

20 FEBRUARY 2019

1. Cabinet approves new National Electronics Policy

The Union Cabinet approved the new **National Electronics Policy 2019** that aims to achieve a turnover of \$400 billion (about Rs. 26 lakh crore) for the electronics system design and manufacturing (ESDM) sector by 2025, while generating employment opportunities for one crore people.

The policy will enable flow of investment and technology, leading to higher value addition in the domestically manufactured electronic products and increased manufacturing of electronics hardware for local use as well as exports.

The policy has introduced new “**easier to implement**” incentive schemes, including interest subvention scheme and credit default guarantee, to replace some of the existing ones under the National Electronics Policy 2012.

The new policy proposes to provide interest subsidy of 4% on loans up to Rs. 1,000 crore on plant and machinery, in case of larger loans, the subsidy will be limited to Rs. 1,000 crore.

The government also proposes to create a fund to provide default guarantee of up to 75% to the banks for plant and machine loans of up to Rs. 100 crore. “This will eliminate the need for small and new investors to provide third party collateral the scheme will be on the pattern of credit guarantee being provided by SIDBI for SME sector.

However, for both these schemes the consultations are on with the Department of Expenditure, the official added. These schemes will be launched once the NPE 2019 is notified.

To promote creation of an ecosystem, the NEP 2019 has pitched for 2.0 version of the Electronics Manufacturing Cluster scheme, under which infrastructure support will be provided for a group of industries that are part of the product supply chain rather than individual industries. The NPE 2019 has also proposed creating a Sovereign Patent Fund to acquire intellectual property for chips and chip components.



2. 7 islands in Andamans, Lakshadweep identified for seaplane operations

Four islands in the Andamans and three in Lakshadweep have been identified for seaplane operations, while private sector participation has been invited for tourism-based projects.

The 5th meeting of the Island Development Agency, chaired by Home Minister Rajnath Singh, also reviewed the progress made towards the programme ‘**Holistic development of islands**’.

SwarajDweep, ShaheedDweep, Hutbay and Long Island in Andaman and Nicobar Islands and Kavaratti, Agatti and Minicoy in Lakshadweep have been identified for seaplane operations.

Key infrastructure projects such as operationalisation of the Diglipur airport for civilian aircraft and the construction of a new airport on Minicoy Island have been accorded high priority by the government,

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while Coastal Regulation Zone clearance (CRZ) has been accorded for 'Middle Strait Bridge' on Andaman Trunk Road.

Bids for private sector participation in three tourism-based projects have already been invited by the Andaman & Nicobar Administration. They include eco-tourism projects on Smith Island and Long Island and a tent city project on Aves Island. Bids will be invited shortly for one more project on Neil Island.

Three projects in Lakshadweep have been identified for issue of bids. These include tourism projects in the islands of Kadmat, Minicoy and SuheliCheriyakara. Environmental Clearance (EC), CRZ clearance and all other clearances required for these projects are being obtained upfront, on priority, to attract more number of reputed bidders.

The Ministry of Commerce has issued a notification extending tax incentives for investments made in the manufacturing and service sector in the islands of Andaman and Nicobar and Lakshadweep.

In order to sustainably utilise the potential of **Tuna fish**, 10 deep-sea modern fishing vessels are being procured by the Lakshadweep administration from Cochin Shipyard Limited.

The Home Minister expressed satisfaction at the progress made since the last meeting held on June 30, 2018, when directions were given to focus on creation of recreational facilities along with tourism infrastructure, implementation of renewable energy projects, incentives for Micro, Small and Medium Enterprises and the development of a film city.



3. More than 4 lakh children are inhalant addicts: survey

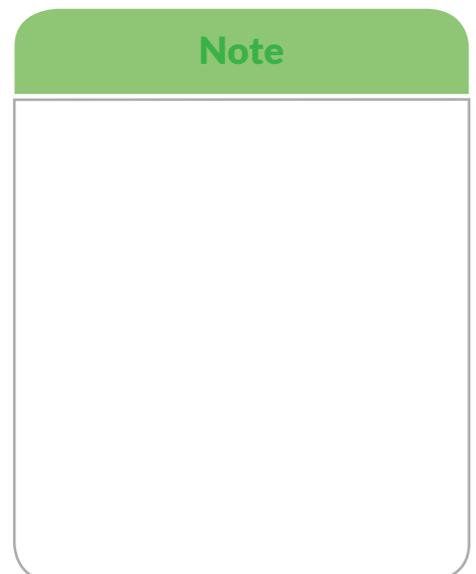
Uttar Pradesh, Andhra Pradesh, Punjab, Chattisgarh and Arunachal Pradesh have emerged front runners in alcohol abuse and health complications arising due to the addiction.

The survey report, which was submitted to the Union Ministry of Social Justice and Empowerment on Monday, noted that 5.7 crore people in the country suffered from alcohol related problems.

Of the 16 crore people who consumed alcohol across the country, prevalence of alcohol consumption was 17 times higher among men than among women.

More than four lakh children and 1.8 million adults needed help for inhalant abuse and dependence.

The survey, conducted to ascertain the magnitude of substance abuse in the country, was carried out between December 2017 and October 2018. It covered 4,73,569 individuals in the 10-75 age group. High prevalence of consumption of alcohol was also reported in Tripura and Chhattisgarh.



Cannabis use

The survey also revealed that about 3.1 crore individuals consumed cannabis, with 72 lakh of them needing help for cannabis use problems. Uttar Pradesh, Punjab and Odisha registered maximum cannabis dependence.

The most common opioid used was heroin. The current use of heroin was 1.14%, followed by pharmaceutical opioids (0.96%) and opium (0.52%). Here, the abuse was found most prevalent in Uttar Pradesh, Punjab and Haryana.

The Ministry for Social Justice and Empowerment maintained that a national guideline would be formulated after detailed consultation with all stakeholders to counter the drug menace in the country.

<p>Growing addiction</p> <p>A survey conducted between December 2017 and October 2018 to ascertain the magnitude of substance abuse in India has thrown up some disturbing figures</p>	<p>People with alcohol-dependence: 57 million</p> <p>High prevalence States: U.P., Andhra Pradesh, Punjab, Chattisgarh, Arunachal Pradesh</p> <p>Sedative/Inhalants users: 4,60,000 children, 1.8 million adults</p>	<p>Cannabis dependence: 7.2 million</p> <p>High prevalence States: U.P., Punjab and Odisha</p> <p>Heroin is the most abused opioid (1.14% of Indians use this)</p> <p>High prevalence States: U.P., Punjab, Chattisgarh, Delhi</p>
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4. Hyperloop dreams are taking shape in U.S. and India

The State of California, U.S., just decided to sharply scale back its plans for a high-speed rail artery meant to transform travel up and down the State. But in the desert outside Las Vegas, the transportation ambitions still seem limitless.

Engineers working for Virgin Hyperloop One are testing a radically different type of mass transit: one that aims to move people and cargo in small wheel-less pods in a vacuum tube at speeds that could exceed 965 km per hour.



The company, which counts Virgin Group as a minority investor, is one of several in the U.S., Canada and other countries developing hyperloop technology.

The concept was promoted by Elon Musk, of electric-car and private-rocket renown, and then offered by one of his companies as open-source technology available to all.

It works by propelling pods using magnetic levitation through a low-pressure, near-vacuum tube. The low pressure minimises friction and air resistance, greatly reducing the power needed.

As the pods travel in a tube, they're not subject to shutdowns due to harsh weather. Virgin Hyperloop One, based in Los Angeles, began testing here in 2017 and is now doing so with a full-scale test track; its main competitors, Hyperloop Transportation Technologies, also in Los Angeles, and TransPod, with headquarters in Toronto, expect to build their own test tracks this year. So far both are working with simulations.

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Maharashtra hyperloop

Virgin, which has raised \$295 million, is in the developmental stage with projects in India and Ohio.

Last month, Maharashtra declared the company's proposed hyperloop system between Pune and Mumbai as an official infrastructure project. Construction on a 7-mile test track could start this year.

Passenger operations could begin by the middle of the next decade, cutting travel time between the cities to 30 minutes, one-fifth the current duration.

All three companies contend that because of energy cost advantages over other forms of transportation, a system will be able to break even in a decade after full-scale operations begin.

A difference from other transit systems will be the passenger experience. To keep the structural integrity of the near-vacuum tube, there will be no windows.

Instead, developers are looking at various exterior simulations that could be projected on large screens throughout the pod.

5. New Universe map unveils 3,00,000 more galaxies

The known Universe just got a lot bigger.

A new map of the night sky published charts hundreds of thousands of previously unknown galaxies discovered using a telescope that can detect light sources optical instruments cannot see.

The international team behind the unprecedented space survey said their discovery literally shed new light on some of the Universe's deepest secrets, including the physics of black holes and how clusters of galaxies evolve.

More than 200 astronomers from 18 countries were involved in the study, which used radio astronomy to look at a segment of sky over the northern hemisphere, and found 3,00,000 previously unseen light sources thought to be distant galaxies.

The map created by the **LOFAR observations**, part of which was published in the journal *Astronomy & Astrophysics*, contains data equivalent to the capacity of ten million DVDs yet charts just two percent of the sky.

Radio astronomy allows scientists to detect radiation produced when massive celestial objects interact.

Ancient radiation

The team used the Low Frequency Array (LOFAR) telescope in the Netherlands to pick up traces or "jets" of ancient radiation produced when galaxies merge. These jets, previously undetected, can extend over millions of light years.

With radio observations we can detect radiation from the tenuous medium that exists between galaxies.



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The discovery of the new light sources may also help scientists better understand the behaviour of one of space's most enigmatic phenomena.

Black holes which have a gravitational pull so strong that no matter can escape them emit radiation when they engulf other high-mass objects such as stars and gas clouds.

The new observation technique would allow astronomers to compare black holes over time to see how they form and develop. "If you look at an active black hole, the jets (of radiation) disappear after millions of years, and you won't see them at a higher frequency (of light).

But at a lower frequency they continue to emit these jets for hundreds of millions of years, so we can see far older electrons.

The Hubble telescope has produced images that lead scientists to believe there are more than 100 billion galaxies in the Universe, although many are too old and distant to be observed using traditional detection techniques.

The LOFAR telescope is made up of a network of radio antenna across seven countries, forming the equivalent of a 1,300-km diameter satellite dish.

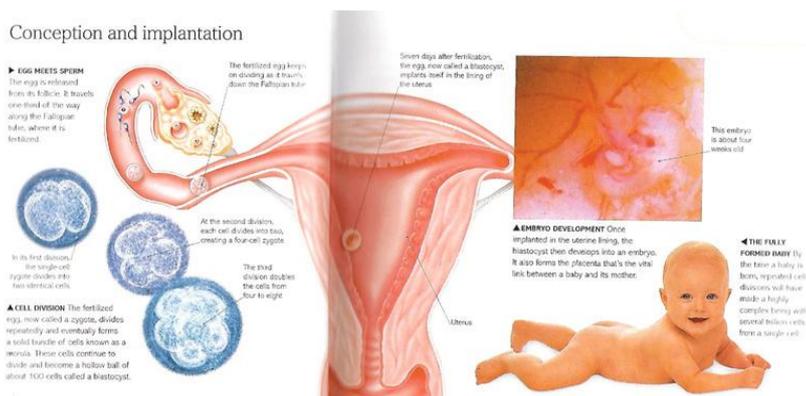
The team plans to create images of the northern sky, which they say will reveal as many as 15 million as-yet undetected radio sources.

6. A bundle of joy from a hidden ovary

The baby was born through surrogacy after egg extraction from transpositioned organ

At 27 years a woman had to undergo removal of the uterus and the left ovary, due to uterine cancer (mild-grade endometrioid adenocarcinoma). Her surgical oncologist decided to preserve her right ovary, but moved it to the abdominal wall, just underneath the skin.

Five years later, the woman became a mother through surrogacy as fertility specialists, in a novel method, extracted the egg from the transpositioned ovary percutaneously, and fertilised it.



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Unique case

The case was unique as IVF specialists found no reports of pregnancies in which eggs were extracted from an ovary in such an ectopic location, and that too, retrieved through the skin.

Her uterus with fallopian tubes as well as the left ovary were removed .



What was remaining was her right ovary. The only way she could have her child was through surrogacy. There was a twist as the right ovary along with its blood supply, instead of being lodged within the abdomen, was brought up through the abdominal wall and placed right beneath the skin.

Ovaries in cancer patients, can be located within the abdomen or above the pelvic brim in case they had to go undergo radiation. In the literature search, the doctors found that people in this situation usually have their ovaries removed and later transplanted back once they are cancer free. In some cases, it it moved out of its normal position in the pelvic area to just above the pelvis, and eggs are retrieved laproscopically.

After detailed work-up, she was put on stimulant injections and doctors used a syringe (same as used in regular IVF procedures) to extract the eggs, but through the skin of the patient's abdomen. The quality of eggs was another challenge.

Three attempts later, doctors finally managed to get embryos out of such a retrieval and implanted them a surrogate in 2018. She delivered a baby girl, weighing 2.62 kg on February 16.

Doctors said this was the country's first surrogate birth following egg extraction from an ovary transpositioned under the skin.

Preserving tissue

The hospital is now working to preserve ovarian tissue for future re-transplantation into the individual for fertility purpose after thawing. "Childhood cancers in pre/pubertal age group are maximum indicators for ovarian tissue preservation.

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