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ECONOMY OF UTTAR PRADESH

- Uttar Pradesh is the fourth largest state in India and has the largest population. The state's population of 200 mn is equivalent to the population of Brazil.
- The state falls under the influence area of key industrial corridors such as North-South and East-West (NS-EW) Corridor and several expressways and highways, conveniently connecting it with remote parts of the country.
- The key industries in the state include food processing, information technology (IT), tourism, mineral-based industries, auto components, textiles, handlooms and handicrafts, biotechnology, leather-based and sporting goods industries. The state has an oil refinery in Mathura, operated by Indian Oil Corporation. High livestock population in the state makes it one of the leading producers of leather products.
- It is a leading manufacturer of export oriented items such as computer hardware, brass works, hand printing, cotton yarn, black pottery, jewellery, silk dress materials, betel leaves, chemicals, stone products etc.
- There are many export-oriented items made across Uttar Pradesh such as software, electronics, computer hardware, chemicals, stone products, brass work, betel leaves, potato based products, hand printing, leather items, cotton yarn, sarees, silk dress material, black pottery, handicraft items, art products, jewellery etc.
- Uttar Pradesh is India's largest milk-producer, second largest producer of hydel power and third largest producer of thermal power. It has a total installed power capacity of over 25,000 MW.
- The state is also a leader in the production of multiple food and horticulture crops such as wheat, sugarcane, potato and mango, among others. Noida-Greater Noida region in the state is home to eight operational Information Technology Special Economic Zones (SEZs).
- The state has 143,000 MSMEs and heavy industrial units set-up their base during the 12th five-year plan. The state has the highest number of cities identified under the Smart Cities Mission of the Indian central government.

INDUSTRIES

■ Auto-Components

- ▶ Uttar Pradesh is home to a large pool of suppliers, majorly located in Noida and Ghaziabad. In 2016-17, car and two-wheeler sales in the state reached 2.6 million units, respectively.
- ▶ In July 2016, Ford India announced its plans to expand retail distribution of Ford genuine parts in Uttar Pradesh.

■ Biotechnology

- ▶ Lucknow is the biotech capital of the state and has the presence of over 3,000 highly qualified scientists working in drug research labs. The state government aims to reduce the gap between potential and actual yields through the application of biotechnology.

■ Food Processing

- ▶ Uttar Pradesh is the largest producer of food grains in India and accounted for about 18% of the country's total food grain output in 2015-16. With 9 agro-climatic zones, the state is a leader in the

production of wheat and sugarcane.

- ▶ The state produced 134 million tonnes of sugar in 2015-16. Also a leader in milk production, the state accounts for 21% of the country's total production.

■ IT and ESDM

- ▶ Uttar Pradesh has about 25 SEZs for IT and ITeS and over 40 IT and ITeS parks. Noida has emerged as one of the key IT clusters of the country.
- ▶ The state also has the presence of an IT city in Lucknow and IT parks in Agra, Meerut, Gorakhpur and Kanpur.

■ Leather

- ▶ Uttar Pradesh is the 2nd largest producer of leather goods and contributes about 25% to the total production of leather and leather products in India.
- ▶ Items of major exports are finished leather, leather footwear, saddlery and harness items. Kanpur and Agra districts are respectively the major saddlery and leather shoe manufacturing hubs in India.
- ▶ The state is also the largest exporter of saddlery goods in India.

■ Chemicals and Petrochemicals

- ▶ Uttar Pradesh contributes about 6% to India's total production of chemicals. Chemical manufacturers like Tata chemicals, Kanoria chemicals and Jubilant Life Sciences have their presence in the state.
- ▶ There is a huge availability of raw materials for the production of fertilizers in Bundelkhand area and rock phosphate in Lalitpur. The state is also the leading state in the production of alcohol (from molasses) and of molasses with a share of 29.4% and 26.8% respectively.
- ▶ Sulphuric acid, bio sulphides centre are located in Kanpur.
- ▶ Soda Ash and Amonia Chloride industries are located in Varanasi. Bareilly is famous for synthetic rubber industry.
- ▶ Phosphorous and Urea are the two main fertilizers produced in the state. Phosphorus manufacturing industries are located in Kanpur, Allahabad, Magarwada, while Urea manufacturing industries are located in Kanpur, Bareilly, Gorakhpur and Prayagraj.

■ Agriculture, Livestock, Fishing

- ▶ UP comprises fertile regions of indo- Gangetic Plain which is reason for agriculture growth. It has also irrigation facilities of canals and tube-wells. Western UP has developed in terms of irrigation.
- ▶ Sugar industry is the largest agro-based industry in India. Western part of UP has greater number of mills and Muzaffarnagar district has the highest number of sugar mills. First sugar mill was established in 1903 in Pratappur, Deoria.
- ▶ Gorakhpur, Ghaziabad, Meerut, Kanpur, Shahjahanpur, Lucknow, Varanasi, Faizabad, Allahabad, Basti and Bareilly are the main sugar producing industries.
- ▶ Both coarse and loaf (Tagar) sugar are prepared in the state. The state holds first rank in the production of jaggery.

Institutions for the development of the sugar industry:

- **Sugarcane Development Board:** It was constituted in the year 1948-49.
- **Uttar Pradesh Cooperative Sugar Factories Federation:** It was established in 1963.
- **Uttar Pradesh Sugar Mill Corporation Limited:** It was established in 1971.
- **Uttar Pradesh Sugar Peasant Institute:** It was established in Lucknow in 1975. Its name was changed to Lal Bahadur Shastri Sugar Peasant Institute.

- ▶ There are some small scale industries in Uttar Pradesh Lakhimpur Kheri is major sugar producing area in the country. The state is mainly known for producing Rice, Oil- seeds, Pulses and Potatoes, Mangoes. Uttar Pradesh has also major fishing area which comprises more than 170 types of fish.

■ Minerals and Heavy Industries

- ▶ Uttar Pradesh is the source of many important minerals and germs. It has reserves of gems, dolomite and coal, sulphur, pyrophyllite, diaspore, limestone and silica sand.
- ▶ Sonbhadra, Mirzapur, Ghaziabad, Kanpur, Gautam Buddha Nagar, Lucknow, and Balrampur are the major industrial areas of Uttar Pradesh.
- ▶ Mirzapur district is famous for aluminium manufacturing.
- ▶ Hindustan Aluminium Corporation Company (HINDALCO) makes aluminium blocks and sheets, which is located in Renukoot, Sonbhadra. The factory gets bauxite from Varanasi and Banda districts.
- ▶ Hathras, Firozabad, Naini, Makhanpur, Saharanpur, Sasni etc are the major glass manufacturing centres in the state. UP is the leading producer of glass.
- ▶ Firozabad bangles are famous in all over India. Glass utensils, chimneys, and other decoration pieces are manufactured in the state. Thus, Firozabad is known as Suhag city.
- ▶ Moradabad is famous for the craft of metal brassware and large quantities of brass is produced here. Varanasi, Mirzapur, Farrukhabad, hapur, Shamli etc are the major centres of nickel and brass utensils.
- ▶ Famous cities for the manufacturing of scissors and knife are Meerut, Hathras, Aligarh and Mathura. Copper utensils and brass statues are made at Mathura.

■ Khadi and Village Industries

- ▶ About 80% of the rural population is based on agriculture based industries. Khadi and Village Industries Commission (KVIC) was established in 1956 and Khadi and Village Industries Board established in 1960 in Uttar Pradesh, which played an important role in promoting Khadi and village industries in rural areas.

■ Handloom & Handicrafts

- ▶ Major source of income in U.P is handlooms and handicrafts. Its major centers are located in eastern U.P including Bhadohi, Mau Aima, Azamgarh, Tanda, Banaras. Meerut and Etawah are some of the popular handloom centers in U.P.
- ▶ Printing on malmal is done at Mathura while Agra, Bareilly, Mirzapur, Aligarh are the centres of carpets.
- ▶ Blankets are manufactured at Muzaffarnagar and Naziabad.
- ▶ In Varanasi, Kanpur and Gorakhpur, handloom design development and training centres are located.
- ▶ Moradabad is popular globally for its brass work. Its handicraft items are exported all over the world. Not only brass, it is producing many other products such as iron sheet metalwares, wood works, aluminium artworks, and glasswares.

Schemes related to handloom industry in UP

- **Deen Dayal Handloom Encouragement Scheme:** It was implemented from 2000-01 for handloom related basic input.
- **Deen Dayal Handloom Marketing Encouragement Scheme:** It was implemented from 1980-90 for adequate marketing of the products.
- **Integrated Handloom Development Scheme:** It was implemented from 2005-06 by Government of India.
- **Janshree Insurance Scheme:** It was implemented from 2003-04 to benefit handloom and powerloom weavers of age between 18 to 60 years.
- **Mahatma Gandhi Weavers Insurance Scheme:** It is implemented by Government of India in association with LIC of India. Its objective is to provide extended insurance cover to handloom weavers.

GoCoop – Promoting Handloom through e-commerce

- GoCoop is an online marketplace which gives rural handloom weavers' cooperatives a platform to sell their products at market prices, directly to buyers across the world.
- GoCoop works with more than 275 handloom weaver cooperatives across 10 states in India. They constitute 90 per cent of GoCoop's supplier base; the rest comprising individual weavers, other craft-based social enterprises and NGOs.

■ Textile Industry

- ▶ Varanasi is famous all over the world for its embroidered textiles, handloom woven. The city also manufactures diesel electric locomotive at diesel locomotive works.
- ▶ Lucknow is center of Chikan embroidery.
- ▶ The state ranks third in cotton textile industry. Kanpur, Agra, Meerut, Bareilly, Ghaziabad, Hardoi, Hathras, Aligarh, Saharanpur, Badaun, Allahabad, Varanasi, Rampur, Moradabad, Mirzapur, Modinagar and Bhadoi are important centres of textile industry.
- ▶ Kanpur is also called the Manchester of the east because the district has a large number of textile mills. Even Mirzapur and Kanpur are the important places of woollen industry. Lal Imli mills in Kanpur was famous for woollen industry.
- ▶ Blankets are manufactured in Muzaffarnagar, Naziabad, and Meerut. In UP, first woollen textile industry was established in 1876 in Kanpur.
- ▶ Bareilly, Agra, Aligarh, Etawah, Sitapur, Mirzapur, Varanasi, Mathura etc are the main carpet manufacturing centres in the state.
- ▶ Varanasi, Etawah, Kanpur and Modinagar are the main centres of silk industry. Mostly mulberry silk is produced in the state. Apart from mulberry silk, tassar silk, eri silk and arandi silk is also produced.
- ▶ Banarasi silk sarees of Varanasi are world famous.
- ▶ Territorial Cooperative Sericulture Federation was constituted in 1992 the state for development of silk production.

| Research & Development Centres | Place |
|---|-------------------|
| Mulberry Silk Research and Development Centre | Subhagpur (Gonda) |
| Tassar Silk Research and Development Centre | Sonbhadra |
| Eri Silk Research and Development Centre | Auraiya |

■ Wooden and Furniture Industry

- ▶ Varanasi, Hathras, Saharanpur and Bareilly are the famous centres for wooden industry.
- ▶ Saharanpur and Nagina are famous for its wood carving. Lucknow and Varanasi are famous for wooden toys and wooden sticks are made in Bareilly.
- ▶ Meerut and Agra are famous for cricket bats and other playing goods. Wooden brushes are manufactured at Kanpur, Allahabad, Agra and Meerut.

■ Paper Industry

- ▶ The first paper industry in the state was established in 1879 in Lucknow. Muzaffarnagar is the main center of paper manufacturing industry.
- ▶ Lucknow, Kanpur, Allahabad, Muzaffarnagar, Ghaziabad and Moradabad are the major centres of this industry.

Important Facts

- The leading gold market of Asia is located in Meerut. It is a leading exporter of music instruments and sports related items.
- Bulandshahr is popular all over the world for its Khurja Pottery. It is exported to many foreign countries such as United Arab Emirates, Australia, USA, United Kingdom, UAE etc.
- Cities like Agra, Aligarh, Bareilly, Allahabad, Ghaziabad, Noida, Lucknow etc are also center of many institutes.
- Noida has also become a hub for software and mobile app development companies like HCL, Barclay's, Samsung, Agicent, CSC. These companies are contributing a lot in increasing the economy of this city.
- The major industries in urban areas of Lucknow are machine tools, furniture, automotive, chikan embroidery, distillery chemicals.
- Ghaziabad is mainly referred as educational and real estate hub. It is also hub of ther industries including automobile, construction, IT and engineering.

The location of different Small and Cottage industries in Uttar Pradesh is as follows;

| Industry Name | Centre Name |
|--------------------------|---|
| Clay Toys | Agra |
| Biscuits | Modinagar, Agra and Aligarh |
| Perfume and fragrant oil | Kanauj, Ghajipur, Jaunpur, Lucknow and Allahabad |
| Carpet construction | Bareilly, Agra, Aligarh, Etawah, Mirzapur |
| Floor Cloth | Agra, Varanasi, Bhadohi, Mirzapur, Bareilly, Saharanpur |
| Matchbox Industry | Bareilly, Saharanpur, Allahabad, Meerut |
| Soap Industry | Kanpur, Agra, Modinagar, Ghaziabad, Meerut |
| Furniture Industry | Hathras, Varanasi, Saharanpur, Bareilly |

| | |
|--|---|
| Handloom and cotton textiles | Meerut, Deoband, Dhampur, Secunderabad, Tanda |
| Cigarette Industry | Saharanpur, Ghaziabad |
| Paint-and-Varnish Industry | Kanpur, Meerut, Ghaziabad, Modinagar |
| Torch Manufacturing | Lucknow |
| Medicine Manufacturing | Kanpur, Jhansi, Lucknow, Saharanpur |
| Faucet Pipe | Allahabad, Kanpur, Lucknow |
| Ceramic utensils | Khurja, Allahabad |
| Manufacturing of paper by hand | Mathura, Kalpi and kagji Sarai |
| Iron Weights | Saharanpur, Agra |
| Brass statues | Mathura |
| Brass locks, Pliers, Knives, Scissors | Hathras, Mathura, Aligarh, Meerut |
| Brass pot | Varanasi, Mirzapur, Farrukhabad, Hathras |
| Sports equipment | Agra and Meerut |
| Wooden toys | Lucknow and Varanasi |
| Cane sticks | Bareilly |

One District One Product (ODOP) Scheme

- This scheme aims to promote popular products from each district of UP. Such a Scheme was first launched in 1979 by the Governor Morihiro Hiramatsu of Oita Province of Japan.
- After this, it was also adopted in the form of one tambon-one product in Thailand during the time of the then Prime Minister of Thailand, Thaksin Suvadthra. Apart from this, Indonesia, Philippines, Malaysia and China have also adopted this model.

Special Economic Zones in Uttar Pradesh

- The State Government of Uttar Pradesh introduced the Uttar Pradesh Special Economic Zone Act, 2002 for the smooth functioning of the Uttar Pradesh Special Economic Zone.
- In 2007, Uttar Pradesh Special Economic Zone Policy (Ahmedabad) was also released.
- The Uttar Pradesh Special Economic Zone is being developed on the basis of SEZ unit at Shanghai in China. The world standard infrastructure facilities at the SEZ and global standard SEZ products requires assistance from the best private sector companies in India in terms of investments.
- The Central government of India has sanctioned four SEZ units in Uttar Pradesh and 10 more SEZ propositions are provided with probationary sanctions. The first four units of SEZ would be implemented in Noida, Moradabad and the two remaining ones would be developed by WIPRO and HCL in Noida.
- Till December 2016, in Uttar Pradesh, in addition to Noida Special Economic Zone (SEZ) set up by the Central Government and Moradabad SEZ set up by the State Government, a total of 19 SEZs have been notified.

Features of Uttar Pradesh SEZ Policy are:

- The methods used in the acquisition of lands are highly effective and time conserving
- The use of single window system pertaining to granting of permits and approvals based on issues such as work force and environment
- The exemptions pertaining to registration fees and stamp duties
- The exemptions from different kinds of tariffs, local and state duties, and taxes pertaining to the functions in the special economic zones
- Permission pertaining to the setting up of power generation units by the manufacturing units for their own use

MSME in Uttar Pradesh

- The state has around 52.38 lakh MCMes which is around 11.55% of the total number of MSMEs in India in 2015-16.
- With the second highest number of MSME units in the country, Uttar Pradesh today is a leading exporter of MSME products in categories like handicrafts, engineering goods, carpets, readymade garments, leather products etc.
- MSME institutes are located in Kanpur, Agra, Varanasi and Prayagraj.

Export Promotion Bureau

- It was established by the Govt. of U.P. in the year 1999 for promoting exports from the State of U.P. The Bureau is headed by Export Commissioner who is also Principal Secretary, Small Scale Industries and Export Promotion for the State of U.P. Export Promotion Bureau office is located 'in Gomti Nagar, Lucknow.
- The objectives of the Bureau is to take effective steps for export promotion in coordination with all the Government Departments and to create a favourable environment for the exporters. It interacts with the exporters on one hand and Export Promotion Councils, Agencies, Export Associations, State and Central Government Bodies on the other hand.
- The Bureau assists exporters in export procedure, various facilities and assistance offered by the State and Central Agencies.

INDUSTRIAL & INFRASTRUCTURE POLICY, 2012

■ Vision

- ▶ To establish Uttar Pradesh as the most preferred destination for investment by attracting investors, thereby accelerating economic growth and creating vast employment opportunities, resulting in qualitative improvement in the living standard of people.

■ Objective

- ▶ It is proposed to achieve the following objectives through the New Infrastructure and Industrial Investment Policy:
- ▶ To achieve industrial development growth rate of 11.2 percent per annum, aligned with the target of 10 per cent per annum growth in State Gross Domestic Product (SGDP) as envisaged in the Twelfth Five Year Plan

- ▶ To accelerate industrial development in the State Creation of congenial industrial environment and high-end infrastructure facilities to attract investment in the State
- ▶ To further strengthen the existing industrial capacity in the State
- ▶ To create new employment opportunities across all economic sectors
- ▶ Eradicating regional industrial imbalance by uniformly extending the benefits of investment to all geographical areas of the state
- ▶ Qualitative enhancement of skill and capacity of human resources of the state

■ Food Processing Industrial Policy 2012

- ▶ The Food Processing Industrial Policy 2012 aims at creating a favourable atmosphere for setting up of food processing units in the state through creation of infrastructure facilities, encouragement to capital investment and technological up-gradation, human resource development, development of marketing network, research and development promotion, quality and certification and grants and concessions.

■ Industrial Investment and Employment Promotion Policy, 2017

- ▶ The Industrial Investment & Employment Promotion Policy of Uttar Pradesh 2017 will strive to leverage the inherent strengths of the state while developing new ones and tackling its underlying weaknesses considering the economic dynamics at play at the Indian, Asian and Global level.
- ▶ The policy will aim to create a framework to stabilize and make existing industries more competitive as well as attract and realize new international and national investments in the industrial sector. The core intentions of the policy are –
- ▶ Create a framework for industrial growth that empowers people and create jobs, thus leading to a ripple effect in the economy
- ▶ Create a roadmap in the State for improving its ability to attract and facilitate business.
- ▶ Provide a reference point for intra-governmental and public-private coordination of policies, laws and principles of economic development.
- ▶ Stimulate institutional learning that comprises state-industry interactions.

■ Major Industrial Corporations and Institutes of Uttar Pradesh

- ▶ **Uttar Pradesh Small Industries Corporation Limited** is a Public incorporated on 13 June 1958. It is classified as State Govt company and is registered at the Registrar of Companies, Kanpur.
- ▶ **Uttar Pradesh State Textile Corporation Limited** is a Public incorporated on 02 December 1969. It is classified as State Govt company and is registered at the Registrar of Companies, Kanpur.
- ▶ **Uttar Pradesh State Handloom Corporation Limited** is a Public incorporated on 09 January 1973. It is classified as State Govt company and is registered at the Registrar of Companies, Kanpur.
- ▶ **Uttar Pradesh Electronic Corporation** was established as a supportive company of Pradeshiya Industrial & Investment Corporation of U.P. Ltd. (PICUP) in 1976 in Lucknow. The headquarters is situated in Lucknow.

INDUSTRIAL AUTHORITY IN UTTAR PRADESH

■ New Okhla Industrial Development Authority (NOIDA)

NOIDA Constituted under the U.P. Industrial Area Development Act, 1976. NOIDA is one of the largest planned industrial townships of Asia. Set up in 1976, with a view to develop an Integrated Industrial Township for the industrial growth of the area, under the Uttar Pradesh Industrial Area

Development Act, it best symbolizes harmony between human habitat and Industrial Enterprise. Software Technology Park of India situated in sector 29, NOIDA is the second largest exporter of software in the country.

■ **Satharia Industrial Development Authority:**

It was established on 30th November, 1989 in Jaunpur under the State Government Industrial Development Act, 1956.

■ **Gorakhpur Industrial Development Authority (GIDA):**

- ▶ It was established in 1998 in Gorakhpur of Uttar Pradesh.
- ▶ New House Scheme, Apparel Park, Textile parks and Transport city was also established in the state.

■ **Yamuna Expressway Industrial Development Authority:**

It was established in 2001.

■ **Lucknow Industrial Development Authority:**

It was established between Lucknow and Unnao in 2005. Its head office is situated in Lucknow.

■ **Uttar Pradesh Financial Corporation (UPFC) limited:**

It was established in 1954 under the State Financial Corporation Act, 1951 with its lead office at Kanpur. The corporation is presently engaged in implementing various state govt. industrial promotional schemes viz; Audhyogik Nivesh Protsahan Yojana ,Infrastructure interest subsidy scheme ,capital investment interest subsidy scheme ,quality control equipment interest subsidy scheme and contributing an important role towards industrial development of the state.

GOVERNMENT INITIATIVES IN UTTAR PRADESH FOR INDUSTRIAL DEVELOPMENT

- **Nivesh Mitra:** The main objective of the system is to enable 'ease of doing business in Uttar Pradesh' through facilitating the entrepreneurs with the electronic based transparent system for online submission and tracking of applications including online fee payment.
- Its main objective is to collaborate in the holistic development of industry friendly environment through progressive regulatory processes, efficient system and effective measurable timelines
- **Udyog Bandhu [Friend of Industry]** is an organization of the State Government of Uttar Pradesh in India; dedicated to facilitate Investment in Industrial and Service Sectors, besides solving various problems of existing & up-coming industries as well, related to different Government departments.
- **Green Field Integrated Township:** The Government of Uttar Pradesh has launched two new projects for setting up of integrated townships. These are Trans Ganga Project and a proposed project at Naini, Allahabad.
- **Plastic city:** It is being developed at Auraiya. GAIL is the main supplier of raw material for the plastic city.
- **Gold Card and Silver Card Scheme:** Gold and silver cards are issued to the exporters by EPB (Export Promotion Bureau) under this scheme. The State Government provides different facilities to the card holders such as priority in Government work, priority in appointment with senior officials of the State Government, entry in Uttar Pradesh Secretariat without problem, etc.

- **Prime Minister Employment Generation Programme (PMEGP)** is a credit-linked subsidy programme introduced by the government of India in 2008. PMEGP is a merger of two schemes, namely, Prime Minister's Rojgar Yojna and Rural Employment Generation Programme. This program focuses on generating self-employment opportunities through micro-enterprise establishments in the non-farm sector by helping unemployed youth and traditional artisans.

ENERGY RESOURCES IN UTTAR PRADESH

- Uttar Pradesh is rich in renewable energy resources such as biomass, solar and biofuels, of which only biomass has been considerably exploited.
- Silica, limestone, and coal are found in considerable quantities in Uttar Pradesh. There also are small reserves of gypsum, magnesite, phosphorite, and bauxite.
- The national government has supported the development of coal fields in the southeastern area around Mirzapur.
- The state often suffers from shortages of power. Installed capacity has greatly increased since Indian independence, but the gap between supply and demand remains wide. A large amount of power is generated at the Obra-Rihand complex in southeastern Uttar Pradesh, one of India's biggest thermal stations.
- Other facilities include a growing number of small and large hydroelectric power plants in various parts of the state and at a nuclear power station in the western district of Bulandshahr (near Delhi).

■ Thermal Power Plants

- ▶ The state of Uttar Pradesh is home to some of the leading thermal power plants like the Obra Thermal Power Station, Anpara Thermal Power Station, Panki Thermal Power Station, Parichha Thermal Power Station, Harduaganj Thermal Power Station, Tanda Thermal Power Plant, Singrauli Super Thermal Power Plant and many more.
- ▶ Apart from the operating thermal power plants in Uttar Pradesh, several other thermal plants are also coming up in the state.
- ▶ Currently, the total installed capacity of thermal power plants run by the Nigam is more than 5,500 Mw at Harduaganj, Pariccha, Obra and Anpara. The private sector power plants have additional installed capacity of nearly 6,360 Mw at Anpara, Roja, Bara and Lalitpur.
- ▶ However, net generation by these public and private sector plants is only about 12,000 Mw, while UP gets nearly 7,000 Mw from the central sector. The state imports power from other sources, including energy exchange and bilateral agreements, which currently stands at about 3,000 Mw.
- ▶ Public sector thermal power plants' load factor had risen by about nine per cent to almost 79 percent, while generation cost had come down, helping state power utility UP Power Corporation Limited (UPPCL) save Rs 933 crore.

Important thermal power stations in the state are as follows:

- **Obra Thermal Power Station** is situated at Obra in Sonbhadra district in Uttar Pradesh. The plant is 125 km away from Varanasi. It is equipped with 13 units, each of which is coal.
- **Anpara Thermal Power Station** is situated at Anpara in Sonbhadra district of Uttar Pradesh. It is almost 200 km away from Varanasi. This Uttar Pradesh thermal power station has 5 units each of which are coal-fired stations. The coal requirements of the plant are fed by Kakri, Kharia and Beena coal mines, NCL. The plant has an installed capacity of 1630 MW, which happens to be the highest among all the thermal power stations in UP.

- ◉ **Panki Thermal Power Station** is situated at Panki, in the Kanpur district of Uttar Pradesh, the Panki Thermal Power Station is only 16 km away from Kanpur. The plant was formed in 10 stages, both with 10 8 units. The coal to the plant is supplied by the coal mines of ECL and BCCL.
- ◉ **Parichha Thermal Power Station** is situated at Parichha in Jhansi district of Uttar Pradesh. It is 25 km away from Jhansi. This Uttar Pradesh thermal power plant has 1 stage with 2 units. The coal is provided to the plant by BCCL and ECL. The plant has an installed total capacity of 890 MW, divided into two units of 210 mw and two units of 110mw.
- ◉ **Harduaganj Thermal Power Station** is situated at Harduaganj in the Aligarh district of Uttar Pradesh. It is about 18 km away from Aligarh. The plant consists of 3 stages with seven units. 460 MW is the total capacity of this power plant.
Situating at Vidyutnagar in the Ambedkarnagar District of the state of Uttar Pradesh, **Tanda Thermal Power Plant** is a coal based plant generating electricity of 440 MW. North Karnpura CoalFields supplies the plant with coal while the water is served by the Sarayu River.
- ◉ **Singrauli Super Thermal Power Plant** is at Singrauli in Uttar Pradesh. This coal based plant has been formed by NTPC.
- ◉ **Chandausi Thermal Power Plant Station** is located in Chandausi in Sambhal district of Uttar Pradesh. It has an installed capacity of 200 MW.

| Power Station | Location | District | State | Installed Capacity (MW) |
|---------------------------------------|--------------|-------------------|---------------|-------------------------|
| Obra Thermal Power Station | Obra | Sonebhadra | Uttar Pradesh | 1322 |
| Anpara Thermal Power Station | Anpara | Sonebhadra | Uttar Pradesh | 1630 |
| Panki Thermal Power Station | Panki | Kanpur | Uttar Pradesh | 210 |
| Parichha Thermal Power Station | Parichha | Jhansi | Uttar Pradesh | 640 |
| Harduagam Thermal Power Station | Harduaganj | Aligarh | Uttar Pradesh | 220 |
| Singrauli Super Thermal Power Station | Shaktinagar | Sonebhadra | Uttar Pradesh | 2000 |
| Rutland TPP | Rihand Nagar | Sonebhadra | Uttar Pradesh | 2000 |
| National Capital TPP | Vidyutnagar | Gautam Budh Nagar | Uttar Pradesh | 1820 |
| Feroz Gandhi Unchahar TPP | Unchahar | Raebareli | Uttar Pradesh | 1050 |
| Tanda TPP | Vidyutnagar | Ambedkar Nagar | Uttar Pradesh | 440 |
| Rosa Thermal Power Plant | Rosa | Shahjahanpur | Uttar Pradesh | 600 |

■ Future Plans

- ▶ The Uttar Pradesh government will add more than 8,500 megawatts (Mw) new thermal power capacity in the public sector by 2022.
- ▶ The fresh capacity will consist of greenfield thermal power units totalling 1,980 Mw each in 2019 and 2020, and 3,960 Mw and 660 Mw in 2021 and 2022, respectively.
- ▶ The state government is working on a two-pronged strategy to not only raise power generation capacity and plant load factor (PLF), but also to reduce the cost of production for greater commercial viability of plants, thereby offering lower tariffs to consumers.

■ Hydroelectric Projects

○ Rihand Hydro Electric Power Station

- Situated at: Pipri, District : Sonbhadra, Uttar Pradesh
- Installed capacity - 300 MW (6x50MW)
- Location: about 165 km from Varanasi, about 150 km from Mirzapur, and about 55 km from Obra
- Name of River : Rihand
- Name of Dam : Rihand
- Name of reservoir : Govind Ballav Pant Sagar
- It is the most important multi purpose project.

○ Khara Hydro Electric Power Station

- Commission Date - 1992
- Approved and Installed Capacity - 72 MW
- Type of Project - Major (greater than 25 MW)
- Type of Plant - Water discharged from Kulhal Power House to Khara Plant
- Water Source - Asan River
- Hydroelectric Basin - Ganga Basin
- Hydroelectric Region - Northern Hydroelectric Region
- Main Reservoir - Asan Reservoir (Dhalipur Lake)
- Owner - State Government
- Operating Company - Uttar Pradesh Jal Vidyut Nigam Limited
- Situated at - Upstream of Tajewala Dam, Uttar Pradesh
- District - Saharanpur

○ Sharda Hydro Electric Power Station

- It was built in the 1920s under an agreement signed between British India and Nepal.
- It is situated on the Sharda river (Mahakali river).
- It still regulates the diversion of the Mahakali river exclusively for the purpose of irrigation and power in Uttar Pradesh.
- It is attached with Ganga Grid system.
- It provides electricity to Pilibhit, Bareilly, Shahjahanpur, Hardoi, Kheri, Sitapur and Lucknow for industries, agriculture and other purposes.

○ Matatila Hydro Electric Power Station

- It is located in Lalitpur district (UP), 60 K.m. far from Jhansi City. Nearest Railway Station is Jhansi on Delhi Mumbai route.

- Power Station is situated on the left bank of river Betwa which rises from Bhopal in the Vindhyan Plateau at an elevation of 1550ft, passes through granite rocks at a steep gradient, the river flows on outskirts of distt. Jhansi forming boundary line of U.P. and M. P and thereafter it mostly flows in U.P., meeting the river Yamuna in Hamirpur Distt in U.P.
 - It is entirely a rain fed river with very high discharge of water during the rainy season and extremely low discharge during summers.
 - The dam was constructed in year 1957 for irrigation purpose. Matatila power House with three machines of 10.2 MW each on the existing Dam has been commissioned in 1965.
 - The Climate of Matatila dam is very hot in the summer season and some time temperature rises upto 50°C during summer and very cold during the winter season. There is monsoon rains in summer season only The climate is dry in the rest of the year.
- ◉ **Gandak Hydropower Station**
- Gandak Hydropower Station, located at Surajpura, Nawalparasi having installed capacity of 15 MW and annual design generation of 106.38 GWh was commissioned in 1979 AD and developed in assistance from Government of India and the Government of Nepal with the total cost of NRs. 170 million.
 - The project is initially developed with the dual purpose of hydropower and downstream irrigation in Uttar Pradesh, India. The station is canal drop type and the first low head (6.09m) power plant in Nepal.
 - The weir is regulated by the Bihar State Government and the canal is shutdown twice a year for regular repair and maintenance.
 - The operation of this power station is hence, affected by irrigation in Bihar and Uttar Pradesh.
- ◉ **Tehri Hydroelectric Project**
- It is a combined project of Uttar Pradesh, Uttarakhand, and Central Government.
- ◉ **Narora Atomic Power Station (Naps)**
- Located in the small town of Narora (Uttar Pradesh), the Narora Atomic Power Station (NAPS) services the northern power grid of India. The plant consists of two PHWRs, the first of which (Unit-1) began commercial operations on 1 January 1991. Unit-2 followed on 1 July 1992.
 - On 31 May 1993, a major fire occurred when the two steam turbine blades servicing Unit-1 malfunctioned.
 - Although a minor tritium leak also occurred around this time period, by December 1999, the facility had been inspected by the Bureau of Indian Standards and its environmental management system had been certified. This certification was followed by the voluntary opening of NAPS to a World Association of Nuclear Operations (WANO) peer review board in early 2000.
 - Later that year, NAPS became the first ISO-14001 certified atomic power station in Asia and also received the Golden Peacock Award from the World Environment Foundation for its efforts in environment preservation.
 - As of 28 February 2003, NAPS reactors had achieved a cumulative generation of 28,366 million units (MUs) since they began commercial operations. NAPS is not under International Atomic Energy Agency (IAEA) Safeguards.

Bodies for Electricity Generation from Conventional Energy Resources

- ◉ Uttar Pradesh State Electric Council was constituted in 1959.
- ◉ Uttar Pradesh Electric Regulatory Commission was constituted under Central Government Electric Regulatory Commission Act, 1998.

- Purvanchal Vidyut Vitran Nigam Limited, Allahabad (Varanasi, Gorakhpur and Ajamgarh region), Western Electric Corporation Limited, Meerut (Muradabad, Saharanpur, and NOIDA region) and Middle Electric Distribution Corporation Limited has been constituted.

Power Corporations

- **Uttar Pradesh Jal Vidyut Nigam Limited (UPJVNL)** is a hydroelectric power generating company of Uttar Pradesh. It was established in the year 1985 by the Govt. of U.P. for exclusive development of Small Hydro Electric Power in the state of Uttar Pradesh (including the entire area now under the new state of Uttarnachal). Completion of its first Small Hydro Power Station Kotabagh (200 KW) in district Nainital in the year 1989-1990.
- **Noida Power Company Limited (NPCL)** is located in Greater Noida. It covers an area of 335 sq km. It was formed in December, 1993. It has a total capacity of 265 MW. It supplies power to over 71 lakh consumers in Greater Noida.
- **Uttar Pradesh Power Corporation Ltd. (UPPCL)** was created on January 14, 2000 is the result of power sector reforms and restructuring in UP (India) which is the focal point of the Power Sector, responsible for planning and managing the sector through its transmission, distribution and supply of electricity.
- UPPCL will be professionally managed utility supplying reliable and cost efficient electricity to every citizen of the state through highly motivated employees and state of the art technologies, providing an economic return to our owners and maintaining leadership in the country.
- **Kanpur Electricity Supply Company Ltd.** is a company incorporated under the Companies Act, 1956 and having its registered office at Kanpur. It was formed on 14 January 2000 under U.P. Electricity reform act 1999. This company is registered for distribution of electricity in the area under Kanpur City (Urban).
- **Dakshinanchal Vidyut Vitran Nigam Ltd. (DVVNL)** was constituted in June 2003. It is responsible for power distribution in 5 zones in Southern, Uttar Pradesh, covering 21 districts.
- **Paschimanchal Vidyut Vitran Nigam Ltd. (PVVNL)** was constituted in July 2003. It is responsible for power distribution in Western Uttar Pradesh. It has 564 sub-stations with total installed capacity of 6569 MW.
- **Purvanchal Vidyut Vitran Nigam Ltd. (PVVNL)** was constituted in July 2003. It is responsible for power distribution in Eastern Uttar Pradesh. Its headquarters is located in Varanasi.
- **Madhyanchal Vidyut Vitran Nigam Ltd. (MVVNL)** is an independent company which was constituted in July, 2003. It is responsible for supply of electricity in middle region of Uttar Pradesh.

Non-Conventional Energy Sources

- Natural resources like wind, tides, solar, biomass, etc generate energy which is known as "Non-conventional resources".
- These are pollution free and hence we can use these to produce a clean form of energy without any wastage.

Major initiatives for Solar Energy Development in the State

- **Grid Combined Photovoltaic Power Plant:** It was established in 1992 in Sarai Sadi village in Mau, Kalyanpur village in Aligarh and Harraiya in Basti.

- Under the National Solar Mission, 2010 in the state, Grid connected project of 100 MW has been established in Banda, Jhansi and Badaun during 2016-17 by private sector.
- Solar Photovoltaic Pump (Potable water) is allocated in those villages/areas where no proper arrangement of drinking water is available. It has capacity of 1200 watts.
- In the state, 54 solar energy shop has been established for easy access to availability and services of new renewable energy system under the Aditya Solar Shop Project.
- Under the Solar City Programme, Moradabad, Agra and Prayagraj are supported for better solar facilities. It is a central sponsored programme.
- Dr. APJ Abdul Kalam City Solar Beam Yojana aims to make drinking water available for backward regions.
- Solar Street Light facilitates electricity on the street roads by solar devices. It is a combined project of both central and state government. It is an automatic device which gets turned off in the morning and gets on in an evening. The device consists of solar PB module of 74 watts, battery of 12 volt and an 11 watt CFL.
- Solar Cooker (dish type) is used for cooking food with the help of solar energy. 1156 types of solar cookers have been distributed and purchased in the state.

Solar Power Policy, 2017

- **Nodal Agency:** Uttar Pradesh New and Renewable Energy Developer Agency (UPNEDA)
- The policy will remain in place for five years or until a new policy is created.

■ Objectives

- ▶ Encourage participation of Private Sector and provide investment opportunities to set up solar power projects in the state.
- ▶ Support in providing environment friendly and affordable Power for All.
- ▶ Promote Research & Development, innovations and skill development in the State
- ▶ Achieve target of 8% Solar Renewable Purchase Obligation (Solar RPO) by 2022.

■ Biomass Energy

- ▶ Biomass fuel is derived from organic material. It is renewable and sustainable source of energy to generate power. Examples of materials that make up biomass fuel are scrap lumber, bagasse, cattle dung etc.
- ▶ UP has potential of 3,757 MW power generation through biomass.
- ▶ Only Uttar Pradesh has utilized a large part of the biomass potential in north Indian States and that is mainly due to the sugarcane industry and the co-generation power plants.
- ▶ In the state, biomass power plants have been established at Ghazipur, Mathura and Kanpur.

■ Biomass Energy Policy, 2015

- ▶ The dual purpose of the policy would be to meet a part of energy demand-supply gap in UP and to encourage renewable energy resources.
- ▶ Those eligible to set up biomass power plants under the policy includes government agencies, private companies, joint ventures, local bodies (both urban and village panchayat) etc.
- ▶ Under the policy, maximum 2 acres of land per MW capacity could be acquired for setting up biomass power plant.

■ Wind Energy

- ▶ Wind energy stands at first place/position among different sources of electricity generation through renewable energy. In our country at present total installed generation capacity is 35700 MW of which wind energy contributes about 68 percent.

- ▶ National Institute of Wind Energy, GoI has expressed the possibility of power generation through wind energy at 50 meters and 80 meters with generation capacity of 138 MW and 1260 MW respectively.
- ▶ Wind force keeps on increasing simultaneously with the increase in height from the ground. Thus power generation also increases with increase in height.

■ Survey and Wind Resource Assessment Of Programme

- ▶ For installation of Electricity generation projects through wind energy first of all assessment of wind force and Wind Power Density (WPD) is done for duration of 1-2 years. This process is known as Wind Resource Assessment.
- ▶ Wind Resource Assessment (WRA) by National Wind Energy Institute has been done to identify the wind energy programs in various districts of Uttar Pradesh. The districts where wind resource assessment has been done at 50 m height are-Lalitpur, Mirzapur, Raebareli, Farrukhabad, Agra, Etawah, Badaun, Jhansi and Sonbhadra.
- ▶ As above districts where wind resource assessment has been done at 80 m height are:-Gonda, Balrampur, Siddharthnagar, Shahjahanpur and Lakhimpur.

■ Wind Energy Policy, 2015

- ▶ To advance the indigenization of the Energy Technology.
- ▶ To promote research and development in the Energy Sector by providing aid and assistance to organizations.
- ▶ To create super skilled man force and to generate employment in the wind energy sector.
- ▶ To promote the generation and use of clean and green power in the state by harnessing wind energy.
- ▶ To spread environmental awareness among the general public.

■ Initiatives for Development of Non-Conventional Energy

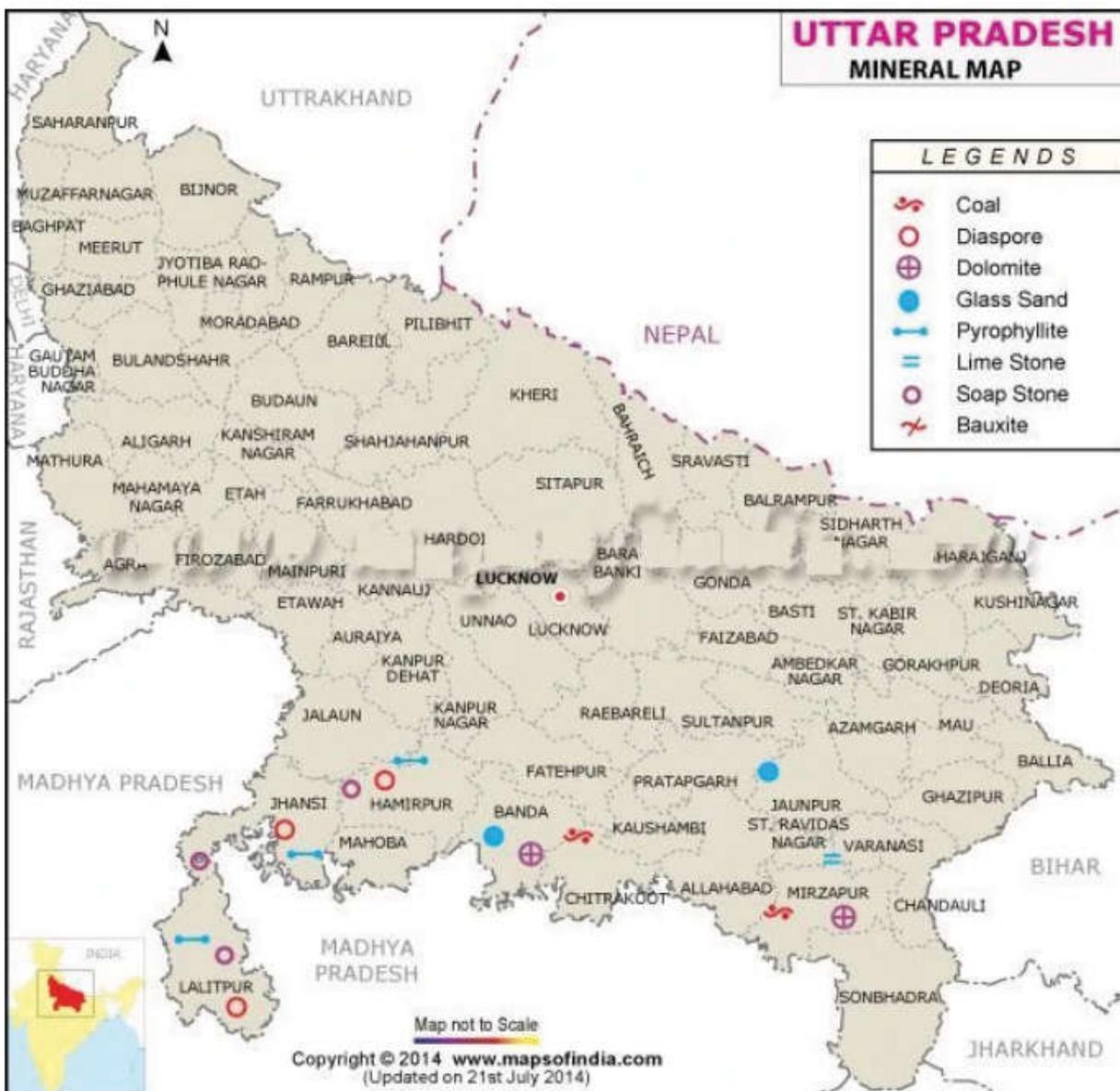
- ▶ Urja Park was planned for the purpose of clean energy development like solar and wind generation facilities. In Uttar Pradesh, it has been established in Lucknow Zoo.
- ▶ Border Area Development Programme (BADP) has been launched by the central government and started in 1999-2000. It was started in the border areas of Uttar Pradesh i.e., Bahraich, Pilibhit, Shravasti, Lakhimpur, Balrampur and Siddharthnagar. Under this programme, solar home light, solar pump, solar water heater, solar lantern etc are provided in these regions.
- ▶ Remote Village Electrification Programme was approved on 31st March, 2012 which aims to provide financial support for electrification in villages and hamlets areas of Uttar Pradesh where the power supply of UPPCL is not able to electrified. It was based on renewable sources of energy.
- ▶ Social Area Demonstration Scheme (SADC) operates the energy parks in Uttar Pradesh which has been established in Lucknow zoo. Under this scheme, Akshay Urja Equipment is conducting 22 projects in the state.

MINERAL RESOURCES

- Uttar Pradesh is endowed with natural wealth in abundance. This wealth lies hidden below a variety of rocks of different ages found in lofty mountain ranges of the Himalayas in the North and Vindhyan ranges in the South.
- The State of Uttar Pradesh has a Long and Interesting history of Mining of Minerals. In the early days Copper, Lead, Iron ore and Placer Gold have been mined on a small scale in parts of Himalayas,

Bundelkhand and South-Eastern districts. In addition Vindhyan Sandstone as building and Mill Stone were also mined in the districts of Agra, Allahabad and Mirzapur.

- Prior to 1900, the Copper ores were mined on a small scale in erstwhile Garhwal, however, the development of Modern Technology and decline in the prices also lead to the decline of small scale Mining. Mining activity during 1920 and 1930 further declined due to various reasons.
- The minerals found in Uttar Pradesh include limestone which is found in Guruma-Kanach-Bapuhari in Mirzapur district and Kajrahat in Sonbhadra district; dolomite in Mirzapur, Sonbhadra and Banda, glass-sand in Karchhana of Allahabad district, Karwi in Banda district and Mau district; marble in Mirzapur and Sonbhadra; bauxite in Rajhewan in Banda, Varanasi & Lalitpur districts; non-plastic fireclay in Bansi and Makri-Khoh area of Mirzapur district; and Uranium in Lalitpur district.
- Important minerals occurring in the State are coal in Singrauli coalfields, Sonbhadra district; and diaspore & pyrophyllite in Hamirpur, Jhansi, Lalitpur and Mahoba districts. Naini area of Allahabad district contains high quality silica sand, an important source of glass sand.
- Other minerals that occur in the State are andalusite and calcite in Mirzapur district; china clay & dolomite in Banda and Sonbhadra districts; felspar in Jhansi district; fireclay, potash & sillimanite in Sonbhadra district; ochre in Banda district; granite in Banda, Hamirpur, Lalitpur & Mahoba districts; iron ore (hematite) and rock phosphate in Lalitpur district.



Minerals Map of Uttar Pradesh

- Besides, Barytes and Edalusite are found in the districts of Mirzapur and Sonebhadra. Sand-stone, pebbles, reh, salt punter, maurang, sand and other minor minerals are also found in the State.

| SN | Minerals | District Name |
|-----|----------------|---|
| 1. | Diamond | Banda, Mirzapur |
| 2. | Gold | In the range of Sharda and Ramganga, Parish area (Sonbhadra). Berwar (Lalitpur) |
| 3. | Uranium | Lalitpur |
| 4. | Line stone | Guruma.Kanaach-Basahari (Mirzapur). Kajrahat (Sonbhadra) |
| 5. | Bauxite | Banda. Varanasi, Lalitpur |
| 6. | Potash salts | Allahabad. Chandauli, Banda. Jhansi, Sonbhadra |
| 7. | Dolomite | Bari (Sonbhadra). Banda |
| 8. | Glass sand | Shankargarh, lohargarh (Allahabad). Bargarh (Banda). Aligarh, Chitrakoot |
| 9. | Andalusite | Sonbhadra. Mirzapur |
| 10. | Soapstone | Hamirpur, Jhansi |
| 11. | Pyrites | Sonbhadra |
| 12. | Rock phosphate | Lalitpur |
| 13. | Ocher | Banda |
| 14. | Silimineite | Sonbhadra |
| 15. | China clay | Sonbhadra. Banda |
| 16. | Calcite | Mirzapur |
| 17. | Iron ore | Lalitpur |
| 18. | Granite | Banda. Hamirpur, Lalitpur, Mahoba |
| 19. | Diaspore | Jhansi, Mahoba, Lalitpur, Hamirpur |
| 20. | Sand stone | Mirzapur |
| 21. | Gypsum | Jhansi, Hamirpur |
| 22. | Asbestos | Mirzapur, Jhansi |
| 23. | Marble | Mirzapur, Sonbhadra |
| 24. | Feldspar | Jhansi |

■ Directorate of Geology & Mining UP

The Directorate of Geology & Mining UP was created in the year 1955, is a multi-disciplinary organisation under the Department of Industrial Development, Govt. of U.P. having total strength of 496 employees including Geologist, Chemist, Geophysicist and Mining officers-

- To explore the mineral resources by geological mapping, drilling and sampling for the estimation of reserves. Experience in assessing Industrial Minerals like LimeStone, SilicaSand, Pyrophyllite, Diaspore, Bauxite, Rock Phosphate and refractory minerals.

- ▶ Engaged in the promotion of conservation and scientific development of mineral resources, and mineral based industries in the state.
- ▶ Presently engaged in the Exploration of base metals & high value minerals.

■ Mining Policy of Uttar Pradesh, 2017

This policy was declared on 30th May, 2017 under Yogi Aditya Nath, present CM of UP.

○ Objectives

- Conservation of minerals
- To make a balance between environment and ecosystem
- To enhance revenue generation from present 1.85% to 3% in the next 5 years.
- To facilitate fair competition.
- To provide technological support and advisory services for scientific development of minerals.
- To make information data available
- To intensify exploration of minerals through technological intervention.
- To promote transparency and consumption free environment.

TRANSPORT SYSTEM

The transport system of UP is divided into 4 heads:

- ▶ Road Transport
- ▶ Rail Transport
- ▶ Air transport
- ▶ Water Transport

■ Road Transport

The major types of roads running in the state are National Highways, Expressways, State Highways, District Roads and Village roads.

○ National highways and State highways

- Uttar Pradesh also has one of the largest road networks in the country, second only to Maharashtra.
- Around 42 National Highways and 83 state highways form a large network of roads to ensure that every town and most of the villages are interconnected.

○ National Highways

- The longest national highway that passes through Uttar Pradesh is NH2 and it stretches up to a length of 752km in the state. This highway starts from Kosi, which is situated on Haryana border and passes through Mathura.
- After that, it goes to famous tourist destinations in Agra. Then the highway further stretches to Etawah and goes to commercial town Kanpur. From Kanpur it goes to Allahabad and Varanasi, the ancient cities. The last destination of this highway in Uttar Pradesh is Chandauli; the town is located on UP Bihar border.
- NH24 starts from Ghaziabad, near Delhi border. It goes through Hapur and Moradabad. It further goes to Rampur and Bareilly and reaches capital Lucknow. The total length of this road is 431 km.

- National Highway 76 starts from Madhya Pradesh border. Jhansi is the origin of this highway in Uttar Pradesh; it takes you to Mauranipur tehsil in MP border. From there it goes to Banda and Mau and ends in Allahabad. The total length of this highway is 500 km, approximately.
- NH91 also begins from Ghaziabad and goes through the Dadri and Bulandshahr towns. It also passes through the industrial town Khurja, Aligarh and Kannauj in UP. This road terminates in Kanpur. The length of National Highway 91 is around 400 km.
- NH93 is another important National Highway in Uttar Pradesh. It commences from the historic city of Agra and cruises through Hathras, Aligarh and Chandausi, before terminating in Moradabad. NH93 is 220km long. The combined length of the National Highways in Uttar Pradesh is around 5,900 km.
- The longest National Highway in the state is NH-34, with the length of 723.4 km and the smallest National Highway is NH-29 with the length of 5 km.

◦ State Highways

- State Highway 1 lies in Eastern Uttar Pradesh; it passes through four towns Maharajganj, Gorakhpur, Dewaria and Balia, traversing a distance of 154km. UP SH1A also starts from Maharajganj and the route of SH1A is through Farendia- Naugarh- Basti- Shrivasti Marg and it covers Sidharthanagar, Balrampur and Gonda districts. The total length of this road is 230km.
- SH5 is also a major state highway with a length of around 350km; it starts from Sidharthanagar and goes through Basti, Jaunpur, Mirzapur and ends up in Sonbhadra.
- Some other important state highways are SH13 and SH21. They are 228km and 385km respectively.
- SH33 is known as Bareilly-Meerut Road. It passes through Badaun, Soron, Kasganj and Sikandra Rao. Badaun is a junction of three State Highways and they are SH33, SH29 and SH51. State highways in Uttar Pradesh cover a total distance of 8,432km.
- The list of 10 routes that will be turned into four-lane stretches includes Khuthan-Jaunpur to Saidpur-Ghazipur near NH31, Paliya-Shahjahanpur via Hardoi- Lucknow section, Allahabad-Jaunpur-Gorakhpur route, Balia-Mau-Azamgarh route, Mathura-Hathras-Budaun-Bareilly route, Aligarh-Palwal route, Varanasi-Jaunpur-Akbarpur route, NH 44 junction Panipat-Shamli-Muzzaffarnagar-Bijnor route, state highway -9 Meerut- Garhmukteshwar stretch, NH Kashipur section Moradabad-Jaspur route.

◦ Expressways

- Uttar Pradesh state host India's longest expressway, Agra Lucknow Expressway followed by second longest expressway of India, The Yamuna Expressway. Recently IAF aircrafts Jaguars, Mirage 2000s, and Sukhoi 30s carry an emergency landing at Agra Lucknow Expressway.
- It is a 6 lane highway. In the state, the first expressway was constructed between NOIDA and Greater NOIDA in the year 2003-04.
- UP Expressway Industrial Development Authority was constituted for the development of expressways on 27th December, 2007.
- Ganga Expressway – 1,047 km
- Ganga Expressway project will connect Greater Noida to Ballia. The expressway has been divided into four sectors but the construction work on Ganga Expressway has not started yet.
- Purvanchal Expressway – 343 km
- Purvanchal Expressway is a proposed 8 lane express highway, connecting the towns of Ballia, Azamgarh with Lucknow. The 343 km long expressway will pass through seven districts of India's Uttar Pradesh state.
- Agra Lucknow Expressway – 302 km
- Agra Lucknow Expressway is the longest expressway in India, between the cities of Agra and Lucknow. The 302 km long controlled access express highway connected to Yamuna Expressway and IAF successfully landed Mirage 2000, Sukhoi Su-30MKI and SEPECAT Jaguar along with Super Hercules in 2017.

- Yamuna Expressway – 165 km
 - Yamuna Expressway is India's one of the longest six lane expressway, connecting Greater Noida with Agra. The expressway starts from Greater Noida and implemented by Jaypee Group.
 - Upper Ganga Canal Expressway – 150 km
 - Upper Ganga Canal Expressway also known as Hindon Expressway is planned to connect Bulandshahr to Haridwar. The eight lane Hindon Expressway project has not started yet.
 - Delhi Eastern Peripheral Expressway -135.6 km
 - Eastern Peripheral Expressway or National Expressway 2 will bypass Delhi and provide connectivity from Faridabad to Sonipat.
 - Delhi Meerut Expressway – 96 km
 - Delhi Meerut Expressway connects Delhi with Meerut via Dasna. The 96 km long controlled access expressway is an under construction project.
 - Allahabad Bypass Expressway – 86 km
 - Allahabad Bypass Expressway is part of the Golden Quadrilateral project and National Highway 2. The expressway is 86 km long access controlled highway.
 - Noida Greater Noida Expressway – 24.5 km
 - Noida Greater Noida Expressway connects Delhi to Greater Noida and under expansion to Taj Economic zone. The expressway is a 24.53 km long six lane express highway.
 - Delhi Noida Direct Flyway – 9.2 km
 - Delhi Noida Direct Flyway is a 9.2 km long access controlled tolled expressway, connects South Delhi to Noida. The world class DND Flyway expressway designed for a safe, fast and delightful driving experience.
- **Eastern Peripheral Expressways - 135 km**
- The Eastern Peripheral Expressway was inaugurated by Prime Minister Narendra Modi on May 27, 2018 in view of bringing down the pollution levels in the National Capital Region. It is the first smart and green 6-lane highway of India.
 - The expressway, also known as KGP (Kundli-Ghaziabad-Palwal) expressway, is specifically designed to connect Kundli and Palwal in Haryana via Ghaziabad to reduce congestion on the roads of the NCR region caused by the vehicles going towards Haryana and Uttar Pradesh.
- **District Roads**
- These roads connect production areas with markets and connecting them with the State Highways and National Highways.
 - These are maintained by the Zila Parishad.
 - These are divided into two types: major district roads and other district roads.
 - These also connects the administrative centre headquarters, and rural areas with the state.
 - The total length of the district roads in Uttar Pradesh is 55,062 km according to the Public Works Department (PWD).
- **Village Roads**
- These roads are in poor shape, affecting the rural population's quality of life, and Indian farmers' ability to transfer produce to market.
 - For the development of these rural roads, Pradhan Mantri Gram Sadak Yojana (Prime Minister's Rural Roads Scheme) was launched in December 2000 by the Indian government to provide connectivity to isolated rural habitations.
 - The scheme envisions that these roads will be constructed and maintained by the village panchayats. In some parts of India, where the government has attempted to manage the programme directly as a local social spending program, it has produced limited results and no lasting change over 10 years, in either the quality or the quantity of rural road network.

- Bharat Nirman (or “Build India”) have privatized the rural road construction projects and deployed contractors. The effort has aimed to build all-season single-lane asphalted roads to connect India’s rural and remote areas. A significant portion of funding for these projects has come from the World Bank and the Asian Development Bank.
- Lucknow Plan was started from 1981 to 2001 for the development of village roads.

◦ **Uttar Pradesh State Road Transport Corporation (UPSRTC)**

- UPSRTC is a public sector passenger road transport corporation providing services in the state of Uttar Pradesh and other adjoining states in North India.
- With a fleet size of around 9314 buses we operate over 3 million kilometers catering to the travel needs of over 1.4 million people and earning over Rs. 67 million everyday. Provision of adequate, efficient, well co-ordinated, comfortable and economical services to our passengers, while earning enough for self-sustenance & growth, is our motto.
- Uttar Pradesh State Road Safety Policy 2014
- Uttar Pradesh government launched a road safety policy, claiming to be the first such initiative in the country, which seeks to check occurrence of street accidents and resulting mortalities.
- Uttar Pradesh is the first state in the country which has launched its road safety policy that deals with ways and means to check road accidents and shocking and painful deaths due to them.
- For NH-2 and NH-25, the first Highway Police have been constituted.

■ **Rail Transport**

- ▶ In this state, there are 9167 km of railway lines and thus, UP ranks first in railway network in India.
- ▶ Railway Museum is situated in Varanasi and first train in Up was started from Allahabad to Kanpur in 1859.
- ▶ Uttar Pradesh is largely covered by three railway zones – the North Eastern Railway (NER), Northern Railway (NR) and North Central Railway (NCR).
- ▶ East Central and West Central Railway are other major railway zones in the state.
- ▶ Loco factory is located in Izzatnagar, Lucknow and Railway Security Council and Railway Safety Commission (established in 1961) are also located in Lucknow.
- ▶ Diesel Locomotives Works Factory was situated at Manduadih in Varanasi district on 23rd April, 1956 by the first President of India, Dr. Rajendra Prasad.
- ▶ The first railway station is Lucknow Railway station which was established in 1926.
- ▶ In 1985, Central Railway Electrification Organisation was constituted in Prayagraj.
- ▶ Vande Bharat Express or Train 18 is India’s first indigenously built engineless semi-high speed train. It runs between Delhi and Varanasi at a maximum speed of 160 kmph. It has been built by the Integral Coach Factory, Chennai, in a record time of 20 months.
- ▶ The train is a 100% ‘Make in India’ project and is claimed to be built at half the cost of a similar train set that is imported.
- ▶ It is energy-efficient as its coaches will be fitted with LED lights. Coaches will have automatic doors and retractable footsteps.
- ▶ It will be inter-connected with fully sealed gangways along with a GPS-based Passenger Information System. It is provided with Bio toilets.
- ▶ Humsafar Express (Via Basti) (12595) runs from Gorakhpur to Delhi. It is a superfast train which was started on 16th December, 2016 from Gorakhpur.
- ▶ Introduced in 1999, Buddha Parikrama Express is a tourist train connecting historical Buddhist pilgrimage sites. This train service is a joint venture of the Railway Ministry and Ashok Travels and Tours, an in-house travel agency of Indian Tourism Development Corporation (ITDC). The train touches major Buddhist centers such as Howrah, Gorakhpur, Gaya, Rajgir and Varanasi. It is a 13

coach express which offers finest Indian hospitality and is specially made to make the journey most memorable.

- ▶ Country's First semi-high speed train that covers the 200 km distance between Delhi and Agra within 100 minutes is the Gatiman Express, which would have a maximum speed of 160 km per hour.
- ▶ Equipped with a 5,500 HP electric locomotive, two Executive AC Chair Cars and eight AC Chair Car coaches, the train has a high power emergency braking system, automatic fire alarm, GPS based passenger information system and sliding doors in the coaches.
- ▶ The passenger amenities have been enhanced by providing better catering service, improved coach interiors with wide windows, bio-toilets besides free multimedia services enabling passengers to view movies, news and so on.
- ▶ Hotspot devices have been installed at coaches to enable passengers to access multimedia services free of cost directly on their smartphones, tablets or laptops.
- ▶ The first Lockers on Wheel Service was started in Shatabdi Express in 1994-95 which runs between Delhi and Lucknow.
- ▶ The third Rail Coach factory is established in Lalganj or Raebareli. The Electric Driver Training Centre is located in Ghaziabad.
- ▶ Prayagraj express is the India's largest train with 26 coaches. It runs between Delhi to Prayagraj.
- ▶ World's largest Railway Platform is situated in Gorakhpur of the total distance of 1366.40 km.
- ▶ Longest Indian railway yard is situated in Deendayal Upadhyay Nagar, Uttar Pradesh and Asia's biggest power house loco shed is also situated here.

◉ **Railway Zones in Uttar Pradesh**

▶ **Northern Zone**

- ◆ Northern Indian Railway was established on April 14, 1952 after merger of Bikaner Railway, Jodhpur Railway, Eastern Punjab Railway, 3 divisions of Eastern Indian Railway and north-west Mughalsarai. It is the biggest zone of all in terms of the length of tracks despite the division of zones in the railways in India.
- ◆ The Northern Zone consists of 5 major divisions - Delhi, Ambala, Lucknow, Ferozpur and Moradabad. The Northern Zone extensively spreads across Haryana, Union Territory of Chandigarh, Uttar Pradesh, Himachal Pradesh, Punjab, Delhi, Jammu & Kashmir, and Uttaranchal.

▶ **North Eastern Zone**

- ◆ The North Eastern was formed on 14th April 1952 by combining two Railway systems (Oudh and Tirhut Railway and Assam Railway) and Cawnpore-Achnera section of the BB&CIR.
- ◆ It was bifurcated into two Railway Zones on 15th Jan. 1958 - North Eastern Railway and North East Frontier Railway.
- ◆ The present N. E. Railway (NER), after re-organisation of Railway Zones in 2002, comprises of three Divisions - Varanasi, Lucknow & Izatnagar. NER has 3450 route kms with 486 stations. NER primarily serves the areas of Uttar Pradesh, Uttarkhand & western districts of Bihar.

▶ **East Central Zone**

- ◆ The East Central Zone is one of the six new zones set up by the Indian Railways. It came into existence on 8th September, 1996. East Central Zone covers a great network of around 3600km and track kilometer of 5250km running through Bihar, Jharkhand and areas of Madhya Pradesh and Uttar Pradesh.
- ◆ With its headquarters at Hajipur in Bihar, the jurisdiction of East Central Zone consists of Danapur, Sonpur, Samastipur, Dhanbad and Mughalsarai divisions.

► North Central Zone

- ◆ The North Central Railway (NCR) was first established on 1st April 2003. Its headquarters is located in Allahabad. It includes three divisions: Allahabad, Agra and Jhansi.
- ◆ Initially, Allahabad division was part of Northern Railway and Jhansi division was part of Central Railway, and new Agra division.
- ◆ The Northern Central Railway has strength of 69,644 employees and has workshops at Sithouli (Gwalior) and Jhansi. This railway zone has 202 main line stations & 221 branch line stations and a total route of about 3062 route-km with mainly double line electrified section
- ◆ This network covers the states of Madhya Pradesh, Uttar Pradesh, Rajasthan and Haryana. The largest railway station on the NCR zone is the Kanpur Central Railway station.

► West Central Zone

- ◆ The West Central Railway (WCR) was first established on 1st April 2003. Its headquarters is located in Jabalpur.
- ◆ It includes three divisions: Jabalpur, Bhopal and Kota.
- ◆ This railway zone has a total route of about 2965 km out of which 1328 route km is electrified. The WCR was carved out of the Bhopal and Jabalpur divisions of the Central Railway and from the restructured Kota division of the Western Railway.
- ◆ This network covers the state of eastern & central Madhya Pradesh, northwestern Rajasthan and southern Uttar Pradesh.

■ Air Transport

- The air transport facilities link UP to almost all the major cities of India. The civil aviation facilities are also satisfactory in UP.
- It is true that the air transport sector of Uttar Pradesh is not very extensive but it serves the purpose.
- It is adequate for the purpose of joining UP with the domestic and foreign places alike. The civil aviation facility connects UP with domestic and foreign destinations through international airports of Varanasi and Lucknow, and domestic airport services of Agra, Allahabad, Gorakhpur and Kanpur. In all, Uttar Pradesh is a well connected state of India.
- Lal Bahadur Shastri International Airport Varanasi is the 2nd big airport of Uttar Pradesh.
- Flying School is situated in Meerut, Aligarh and Etawah districts. The Civil Aviation training centre is situated at Prayagraj. It was established in 1948.
- National parachute training college situated at Agra, Uttar Pradesh. Its motto is "SAAHAS KAUSHALAM BALAM" which means courage, skill, strength.
- In UP, 12 districts are selected under UDAAN scheme of Central Government. These are Agra, Kanpur, Aligarh, Prayagraj, Azamgarh, Bareilly, Chitrakoot, Jhansi, Ghaziabad, Moradabad, Shravasti and Sonbhadra.
- The new Uttar Pradesh Civil Aviation Promotion Policy 2017 has been brought to promote investments and trade in Uttar Pradesh and will also promote tourism while increased road connectivity along with air connectivity will create more employment avenues.

Some important airports are:

- Choudhary Charan Singh International or Amausi Airport : Lucknow
- Lal Bahadur Shastri International Airport : Varanasi
- Allahabad Airport : Bamrauli
- Kanpur Airport : Kanpur
- Gorakhpur Airport : Gorakhpur

- ▶ Agra Airport : Agra
- ▶ Faizabad Airport : Faizabad
- ▶ Bareilly Airport : Bareilly

■ Water transport

- ▶ It will soon start in the Yamuna river in Uttar Pradesh. A water port will be set up in Baghpat district. Many highway projects in Meerut, Baghpat and Moradabad have been inaugurated.
- ▶ In Baghpat, while laying the foundation stone of work related to NH334B, the government is planning to export sugar from western UP to Bangladesh through Yamuna water transport which will be connected to Allahabad and the DPR for this project is also ready.
- ▶ In Meerut and Moradabad, foundation stone for road projects and various schemes related to sewage treatment and river cleaning have been laid. After completion of these projects it will take only 40 to 45 minutes to reach Delhi from Meerut.
- ▶ The government will inaugurate and lay the foundation stones for 331 km length of National highways and Sewage Treatment Plants under Namami Gange works together at Muzaffarnagar and Bulandshahr districts.
- ▶ First water way terminal in UP was started in 2018 in Ramanagar near Varanasi by PM Narendra Modi.

IMPORTANT FACTS

- The State exports majorly to the USA, the UAE and the UK. Recently, the share of exports to Vietnam has also risen, primarily driven by growing exports of buffalo meat.
- The USA and the UAE have continued to account for the biggest shares, which have further risen during the period 2012-13 to 2016-17, subjecting the State's exports to higher concentration risk, especially given the slew of protectionist measures implemented recently in the USA.
- Animals and animal products, leather and leather products, construction materials, gems and jewellery and textiles and garments have been identified as sectors with the maximum potential for exports from Uttar Pradesh, not only because the State has comparative advantage in exports of these products but also because the global import demand for these products has remained robust.

- The highest exported product from Uttar Pradesh is buffalo meat.
- Uttar Pradesh ranked 10th among Indian States according to Ease of Doing Business ranking by DIPP in 2015. The State slid to the 14th position in the Ease of Doing Business ranking 27 of 2016.
- The industrial hubs like Noida, Kanpur and Lucknow have been top favourites for receiving the FDI. FDI for software industry, semiconductors and communications equipment has been concentrated majorly in Noida.
- According to fDi Intelligence from the Financial Times¹⁸, the State attracted FDI capital investment inflows worth USD 12,075.80 million cumulatively during the period January 2003 to November 2017.

BUDGET OF UTTAR PRADESH

- The Finance Minister, Mr. Rajesh Agarwal presented the Budget for Uttar Pradesh for financial year 2019-20 on February 7, 2019.
- Budget Highlights
- The Gross State Domestic Product (GSDP) of Uttar Pradesh for 2019-20 at current prices is estimated to be Rs 15,79,807 crore, which is 7% higher than the revised estimate for 2018-19.
- Total expenditure for 2019-20 is estimated to be Rs 4,79,701 crore, a 6.7% increase over the revised estimate of 2018-19. In 2018-19, as per the revised estimate, there is estimated to be an increase of Rs 21,189 crore (4.9%) of expenditure over the budgeted estimate.
- Total receipts (excluding borrowings) for 2019-20 are estimated to be Rs 3,97,416 crore, an increase of 3.2% as compared to the revised estimate of 2018-19. In 2018-19, total receipts (excluding borrowings) is estimated to be higher than the budgeted estimate by Rs 31,402 crore (8.9%).
- Revenue surplus for the next financial year is targeted at Rs 27,777 crore, or 1.76% of the GSDP. Fiscal deficit is targeted at Rs 46,911 crore (2.97% of GSDP).
- Sectors such as police (44%), irrigation and flood control (19%), social welfare and nutrition (16%), and health and family welfare (15%) saw the highest increase in allocations.

■ Policy Highlights

- ▶ **Cess on liquor sales:** Cess will be levied on liquor sales, through which a revenue of Rs 165 crore is estimated. This will be used towards feeding of stray cattle.
- ▶ **Rural development: Rs 6,240 crore has been allocated towards Pradhan Mantri Awas Yojana** – Rural. Rs 3,488 crore has been allocated under the National Rural Livelihood Mission. Rs 2,954 crore has been allocated towards the National Rural Drinking Water Mission.
- ▶ **Woman and child development:** A new scheme, Kanya Sumangala Yojana has been announced to improve the health and education levels of girls. Rs 1,200 crore has been allocated towards it.
- ▶ **Education:** Rs 500 crore has been allocated towards improving infrastructure in primary and higher primary schools. Rs 272 crore has been allocated towards Sanskrit medium schools. Rs 4,433 crore has been allocated towards scholarships for students belonging to poor sections of society.

■ Key Sectors

- ▶ As per Investor Summit 2018, Uttar Pradesh government will focus on key sectors such as IT and ITeS, Dairy, Electronics, Tourism, Manufacturing, Renewable Energy and Agro & Food Processing.
- ▶ The major factor driving the growth in the manufacturing sector is the availability of robust infrastructure, extensive road network, large pool of talent, and various investments and incentives offered by the state government.
- ▶ In 2017-18, exports of major agriculture commodities from Uttar Pradesh stood at US\$ 2.83 billion and Merchandise exports from Uttar Pradesh reached US\$ 13.80 billion in 2017-18 and US\$ 13.80 billion in April 2018-February 2019.
- ▶ In state budget 2018-19, Uttar Pradesh government has increased its railway budget to Rs 36,000 crore (US\$ 5.59 billion) for development of several railway projects as compared to the previous year.
- ▶ Uttar Pradesh accounts for strong demand for fertilisers on account of the high availability of acreage coupled with the large size of the state.
- ▶ As per state budget 2018-19, Rs 15 crore (US\$ 2.33 million) has been allocated for National Programme for Dairy Development (NPDD) schemes which will help to boost production of dairy products.