

INDIA FOCUS



PM Modi really cares about India because he is pushing us to make significant investment ...

ELON MUSK,
CEO of Tesla Motors

Together, we're unlocking a shared future of what I believe to be unlimited potential

JOE BIDEN
US President during PM Modi's visit



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PM Modi secures billions of dollars in investment commitments during 3-day US visit



PM Narendra Modi and President Joe Biden at the White House on June 22, 2023.

Prime Minister Narendra Modi's six-day state visits to the US and Egypt last month have marked several major deals to boost cooperation in key areas such as defence, space, technology and trade. During his trip, which was termed "historical", the Prime Minister met the US President, Egypt's President, and executives of various companies.

The Prime Minister was accorded a ceremonial welcome at the White House's South Lawn by US President Joe Biden and First Lady Jill Biden. He also addressed a joint meeting of the US Congress and met the US Vice President.

After meeting Modi, Biden tweeted

saying "the friendship between the United States and India is among the most consequential in the world. And it's stronger, closer, and more dynamic than ever". In response, Modi said: "Friendship between our countries is a force of global good. It will make a planet better and more sustainable. The ground covered in my recent visit will strengthen our bond even more."

In a series of meetings, the Prime Minister met several CEOs, who have committed billions of investment in India. According to reports, the US is the third largest source of foreign investment for India, with over \$60 billion (Rs 4.91 trillion) invested between

2000 and 2023, according to official data.

Modi said: "This new journey is of our convergence on global strategic issues, of our cooperation for Make in India, Make for the World. Be it technology transfer and manufacturing cooperation or increasing coordination in the industrial supply chain, both nations are taking strong steps towards a better future. The decision of General Electric Company to manufacture fighter planes in India will prove to be a milestone for India's defence sector."

Under the flagship "Innovation Handshake" initiative, PM Modi met CEOs of Google, Apple, Microsoft, and other tech giants.

GE Aerospace announced that it has signed a Memorandum of Understanding (MoU) with Hindustan Aeronautics Limited (HAL) to produce fighter jet engines for the Indian Air Force. The agreement includes the potential joint production of GE Aerospace's F414 engines in India. The MoU is a major milestone in the bilateral relationship.

Boeing has announced a \$100-million investment in infrastructure and programmes to train pilots in India, which will support India's need for 31,000 new pilots over the next 20 years. Additionally, Boeing has completed a C-17 after-market support facility and a new parts logistics center in India that allows the country to become a regional maintenance hub.

After meeting Modi in Washington, Google and Alphabet CEO Sundar Pichai said that Google is investing \$10 billion in India's digitisation fund, adding that PM Modi's vision for Digital India serves as a blueprint for other countries.

Pichai lauded PM Modi's visionary approach to Digital India. He revealed Google's plans to establish a global fintech operations centre in Gujarat's GIFT City. "It will cement India's fintech leadership thanks to UPI and Aadhaar. We are going to build on that foundation and take it globally."

Amazon CEO Andrew Jassy expressed his commitment to generating additional employment opportunities in India, after meeting Modi. Amazon is one of the biggest investors in India. World's largest EV maker Tesla's founder met the Prime Minister and said that his company will soon set up a plant in India. Micron Technology has agreed to build a \$2.75-billion semiconductor assembly and test facility in India, with Micron spending more than \$800 million and India financing the rest. US-based Applied Materials will launch a new semiconductor center for commercialisation and innovation in India, and Lam Research, another semiconductor manufacturing equipment company, will start a training programme for 60,000 Indian engineers.

Walmart aims to export goods worth \$10 billion annually from India by 2027, as reiterated during a meeting between its CEO and Modi.

On the space front, India signed on to the Artemis Accords, a blueprint for space exploration

HIGHLIGHTS OF THE DEAL

- MQ-9B drones for India worth \$3 billion
- US Navy ship repair in Chennai, Mumbai, Goa
- Boeing C-17 logistics support in India
- US semiconductor facilities and training in India
- India joins critical mineral security partnership
- Quantum partnership
- Space cooperation: astronauts, observatory in India, data sharing
- In-country H1B / L visa renewal pilot
- US consulates in Bengaluru/ Ahmedabad; Indian consulates in Seattle + 2 other cities
- US support for India at IEA
- India's VSK to do solar manufacturing in Colorado
- India's JSW to produce steel in Ohio
- Hydrogen breakthrough agenda

Source: White House fact sheet

cooperation among nations participating in NASA's lunar exploration plans. NASA and the Indian Space Research Organization also agreed to make a joint mission to the International Space Station next year.

Foreign Secretary Vinay Mohan Kwatra said technology constituted a key theme of the discussions, with "roughly 20 to 25" areas of tech cooperation identified. This included semiconductors, quantum, science and tech, defence, and space, where he pointed out that India had signed the Artemis Accords which would open up new areas of partnership between Isro and Nasa for cooperation in outer space. "One of the key elements in this has been that out of the seven WTO disputes between India and the US there has been a resolution for six of the outstanding WTO disputes."

Written using agency reports

ECONOMY

Net direct tax collections for 2023-24 register a growth of 11%

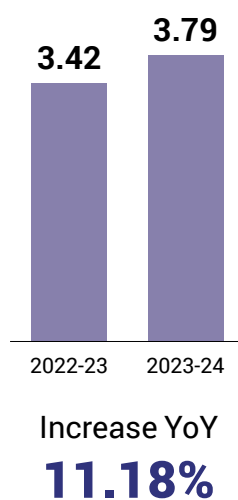
Written using agency reports

The figures of direct tax collections for 2023-24 show that net collections are at Rs 3.79 trillion, compared to Rs 3.42 trillion in the corresponding period of 2022-23, according to a Press Information Bureau release. This is a rise of 11.18%.

The net direct tax collection includes Corporation Tax (CIT) at Rs 1.57 trillion (net of refund) and Personal Income Tax (PIT) including Securities Transaction Tax (STT) at Rs 2.22 trillion (net of refund).

The gross collection of direct taxes (before adjusting for refunds) for 2023-24 stands at Rs 4.19 trillion against Rs 3.71 trillion in the corresponding period of the preceding financial year, registering a growth of 12.73%. This includes CIT at Rs 1.87 trillion and Personal Income Tax (PIT) including Securities Transaction Tax (STT) at Rs 2.31 trillion.

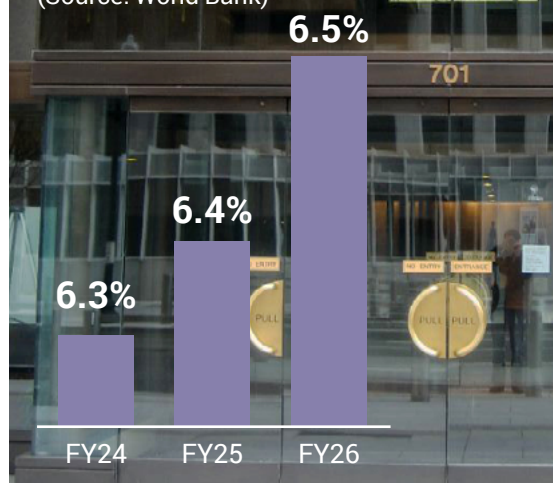
The advance tax collections for the first quarter of 2023-24 stand at Rs 1.17 trillion, against Rs 1.02 trillion for the corresponding period of 2022-23, showing a growth of 13.70%.

DIRECT TAX COLLECTIONSNet collections
(Rs trillion)**Indian economy to be the fastest-growing in FY24, says World Bank**

Written using agency reports

India is expected to maintain its position as the fastest-growing major economy in terms of both aggregate and per capita GDP despite a slowdown in growth, according to the World Bank.

The bank also projects a slight pickup in growth through 2025-26, attributing it to inflation moving back toward the midpoint of the tolerance range and the payoff from reforms. The bank's April forecasts remain unchanged, with India's growth projected at 6.3% for FY24, rising to 6.4% in FY25. A growth rate of 6.5% is projected for FY26. Additionally, the World Bank emphasises that India's growth will have a positive impact on the growth prospects of the South

GDP OUTLOOKGrowth projected
(Source: World Bank)

Asian region.

"Greater than expected resilience in private consumption and investment, and a robust services sector in India, is supporting growth in 2023. Growth is projected to pick up slightly through FY26 as inflation moves back toward the midpoint of the tolerance range and reforms payoff," the multilateral development bank says in its Global Economic Prospects report.

The World Bank also highlights the unexpected resilience in private consumption and investment, along with robust growth in the services sector in India, as factors contributing to an upward revision in growth for 2023.

"However, manufacturing rebounded into 2023 after contracting in the second half of 2022, and investment growth remained buoyant as the government ramped up capital expenditure. Private investment was also likely boosted by increasing corporate profits. Unemployment fell to 6.8% in the first quarter of 2023, the lowest since the onset of the Covid-19 pandemic, and labour force participation increased," it adds.

ENERGY LEADER**India to be green hydrogen hub by 2040: Hardeep Singh Puri**

Written using agency reports

India will become a major green hydrogen hub in all aspects – production, consumption and exports – by 2040, petroleum and natural gas minister Hardeep Singh Puri said at a CII event, according to a report in the Financial Express.

"By 2040, India will be a major green hydrogen hub with demand, production, and consumption all in India, including major exporting of green ammonia and others. I am very bullish on these next 15 years," the minister said.

Considering the energy requirement of a



Hardeep Singh Puri, minister for petroleum and natural gas, at a CII event.

growing India, he said that while the exploration and production (E&P) activities will go up exponentially, increased affordability and spending power will make green transition even faster.

Puri called on the industry people attending the two-day annual event of the Confederation of Indian Industry (CII) to make their investment decisions based on the forecast that 25% of the global demand in the next 20 years till 2045 will come from India. "This growth will take place, transition to green energy will take place and that is the real story which is unfolding," he said, adding that while global increase in demand per capita is 1%, growth in India is thrice that much.

The diplomat-turned-politician said that at the rate at which India became the fifth largest economy from being the 10th largest, it will go on to become a \$4.3 trillion economy from current \$3.8 trillion to be the third largest in the world. ■

MAKING IN INDIA

76% rise in FDI seen in manufacturing sector due to PLI schemes

Written using agency reports

The Production Linked Incentive (PLI) schemes have led to a significant increase in production, employment generation, economic growth and exports in the country, according to the Department for Promotion of Industry and Internal Trade (DPIIT).

Addressing a press conference in New Delhi, Rajesh Kumar Singh, Secretary, DPIIT, said that due to the PLI schemes, there was a significant increase of 76% in FDI in the manufacturing sector to \$21.34 billion in 2021-22 from \$12.09 billion in 2020-21.

The PLI schemes – as envisioned by Prime Minister Narendra Modi with the objective of making India self-reliant – are built on the foundation of 14 sectors with an incentive outlay of Rs 1.97 trillion (about \$ 26 billion) to strengthen their production capabilities and help create global champions.

Sectors for which PLI schemes exist and have seen an increase in FDI inflows from 2021-22 to 2022-23 are drugs and pharmaceuticals (+46%), food processing industries (+26%) and medical appliances (+91%). The schemes have transformed India's exports basket from traditional commodities to high value-added products such as electronics & telecommunication goods and processed food products.

As on date, 733 applications have been approved in 14 sectors with expected investment of Rs 3.65 trillion. As many as 176 MSMEs are among the PLI beneficiaries in sectors such as bulk drugs, medical devices, pharma, telecom, white goods, food processing, textiles & drones.

Actual investment of Rs 625 billion has been realised till March 2023 which has resulted in incremental production and sales over Rs 6.75 trillion and employment generation of around 325,000. Exports have been boosted by Rs 2.56 trillion till 2022-23.

Incentive amount of around Rs 29 billion was disbursed in 2022-23 under PLI Schemes for 8 sectors – large-scale electronics manufacturing, IT hardware, bulk drugs, medical devices, pharmaceuticals, telecom & networking products, food processing and drones & drone components. The PLI Scheme has led to major smartphone companies shifting its suppliers to India, including Foxconn, Wistron and Pegatron. As a result, top high-end phones are being manufactured in India. It has also resulted in a 20-fold increase in women employment and localisation in IT hardware.

The Secretary of the DPIIT said that the value addition in mobile manufacturing in India is to the tune of 20%. "We have been able to increase the value addition in mobile manufacturing to 20% within a period of 3 years whereas countries like Vietnam achieved 18% value addition over 15 years and China achieved 49% value addition in over 25 years. Seen in this perspective, it is a big achievement," Singh added.



GAINS OF PLI

76% rise in FDI in manufacturing sector due to PLI Schemes

20% value addition in mobile manufacturing within 3 years

PLI Schemes transform India's exports basket from traditional commodities to high value-added products

733 applications approved till date in 14 sectors; expected investment of Rs 3.65 trillion

The PLI Scheme for LSEM along with existing Phased Manufacturing Program (PMP) has led to increased value addition in the electronics sector and in smartphone manufacturing, 23% and 20% respectively, from negligible in 2014-15. Of the \$101 billion total electronics production in FY 2022-23, smartphones constitute \$44 billion including \$11.1 billion as exports.

Import substitution of 60% has been achieved in the telecom sector and India has become almost self-reliant in antennae, GPON (Giga-bit Passive Optical Network) & CPE (Customer Premises Equipment). Drones sector has seen a 7 times jump in turnover due to the PLI Scheme which consists of all MSME Startups.

Under the PLI Scheme for Food Processing, sourcing of raw materials from India has seen significant increase which has positively impacted the income of Indian farmers and MSMEs.

There has also been a significant reduction in imports of raw materials in the pharma sector. Unique intermediate materials and bulk drugs are being manufactured in India including Penicillin-G, and transfer of technology has happened in manufacturing of medical devices. ■

HARNESSING INFRA PLATFORM

PM GatiShakti to extend benefits to the nation beyond the infrastructure sector, says Goyal

Written using agency reports

The Union Minister of Commerce and Industry, Consumer Affairs, Food & Public Distribution and Textiles, Piyush Goyal, has said that PM GatiShakti must be effectively leveraged using the area development approach to extend benefits to the nation beyond the infrastructure sector.

Last month, he chaired a meeting to review the progress of PM GatiShakti with the Department for Promotion of Industry and Internal Trade (DPIIT) and eight ministries concerned in New Delhi. The minister emphasised upon the participating ministries to harness the full potential of the integrated platform to further accelerate infrastructure and economic growth.

He said that the agriculture sector can be supported by setting up common facilities on agricultural lands by cooperatives and startups using the integrated framework of PM GatiShakti and data from the National Master Plan (NMP).

Besides senior officials from the DPIIT, the meeting saw representation from various Ministries including Road Transport and Highways, Railways, Ports, Shipping and Waterways, Civil Aviation, Power, Petroleum and Natural Gas, Department of Telecommunication (DoT), New and Renewable Energy, Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-N) and National

Industrial Corridor Development Corporation (NICDC).

Special Secretary-DPIIT Sumita Dawra presented the progress of PM GatiShakti in terms of improving the data quality of the NMP, standardising data layers and establishing a quality improvement plan (QIP) mechanism for better planning.

To encourage usage of NMP for social sector planning, five new ministries are proposed to be on-boarded on the PM GatiShakti, in addition to 14 social sector departments already onboard, to augment the socioeconomic development in the country.

In addition to improving the domestic logistics ecosystem, DPIIT is progressively working towards improving the EXIM logistics.

An EXIM Logistics Group has been formed with other ministries concerned. An action plan for improving the country's performance on each of the Logistics Performance Index (LPI) parameters of the World Bank report will be formulated and executed soon. Efforts are also being made to ensure end-to-end multi-modal tracking of cargo by integrating Unified Logistics Interface Platform (ULIP) with GSTN data. In order to impart wider understanding and adoption, capacity building of officials at states level is also planned through training modules on PM GatiShakti at Central Training Institutes. ■

GREEN ENERGY

India hails Singapore's ratification of International Solar Alliance

Written using agency reports



India's External Affairs Minister S Jaishankar hailed Singapore's ratification of the ISA as a "big step" because when a country like Singapore "which is so active and motivational for many, joins ISA fully, this is something very important"

India has hailed Singapore's decision to ratify the International Solar Alliance (ISA), signifying the decision to join collective efforts on climate action.

Singapore Minister Dr Mohamad Maliki bin Osman deposited Singapore's International Solar Alliance (ISA) of Ratification with India's External Affairs Minister (EAM) S Jaishankar last month.

Jaishankar hailed Singapore's ratification of the ISA as a "big step" because when a country like Singapore, "which is so active and motivational for many, fully joins ISA, this is ISA fully, this is something very important".

ISA, also called the International Agency for Solar Policy and Application, is a group of 106 signatory countries (86 of which are members), the majority of which are sunshine countries that lie entirely or partially between the Tropic of Cancer and the Tropic of Capricorn.

The alliance's main goal is to promote efficient solar energy use in order to reduce the reliance on fossil fuels. This programme was first presented by Prime Minister Narendra Modi, who co-launched it with French President Emmanuel Macron at the United Nations Climate Change Conference in Paris.

ISA is also the treaty-based agency responsible for implementing One Sun One World One Grid, which aims to transfer solar power-generated energy to other areas and meet electricity demands. ■

TECH ENABLER

Technology to contribute 20-25% of Indian GDP by 2025-26: IT Minister Chandrasekhar

PTI

The Indian government has set a goal of making technology 20-25% of the nation's GDP by 2025, IT minister Rajeev Chandrasekhar said while addressing Indian-American entrepreneurs and asking them to be part of this story of India.

"Any part of technology that you look at today, there is significant presence and momentum by Indian startups, Indian enterprises and Indian innovators. Over the last five years, in particular, during and after Covid-19, the Indian innovation economy has grown from 4-5% in 2014 to 10% today," he said.

Talking about the potential that technology as a sector has, he spoke about the aim for technology to contribute to nearly 20% of the total GDP of India, setting the bar at \$5 trillion.

"Our target is that technology and the digital economy would be 20% of the total GDP, which also is growing at about 8%, 7.5% per annum by 2025-2026. So, 20% of our GDP, which will be about \$5 trillion amounts to a trillion dollars and

that is the goal that we are working on. That is the mission that Prime Minister Modi's government is focused on," Chandrasekhar said.

Describing AI as a kinetic enabler of the digital economy, the minister said it is a very important and valuable layer on the progress that has been made by the startups and innovation ecosystem over the last several years around the consumer internet and the data economy.

According to the minister, India Stack is gaining a tremendous amount of recognition from other countries and multilateral agencies. This played a significant role during the Covid pandemic in

helping India fight the pandemic, detect disease, and deliver vaccines to the entire population in a seamless orderly manner.

The other areas of focus for artificial intelligence certainly are healthcare and languages, he said.

The third and fourth element of AI is the data management office, and the creation of AI compute infrastructure, he said. ■



"Any part of technology that you look at today, there is significant presence and momentum by Indian startups, Indian enterprises and Indian innovators. Over the last five years, in particular, during and after Covid-19, the Indian innovation economy has grown from 4-5% in 2014 to 10% today."

— RAJEEV CHANDRASEKHAR
Union Minister of State
for Electronics and
Information Technology

IT MANUFACTURING

Government clears PLI 2.0 for IT hardware with an outlay of Rs 170 billion

Written using agency reports

The government had last month cleared the PLI 2.0 scheme for IT hardware with an outlay of Rs 170 billion, more than doubling the budget for the scheme that was first cleared in 2021 to incentivise and promote domestic manufacturing by attracting large investments in the value chain. It will be implemented from July 1 with a cap on maximum incentives available to participating companies.

By providing financial incentives, the government aims to encourage the localisation of IT hardware components and sub-assemblies, leading to increased production within the country. The scheme covers laptops, tablets,

all-in-one PCs, servers and ultra small form factor devices.

The scheme is expected to lead to total production of about ₹ 3.35 trillion, bring an additional investment of ₹ 24.3 billion in electronics manufacturing and is expected to generate 75,000 additional direct jobs.

REACHING SPACE

389 foreign satellites launched in the last 9 years

Written using agency reports

Out of 424 foreign satellites launched till date by India, 389 were launched in the last nine years of the Narendra Modi government.

Further, out of the \$174 million earned, \$157 million came in the last nine years and similarly out of Euro 256 million earned so far, Euro 223 million came during the 9 years of the Modi regime, said Union Minister of State (Independent Charge) Science & Technology; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Jitendra Singh, in an exclusive interview with DD News.

He said that India's space sector is fast gaining a pre-eminent position in the world and the countries which started their space programmes long before us are increasingly seeking our services and launch facilities.

Singh said apart from the core functioning of rocket launching, India's space applications have become a big source of livelihood opportunities through 130-odd startups.

Referring to applications of space technology in different sectors to bring "ease of living" for common man, Singh said space tech has touched virtually every household in India.

Recently ISRO launched a record 104 satellites aboard PSLV-C37 from Satish Dhawan Space Center, Sriharikota of which 101 belong to international customers, signifying India's increasing presence in the global space industry. Moreover, the indigenous human space mission Gaganyaan is almost ready to carry Indians into space. If successful, India will be the fourth

country to have sent a human to space, the other three being the US, Russia and China. he added.

INDIGENOUS TECH

IIT-M develops low-cost mobile air pollution monitoring framework

Written using agency reports

Researchers at the Indian Institute of Technology-Madras (IIT-M) have developed a low-cost mobile air pollution monitoring framework in which pollution sensors mounted on public vehicles can dynamically monitor the air quality of an extended area at high spatial and temporal resolution.



"In view of a small number of Air Quality Index (AQI) monitoring stations, the IIT-M researchers have developed a new technology whereby low-cost air quality sensors are mounted on vehicles to gather spatio-temporal air quality data. For the cost of a single reference monitoring station, it would be possible to map an entire city at high resolution using these low-cost mobile monitoring devices," said a release from IIT-M.

Elaborating on the findings of the research, IIT-M professor Raghunathan Rengaswamy said that the mobile air quality sensors would find extensive use in both personal and public health initiatives. "Personal monitoring devices can help people know the extent of pollution in their neighbourhood so that they can take protective measures. Traffic can be rerouted if local pollution levels are known. Government policy changes and smart city planning would benefit enormously from the use of mobile air quality trackers. Our affordable IoT-based mobile monitoring network, coupled with data science principles, offers unprecedented advantage in gathering hyperlocal insights into air quality. It is the only viable option at present, capable of offering high spatio-temporal awareness that could allow for informed mitigation and policy decisions," he added.

In addition to pollutants, the devices can assess road roughness, potholes and UV index among others. "The modular design of the device allows for sensors to be replaced on demand. The patented IoT side view mirror design enables the



devices to be retrofitted on any kind of vehicle, ranging from buses to cars and even two-wheelers,” a researcher said. ■

TECH ENABLER

Govt's technology & policy initiatives empower growth of business: Piyush Goyal

Written using agency reports

The Union Minister of Commerce and Industry, Consumer Affairs, Food and Public Distribution and Textiles, Piyush Goyal, said technology and policy initiatives of the government serve as enablers to empower businesspersons for faster growth and development.

During his address at the Diamond Jubilee event of the Federation of Freight Forwarders Associations in India (FFFAI) as the Chief Guest in New Delhi, he encouraged the members of FFFAI to work in a completely transparent manner.

Goyal stressed upon inclusive development and creation of opportunities for all those left behind so that everyone can participate in the making of developed India. He said that the entire country is looking towards a prosperous future with a better world for our children.

The Minister said that corruption is a termite from which the country has to be saved. Goyal emphasised upon the importance of “Panch Pran”, enunciated by the Prime Minister Narendra Modi. He said that Panch Pran acts as the road map for the country for the next 25 years and the Prime Minister had spoken about Nari Shakti for women-led development and eliminating corruption while enunciating Panch Pran.

Goyal said that India is respected and recognised the world over and is being watched in its journey towards a developed and prosperous nation. He said that the world is expecting India to drive the economic growth and turn this century into India's century.



Piyush Goyal, Union Minister of Commerce and Industry, Consumer Affairs, Food and Public Distribution and Textiles, stressed upon inclusive development and creation of opportunities for all those left behind so that everyone can participate in the making of developed India.

The minister said that economic growth compounds itself and in the last 25 years there has been 10x economic growth in the last 25 years. Goyal said that the demographic dividend and strong fundamentals of the economy will drive the growth in the Amrit Kaal.

He also highlighted that India is the fastest growing large economy in the world with inflation under control during the last 9 years and said that the government under the leadership of the Prime Minister had mandated the Reserve Bank of India (RBI) to keep inflation in check.

The Minister cited the examples of a strong and resilient banking system enabling large loans as well as MUDRA Loans, high rate of digital transactions with Unified Payment Interface (UPI) system, significant growth in overall exports over the years, high remittance, continuous growth of FDI, robust stock markets and food security, among others, to showcase the development journey that India is undergoing.

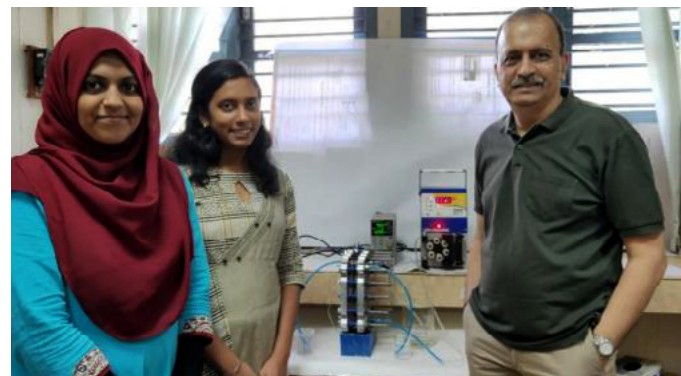
The minister said that the target of achieving overall exports to \$ 2 trillion by 2030 is doable and a business opportunity for FFFAI members. Goyal encouraged getting out of the colonial mindset by working in the present for a prosperous future. The completion of 60 years of FFFAI is a moment for reflection of the past, celebration of achievement, pride in current standing and working towards a brighter future, he added. ■

HARNESSING SEAWATER

IIT-Madras generates hydrogen from seawater using solar energy

Written using agency reports

Researchers in the Department of Physics at the Indian Institute of Technology Madras (IIT-M) have developed critical components for a highly efficient, cost-effective way to electrolyse seawater to generate hydrogen. The results were published in the journal “ACS Applied Energy Materials”. The alkaline water electrolyser technology is energy-intensive, requires an expensive oxide-polymer separator, and uses fresh water for electrolysis.



Ramaprabhu Sundara and his team members at IIT-Madras

The IIT-Madras team led by Ramaprabhu Sundara has addressed each of these challenges by developing simple, scalable and cost-effective alternatives that are highly efficient in splitting seawater and generating hydrogen.

In place of pure or fresh water, the team has developed an electrolyser using alkaline seawater. They used a carbon-based support material for the electrodes instead of metals to almost eliminate the possibility of corrosion. They also designed and developed transition metal-based catalysts that can catalyse both oxygen and hydrogen evolution reactions. The catalyst enhances the production of both hydrogen and oxygen even when impurities and chemical deposition on one of the electrodes takes place. Also, the researchers have developed a cellulose-based separator that is very economical and serves the purpose of allowing hydroxide ions to pass through but prevents oxygen and hydrogen that are generated from crossing-over. Finally, the researchers have optimised all the parameters such that the water electrolyser can directly use photovoltaic-derived voltage to split seawater and generate green hydrogen and oxygen, oxygen can be used elsewhere.

“Since conventional metal support materials get easily corroded when seawater is used, we developed a carbonbased support material,” says Sundara. “The support material is used in both the anode and cathode, and is coated with the catalyst. The catalyst allows enhanced and simultaneous production of hydrogen at the cathode and oxygen at the anode.”

Anamika Ghosh from IIT-Madras and the first author of the paper said: “We also fabricated a stack consisting of three cells and hydrogen produced is about four litres per hour at an applied voltage of 2 V per cell.” All the measurements were done at ambient pressure and room temperature. “All the cells have shown a shelf-life of more than six months, and the study is continuing,” said another team member.

STARTUP CULTURE

Quantum jump in startups to more than 0.1 mn with more than 100 unicorns, says Union Minister

Written using agency reports

There has been a quantum jump in startups to more than 100,000 with more than 100 unicorns, said Union Minister of State (Independent Charge) Science & Technology; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Jitendra Singh, in an interview to DD News.

He said that before 2014, there were just around 350 startups, but after Prime Minister Narendra Modi gave the clarion call from the ramparts of the Red Fort in his Independence Day address and rolled out a special startup scheme in 2016,

there has been a quantum jump in startups to more than 100,000 with more than 100 unicorns. Similarly, biotech startups have grown 100 times in the last 8 years from 52-odd startups in 2014 to 5,500 plus in 2022, the minister said. Singh exhorted the youth of the country that this is the “Best of the Times” for India and they should not become prisoners of their own aspirations.

G20 & STARTUPS

Startup20 calls for commitment of \$1 trillion for startups by 2030

Written using agency reports

A Startup20 Engagement Group meeting in Goa last month witnessed crucial discussions and meetings aimed at strengthening collaboration and aligning efforts towards the growth and support of startups globally.

The programme commenced with closed-door meetings between national and international delegations and Chintan Vaishnav, Chair of Startup20, focusing on key agendas and strategic partnerships.

During the press conference held after the meeting, Vaishnav addressed the media, highlighting the progress made and the significance of the policy communiqué. He expressed his satisfaction with the agreement reached by all delegates on the communiqué, marking a pivotal moment in the journey of the G20 nations towards fostering startup ecosystems worldwide. Vaishnav emphasised the collective efforts and extensive consultations undertaken with G20 nations to arrive at this crucial juncture.

In his statement, Vaishnav underscored the importance of specific action points outlined in the communiqué. The key action points include the creation and adoption of a definition framework for startups, creating a network institution to support startups and ecosystem stakeholders



across G20, increasing and diversifying access to capital, easing market regulations for startups, and prioritising the inclusion of under-represented communities within the startup ecosystem as well as the scaling up startups of global interest. These measures aim to foster a conducive environment that empowers startups to innovate, grow, and address global challenges effectively.

He also made a significant call to action, urging G20 countries to unite in their commitment to the startup ecosystem.

The agreement signifies the confidence of the Startup20 community in scouting startups globally, funding them collaboratively, mentoring them contextually, and scaling them internationally. The G20 nations have taken a significant stride forward in their mission to nurture and support startups, setting the stage for a vibrant and thriving global startup ecosystem. The Startup20 Engagement Group of the G20 concluded with success here in Goa Sankalpana, with an atmosphere of unwavering energy and determination.

Over 250 national and international delegates took part in Startup20 Goa Sankalpana on the first day and around 40+ startups from around the country showcased their innovative products. ■

POWERING STARTUPS

Google India announces second edition of Startup School

Written using agency reports

Google India has announced the second edition of its Startup School 2023, a virtual programme aimed at supporting and empowering startups in India. Supported by the government's Startup India initiative, the programme will commence on July 11 and run for eight weeks, featuring a lineup of over 30 Google and industry experts.

The inaugural edition of Startup School, launched last year, saw over 14,000 startups participating from more than 600 towns and cities across India, Google said in a blog post.

The success of the programme highlighted the need to provide pathways for founders from non-metro cities to benefit from the knowledge and expertise of experienced entrepreneurs and their teams, the company added.

Testimonials from participants of the first edition showcased the programme's impact on their businesses. Gaurav Sen from Interview Ready noted that leveraging best practices in Google Analytics led to a 2X growth in paid users for their interview prep platform.

The curriculum will cover topics such as AI, product and tech strategy, marketing and global growth, and funding and leadership. The programme aims to reach 30,000 startups and provide them with the necessary tools and knowledge to innovate responsibly and learn best practices at scale, Google added.

Manmeet K Nanda, Joint Secretary of the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, expressed his pleasure in launching the Google Startup School 2023. "India began its startup journey with the vision laid down by Prime Minister Narendra Modi in January 2016 with the launch of the Startup India initiative and it gives me immense pleasure to launch the Google Startup School 2023 supported by Startup India and DPIIT. Startup India and Google with this shared mission of contributing to the growth of entrepreneurship in the country have come together to enable startups at scale through this programme," Nanda said.

The agenda for Startup School 2023 includes sessions led by prominent industry leaders. ■

ACCELERATOR PROGRAMME

Shell India launches new startup programme

Businessline

Shell India is introducing a fresh initiative within its startup accelerator programme, Shell E4, called the Net Zero Challenge. As part of the initiative, Shell India will choose two startups to receive funding of \$15,000 each, according to a report in businessline.

The programme consists of two phases: "During the initial three months, startups will undergo intensive mentorship in boot camps, while the subsequent phase will provide the opportunity for the five selected startups to secure MVP funding, which will span an additional 3-4 months," said Debasis Goswami, General Manager of Shell E4 Startup Hub.

The programme focuses on specific themes including clean tech, AI ML for net zero emission, waste management, plastic circularity, sustainability, EV charging, battery swapping and new battery chemistry — covering the entire gamut of energy solutions from biofuels, hydrofoils, and digital standpoints. ■



Investment Bank Goldman Sachs says India set to be world's second-largest economy by 2075

AIR News

Investment bank Goldman Sachs has said that India is poised to become the world's second-largest economy by 2075, crossing Japan, Germany and the US. With a population of 1.4 billion people, India's GDP is estimated to expand remarkably, reaching \$52.5 trillion surpassing the US GDP projection.

In a recent report, Goldman Sachs said on top of a burgeoning population, driving the forecast is India's progress in innovation and technology, higher capital investment and rising worker productivity.

This is an appropriate time for the private sector to create capacity in manufacturing and services to generate more jobs and absorb the large labor force.

According to 85 sovereign wealth funds and 57 central banks representing \$21 trillion in assets, India is now the number one emerging market to invest in.

Invesco Global Sovereign Asset Management Study said among the emerging markets, India has piqued sovereign investors' interest, overtaking China.

Viewed increasingly positively for its improved business and political stability, favourable demographics, regulatory initiatives, and a friendly environment for sovereign investors, India has now overtaken China as the most attractive emerging market for investing in emerging market debt.

India is among a number of countries, including Mexico and Brazil, that are benefitting from increased foreign corporate investment aimed at both domestic and international demand. ■

AUTO INDUSTRY

Indian automakers reports positive growth in June sales

Written using agency reports

Indian automakers reported a growth in passenger vehicle (PV) sales in June, aided by demand for new models, while premium two-wheeler makers saw sales growth on steady urban demand and discounts.

The country's biggest auto company in terms of market share, Maruti Suzuki India, sold 0.15 million units in June, 1.6% higher on a year-on-year basis. The domestic sales grew 6.1%, while exports witnessed a 17% decline.

Hyundai Motor India Ltd sold 65,601 units in June, a 5% rise increase from 62,351 units sold in



June 2022. The automaker's domestic sales rose 2% to 50,001 units. However, unlike the industry leader Maruti Suzuki, Hyundai's exports increased 17% in June.

Honda Cars India reported a 35% decline in sales to 5,080 units in June. MG Motor India reported a 14% rise in its retail sales at 5,125 units, a 40% quarter-on-quarter rise.

Sales of PVs were also aided by improvement in supply chain issues, analysts said, but they warned that constraints have not completely resolved. ■

The commercial vehicles segment also saw an uptick in sales, with industry leaders reporting an increase in sales.

Ashok Leyland's dispatches to dealerships rose 5% year-on-year to 15,221 units in June aided by bus sales, which nearly doubled in the month. Eicher Motors posted a 6.5% rise in total VE commercial vehicles in June at 6,725 units against 6,307 units in the previous year.

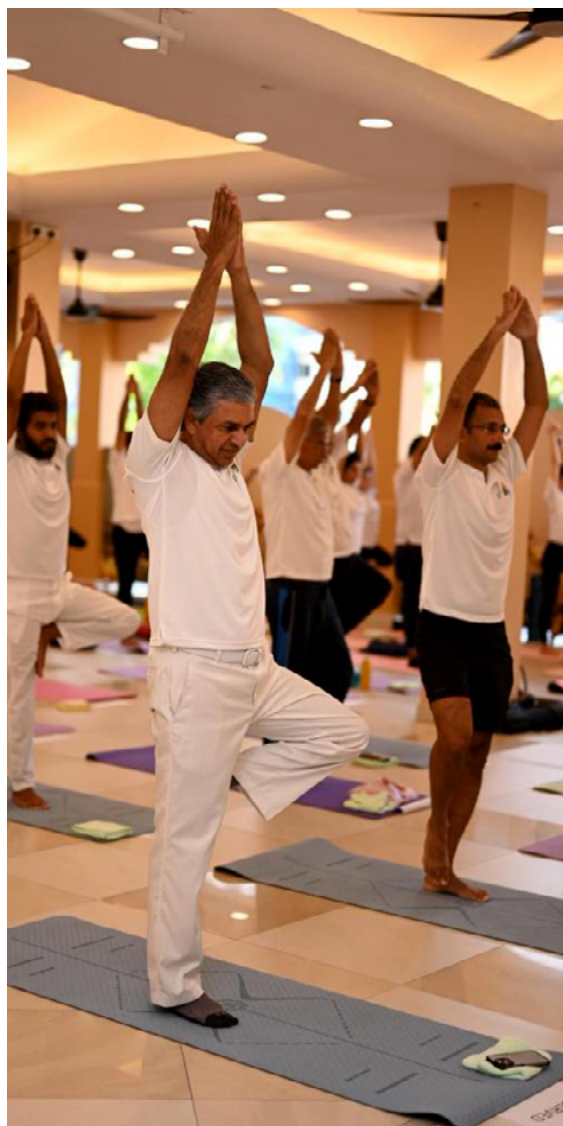
Mahindra & Mahindra's passenger vehicle dispatches to dealerships jumped 21% to 32,588 units in June as demand for SUVs remained robust. Tractor sales rose 6% to 44,478 units despite a late arrival of the South-West monsoon.

Bajaj Auto's sales fell 2% to 0.34 million units in June as demand remained weak in the overseas markets. TVS Motor Co's total two-wheeler sales grew 4% year-on-year to 0.304 million units in June as domestic dispatches registered strong growth. Royal Enfield registered the best first quarter performance with a sale of 2,27,706 motorcycles in FY24. ■

Modi leads delegate from 135 nations at yoga day event



PM performs yoga at 9th annual International Day of Yoga 2023 celebrations at UN Headquarters, in New York on June 21, 2023.



Odisha Parivar Diaspora Connect

Odisha Parivar Diaspora Connect in Singapore was held on June 4, 2023.

Mr. Rohit Pujari, Hon'ble Minister for Higher Education, Government of Odisha, MLAs and senior officers from the Government of Odisha participated. India's High Commissioner to Singapore, H.E. Mr. P. Kumaran in his address welcomed the dignitaries who had flown here in the maiden flight to Singapore from Bhubaneswar and extended his condolences to the grieving families and those injured in the recent train

accident in Odisha.

The High Commissioner said that the Odisha government's model of viability gap funding is a useful and innovative approach. He assured constructive engagement of the Indian High Commission in Singapore with the Odisha Tourism department and the Directorate for Odisha Parivar, and requested the Indian diaspora and friends of India in Singapore to take advantage of these direct flights to visit and explore Odisha – one of India's best kept secrets.



TEPC India Pavilion

Telecom Equipment & Services Export Promotion Council's (TEPC) India Pavilion in Communic Asia 2023 (June 7-9, 2023) was inaugurated by H.E. Mr. P Kumaran, High Commissioner of India to Singapore.

The pavilion showcased Indian telecom products & technology solutions under the broad theme of Make in India and Atmanirbhar Bharat. Eighteen ICT companies from India participated under the umbrella of TEPC in addition to a few others participating on their own.

Being an anchor event of Asia Tech x Singapore 2023, CommunicAsia brings together communication service providers, market disruptors, technology vendors, system integrators, cloud providers, regulators and industry analysts, among others.



Forthcoming Events In India

I. World Food India 2023 November 3-5, 2023

Date & Venue: November 3-5, 2023,
at Pragati Maidan,
New Delhi, India

Organizer: Ministry of Food Processing
Industries (MoFPI)

Contact: megafoodevent-fpi@gov.in,
world-foodindia@gov.in

Details: The Ministry of Food Processing
Industries (MoFPI), Government of India, will be

organising the second edition of the World Food India 2023 from November 3-5 at Pragati Maidan, New Delhi, India. With a theme of "Processing for Prosperity", this event is slated to be the biggest congregation of senior government dignitaries, global investors and business leaders of major global and domestic food companies. This year being celebrated as the International Year of Millets, the second edition of the World Food India will also focus on and showcase the important role millets can play in sustainable agriculture and food security.

Website: <https://worldfoodindia.gov.in/>

II. 2ND GI (GEOGRAPHICAL INDICATIONS) FAIR INDIA 2023

Date & Venue: July 20-24, 2023,
at India Expo Centre & Mart,
Greater Noida, Delhi-NCR

Organizer: Export Promotion Council
for Handicrafts (EPCH)

Contact: rajesh.singh@epch.com

Details: The Export Promotion Council for
Handicrafts is organising the second edition
of "GI (Geographical Indications) Fair India
2023" from July 20-24 at India Expo Centre &

Mart, Greater Noida, Delhi-NCR. The GI Fair India will be a B2B & B2C GI fair showcasing the strength of Indian GI products under one roof. There are about 460+ famed Indian products that have been recognised and tagged with the global geographical indication. Out of these are 260 handicrafts & handloom products; 169 agricultural products; 23 food items; 12 manufactured goods and 3 natural products. The Government of India and the Ministry of Commerce & Industry have given emphasis on promotion of exports of traditional GI products from India.

Website: <https://www.gifairindia.in/home>

III. UP INTERNATIONAL TRADE SHOW (UPITS)

Date & Venue: September 21-25, 2023,
at India Expo Centre & Mart,
Greater Noida

Organizer: The Government of Uttar
Pradesh together with the India
Exposition Mart Limited (IEML)

Contact: info@upinternational
tradeshow.com,
exhibition3@indiaexpo
centre.com,
upits@indiaexpocentre.com

Details: The Government of Uttar Pradesh together with the India Exposition Mart Limited (IEML), Greater Noida, is organising the first edition of the UP International Trade Show from September 21-25 at the India Expo Centre & Mart, Greater Noida. The 5-day event seeks to showcase products & services manufactured in the state of Uttar Pradesh and aims to become the biggest sourcing show. It will also put on display the culture, cuisine and food of Uttar Pradesh.

Website: <https://upinternationaltradeshow.com>

For feedback & comments, please contact:

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