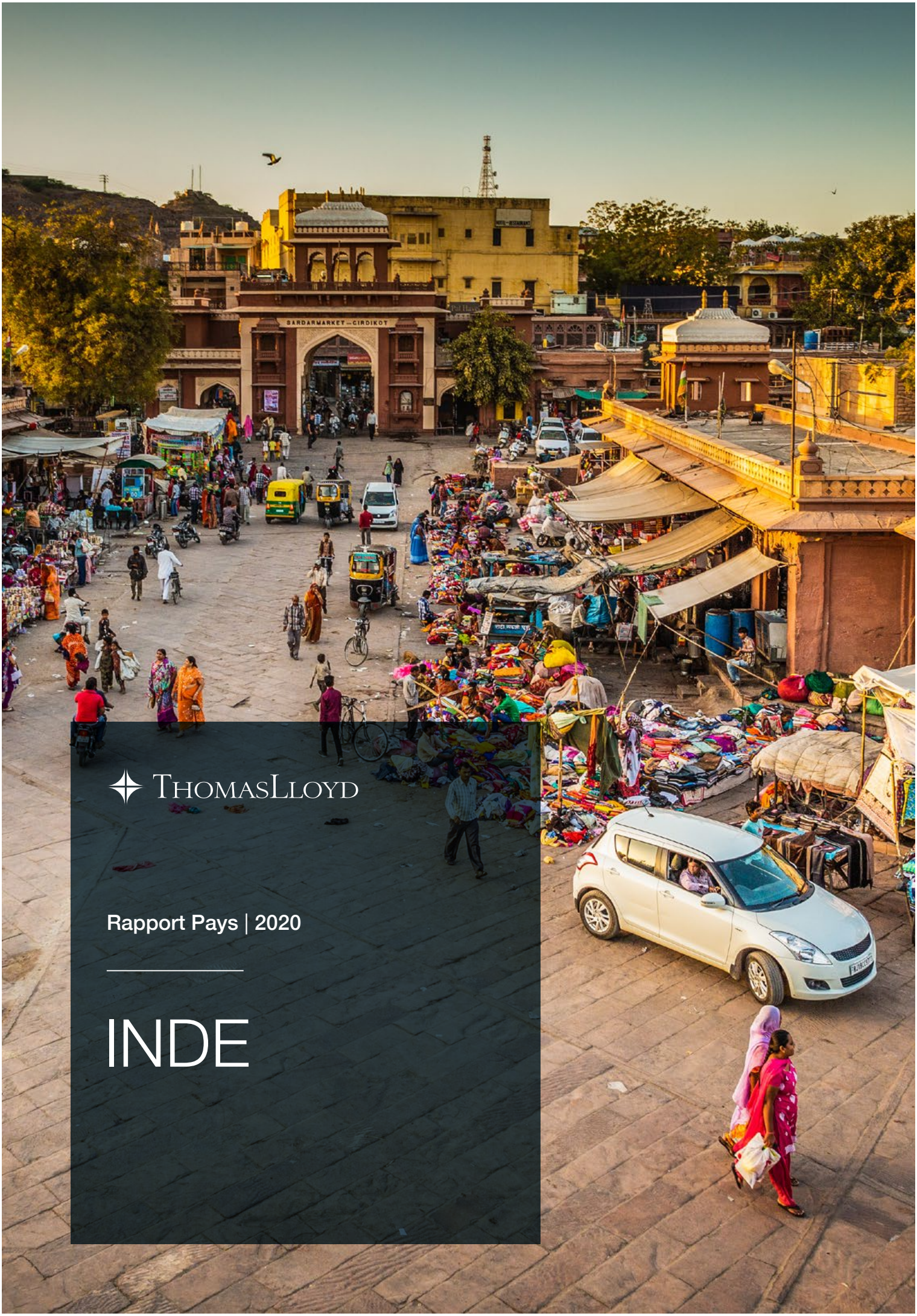

ThomasLloyd

Rapport Pays | 2020

INDE

Résumé

L'Inde est le septième plus grand pays du monde, avec une superficie totale de 3 287 263 km². Située en Asie du Sud, elle possède un littoral de près de 7 000 km, qui fait face à la Mer d'Oman à l'ouest et au golfe du Bengale à l'est. Elle a des frontières terrestres avec six pays : le Bangladesh, la Chine, le Pakistan, le Népal, le Bhoutan et la Birmanie.

L'Inde est le deuxième pays le plus peuplé au monde, avec une population de plus de 1,3 milliards. Les Nations unies estiment que la population augmentera de plus de 300 millions au cours des 25 prochaines années et qu´en 2028, elle dépassera la Chine, pour devenir le pays le plus peuplé au monde.

L'Inde est la plus grande démocratie au monde. Le pays est actuellement dirigé par le Premier ministre Narendra Modi du parti Bharatiya Janata. Après avoir remporté une victoire écrasante aux élections législatives de mai 2014 – la première fois en 30 ans qu'un parti remportait seul une majorité parlementaire – les élections de 2019 ont vu le parti Bharatiya Janata (BJP) accroître sa majorité. Le parti a remporté 303 sièges au Lok Sabha, la chambre basse du parlement indien, marquant ainsi une progression sur les 282 sièges qu'il avait gagnés en 2014.

L'économie indienne a connu une croissance rapide au cours des deux dernières décennies. En 2000, l'Inde ne figurait même pas parmi les dix premières économies mondiales. Son PIB annuel était alors inférieur à celui du Mexique, de l'Espagne et de la Corée du Sud, et elle n'était que la 13e puissance économique mondiale. Fin 2019, elle est devenue la cinquième puissance économique mondiale après les États-Unis, la Chine, le Japon et l'Allemagne et son PIB annuel a plus que sextuplé, passant de 466 841 millions de dollars à 2 935 570 millions de dollars.

Tout comme les États indiens qui varient en fonction de leur superficie et de leur population, le PIB y est également très variable. Le Maharashtra est en tête avec 430 milliards d'USD, soit environ 70 % de plus que les 250 milliards d'USD du Tamil Nadu, qui occupe la troisième place, avec 226 milliards d'USD.

La notation du crédit souverain de l´Inde de Standard & Poor's, dernièrement mise à jour en juin 2020, est de BBB-, avec une perspective stable. Moody's a longtemps été plus optimiste que S&P, mais en juin 2020, Moody´s a abaissé la note du pays de Baa2 à Baa3 avec une perspective négative. Depuis janvier 2007, l'Inde bénéficie d'une notation de crédit de qualité.

La Banque centrale de l´Inde, la Reserve Bank of India, existe depuis 1935. Son mandat lui impose de maintenir « un cadre politique monétaire moderne pour relever le défi d'une

« Je voudrais vous demander : À quoi pensez-vous avant d'investir dans un pays ? Ce pays a-t-il une démocratie dynamique ? Ce pays est-il stable sur le plan politique ? Ce pays a-t-il une politique favorable aux investissements et aux affaires ? Ce pays est-il transparent en matière de gouvernance ? Le pays dispose-t-il d'un vivier de talents qualifiés ? Ce pays dispose-t-il d'un vaste marché ? Autant de questions différentes que vous vous posez peut-être.

Et la réponse incontestée à toutes ces questions est simple : c'est l'Inde. »

Discours du Premier ministre Modi à la conférence « Invest India » au Canada le 08.10.2020

économie de plus en plus complexe, pour maintenir la stabilité des prix tout en gardant à l'esprit les objectifs de croissance ». Les politiques de la RBI (Banque de réserve de l'Inde) ont contribué à faire baisser l'inflation de l'IPC qui s´élevait à 11,5 % en 2013 à seulement 2,0 % au début de 2019, bien qu'à la mi-2020, elle ait été juste au-dessus de la partie supérieure de sa fourchette cible de 2 à 6 %.

Le rapport « Ease of Doing Business 2020 » de la Banque mondiale présente divers indicateurs qui mesurent, entre autres, la facilité à créer une entreprise, à enregistrer une propriété, à obtenir un permis de construire, à obtenir un crédit, à payer des impôts, à faire respecter les contrats et à résoudre les problèmes d'insolvabilité. Le classement de l'Inde est passé de 130 à 100 en 2019, puis à 63 en 2020. L'Inde a été reconnue comme étant l'un des dix pays qui progressent le plus parmi les 190 pays qui sont étudiés chaque année. La Banque mondiale a relevé qu' « étant donné la taille de l'économie indienne, ces efforts de réforme sont particulièrement louables ».

L'Inde se classe au 70e rang sur 141 pays pour les infrastructures dans le dernier rapport sur la compétitivité mondiale du Forum Économique Mondial. Une ventilation détaillée montre que le pays est classé 59e pour les transports ferroviaires, 49e pour les services portuaires, 48e pour les infrastructures routières et 59e pour le transport aérien. Bien que la capacité d´approvisionnement en électricité installée ait considérablement augmenté, la qualité mesurée par le pourcentage de la production réellement livrée aux consommateurs finaux, fait que l'Inde n'est classée qu'à la 108e place au niveau mondial.

Les chiffres de la Central Electricity Authority montrent que la capacité totale de production d'électricité installée en Inde à la fin de l'exercice 2019-20 s'élevait à un peu plus de 370 GW, un chiffre qui a presque quadruplé depuis 2000. Dans ce total, la capacité d'énergie renouvelable, hors hydroélectricité à grande échelle, a atteint plus de 87 GW, l'énergie solaire représentant près de 35 GW et l'énergie éolienne 38 GW supplémentaires. Ensemble, l'énergie solaire et l'énergie éolienne représentent désormais 20 % de la capacité totale mise en place.

Afin de renforcer encore ses références en matière de développement durable, le gouvernement indien a annoncé qu'aucune nouvelle capacité de production à base de charbon n'est requise au-delà des 50 GW à différents stades de construction susceptibles d'être mis en service d'ici 2022. L'Inde est désormais le troisième producteur et le troisième consommateur mondial d'électricité. La part des énergies renouvelables dans l'ensemble des capacités devrait augmenter inexorablement au cours des prochaines décennies.

ITB 2020

L'Indice de transformation de la fondation Bertelsmann (ITB, échelle de 1 à 10) analyse et évalue la qualité de la démocratie, de l'économie de marché et de la gestion politique dans 137 pays en développement et en transition.
La progression et la régression sont mesurées sur la voie d'une démocratie constitutionnelle et d'une économie de marché, accompagnées par une politique sociale.

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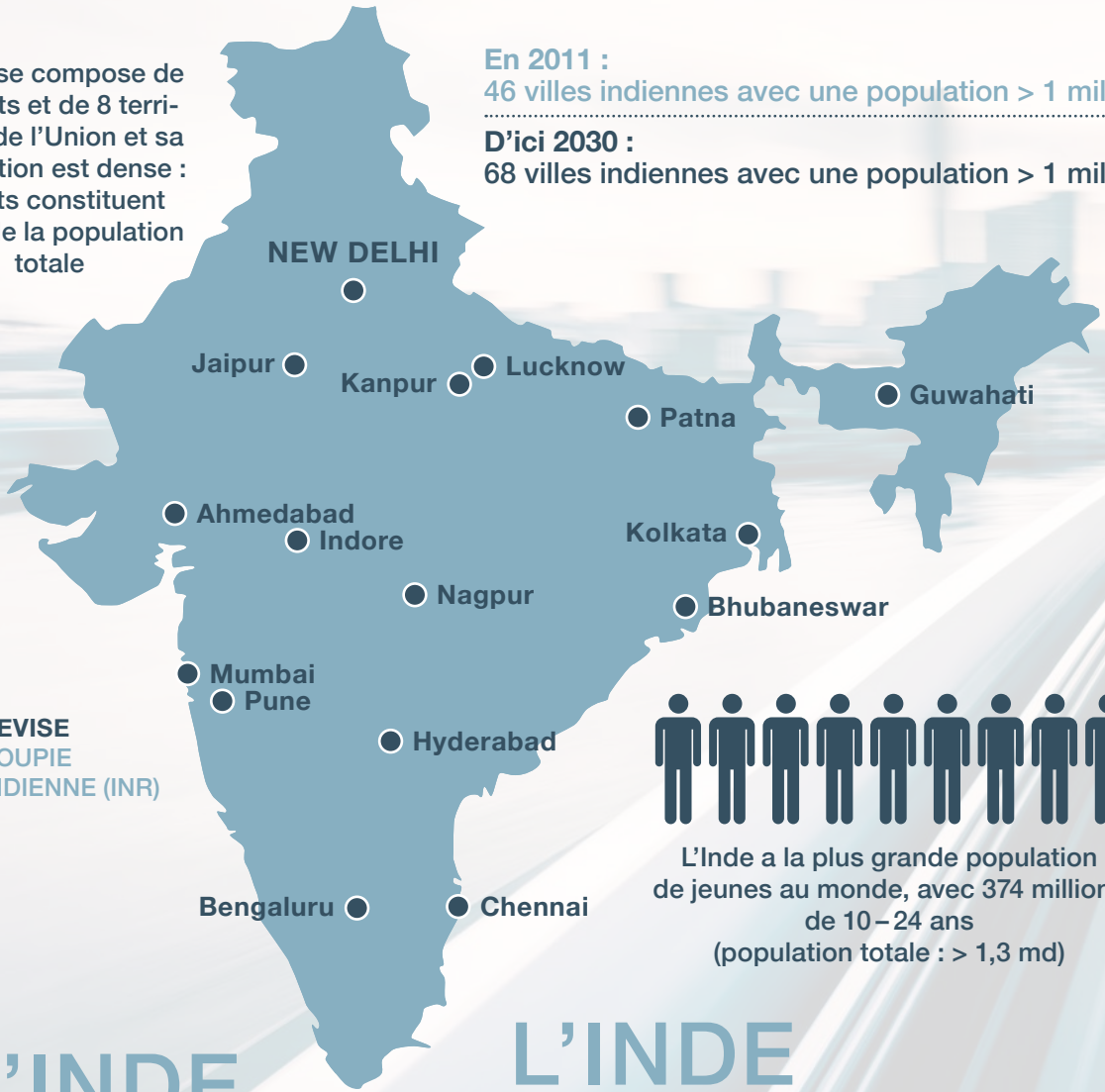
* Moyenne régionale

L'INDE
APERÇU

L'Inde se compose de 28 États et de 8 territoires de l'Union et sa population est dense : 9 États constituent 71 % de la population totale



En 2011 :
46 villes indiennes avec une population > 1 million

D'ici 2030 :
68 villes indiennes avec une population > 1 million

DEVISE
ROUPIE
INDIENNE (INR)

L'Inde a la plus grande population de jeunes au monde, avec 374 millions de 10 – 24 ans (population totale : > 1,3 md)

L'INDE
CONSTITUE ...

2,4%
de la surface mondiale

17,7%
de la population mondiale

L'INDE
EST LA PLUS GRANDE ...

démocratie dans le monde et la plus grande nation anglophone au monde

+44%

CROISSANCE DE LA POPULATION
de 2000 à 2030

+78%

CROISSANCE DU PIB
de 2010 à 2019

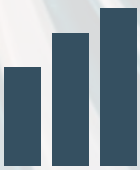
+33%

CONSOMMATION DE COURANT
de 2010 à 2018

BBB-

BBB-AVEC PERSPECTIVE STABLE

NOTATION DE CRÉDIT
Standard & Poor's



CINQUIÈME
puissance économique mondiale à la fin de l'année 2019

MAIS

70E
sur 141 pays dans le monde pour la qualité de ses infrastructures

N° 3
L'Inde est le troisième plus gros consommateur d'électricité après les États-Unis et la Chine

CINQUIÈME
plus grand marché de l'énergie solaire au monde après la Chine, les États-Unis, le Japon et Allemagne

278
MILLIARDS d'US$

Le National Infrastructure Pipeline prévoit un investissement total de 1 390 milliards de dollars. Cela équivaut à 278 milliards d'USD par an pour les cinq prochaines années.

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 range 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).

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 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.

Total land area:
3,287,263 km², 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)

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

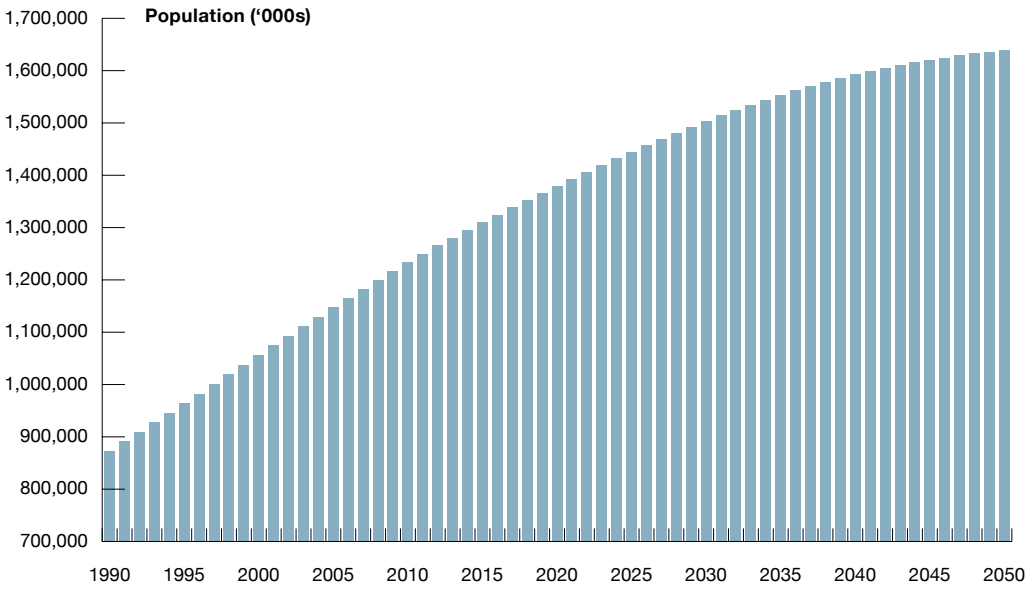
India is the world's second largest country by population with more than 1.3bn. The United Nations estimates the population will increase by more than 300m over the next 25 years and in 2028 it will overtake China to become the world's most populous nation.

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 40 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 (19.8m) in North India. Mumbai, the financial capital, is the most populous (23.1m) and also the wealthiest city in India. Bengaluru (13.9m), formerly known as Bangalore, and Chennai (11.1m), formerly known as Madras, are the largest cities in South India. Kolkata (15.3m), the cultural capital, is the largest city in East India whilst Hyderabad has more than 13m people.

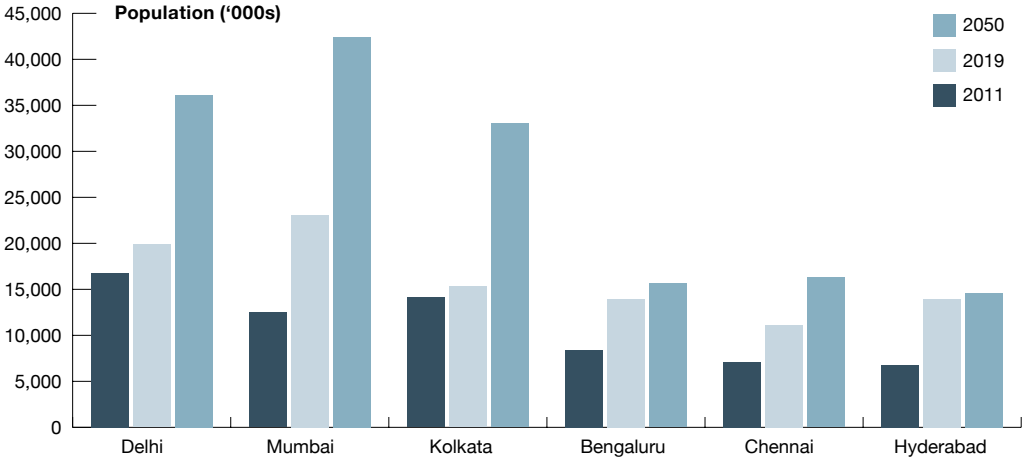
100 million people come every 12 years to the Kumbh Mela festival, the world's biggest gathering of humans.

India's population forecast to increase by almost 300mn over next 25 years



Source: United Nations Population Division

Projected growth in India's mega-cities



Source: Hornweg & Pope – Population Projections 2050

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.

Increased rural to urban migration and endogenous population increase will result in further growth in many cities across India. By 2050 the country is expected to have increased its tally of megacities to 8, and by 2100 it is projected to have 12. Existing megacities are also predicted to continue to grow in size. Delhi will increase by nearly 16 million by 2050, whilst Mumbai is set to grow by almost 20 million to become the world's most populous city by 2050. Another current megacity, Kolkata is projected to more than double in size, from 15 to 33 million.

Economy

At the start of this millennium, India's annual GDP stood at just $466,841m; less than one-third the size of the French economy whose GDP was $1,502,245m and the United Kingdom with $1,652,539m. Its economy was barely one-fifth the size of Germany which was then the world's 3rd largest with a GDP of $2,202,845m. In 2000, India was not even amongst the world's top 10 economies. Its annual GDP at that time was lower than Mexico, Spain and South Korea and it was only the 13th largest in the world.

In the first 8 years of the new century, India's economic growth accelerated from the 5.4% annual average of the previous decade; 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 nonetheless expanded at an average annual pace of 6.6% and its growth compares very well against other countries in Asia, in second place only to China.

After the country's Election in 2019, growth began to slow and latest estimates from the IMF put the annual rate at just 4.2%; the slowest pace since 2002. Weakness in the rural economy, a deceleration of private consumption and credit supply constraints from non-banking financial companies (NBFC's) were largely responsible for this slowdown, whilst the country was by no means immune to global uncertainties relating to trade, tariffs and economic activity.

In the space of less than 20 years, India overtook Mexico, Spain, South Korea, Brazil, Canada, Italy, France and the United Kingdom to be at the end of 2019 the fifth largest economy in the world after Germany. Due to its enormous and rapidly growing population, however, the per capita GDP numbers are much less impressive. For sure, average annual incomes per head have risen more than fivefold over the period from $432 to $2,270 but this is less than a quarter of China's average and only one-twentieth of the comparable G7 number.

10^{12}

India's economy has expanded 78% in the last decade. Annual GDP has increased by over USD1,100bn over the period.

Economic growth in selected Asian countries (annual % change)

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Asia 30-country total	**7,8**	**7,0**	**6,9**	**6,8**	**6,8**	**6,7**	**6,3**	**6,4**	**5,5**
China	9,5	7,9	7,8	7,3	6,9	6,8	6,9	6,8	6,1
India	6,6	5,5	6,4	7,4	8,0	8,3	7,0	6,1	4,2
Indonesia	6,2	6,0	5,6	5,0	4,9	5,0	5,1	5,2	5,0
Thailand	0,8	7,2	2,7	1,0	3,1	3,4	4,1	4,2	2,4
Philippines	3,7	6,7	7,1	6,1	6,1	6,9	6,7	6,2	5,9
Malaysia	5,3	5,5	4,7	6,0	5,0	4,5	5,7	4,7	4,3
Pakistan	3,6	3,8	3,7	4,1	4,1	4,6	5,2	5,5	3,3
Bangladesh	6,5	6,3	6,0	6,3	6,8	7,2	7,6	8,0	7,9
Vietnam	6,4	5,5	5,6	6,4	7,0	6,7	6,9	7,1	7,0
Sri Lanka	8,4	9,1	3,4	5,0	5,0	4,5	3,3	3,2	2,7

Source: IMF World Economic Outlook

India

a federal republic with **28 states** and **8 union territories**

Delhi, the national capital, is the largest city both by area and population (19.8 m) in North India.

Delhi

Population (millions)

2011 16.75

2019 **19.86**

2050 36.16

The country has a total of 40 cities that each has a population exceeding one million residents. Of these cities, six have populations that exceed 10 million.

Kolkata (15.3 m), the cultural capital, is the largest city in East India

Kolkata

Population (millions)

2011 14.11

2019 **15.32**

2050 33.04

The largest of the states

Rajasthan

342,238 km²

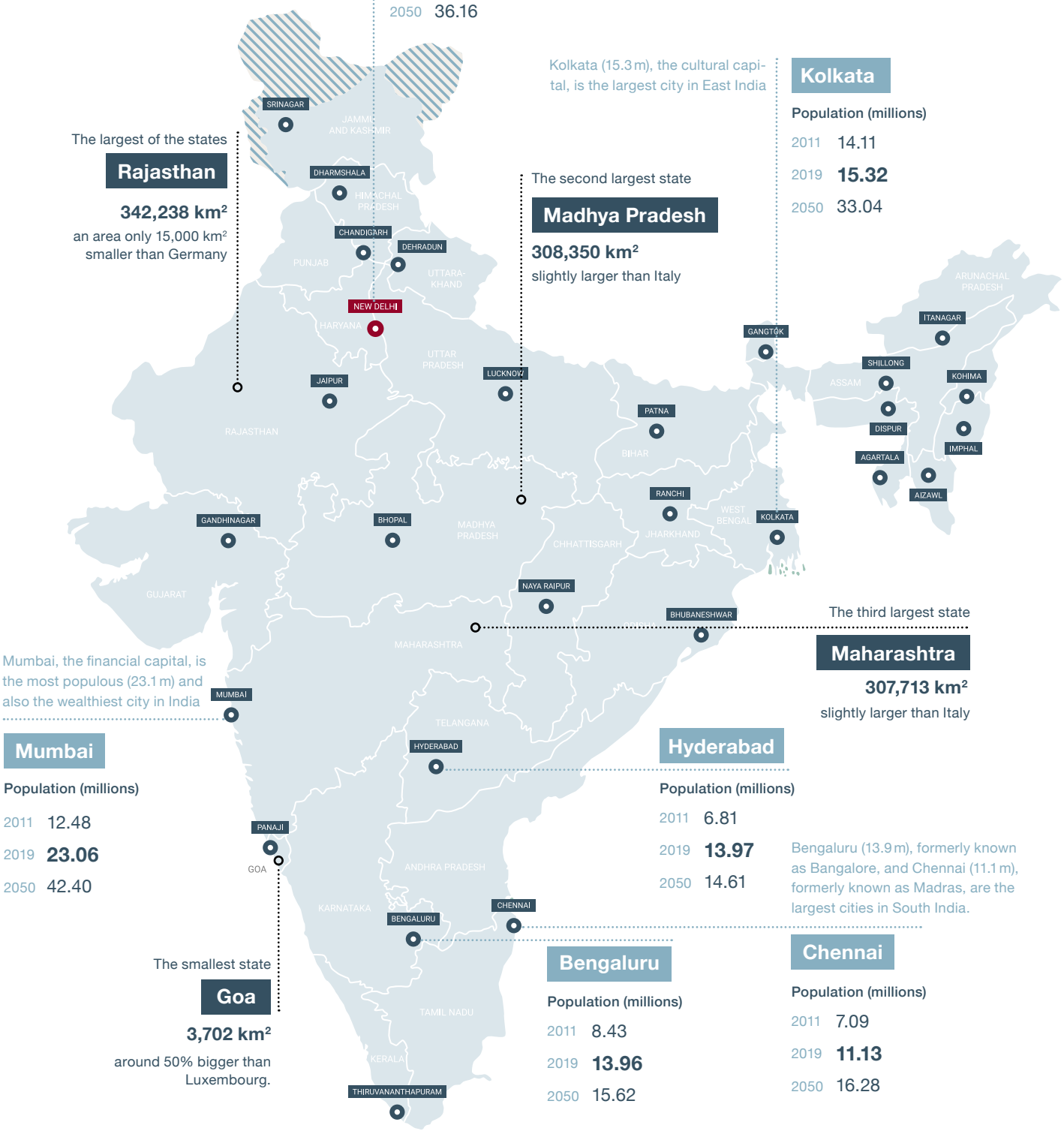
an area only 15,000 km² smaller than Germany

The second largest state

Madhya Pradesh

308,350 km²

slightly larger than Italy



The third largest state

Maharashtra

307,713 km²

slightly larger than Italy

Mumbai, the financial capital, is the most populous (23.1 m) and also the wealthiest city in India

Mumbai

Population (millions)

2011 12.48

2019 **23.06**

2050 42.40

Hyderabad

Population (millions)

2011 6.81

2019 **13.97**

2050 14.61

Bengaluru (13.9 m), formerly known as Bangalore, and Chennai (11.1 m), formerly known as Madras, are the largest cities in South India.

The smallest state

Goa

3,702 km²

around 50% bigger than Luxembourg.

Bengaluru

Population (millions)

2011 8.43

2019 **13.96**

2050 15.62

Chennai

Population (millions)

2011 7.09

2019 **11.13**

2050 16.28

Source: University of Toronto, Global Cities Institute, Socioeconomic Pathways and Regional Distribution of the World's 101 Largest Cities

India's Central Bank, the Reserve Bank of India, 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, and 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 is published after 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
- he statement of each member on the resolution adopted.

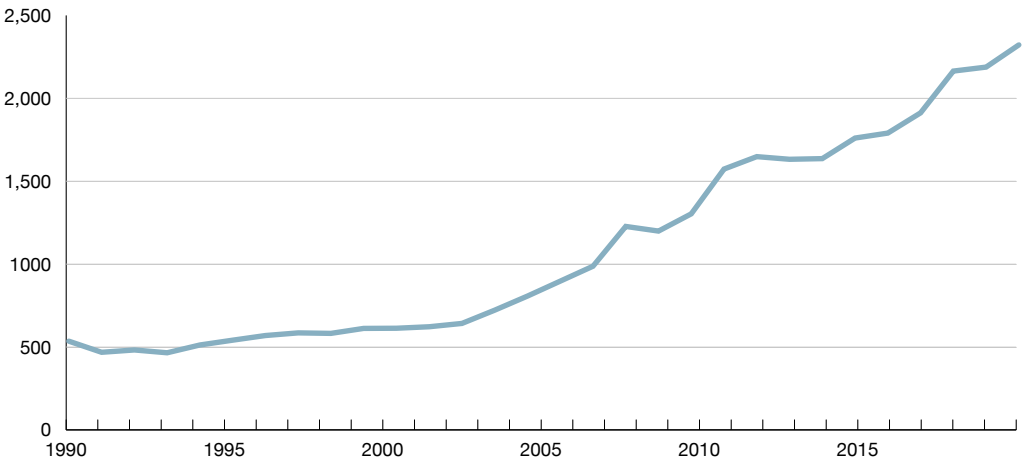
Once every six months, the Reserve Bank is required to publish a document called the Monetary Policy Report to explain:

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

10^9

Over 1 billion Indians have a mobile wireless connection and enjoy some of the lowest call charges available anywhere in the world.

Per capital GDP of India (annual USD)



Source: International Monetary Fund

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.

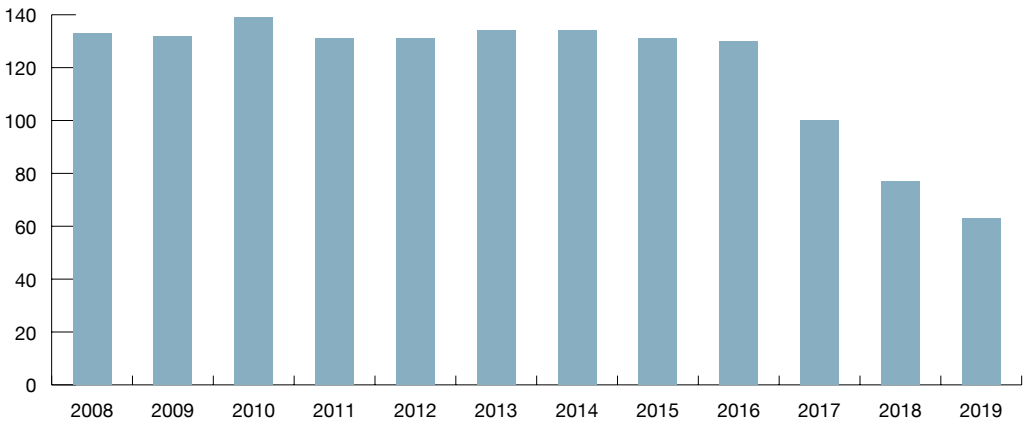
The National Institute for Transforming India (NITI Aayog) is the body charged to monitor, coordinate and ensure implementation of the globally accepted SDG's; bringing the 17 development goals into action across India. It is the premier policy 'Think Tank' of the Government of India which provides both 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. Its ambitious objectives include:

- To evolve a shared vision of national development priorities, sectors and strategies with the active involvement of States.
- To foster cooperative federalism through structured support initiatives and mechanisms with the States on a continuous basis, recognizing that strong States make a strong nation.
- To develop mechanisms to formulate credible plans at the village level and aggregate these progressively at higher levels of government.
- To ensure, on areas that are specifically referred to it, that the interests of national security are incorporated in economic strategy and policy.
- To pay special attention to the sections of our society that may be at risk of not benefiting adequately from economic progress

The World Bank's 'Ease of Doing Business 2020' 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. Despite the more challenging macroeconomic backdrop noted earlier, India's rank improved from 130 to 100 in 2019 and by 2020, it had risen further to 63. It was recognised for being one of the top 10 improvers amongst the 190 countries that are studied annually. The World Bank noted that, "Given the size of India's economy, these reform efforts are particularly commendable."

The World Bank notes that, "Prime Minister Narendra Modi's "Make in India" campaign focused on attracting foreign investment, boosting the private sector – manufacturing in particular – and enhancing the country's overall competitiveness. The government turned to the Doing Business indicators to show investors India's commitment to reform and to demonstrate tangible progress. In 2015 the government's goal was to join the 50 top economies on the ease of doing business ranking by 2020. The administration's reform efforts targeted all of the areas measured by Doing Business, with a focus on paying taxes, trading across borders, and resolving insolvency. As a result, the country has made a substantial leap upward, raising its ease of doing business ranking from 130 in Doing Business 2016 to 63 in Doing Business 2020."

World Bank's Ease of Doing Business ranking



Source: World Bank 'Ease of Doing Business 2020'

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.

Politics

India is a federal republic with 28 states and eight 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.

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 2019. Voter turnout amongst the 911 million people eligible to vote was the highest ever at 67.11% across 542 constituencies; around 0.7% higher than the 2014 Election which was itself a then-record 66.44%.

The Bharatiya Janata Party (BJP) led by incumbent Prime Minister Narendra Modi won 303 seats by receiving 37.36% of the vote. As it is a 'first past the post' electoral system, seat totals are not determined by the popular vote, but by the result in each constituency. The BJP thereby increased its already substantial parliamentary majority. The National Democratic Alliance (NDA), a grouping of centre-right and right wing political parties led by the BJP increased its total seats in the Lok Sabha to 353 with a combined vote share of 45.43%. The Indian National Congress won just 52 seats, and the Congress-led United Progressive Alliance won 91. Other parties and their respective alliances won 98 seats. Narendra Modi was sworn-in as the 16th Prime Minister of India on May 30th 2019.

The 2019 Indian parliamentary election – the world's largest ballot. 911 million eligible voters, 611 million votes cast at 113,000 polling stations.

911,000,000
Eligible Voters

611,000,000
Votes

113,000
Polling stations

Infrastructure

India has traditionally developed significant expertise in engineering and has an 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 123,542 kilometres of total track over a 67,368-kilometre route and is the fourth largest network in the world after the US, Russia and China. With a total workforce of 1.227 million people, it is the world's eighth largest employer. 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, with 8.439 billion passenger journeys.

In additional to the national rail network, there are 13 rapid transit metro systems in India. The first of these opened in Kolkata in 1984, whilst the newest opened in Nagpur in 2019. The Delhi Metro is the largest in the country. With a total length of 347 kilometres and 229 stations, it is now the world's 11th longest metro system and 22nd largest by passenger usage.

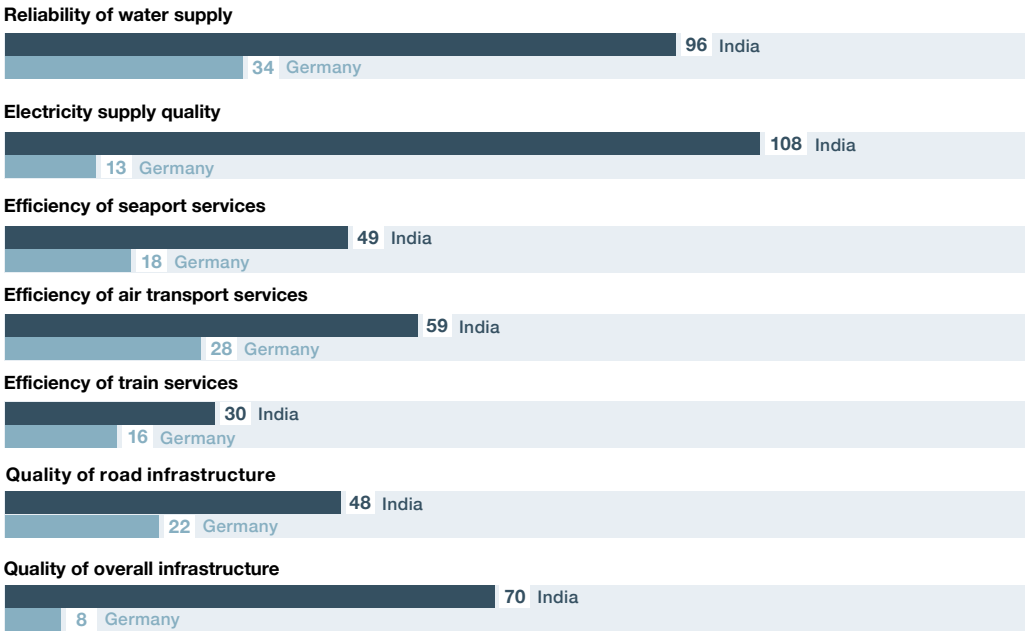
According to the Ministry of Roads, Transport & Highways, the total road-network is 5,897,671km; the second largest in the world although this total includes many narrow and unpaved roads. The length of national highways in India increased from 70,934km in 2010 – 11 to 114,158km in 2017. At 1.80 km of roads per square kilometre of land, the quantitative density of India's road network is roughly equal to Germany; higher than that of Japan (0.91) and the United States (0.68), and far higher than that of China (0.49), Brazil (0.19) or Russia (0.09).

Civil aviation was nationalised 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

1.3 Mio.

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

World Economic Forum Global Competitiveness Index for Infrastructure



Source: World Economic Forum, The Global Competitiveness Report 2019

merged in 2011. As a result of subsequent deregulation, IndiGo, Spicejet, Air India, GoAir and Vistara are now the major carriers in order of their market share. Jet Airways, meantime, has been grounded since April 2019, following financial difficulties resulting from aggressive price discounting across the sector. India is the third-largest civil aviation market in the world. It recorded air traffic of 341 million passengers in fiscal year 2019–20, of which 275 million were domestic passengers.

India has a coastline of 7516 kilometres, forming one of the biggest peninsulas in the world. According to the Ministry of Shipping, in fiscal year 2018–19 around 95% of India's trading by volume and 68% by value was done through maritime transport. India has 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.

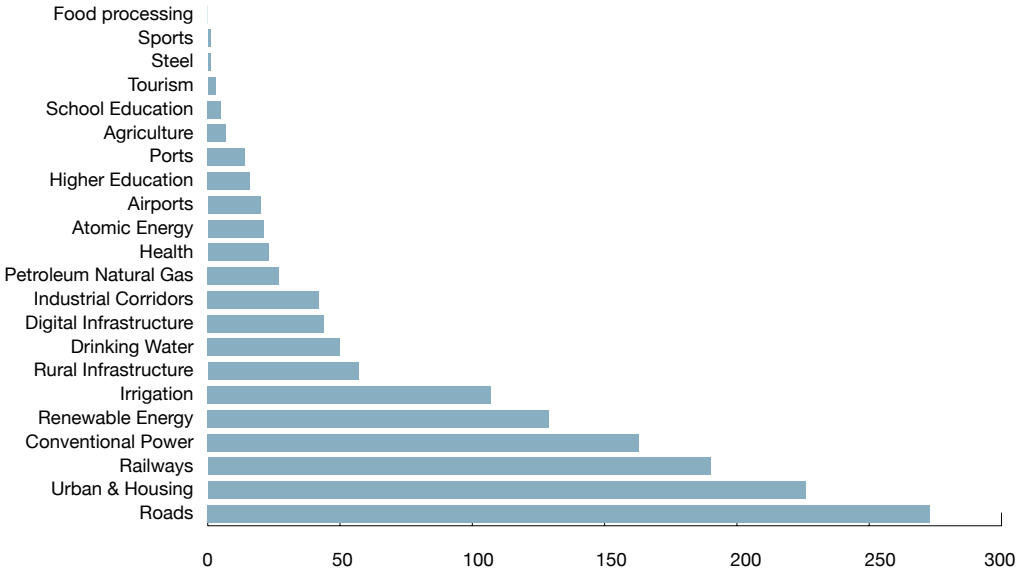
India also has an extensive network of inland waterways in the form of rivers and canals. The Inland Waterways Authority reports their total navigable length is 14,500km, of which about 5,200km of the rivers and 4,000km of canals can be used by mechanized crafts. Freight transportation by waterways is 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 with some of the lowest call charges available anywhere. As of end-2019, the Telecom Regulatory Authority of India reported a total of 1.172bn subscribers, over a billion of whom were wireless customers, plus a further 624,800 broadband internet subscribers.

For all its' impressive aggregate metrics, however, India ranks only number 70 of 141 countries for Infrastructure in the World Economic Forum's 2018–19 Global Competitiveness Report. A detailed breakdown shows it ranks 39 for railroads, 49 for ports, 48 for roads and 59 for air transport. Indeed, its overall rank of 70 was down 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.

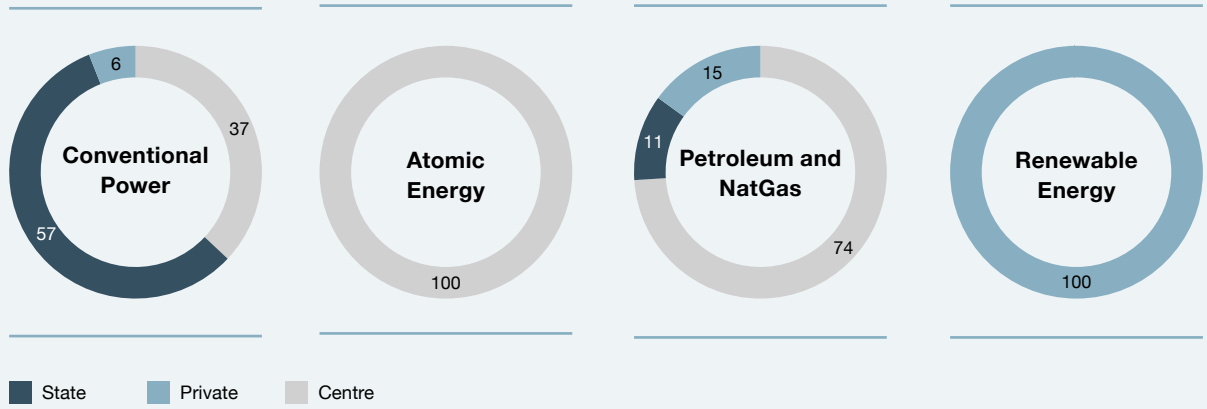
Rapid population growth means the nation must invest heavily merely to stand still. Recognising this reality, Prime Minister Narendra Modi's Independence Day speech in 2019 announced that ₹100 lakh crore would be invested on infrastructure over the next 5 years. In US Dollars, this amounts to investment of 1,390 billion or 278bn per annum.

India's National Infrastructure Pipeline (NIP) (USDmn)



Source: Government of India, Ministry of Finance, Department of Economic Affairs

Sources of funding for India's National Infrastructure Pipeline (NIP) (percentages)



Source: Government of India, Ministry of Finance, Department of Economic Affairs

Finance Minister Nirmala Sitharaman at the end of 2019 gave more details of the infrastructure plan.

Roads, urban and housing, railways and power (renewable and conventional) comprise over 70% of the National Infrastructure Pipeline whilst renewable energy, atomic energy and conventional energy comprise 22% of the total NIP investment.

There is no doubting the political will to embrace technological change and modernise the country's infrastructure, although just as India's impressive bureaucracy has contributed to the country's relative economic and political stability, it can also be a source of frustration and weakness. Contract negotiations can be complex and protracted, and whilst legal agreements are necessary to protect consumers, investors and all relevant stakeholders, the sometimes conflicting priorities of State and National governments can create formidable challenges and delays in execution.

If these difficulties can be overcome or at least mitigated, then the scope for private sector investment – most notably in renewable energy – is enormous.

Energy market

Figures from the Central Electricity Authority show that total installed power capacity in India as at the end of financial year 2019–20 amounted to just over 370 GW; a figure which has increased almost four-fold since 2000. Within this total, renewable energy capacity excluding large-scale hydropower rose to over 87 GW with solar accounting for almost 35 GW and wind a further 38 GW. Taken together, solar and wind power now account for 20% of the total installed capacity.

COAL: Coal still accounts for more than half of all electricity supplied in India with 205 GW. The country has the fifth-largest hard coal reserves in the world (roughly 10% 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."

HYDROELECTRICITY: India currently has around 50 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 4 GW of small hydro are installed with a further 10 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.

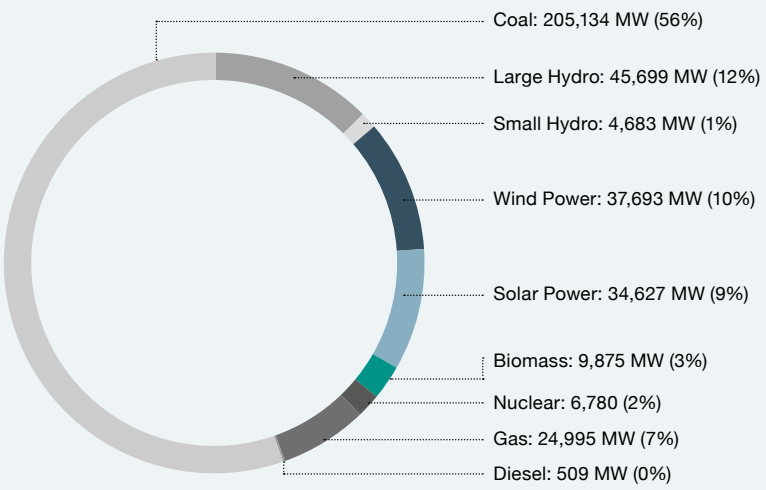
NUCLEAR: India has 22 operating nuclear reactors at seven sites, with a total installed capacity close to 7 GW. Another six nuclear power plants are under construction, which will add around 5.5 GW to the total. The current share of nuclear power in the generation mix is relatively small at 3% is way lower than the vision of the Department of Atomic Energy (DAE), which hoped to produce at least 20 GW of nuclear power by 2020. Nonetheless, India still has ambitious plans to expand its future

Total installed power capacity

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 March 1990	41,236	2,343	165	**43,744**	1,565	18,307	–	**18,307**	**63,616**	9.89%
31 March 1997	54,154	6,562	294	**61,010**	2,225	21,658	902	**22,560**	**85,795**	4.94%
31 March 2002	62,131	11,163	1,135	**74,429**	2,720	26,269	1,628	**27,897**	**105,046**	4.49%
31 March 2007	71,121	13,692	1,202	**86,015**	3,900	34,654	7,760	**42,414**	**132,329**	5.19%
31 March 2012	112,022	18,381	1,200	**131,603**	4,780	38,990	24,503	**63,493**	**199,876**	9.00%
31 March 2017	192,163	25,329	838	**218,330**	6,780	44,478	57,260	**101,738**	**326,848**	10.31%
31 March 2018	197,171	24,897	838	**222,906**	6,780	45,293	69,022	**114,315**	**344,001**	5.25%
31 March 2019	194,445	24,937	638	**220,019**	6,780	45,399	77,642	**123,041**	**349,840**	1.70%
31 March 2020	205,134	24.955	509	**230,598**	6,780	45.699	87.027	**132,726**	**370,104**	5.79%

Source: Central Electricity Authority

Installed capacity by source in India as on 31 March 2018



Source: Ministry of New and Renewable Energy

role, including a long-term plan to develop more complex reactors that utilise thorium, a potential alternative source of fuel for nuclear reactors and of which India has the world's third largest reserves. The Government has cleared the paperwork for 12 more reactors with a cumulative capacity of 9 GW.

NATURAL GAS: Natural gas has a relatively small share (7%) of the domestic energy mix totalling around 25 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 around 20% of India's energy consumption, by far the largest share of which is the traditional use of biomass for cooking in households. There was just under 10 GW of power generation capacity fuelled by biomass at end-2019; around 3% of total capacity. The largest share is based on bagasse (a by-product of sugarcane processing) and a smaller share is cogeneration based on other agricultural residues. A Report from the Indian Renewable Energy Development Agency (IREDA) in 2018 suggested the potential for biomass energy in India includes 16 GW from biomass energy and a further 3.5 GW from bagasse cogeneration.

WIND: India has the fourth-largest amount of installed wind power capacity in the world. As of March 31st 2020, the installed capacity of wind power was 37.7 GW, spread across many states. The largest wind power generating state is Tamil Nadu accounting for nearly 25% of installed capacity, followed in decreasing order by Gujarat, Maharashtra, Karnataka and Rajasthan. Wind power accounts for 10.0% 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: The Indian government had an initial target of 20 GW capacity for 2022, which was achieved four years ahead of schedule. In 2015, the target was raised to 100 GW of solar capacity (including 40 GW from rooftop solar) by 2022, targeting an investment of USD100 billion. As of March 2020, the installed capacity of solar electricity was 34.62 GW, around 9% of the total and a tenfold increase in the last 5 years alone. The largest solar power installations are in Karnataka, followed by Telangana, Rajasthan, Andhra Pradesh and Gujarat.

In May 2018, the WHO 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 $PM_{2.5}$) are in India.

Solar energy policy

India is a world leader in renewable energy. Its' success has not been accidental, but a result of determined efforts over a long period of time, well before it became fashionable and without the boom and bust cycles and expensive subsidy-based failures which characterised European efforts.

Way 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."

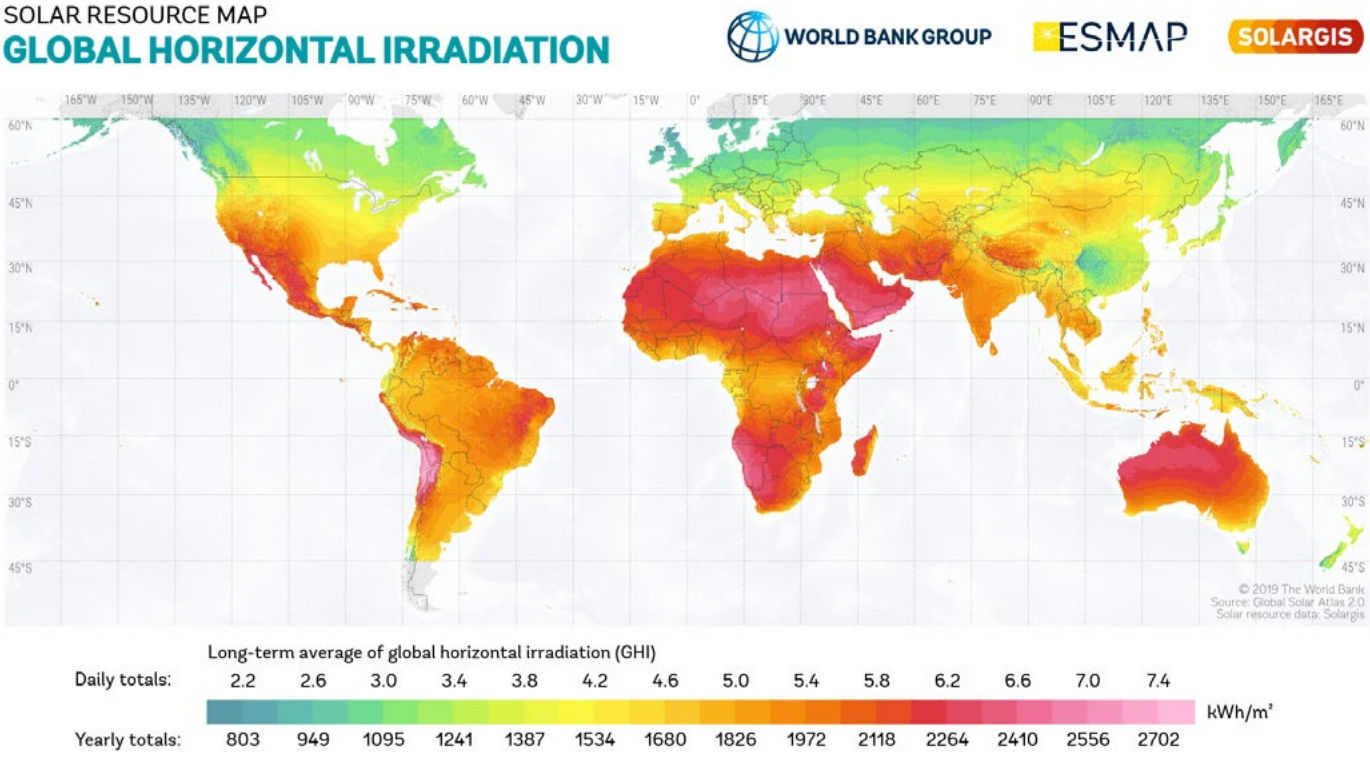
In 2010, the launch of the Jawaharlal Nehru National Solar Mission targeted 20 GW of solar energy by 2022. This target was dramatically upgraded by the Narendra Modi government in the 2015 Union Budget of India to 100 GW of solar installations by 2022; of which 40 GW of rooftop solar photovoltaics (PV) and 60 GW of large- and medium-scale grid-connected PV projects. That Budget introduced the now-familiar target of 175 GW of renewable energy by 2022: 100 GW from solar, 60 GW from wind, 10 GW from biomass and a further 5 GW from small hydro.

Political support and visionary leadership have harnessed very favourable geographical and climactic conditions. Abundant sunshine and huge areas of barren desert land are key to India's future energy strategy and significant work has been done by public and private sector organisations to quantify and map its solar potential. Our preferred analysis is that from SolarGis and their measure

700 million

India has been prioritizing access to electricity and clean cooking. Progress in both have been remarkable: 700 million people gained access to electricity since 2000, and 80 million new LPG connections for clean cooking were created. This reduces the use of traditional biomass in cooking, the chief cause of indoor air pollution that particularly affects women and children.

Solar Resource Map – Global Horizontal Irradiation



Source: © 2019 The World Bank, Source: Global Solar Atlas 2.0, Solar resource data: Solargis

of Global-Horizontal radiation which shows clearly and accurately the amount of solar energy that is available at a given time and location anywhere in India and predicts the potential future availability of solar energy in a location based on past conditions. This certainty and stability are vital components of future energy security.

Solar irradiance is the power per unit area received from the sun in the form of electromagnetic radiation. Global Horizontal Irradiance (GHI) at any particular location on earth fluctuates seasonally according to the angle of the sun and the earth's orbit around it. To make meaningful comparisons across geographies, measurements are often expressed as either the long-term average daily or annual sum of kWh per square metre. The most plentiful solar irradiance in India is found in the Northwest and Central South of the country where the annual total can be as high as 2,000 – 2,100 kWh/m^2. To help place this in a European context, Northern and Central Europe average around 850 – 1,000kWh/m^2 per annum whilst the comparable measure for Southern Europe is 1,600 – 1,700kWh/m^2.

Almost all India's current solar capacity has been installed in the past ten years. The initial 20 GW target was met in 2018 and a further 12.9 GW has subsequently been installed to take capacity to 34.6 GW. Despite generally more challenging economic conditions and amidst frequent warnings of slowdown, annual growth of solar installation has not fallen below 20% in any of the past six years – helped by continued reductions in the price of solar power. India achieved 'grid parity' in 2017 – 18 and solar power is now much cheaper than new thermally-generated power.

According to the Ministry of New and Renewable Energy, as of March 31st 2020, India had grid connected 87.03 GW renewable technologies-based electricity capacity. By 2017, renewables exceeded the capacity of major hydroelectric power for the first time ever. In 2020, the total installed capacity of solar, wind, biomass and small hydro now exceeds both hydro, gas and diesel combined.

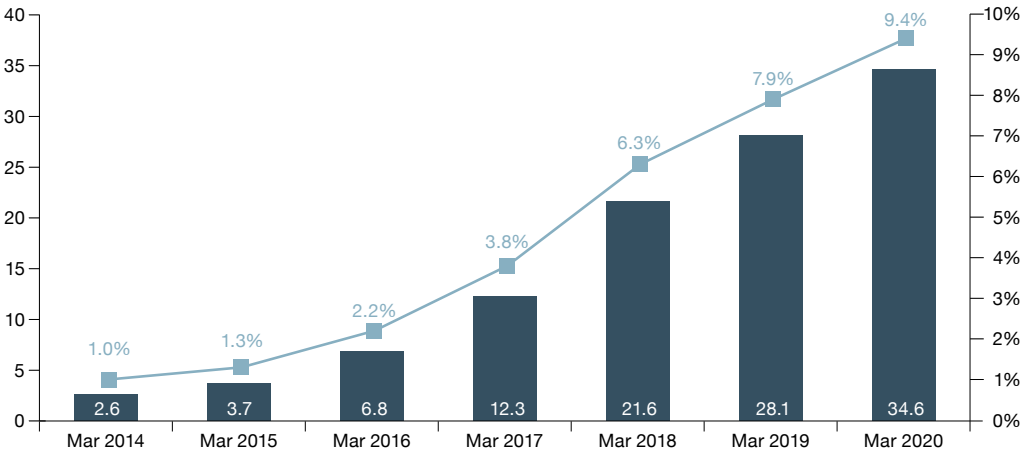
Growth of utilities' installed solar capacity

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
2018	21,651	9,362	76.18
2019	28,180	6,529	30.16
2020	34,627	6,447	22.88

Climate protection gathering pace

- In 2017, Transport Minister Nitin Gadkari shocked the automobile industry (and the world) when he announced that he intended for India to move to 100% electric cars by 2030. The target has subsequently been reduced to 30%.
- The government has now decided to focus on the segment below cars: two-wheelers, where sales are much higher, and three-wheelers (largely auto-rickshaws).
- The new proposal is to have only electric three-wheelers operating in the country by 2023, and only electric two-wheelers by 2025.
- As part of the commitment made at the Paris Climate Conference in December 2015, India agreed to spend USD6 billion to reforest 12% of its land; bringing total forest cover to 235 million acres by 2030, or about 29 percent of the country's territory.

Total installed solar capacity (GW) and market share



Source: Ministry of New and Renewable Energy

Paris Agreement on Climate Change

India is a signatory to the Paris Agreement on Climate Change and supports the achievement of the Sustainable Development Goals (SDG's). Its' Nationally Determined Contribution (NDC) under the Paris Agreement includes commitments:

- to reduce the emissions intensity of its GDP by 33 – 35% from 2005 levels by 2030.
- to achieve about 40 percent cumulative electric power installed capacity from non-fossil fuel based energy resources by 2030 with the help of transfer of technology and low cost international finance including from Green Climate Fund (GCF).
- to create an additional carbon sink of 2.5 to 3 billion tonnes of CO2 equivalent through additional forest and tree cover by 2030.
- to better adapt to climate change by enhancing investments in development programmes in sectors vulnerable to climate change, particularly agriculture, water resources, Himalayan region, coastal regions, health and disaster management.

India's immediate NDC challenge is to achieve 40% installed capacity of power from non-fossil fuels by 2030. The current 45.7 GW of large-scale hydroelectricity plus the 87.0 GW of renewable energy capacity already installed gives a total RE capacity of 132 GW; around 36% of the country's overall capacity. At recent rates of expansion, installation and new bidding in the solar sector, the NDC target is at least within reach.

India has a proven track record of success in solar energy. It is a now well-established and highly regarded investment destination with significant 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 remains a compelling proposition.

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