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En bref

Lors de la COP26 qui s'est tenue à Glascow entre le 31 octobre et le 12 novembre, le Premier ministre Narendra Modi a annoncé cinq objectifs en matière de lutte contre le réchauffement climatique :

- L'atteinte par l'Inde de la neutralité carbone en 2070.
- 500 GW de capacités de production d'énergie non-fossile installées d'ici 2030.
- La réduction de l'intensité carbone de l'économie indienne de 45% en 2030.
- La réduction d'un milliard de tonnes les émissions de CO_2 de l'Inde sur 2021-2030 par rapport aux projections.
- Répondre à 50% des besoins énergétiques indiens grâce aux énergies renouvelables d'ici 2030.

Infrastructures

- La construction d'autoroutes tombe à son plus bas niveau depuis trois ans, à 21 km par jour.
- N. Modi annonce PM Gati Shakti, un plan d'investissement de 100 000 Mds INR (1 100 Mds EUR) dédié au développement de la connectivité multimodale.
- Egis compte investir 4,3 Mds INR (50 M EUR) en Inde dans les cinq prochaines années, s'ajoutant aux 75 M EUR investis depuis 25 ans.

Ferroviaire

- Le Ministre des Chemins de Fer annonce la création de 500 terminaux multi-modaux d'ici cinq ans, dans le cadre du plan *PM Gati Shakti*.
- La ligne de chemin de fer connectant le Nord-Est de l'Inde au Bangladesh sera mise en service en septembre 2022.

Développement et transports urbains

- L'Inde évalue à 700 Mds USD ses besoins de financement pour le développement des infrastructures urbaines entre 2021 et 2031.

Pétrole, gaz et biocarburants

- La privatisation de Bharat Petroleum est retardée faute d'appétit suffisant des investisseurs pour cette entreprise centrée sur les énergies fossiles.

Electricité et énergies renouvelables

- Les capacités installées de production d'énergie solaire et éolienne de l'Inde ont augmenté de 10 GW entre janvier et septembre 2021.
- Les tarifs des nouveaux projets solaires devraient augmenter de 0,20 à 0,25 INR/kWh suite à la hausse du prix des modules et à l'augmentation de la GST.
- Le gouvernement central annonce des mesures pour favoriser un versement rapide des compensations dues suite aux changements réglementaires.
- L'Inde et l'Italie vont développer leur partenariat dans les domaines de la production d'hydrogène vert, d'électricité renouvelable, de réseaux de transport d'électricité, et de gaz naturel.
- Lors de la COP26, le groupe Adani annonce 20 Mds USD d'investissements dans les énergies renouvelables d'ici 2030 avec un objectif de 45 GW.
- L'Inde rehausse ses engagements pour la décarbonation de son mix énergétique à horizon 2030.
- Une étude estime à 15 Mds USD les besoins en investissements pour que l'Inde installe 15 GW d'electrolyseurs d'ici 2030.

Mobilités électriques

- Tata Power développe un réseau de plus d'un millier de stations de recharge pour véhicules électriques dans plusieurs villes du pays.
- Selon N. Gadkari, le prix des véhicules électriques devrait concurrencer celui des véhicules essence d'ici deux ans.

Environnement et qualité de l'air

- La COP26 s'achève sur un succès en demi-teinte, marqué par l'opposition de la Chine et de l'Inde à un abandon du charbon.
- Le gouvernement indien demande l'arrêt de six centrales à charbon autour de Delhi pour réduire la pollution atmosphérique.

Revue de presse

1. Infrastructure

Highway construction to falls to three-year low

Financial Express, 19/10/2021

Protracted rains have taken a toll on highway construction, one segment that has consistently been weathering the broader economy's travails and even the pandemic shock. Construction fell to its lowest in three years to a little over 21 km per day during the April-September period of the current fiscal, compared with an average of 22 km/day in the same period last year and the peak of 25.67 km/day in the comparable pre-pandemic period of April-September 2019.

Of course, the savage second Covid wave had affected highway construction during the months of May, June, July this year, though the severity of its impact was much less than during the lockdown period in 2020 and the months that immediately followed. In August this year, however, monsoon rains hit the construction the hardest — just 428 km of highways (13.8 km/day) were built in the month against 665 km in the corresponding month in the previous year. The dismal situation persisted in September too with – 469 km (15.63 km/day).

The ministry of road transport and highways (MoRTH) has set an ambitious target of 40 km per day highway construction for the current fiscal compared with the daily average of 36.4 km achieved in 2020-21. On May 1, Union minister Nitin Gadkari had said the ministry of road transport and highways (MoRTH) would be constructing highways worth `15 lakh crore in the next two years.

"Prolonged monsoons have affected the productive days for an extended period in current financial year when compared to last year which affected the pace of execution," Icra's Rajeshwar Burla said.

Awards of highway projects, though less than that of the last year, were more than double the 2019 level at 4,609 km during the April-September period of the current fiscal. In 2020-21, the ministry of road transport and highways MoRTH awarded 10,467 km highway length compared with 8,948 km in 2019-20.

"Awards could be fluctuating month on month. It is difficult to attribute any reason for this. However, overall awards for the full year it should surpass the last year's level," Burla said.

Gati Shakti: Modi launches 100-lakh crore national master plan for multi-modal connectivity, details here

Hindustan Times, 13/10/2021

In a landmark event marking a milestone for the infrastructural landscape of India, Prime Minister Narendra Modi on Wednesday launched the 'PM GatiShakti - National Master Plan' for multi-modal connectivity to economic zones in the country. The plan is an important part of Prime Minister Modi's 'Aatmanirbhar Bharat' (self-dependent India) vision and ambitiously aims to lend more power and speed to projects under the $1.5-trillion National Infrastructure Pipeline and boost the goal of achieving a $5-trillion economy, especially in wake of the recent

economic impacts of the coronavirus disease (Covid-19) pandemic.

The PM GatiShakti launch event took place at 11am at New Delhi's Pragati Maidan. Prime Minister Modi, who was present at the launch event, reviewed the model of the new exhibition complex at Pragati Maidan, before launching the GatiShakti plan with the press of a remote button. The ambitious plan envisages a centralised portal to unite the infrastructural initiatives planned and initiated by as many as 16 central ministries and departments. Speaking at the event, the Prime Minister said that PM GatiShakti targets to cut logistic costs, increase cargo handling capacity and reduce the turnaround time.

Union minister for commerce and industry Piyush Goyal, who was also present at the event, said that the PM GatiShakti initiative will give infrastructure creation a new direction and also provide a new pace to existing projects.

What is PM GatiShakti?

The PM Gati Shakti plan, envisioned by the Prime Minister, is a campaign to lend more speed (Gati) and power (Shakti) to projects by connecting all concerned departments on one platform. This way, the infrastructure schemes of various ministries and state governments will be designed and executed with a common vision, Modi said. He added that taxpayers' money in the past was 'insulted' through a lethargic approach to development work, with departments working in silos and there was no coordination on projects.

As an example, he said the first inter-state natural gas pipeline was commissioned in 1987. From then to 2014, 15,000-km of the natural gas pipeline was built. Currently, more than 16,000-km of the new gas pipeline is being constructed. "What was done in 27 years, we are doing in it in less than half that time," the Prime Minister said. It is not possible to carry out the development of the country without a holistic approach to quality infrastructure, said Prime Minister Modi, echoing his 15th August Red Fort speech earlier this year on the occasion of the 75th Independence Day.

The various government departments which will join hands for coordinated developmental projects include the ministries of road to railways, aviation to agriculture. This will, in turn, reduce logistic cost and turnaround time, and also help India become an attractive investment destination.

The six pillars of 'PM GatiShakti - National **Master Plan':**

1. Comprehensiveness: It will include all the existing and planned initiatives of various ministries and departments with one centralized portal. Each and every department will now have visibility of each other's activities providing critical data while planning and executing projects in a comprehensive manner.

2. Prioritisation: Through this, different departments will be able to prioritise their projects through cross-sectoral interactions.

3. Optimisation: The National Master Plan will assist different ministries in planning for projects after the identification of critical gaps. For the transportation of the goods from one place to another, the plan will help

in selecting the most optimum route in terms of time and cost.

4. Synchronisation: Individual ministries and departments often work in silos. There is a lack of coordination in the planning and implementation of the project resulting in delays. PM GatiShakti will help in synchronising the activities of each department, as well as of different layers of governance, in a holistic manner by ensuring coordination of work between them.

5. Analytical: The plan will provide the entire data at one place with GIS-based spatial planning and analytical tools having 200+ layers, enabling better visibility to the executing agency.

6. Dynamic: All ministries and departments will now be able to visualise, review and monitor the progress of cross-sectoral projects, through the GIS platform, as the satellite imagery will give on-ground progress periodically and progress of the projects will be updated on a regular basis on the portal. It will help in identifying the vital interventions for enhancing and updating the master plan.

French engineering firm Egis to invest Rs 430 crore in India

BusinesToday.In, 11/11/2021

Engineering and consulting services major Egis Group will be investing Rs 430 crore (€50 million) over the next five years to strengthen its foothold in India. With the Indian government's steady push for fast-paced infrastructure development, the French multinational is now looking to grow its presence here by acquiring smaller firms and strengthening its portfolio in areas like railways and water management, a top company official said.

In lieu of the country's growing importance due to massive development of public infrastructure, Egis has already developed a state-of-the art global design centre at Gurugram. In its 25 years of existence in India, Egis has so far invested Rs 640 crore (€75 million). Its India operations is the second largest outside of France, in terms of people employed.

However, the government's growing push over infra even during the pandemic and, resultantly, opening up of newer opportunities like piped water supply and management in rural areas, new metro rail projects and national highways, has forced the company to hire 500 people locally in 2021.

"Over the last 25 years we have invested €75 million and now we are planning to invest €50 million within the next five. This itself shows the growing importance and activities in India. In 2021, so far, our order intake has grown by 108 per cent -- higher than any of our competitors" said Laurent Germain, CEO, Egis Group.

According to Germain, the group is now looking to grow its India business to Rs 640 crore a year by 2026, from Rs 380 crore now. This, he says, is part of the group's global plans to double its revenue to €2.5 billion in five years from €1.22 billion.

The performance of the India unit has provided the much-needed impetus to its growth plans so far. According to the company, in last one year, Egis India has bagged over 65 new projects that include Surat Metro Project, project management consultancy (PMC) for various National Highways, Faridabad and Jaipur smart cities, Prestigious Green highway project and

various Rural Water Supply Projects especially in North East India.

The PMC for soon to be inaugurated Purvanchal Expressway - a 341 Kms, 6-lane highway connecting Uttar Pradesh's Lucknow and Ghazipur -- was done by Egis.

To fuel its growth in India, Germain is now looking to acquire one or two companies that will further aid its top-line. In the last one year, the group has acquired 16 companies globally, he said.

2. Ferroviaire

Indian Railways to set up 500 multi-modal cargo terminals under Gati-Shakti scheme: Ashwini Vaishnaw

Financial Express, 18/10/2021

Under the newly launched PM GATI-SHAKTI programme, Indian Railways will establish nearly 500 multi modal cargo terminals in a time period of four to five years, Railway Minister Ashwini Vaishnaw said recently. The Union Minister was quoted in an ANI report, saying that PM GATI-SHAKTI multi modal cargo terminals of the national transporter will be terminals where different modes of transportation will be seamlessly integrated with the rail transportation network. On Wednesday, Prime Minister Narendra Modi, at Pragati Maidan in New Delhi, launched PM Gati Shakti programme – National Master Plan for multi modal connectivity.

According to the report, PM GatiShakti is the result of PM Modi's constant endeavour to build Next Generation Infrastructure, which improves Ease of Doing Business as well as Ease of Living. The multi modal connectivity under the PM GATI-SHAKTI programme will offer integrated and seamless connectivity for the movement of goods, people as well as services from one mode of transport to another. The report further said it will facilitate the last mile connectivity of infrastructure. Besides, it will also reduce travel time for people, the report added.

The newly launched digital platform, Gati Shakti will bring 16 Ministries including Roadway and Railway ministries together for integrated planning as well as the coordinated implementation of infra connectivity projects. It will incorporate various Ministries and State Governments' infra schemes such as Sagarmala, Bharatmala, land/dry ports, inland waterways, UDAN etc.

Economic zones such as textile clusters, defence corridors, pharmaceutical clusters, fishing clusters, electronic parks, industrial corridors, Agri zones will be covered to improve connectivity as well as make Indian businesses more competitive. The digital platform Gati Shakti will leverage technology extensively including spatial planning tools with ISRO (Indian Space Research Organisation) imagery developed by Bhaskaracharya National Institute for Space Applications and Geoinformatics (BiSAG-N).

Railway line connecting NE with Bangladesh likely to be completed by September-end next year: NFR official

The Economic Times, 17/11/2021

The much-awaited 15.6-km-long Agartala-Akhaura railway line, connecting India's North-East with Bangladesh, is likely to be completed by the end of September 2022, officials said.

Divisional Manager of Northeast Frontier Railway, J S Lakra, who is in Tripura for two days, visited Nischintapur yard here on Friday to review the work underway for the project - which was taken up in 2013 after the two countries inked a memorandum. "I visited the Nischintapur area and I was happy to see the kind of work being undertaken for the project. It is likely to be completed by September next year," he told reporters here on Saturday.

He also said that goods will be shipped from one country to another via the network, and later people, too, can avail the service to travel. The Agartala-Akhaura railway line, once inaugurated, is expected to give trade and commerce between India and Bangladesh a desired boost. IRCON International Ltd -- formerly Indian Railway Construction Limited -- has been assigned the task of constructing the line on both sides of the border.

After completion of work, India's northeast would not just be connected with Bangladesh via the railway network, but the region will also have easier access to Chittagong sea port in the neighbouring country, another official said.

The railway link will connect Gangasagar under Akhaura sub-division of Brahmanbaria district of Bangladesh with Nischintapur in India here, and from there to Agartala station. Nischintapur has a transhipment yard, the first in the northeast region, and the passengers coming from Bangladesh would be de-boarded there. The incoming goods will also be offloaded at Nischintapur.

Work on the Indian side is almost complete. On the Bangladesh side, The Agartala-Akhaura railway line, once inaugurated, is expected to give trade and commerce between India and Bangladesh a desired boost.

Industry construction has resumed after a long gap due to COVID-19 lockdown, an official of IRCON International Ltd told PTI. The Ministry of Development of the North Eastern Region (DoNER) is bearing the cost for laying the 5.46-km-long track on the Indian side, and the expenses of setting up the 10.6-km-long stretch in Bangladesh is being borne by the Ministry of External Affairs, the official said. "Cost and time would be saved in ferrying goods and heavy machinery between the northeast and abroad using the Bangladesh's railway network and ports as stakeholders won't need not travel via Kolkata anymore," he added.

3. Développement et transports urbains

India eyes $700 billion investments to boost urban infrastructure

ConstructionWeekOnline, 03/11/2021

Kunal Kumar, Joint Secretary and Mission Director (Smart Cities Mission), Ministry of Housing and Urban Affairs, said that India needs around $700 billion of investment from 2021 to 2031 to boost its urban infrastructure services like urban mobility, affordable housing, water security, Clean India mission and Smart Cities mission.

Kumar along with other Ministry of Housing and Urban Affairs officials Dinesh Kapila, Economic Advisor (Housing) and Jaideep, OSD (Urban Transport) was briefing the media on the sidelines of the inauguration of the 'Urban and Rural Development Week' at the India Pavilion in Expo 2020 Dubai.

The Ministry is showcasing its efforts being made in comprehensive urban development in India and exhibiting the multi-sectoral opportunities for the World during the 'Urban and Rural Development Week' in Dubai. The broad objective is to demonstrate India's innovative case studies and attract investments to India, fostering market access for other countries.

Kunal Kumar added, "India is a $3 trillion economy and aggressively moving towards becoming a $10 trillion economy by 2030 and one of main constituents of this growth will be massive urbanisation happening in the country. Rapidly urbanizing India presents exciting investment opportunities for private sector in Indian cities to address several challenges which include improving quality of urban services such as water, sanitation, urban transport and planned development of land resources."

"The government of India since 2014, has already invested $160 billion on creating and upgrading urban infrastructure and ensuring ease of living for the citizens. India's investment in the urban sector has jumped by over 600% during 2014-2021 as compared to 2004-2014. Urban Development is the key to India's growth because we need productive, liveable cities that ensure ease of doing business," he said.

Kumar added, "The government of India has created a National Infrastructure Pipeline (NIP) for infrastructure projects worth $1.5 trillion to be completed between 2020-25. Major focus of NIP is across energy (24%), roads (18%), urban (17%) and railways (12%). Each of these urban mission presents opportunities for global companies to invest and grow."

Speaking on the Smart Cities Mission, Kumar said that with total investments worth $28 billion, the Smart Cities Mission is realizing the vision of 100 'smarter' Indian cities in addressing the challenges of increasing urbanization and ultimately the plan is to cover more than 4000 cities in the country.

Jaideep, OSD (Urban Transport), Ministry of Housing and Urban Affairs, said, "Urban Transport with a big focus on Metro Rail and other mass transit systems is a critical component of the comprehensive approach initiated towards urbanization. In the last seven years we have operationalised 485 km of Metro network. In National Infrastructure Projects, we have projects worth $60 billion out of which $32 billion is sanctioned and remaining is in planning stage to be implemented before 2024. We are also working on green urban mobility, sustainable and energy efficient transport system."

Speaking on the opportunities in the real estate sector in India, Dinesh Kapila, Economic Advisor (Housing), Ministry of Housing and Urban Affairs, said, "The size of the housing sector is currently $200 billion in India, and it contributes around 7% to the GDP. The contribution of the real estate sector to the Indian economy is likely to be around $1 trillion by 2030. As per an industry study, with massive urbanisation, every year we need to construct 700-900 million sq mt. worth of houses, malls and offices. There are huge opportunities in India in the next ten years and currently the atmosphere is very conducive to the growth of the real estate sector and also the economy."

The inaugural day also saw a panel discussion on 'The Future of Cities: Perspective on use of technology' which saw

participation from dignitaries like H.E. Dr Aisha Bin Bishr, Global Digital & Urban Future Magnate & Former Founding Director General of Smart Dubai, Vice Chairwoman of Emaar Development board (UAE); Andrea Petti, MD- IMEA Region, PTV Group (Germany); Sridhar Gadhi, founder & executive chairman, Quantela Inc.; Afzal Shabaz Mohammed, VP- IoT and Technology and Innovation, Siemens Industrial LLC (UAE); JVS Ramakrishna, head - strategy & CTO (Safe & Smart Cities), L&T Smart World & Communication and Ashish Khare, GM and Global Head- IoT and Smart Cities, Wipro.

The session highlighted the importance of IoT in making cities self-sustainable, integrated command and control centres and also discussed the role of emerging technologies in the sector.

The second panel discussion on 'Resurgence and responsible real estate' saw participation from industry leaders like Dinesh Kapila, Economic Advisor (Housing), Ministry of Housing and Urban Affairs; Raj Menda, joint chairman, FICCI Real Estate Committee and Corporate Chairman, RMZ Corp; Sanjay Dutt, joint chairman, FICCI Real Estate Committee and MD and CEO, Tata Realty & Infrastructure; Asheesh Mohta, senior MD, Real Estate – India, The Blackstone Group; Sharad Mittal, CEO, Motilal Oswal Real Estate; Ashish Singh, partner real estate, Actis; Srini Sriniwasan, MD, Kotak Investment Advisors and Chanakya Chakravarti, MD India, Growth Markets, Ivanhoé Cambridge.

The Urban and Rural Development Week will go on till 6th November and the sessions will address themes like Resurgence and Responsible Real Estate, Smart and Sustainable Transportation, Alternate Real Estate, Building Smart, Liveable and Sustainable Cities, and Electric Mobility.

4. Pétrole, gaz et biocarburants

Plan to privatise Bharat Petroleum delayed as bidders struggle to find partners

The Print, 25/10/2021

India's plan to privatize Bharat Petroleum Corp. has run into rough weather with bidders struggling to find partners and spread their financial risks, according to people familiar with the matter.

The three suitors — the Vedanta group, Apollo Global Management and I Squared Capital — are talking to global energy giants and sovereign and pension funds, but haven't been able to finalize partners, the people said, asking not to be identified as the deliberations are private. Some bidders are finding it difficult to invest due to sustainability rules that make it tougher for them to buy a stake in an oil refiner, some of the people said. The fresh hurdle to sell the government's entire stake could temper some of the euphoria generated by the recent sale of Air India Ltd. to the Tata Group and slow down the nation's biggest privatization drive. The sale of the state-run refiner-cum-fuel retailer would have fetched about $13 billion for the exchequer and other shareholders.

BPCL shares fell 3.5% to 431.7 rupees at the close in Mumbai, the most in more than a month, following the Bloomberg News report.

The massive price tag means bidders as well as the Indian government want a consortium with stronger technical and financial muscle for the transaction, the people said.

Spokesmen at the finance ministry and BPCL weren't immediately available for a comment, while Apollo Global declined to comment. Representatives at Vedanta and I Squared didn't reply to emails seeking comment.

A global push toward green energy and pressure from investors to slash emissions is holding back companies from making large investments in fossil fuels. The pandemic and its fallout has also delayed the process and discouraged global firms from committing big investments in traditional fuels.

For BPCL, the bidders have been slow in conducting due diligence as they wait for new partners to join, the people said. That will likely upend the federal government's aim to complete selling its entire 53% holding in BPCL by the end of this financial year in March, for which it had planned to seek financial bids next month.

BPCL allowed bidders virtual access to its financial data early April, but it hasn't progressed beyond exchange of a few queries and some initial discussions with the state-run company's management in the past six months.

"Bidders are conducting due diligence, but uncertainty over the bidder consortium and process complexity, including valuation, may lead to potential delays," Fitch Ratings Ltd. said in a commentary last month. "We believe the risks of further Covid-19 waves and global oil and gas companies' increased focus on energy transition lead to additional uncertainty over the timing and valuation of potentially large acquisitions in the sector."

BPCL has three refineries that can process about 700,000 barrels of oil daily, a marketing network of almost 19,000 fuel stations and close to 6,200 liquefied petroleum gas distributors.

5. Electricité et énergies renouvelables

India added 10 GW of solar and wind capacity in the first months of 2021

The Economic Times, 27/10/2021

From January 2021 till September 2021, approximately 8,811 MW solar capacity and 1,246 MW of wind capacity was added in India. This is about 280% and 101%, respectively, higher compared to the same period previous year, according to a report of JMK Research. "The key reason for the significant increase is the commissioning of delayed projects in this period that were supposed to get commissioned earlier but got delayed because of COVID-19 disruption," the report added.

In terms of cumulative installations, according to the data released by Ministry of New and Renewable Energy (MNRE) till September 2021, India's RE installation capacity reached 101.53 GW. Solar energy contributes for approximately 46% share in the total RE segment, making it the major contributor followed by wind energy (39%), Bio Power (10%) and Small Hydro (5%).

Rajasthan, Gujarat, Uttar Pradesh, and Maharashtra added maximum solar capacity

in this period accounting for 68.53% of all solar installations. In wind segment, Gujarat, Tamil Nadu and Karnataka contributed about 98.66% of India's total wind installations. In the rooftop solar segment, about 2,068 MW of new capacity was added during January to September 2021, which is 134% higher than 883 MW capacity added during January to September 2020. Gujarat leads the chart with a capacity addition of 531 MW, accounting for nearly 26% of the total rooftop installations during the analysis period.

Next to Gujarat, Maharashtra (501 MW), Haryana (217 MW) and Uttarakhand (181 MW) are the leading states with the most installed rooftop solar capacity. The "Surya Urja Rooftop Yojana – Gujarat" scheme is the key reason for this significant capacity addition in Gujarat that aims installation of solar rooftops for 8 lakh residential consumers by March 2022. Under this scheme, 40% of state subsidy is provided on installation of systems up to 3 kW and 20% subsidy for 3 kW- 10 kW system size.

According to JMK Research, in 2021, approximately 11 GW of new utility scale solar capacity and 2.8 GW of new wind capacity is expected to be installed in the country. Whereas rooftop solar capacity addition is expected around 3 GW. If the third wave of the covid-19 pandemic does not strike the country between November and December 2021, then it is extremely likely that the RE sector will achieve this target of 2021.

Solar tariff to go up by 20 to 25 paise/unit in forthcoming bids: Icra

The Economic Times, 28/10/2021

Solar energy tariff is likely to go up by 20-25 paise per unit in upcoming bids for projects as compared with rates seen over the past six months, according to an ICRA report on renewable energy. This assumes significance in view of India's ambitious target to achieve 450 GW of renewable energy by 2030.

"The increase in (solar) module prices and the recent hike in GST (good and services tax) rate for solar power equipment are likely to increase the tariffs in the forthcoming solar bids by 20-25 paise per unit from the levels seen over the past six months," the report stated. Nonetheless, it said that the tariffs are likely to remain competitive at less than Rs 3 per unit.

The increase in cell and module prices is likely to moderate the debt coverage and return metrics for the projects bid out over the past one year and with expected commissioning over the next 6-12 months, it said.

Further, developers are likely to face delays in execution owing to the supply chain constraints arising from disruptions in China, it added. The availability of adequate timeline buffer under the PPAs (power purchase agreement) or securing timeline extension from the bidding agency remains important, Icra said.

The price of imported Mono PERC PV modules in India has increased by over 35 per cent from 19-20 cents/watt in December 2020 to 22-23 cents per watt in June 2021 and further to 27-28 cents per watt in October 2021.

This is mainly driven by an increase in the polysilicon prices, a key input for PV modules along with the recent supply-side disruptions in China, it stated. The disruption in manufacturing operations across the value chain of solar PV modules in China owing to the prevailing power cuts is

leading to elevated price levels for solar PV cells and modules.

Given the likely continuation of these power cuts amid the emission control targets in China, the prices are likely to remain elevated in the near term, it also stated. Apart from the polysilicon, the cost pressures for solar power projects are arising from the sharp jump in the steel and aluminium prices which are used in mounting structures and back sheets for solar PV modules respectively, it said.

India notifies rules to protect green energy investements

Mint, 23/10/2021

In an attempt to soothe investor concerns amid a logjam over power supply contracts with Punjab, Gujarat and Andhra Pradesh, the union government has notified rules for ensuring "timely recovery of costs due to change in law."

"The investors and other stakeholders in the power sector had been concerned about the timely recovery of the cost due to change in law, curtailment of renewable power and other related matters," the union power ministry said in a statement on Saturday.

The clean energy sector has been facing some headwinds over contracts with Punjab, Gujarat and Andhra Pradesh, delays in land acquisition and clearances, regulatory uncertainty, inadequate grid connectivity, and inordinate payment delays by states such as Telangana.

"For curtailment or regulation of power, the provisions of the Indian Electricity Grid Code shall be followed. In the event of a curtailment of supply from a must-run power plant, compensation shall be payable by the procurer to the must-run power plant at the rates specified in the agreement for purchase or supply of electricity. The RE generator is also allowed to sell power in the power exchange and recover the cost suitably. This helps in realisation of revenue by the generator and also the power is available in the electricity grid for use of consumers," the statement said.

About ₹4.7 trillion has been invested in India's renewable energy space in the last six years, with an expected ₹1 trillion investment opportunity a year till 2030.

"Timely recovery of the costs due to change in law is very important as the investment in the power sector largely depends upon the timely payments. At present the pass through under change of law takes time. This impacts the viability of the sector and the developers get financially stressed. The Rules would help in creating investment friendly environment in the country," the statement said.

The Punjab government has cited the fall in prices of solar panels as well as lower borrowing costs and reduced corporate taxes to seek a revision of its solar power tariffs and has called for a tariff of ₹4.50 per unit as reported by Mint earlier. Also, 5.2 gigawatt (GW) of solar and wind energy projects are hanging fire, due to the state government's decision to reopen renewable energy contracts inked under the previous N. Chandrababu Naidu government.

"The following Rules notified by the Ministry of Power under Electricity Act, 2003 are in the interest of the electricity consumers and the stakeholders: i) Electricity (Timely recovery of costs due to Change in Law) Rules, 2021. ii) Electricity (Promotion of generation from renewable sources of

energy by addressing Must Run and other matters) Rules, 2021," as per the statement.

This comes at a time of solar module prices touching 28 cent kilowatt-hour (kWh), the highest since 2019 as reported by Mint on Saturday. This sharp jump in prices is on account of China's worst ever power shortage, with factories being run on limited days. With modules accounting for nearly 60% of a solar power project's total cost, any price increase will impact the internal rate of return (IRR) from such projects, many of which have already signed power purchase agreements (PPAs). With India having strict commissioning deadlines, the failure to meet them will result in penalties for developers.

"A formula has been provided to calculate adjustment in the monthly tariff due to the impact of Change in Law," the statement said.

Mint had earlier reported about Chinese solar equipment makers such as Trina Solar Ltd, one of the largest Chinese solar power equipment manufacturer, serving force majeure notices to its Indian clients, citing inability to supply equipment according to agreed schedules.

"The Rules also provide that a must-run power plant shall not be subjected to curtailment or regulation of generation or supply of electricity on account of merit order dispatch or any other commercial consideration. The electricity generated from a must-run power plant may be curtailed or regulated only in the event of any technical constraint in the electricity grid or for reasons of security of the electricity grid," the statement said.

According to the Central Electricity Authority, by 2030 the country's power requirement would be 817GW, more than half of which would be clean energy, and 280GW would be from solar energy alone. To achieve the target of 280GW, around 25GW of solar energy capacity is needed to be installed every year till 2030.

"The Rules also provides for the Intermediary procurer to procure electricity for distribution licensees. In this regard, the Rules inter-alia states that "the intermediary procurer, an agency nominated by the Central Government or State Government, may procure electricity through a transparent process of bidding in accordance with the guidelines issued by the Central Government under section 63 of the Act for sale to one or more distribution licensees," the statement said.

Indian solar energy projects have been facing a raft of problems such as higher commodity prices and solar power tariffs expected to go up by 10 paise per unit with a higher Goods and Services Tax (GST) levied on cells, modules and inverters from 1 October.

"These Rules will help in achieving the targets of RE generation," the statement said.

India, Italy to collaborate on green hydrogen, gas sector

The Economic Times, 31/10/2021

India and Italy have agreed to explore development of green hydrogen, setting up renewable energy corridors, and joint projects in the natural gas sector as the two nations sought to strengthen partnership in energy transition. A joint statement, issued

after Prime Minister Narendra Modi held the first in-person meeting with his Italian counterpart Mario Draghi on the sidelines of the G20 Summit in Rome, said the two leaders agreed to encourage joint investments of Indian and Italian companies in energy transition-related fields.

They agreed to "initiate a dialogue to support the development and deployment of green hydrogen and related technologies in India" as well as to "consider working together to support a large size green corridor project in India to capitalize on India's target to produce and integrate 450 GW of renewable energy by 2030."

The two leaders also agreed to "encourage Italian and Indian companies to develop joint projects in natural gas sector, technological innovation for decarbonisation, smart cities and other specific domains (i.e.: electrification of urban public transport)."

India set an ambitious target of building capacity to generate 450 gigawatts of electricity from renewable sources such as solar and wind and more than double the share of natural gas in its energy basket to 15 per cent by 2030 as its transitions to a low carbon emitting economy.

It is also looking at scaling up hydrogen production from all sources, particularly green hydrogen as part of its energy transition pathway. The joint statement said a joint working Group established by the Memorandum of Understanding on Cooperation in the field of Energy, signed in Delhi on October 30, 2017, will be tasked to explore cooperation in areas such as smart cities; mobility, smart-grids.

The group will also explore cooperation in electricity distribution and storage solutions; gas transportation and promoting natural gas as a bridge fuel; integrated waste management (waste-to-wealth); and green energies (green hydrogen; CNG & LNG; bio-methane; bio-refinery; second-generation bio-ethanol; castor oil; bio-oil -waste to fuel).

The two leaders also agreed to "share useful information and experiences especially in the field of policy and regulatory framework, including possible means to facilitate the transition to cleaner and commercially viable fuels/technologies, long-term grid planning, incentivizing schemes for renewables and efficiency measures, as well as with regard to financial instruments for accelerating clean energy transition."

They acknowledged significant progress in bilateral relations since the adoption of the Action Plan for an enhanced Partnership between India and Italy (2020-2024) on November 6, 2020. They expressed their resolve to strengthen cooperation in the strategic sectors addressed by the Action Plan, including the cross-cutting issue of accelerating the clean energy transition to fight climate change, central to both the G20 Leaders Summit in Rome and the COP26 in Glasgow. They also recalled the India-EU Leaders' Meeting held in Porto on May 8, 2021, where the European Union and India highlighted the urgency of addressing the interdependent challenges of climate change, biodiversity loss and pollution.

The two leaders agreed to deepen cooperation for accelerating the deployment of renewable energy, including deployment of innovative renewable technologies such as offshore wind energy and exploiting the potential of green hydrogen, promoting energy efficiency,

developing smart grids and storage technologies, modernizing the electricity market. "In addition, both sides agreed on the utmost importance of cost-effective integration of a growing amount of renewable energy into their respective power systems, as a key asset for an effective clean transition that generates jobs, GDP growth, reinforces universal energy access while eradicating energy poverty," it said.

"In this perspective, the two Prime Ministers appreciated India's resolve to deploy 450 GW of renewable energy by 2030 as well as Italy's prompt ratification and active support to the International Solar Alliance, and agreed to launch a bilateral strategic partnership in the domain of energy transition." Such a partnership could build on existing bilateral mechanisms, including by giving new impetus to the cooperation on renewable energy and sustainable development between the Italian Ministry of Ecological Transition and its Indian counterparts, namely Ministry of New and Renewable Energy, Ministry of Power and Ministry of Petroleum and Natural Gas, it added.

Adani Group firms AGEL, ATL declare energy compact goals as part of COP26

Business Standard, 09/11/2021

Adani Green Energy Ltd (AGEL) and Adani Transmission Ltd (ATL) have declared their energy compact goals as part of COP26, primarily adhering to the Sustainable Development Goal 7 (SDG 7).

Adani Green Energy Ltd (AGEL), the world's largest solar power developer, and Adani Transmission Ltd (ATL), India's largest private sector power transmission and retail distribution company, have declared their Energy Compact Goals as part of COP26, primarily adhering to SDG 7, the company said in a statement.

The SDG 7 defines a set of goals to be achieved by 2030. The companies are to ensure universal access to affordable, reliable, and modern energy services and increase substantially the share of renewable energy in the global energy mix, it added.

Both AGEL and ATL have centred their business strategy around the achievement of SDGs across all their activities, with SDG 7 as the cornerstone.

AGEL's and ATL's commitment will also support the targets taken by the Government of India and its commitment to the UN Energy Compact, it stated. India has committed to increasing the installed capacity of renewable energy to 450 GW by 2030 and to the production-linked incentive (PLI) scheme to add 10 GW solar PV manufacturing capacity by 2025.

India has also committed to 'enhancing energy efficiency in agriculture, buildings, industry and transport sectors and promote energy-efficient appliances/ equipment to reduce India's emissions intensity of GDP'.

AGEL has set a target of achieving the 45-gigawatt (GW) renewable energy capacity by 2030, with the average tariff below the average power purchase cost (APPC) at the national level. Further, AGEL will invest USD 20 billion in renewable energy development over the next decade and develop a two GW per year solar manufacturing capacity by FY 2022-23.

ATL is on course to increase the share of renewable power procurement from the current 3 per cent to 30 per cent by FY 2023 and to 70 per cent by FY 2030 through its utility subsidiary in Mumbai and reduce its carbon intensity on per unit of revenue basis to support SDG 13 for Climate Change Mitigation.

ATL's role as a transmission provider and distributor of energy is also in line with SDG 11 on Sustainable Cities and Communities, as it provides resilient infrastructure and ensures community access to a consistent and secure power supply.

Adani Transmission Ltd (ATL) is the transmission and distribution business arm of the Adani Group, one of India's largest business conglomerates.

ATL is the country's largest private transmission company with a cumulative transmission network of 18,300 circuit km (ckm), out of which 13,700 ckm is operational and 4,600 ckm is at various stages of construction.

The company also operates a distribution business serving about three million customers in Mumbai. With India's energy requirement set to quadruple in coming years, ATL is fully geared to create a strong and reliable power transmission network and work actively towards serving retail customers and achieving 'Power for All' by 2022.

Adani Green Energy Ltd (AGEL), part of India-based Adani Group, has one of the world's largest renewable portfolios, with locked-in growth of 19.8 GW across operational, under-construction, awarded and acquired assets, catering to investment-grade counterparties.

The company develops, builds, owns, operates and maintains utility-scale grid-connected solar and wind farm projects.

Key customers of AGEL include Solar Energy Corporation of India (SECI), National Thermal Power Corporation (NTPC) and various state discoms. Listed in 2018, AGEL today is a USD 19-billion market cap company helping India meet its COP21 goals. Mercom Capital, the US-based think tank recently, ranked Adani Group as the number one global solar power developer.

"India Will By 2030...": 5 Promises PM Modi Made At Climate Summit

NDTV, 02/11/2021

Prime Minister Narendra Modi on Monday addressed the COP26 climate summit in Glasgow where he spoke about 'panchamrit' or five nectar elements to deal with the challenge of climate change. PM Modi also announced that the country will become carbon neutral by 2070.

'Panchamrit' presented by PM Modi at the climate summit:

- India will reach its non-fossil energy capacity to 500 GW by 2030.
- India will meet 50 percent of its energy requirements from renewable energy by 2030.
- India will reduce the total projected carbon emissions by one billion tonnes from now to 2030.
- By 2030, India will reduce the carbon intensity of its economy to less than 45 percent.
- By 2070, India will achieve the target of net zero emissions.

India is the last of the world's major carbon polluters to announce a net-zero target, with

China saying it would reach that goal in 2060, and the US and the EU aiming for 2050.

Scientists say we must halve global emissions by 2030, and reach net-zero by 2050, in order to prevent the worst impacts of climate change

He also called for a global push to adopt sustainable lifestyles. "Instead of mindless and destructive consumption, we need mindful and deliberate utilisation," he said, citing consumer choices in areas from packaging to diet."These choices, made by billions of people, can take the fight against climate change one step further," he said.

PM Modi, who arrived in Glasgow on Sunday night from Rome, was received by British Prime Minister Boris Johnson and UN Secretary General Antonio Guterres. The Prime Minister was then seen interacting animatedly with Mr Johnson and Mr Guterres with his arms around their shoulders. The three leaders had also attended the G20 Summit in Italy which concluded on Sunday.

India needs $15 bn funding to set up 15 GW green hydrogen electrolyser capacity by 2030

The Economic Times, 22/11/2021

India will require an estimated $15 billion in public and private funding to set up 15 gigawatt (GW) of green hydrogen electrolyser capacity by 2030, according to industry body, India Hydrogen Alliance (IH2A). This electrolyser capacity is expected to produce 3 million metric tonnes (MMT) of green hydrogen and would need 30 GW of renewable energy. IH2A is an industry coalition of global and Indian firms committed to create a hydrogen value-chain and economy in India. These findings were presented by the industry body in the first of a six-part consultation series organised by NITI Aayog and the industry on green hydrogen demand in different sectors.

The first series identified various key challenges that need to be addressed in meeting national ambitions and has called out funding, hydrogen standards, electrolysers manufacturing, creation of carbon market and hydrogen clusters as immediate priorities for India.

The 15 GW capacity ambition is one the of three scenarios that IH2A considered for arriving at the indicative national figures. It also gave a probable break-up for setting up 15 GW capacity, consisting of three 2 GW, six 1 GW, and six to seven 400 MW to 500 MW installed electrolyser capacity at eight to nine national green hydrogen hubs or clusters.

The remaining two scenarios were to set up 25 GW and 35 GW electrolyser capacity in the next 10 years. It is important to note here that these figures are indicative and are comparable to similar sized global projects for the same period. Under the second scenario of installing 25 GW electrolyser capacity in 10 years, IH2A estimated that about $25 billion investment would be required. This capacity will produce 5 MMT of green hydrogen and require about 50 GW renewable energy capacity which could come from new hydrogen-dedicated RE capacity and about 22 GW from RE excess capacity. This 25 GW could comprise eight 2 GW, eight 1 GW, and 8 to 10 400 MW to 500 MW installed electrolyser capacity at 12 to 16 national hydrogen clusters. IH2A thinks that the second scenario is the more probable one among the three.

For the third case, it assumed the setting up of 35 GW electrolyser capacity by 2030 to produce 7 MMT of green hydrogen. IH2A noted that this would require about $35 billion investment from public and private sectors and a renewable energy capacity of about 70 GW.

This 35 GW capacity could consist of 10, 2 GW, and 10, 1 GW along with 10 to 12 400 to 500 MW electrolyser installed capacity at 20 national hydrogen hubs. The stakeholder consultation covered the importance of a visionary national target that is critical to reducing the prices of green hydrogen, with a view expressed by some stakeholders that India should target 5 MT of domestic green hydrogen production by 2030 serving both existing and new applications.

6. Mobilités électriques

Tata Power completes installation of over 1000 EV charging stations across cities

Mint, 25/10/2021

Tata Power, one of the country's largest private-sector integrated companies , now has a network of more than 1000 Electric Vehicle (EV) charging stations across the country.

This network of 1000 public EV charging stations provides innovative and seamless EV charging experiences for Tata Power's customers across Offices, Malls, Hotels, Retail Outlets, and places of public access, enabling clean mobility and freedom from range-anxiety. In addition, there are close to 10,000 home EV charging points, which make EV charging super-convenient for the vehicle owners.

Tata Power EZ Chargers ecosystem covers the entire value chain of Public chargers, Captive chargers, Bus/ Fleet chargers and Home chargers. Starting with the first chargers being installed in Mumbai, Tata Power EV charging points are now present in nearly 180 cities and in multiple State and National highways under various business models and market segments. The Company is planning to have a base of 10,000 Charging Stations as also to enable whole stretches of highways into e-highways across the length and breadth of the country.

"We have started the first of our many milestonestowards enabling the EV revolution in the country through successful deployment of over 1000 EV charging points in public domain. This makes Tata Power the country'slargest EV charging solutions provider. Our innovative and collaborative approach has made a significant impact in developing this ecosystem and encouraging EV adoption in the country. We remain committed to playing a key role along with other stakeholders in achieving the national goal of transition to green mobility," said Dr. Praveer Sinha, CEO & MD, Tata Power.

Tata Power has collaborated with Original Equipment Manufacturers (OEMs) to roll out EV charging infrastructure and aims to expand its presence further in many cities of India. It has partnered with Tata Motors Limited, MG Motors India Limited, Jaguar Land Rover, TVS & more, for developing EV charging infrastructure for their customers and dealers. The partnerships with multiple state transport utilities facilitate e-bus charging, furthering the cause of green public transport. Tata Power also actively collaborates with IOCL, HPCL, IGL, MGL and multiple State Governmentsfor developing EV Charging Infrastructure (EVCI).

With the increase in Electric Vehicle adoption, the company has also expanded footprint into the electric 3- wheeler and 2-wheeler charging market. Earlier this month, Tata Power and TVS Motor Company, one of the leading manufacturers of two-wheelers and three-wheelers globally, signed on a strategic partnership to drive the comprehensive implementation of EVCI across India and deploy solar power technologies at TVS Motor locations.

The partnership aims to create a large dedicated electric two-wheeler charging infrastructure to accelerate electric mobility in India. Some of the recent announcements by the Company include those with HPCL to provide end to end EV charging stations at their retail outlets and with the Lodha Group for stations in its commercial and residential projects in Mumbai. In July 2021, Tata Power and Hindustan Petroleum Corporation Limited (HPCL), a Maharatna Oil & Gas Public Sector undertaking, joined hands to provide end-to-end EV charging stations at HPCL's retail outlets (petrol pumps) in multiple cities and major highways across the country. Similarly, the Company has a tie-up with Lodha Group, one of the largest real estate developers, to provide end-to-end EV charging solutions in all its residential and commercial projects across Mumbai Metropolitan Region (MMR) and Pune. Tata Power has also developed a robust software platform for customers of EV charging and has released a mobile-based application (Tata Power EZCharge) to give its consumers a simple and easy charging experience.

The app helps in locating EV charging stations, charging EVs, and making bill payments online, making it one of its kind. In line with India's Nationally Determined Contributions (NDC), Tata Power has furthered its vision for a sustainable tomorrow with its commitment to achieving Carbon Neutrality before 2050. The Company is increasing its efforts in this direction with its commitment to set emission reduction targets in line with the Science-Based Targets initiative (SBTi).

Cost of electric vehicles will be on a par with petrol variants in 2 years: Nitin Gadkari

Hindustan Times, 09/11/2021

Union transport minister Nitin Gadkari said that the cost of electric vehicles (EV) in India will drop to the level of petrol vehicles in the next two years.

"Within two years, the cost of EVs will come down to a level that will be at par with their petrol variants. Already GST is only 5% on EVs and the cost of lithium ion batteries is also declining. Besides, the government has already framed a policy allowing petrol pumps to set up EV charging stations. In two years there will be a lot charging points across India as well," Gadkari said at a webinar, organised by The Sustainability Foundation, Denmark, on accelerating the phasing out of coal and switching to electric vehicles, in the national capital on Sunday evening.

"Electric mobility is gaining good momentum in the country. There is no artificial push required. The per kilometre cost of petrol-based vehicle is ₹10, that of diesel is ₹7/km, whereas for EVs, it is ₹1/km," he said.

This is significant because by 2030, India has set a target of 30% EV sales penetration for private cars, 70% for commercial vehicles, 40% for buses and 80% for two- and three-wheelers. At present, only about 2-3 e-car variants cost below ₹15 lakh in the country.

The cost of two-wheelers and three-wheelers have already almost come at par with the existing petrol after factoring in the subsidies.

Gadkari further said that a potential pilot project is being planned to install an electric highway system in the Delhi-Mumbai Expressway which can be electrified using abundant solar power energy in the region. Apart from this, the government also plans to set up charging points at fuel stations.

The National Highways Authority of India (NHAI) has chalked out a plan to install at least 700 EV charging stations across its major highways in the country by 2023. These will be spread across a range of 40-60kms.

The Union minister said that the central government is also focusing on ensuring that EV charging stations get their electricity from renewable sources. The government will also soon launch the country's fully electric tractor, the minister added. This comes months after Gadkari introduced the country's first-ever tractor run on CNG in February this year.

"There is no benefit in producing coal based electricity. Our attention is now on renewable sources such as solar, tidal, wind energy and biomass. Domestic EV charging can be fulfilled through rooftop solar system. The average retail electricity charge across the country is as high as ₹7-8 kWh, that of backup power with diesel generator sets is as high as ₹20/kwh. Meanwhile, solar power is less than ₹2/kwh today. So, rooftop solar system can address the twin problem of high electricity cost and grid reliability," he said.

At present, India has world's fourth largest renewable energy capacity at 145 GW. Gadkari said domestic EV charging through solar PV cells, panel system at homes, malls, parking lots and offices would make EVs more affordable and adaptable.

The country has seen an increased demand for small battery operated vehicles such as e-scooters, e-carts, e-autos, e-bicycles in the past two years, Gadkari said.

Electric two-wheeler and electric car sales have seen a rise of 145% and 190% respectively when compared to the pre-Covid period, he said. India has the potential to become an exporter in these two segments of EVs, the minister added.

7. Environnement et qualité de l'air

U.N. climate agreement clinched after late drama over coal

Reuters, 17/11/2021

GLASGOW, Nov 14 (Reuters) - U.N. climate talks ended Saturday with a deal that for the first time targeted fossil fuels as the key driver of global warming, even as coal-reliant countries lobbed last-minute objections.
While the agreement won applause for keeping alive the hope of capping global warming at 1.5 degrees Celsius, many of the nearly 200 national delegations wished they'd come away with more.

"If it's a good negotiation, all the parties are uncomfortable," U.S. climate envoy John Kerry said in the final meeting to approve the Glasgow Climate Pact. "And this has been, I think, a good negotiation."

The two-week conference in Scotland delivered a major win in resolving the rules around carbon markets, but it did little to assuage vulnerable countries' concerns about long-promised climate financing from rich nations.The British COP26 president, Alok Sharma, was visibly emotional before banging down his gavel to signal there were no vetoes to the pact, after the talks had extended overtime – and overnight – into Saturday.
There was last-minute drama as India, backed by China and other coal-dependent developing nations, rejected a clause calling for the "phase out" of coal-fired power. After a huddle between the envoys from China, India, the United States and European Union, the clause was hurriedly amended to ask countries to "phase down" their coal use.
India's environment and climate minister, Bhupender Yadav, said the revision reflected the "national circumstances of emerging economies."

"We are becoming the voice of the developing countries," he told Reuters, saying the pact had "singled out" coal but kept quiet about oil and natural gas.

"We made our effort to make a consensus that is reasonable for developing countries and reasonable for climate justice," he said, alluding to the fact that rich nations historically have emitted the largest share of greenhouse gases.

The single-word change was met with dismay by both rich countries in Europe and small island nations along with others still developing.

"We believe we have been side-lined in a non-transparent and non-inclusive process," Mexico's envoy Camila Isabel Zepeda Lizama said. "We all have remaining concerns but were told we could not reopen the text ... while others can still ask to water down their promises."

But Mexico and others said they would let the revised agreement stand. "The approved texts are a compromise," said U.N. Secretary-General Antonio Guterres. "They reflect the interests, the conditions, the contradictions and the state of political will in the world today."

CARBON MARKET BREAKTHROUGH

Reaching a deal was always a matter of balancing the demands of climate-vulnerable nations, big industrial powers, and those like India and China depending on fossil fuels to lift their economies and populations out of poverty.

Sharma's voice broke with emotion in response to vulnerable nations' expressing anger over the last-minute changes. "I apologise for the way this process has unfolded," he told the assembly. "I am deeply sorry."

The overarching aim he had set for the conference was one that climate campaigners and vulnerable countries said was too modest – to "keep alive" the 2015 Paris Agreement's target to keep global temperatures from rising beyond 1.5C (2.7 Fahrenheit) above pre-industrial levels. Scientists say warming beyond this point could unleash irreversible and uncontrollable climate impacts.

In asking nations to set tougher targets by next year for cutting climate-warming emissions, the agreement effectively acknowledged that commitments were still inadequate. National pledges currently have the world on track for about 2.4C of warming.

The talks also led to a breakthrough in resolving rules for covering government-led markets for carbon offsets. Companies and countries with vast forest cover had pushed hard for a deal, in hopes also of legitimising the fast-growing global voluntary offset markets.

The deal allows countries to partially meet their climate targets by buying offset credits representing emission cuts by others, potentially unlocks trillions of dollars for protecting forests, expanding renewable energy and other projects to combat climate change.

'THE ERA OF COAL IS ENDING'

Jennifer Morgan, executive director of the campaign group Greenpeace, saw the glass as half-full.

"They changed a word but they can't change the signal coming out of this COP, that the era of coal is ending," she said. "If you're a coal company executive, this COP saw a bad outcome."

Developing countries argue rich nations, whose historical emissions are largely responsible for warming the planet, must finance their efforts both to transition away from fossil fuels and to adapt to increasingly severe climate impacts.

The deal offered a promise to double adaptation finance by 2025 from 2019, but again no guarantees. A U.N. committee will report next year on progress towards delivering the $100 billion per year in promised climate funding, after rich nations failed to deliver on a 2020 deadline for the funds. Finance will then be discussed again 2024 and 2026. read more

But the deal left many vulnerable nations despondent in offering no funding for climate-linked losses and damages, a promise made in the original pact called the U.N. Framework Convention on Climate Change in 1992.

Rich nations once again resisted acknowledging financial liability for their years of emissions that drove climate change as they rose to economic prosperity.

While Glasgow agreement laid out a pathway for addressing the issue by establishing a new secretariat dedicated to the issue, vulnerable countries said that represented a bare minimum of acceptability."This package is not perfect. The coal change and a weak outcome on loss and damage are blows," said Tina Stee, climate envoy from the Marshall Islands. Still, "elements of the Glasgow Package are a lifeline for my country. We must not discount the crucial wins covered in this package."

India to halt some coal plants to clean Delhi's air

Mint, 17/11/2021

India has directed six coal-fired power plants located around Delhi to shut down until the end of this month as part of measures to clean some of the world's dirtiest air, as a cloud of smog has enveloped the city and its suburbs for nearly two weeks.

The federal Environment Ministry late Tuesday also barred the entry of all trucks except those carrying essential items into the National Capital Region of Delhi and encouraged citizens to work from home to curb pollution. The decision came after officials from the Delhi government and the neighboring states of Uttar Pradesh, Punjab, Rajasthan and Haryana met to discuss ways to check the soaring pollution.

India's Supreme Court on Monday called for urgent restrictions on vehicular movement and industrial activities in and around the capital. The city has ordered schools to only teach online until Nov. 20, halted construction activities and asked some government employees to work from home after the top court called the situation an "emergency" on Saturday.

About half the 13,210MW thermal power capacities in the capital region have been ordered shut to improve air quality. Thermal capacity of 6,300 MW capacity within a 300-kilometer (186 miles)-radius of Delhi that has been closed down includes two units of 2,400 MW in neighboring Haryana, two units of 2,180MW in Punjab and two of 2,320 MW in Uttar Pradesh.

The move is unlikely to have an impact on power supplies to the Indian capital and other states. Power companies are usually prepared for this annual exercise and tie up capacities in advance to deal with the situation. Any step that affects power supply would be counter-productive as it could lead to a jump in the use of diesel-fueled generators.

India's top court is expected to review the pollution control measures on Wednesday.

The shutting down of power plants will help address emissions and cut pollution, said Jyoti Pande Lavakare, author of 'Breathing Here is Injurious to Your Health' and co-founder of civil society group Care for Air. But "We need a thought-through, ambitious plan, which is being led with leadership right from the top" to address the issue in the long term, she said.

A thick blanket of of toxic haze is an annual phenomenon in the northern city and its surroundings, especially as winter arrives and temperatures dip. Politicians and authorities have squabbled over a solution for years, with dialog picking up only when the pollution soars. However, as the

pollution levels ebb the debate dies down and the issue has never caused any serious political fallout. Speaking at the Bloomberg New Economy Forum in Singapore on Wednesday, Sunil Mittal, the billionaire chairman of Bharti Airtel Ltd. said he would fly back to Delhi later tonight, a city that is "covered in smog."

"We can't live like this," Mittal said. "We talk about 5 million people dying of the pandemic; we don't talk about how many people have been choked around the world."

The air quality index, or AQI, for New Delhi was at 244 at 8:30 a.m. local time, according to website IQAir, which monitors air pollution around the world. Readings below 50 are considered safe, while anything above 300 is considered hazardous. PM2.5 concentration in the air was recorded 38.7 times above the WHO annual air quality guideline value, its said.

The toxic air quality across several Indian cities is driven by a combination of factors, including vehicular and factory emissions, road dust, construction activities and stubble burning by farmers.

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