<table>
<thead>
<tr>
<th>S. NO.</th>
<th>SUBJECT</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TRANSPORT</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>-E-Vehicles (EV)</td>
<td>1-13</td>
</tr>
<tr>
<td>1.2</td>
<td>-Oil &amp; Gas run vehicles</td>
<td>13-14</td>
</tr>
<tr>
<td>2</td>
<td>ENVIRONMENT</td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>- Air, Water &amp; Sound pollution</td>
<td>15-36</td>
</tr>
<tr>
<td>2.2</td>
<td>- Health</td>
<td>36-37</td>
</tr>
<tr>
<td>3</td>
<td>ENERGY CONSERVATION</td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>-Oil &amp; Gas</td>
<td>38-63</td>
</tr>
<tr>
<td>3.2</td>
<td>-Electricity</td>
<td>63-66</td>
</tr>
<tr>
<td>4</td>
<td>RENEWABLES ENERGY</td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>-Wind</td>
<td>66-67</td>
</tr>
<tr>
<td>4.2</td>
<td>-Solar</td>
<td>68-73</td>
</tr>
<tr>
<td>4.3</td>
<td>-Biomass</td>
<td>73-77</td>
</tr>
</tbody>
</table>

This Energy News contains excerpts of articles picked up from selected daily newspapers & magazines.
Battery swap for cost slash: The buzz stops here

There lived a finance wizard, the story goes, who came up with the right answer to any problem his subordinates took to him. Only, each time a ticklish problem was posed to him, he would open the drawer of his desk, take a peek and come up with the perfect solution. When he died, his eager juniors opened the drawer to find out what gave the wizard the answers. They found a piece of paper bearing the three fundamental principles of accountancy — “Debit the receiver, credit the giver; debit what comes in, credit what goes out, debit all expenses and losses, credit all incomes and gains.” The point of this parable is, obviously, the importance of fundamentals. To bring in an e-mobility revolution in India, it is necessary to not lose sight of one of the basics of economics — scale drives down costs. Going by the tenders for e-buses, India is expected to see 5,600 electric buses in the next 18 months in about 65 cities. And that is only the beginning. Prof HM Shivanand Swamy of CEPT University, Ahmedabad, says that if the government and industry play the cards right, there could be 20,000-30,000 e-buses in India in the next 5-7 years. However, for a country as large as India, even that is not quite enough.

Buses for the masses- It is fairly well understood that e-buses will lead the e-mobility revolution in India. Two-wheelers and three-wheelers “will go e” quite early on, but buses are those that will move the masses. Personal transportation, cars and SUVs will take time to go electric. The time of e-buses has come. Studies have shown that e-buses are more economical than diesel buses, on ‘total cost of ownership’ basis. For sure, they cost a bomb — for
example, a BYD (Chinese) bus costs ₹1.6 crore — but it is well worth it because your running costs are low. Because e-buses cost twice as much as the diesel-powered, interest and depreciation costs are correspondingly double, but all other costs such as fuel and maintenance are far less.

Here are some illustrative numbers. In Bengaluru, an AC diesel bus will incur a cost of ₹85 a km; an e-bus will need ₹20 less. For non-AC buses, the numbers are ₹55 and ₹40. Another estimate, made by Prof Swamy, seems to be less generous to e-buses. In a 2018 paper on Financing of e-Buses, he estimates the typical costs of diesel and electric AC buses at ₹68 and ₹61, respectively. But the variance in estimates is understandable because the cost-per-km of e-buses depends upon a number of factors, but mainly the density of buses per route and choice of technology. Indeed, the number of buses you put on a route and the passenger load, in a way, determine the choice of technology. You see a good example in the operations of Ashok Leyland in Ahmedabad. The bus maker has deployed 50 buses in the city; 18 of them on a high-traffic route and the rest spread over several routes across the city. These 18 are in battery-swapping mode, while the rest are charged at one of the several charging stations on the routes. Thanks to the higher frequency of buses, Sun Mobility, Ashok Leyland’s partner, is able to run a battery-swap service for the buses. (Sun Mobility is a start-up co-founded by Chetan Maini, who kicked off e-mobility in India two decades ago by bringing in the two-seater Rewa cars, which business was later sold to the Mahindras.) Because the buses do a quick run on the route and come back to that point, the battery could be downsized. Yuvraj Sarda, Head-Strategy, Sun Mobility, tells BusinessLine that swapping enabled the battery to be downsized from 350 kWhr to 64 kWhr, reducing weight and making more room for passengers. It takes less than three minutes to pull out the drained battery and put in a fully-charged one. And because you can charge up the batteries at leisure, you don’t have to build a series of fast charging points, which are costly. A ‘fast’ charging station that will fully energise a battery in four hours costs ₹20 lakh. If you want to charge much faster (oh, you can, but you will lose energy in the process and shrink battery life), it will cost you more. The lesson from this, therefore, is to raise the density of e-buses wherever possible, so that swapping, rather than charging, is possible. This will bring down the cost of operations.
Safety awareness - The e-bus is a new animal. Sure, there are half a million of them in the world today, but more than nine out of ten are in China alone. Therefore, for the rest of the world, the e-bus is still an unknown commodity. The question is, how safe is it? A scary point is that the bus has 650 V DC motor — anything above 60 V DC is fatal to touch. And, batteries could catch fire. Karthick Atmanathan, who heads the electric mobility division of Ashok Leyland, recalled while speaking at a conference in Chennai recently that he bumped into a fire department official in a restaurant and realised that the man did not quite know how to handle Li-ion battery fire. A burning battery, Atmanathan said, even if dunked in a tank of water, will resume its burning after it is taken out. Ashok Leyland’s buses have several layers of protection, such as auto switch-off in case of overheating or an accident. A spokesman of the company says e-buses are safer than diesel buses — only you have to learn how to handle things during emergencies. As the country moves towards e-buses, awareness on safety needs to be built, lest a freak accident derails the whole movement.

*****

Convert 25% of all vehicles to electric, save ₹6k cr: Report

If 25% of all vehicles registered in the national capital are electric by 2024, then Delhi would save ₹6,000 crore in fuel costs, a report submitted to the government on Monday, by the Dialogue and Development Commission (DDC) of Delhi and Rocky Mountain Institute, said. The report, submitted to transport minister Kailash Gahlot, has recommended creating a single window clearance system for registering e-vehicles (EVs) in Delhi. This was one the 10 actionable
solutions offered to the Delhi government to accelerate mobility transition in the city, DDC chairman Jasmine Shah said. He said these recommendations, if approved by the government, will be added to draft Electric Vehicle Policy for Delhi which, Shah added, is likely to be notified soon. “The proposed solutions in the report range from policy, institutional, technical, and financial interventions that can help support rapid adoption of EVs and other urban mobility solutions in Delhi. We have also proposed commissioning of charging and battery swapping infrastructure. Introducing an attractive financing model for EVs through a government-led interest rate subvention scheme is another recommendation. Other recommendations include data solutions, awareness campaigns, and capacity-building programmes,” Shah said. The report estimated that as per the draft electric vehicle policy, the capital will need to register approximately five lakh new EVs in the next five years. During their lifespan, these EVs are estimated to save approximately ₹6,000 crore expenditure on fossil fuel imports, and 4.8 million tonnes of carbon dioxide emissions, equivalent to one lakh petrol cars, the report noted. “It will also improve air quality by negating 159 tonnes of PM 2.5 (fine particulate matter) tailpipe emissions, which are a known cause of respiratory diseases and premature deaths,” it added. Gahlot said, “This report will be an important reference point for our agencies on various reforms needed to ensure successful transition to e-vehicles.” The report was based on discussions and suggestions received at the mobility lab workshop, hosted by DDC and Rocky Mountain Institute, in Delhi on June 26-27. At the workshop, solution providers shared ambitious goals for deploying clean, shared, and people-centric mobility solutions, a government statement read. “Over the next year, the participants intend to deploy nearly 35,000 electric and accessible passenger vehicles, at least 1,000 EVs for last-mile deliveries, and several public charging and swapping stations across Delhi. In addition to vehicles and hardware,” it said.

*****
Electric vehicles aren’t a roaring success with car buyers just yet but Tata Motors, the maker of Tiago and Tigor compact cars, believes tax incentives from states and the Centre would eventually prompt individual purchasers to look at the electric powertrain. The company is adopting a twin product strategy, differentiated for personal and fleet buyers. Its first EV for personal buyers will hit the market in the fourth quarter with its new modular EV powertrain Ziptron, the company announced on Thursday. The higher range Tigor EV for fleets will be launched in the coming weeks. Tata Motors will be launching an electric vehicle based on the X4 platform, which may be the Altroz EV to be showcased at the Auto Expo of 2020. The Ziptron is a 300-watt powertrain having a range of more than 250 km per charge. The Ziptron powertrain is modular and versatile, and it will be used across the two new modern architectures X4 and Q5 in the coming years. The existing battery in Tigor will be enhanced so that fleet buyers are assured of a longer driving range for their vehicles. Shailesh Chandra, head of E Mobility Division at Tata Motors, told ET
that despite low volumes, there is a business case for EVs, and the company does make margins with current models. “The fleet segment is just 10% of the overall market; so, electrification cannot gain momentum in India without focus on 90% of the market,” Chandra said. “So far, personal segment vehicles available could not overcome the barriers. It is possible for us to make electric vehicles more attractive with the new range of products.” Through the Ziptron electric powertrain, developed by a dedicated team of 350 engineers, Tata Motors has tried to address issues surrounding range anxiety, driving performance, and safety. The company will offer eight years’ warranty on the powertrain the company claims has been tested for close to a million kilometres. Tata Motors said studies have shown that a prospective buyer is willing to pay a 25% premium for an EV, although that shouldn’t be assumed to arrive at the price point. Tata Motors will not focus on the entry segment, as the price premium can be two times. But certain segments (SUVs or premium hatchbacks) could be as competitive for EVs as they are for traditional, fuel-powered engines. “For these segments, price is not the primary consideration; they are looking at new technologies, connected car solutions, performance, and some are even environmentally conscious,” Chandra said.

****

Hero Electric looks to double capacity

Heroelectric, one of the largest electric scooter makers in India by sales, plans to double capacity over the next 12 months. The company is eyeing expansion either at its Ludhiana unit or may explore setting up a Greenfield one in South
India. Hero Electric, a subsidiary of Hero Eco Ltd, has an annual capacity of 75,000 units at its Ludhiana facility, which will be increased to 150,000 annually. According to Sohinder Gill, CEO, Hero Electric will invest ₹700 crore over the next three to four years as capex. Of this, nearly ₹250-300 crore will go towards capacity addition. “We can look at brownfield expansion at Ludhiana or go for a Greenfield unit down South. We are exploring all the five (Southern) States and a call on this will be taken soon,” he said on the sidelines of the launch of its electric scooter range. Around 65,000 electric two-wheelers were sold in India in FY19, of which 37,000 were sold by Hero Electric alone. “We have seen sales nearly double over the last six months and we now have a 65 per cent market share,” Gill said. The company is also eyeing an increase in dealerships. While Hero Electric remains bullish on the demand for electric two-wheelers, sales of e-scooters have been slow especially since the Centre introduced tight localisation norms to avail of benefits under the Faster Adoption and Manufacturing of Electric and Hybrid Vehicles (FAME-II) scheme. Finance Minister Nirmala Sitharaman in a bid to push sales and also aid manufacturing, had recently announced customs duty exemption on lithium–ion cells, which will help lower the cost of lithium-ion batteries in India as they are not produced locally. Makers of components such as solar electric charging infrastructure and lithium storage batteries and other components will be offered investment-linked income tax exemptions under the Income Tax Act, and other indirect tax benefits.

*****

TN unveils new electric-vehicle policy; targets ₹50,000-cr investment

Tamil Nadu Chief Minister Edappadi K Palaniswami on Monday unveiled the State’s electric-vehicle policy, which has set out a vision to attract ₹50,000 crore in investments and create 1.5 lakh new jobs. While the ‘Tamil Nadu Electric Vehicle Policy 2019’ aims to create a comprehensive EV ecosystem in the State, it has also chalked out a strategy to make Tamil Nadu the preferred destination for EVs and component manufacturing units, including battery and charging infrastructure. The support measures announced in the EV policy include 100
per cent road tax exemption for all types of EVs, capital subsidies, reimbursement of State GST, subsidy on land cost and special incentives for job-creating EV projects. Capitalising on its traditional strengths in manufacturing and skill availability and thanks to the support measures under the new policy, the State will emerge as a leader in the EV space, industry representatives say. Under the new EV policy, the major cost saving as part of the on-road price package will be on insurance, as the State government offers 100 per cent road tax exemption and there will be waivers on registration fees under the Central government’s policy.

A plethora of measures- For makers of EVs, parts and charging infrastructure equipment makers, there is a plethora of support measures. “Our EV policy is a comprehensive one as it covers the manufacture of electric vehicles, batteries and accessories. Apart from capital subsidy and tax exemption, we have given land subsidy. Also, we have decided to create an EV park with plug-and-play facilities. This is also a unique feature when compared with other States,” N Muruganandam, Principal Secretary to Government, Industries Department, Government of Tamil Nadu, told BusinessLine.

Holistic approach- “It’s a well-thought-out policy for a manufacturing State like Tamil Nadu. Interestingly, the State government had wider consultations with industry people at every stage to come out with such a comprehensive policy. The new policy will give a much-needed push to EV adoption. Also, the State can emerge as a strong force in EV manufacturing given its strengths,” BC Dutta, Vice-President – Corporate Affairs, Hyundai Motor India, told BusinessLine. Under the new policy, all electric vehicles — two- and three-wheelers, cars, buses and commercial vehicles — will get 100 per cent road tax exemption till the end of 2022, according to a statement.

The new EV policy has also offered to provide incentives under a special package for investments above ₹50 crore and create at least 50 direct jobs in the form of new projects or expansion projects. Investments made from April 1, 2018 will be considered for this.

“Since the EV industry is evolving, the State government’s threshold level of ₹50 crore for incentives is a welcome move. This can attract electric two-wheeler
companies such as Ather Energy to invest in the State,” said an industry analyst. Elaborating on the unique features in the policy, Muruganandam said that the State government will set up exclusive EV parks in major auto-manufacturing hubs and also in areas that have the potential to attract EV investments. These EV parks will enable the creation of a vendor ecosystem that will serve OEMs. The State government has attempted to put southern districts also on the investment map. The new electric policy offers to provide investors a 50 per cent subsidy on the land cost if the investment is made to obtain land from government agencies in southern districts, while in other districts it is just 15 per cent.

*****

IIT researchers develop material to detect hydrogen gas leak

Researchers at Hyderabad and Jodhpur IITs have developed materials that can be used as sensors to detect hydrogen gas leaks. Since the gas is highly inflammable, the dangers of a leak too are real. Hydrogen gas leaks, especially in an industrial environment, can lead to major accidents. Detection of hydrogen gas leaks is considered a difficult task.

‘Hydrogen economy’- The IIT researchers have come up with semiconductor materials that can help in the development of reliable hydrogen gas sensors and lead to quick response capability, both in domestic and industrial environments. Scientists see this development as a step towards a ‘hydrogen economy’. A paper, co-authored by Chandra Shekhar Sharma and Mahesh Kumar, and Vijendra Singh Bhati, Akash Nathani and Adarsh Nigam, has been published in the journal Sensors.
and Actuators. Chandra Shekhar Sharma of IIT Hyderabad said the importance of hydrogen as a primary energy source is growing. However, there are two problems associated with the gas — one is the complicated production issues and the other is the difficulty of detecting the gas. “We have made progress in solving the second,” he added. What makes a hydrogen leak dangerous is the low ignition energy of the gas and the explosive range (4-75 per cent). Human beings cannot sense hydrogen because it is colourless and odourless and, therefore, tools, especially those with sensors, are a must, said Mahesh Kumar of IIT Jodhpur.

**Types of hydrogen sensors**- Many kinds of hydrogen sensors are being studied, including optical, electrochemical and electrical. Electrical sensors, in particular resistive sensors, are the closest to practicality due to their low cost, simple design and good sensitivity.

Nano particles (one hundred thousand times thinner than human hair) of zinc oxide (metal oxide semiconductor) have good hydrogen sensing properties. The research team has improved the sensitivity of this material even further. The researchers loaded the zinc oxide nanoparticles onto nanofibres of carbon and found that this results in a sensing response of nearly 74 per cent compared to 44.5 per cent in pure ZnO nanoparticles. Nanofibres are extremely thin fibres that are bundled to look like cotton candy. The team spun the nanofibres by a process called electrospinning, in which a polymer solution is electrically charged and ejected through a spinneret under a high-voltage electric field. In this work, the researchers used a special polymer blend to obtain nanofibres of the polymer, which was then converted to carbon nanofibres by heating. This leads to zinc oxide deposits on the surface of the nanofibres.

2024 target: Delhi needs 5L new electric vehicles

To meet Delhi’s draft electric vehicle policy target of 25% share for electric vehicles (EVs) in new registrations by 2024, Delhi will need to register approximately five lakh new EVs in the next five years, a new report says. The report titled ‘Accelerating Delhi’s Mobility Transition: Insights from the Delhi Urban Mobility Lab’ has been prepared by the Dialogue and Development Commission of Delhi and Rocky Mountain Institute. It was submitted to Delhi’s
transport minister Kailash Gahlot on Monday. The report states that over their lifetime, these EVs are estimated to avoid approximately Rs 6,000 crore in oil and liquid natural gas imports and 4.8 million tonnes of CO2 (carbon dioxide) emissions, equivalent to avoiding CO2 emissions from nearly 1 lakh petrol cars over their lifetime. They will also help avoid about 159 tonnes of PM2.5 (fine particulate matter) tailpipe emissions, a known cause of respiratory diseases and premature deaths. The report proposes ten actionable solutions to accelerate Delhi’s transition to a shared, clean, and people-centric mobility future, including 35,000 electric vehicles within a year. The report also identifies the economic and environmental benefits of an electric mobility future in Delhi.

The report proposes actionable solutions by summarizing discussions and suggestions from a workshop that was held on June 26-27 in Delhi. “As Delhi looks to take ambitious steps towards inducting large number of electric buses and taking leadership in fighting air pollution, this report will become an important reference point for all our agencies on the various reforms needed to ensure a successful transition to electric vehicles,” Gahlot said. One of the many proposed solutions in the report is the creation of a single-window clearance system that provides clearer and simpler processes for both registering and permitting EVs, as well as commissioning charging and battery swapping infrastructure. Another is a more attractive financing for EVs through a government-led interest rate subvention scheme. Others include data solutions, awareness campaigns, and capacity building programmes. At the workshop, solution providers shared ambitious goals for deploying clean, shared, and people-centric mobility solutions in Delhi. Over the next year, the participants intend to deploy nearly 35,000 electric and accessible passenger vehicles and several public charging and swapping stations across Delhi. In addition to vehicles and hardware, other goals include getting thousands of users on to digital ride-hailing and data sharing platforms and ensuring that information related to routes and fares is accessible in multiple formats.

*****
China’s BYD rolls out pure electric UV, minivan; to focus on B2B segment initially

Chinese electric vehicle maker BYD has introduced its two new pure-electric vehicles for the Indian market. The company seeks to cash in on the emerging opportunities in view of a big push for electric mobility by the Indian government. The company has launched T3 pure electric passenger MPV (multi-purpose vehicle) and T3 pure electric commercial logistics minivan. “Our pure electric buses have cemented their position as a market leader in the Indian e-bus segment. Now, we are delighted to launch the all-new pure electric T3 MPV and T3 minivan for the Indian market and are confident that our products will set a benchmark in India’s electric van segment,” said Liu Xueliang, Managing Director of BYD India. “We are not going to have an official launch for now. However, we will demonstrate the vehicle as soon as possible to collect some operational data. With the data and operation, we will invite potential users to test ride the vehicles before sale,” Ketsu Zhang, Executive Director, told BusinessLine. The proposed models will be sold in the B2B (business-to-business) segment. Thus, the price will be decided case by case, in accordance with the business model and service package. “At this early stage, we are going to focus on creating a more efficient, more reliable B2B and electric public transportation sector. We will also gradually look at increasing investment and manufacturing electric vans locally depending on Indian market demand and government policies,” said Zhang.
Cost savings- Compared to a traditional fuel minivan, T3 MPV and T3 minivan promise cost reductions. One single T3 MPV or T3 minivan can save fuel consumption and emissions equivalent to five passenger cars. Both models require only 1.5 hours to charge fully using DC charging equipment, and both also support standard AC chargers. Once fully charged, both models can travel up to 300 km. The company plans to make good use of existing partners’ network in the initial period. It has an association with Olectra and will discuss with it to form a co-operation model. “We do believe Olectra will strengthen our business development in India,” said Zhang. In addition, BYD is now actively looking for local partners for the electric van product series. These models will be imported from China and sold in India in the near term. Established in March 2007, BYD India has so far invested $150 million in India in putting up factories including one for electric buses, and offices. BYD says it is the first OEM to export e-buses to overseas markets from India.

*****

Maruti to Roll out CNG Models of All Small Cars

Maruti Suzuki, the country’s largest carmaker, will make all the small cars in its portfolio available in compressed natural gas (CNG) variants to reduce dependence on imported oil and cut down on vehicular pollution. The company expects the increase in sales of CNG and hybrid vehicles to pick up the slack
after its planned stoppage of diesel vehicle manufacture. “All small cars in our portfolio will get converted to CNG,” Maruti Suzuki chairman RC Bhargava told ET. “There is an acceptance from the government that CNG is a cleaner fuel, and it is being accepted for transportation. They are setting up 10,000 CNG distribution outlets.” The country’s No. 1 carmaker has borne the brunt of the drop in auto sales that’s part of the broader slump in the Indian economy. Maruti Suzuki posted a 35.9% decline in domestic sales to 94,728 units in August. Currently, the CNG option is available for eight Maruti Suzuki models, including Alto, Alto K10, WagonR, Celerio, DZire Tour S, Eeco, and Super Carry mini truck. The company has 16 models in its portfolio.

‘Encourage India-made CNG Kits’-

CNG-powered vehicles currently constitute around 7% of overall sales of the company. In states where CNG distribution outlets are available, variants running on the fuel account for about 30% of the sales of each model, company executives said. Maruti Suzuki sold 31,000 CNG vehicles in the first four months of the current fiscal year. CNG distribution outlets currently are mostly located in Delhi, Mumbai and Gujarat. The company increased production of CNG-powered vehicles by 40% last fiscal and is in the process of raising it by another 50% this year. Bhargava said factory-made CNG vehicles cost substantially more than those retrofitted with kits because of taxes and manufacturing costs but pointed out that they are also safer. “Retrofitment is done with imported parts — this is not Make in India,” he said. “To promote Make in India, the government must encourage factory-fitted CNG vehicles... We should make CNG kits in India. Safety levels of CNG cars should go up.” In a bid to push adoption of CNG vehicles in the personal mobility space, the petroleum and natural gas ministry had last year announced plans to set up 10,000 CNG distribution outlets in 10 years. It is estimated that the country will save nearly ₹2 lakh crore in oil imports if personal car users switched to CNG vehicles. Maruti Suzuki said earlier this year that it will discontinue production of diesel vehicles due to the steep increase in costs related to the transition to BS VI emission standards from April 1, 2020.

*****
City wants clearer picture of fight ahead as pollution season nears

Delhi and its neighbours appear to be better equipped than ever before to fight air pollution. The number of air quality monitoring stations in the National Capital Region has more than doubled compared with last year, a Central Pollution Control Board (CPCB) official told TOI on Monday. “This year, we have 113 monitoring points in NCR, up from 54 in 2018. This is helping us get a comprehensive picture. We can also pinpoint the causes of pollution in specific areas,” the official said. Beijing, often seen as a reference point by experts in green fight, in contrast, has between 35 and 40 automatic monitoring sites across the city. Data from these fixed-automatic stations — costing around Rs 1.2 crore each with 10% yearly operation and maintenance expenses — is allowing CPCB’s air quality index for NCR to accurately reflect the extent of pollution in the region. Delhi alone has 48 stations run by Delhi Pollution Control Committee (DPCC), System of Air Quality and Weather Forecasting and
Research (SAFAR) and CPCB. “In Haryana, there are 19 such stations, of which three are in Gurgaon and four in Faridabad. In Uttar Pradesh, there are 35, including eight in Ghaziabad and 12 in Noida and Greater Noida. In Rajasthan (areas under NCR only), there are 11,” the CPCB official said. Twenty nine more stations are in the works and will take the total number in NCR to 142. These observation points collect real-time data of particulate matter (PM10 and PM2.5), sulphur dioxide, nitrogen dioxide, carbon monoxide, ozone, ammonia, benzene as also different weather parameters. They have been installed around residential and industrial areas, hospitals, schools, colleges and stadiums — to give a true representative character of air pollution. “As per international guidelines, the correct way to know one index for a city air quality is to consider different micro-environments. For a typical metro city, commercial, urban complex, sub-urban, residential, industrial, road sides and traffic junctions are the micro-environments that should be covered in the monitoring network,” a World Meteorological Organisation report recently stated. The real-time pollution figures from these stations in the city are available on DPCC, SAFAR, CPCB and the respective state pollution control board websites. CPCB uses this data to calculate the overall AQI for these locations, which is then displayed on its website. Experts have hailed the coordinated efforts of the agencies. Anumita Roychowdhury, executive director, Centre for Science and Environment, told TOI: “The impressive expansion of real-time monitoring network across land uses in Delhi is an opportunity to track trends over time and across hotspots, refine action for impact, and alert people daily for health protection. Such granular real-time data allows more advanced air quality and health assessment.” Using the readings of the newly installed stations, a task force set up by CPCB had last year identified pollution hotspots and directed municipal corporations and pollution bodies to take focused action. CPCB had identified 15 highly polluted areas in Delhi and six in neighbouring areas.

*****

16
Delhi slips 6 places in world’s most liveable cities’ ranking

The national capital has slipped six places to rank 118th on a list of the world’s most liveable cities, a report released by the Economist Intelligence Unit stated on Wednesday. The decline in ranking for New Delhi was attributed primarily to an increase in petty crime cases and witnessing “some of the world’s worst air quality levels”, the annual Global Liveability Index stated. The study was conducted in 140 cities around the world, in which Vienna remained the most liveable city for the second year in a row. “The Indian capital has seen an increase in petty crime cases over the past year, as well as recording some of the world’s worst air quality levels. The 2018 update to the World Health Organisation (WHO) Global Ambient Air Quality Database shows that New Delhi currently boasts the sixth highest annual mean concentration of fine particulate matter among cities around the world,” the report stated. New Delhi got an overall score of 56.3 out of 100. It was followed by Mumbai which got a score of 56.2 and was ranked 119. Out of the five parameters on which the cities were ranked, New Delhi got the lowest rating for its ‘stability’. The city secured a score of 50 in terms of stability. The other four parameters included healthcare, culture and environment, education, and infrastructure. For education, New Delhi was given a score of 75 that was more than what some other cities got despite being ranked way above Indian capital. For infrastructure, Delhi got 58.9 which is more than that of Hanoi (55.4) and Mexico City (46.4). Both Hanoi and Mexico City had their overall rankings higher than Delhi. In the category of culture and environment, almost all cities ranked above Delhi excluding Jeddah, Ho Chi Minh and Bander Sari Bagawan. Owing to the problem of poor air quality which worsens in the national Capital during the winter months, New Delhi received a low score of 51.4 in the culture and environment category. According to experts, Delhi needs sector-based solutions for its holistic development. “Blanket solutions won’t work actually as the connotation of, say, safety and security, is different in residential areas than what it is in a commercial area. Augmenting public transport and last mile connectivity is one aspect that actually addresses both the issues — safety and pollution. This should be looked
at immediately,” Sanjukta Bhaduri, professor of urban planning at School of Planning and Architecture, said.

City needs to work on lowering pollution, petty crimes: Experts

From creating a gender inclusive infrastructure to collaborating with neighbouring states and focusing on data to tackle air pollution, experts said Delhi needs to reorient its methodology to mitigate the two biggest problems the capital faces — air pollution and rise in petty crimes. An annual survey on Global Livability Index, released by Economist Intelligence Unit (EIU) Wednesday, stated that Delhi ranks poorly because of its “appalling air quality” and rise in petty crimes. The national capital was ranked 118th among 140 cities, six ranks lower than that of last year. “Even though the air quality in Delhi improved over the last few months, this improvement was marginal. The primary problem is the collation of data itself. It is not captured in real time across the city, which makes the assessment of pollution levels difficult,” Vivek Chattopadhyay, senior program manager (Clean Air Program) at the Centre for Science and Environment, said. Kalpana Viswanath, co-founder of mobile app Safetipin, which supports women’s safety, however, disagreed that “rising crime rates” was a primary factor for Delhi’s poor ranking. “It has to be majorly about air pollution. The toxic air quality surely has pulled down other parameters like healthcare. But, I do not really see crime as a major factor. The gender safety index has in fact improved in recent times in Delhi because of efforts from the police, the government and all other stakeholders,” she said. The report also made a mention of Delhi’s “rising crime rates” that affected its “stability”. Until mid-August this year, Delhi saw 832 crimes reported every day on average — a 27% jump from the corresponding period in 2018.

****

No to single-use plastic: Street plays, rallies to drive home point

Delhi government on Wednesday issued an advisory to district magistrates, education, health, industries and other departments to organise street plays, quiz competitions, cycle rallies, etc to create awareness and stop the use of
single-use plastic. The departments have been asked to conduct the campaign till October 1. In his Independence Day speech, PM Narendra Modi had urged people and government agencies to take steps to free the country of single-use plastic. The existing law doesn’t ban the use of single-use plastic items above 50 microns. Since the Centre is yet to clarify whether a law would be brought soon to ban single-use plastic completely, Delhi government has confined its action to creation of awareness and enforcement of ban on plastic items below 50 microns. “The DMs and the departments have to mobilise people at the ground level for shunning the use of single-use plastic items. We want to involve as many people as possible in the campaign so that the message reaches the masses,” said an official. The activities involve creating awareness about the harmful nature of single-use plastic items, promoting alternatives and recycling. The DMs have also been instructed to strictly enforce the ban on the use of plastic bags below 50 microns. Its violation invites a fine of Rs 5,000 and imprisonment. In the past few years, the authorities have tried to implement the ban, but not in a sustained manner. “The industries department will involve stakeholders, while other agencies will involve consumers, vendors and students in the campaign,” said an official. Sources said the Centre may impose a nationwide ban on single-use plastic from October 2.

*****

TERI to study impact of climate change on farm sector

The Energy and Resources Institute (TERI) is looking at undertaking a study on the impact of climate change and sustainability on the agriculture sector in India and come out with probable solutions to address these. According to Ajay Mathur, Director-General of TERI, there is a need to take a re-look at the cropping pattern adopted by various States keeping in mind the way climate change is impacting major crops and sowing pattern. “We are aware of the issues confronting the agricultural sector that need to be addressed and I am hoping that we would work on those,” Mathur told BusinessLine when asked if TERI would look at studying the impact of climate change and sustainability on agriculture and cropping pattern in the country. Mathur was speaking on the sidelines of the environment and energy conclave organised by the Bengal
Chamber of Commerce and Industry in the city recently. Farmers in dry land areas should opt for cultivation of millets which can be grown in less water rather than going in for plants like wheat and paddy which are water-intensive. However, that does not happen because the minimum support price (MSP) offered by government on crops like paddy and wheat acts as an incentive to farmers to grow more of these crops. If there has to be a change in the cropping pattern, there needs to be change in the MSP system. A slew of other changes need to be brought in to be able to make a noticeable difference in the cropping pattern adopted by different States.

“It is our belief and it is also empirical evidence now agreed to by most agricultural economists that paddy is grown in Punjab because of MSP. Without that it will be mainly the Basmati part and nothing else, which would solve a large part of the problem. So the changes that will occur in the agricultural pattern are not that easy and will come about because of a variety of changes. MSP is one such change,” he pointed out.

**Water management**- Nitin Desai, Chairman, TERI, said the impact of climate change on India’s agricultural sector can be “quite deep” and there is a need to undertake a great deal of research to understand how the country can cope particularly when the rainfall has become unpredictable. There are long periods of drought followed by periods of unprecedented rains. High temperature levels also pose a challenge.

“We have some major issues in India of variations in North Indian rivers due to glacier melt that will arise and then we will get much more water in early spring and much less in summer. So there is a huge challenge before us as to how do we manage agriculture. The key would be water management – it is strategic thing if we get that right then we can get other things right,” he said.

The Centre had, in March, rolled out the PM-KUSUM scheme to encourage farmers to generate solar power in their farms and use the clean energy to replace their diesel water pumps.

“Through this programme we have a chance of managing water, managing grid electricity and giving the farmer a new source of revenue,” Mathur said.
Slowly but surely, air pollution is becoming a politically salient issue, at least in the national capital. Advertisements featuring the Delhi chief minister claiming a 25% reduction in five years have been followed by an inevitable push back from the Opposition on who deserves credit. Air quality may have finally become an election issue. In July, the Union environment minister had claimed improved air between 2016 to 2018. It is important, however, to tread with caution and for governments to understand that they must adopt a systematic and transparent process to track air quality improvements over the years. The difficulty in credibly tracking air quality arises from problems with the underlying data. One set of data relies on manual monitoring, and has been the basis of submissions to Parliament. Another set is based on continuous and automated monitoring, which is more reliable, but incomplete. We discuss the use and pitfalls of each of these below.

Comparing CPCB’s manual monitors—The first is the Central Pollution Control Board (CPCB) data submitted in the Parliament that come from the manual monitoring stations of the National Air Quality Monitoring Programme (NAMP). The chart above illustrates the annual averages of PM 2.5 (the main pollutant) for Delhi, using data submitted to the Parliament for 2014-2018, supplemented
for 2012 and 2013 by information from CPCB’s 2013-14 annual report. Contrary to a reduction, PM2.5 levels have nearly doubled from 2012 to 2018. However, the data used to compute annual NAMP averages is not available publicly, and are therefore hard to verify, and readings are taken infrequently. Therefore, this is unlikely to be a robust basis for tracking Delhi’s air quality.

**Comparing CPCB’s continuous monitors** - The parallel continuous monitoring network has more official monitoring stations, greater transparency, and much greater frequency of measurement. However, here the challenge for comparisons across years is to ensure continuous unbroken data from a consistent set of monitors, because air quality levels can vary substantially across a city like Delhi, and over the course of the year. Publicly available data has several data gaps that make like-for-like comparisons very difficult. This is precisely the challenge in Delhi. Even for a recent period like 2016-2018, these data issues inhibit any straightforward claims on air quality improvements. For earlier years, the number of monitors with reliable data are paltry. In 2011, we would have to rely on one monitor – at ITO. Between, 2012-2014, we have 1-3 reliable monitors, but often with additional issues such as entire months missing. If we had to compare ITO data in 2011 with 2018, PM2.5 levels see a modest 12% reduction. But can we confidently make strong claims on air quality improvement on the basis of such scarce information? Unambiguously, no.

**Urgent need for assessment protocol to track progress** - On the positive side, Delhi’s monitoring network had become more robust in 2018, and will serve as a good basis for comparison in the future. With the National Clean Air Programme, the monitoring network in Delhi and 121 other cities will be expanded further, and cities have a 20-30% reduction target to achieve by 2024. However, without a well-defined assessment process established up front, we risk future debate about progress achieved. Such a process needs three components. One, an assessment method that specifies monitors to consider, reliability criteria, and statistics (annual average, extreme events etc) to use. Two, transparency in official reporting with analysis steps outlined, and all underlying data being publicly accessible. Three, results must be replicable, so that any interested citizen should be able to repeat the analysis with the data
and find the same results if the same steps are followed. Agencies such as CPCB have stated that air quality levels have improved in the last few years. As residents of Delhi, we hope that the air has indeed become cleaner, and urge the government to use reliable regulatory data available to them to assess and report this in a systematic, transparent, and replicable manner. This is not an issue around which we should allow lingering doubts and guesswork.

As bad air season nears, India lags behind on AQI monitoring

India has one air quality monitoring station for every 7 million people while China has over eight times that number, according to top environmental scientists who believe that the scale of the air pollution problem affecting Indians may be more severe than understood due to lack of adequate monitoring. India will need at least 1,600 more monitoring stations to make up for the shortfall, according to a projection by a team made up of scientists from Indian Institute of Technology (IIT) Delhi, IIT Kanpur and Indian pollution research group UrbanEmissions.info, and Canadian academicians. “What we cannot monitor we cannot maintain — be it health, economy or air quality. At present the number of air quality monitoring stations is inadequate in India and therefore it is very difficult to get a proper picture,” said SN Tripathi, head of
the civil engineering department at IIT-Kanpur and one of the scientists involved in the report. Much of north India, especially the Indo-Gangetic plains, reels under hazardous levels of pollution for most of the winter months. The air pollution in the national capital of Delhi, where the crisis triggered closure of schools and advisories to avoid the outdoors in recent years, has been linked to shorter life spans by several studies. The condition in other cities may also be alarming. “Only about 5% of our census towns are monitored now. Alternative methods such as satellite monitoring and low-cost monitoring can help us do better mapping of pollution and exposure to inform action. But cities will still need some reference regulatory monitors to assess trend and compliance with clean air targets,” said Anumita Roy Chowdhury, executive director (research and advocacy), of Centre for Science and Environment. At present, India has a little less than 1,000 monitoring stations across 339 cities. The Union government has drawn up a National Clean Air Programme (NCAP), setting 2024 as the year by which pollution levels must be cut by 20-30% in 102 cities that were found to be highly polluted in 2017. But the scientists indicated that the lack of proper data would militate against achieving this goal. A new automated air quality monitoring system will require approximately ₹1.8 crore to set up and run for seven years, according to an official of the Central Pollution Control Board (CPCB), who asked not to be named. “We compared the density of India’s monitoring network with that of comparator countries and find large differences. To address these gaps… India will require 1,600-4,000 monitors (1.2 to 3 monitors per million people),” said Sagnik Dey, an associate professor of IIT Delhi’s Centre for Atmospheric Sciences and the coordinator of Centre of Excellence for Research on Clean Air (CERCA). According to the analysis, the density of air quality monitoring stations in India (between 2010 and 2016) was around 0.14 monitors per million people. Most European countries have 2-3 monitors per million people; China, which also faces the challenge of bad air and high population density, has 1.2; Brazil has 1.8 monitors per million people; and USA has around 3.4 monitors per million people, said the report. The report has been published in Atmospheric Environment, a peer-reviewed scientific journal of the Elsevier Group. In order to make the expansion financially easier, the experts suggested using a mix of high-end and low-cost sensors, satellite monitoring and modelling to attain the clearer picture it needs of the issue.
China, for instance, has deployed 10,000 low-cost sensors and London uses at least 100 of them. “Same goes with California where a hybrid system of monitoring is being deployed to have a better understanding of the air quality and the pollution sources,” said Tripathi. The senior CPCB official quoted above said that the agency has proposed that there is one monitor deployed for every million people, but suggested that simply increasing numbers may not be the answer. “In most developed countries like the USA and in Europe, authorities first try to get an idea of vulnerable pollution. Monitoring stations are then deployed accordingly,” this person said.

*****

Odd-even 1.0 cut pollution: DTU study

The first phase of the odd-even vehicle rationing scheme in January 2016 brought down the level of particulate matter (PM) in the city’s air by 4.7 to 5.7%, a study by the Delhi Technological University has found. The study titled ‘The effect of odd-even driving scheme on PM2.5 and PM1.0 emission’ — which was conducted by a team of researchers from the department of environment engineering at DTU, led by assistant professor Rajeev Kumar Mishra — was carried out in three traffic heavy stretches, Pitampura (Madhuban Chowk), Panchkuian Road and Najafgarh Road in January 2016. After the first round, the Aam Aadmi Party (AAP) government in Delhi had introduced another round of vehicle rationing scheme in April. Chief minister Arvind Kejriwal has announced that the odd-even scheme will be implemented for a third time in Delhi between November 4 and November 15, as a measure of controlling the pollution levels in winter. The peer reviewed study found that in the 15 days when the vehicle rationing plan was in place in Delhi, PM 2.5 levels reduced by 5.73%, while the PM1 levels in the ambient air around these corridors came down by 4.70%. The scientists in DTU measured the fine PM1 levels by specialised instruments. “During the study, it was found that the reduction of PM 2.5 is higher than that of PM 1 during the implementation of odd-even scheme. Since PM2.5 includes finer particles, this is a sign that the reduction of vehicles on the road contributed in bringing down the pollution levels,” said Mishra. He added that this, though small, was a “significant” impact towards
the fight against the alarming pollution levels in the national capital. PM10 is the coarse dust that mainly comes from road sides and construction sites. The primary source of PM 2.5 is combustion, including vehicular emissions and garbage burning. PM 1, on the other hand, is among the finest particles that can reach the blood stream and percolate the organs. These fine particles are nearly 50 to 70 times finer than human hair. Earlier studies assessing the impact of the odd-even scheme showed only a minor drop in pollution levels during the period. A study done by a team of scientists from IIT-Delhi, IIT-Kanpur, IITM-Pune CSIR and TERI showed that the first round of the odd-even plan in January brought down pollution levels by just around 2-3%. Experts from Centre for Science and Environment (CSE), however, suggested the arrangement as an effective “emergency measure” that could prevent pollution levels from getting worse.

*****

Experts suggest turning to odd-even, pollution masks

Environment experts recommended odd-even road rationing and use of face masks as “short term measures” to fight pollution during the winter months when the air quality in Delhi reaches alarming levels, the state government said in a statement on Thursday. Delhi chief minister Arvind Kejriwal on Thursday met environment and sustainability experts to formulate winter air pollution
action plan so that the city does not turn into a “gas chamber”. Quoting the executive director, Energy Policy Institute at the University of Chicago, the Delhi government stated, “The January 2016 odd-even pilot plan reduced particulate air pollution concentrations by 14%-16%.” “However, due to the possibility of compliance issues in the long run, it is best suited as an emergency measure during the winter, when vehicle emissions become problematic,” it added. In 2017, a joint study conducted by atmospheric scientists of IITs and IIM, however, had revealed that in the first phase of odd-even scheme the levels of pollution declined only by 2%-3%. Only three areas in Delhi—Najafgarh, Shalimar Bagh and Greater Kailash—witnessed 8%-10% drop in pollution due to the odd-even scheme, the study showed. Experts also said that the use of pollution masks could be beneficial as an effective risk-mitigation measure. “In a study done by EPIC India across 3,500 slum residents of Delhi in winter of 2018, it was found that take-up of masks was the highest when it was distributed free,” the statement said. The suggestions specified that certain types of pollution masks (N90 or N95 masks) can be effective in reducing an individual’s exposure to outdoor air pollution.

*****

CPCB: Resolve bad-air grievances, or else...

Agencies in Delhi have drawn the ire of Central Pollution Control Board for failing to address complaints related to bad air. CPCB has now threatened them with prosecution if the complaints are not resolved at the earliest. At a recent
meeting with government agencies, CPCB pointed out that social media agency data from October 29, 2018, to March 3, 2019, indicated a 79% pendency with Delhi Pollution Control Committee. While North Delhi Municipal Corporation had 47% complaints pending, “around 44% pendency with EDMC, 28% with SDMC and 44% with DDA”, also invited the wrath of CPCB. “As per directions of the Supreme Court, if the complaints are not resolved, CPCB will be constrained to initiate prosecution against the agency concerned,” CPCB member-secretary told officials during the meeting, which was chaired by Delhi chief secretary, to discuss preparations for the winter action plan to curb air pollution in the capital. “The last five-year trend of PM10 and PM2.5 for the critical winter months starting from October till March was also presented (during the meeting). CPCB member-secretary expressed concern on the need for proactive steps that will be required to be taken by all agencies for air pollution control in order to avoid four consecutive years of severe-plus air quality,” the minutes of the meeting, a copy of which is with TOI, stated. CPCB recently created a central control room for monitoring air quality and centralised management of public complaints related to air pollution. “Initially, a mobile app, Sameer, was launched in 2016 to provide a forum to citizens to lodge their complaints. Later, along with the app, complaints pertaining to air pollution were being received through social media, on website, emails, and letters,” a senior CPCB official said. The app not only provides air quality updates to citizens in their respective areas, but also gives them a platform to lodge their complaints. “Grievances on Sameer are automatically assigned, based on the geo-location of the area to nodal agencies concerned, such as municipal corporations, development authorities, industrial department, traffic police, transport department, public construction agencies, and so on, depending on the type of problem reported,” the official said. The nodal agencies are expected to redress the complaints within 24 hours and upload the action-taken report, along with documentary evidence or visual proof, on the same platform. Another application, called Graded Response Action Plan–CPCB Mobile App, has been designed exclusively for the nodal agencies to take action on complaints. Earlier, agencies in Delhi and its neighbouring cities were asked to provide an updated inventory of land owned to CPCB so that responsibility could be fixed with no room for blame game. The agencies were also asked to
organise a special campaign against open waste dumping and burning. “Agencies with the maximum number of complaints (UPPCB, SDMC and Gurugram MC) should take immediate steps for their resolution and be extra vigilant in their respective areas,” CPCB had said during the meeting with NCR agencies.

*****

Winter is coming: Dust control, night patrolling two key plans

Dust suppression measures, night patrolling to keep a check on open burning of waste and micro-level planning at pollution hotspots are among the key measures that authorities intend to take ahead of this winter to ensure that Delhi’s bad air doesn’t turn worse. Road-owning agencies and the Public Works Department will identify stretches where dust suppressants need to be put into use, as per the directions issued by the Delhi chief secretary at a meeting held with Central Pollution Control Board and municipal corporations. The meeting, held on Wednesday, to discuss the Winter Action Plan stressed on the need to focus on dust and open burning of waste, key contributors to air pollution in the city. “The industries department will submit the status on action taken in the Mayapuri industrial area and the action plans for Wazirpur and Okhla. It will prepare a roster duty chart of 24 hours of officials to check open burning in industrial areas and submit details of prosecution launched, penalties imposed and violations recorded,” the minutes of the meeting quoted the chief secretary as saying. Last year, CPCB had put up a list of hotspots in NCR. Those in Delhi included Anand Vihar, Bawana, CRRI Mathura Road, DTU, Dr Karni Singh Shooting Range, Dwarka Sector 8, Jahangirpuri, Mundka, NSIT Dwarka, Narela, Okhla Phase-II, RK Puram, Rohini, Shadipur and Wazirpur. In neighbouring areas, the key areas were Sector-16A Faridabad, Vikas Sadan, Gurgaon, Haryana, Vasundhara (Ghaziabad), Knowledge Park-III, Greater Noida Sector 125, and RIICO Industrial Area III, Bhiwadi. Authorities have been asked to step up vigil at these locations. “Last five years’ trend of PM10 and PM2.5 for the critical winter months, starting from October till March, were also presented (during the meeting). The CPCB member secretary expressed concern over the need for proactive steps that will be required to be taken by all agencies for air
pollution control to avoid four consecutive years of severe-plus air quality (sic),” the minutes added. With the peak pollution season barely a month away, agencies have been directed to keep a check on all its sources. According to a source apportionment study by IIT Kanpur in 2015, the top four contributors to PM2.5 emissions in Delhi are road dust (38%), vehicles (20%), domestic fuel burning (12%) and industrial point sources (11%). The top four contributors to PM10 emissions are road dust (56%), concrete batching (10%), industrial point sources (10%) and vehicles (9%).

*****

Air much better, but can’t feel change as condition so bad

While lauding the reduction in pollution levels in the city over the last few years, thanks mainly to the coordinated efforts of various governments and agencies, experts maintain that there is no reason to celebrate yet. An analysis of the annual air quality data submitted by Central Pollution Control Board to Parliament, and quoted by chief minister Arvind Kejriwal on Friday, points out that the three-year average of PM2.5 (tiny, respirable particles) between 2016 and 2018 is 25% lower than the 2012-2014 baseline period. From an average PM2.5 reading of 154 microgram per cubic metre, it has reduced to 115 microgram per cubic metre, it states. Anumita Roychowdhury, executive director, research and advocacy, Centre for Science and Environment, insists there is a long way to go. “It is a substantial reduction, but you don’t feel (it) so much because the levels were so high. This data gives us confidence that if you act, you will get results. But more needs to be done,” Roychowdhury said. CSE had earlier pointed out that there was a need for more broad-based and stronger action at the regional level to prevent winter pollution from worsening. “This stabilisation has been possible because of multi-sector intervention to clean up the vehicle fleet and fuels, tightening of industrial pollution control and the phase-out of dirty industrial fuels (pet coke, furnace oil and coal), shutting down of coal power plants in the city, action on brick kilns and hotspot areas, and dust control at construction sites with some efforts to control pollution from waste,” Roychowdhury said. However, CSE had cautioned that even after this reduction and stabilisation, Delhi faced the
daunting challenge of a 65% reduction from the current baseline to meet the clean air standards for PM2.5.

“Even after achieving this, the challenge still remains. It is now time for hard decisions and disruptive actions, across the region. Bigger challenge is enforcement and compliance,” she said. Echoing her sentiments, Dipankar Saha, former head of CPCB’s air quality laboratory, said these were welcome signs, but more needed to be done.

“We can’t ignore data, when it’s been generated using international protocol and practices. There’s significant improvement in the ground level emissions control, but further improvement is possible by creating grassy open areas, besides putting all regulatory measures in place. Similar strategies are must not only for entire NCR but also beyond,” Saha said.

*****

**New NTPC tech to cut Dadri pollution**

The capital’s airshed management will receive a boost with state-run generation utility National Capital Power Station (NTPC) introducing online coal analysers at its Dadri power plant near Delhi as part of a larger plan to reduce ash and other pollutants such as sulphur in emission from its thermal units. The 1,820MW power station is located in Gautam Budh Nagar district of Uttar Pradesh adjoining Delhi. The plant is a major source of electricity for the capital and its emission has a bearing on the city’s ambient air quality. Called All Scan Elemental, the analysers from RTI (Real Time Instruments), a diversified Australian company specialising in online analysis of bulk material, are also being introduced in NTPC’s Unchahar plant in UP, Kahalgaon in Bihar, Bongaigaon in Assam, Farakka in West Bengal and Mouda in Maharashtra. The analysers monitor coal quality in real time as the fuel is fed into the plant’s boiler-furnace by conveyor belts. Broadly, the system monitors parameters such as ash, sulphur, moisture and energy density, or heat content of coal. Real time input helps power plants to maintain fuel quality — by blending higher grade of coal, if needed — to run plants efficiently. This ultimately reduces pollution by way of lowering ash and sulphur content in emission and also
improves economic viability of the plant. The analysers will help NTPC power plants to stay within the 34% maximum ash content limit for coal set by the ministry of environment and forests.

*****

Corpn to use plastic waste for colony roads

The capital’s plastic waste may soon be made useful with North Delhi Municipal Corporation planning to utilise it in laying and repairing colony roads. The north corporation is planning to use the processed material from recycled plastic as an additive in building material used for repairing roads and making tiles. Corporation commissioner Varsha Joshi said they were exploring the usage of plastic mixture in road repairs. “An agency has also offered to demonstrate use of plastic tiles,” she added. A senior corporation official pointed out that a similar experiment was carried out long time ago on Underhill Road near Civil Lines when an entire stretch was laid using plastic granules. “Such roads have higher durability and are less prone to develop potholes due to waterlogging,” he said. “Plastic granules are already being produced in bulk using recycled plastic in outer Delhi areas. These can be easily powdered and added to the bitumen-asphalt mixture before spreading it on construction material,” the official added. A senior engineer, however, pointed out a practical difficulty that the civic body would have to overcome to make the project a success. “The temperature fall is rapid when plastic powder is added to the hot bitumen mix. While a normal bitumen mixture takes
three-four hours to cool down, the plastic-added mix has to be used in one-two hours. Hence, the distance between the hot mix plant and the location where roads are being laid will be crucial,” he said, adding that if the trucks get delayed, the mixture will turn into a rubbery mass. It is estimated that the roads made with plastic additives do not require any repair for four-five years. “As these roads are better suited for light vehicles, these processed materials should be used for colony roads, service lanes and footpaths. Heavy vehicles such as trucks can damage plastic roads,” the engineer added. Last week, Noida Authority had resumed road resurfacing work using plastic waste in Sector 14. About three tonnes of plastic were used to repair a 4km-stretch between the Noida entry gate and Mahamaya Flyover near Film City. The Authority, which is using 8% plastic in the mixture, has planned to set up a plant where shredded plastic can be used in construction material. An official said rag pickers would segregate plastic waste before depositing it with the Authority. Delhi is the largest contributor to the country’s 25,940 tonnes of plastic waste generated every day, making it essential to adopt new ways to dispose of the trash. According to a 2015 Central Pollution Control Board report, Delhi produced around 689.5 tonnes of plastic waste daily. Almost 70% of the plastic in Delhi is of the single-use variety and most of it ends up in drains and landfills.

*****

CII-IGBC plans to promote energy-efficient buildings

CII-Indian Green Building Council (IGBC) has announced its plans to popularise ‘Net-Zero Energy Building Movement’ in India, which is aimed at promoting energy efficiency. Coinciding with the completion of 15 years of CII-Sohrabji Godrej Green Business Centre (CII-Godrej GBC) in Hyderabad, it announced that
it has become a ‘Net-Zero Energy’ Platinum rated building. Ajay Mishra, Special Chief Secretary, Telangana, awarded the IGBC plaque to Jamshyd N Godrej, Chairman, CII-Godrej GBC, at the 15th CII-Godrej GBC Foundation Day, which was organised in Hyderabad. Mishra said that Telangana was at the forefront in taking forward the solar energy movement in the country. He reaffirmed the state’s commitment for sustainable development. IGBC Net-Zero Energy Building rating system enables the reduction in energy consumption and encourages the use of appropriate renewable energy sources to meet the energy requirement. The rating system is designed for both new and existing buildings, both for air-conditioned and non-air-conditioned buildings. According to the system, the CII-Sohrabji Godrej GBC has achieved 85 credit points and was awarded Platinum rating. The annual energy consumption of CII-Godrej GBC is around 200-204 MWh. The building has met all its energy requirements through on-site renewable energy Solar PV systems of 130kWp, which would generate 220 MWh per annum. Jamshyd N Godrej said, “It (the building) started off with energy efficiency and went on focusing on green buildings, green companies, green products. The next areas of focus would be green education, green entrepreneurship, and e-mobility.” CII exchanged MoUs with T-Hub and IIT-Madras for facilitating green entrepreneurship.

*****

Hopeful of MRPL-HPCL merger next year: ONGC chief

Oil and Natural Gas Corporation (ONGC) is hopeful of merging its downstream subsidiaries next year. Speaking after ONGC’s 26th Annual General Meeting, Chairman and Managing Director, Shashi Shankar said, “A committee has been formed to look into the synergies.” He was responding to a query about the synergies after ONGC’s acquisition of fellow public sector undertaking, Hindustan Petroleum Corporation Limited. Elaborating on the way ahead, Shankar said, “We are hopeful of a merger between Mangalore Refinery and Petrochemicals Limited (MRPL) and HPCL next year.”

ONGC completed acquisition HPCL in January 2018 after spending nearly ₹36,915 crore. After initially dragging its feet, the HPCL board recognised ONGC as its promoter a few weeks ago. This is being looked as another step towards
greater synergy between the two companies and an opportunity for ONGC to organise its downstream businesses. Responding to queries on the proposals to list ONGC Videsh (OVL), the overseas investment arm of the company on the stock exchanges, Shankar said, “As of now, we have done a significant investment in the form of Mozambique that is presently at Final Investment Decision (FID) stage. We have responded to the Ministry that the time is not right to list ONGC Videsh... It would be better to list after Mozambique asset is monetised.” OVL and its Indian as well as foreign partners have agreed to invest $ 20 billion in constructing a gas liquefaction and export terminal in Mozambique to monetise vast offshore natural gas reserves they had found. The consortium has taken a FID for Area-1 Mozambique LNG project in June this year. On the capital expenditure (capex) plans for the year, an ONGC presentation stated that capex target for financial year 2019-2020 has been set at ₹ 32,921 crore. Capex in fiscal 2018-2019 stood at ₹ 29,449 crore and ₹ 28,427 crore in fiscal 2017-2018. Charting out the longer term vision of the company, Shankar said that ONGC will achieve a domestic gas production of 40 Billion Cubic Meters (up from 24 BCM in fiscal 2018-2019) before 2040. There is also an aim to have 5-10 GW (from 23 MW solar and 153 MW wind) of renewable energy assets by 2040.

****

घर के अंदर भी प्रदूषित हवा में सांस ले रहे दिल्ली के लोग

दिल्ली में घरों के अंदर प्रदूषण तब मानकों से पांच गुना तक अधिक है। घरों में लोग खतरनाक पीएम-2.5 की अधिक मात्रा का साथ ही कार्बन डाई ऑक्साइड, पेंट, फरफ्यूम जैसे वाष्पशील कार्बनिक यौगिकों की मात्रा भी हो रही है। दिल्ली-एनसीआर की 200 कॉलेक्टरियल यौनियों के 400 घरों में प्रदूषण का स्तर मापने पर यह जानकारी सामने आई है। प्रदूषण नियंत्रण पर काम करने वाली कंपनी ब्रीथ ईजी ने अप्रैल 2018 से अप्रैल 2019 के बीच यह अवधायन किया है।

पीएम 2.5 की मात्रा पांच गुना अधिक : संस्थान के अध्ययन में सामने आया कि घरों के अंदर प्रदूषक कण पीएम-2.5 का स्तर सालाना औसत 188 माइक्रोग्राम प्रति घन मीटर रहा। सालाना 40 माइक्रोग्राम प्रति घन मीटर की मात्रा तक की सुरक्षित मात्रा है। हालांकि पीएम-2.5 की मात्रा बाहर के सुकालेख कम रही।

वेंटिलेशन सिस्टम की कमी मुख्य वजह : परीक्षण किये गए अधिकांश घरों में वेंटिलेशन सिस्टम की कमी थी और गैस या धुएं मुकाबले के लिए कम होने लगे और खिड़कियों खोलने पर लोग निर्भर थे।

पेंट और परफ्यूम की मात्रा भी तीन गुना : घरों के अंदर पेंट, परफ्यूम आदि वाष्पशील कार्बनिक यौगिक की मात्रा भी सुरक्षित सीमा से दो से तीन गुना तक अधिक रही। कई घरों के अंदर कार्बन डाई ऑक्साइड का स्तर 750 पीपीएम की सुरक्षित मात्रा के मुकाबले 3,900 पीपीएम तक पाया गया। हालांकि सालाना औसतन यह 2400 पीपीएम था, जो मानक से तीन गुना अधिक है। यह सेहत के लिए बेहद खतरनाक है।

35
दिमाग पर असर डालती है कार्बन डाई ऑक्साइड की अधिक मात्रा - ब्रीइ इजी संस्क्रा के सीईओ वरुण अग्रवाल ने बताया कि आम तौर पर प्रदूषण में पीएम 2.5 और पीएम 10 को ही खतरनाक बताया जाता है, लेकिन कार्बन डाई ऑक्साइड की अधिक मात्रा भी सेहत के लिए खतरनाक है। इस गैस की अधिक मात्रा से न सिर्फ सांस की बीमारियों का खतरा बढ़ जाता है बल्कि एक सीमा के बाद यह दिमागी स्थिति पर भी असर पड़ता है। इसका मनोविज्ञानिक गुणों पर नकारात्मक असर पड़ने लगता है।

*****

विदेश का प्लास्टिक कचरा हवा जहरीली कर रहा

अमेरिका व यूरोपीय देशों से मंगाए जा रहे प्लास्टिकयुक्त कागज और सड़क किनारों का कचरा आबोधवा में जहर घोल रहे हैं। इतना ही नहीं, विदेश से आने वाला यह कचरा देश के शहरों की मिट्टी को भी खराब कर रहा है। इन कचरों का इस्तेमाल ईट भट्टों, पेपर मिल और प्लास्टिक फैक्ट्री में किया जाता है। केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसी) ने नेशनल ग्रीन ट्रिब्यूनल (एनजीटी) में पेश कीप रिपोर्ट में यह खुलासा किया है। एनजीटी ने केंद्र सरकार को विदेश से कचरा मंगाने पर नियंत्रण करने का निर्देश दिया है। ट्रिब्यूनल ने इसी साल अप्रैल में सीपीसी को इस बारे में जांच करने और रिपोर्ट पेश करने का आदेश दिया था। सीपीसी ने एनजीटी को बताया कि दिल्ली सहित सबसे राज्यों के प्रदूषण नियंत्रण बोर्ड/समितियों की विशेष दंगें जा रहे प्लास्टिकयुक्त कचरों का प्लास्टिक कचरा प्रबंधन नियम- 2018 के तहत निपटारा सुनिश्चित करने का आदेश दिया गया है। एनजीटी प्रमुख जस्तिस एके. गोपाल की अनुमान वाली पीठ ने इसे गंभीरता से लेते हुए सीपीसी की नियमों के तहत प्लास्टिक कचरों का निषेधन नहीं करने वाले निकायों के खिलाफ समुचित कारवाई करने का आदेश दिया है। साथ ही 16 अक्टूबर तक इस मामले में अगली रिपोर्ट पेश करने को कहा है।

मुजफ्फरपुर व मेरठ के मिल की जांच: पीठ ने अभिमृत जैन की ओर से दाखिल याचिका पर सीपीसी को विदेश से मंगाए जा रहे प्लास्टिकयुक्त कागज के कचरों से हो रहे प्रदूषण की जांच करने का आदेश दिया था। सीपीसी ने उत्तर प्रदेश के मुजफ्फरपुर व मेरठ में कागज के दमल की जाोंच की। रिपोर्ट के अनुसार, जांच में पाया गया कि विदेश से मंगाए गए प्लास्टिक के कचरों की नियमों के अनुरूपी का ज्ञात नहीं किया गया और इस प्रकार इसे आबोधवा और मिट्टी खराब हो रहा है।

1. कागज के मिल की विदेशों से मंगाए गए कचरों का गता व कार्डबॉर्ड बनाने में इस्तेमाल किया जाता है।
2. ईट की पकाने के लिए कॉयलों की जगह प्लास्टिकयुक्त कचरों का भट्टों में इस्तेमाल किया जाता है।
3. कुछ जगहों पर कागज से प्लास्टिक अलग कर इसे रिसाइकल किया जाता है और छोटे-छोटे दाने पेयार किए जाते हैं।
4. प्लास्टिक के कार्डबॉर्ड भी तैयार किए जाते हैं।

*****

AIIMS finds high toxin levels in 16% of patients

When doctors at AIIMS decided to run tests for environmental toxins on patients with serious illnesses whose cause couldn’t be established, they were shocked by the results. Of 216 patients tested, 32 (16%) had high levels of dangerous metals and substances, including arsenic, lead, chromium, fluoride, iron and cadmium. The findings, doctors told TOI, reaffirm concerns about environmental toxins causing a spurt in illnesses, including cancer, neurodevelopment disorders, congenital diseases and gastro disorders. Most toxins
get into the body through contaminated water, air and soil. “To establish the links between toxins and diseases, we plan to screen all patients with illnesses of unknown origin for toxins,” Dr A Shariff, founder of the clinical toxicology lab at AIIMS, said. Study to focus on cause-effect link between toxins and diseases

He added that the institute had recently set up a new lab that has facility to screen patients for more than 17 heavy metals and toxins. Diagnosis is done through a simple blood test or analysis of urine sample, Dr Shariff said. “We plan to expand the scope of testing further in the coming days,” he added. Dr Randeep Guleria, the director of AIIMS, said identification of heavy metals in patients visiting the institute is only an index case. “Our aim is to spot trends involving patients belonging to specific areas, who have high levels of a certain toxin, and find the source,” he said. “For example, some areas have high levels of arsenic or iron in the water and this could be causing some illness. If we can establish this link, people in the area can be made aware of it. They can be warned about the polluted water source and local administration can take policy decisions to make safe water available,” Dr Guleria said. The incidence of lung cancer among young adults, who don’t smoke, is also diagnosed frequently. The AIIMS director said blood tests to find the presence of environmental toxins may help establish links, if any, between air pollutants and the disease. “If we can show through research the cause and effect relationship between environmental toxins and illnesses such as lung cancer, policymakers and the public will take the threat of pollutants more seriously and act to reduce it. That is our hope,” Dr Guleria said. According to the Lancet Commission on Pollution and Health, contaminated water, air and soil are responsible for about nine million early deaths, which is about 16% of global deaths. About 92% of these early deaths due to environmental toxicity occur in low and middle-income countries, which includes India. Experts say children are most affected by environmental toxins as their exposure to even low concentrations during intrauterine life and early childhood can result in lifelong physical and/or mental disabilities, if not death. “There are multiple global researches that link environmental toxins to neuro-development disorders in children,” said a paediatric neurologist

*****
India mustn’t bend to US pressure on Iran

Two days after mysterious drones and missiles, evading Saudi Arabia’s expensive Patriot missile system, blasted state owned Aramco’s refinery in Abqaiq and the oilfield of Khurais, India’s Foreign Secretary Vijay Gokhale was sitting with Iranian officials in Tehran to discuss ways to improve bilateral ties in the area of energy, connectivity and trade in an era of US sanctions against Tehran. The attack on Abqaiq that spiked oil prices and exposed the vulnerability of Saudi’s promise of uninterrupted oil supplies to its Asian customers allowed Tehran to remind New Delhi that it could restore its supplies whenever it was ready. Iran was one of the biggest suppliers of oil to India before US sanctions brought it to zero earlier in May this year. Iran supplies oil to China, Russia and countries that do not countenance bilateral sanctions. Initially, India had announced that it did not recognise US sanctions, but later succumbed to the pressure. Though planned earlier, the fact that this meeting between India and Iran was not cancelled after the “game changing” attack on the Saudi Arabian refinery suggests that the Indian government, little by little, is realising how its pusillanimous conduct towards US sanctions has contributed to it squandering major opportunities after making diplomatic and financial investments in Iran. Tehran that was keen to have Indian investments in energy sector and connectivity projects has now given the first right of refusal to China after it inked a gargantuan $250 billion deal with them. Iranian sources deny that it would have any impact on the much-vaunted trilateral Chabahar project, which India signed in 2016 with Iran and Afghanistan that allowed it to side step Pakistan and access the land route to Central Asia. After the deal that China has signed with Iran, it would now have a larger presence in Chabahar’s freezone
now and could give comfort to Pakistan that was worried by India’s presence in its neighbourhood. What happens to the protracted negotiations with Farzad-B gas-field in the Persian Gulf, where Tehran was keen on Indian participation? Sources in the Iran government claim that the delay in negotiations with New Delhi has allowed Saudi Arabia to extract more gas from the field. Iranian sources claim that they would be soon close the window for negotiations on the gas field if India’s ONGC Videsh (OVL) does not seal the deal. However, the biggest worry for the Indian government has been in its investment in Chabahar. Though Trump administration imposed no sanctions on Chabahar as it was meant for Afghanistan reconstruction, but India’s company mandated to manage the port Shahid Behesti there found it difficult to transfer funds — due to the refusal of Brussels-based SWIFT to process payments to Iran. Though Iranians blame the Indian company for dragging its feet, there is considerable merit in their claim that moving money in a country cramped by sanctions is difficult. So impeccable has been India’s conduct in following the sanctions till now that a US official in response to a question that it was violating the sanctions through Chabahar port said, “We have no evidence of India running afoul of US sanctions”. However, US officials have been pressuring India to stop trading with Iran to squeeze it further. In the past few months, India’s trade with Iran has jumped to $18.5 billion. Goods other than petroleum are finding their way into the trade portfolio. Iranians are dangling a carrot to New Delhi that they could increase their imports from India if it shows greater “strategic autonomy”.

**INSTEX option**- India could be helped by the alternative trade system that the European Union has been putting together after US sanctions prevented countries from using a dollar-led SWIFT to trade with Iran. European Union, which is still committed to the nuclear deal signed in 2015, attempts to mollify an enraged Iran resulted in the creation of a system, INSTEX, which is nothing but a complicated barter system that side steps the dollar route. European countries that began its usage in July have confined it to humanitarian goods only so that they do not antagonise Washington. Iranian authorities claim that goods worth $14 billion have been lined up for trading, which excludes oil. Many countries including India that want to disengage from US controlled trading order also want to explore INSTEX. Washington sees in INSTEX
beginning of a revolt of against its hegemony of the financial world order and are keen to smother it. Their fear that this method of trade could also be used for sale of oil has seen a quick reaction from US treasury after the Saudi refinery strike, which has now imposed new sanctions on Iran’s central bank. The Central Bank of Iran manages trade in humanitarian goods and INSTEX and these sanctions, Iranian observers claim, could be enduring and hurt the West Asian nation in the long run. Iran is still producing oil, though far less than before it was hit by sanctions, which were meant to squeeze it out of the market. After the sanctions came into full force after May this year, Iranians began to park much of their oil in China’s strategic reserves through their tankers that had their transponders shut off to prevent US satellites from locating them or their routes. This has begun to peter off.

**Britain pushed back**- In an endeavour to deter Iran from trading in oil, Britain detainted an Iranian oil tanker on July 4 claiming it was heading to Syria. Iran hit back claiming that they had not been subjected UN sanctions and they had the freedom of navigation. In a tit for tat operation, it seized a British ship at the volatile Strait of Hormuz and forced them to release their tanker. This success coupled with the way they downed a US drone near Strait of Hormuz brought in a swagger that is now being challenged after the refinery attack, which they claim has come from Houthis. A spillover of a bloody war unleashed by Saudi Arabia that has seen almost 95,000 deaths, the Houthis have been attacking the Kingdom with major military success. Houthis have managed to bring about a rapture in ties between Saudi Arabia and the UAE — a factor that Iran believes could further hurt oil supplies to India and the world.

With its close ally Israel in turmoil after the electoral defeat of Prime Minister Benjamin Netanyahu, and Saudi Arabia scrambling to save its oil resources, the US is sending troops not just to preserve its influence in the region, but also chasten Iran, which has been emboldened by the support it is getting from China and Russia. If Iran emerges from the allegations of being behind blowing up Saudi refinery unscathed then the world could well see the rehabilitation of the West Asian nation and emergence of a new trading order.

*****

40
Petrochem Cos may See Feedstock Supply Crunch, Margin Pressure

Indian petrochemical manufacturers may face disruption in the supply of feedstock and margin pressure as prices increase after the disruption in supply from Saudi Aramco which witnessed attacks on its facilities on September 14, sector experts said. Price of naphtha, a key feedstock, has been volatile since the attacks. Reports suggest that some Asian manufacturers have already paid a premium of about $10 a tonne for it. The supply itself would be a challenge for Asian countries, especially India, which are structurally short of the fuel. Saudi Aramco is the third largest Middle Eastern supplier to the region. At a time like this, US petrochemical producers could have a price advantage and may increase their supplies; some expect supplies to even China increasing substantially. “The US over the last five years has added around 10 million tonnes of ethylene capacity primarily to service the export markets --China in particular. Most of that capacity hit the market over the last 18 months -- I would fully expect the US to gain market share of exported product to China at the cost of Saudi Arabia,” said Hassan Ahmed, analyst at US-based investment research firm Alembic Global Advisors. Ahmed said a $10 a barrel move in oil prices would swing ethylene and polyethylene prices by $121 a tonne and methanol prices by $67/ tonne. As for the two of the key feedstock for the petrochemical industry, he expects a $10 per barrel move in crude oil prices will swing naphtha prices by $93 per tonne, while ethane prices may not react as it tends to move with natgas prices.

****

Petronet to invest $2.5 bn in US energy firm Tellurian

Tellurian Inc. has signed a $7.5 billion agreement for India’s Petronet LNG Ltd to buy a stake in its proposed liquefied natural gas (LNG) terminal in Louisiana, in what could potentially be one of the largest foreign investments in the US for shipping shale gas abroad. Petronet will spend $2.5 billion for an 18% equity stake in the $28 billion Driftwood LNG terminal, the largest outside holding so far in the project, and negotiate the purchase of 5 million tonnes of gas per
annum. The remainder of the total will come from debt, Tellurian chief executive officer (CEO) Meg Gentle said. The companies plan to complete the agreement by March 31, by which time Tellurian hopes to have signed up partners to enable it to proceed with the project. “We will sign the document sometime in the first quarter and we will have financing ready to close simultaneously, and then we will begin construction,” Gentle said in a telephone interview. “India is one of the fastest growth markets for LNG and should soon become the second-largest LNG importer,” she said. The deal, signed in Houston in the presence of Prime Minister Narendra Modi, underscores a record year for the LNG industry, with tens of billions of dollars worth of export projects given the green light. The surge of new supply from the US’ trove of shale gas has rendered the once-premium fuel accessible for emerging markets such as India, currently the sixth-largest buyer of US LNG. “People should not be surprised this came,” said Tellurian co-founder Charif Souki, who also founded America’s largest LNG exporter Cheniere Energy Inc. “The United States and India have a significant issue diametrically opposed. We have too much gas that we don’t know what to do with and India needs greater gas, and 1 million tons a time is not going to solve the problem.” The pact was signed on the sidelines of Modi’s meeting with top executives of US energy majors in Houston. In his first engagement during his week-long visit to the US, Modi met 17 CEOs of US energy companies such as Tellurian Inc., ExxonMobil, BP Plc, Cheniere Energy, Dominion Energy, and Total SA. He was accompanied by petroleum secretary MM Kutty, external affairs minister S Jaishankar, foreign secretary Vijay Gokhale, and India’s ambassador to the US Harsh Vardhan Shringla. India has been sourcing LNG and crude oil from the US, with Indian companies investing $4 billion in US shale gas assets. “Petronet will invest $2.5 billion in Tellurian’s proposed Driftwood LNG export terminal, in exchange for the rights to 5 million metric tonnes of LNG per year over 40 years,” said Raveesh Kumar, external affairs ministry spokesperson. India, the biggest emitter of greenhouse gases after the US and China, has been pushing for a gas-based economy and plans to connect 10 million households to piped natural gas by 2020. It plans to reduce its carbon emissions by 33-35% from its 2005 levels by 2030, as part of its commitments to the United Nations Framework Convention on Climate Change adopted by 195 countries in Paris in
2015. In a tweet, PM Modi said, “It is impossible to come to Houston and not talk energy! Had a wonderful interaction with leading energy sector CEOs. We discussed methods to harness opportunities in the energy sector. Also witnessed the signing of MoU between Tellurian and Petronet LNG.”

*****

**Saudi Arabia to invest $100 bn in India**

Saudi Arabia, the world’s biggest oil exporter, is looking at investing $100 billion in India in areas of petrochemicals, infrastructure and mining among others, considering the country’s growth potential. Saudi Ambassador Dr Saud bin Mohammed Al Sati has said India is an attractive investment destination for Saudi Arabia and it is eyeing long-term partnerships with New Delhi in key sectors such as oil, gas and mining. “Saudi Arabia is looking at making investments in India potentially worth $100 billion in the areas of energy, refining, petrochemicals, infrastructure, agriculture, minerals and mining,” Al Sati told PTI in an interview. He said Saudi Arabia’s biggest oil giant Aramco’s proposed partnership with Reliance Industries Ltd reflected the strategic nature of the growing energy ties between the two countries. The envoy said investing in India’s value chain from oil supply, marketing, refining to petrochemicals and lubricants is a key part of Saudi Aramco’s global downstream strategy. “In this backdrop, Saudi Aramco’s proposed investments in India’s energy sector such as the $44 billion West Coast refinery and petrochemical project in Maharashtra and long-term partnership with Reliance represent strategic milestones in our bilateral relationship,” he said. The envoy said the vision 2030 of Crown Prince Mohammed bin Salman will also result in significant expansion of trade and business between India and Saudi Arabia in diverse sectors. Under vision 2030, Saudi Arabia plans to diversify the Saudi economy while reducing its economic dependence on petroleum products. Saudi Arabia is a key pillar of India’s energy security, being a source of 17% or more of crude oil and 32% of liquefied petroleum gas (LPG) requirements of India. The envoy said more than 40 opportunities for joint collaboration and investments across various sectors have been identified between India and Saudi Arabia in 2019, adding the current bilateral trade of $34 billion will undoubtedly continue to increase.

*****
Domestic rates of petrol and diesel have risen by ₹2-2.5 per litre in a fortnight since the drone attack on Saudi oil facilities sent international oil prices soaring. On Friday, petrol had touched ₹80 a litre in Mumbai and ₹74.34/litre in Delhi. The rates for diesel were ₹70.55/litre and ₹67.24/litre, respectively. State oil companies, which control nearly 90% the domestic fuel market and act as price-setters, are expected to revise local fuel prices daily after factoring in 15 days’ moving average of fuel prices in the international markets as well as the exchange rate. However, oil companies do not strictly follow this, resulting in amplified increases or cuts in local prices at times. In Delhi, the price of petrol has increased by Rs 2.37/litre and that of diesel by Rs 1.87/litre since September 14 when a pre-dawn strike by an army of drones halved Saudi Arabia’s oil production and took away 5% of world supplies.

*****
The stock of Mumbai-based city gas distributor Mahanagar Gas shot up about 8 per cent on August 20 after its foreign promoter BG Asia Pacific Holdings Pte Ltd (a subsidiary of Shell) sold its remaining 10 per cent stake in the company. Over the past year, the foreign promoter has been reducing its holdings in tranches and has now fully exited the stock. The impending sale of the remaining stake was an overhang, and with this now done with, the stock got a breather. But despite this gain, the stock is still down about 16 per cent since mid-April. The ongoing discussions about the shift to electric vehicles in the future, the severe slowdown in the auto industry, and proposals that could increase competition for city gas distribution (CGD) players have also taken a toll on the stock. It didn’t help that in the recent June quarter, volume growth for Mahanagar Gas was a tepid 3 per cent or so. But the stock’s fall presents a good buying opportunity for investors with a long-term perspective and a high appetite for risk. At ₹847, the stock trades at about 14 times its trailing 12month earnings, lower than the average of nearly 20 times it traded at in the past three years, and much lower than the 28 times that its Delhi-based CGD peer Indraprastha Gas trades at. Also, the business prospects of Mahanagar Gas seem good. For one, the troubles in the auto sector don’t seem to have affected vehicles that run on compressed natural gas (CNG) much.

Increase in CNG sales- In its conference call after the June 2019 quarter results, the company’s management said that despite overall automobile sales slowing down, the number of vehicles adopting CNG is steady at 5,000-6,000 a month. The management also said that, as per data disclosed to them by Maruti Suzuki,
there was an impressive increase year-on-year in CNG vehicles sales. On the threat from electric vehicles in the long run, the suppliers of relatively clean fuels such as natural gas will be better placed to weather the disruption. The Centre, while it is keen on promoting electric vehicles, has also laid out an ambitious roadmap for significantly increasing the share of natural gas in the country’s energy mix. The ambitious roll-out of CGD networks across the country, envisaged by the ninth and tenth round of auctions over the past year or so, suggests that CGDs should be able to hold their own in the long run. While proposals to allow new distributors access to the existing pipeline networks of incumbent players have been mooted, it may not materially impact the business of entrenched companies such as Mahanagar Gas that have the firstmover advantage and can compete effectively on pricing.

**Volumes to pick up**—After a good show last year, the company’s volume growth in the June 2019 quarter took a knock. The company attributes this to a high base effect due to strong double-digit growth in the year ago period, and dip in CNG volumes sold to state transport undertakings which scrapped some old buses. CNG supplies to vehicles is the company's mainstay. This, along with supply of piped natural gas (PNG) to households, accounts for about 85 per cent of the company’s volumes and revenue; the source for this is cheaper domestic gas. Supplies to industrial and commercial customers (with costlier imported gas) make up the rest of the volumes. Volumes are expected to pick up in the coming quarters with a tender for 500 CNG buses placed by the state-run BEST bus transport company in Mumbai. The company has retained its guidance of about 6 per cent volume growth in FY 2020. That Mahanagar Gas did not win any new geographical areas in the recent round of CGD auctions is a dampener. Also, there are some constraints to growth in the Mumbai metropolitan region due to challenges in land availability to set up CNG stations. Still, there is good potential in the key geography that remains under-penetrated. Besides, the Raigad region offers strong scope for growth. In the June 2019 quarter, despite low volume growth, Mahanagar Gas grew its revenue about 22 per cent Y-o-Y to ₹757 crore, and its profit about 32 per cent Y-o-Y to ₹170 crore. This was thanks to higher price realisations and lower cost of imported gas. The benefit of lower cost of imported gas is expected to continue for more quarters. With its products still largely retaining their competitive pricing edge over fuels such
as petrol and diesel, Mahanagar Gas may not have to cut prices much, even if it has to make some adjustments.

****

Govt. Wants Oil Cos to Pay ₹34,000 Cr in Dividend

The government wants oil companies to pay ₹34,000 crore in dividend, profit petroleum and royalty in this financial year, about 15% more than they did last year, in a bid to raise resources for public spending amid economic slowdown and corporate tax cut. The finance ministry recently conveyed to the petroleum and natural gas ministry that state-run oil companies would need to step up dividend payout this year, which will increase overall revenue receipt from the oil sector and help the government meet its revenue target, said people aware of the matter. The target of ₹34,000 crore was fixed ahead of last week’s decision to cut corporate tax rate, which is expected to leave a ₹1.45 lakh crore revenue gap for the government this fiscal. This target may be revised upwards soon and companies will be expected to pay a higher dividend and return to shareholders almost all the additional profit they make from tax cuts, said the people. Officials at the two ministries will soon begin discussions with company executives on the contribution each firm can make. The target includes dividend from state-run oil companies, profit petroleum and royalty from offshore oil and gas fields, and petroleum licensing fee. In 2018-19, the comparative figure was about ₹29,000 crore, almost half of which came from dividends by state oil companies. Profit petroleum and royalty made up the balance, with a small contribution from licensing fee. Last year, ONGC, Indian Oil Corporation and Oil India undertook a combined ₹9,500 crore share buyback programme, which allowed the government to offload shares in these companies. Officials believe that since there is no such buyback planned this year, oil companies can return a similar amount to shareholders in the form of dividend, according to the people cited earlier. Lower oil prices and declining domestic production may lead to a decline in the government’s income from profit petroleum and royalty this year. Therefore, the share of dividend will have to rise to meet the government’s oil revenue target. The average Indian basket crude oil price is down about $5 a barrel this year from $70 in 2018-19.
Local output of crude oil is down 6% in five months through August from a year ago while gas production is 1% lower. In 2018-19, higher prices and a weaker rupee helped ONGC register a record annual profit of ₹26,700 crore even though its oil production had declined. Resource-rich oil companies have been a big contributor to the states’ revenue for several years. The petroleum sector contributed ₹595,000 crore to state and central exchequers in 2018-19.

****

Brazil sets sights on China’s ethanol market

Brazil’s ethanol industry is looking to grab a chunk of China’s ethanol market as the Asian nation targets a 10% blend in gasoline to improve air quality, but a short-term jump in exports is unlikely, according to people following the matter. China wants to add 10% of ethanol to all gasoline used in the country by 2020, a policy that could sharply boost the country’s ethanol market and potentially increase imports, since local production capacity is too small to meet the target. Brazilian ethanol industry representatives were part of a trade mission organized by the Sao Paulo state government that visited China this month. The mission’s agenda included meetings with Chinese authorities and a visit to the headquarters of commodities trader COFCO, which owns four ethanol plants in Brazil. Sao Paulo state is the largest ethanol producer in Brazil. The state’s agriculture secretary, Gustavo Junqueira, who went along on this month’s China visit, said the opening of China’s ethanol market was discussed. In a statement, Junqueira added that he thought Sao Paulo mills could sharply
increase deals but did not elaborate. Felipe Vicchiato, chief financial officer for Sao Martinho SA, a large Brazilian ethanol producer, said Chinese officials seemed to be serious about the 10% ethanol plan during the talks. Sao Martinho’s Chairman Marcelo Ometto was also part of the trade mission. A source at COFCO, however, told Reuters it was unlikely China would implement the blend nationally next year.

“Implementation has been slow ... E10 has been done only in some regions for now,” the source said, asking not to be named because he lacked authorization to speak publicly about the issue.

The Chinese government would most likely seek to balance ethanol use with local production, refraining from pushing for an immediate implementation of the E10 that would necessarily spur imports, the COFCO source added. “There is also pressure from oil companies, so I don’t think it is going to happen,” he said, referring to implementation next year. The United States Department of Agriculture (USDA) estimates that China will be far from reaching the national E10 target next year. It projects the country’s total ethanol blending volume to gasoline in 2020 at between 3% and 3.5%.

If Chinese imports were to jump, Brazil would be in a good position in relation to the United States, the world’s biggest ethanol producer. China slapped a 25% additional tariff on imports of US ethanol this year as part of the trade war between the world’s two largest economies.

*****

Petronet LNG to acquire 26% stake in BPCL’s Krishnapatnam LNG terminal

Petronet LNG Ltd (PLL), India’s biggest importer of liquefied natural gas (LNG), will take a 26 per cent stake in a planned 1 million tonne (mt) capacity terminal for import and re-gasification of the super cooled fuel. The terminal will be helmed by Bharat Petroleum Corporation Ltd (BPCL) at Krishnapatnam port in Andhra Pradesh’s Nellore district. BPCL has received the board’s approval for the project, which is estimated to cost ₹1,700 crore and is targeted to begin
operations by 2024. “We have an arrangement for PLL to take a 26 per cent stake in the project,” a top BPCL executive told BusinessLine. “We are also talking to Japanese firms such as Mitsui & Co and NKK as well as some other firms to take stakes in the terminal,” the executive said, asking not to be named.

PLL, part-owned by Oil and Natural Gas Corporation Ltd, GAIL (India) Ltd, Indian Oil Corporation Ltd and BPCL, runs LNG regasification terminals at Dahej in Gujarat and Kochi in Kerala.

Focus on east coast- BPCL’s decision to build the terminal at Krishnapatnam port was dictated by the need for such facilities on the Eastern coast to tap the demand for the clean fuel in the southern and eastern parts of the country. Most of the LNG re-gasification terminals are currently located on the western coast. D Rajkumar, Chairman and Managing Director of BPCL, said the project was “first of its kind in India”. “The uniqueness of this project is that we are not looking at 3 mt or 5 mt or 7.5 mt in the initial stage itself. But, depending on the demand, we will be scaling up the project. We are starting with 1 mt and will go to 3 mt and then to 5 mt depending on the demand so that we don’t land-up in a situation BPCL’s decision to build the terminal at Krishnapatnam port was dictated by the need for such facilities on the Eastern coast where the utilisation of the terminal is very low like, unfortunately, what is happening with the Kochi LNG terminal,” Rajkumar said. “We are not looking at a floating storage re-gasification unit (FSRU) or land-based terminal, we are looking at a floating storage unit (FSU) and then re-gasification on land; this is being used in other parts of the world, so we thought of doing this mainly to reduce project cost in the initial stages,” he added. “BPCL is trying to be cautious on the capacity and the investment it will make in the project. Instead of making a ₹6,000 crore investment upfront, we are starting small,” the BPCL executive mentioned earlier said. The oil refiner is also scouting for a captive customer for the terminal. “Besides, we are thinking that our terminal can also look at feeding some other markets that will come up such as the city gas distribution (CGD) in that region, Hyderabad and around and in Eastern India,” he added. CGD will happen in the Eastern region, but they will not have any gas feed, as all re-gasification terminals are on the West. “In the West, pipelines will come, but the Eastern market is going to suffer. The success of CGD in the East will depend on the ability to have products being made available there. Plus, we are
also anticipating that Mozambique will start giving gas and we will have our own gas,” the BPCL executive said.

Gas unit- Bharat Gas Resources Ltd (BGRL), the gas unit of BPCL, has signed a sales and purchase agreement, to source 1 mt of LNG a year for 15 years from the Mozambique LNG project, and the supplies are expected to start from 2024-25. BGRL is looking to double its gas business to 5 mt by 2022 from 1.8 mt, Rajkumar said. It has acquired 13 geographical areas (GA) in the ninth and tenth rounds of bidding for CGD networks. The firm is targeting a portfolio of 37 GAs, he added.

*****

Ashok Leyland’s heavy trucks are BS-VI ready, await fuel availability for commercial launch

Leading truck and bus maker Ashok Leyland said its entire heavy truck range is BS VI-ready, but the company is not in a position to produce and sell such vehicles due to non-availability of BS VI-fuel. It has received the compliance certificates from the Automotive Research Association of India (ARAI). The Hinduja flagship claimed on Tuesday that it has became the first Indian commercial vehicle maker to get BS VI certification for its entire heavy trucks range (gross vehicle weight of 16.2. tonne and above).

“We are the first local OEM to obtain the BS VI-compliance certificates for heavy trucks. This heavy range is our high volume segment. So, we now have a large chunk of volume category certified and ready for production,” N Saravanan, Chief Technology Officer, Ashok Leyland, told a group of reporters here. “If fuel was available, we would have started selling these ranges. The fuel should be available across the country, can’t be in one or two cities,” he said. However, Ashok Leyland is looking at putting these trucks in some select regions like NCR-Rajasthan where the BS VI-fuel is available. Saravanan said the company had spent ₹600-700 crore in the last 3-4 years on BS-VI technologies and associated areas. The new BS-VI trucks are being built on a new modular platform. It will offer such trucks in four engine options.
“We have run till now about 2 million km on road with BS-VI engines and will continue to run till BS-VI deadline to touch about 4-5 million km,” he said. But details were not provided on the likely increase in prices and fuel efficiency of BS-VI trucks. Cabins of BS-VI trucks may also look different due to large cooling systems and other required norms. Also, there will be more electronics in terms of a good number of sensors. The BS-VI trucks will offer telematics solutions too. BS-VI compliance in the LCV and ICV range is expected to be completed shortly. Saravanan also said Ashok Leyland is working on making the entire ecosystem — dealers, service teams and others — to be ready for the BS VI norms

*****

India to open ‘Russian energy corridor’ to cut reliance on traditional suppliers

India and Russia will unveil a comprehensive energy co-operation agreement next week when Prime Minister Narendra Modi and Russian President Vladimir Putin meet at Vladivostok that seeks to open a “far east energy corridor” intended to reduce India’s dependence on traditional fuel suppliers. The framework, to be inked at the Modi-Putin summit, aims for an alternate route for oil, gas and coal from the Russian Far East. “A joint statement on comprehensive energy cooperation will be issued. A five-year complete roadmap will be signed. Several issues will be mentioned in the roadmap. Discussions are at a final stage. A new dimension is coking coal. MoUs will be signed at company level also,” oil minister Dharmendra Pradhan told TOI.

India is preparing to begin regular imports of Russian crude and coking coal, both from the far eastern region of Russia, where Indian state-run oil firms have invested billions of dollars in oil and gas projects. In this context it is fitting that the plan be revealed at Vladivostok, a major terminal of the Trans-Siberian railway. Modi is chief guest at this year’s Eastern Economic Forum, Putin’s annual gig of world leaders and captains of industry, to promote investments in the natural resource-rich far eastern region. Pradhan’s visit is the third successive by an Indian minister — after commerce minister Piyush Goyal and foreign minister S Jaishankar — aimed at preparing the groundwork for the
India and Russia on Wednesday signed on a roadmap for cooperation in the hydrocarbons sector with Moscow agreeing to look at supplying coking coal from its Far East and the two nations expanding energy partnership in hydro and thermal power. A joint statement issued by the Russian government following the 20th India-Russia annual summit between Prime Minister Narendra Modi and President Vladimir Putin here said the two sides agreed to explore joint development of oil and gas fields in Russia and India including offshore ones. "With the signing of the Roadmap for cooperation in Hydrocarbons for 2019-24 during the Summit, both Sides expect bilateral cooperation in this sector to touch new heights in the next five years," it said without giving details. As many as 15 MoUs were signed during the talks, according to a statement by India's Ministry of External Affairs. These included one between the Ministry of Energy of the Russian Federation and the Ministry of Petroleum and Natural Gas of India on the use of natural gas for
transportation. Another one signed by the two sides was for "expansion of cooperation in the oil and gas sector," it said without giving details. Russian gas producer Novatek signed a pact with Petronet LNG Ltd for liquefied natural gas supply and joint development of downstream LNG business. "The leaders are determined to forge cooperation in geological exploration and joint development of oil and gas fields in Russia and India, including offshore fields. They will continue their work to develop the ways of delivering energy resources from Russia to India, including a long-term agreement for sourcing Russian crude oil, the possible use of the Northern Sea Route and a pipeline system," the joint statement said. The two leaders noted the prospects of Russia's Rosneft-backed Nayara Energy Ltd increasing the capacity in Vadinar oil refinery in Gujarat. "India and Russia agreed to consider the prospects for expanding cooperation in hydro and thermal power, energy efficiency as well as for designing and constructing facilities that generate energy from non-conventional sources," it said. Also, the two leaders noted the immense potential of cooperation in the field of non-nuclear fuel and energy. "India and Russia welcome the success of interaction between JSC Rosneft Oil Company and Consortium of Oil and Gas Public Sector Undertakings in implementing the Vankorneft and Taas-Yuryakh Neftegazodobycha (oil and gas field) projects (in Russia), the work of the Nayara Energy oil refinery, cooperation in extracting hydrocarbon resources over the last two decades as well as the timely delivery of liquefied natural gas under the agreement between Gazprom and GAIL India," the joint statement said. The two sides also "agreed to cooperate in supply of coking coal from Russian Far East to India," it said. A memorandum of understanding (MoU) was signed between Coal India Ltd and Far East Investment and Export Agency to cooperate in coking coal mining projects implementation in the Russian Far East, MEA said.

*****

**Saudi Aramco attack fallout: India to source more crude oil from Russia**

India and Russia have discussed ways of increasing Russian crude supplies to Indian refineries following a devastating attack on Saudi Arabia’s oil facilities
that has cut its output in half and reduced global supplies by 5%. Oil minister Dharmendra Pradhan and Russian energy giant Rosneft’s CEO Igor Sechin met on Tuesday in New Delhi to discuss the global supply situation as well as the ongoing energy cooperation between the two countries. “The developments in energy markets, including global crude oil supplies, in the light of the recent attacks on Saudi Aramco’s facilities, were also discussed. In this context, a special focus was on increase of crude oil supplies from Russia to Indian refineries,” according to a statement by the oil ministry. Saudi Arabia has assured Indian refiners that all supply commitments will be made but refiners want to be prepared for any contingency as well as have a more diversified supply base for future. Indian state refiners are in talks with Russia’s Rosneft to finalise a term-contract for purchase of Russian crude to diversify their supply sources, Pradhan said on Tuesday after meeting Sechin. “The parties agreed to intensify their cooperation aimed at the strengthening of energy security in India and supplying of high-quality feedstock and crude oil products to Indian customers,” Rosneft said in a statement. “The focus was made on bilateral cooperation and the establishment of an efficient energy bridge based on the vertical integration concept. This includes participation of the Indian partners in production projects and investments in refining as well as the joint operations on the global and regional markets,” Rosneft further said. Over the years, Indian refiners have been tapping new geographies to cut their over-reliance on any one region or country. State refiners barely use Russia crude though they have occasionally used it in the past. The high freight due to the long shipping distance between Russia and India makes Russian crude uneconomical. But a strong diplomatic push by Prime Minister Narendra Modi and Russian President Vladimir Putin will likely help overcome the expensive freight hurdle, officials said. Rosneft-led consortium is reviewing an option of a two-fold increase of the refining throughput at the Vadinar Refinery, the company said. “In the first stage, the consortium commits to investment of $850 million towards the building of a petrochemical unit in Vadinar within two years,” it said.

*****

55
How India’s pipelines to Bangladesh, Nepal are changing oil trade dynamics

In September 2018, India and Bangladesh entered an agreement for a cross-border pipeline to carry one million tonne diesel annually from Siliguri (West Bengal) depot of the Numaligarh Refinery (NRL) to Parbatipur in Bangladesh. One year down the line, the project is gaining speed. According to sources, the contracts for pipes are already in place and delivery is expected to start from November. Meanwhile, the Bangladesh government is expected to notify landowners for right-of-way for the underground line. Of the 130-km long pipeline only six km is in India. The West Bengal government has already ensured the right of way. India is offering ₹303 crore financial assistance in completing the project that will largely meet the diesel requirements of northern parts of Bangladesh. Bangladesh imported 4.8 mt of diesel in 2017-18. This includes 1-1.5 lakh kilolitre supplies by rail from India beginning 2016. In the absence of pipeline infrastructure, diesel is distributed mostly by river to the oil bunkers.

Oil diplomacy- The pipeline supply will therefore bring in major logistical change in auto-fuel distribution in Bangladesh. India is fast establishing pipeline network in the region. The beginning was made with Nepal as Delhi completed construction of 69-km Motihari (Bihar)-Amlekhgunj (Nepal) early this month. The project was completed in half the scheduled time, eliminating roughly 1,000-1,200 road tankers which were earlier congesting the roads of Raxaul (Bihar) and Birgunj (Nepal). But more importantly, it ended a long pending political irritant. During the 2015 Madhesi stir in southern Nepal, the protestors
blocked the trading gate to cut off oil supplies. Nepal in turn blamed India for stopping the oil supplies. With oil now delivered 30 km inside Nepal and at a lower cost, the political narrative between the two countries is set to change.

**POL exports**- With Nepal dependent on Indian supplies for petroleum products naturally the Moti-Hari-Amlekhigunj pipeline will not have any impact on trade volume. But the reverse is true for Bangladesh. Petroleum products already started occupying space in the bilateral trade and its importance will increase in the days to come. With Indian refiners exploring markets in the entire neighbourhood, oil and oil pipelines are set to gain prominence in the future.

****

**Oil Cuts Losses as Saudi Blames Iran for Attacks**

Oil trimmed losses after Saudi Arabia said Iran sponsored recent attacks to its oil production facilities. Futures fell as much as 2.2% in New York before easing declines on Wednesday. The weekend attacks on the kingdom’s critical oil infrastructure were “unquestionably sponsored by Iran,” according to a spokesman for the Saudi defense ministry. West Texas Intermediate crude for October delivery declined 47 cents to $58.87 a barrel at 10:49 am on the New York Mercantile Exchange. Prices touched $58.02 earlier in the session. Brent for November settlement fell 18 cents to $64.37 a barrel on the ICE Futures Europe Exchange, and traded at a $5.64 premium to WTI for the same month. An Energy Information Administration report showed domestic oil inventories rose by 1.06 million barrels last week, after four straight weeks of declines. Analysts in a Bloomberg survey had called for a 2.25 million barrel drop in crude supplies.

****

**Oil Cools on Saudi Recovery Forecasts**

Oil plunged nearly 7% in London after Reuters reported Saudi Arabia is close to restoring 70% of the oil production it lost after this weekend’s attack on a key crude facility in the kingdom. Brent crude dropped to as low as $64.48 a barrel
on the report, which cited an unidentified Saudi source saying the Opec member would return to full production in the next two to three weeks. Estimates of when, and how much, of the 5.7 million barrels a day of shut output would be back online has fluctuated since the attack. Significant volumes could come back within days, people familiar with the matter said over the weekend, adding that it could still take weeks to restore full capacity. Brent futures rose 19% in a matter of seconds at the open on Monday and ending the day up 15%, their biggest single-day advance. The worst ever sudden disruption to global oil supplies continues to reverberate as geopolitical risk premiums soar on concern over instability in the Middle East and a potential retaliation against Iran, which the US has blamed for the strikes. Brent for November settlement fell $4.09 to $64.92 a barrel at 10.12 am in London. Ten unmanned drones damaged one of the Saudis’ flagship fields and a key processing complex on Saturday, triggering one of the wildest bouts of trading seen in oil markets. WTI for October slid $3.48 to $59.42 a barrel, after declining as much as 5.6%. The US benchmark’s discount to Brent for the same month narrowed to $5.54. Saudi Aramco is firing up idle offshore oil fields – part of its cushion of spare capacity – to replace some of the lost production, a person familiar said earlier. Customers are also being supplied using stockpiles, though some are being asked to accept different grades of crude. The kingdom has enough domestic inventories to cover about 26 days of exports, according to consultant Rystad Energy. Customers are also preparing to tap strategic reserves if needed. US President Donald Trump authorised the release of oil from the US Strategic Petroleum Reserve, while the International Energy Agency, which helps coordinate industrialised countries’ emergency fuel stockpiles, said it was monitoring the situation. The disruption surpasses the loss of Kuwaiti and Iraqi petroleum output in August 1990, when Saddam Hussein invaded his neighbor. It also exceeds the loss of Iranian oil production in 1979 during the Islamic Revolution, according to the IEA. Nevertheless, US Energy Secretary Rick Perry said on Tuesday that the market is well-supplied and a “staggering spike” in prices is unlikely.

*****

58
The Centre’s ethanol push will help sugar mills as well as oil companies

Year after year, despite drought conditions in many parts of the country, we produce more and more of sugarcane – a water-guzzling crop, and there is a huge amount of excess sugar in supply in the market today. In fact, we are entering the Sugar season 2019-20 (October-September) with a record opening stock of 142 lakh tonnes of sugar — that can actually serve half the country’s annual demand. While scrapping FRP to dissuade farmers from growing cane is not in consideration by states, given the vote bank of cane growers, all focus is now in pushing mills to divert cane into making of ethanol — a biofuel that derived from sugarcane that when blended with petrol, limits carbon discharge. This will reduce excess sugar supplies in the market, and boost sugar price, helping mills. It will also reduce oil imports, and save dollars for the country. That way, the Centre thinks it can kill two birds with one stone.

A great idea. But, is it doable?

While the Centre keeps rising its ethanol-blended petrol (EBP) target every year (from 5 per cent to 10 per cent and now 20 per cent by 2030), given that it is not mandatory for oil companies, will they oblige? As oil prices have fallen sharply, will it still be worthwhile? Also, do sugar mills have enough capacity to produce sufficient ethanol to reach the 20 per cent blending target?

To reach the Centre’s ambitious target of 20 per cent in blending by 2030, a back of the envelope calculation with India’s current fuel consumption shows
that there is the requirement of around 700-800 crore litres of ethanol in a year. But India’s current ethanol production capacity is only around 355 crore litres.

**Increasing capacity**- The lack of capacity in ethanol production is not likely to pose a hurdle in reaching the blending target. With the Centre’s soft loan (interest subvention) provision for sugar mills to build capacity in ethanol in June last year, many companies have come forward to expand or add new capacities. So far, a total number of 245 projects have been approved by the Government under the scheme for financial assistance says ISMA. Around 300 crore litres of capacity is expected to be added if all the approved projects come on stream in the next 2-3 years, taking the total ethanol production capacity to 600-700 crore litres annually. This will help take EBP to the desired target. In 2018-19 ethanol supply year, i.e., December – November, about 163 crore litres of ethanol have been lifted by oil companies (till September 10) from sugar mills. This brings the blending rate for the year to 5.6 per cent. In the next two-and-half months, the total lifting may reach about 200 crore litres, say market observers.

**Why oil companies are interested**- Though there is no written mandate, oil companies have begun to show interest in blending petrol with ethanol in last few years, due to the government’s constant push and the high price of oil, that has made blending ethanol with petrol an attractive deal. Note that the cost of ethanol is lower to petrol for oil companies, but when selling it at the retail pump, oil companies sell ethanol-blended petrol at the same price as petrol and make a profit. While last year the price of petrol at the retail pump (in Delhi) was about ₹81, the cost of ethanol worked out to about ₹62, the difference per litre was ₹19 for the oil companies. Now, with a lower price for petrol, due to falling in crude prices globally, and the higher cost of ethanol (after price increase by the government), the profit has come down to ₹5/litre but is still attractive.

*****
Oil Prices Fall after Opec+ Alliance Talks

Oil prices fell on Thursday after a meeting of the Opec+ alliance yielded no decision on deepening supply cuts but focused instead on bringing Nigerian and Iraqi output down to their agreed quotas. Oil came under further pressure after the European Central Bank cut its deposit rate to a record low -0.5% from -0.4% and said it will restart bond purchases of 20 billion euros a month from November to prop up euro zone growth. Brent crude futures were down $1.49 cents at $59.32 a barrel by 1350 GMT. US West Texas Intermediate futures fell $1.27 cents to $54.48. Both were heading for a third session of losses. Saudi Arabia’s new energy minister, Prince Abdulaziz bin Salman, said deeper cuts would not be decided before a meeting of the Organization of the Petroleum Exporting Countries planned for December. — Reuters

*****

Attack on Aramco’s plants could make petrol, diesel dearer by ₹1/litre

Tuesday could see consumers paying up to a rupee more for their petrol and diesel. This is because of the spurt in global crude oil prices following the coordinated drone attack on Saudi Aramco’s oil production facilities, including a crude processing plant in Abqaiq, on Saturday. Subsequent to the attack, Saudi Aramco had announced curtailment of production by almost a half. Indian oil refiners — both in public and private sector — are primarily dependent on crude oil from Saudi Arabia. Though the government maintained that Saudi
Arabia has assured supply, it is also closely watching the situation as the oil market remained volatile.

‘Force majeure not invoked’

“The retail price could go up in the range of 2-3 per cent on Tuesday and move higher over the coming weeks if the hike in crude prices does not taper,” an oil marketing company official said. On Monday, petrol in Delhi was sold at ₹72.03 a litre and diesel at ₹65.43 a litre. “When the domestic economy is in doldrums, the bombshell of oil price jump to $66 a barrel from $60 in one stroke has sent a shiver down the spine of road transporters,” SP Singh, Senior Fellow and Coordinator at Indian Foundation of Transport Research and Training, said. “Till now, Saudi Arabia has not announced any force majeure and has indicated that the supplies can be met with inventories which it holds. But clarity is yet to emerge on how much time it will take for production to return to earlier levels. Based on the news, there was an immediate swing in crude oil prices, but they cooled a bit subsequently,” Mukesh Kumar Surana, Chairman & Managing Director, Hindustan Petroleum Corporation Ltd, told BusinessLine. “If they resume supplies quickly, prices will cool off. Since domestic auto fuel According to analysts, a roughly $10 per barrel increase in the price of crude oil results in a ₹5 /litre rise in petrol and diesel prices are calculated on a rolling basis (benchmarked to the 15-day average global product prices), the domestic prices will not shoot up suddenly, but may firm up in future if the supply disruptions persist,” he said.

*****

**India Grabs US Crude That was Originally Set to Arrive in China**

An Indian state-owned refiner has swooped in to buy American oil that was en route to China but due to arrive after new tariffs kicked in. Bharat Petroleum Corporation bought one or two cargoes of US crude that were recently diverted from its original destination of China, refineries director R Ramachandran said in an interview.
He didn’t identify the seller, how big the shipments were, or the name of the ships. It’s possible BPCL could buy more American oil that was headed to China, he said. Beijing announced it would impose the 5% levies — the first ever Chinese tariffs on US oil — on August 23 and they took effect September 1. Six tankers carrying about 12 million barrels of U.S. crude were on the way to China at the time of the announcement. At least one of those vessels arrived before the deadline, while another ship may have offloaded its cargo at a port near Qingdao before the tariffs took effect. Unipec — the trading arm of China’s state-owned oil giant Sinopec — offered US crude that couldn’t arrive in the Asian country before September 1 in late August. At least three potential Asian buyers received offers from Unipec, according to people with knowledge of the matter. Indian refiners have increased their purchases of American oil this year as supplies from Iran and Venezuela were hit by White House sanctions. The Asian nation bought an average of 287,000 barrels of US crude a month in this year through May, compared with a monthly average of 131,000 barrels in 2018, according to US Energy Information Administration data. China was the biggest foreign buyer of American crude as recently as the middle of last year but imports were subsequently slashed as the trade dispute worsened. Purchases picked up again this year, reaching 1.5 million tons in July, data from the General Administration of Customs show. Ramachandran also said BPCL is looking to process US West Texas Intermediate Light and Louisiana Light Sweet crude, two American grades that the Indian refiner has yet to purchase.

*****

NLC India’s renewable power capacity exceeds 1 GW

State-owned mining-cum-power generating company NLC India has said its installed capacity in the renewable sector has exceeded 1,000 MW. The company commissioned 95-MW capacity of the 109-MW solar power project in Ramanathapuram district in south Tamil Nadu. With this, the total renewable capacity established by the company exceeded 1 GW. The above project was part of 709-MW solar power projects awarded by TANGEDCO. The total cost of the 709 MW projects is estimated at ₹3,036 crore. This will have a debt-equity ratio of 80:20. “These projects are expected to be commissioned during this
fiscal,” Rakesh Kumar, Chairman & Managing Director of NLC India, had told the company’s recent conference call. NLC India is executing a 20-MW solar power project in the Andaman Islands at an estimated cost of ₹131 crore. The company has already commissioned 2.5 MW of solar unit and is in the process of installing and commissioning 17.5-MW capacity in the island during this fiscal. Along with renewable projects, the company expects to commission both the units of Neyveli New Thermal Power Station during this fiscal. Also, its Talabira Mine in Odisha will start coal production this year. By November 2020, it is expected to commission one unit (660 MW) of Neyveli Uttar Pradesh Power Ltd (NUPPL), Ghatampur. In the first quarter of this fiscal, the company could sell 264.71 million units of solar power, which resulted in a revenue of ₹88.57 crore. In the case of wind power, it supplied 26.06 million units and the revenue was ₹10.38 crore. The company’s profit before tax in the case of solar during Q1 of this fiscal was ₹24.64 crore and for wind, it was ₹4.99 crore. PAT was ₹21-22 crore in solar and over ₹3 crore in wind (as the tax was about 24 per cent), according to Kumar. To realise we were passing through a town, because it was completely dark,” Raman said. Raman wondered whether he could use all that darkness to make something to light it up, not unlike the way that solar panels generate electricity from the sun’s heat and light. He did in new research published on Thursday in the journal Joule, Raman demonstrated a way to harness a dark night sky to power a light bulb. His prototype device employs radiative cooling, the phenomenon that makes buildings and parks feel cooler than the surrounding air after sunset. As Raman’s device releases heat, it does so unevenly, the top side cooling more than the bottom. It then converts the difference in heat into electricity. In the paper, Raman described how the device, when connected to a voltage converter, was able to power a white LED. Jeffrey C Grossman, a materials scientist at the Massachusetts Institute of Technology, said the work was “quite exciting” and showed promise for development of lowpower applications at night. “But there is definitely a long way to go if they want to use it as an alternative to adding battery storage for solar cells,” Grossman adds. Everything emits heat, according to the laws of thermodynamics. At night, when one side of Earth turns away from the sun, its buildings, streets and jacket-less people cool off. If no clouds are present to trap warmth, objects on the Earth can lose so much heat that they reach a lower
temperature than the air surrounding them. The cloudless atmosphere becomes a porthole to the void, through which warmth flows. Humans have taken advantage of this effect for millennia. Six thousand years ago, people in what are now Iran and Afghanistan constructed enormous beehive-shaped structures called yakhchal, which used this passive cooling effect to create and store ice in the desert. Modern scientists have studied how to harness energy from Earth’s day-night swings in temperature, but that work has mostly remained theoretical. In 2014, researchers led by Federico Capasso, an electrical engineering professor at Harvard, calculated that at best only about 4 watts of energy can be extracted from a square metre of cold space. By contrast, a solar panel generates about 200 watts per square metre in direct sunlight. Nonetheless, a device that could produce any amount of electricity at night would be valuable; after the sun sets, solar cells don’t work and winds often die down, even as demand for lighting peaks. The prototype built by Raman resembles a hockey puck set inside a chafing dish. The puck is a polystyrene disk coated in black paint and covered with a wind shield. At its heart is an off-the-shelf gadget called a thermoelectric generator, which uses the difference in temperature between opposite sides of the device to generate a current. A similar device powers Nasa’s Curiosity rover on Mars. Usually, the temperature difference in these generators is stark, and they are carefully engineered to separate hot and cold. Raman’s device instead uses the atmosphere’s ambient temperature as the heat source. The shift from warm to cool is very slight, meaning the device can’t produce much power. His device is elevated on aluminium legs, enabling air to flow around it. As the dark puck loses warmth to the night sky, the side facing the stars grows colder than the side facing the air-warmed tabletop. This slight difference in temperature generates a flow of electricity. When paired with a voltage converter, the prototype produced 25 milliwatts of power per square metre. That is about three orders of magnitude lower than what a typical solar panel produces, and well short of even the roughly 4-watt maximum efficiency for such devices. Still, several experts said the prototype was an important contribution to a new and relatively unusual space in the renewable energy sector.

“This is a neat combination of radiative cooling with thermoelectric materials,” said Ellen D Williams, a physics professor at the University of Maryland. “Both
technologies are proven and practical, but I haven’t seen them combined like this. They did this with inexpensive materials, suggesting it could be made into useful products for the developing world.”

One challenge will be improving the device’s efficiency without raising its costs, said Lance Wheeler, a materials scientist at the US National Renewable Energy Laboratory. Although thermoelectric devices are less efficient and more expensive than photovoltaic cells, they can be more durable. Conceivably, Raman said, thermoelectric devices could complement solarpowered lights in areas where changing batteries is a challenge, like on street lamps or in remote areas.

“I figured the amount of electricity we could get would be pretty small, and it was,” he said. “But walking around in Sierra Leone, I realised lighting remains a big problem, so it’s an opportunity as well.”

*****

Renew Power Moves HC Objecting to Disconnection of Part of Its Capacity

Renew Power, a wind and solar energy producer, has moved the Andhra Pradesh high court, objecting to the disconnection of part of its capacity in the state. This follows its earlier petition questioning the government’s decision to renegotiate power purchase agreements. In the fresh application filed earlier
this week, ReNew protested against 300 MW of its wind projects being suddenly denied connectivity by the Andhra Pradesh Transmission Co. (APTRANSCO) at its Uravakonda substation. The first hearing on this application was held on Wednesday. APTRANSCO chairman Srikant Nagulapalli said in a memo dated September 14 that “irregular connections and loads” were being removed after careful examination of a vigilance report. ET has reviewed a copy of the memo. In addition, 100 MW of Greenko’s wind projects have been disconnected. APTRANSCO and ReNew did not respond to ET’s queries. A senior state government official claimed ignorance about the APTRANSCO memo. The Wind Independent Power Producers Association had filed a petition with the regulatory commission maintaining that 1,000 MW of power was not being evacuated because two transformers at Uravakonda substation had been malfunctioning. APERC formed a committee to visit the site and a hearing has been scheduled for Saturday. About 1,800 MW of wind power capacity is said to be connected to this substation. The state has commissioned 3,978 MW of wind energy capacity, according to Bridge to India, a renewable energy consultancy firm. “We took our engineers to the site to repair the transformers earlier and they were not even allowed to access it. Half of the wind projects in the state are connected to the Uravakonda substation,” said an industry executive, requesting anonymity. “APTRANSCO started this new drama of removing connectivity. They want to scare us in all kinds of ways so we will come forward and negotiate tariffs,” the person alleged. Andhra Pradesh chief minister YS Jaganmohan Reddy, who took office in May, decided to renegotiate PPAs signed by the previous government with renewable energy developers, alleging they were at rates higher than in other states because of corruption. He formed a committee to renegotiate with the developers. The state then threatened to terminate the PPAs if developers didn’t agree to reduce tariffs. Developers — ReNew among them— took the state to court and obtained a stay order on all proceedings of the committee. Hearings have been going on for the past few weeks.

*****

67
Telangana is on course to achieving 5 Giga Watts (GW) of renewable energy capacity by next year, and the state plans to come out with a tender for setting up of about 1000 MW (1 GW) of solar power generation capacity. The state, which was carved out of bifurcation of Andhra Pradesh in 2014, now has a total installed capacity of about 3,800 MW, which includes grid-connected and standalone rooftop solar units, and it has the second highest solar capacity in the country, after Karnataka. Ajay Mishra, Special Chief Secretary, Energy, Telangana, during the week-end said the state government is in the process of finalising a tender for about 1,000 MW, and expects to reach the targeted 5 GW capacity by next year. This will include some rooftop solar units and some standalone installations.

Addressing gaps- The state has adopted decentralised distributed solar installation projects, as opposed to the solar park model. In the park model, huge capacity comes up at a single location, making its management relatively tougher and needing additional evacuation infrastructure. Barring one project, where more than 100 MW of solar capacity is located, most of the projects have been awarded and installed on a de-centralised distributed model. The state had encouraged projects across over 180 locations, instead of concentration of projects at one location as in solar parks.

Also read: Telangana solar model helps save over ₹500 cr

This was based on demand-supply gaps in various parts of the state, aimed at supporting the agricultural loads. About 250 to 300 MW will come up in the state-owned coal mining company The Singareni Collieries Company Limited, in addition to the state government proposals. “By opting for a distributed solar installation model, the state had managed to save about ₹450 crore, which would have
otherwise required to strengthen the transmission and distribution network,” Mishra said. While some of the wind developers have come forward to set up windpower generation units with highly efficient turbines in the state known for low wind speeds, the state has not pushed forward with their proposals.

Policy tweak- The state is also planning to tweak its solar power policy as it is keen that the new projects that are tendered out, come up at attractive prices, factoring the drop in cost of solar modules and related equipment.

Also read: Telangana govt. to come up with new solar policy

While the tenders and policy would have come up much earlier, it has been held up due to elections. It may be announced anytime in the near future.

*****

GIP, Edelweiss Infra in Final Lap to Buy Engie’s India Solar Portfolio

Global Infrastructure Partners (GIP) and Edelweiss Infrastructure Yield Plus fund are competing to acquire the solar energy portfolio of French major Engie in India for around $400 million, said two people aware of the development. Both have submitted firm offers and a final decision is due in the next couple of weeks. Actis, another global investor in the race, had backed out recently. Engie has a renewable energy capacity of 1.5 GW in India. It has an installed capacity of 810 MW in solar and a capacity of 280 MW in wind. Rothschild & co is running a sale mandate for
Engie. GIP India is believed to have submitted a proposal that includes cash along with stock in its own clean energy subsidiary Vector Green Energy. Edelweiss infra is bidding through Sekura Energy Limited, the energy focused platform wholly owned by Edelweiss Infrastructure Yield Plus. Vector Green Energy is the wholly owned subsidiary of India Infrastructure Fund II — a SEBI-registered Category-I Alternative Investment Fund managed by GIP India LLP. Vector Green currently owns 346 MW of capacity across 11 projects and 5 states in India. However, it is not clear if Engie will accept the offer as it is seeking a total exit from India, one of the sources mentioned above said. GIP entered India last year by acquiring the infrastructure asset management business from the multi-asset manager IDFC Alternatives Ltd. It consists of two funds- the India Infrastructure Fund I and Fund II — that invested about $1.4 billion across power, roads and renewable energy sectors. GIP, which has deployed all capital under previous IDFC funds in India, plans to launch its new India focused fund by early next year. GIP is also in the process of signing an agreement with RattanIndia Power Ltd (formerly India Bulls Power) to buy the solar portfolio for an enterprise value of about $300 million (₹2,000 crore), which ET had reported in April.

*****

Project for solar power on farmland to kick off

Delhi government’s plan to generate solar energy on agricultural land is set to take off next week. The power department will soon float tenders to invite companies to set up the solar plants under the Mukhyamantri Kisan Aay Badhotari Solar Yojana under the public-private participation model. A power department official said they have got the consent of farmers to install the solar panels on almost 150 acres of agricultural land in outer Delhi. The scheme was
approved by the state government in July last year, but picked up speed only after Delhi Electricity Regulatory Commission (DERC) notified the net metering guidelines. The energy generated through the renewable source will be exported to the grid and then supplied to the areas, the official said. The virtual net-metering will calculate the total energy exported and adjusted in more than one electric connection of participating consumers. Under the scheme, the private companies under the RESCO (Renewable Energy Service Company) model will be allowed to install solar panels on not more than one-third of the total land owned by a farmer. The farmers will be paid Rs 1 lakh per acre as rent with 6% annual increase for 25 years. By the 25th year, the farmer will be getting Rs 4.04 lakh per acre from the companies. Though no commercial activity will be allowed on the agricultural land, the official said the installation was exempted under Section 81 of the Land Act. While the installation of solar panels will help the farmers increase their income by 3-4 times, the tips on hi-tech farming will help them augment it further. The officials said the panels would be installed 3.5 metre above the surface to allow passage of tractors and unhindered farming activity. The farmers will also get 1,000 units of free electricity every year for each acre of land, he said. According to the official, a total of six acres would be required for the installation of 1MW solar plant, which could generate approximately 13 lakh units of electricity annually. The scheme, said the official, involved at least three departments of Delhi government — revenue, power and development. While the revenue department has been tasked with the responsibility of identifying land-owning farmers and help them with necessary documentation and signing the contract with the agencies concerned, the development department would create awareness about the scheme among the farmers by organising workshops. The power department will look after the overall implementation of the scheme and tendering processes.

*****
NTPC to Invest ₹ 25K Cr to Set Up Solar Park

NTPC, India’s largest power company, will not undertake any new coal-based generation for the next few years as part of measures to reduce its carbon footprint and has decided to invest about ₹25,000 crore to set up one of the world’s largest solar parks at Kutch in Gujarat. The solar park will be developed in phases over the next five years. The company also expects to disconnect some of its coal-based capacity from morning till evening to make way for affordable solar and wind power generation, said a senior company official. Besides, it plans to set up solar power plants of 1,000-MW capacity which will sell electricity in open market. NTPC’s plan to procure renewable power from plants across the country and bundle it with its coal-based generation will be implemented in a month, the official told ET on condition of anonymity. “We will not set up coal-based power plants for the time being. We are setting up solar plants at Bilhor in Uttar Pradesh and Barethi in Madhya Pradesh where originally coal-fired plants stations were planned,” said the official. “Don’t be surprised if in the next three-four years, we may have to stop coal-based plants from morning to evening.” The government regulations to cap emissions from coal-fired power plants, which increase the costs of building such projects, have also prompted the company to turn to green energy for growth. The company is expecting subsidy from the central government and is open to awarding contracts to private companies or on a turnkey basis to set up the projects. It will procure the electricity generated from these projects, bundle it with its produce and sell it to the distribution companies and avoid state government interventions. Bridge to India managing director Vinay Rustagi hailed the decision. “It is a remarkable development and shows how far the renewable energy sector has come in the last few years. But for NTPC, a 100% thermal power-focused company and reliant primarily on a cost-plus model, competing with private developers in an aggressive marketplace is not going to be an easy proposition,” he said. The company is also planning to build a 500-MW hydropower project in Himachal Pradesh, where it already operates one such plant, according to the official. The official said reneging of renewable contracts by states, including Andhra Pradesh, which has sought renegotiation of agreements, has affected sentiment of global investors. Non-payment of dues by power distribution companies to renewable energy firms also acted as a
deterrent. The dues to green companies stood at ₹9,735 crore in July, according to a recent report by the Central Electricity Authority. Discoms from Andhra Pradesh led the list with total unpaid bills of ₹2,509 crore, followed by Tamil Nadu distributors at ₹2,413 crore. Of the total 130 GW capacity targeted by 2032, the company aims to build 32 GW renewable energy plants to reduce the share of fossil fuels in its energy mix to 70% from about 96%. NTPC operates 53 power stations. In addition, it has nine coal plants and one gas station, owned by joint ventures or subsidiaries, taking the total capacity to 55,786 MW. India is targeting 175 GW of renewable capacity in the country by 2022, more than double the 80.6 GW today.
Repository of energy – efficiency benchmarks on the cards for industry

The Government and Bureau of Energy Efficiency are working towards developing a national repository of energy efficiency benchmarks to make them accessible to industry stakeholders. Energy Efficiency will make up for more than half of the share of abatement of energy consumption that India has committed to from 2010 to 2035, as part of its commitment to the environment, according to Milind Deore, of Bureau of Energy efficiency. During CII Energy Efficiency Summit 2019 he said, “Market transformation towards energy efficient products is one of the key goals for the Government. One of the initiatives we are working on is to develop a national repository of energy efficiency benchmarks, which will be accessible to all industry stakeholders. By 2030, the government aims to facilitate saving of about 500 billion units of energy.” Ravichandran Purushothaman, Chairman, Energy Efficiency Council, CII-Godrej GBC, said that State-level implementation of Central policies is an area that needs much more work. Another area that needs attention is collaboration between stakeholders and it requires government support. There are companies that need certain resources that are being produced in excess
and going to waste at other companies. With proper government support, a pan-India industry collaboration can solve this problem.” Rene Van Berkel, regional representative for the United Nations International Development Organization (UNIDO), said more work needs to be done to de-risk energy efficiency measures as it can be quite difficult for small businesses to adopt energy efficiency technologies and techniques. “Finance is not necessarily the only problem, as cost of technologies can be a barrier for many small businesses. We need to be more involved in piloting new technologies that are marketable, scalable, and cost-competitive,” he said. Meher Pudumjee, Chairperson, Energy Efficiency Summit 2019, said that CII’s National Award for Excellence in Energy Management is a platform for the Indian industry to share its best practices, case studies, and success stories on resource conservation, energy and environment management.

**Talengana Solar policy**- D Prabhakar Rao, Chairman and Managing Director, Transmission Corporation of Telangana Limited (TSTRANSCO) and Telangana State Power Generation Corporation Limited (TSGENCO), said “The Telangana solar power policy, incorporated in 2015, is consistently enabling the development of solar power projects. TSGENCO has taken up a big role and distributed LED bulbs among consumers, and replaced 4 lakh street lights with energy saving LED lights.” “TS distribution companies are also working on demand-side management measures with the support of CII and BEE. In order to enable sustainable development, TS power utilities are gearing up to establish a dependable charging infrastructure for electric vehicles (EVs) in the near future,” he said. More than 160 participating companies, individuals among others were felicitated and awarded for their innovative initiatives towards addressing energy efficiency.

****
Generating power

NTPC’s shares have been volatile since the announcement of the June quarter results. The broader market volatility also played its part, but some element of pessimism seems to have crept in after the results came in. There were many one-off items that depressed the company’s profits. This left the street wondering whether there is more pain in store. But a pipeline of projects that will come on stream over the course of 2019-20 and till 2021-22 (nearly 15 GW) makes its current valuation look attractive. The stock trades at eight times its trailing 12-month earnings as against its historical three-year average of 12 times. NTPC’s possible acquisition of the government’s stake in SJVN and NHPC has also weighed heavily on the stock. The fear among investors seems to be that if NTPC buys NHPC or SJVN to fund the government’s disinvestment targets, it could curtail its dividend. NTPC is currently a high dividend-paying PSU (dividend yield of 4-5 per cent). While these are concerns, the pessimism may be slightly overdone. The pipeline of projects, offering good revenue visibility, lends comfort to earnings over the next three years.

One-time impact on PAT- The net profit in the June quarter at the standalone level was flat at ₹2,603 crore. Revenue from operations grew just 7 per cent to ₹24,193 crore. At the consolidated level, profit after tax (PAT) was ₹2,840 crore. The standalone profit for the quarter was impacted by a one-time impact of an additional charge under the old deviation settlement mechanism that occurred in the June quarter. This had a ₹150-crore impact on the June quarter’s profits. However, since the regulator has exempted power producers from paying this charge henceforth, there will not be any impact in the ensuing quarters. Additionally, there was a ₹150-crore one-time impact due to use of older inventory of coal at some power plants in the Vindhyachal belt (Uttar Pradesh), which had a low gross calorific value (GCV). This meant the loss of GCV was higher than that permitted by the power regulator’s norms. Hence, NTPC’s tariffs charged to power distributors were depressed to that extent. This is not expected to recur in the subsequent quarters as the company has fresh coal stocks available. Contribution to earnings from NTPC’s subsidiaries and joint ventures is also likely to go up as more projects near commercial operations.
The company has also set up a coal subsidiary to undertake all its coal mining activities and sell surplus coal to third-parties.

**Possible acquisitions** - While concerns over NTPC acquiring the government’s stake in SJVN and NHPC have also weighed on the stock, the management has clarified that discussions with the Centre on an SJVN stake buy had taken place two years ago. Also, there has been no talk so far of NTPC buying stake in NHPC. NTPC is still interested in buying SJVN because it would help boost its non-fossil fuel-based powergeneration portfolio, and not particularly on account of the government’s insistence alone. The company has plans of nonfossil fuel-based power to contribute nearly 30 per cent of its 130 GW planned installed capacity by 2032.

**Pact with Coal India** - There was some apprehension that a strike at one of Coal India’s subsidiaries would hamper power production at three plants, but NTPC says it has signed a longterm fuel supply arrangement with Coal India for an annual contracted quantity of 172 million tonnes per annum. The company’s plan to add nearly 5 GW of installed capacity every financial year till 2021-22 will automatically give a boost to its profits. This comes at the back of muted commercial capacity addition in 2018-19. The equity that is currently tied up in the capital work-in-progress or projects under construction will be freed and start earning returns for the company. At the end of March 2019, the regulated equity base (REB) in projects commissioned stood at ₹53,989 crore; the management expects this to cross ₹60,000 crore by the end of 2019-20. By the end of 2021-22, REB is expected to touch nearly ₹86,000 crore. As more projects are commissioned, the investments made by NTPC in them will start earning returns and add to the cash balance

*****