

Enviro Monitor

January 2016

Air quality



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Smart cities



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Air quality

Government to leapfrog to BS-VI from 2020. In a move to curb vehicular pollution, the government announced it would prepone implementation of Bharat Stage (BS)-VI emission standards by a year, to April 2020. In the process, it decided to skip the BS-V emission standard. In the new emission standard, particulate matter (PM) emission for diesel cars would be 80 per cent less than BS-IV and the nitrogen oxide (NOx) level would be 83 per cent lower. The sulphur content in fuel norms for diesel and

petrol under both V and VI standards would not change at 10 parts per million, though it is substantially less than the 50 mandated for both fuels under BS-IV.

EFFORTS TO CONTROL EMISSIONS

India embarked on a formal emission control regime in 1991. Here is a brief history of the country's efforts to cut vehicle emission.

1991-92: The first stage of mass emission norms came into force for petrol vehicles in 1991 and in 1992 for diesel vehicles.

1995: From April 1995, the government made fitment of catalytic converters compulsory in new petrol-fuelled passenger cars sold in the four metros of Delhi, Calcutta, Mumbai and Chennai, along with the supply of Unleaded Petrol (ULP). Availability of ULP was extended to 42 major cities and now it is available across the country.

2000-01: In 2000, passenger cars and commercial vehicles met Euro I equivalent India 2000 norms. Euro II equivalent Bharat Stage-II (BS-II) norms were in force from 2001 in four metros—Delhi, Mumbai, Chennai and Kolkata.

2002: The first auto fuel policy was announced in

August 2002. It laid down the emission and fuel roadmap up to 2010. As per the policy, four-wheelers in 13 metro cities moved to BS-III emission norms from April 2005 and the rest of the country to BS-II.

2010: BS-IV for 13 metro cities was implemented from April 2010 and the rest of the country moved to BS-III. It has now been extended to more than 50 cities.

2014: The second version of the fuel policy—Auto Fuel Policy 2025—was submitted to the oil and gas ministry. It lays down the emission and fuel roadmap up to 2025 and envisages BS-IV roll out across the country by 2017 in a phased manner, with BS-V emissions in 2021 and BS-VI from 2024. The proposal is yet to be accepted by the government and notified.

This is the second time the BS-VI implementation has been advanced. An earlier draft had advanced its date of adoption to 2021, from 2024. No other country has skipped a standard and leapfrogged to a new standard directly. The government had earlier planned to implement BS-V from 2019 and BS-VI from 2021 for four-wheelers. The move could significantly cut down on vehicular pollution, which has made the air of India's cities among the most contaminated in the world.

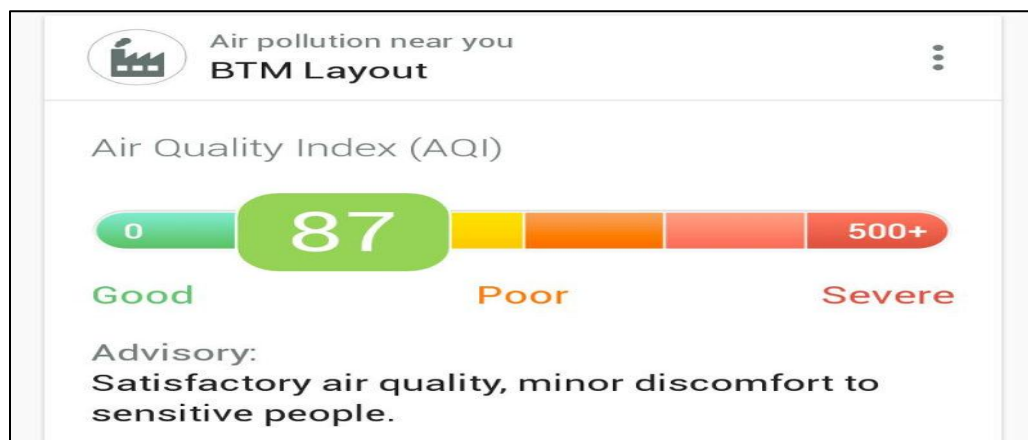
Delhi's odd-even policy beneficial, can reduce pollution. TERI, in its analysis of the 'odd-even' pilot scheme, said that although the percentage effect could be small, but given the concentrations as high as in Delhi, the absolute reductions in PM 2.5 concentrations are "significant" as it can help reduce health impacts. TERI said that the scheme has brought "considerable" additional benefits including reducing on road congestion, increase of average car speeds, reduced fuel usage and made significant impact on public awareness levels on air pollution and its impacts on human health. According to TERI, the scheme can be strengthened by improvement in public transport systems which will help in removing the exemptions applied during this phase. TERI analyzed the ambient air pollutant concentrations in Delhi from December 24 to January 15 at four stations – Mandir Marg, Punjabi Bagh, Anand Vihar and R K Puram.

IMD launches a system to monitor aerosols and black carbon in atmosphere. The Indian Meteorological Department (IMD) has launched a System of Aerosol Monitoring and Research (SAMAR) which will help the country in studying concentration of black carbon in atmosphere due to air pollution and its impact on climate. The SAMAR, equipped with many sophisticated equipment including 12 sky radiometers, will study aerosols' different properties and determine how it impact the climate over a longer period of time. At present, country has to depend on other countries' research for this purpose.

Chulhas make *Bharat* as polluted as India. A recent [report](#) from a Union health ministry committee highlights the importance of tackling pollution from the burning of dung and wood in village chulhas across India. Household cooking is "probably the largest single source of exposure in the country, although only one of many contributors to ambient air pollution", the report said. Most rural households in India—an estimated 780 million people—continue to rely on wood, dung and other biomass for cooking, while a good percentage of urban households also use non-LPG stoves.

Next on the priority list are pollution from vehicles, garbage burning, and diesel generator sets—all micro or local sources of pollution. Then comes road and construction dust, followed by brick kilns, local industries, and then power plants and other large industries.

Helpchat App provides air quality updates in India. Bengaluru-based personal assistant app Helpchat has launched a new feature on its app that provides alerts when the air quality drops below a certain threshold. The app presents readings of the Air Quality Index index, sourced from Central Pollution Control Board (CPCB) as the primary source, and mashes it up with secondary source. The app uses the Air Quality Index as a key data point, which translates air quality into a number ranging from 0 to 500.



Source. Gadget 360, 4 January 2016

International trade triggering nitrogen pollution. According to the first ever global Nitrogen footprint study, China (20%) has been identified as world's top nitrogen emitting country followed by India (11%). Both the nations have been tagged as Net Exporters which means that the total nitrogen emissions are higher for their exports than their imports. The new research published in [Nature Geoscience](#) maps the nitrogen 'footprint' of 188 countries, and finds that around a quarter of emissions come from making products that are then traded internationally. As most of this trade takes products from poorer countries to richer ones, nitrogen pollution in developing nations is being driven by demand for food and clothing products in developed countries

[Gadget 360](#), 4 January 2016 | [Mint](#), 6 January 2016 | [Business Standard](#), 7 January 2016 | [The Times of India](#), 9 January 2016 | [Indian Express](#), 15 January 2016 | [The Times of India](#), 15 January 2016 | [Carbon Brief](#), 25 January 2016 | [The Times of India](#), 27 January 2016



Government allots Rs 1000 crore for toxic water zones. NITI Aayog will provide Rs 1000 crore to save a large population in various states where people are forced to consume groundwater that contains excess of health-crippling arsenic and fluoride. The plan is to install community water purification plants (CWPPs). Each of which would provide 1000 litres of drinking water an hour for which users will have to pay 10 paise per litre. Groundwater contamination—also including that of iron, salinity and

nitrate - has become a serious public health crisis, particularly in rural pockets, affecting over 3.61 crore people in 63,831 pockets across half of India's districts, latest government data shows.

Top two worst-affected states in terms of overall contamination are Rajasthan (86,83,403 people in 21,927 pockets) and West Bengal (89,74,986 people in 10,807 pockets), government data as on December 2015 shows. Purely in terms of fluoride, Rajasthan has 43.74 lakh affected people in 6,904 pockets. For Karnataka, the number stands at 7.79 lakh people in 1044 pockets. States such as Punjab and Assam are facing both arsenic and fluoride problems.

Centre plans trash cleaning machines, law on Ganga rejuvenation. The Centre plans around a dozen garbage cleaning machines for the surface of the Ganga river by the next monsoon. It is also preparing legislation for involving riparian states for rejuvenating the river. Global tenders have already been floated for the trash cleaning machines, to come up at Kanpur, Allahabad and Haridwar, to supplement the existing ones at Varanasi and Patna. The Centre recently approved setting up of a Special Purpose Vehicle (the term for an entity or company formed for a specific purpose) to maintain and set up sewage treatment plants along all the 118 cities and towns along the Ganga.

Clean up Act

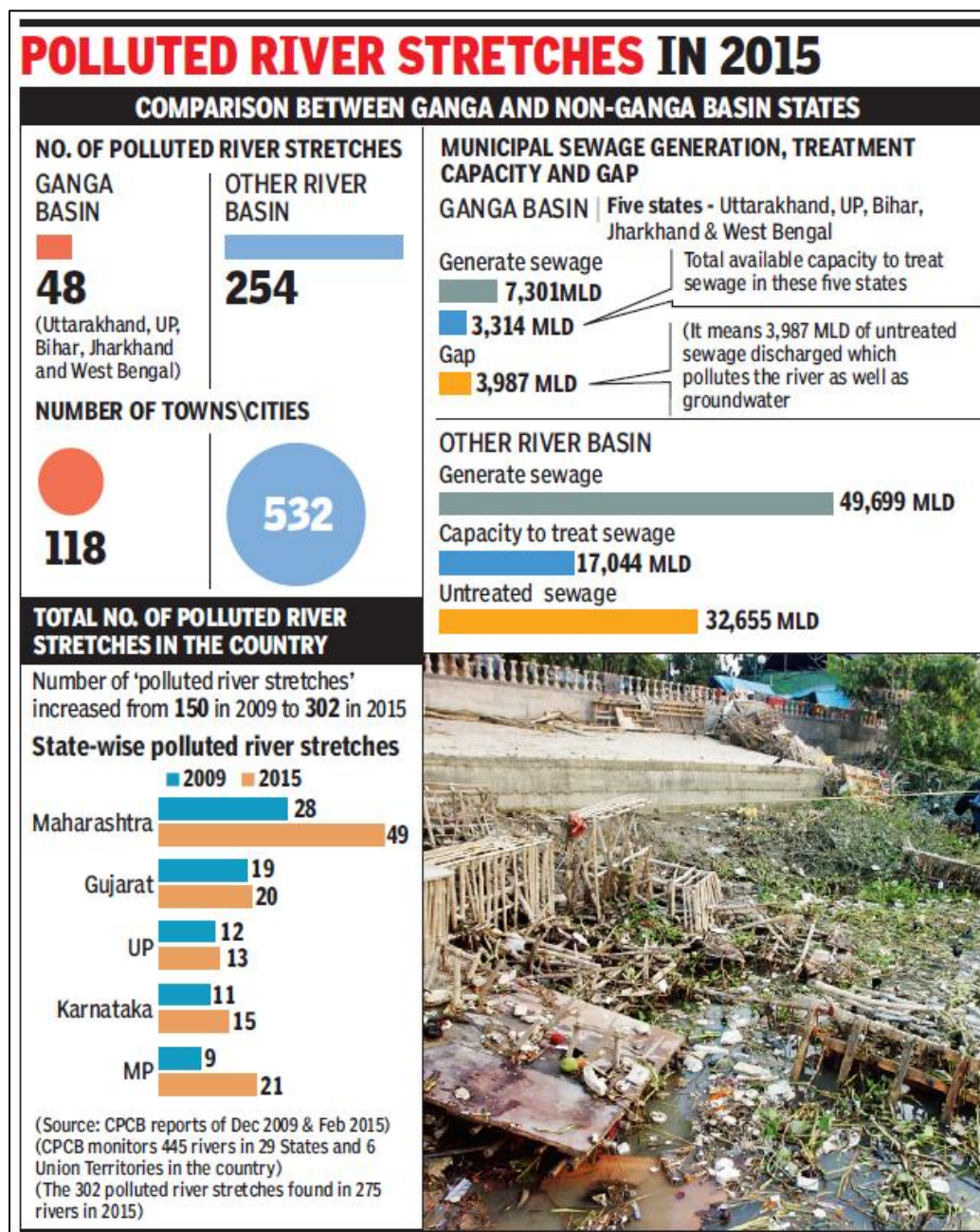
- ➔ Centre working on comprehensive legislation for rejuvenating Ganga
 - ➔ The legislation would pave the way for a Centralised Authority on Ganga Cleaning
 - ➔ Centre plans to set-up 11-12 trash cleaning machines to clean Ganga surface by monsoon
 - ➔ Two high-powered committees chaired by Finance Minister and Road Transport Minister overseeing the work on Ganga cleaning
 - ➔ Kanpur Tanneries has to be connected with sewage treatment plant by March 2017 or face closure
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Eight central ministries join hands for the ambitious clean Ganga mission. Seeking to use different arms of the government in pursuing the gigantic task of Ganga cleaning, the Union water resources ministry has signed a joint memorandum of understanding (MoU) with seven ministries to carry forward multi-sectoral activities for minimum three years to rejuvenate the river. Under the MoU, the Ministry for Human Resources and Development will facilitate IITs for developing and undertake pilot projects for implementing Zero Liquid Discharge (ZLD) system for four types of industrial pollution covering tanneries, chemical, pharma and textile industries. The Ministry of Ayush will take up promotion of medicinal plants in the Ganga catchment areas and ministry of youth affairs will involve sports persons to form young group to take up activities related to Ganga cleaning.

Government shuts 150 polluting industrial units along Ganga. The Centre has issued the closure orders for not installing Online Continuous Effluent Monitoring System (OCEMS) along River Ganga. Minister of State (Independent Charge) of Environment, Forest and Climate Change, Mr Prakash Javadekar said that of the 764 polluting industries, 514 have already installed the monitoring system while 94 are in the process. He added that the industrial pollution has significantly come down in the river due to the installation of the monitoring system and added that the problem of black liquor discharge and spent wash into the river has also been largely controlled.

Union water resources, river development and Ganga rejuvenation minister Ms Uma Bharti has announced projects worth Rs 78 crore to cover upgrading of STP (sewage treatment plant) and diversion of drainage at Anupshahr in Bulandshahr district. Bharti was at Anupshahr as part of her inspection of prominent ghats and other critical areas.

Focus on Ganga, but pollution plagues 254 other stretches. Ganga river basin states, having 48 polluted river stretches, need special attention due to their lengths and the size of dependent population but this does not take away the case of other river basin states which have as many as 254 polluted river stretches. The Central Pollution Control Board (CPCB) had identified these polluted river stretches and found the number of such stretches had increased from 150 in 2009 to 302 in 2015. The polluted stretches were identified through constant monitoring of water quality in rivers across the country. It was based on the BOD (bio-chemical oxygen demand) levels in water that shows the extent of organic and bacterial contamination.



Source. The Times of India, 25 January 2016

Ammonia in Yamuna five times higher than normal. The level of ammonia in Yamuna was five times above the acceptable limit at 2.5 parts per million during the latter part of January 2016.. The acceptable limit is 0.5 parts per million. The primary reason behind the recurrent problem is the failure to ensure ecological flow in the river. Ecological flow — which is described as the minimum amount of water that should flow throughout the river at all times to sustain underwater and estuarine ecosystems and human livelihoods — must be maintained at 10 cumecs (cubic meter per second) at all times.

Lakes in Koramangala-Challaghatta are most polluted. The lakes in Koramangala-Challaghatta valley are the most polluted than the ones in Vrishabavathi and Hebbal valleys. The study by the Indian Institute of Science, *Wetlands: Treasure of Bangalore*, reveals the Koramangala-Challaghatta valley receives more waste water; at its inlets, higher organic contents except phosphates are found. The survey of 105 wetlands says 98% are encroached upon by illegal buildings (high rises, commercial buildings, slums, etc), 90% of lakes are sewage fed, 38% are surrounded by slums and 82% show loss of catchment area. These areas are being used as dumping yards for either solid municipal waste or construction debris. The common threats faced by lakes in Bengaluru include dumping of building debris, plastic and solid waste into the water bodies, construction buildings near or on the lakes by developers and improper and damaged fencing which increase encroachments in the area.

Only 16 per cent of Bengaluru's sewage water is treated. The sewage treatment plants in the city have a capacity to treat up to 720 million litres per day, but only 40 per cent of Bengaluru's houses are connected to the sewage network. The BWSSB is able to treat only 16 per cent of the total sewage water produced in the City, while 42 per cent enters lakes. The reason behind this is that the City's sewage network is not well connected to the 14 Sewage Treatment Plants (STPs) due to corroded sanitary lines.

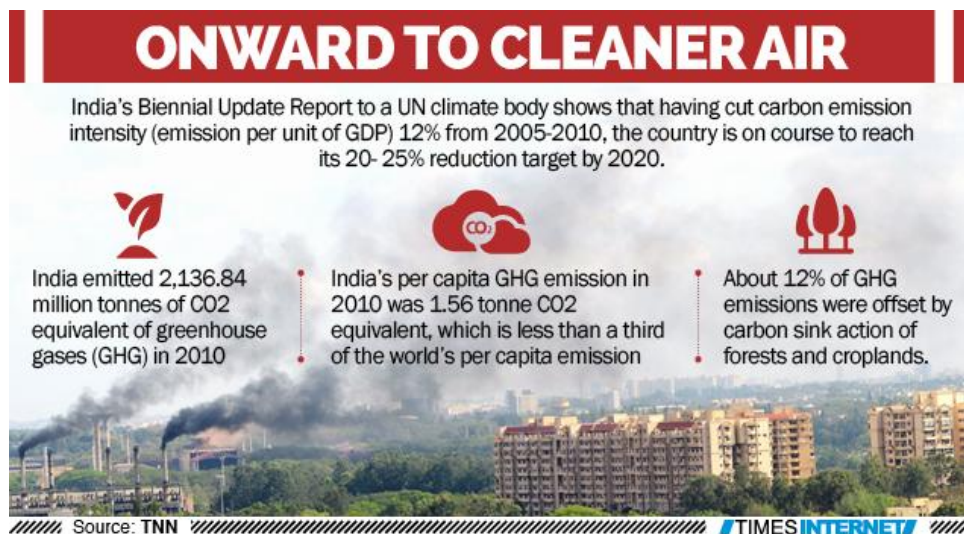
Oil India tastes success in restoring polluted water bodies. A research unit of Oil India Ltd (OIL) has achieved success in lowering oil content in water bodies at drilling pits, making these areas conducive for the growth of aquatic flora and fauna. For the first time, such an integrated approach of bio-remediating oil contamination in water bodies (effluent pits) has been tried out in OIL. The first of its kind 'Pilot Scale Bio-Remediation' initiative by OIL's newly established Biotechnology Section was started in August last year to lower the oil content in DEPs to less than 10 parts per million (ppm) within six months.

[India Today](#), 6 January 2016 | [The Times of India](#), 6 January 2016 | [The Economic Times](#), 9 January 2016 | [Business Standard](#), 11 January 2016 | [The Times of India](#), 14 January 2016 | [Deccan Herald](#), 20 January 2016 | [DNA](#), 21 January 2016 | [The Times of India](#), 25 January 2016 | [Hindustan Times](#), 28 January 2016 | [The Times of India](#), 1 February 2016



India cut carbon emission intensity by 12% in 5 years. India submitted its first [Biennial Update Report](#) to the United Nations Framework Convention on Climate Change (UNFCCC), towards fulfillment of the reporting obligation under the Convention. As per the provisions of the Convention, countries need to periodically provide information in the form of their National Communication. Forests and croplands, which absorb carbon dioxide, offset the total emissions by 12 per cent, thereby bringing down

India's net emissions to 1.88 billion tonnes of carbon dioxide equivalent.



Source. The Times of India, 22 January 2016

As per the report, India emitted 2136.84 million tonnes of CO₂ equivalent greenhouse gases in 2010. Energy sector was the prime contributor to emissions and with 71% of total emissions in 2010. Energy sector includes - electricity production, fuel combustion in industries, transport and fugitive emissions. Industrial processes and product use contributed 8%; agriculture and waste sectors contributed 18% and 3% respectively to the national GHG inventory.

Rs 310 crore project to mitigate climate effects in Himachal. The 310 crore Himachal Pradesh Forest Ecosystem Climate Proofing project is being launched with German collaboration. It will be implemented for six years in eight forest divisions of Chamba and Kangra districts and will provide direct and indirect employment to 1.5 lakh people of 600 cluster villages. Bamboo forests spread over 1,000 hectares and traditional water springs and other resources in the catchment areas of around 150 natural rivulets will be revived.

Climate change advances wine grape harvest by two weeks. Harvesting of wine grapes, one of the most crucial activities in wine making has started at the Sula Vineyards, a maker of wines. Climate change has had an impact, advancing the harvest two weeks earlier than before, said a statement from the vineyards. The grapes come from across Maharashtra at Sula's three wineries, and from across Karnataka for its Karnataka winery.

Climate change causes mango crop losses. In Uttar Pradesh, northern India, unusually warm weather in December, related to El Nino, has caused mango trees to flower early. Now growers fear that the fall in temperatures witnessed lately will hit crops meant for the summer market, as flowering mango trees need consistently warm weather to fully ripen. Coupled with the earlier warm winter, the expected sudden drop in temperature has added to the problems for mango growers.

Global warming can turn Indian Ocean into ecological desert. The Indian Ocean is an ecological desert in the works, warned scientists who sounded the alarm not just on overfishing but also on the pernicious effects of global warming. Overfishing is not the sole cause for the lowered catch in the region – food sources for fish are increasingly becoming scarce because of global warming. Warming in the Indian Ocean has been decreasing phytoplankton by up to 20 percent, revealed a [study](#) conducted by Dr Roxy Mathew Koll, Scientist, Indian Institute of Tropical Meteorology. Rising water temperatures appear to have been decreasing the number of phytoplankton – microscopic plants located at the base of the marine food chain serve as food for fish – for more than six decades now. This scarcity of phytoplankton is feared to affect the whole food chain and likely turn the Indian Ocean into an “ecological desert”.

Ocean warming 'underestimated'. The amount of sea level rise that comes from the oceans warming and expanding has been underestimated, and is likely about twice as much as previously calculated, German researchers have said. The findings in the [Proceedings of the National Academy of Sciences](#) suggest that increasingly severe storm surges could be anticipated as a result. Sea level can mount due to two factors -- melting ice and the thermal expansion of water as it warms. Until now, researchers have believed the oceans rose between 0.7 to one millimetre per year due to thermal expansion. But a fresh look at the latest satellite data from 2002 to 2014 shows the seas are expanding about 1.4 millimetres a year, said the study.

[The Economic Times](#), 13 January 2016 | [The Times of India](#), 15 January 2016 | [Tech Times](#), 21 January 2016 | [The Times of India](#), 22 January 2016 | [Press Information Bureau](#), 22 January 2016 | [The Times of India](#), 26 January 2016 | [The Tribune](#), 1 February 2016



New mining rules for minor minerals notified. The government has notified a new policy of granting environmental clearance (EC) for minor minerals to combat illegal sand mining. The power of granting environmental clearances for leases up to five hectares have been delegated

to district committees for the first time, among other steps, including the monitoring of mined-out material through information-technology-enabled services. Another important feature of the policy is use of technology and technology-

Major minerals are those specified in the Schedule appended in the Mines and Minerals (Development and Regulation) Act, 1957, and the common major minerals are calcite, clay, coal, quartz, etc. Minor minerals are those specified in the Schedule appended in minor mineral concession rules and the common minor minerals are limestone, decorative stones, etc.

enabled services to track mined-out minerals. Their movement will be controlled through Transit Permit.

A District Environment Impact Assessment Authority (DEIAA) has been created for proper monitoring of sand mining. The DEIAA will be responsible for grant of environmental clearance for category 'B2' projects for mining of minor minerals, for all the districts in the country.

Government to amend law to push mining M&As. The government has proposed amendments to the country's mining law to allow transfer of lease for captive mines during mergers and acquisitions in a move aimed at helping companies pare debt and also enable banks to recover some of the funds that are locked up. The government released draft amendments to the Mines and Minerals (Development and Regulation) Act, 1957 as changes last year blocked transfer of leases for captive mines which were allotted before auctions became the norm.

HC nod to traditional limestone, sandstone mining in Meghalaya. The High Court of Meghalaya has allowed traditional excavation and transportation of limestone and sandstone in the State. The Court, however, said that for grant of any new mining lease (excluding traditional excavation and transportation of limestone and sandstone), the State authority should seek clearance from the State Level Environment Impact Assessment Authority (SLEIAA) instead of CEC as directed in the judgment and order of the Court dated November 26, 2015.

Indian Bureau of Mines, NRSC to work on satellite imagery initiative. The Indian Bureau of Mines, Ministry of Mines has entered into a memorandum of understanding with the National Remote Sensing Centre (NRSC), Department of Space for monitoring of mining activity through satellite imagery. This initiative is part of the Digital India drive. Under the MoU, NRSC will demonstrate the use of high resolution satellite imagery in the monitoring of mining activity/changes over a period of time and over selected group of mines at two locations of Indian Bureau of Mines on a pilot basis. This includes checking and validation of the consistency of Different Geo Positioning System (DGPS) points collected as part of lease boundary survey programme of selected group of mines. The project has been named Sudoor Drishti. Bhuvan-based services will be used for the monitoring of mining activities and development of mobile app for field data collection to verify the ground realities with respect to the approved proposals of mines in Odhisa and Karnataka.

The Times of India, 12 January 2016 | The Hindu Business Line,... 21 January 2016 | The Pioneer, 22 January 2016 | Business Standard, 22 January 2016 | The Shillong Times, 28 January 2016



India launches its urban makeover plan with smart cities. The government has picked 20 cities, including five state capitals, to launch its larger urban makeover plan. It proposes to invest Rs.50,802 crore on these cities, selected through a challenge, and is the first phase of the government's plan to set up 100 smart cities. The cities in the first list have made it to the top of the competition based on implementation framework, including feasibility and cost-effectiveness which has a weightage of 30%, followed by result orientation (20%), citizen participation (16%), smartness of proposals (10%), strategic plans (10%), vision and goals (5%), evidence-based city profiling and key performance indicators (5%) and processes followed (4%).



Source: Mint, 29 January 2016

Over \$150 billion investment required for Smart City initiative. The government's vision of creating 100 smart cities will require an investment of over \$150 billion (roughly Rs. 10,15,520 crore) over the next few years with private sector being a significant contributor, says a report. According to Deloitte, nearly \$120 billion (roughly Rs 8,12,415 crore) will come from the private sector. The government has already initiated two programmes with an initial outlay of \$7.513 billion (roughly Rs. 50,863 crore) for 'Smart

Cities Mission' and the 'Atal Mission for Rejuvenation of Urban Transformation (AMRUT)' for the upgradation of 500 existing cities.

India and France ink deals. India and France deepened their strategic partnership, concluding deals worth an estimated \$15 billion. In addition, French companies will invest \$10 billion in India over the next five years. The two countries have signed a series of preliminary pacts on the development of Chandigarh, Nagpur and Puducherry as “smart cities”, besides another clutch of pacts on urban development, water, waste treatment and solar energy.



SMART CITIES

MoU between AFD and
1. Union Territory of Chandigarh
2. Government of Maharashtra
3. Union Territory of Puducherry

AFD to provide technical assistance on urban development in the fields of urban transport, water, waste treatment, solar energy, urban planning and architecture and heritage

PROJECTS ON SMART CITIES, SUSTAINABLE URBAN MOBILITY SYSTEMS, PUBLIC TRANSPORT, ENERGY SOLUTIONS

Nine French companies sign MoUs with Engineering Projects India.

MoU with
1. Alstom Transport 2. CAN Group,
3. Dassault Systemes
4. Schneider Electric 5. Thales
6. EDF Energies Nouvelles
7. EGIS India 8. Lumiplan
9. Poma Group

Source. Mint, 26 January 2016

Mint, 26 January 2016 | [Mint](#), 29 January 2016 | [NDTV Gadget](#), 1 February 2016