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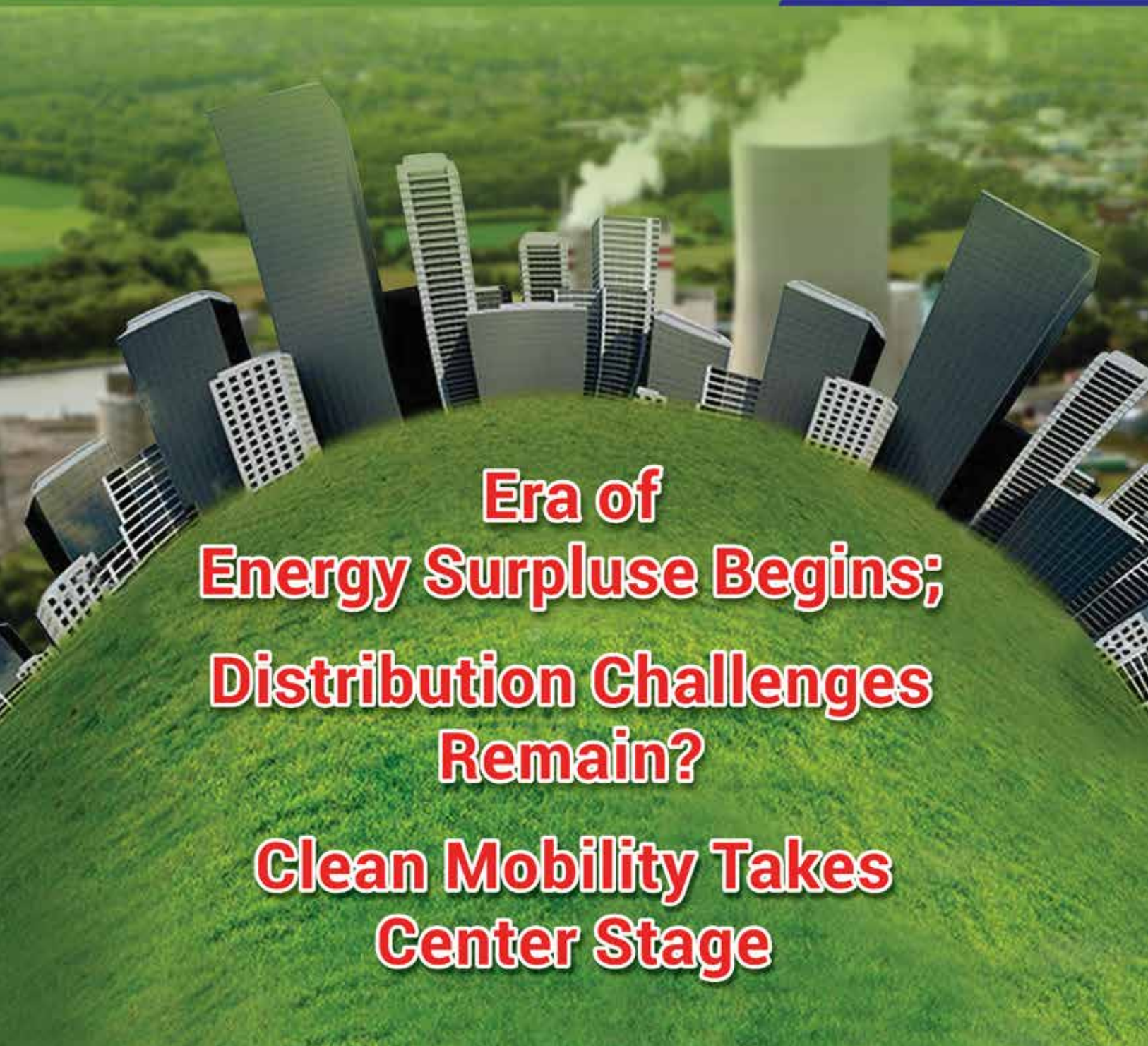


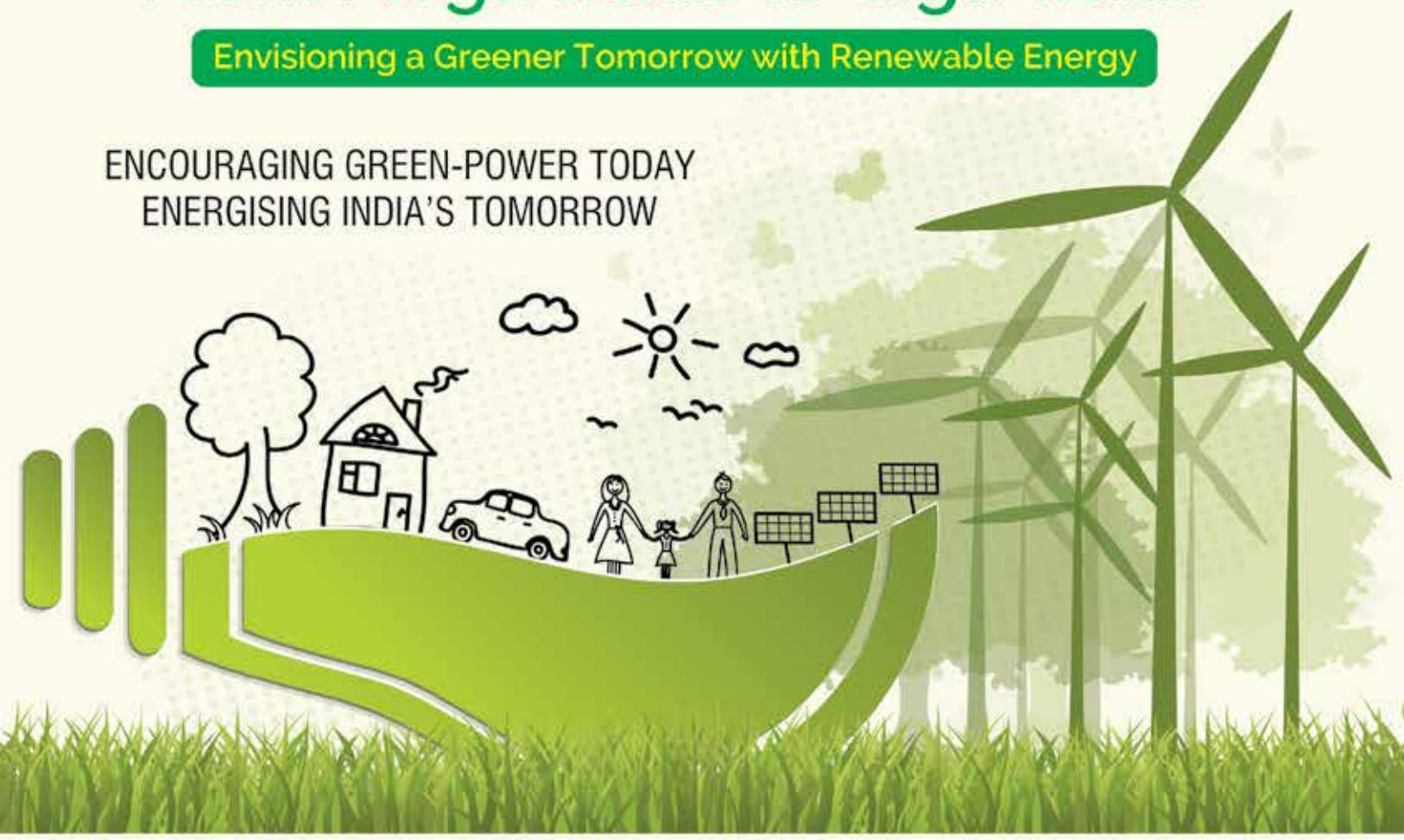
Era of Energy Surpluse Begins; Distribution Challenges Remain?

Clean Mobility Takes Center Stage

From Mega watts to Giga watts

Envisioning a Greener Tomorrow with Renewable Energy

ENCOURAGING GREEN-POWER TODAY
ENERGISING INDIA'S TOMORROW



Energy for Ever

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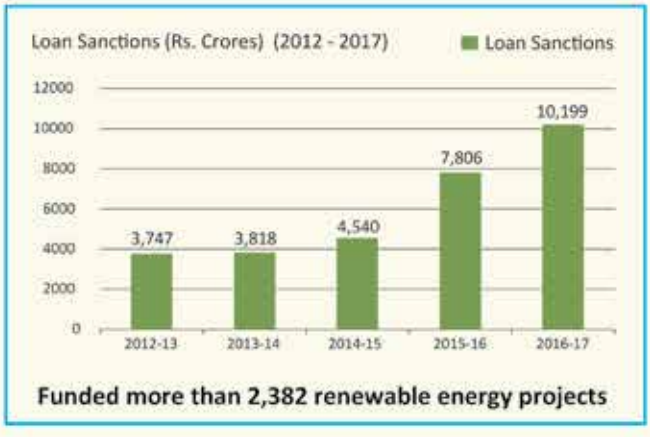
- 4th largest wind installations in the world
- One of the largest solar programs in the world with planned capacity of 100 GW by 2022
- All IREDA funded projects are helping in avoiding CO_2 emissions



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The Economic Survey 2018 Flags Some Key Energy Issues

Although the Survey is positive about the future economic growth of the country, it has flagged some issues which may have serious impact or which need revisiting. Some important issues are:

Oil Prices

Rising oil prices is one of the biggest risks to the Indian economy next fiscal year as it could crimp real incomes and spending.

India has benefited from the low oil prices for the last three years but about 45% rise in crude prices since the middle of 2017 appear to wipe out that advantage.

"It is estimated that a $10 per barrel increase in the price of oil reduces growth by 0.2-0.3 percentage points, increases WPI inflation by about 1.7 percentage points and worsens the current account deficit by about $9-10 billion dollars," the Survey said.

The average prices of Indian basket of crude oil have risen by around 14% per cent so far in 2017-18 compared to 2016-17, and could rise further by another 10-15% per cent in 2018-19, according to the Survey.

"(The higher prices) will crimp real incomes and spending—assuming the increase is passed on into higher prices, rather than absorbed by the budget through excise tax reductions or by the oil marketing companies," the Survey said. "And if higher oil prices require tighter monetary policy to meet the inflation target, real interest rates could exert a drag on consumption."

The Survey sees the risk of oil prices going higher if Saudi Arabia, in coordination with Russia, were to undertake 'aggressive output cuts' ahead of the planned listing of the Saudi Arabian oil company, Aramco.

Subsidies to Renewable Sector

The Government, so far, has played an active role in promoting adoption of renewable energy resources by offering various incentives such as generation-based incentives, capital and interest subsidies, viability gap funding, and concessional finance.

Renewable energy has been placed under priority sector lending and bank loan for solar rooftop systems is to be treated as a part of home loan/home improvement loan with subsequent tax benefits.

The Government may revisit incentives and subsidies for the renewable energy sector as the tariffs have been falling to almost match the levels of thermal power.

"There is a case for revisiting the subsidies and incentives being given to the renewable energy sector," said the Survey. "Currently, the levelised tariff is approaching grid parity," it said. The industry is now bracing for an overhaul of incentives and subsidies, and this could impact their pricing.

"The government is definitely not encouraging renegotiation of PPAs (power purchase agreements)," a leading renewable energy developer said on condition of anonymity. "In the same spirit, taking back the incentives given to projects already may not be tenable, because it might lead to legal trouble," the developer said.

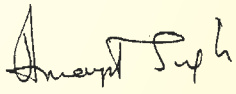
"Going forward, it looks like the intent is to take away the incentives. So people in business will go back and do their maths once more, because there is a correlation between the incentives and prices. It remains to be seen how much they are pulling out and which area is being affected."

Impact on Agriculture

The Economic Survey 2017-18, said farmer income losses from climate change could be between 15% and 18% on an average, rising to anywhere between 20%-25% in unirrigated areas of the country.

"Applying IPCC (Intergovernmental Panel on Climate Change)-predicted temperatures and projecting India's recent trends in precipitation, and assuming no policy responses, give rise to estimates for farm income losses of 15% to 18% on average, rising to 20%-25% for unirrigated areas," pointed out the Survey.

Mr. T K Arun of Economic Times says that, what the Survey does not spell out is that "India's political economy is at the root of many ills. States have taken on the debt of electricity boards, raising the fiscal deficit, because they lack the guts to stamp out power theft. Banks have huge bad loans partly because projects are inflated, to divert money".



Amarjit Singh

SECTORAL NEWS

India's comprehensive National Energy Policy to be out soon, PM

Prime Minister Narendra Modi said India will soon have a comprehensive national energy policy and lauded the country's clean energy programme under which renewables energy generation capacity has doubled in the last three years.

He was speaking at the Global Entrepreneurship Summit 2017 held in Hyderabad. "We are working on developing a national gas grid and a comprehensive National Energy Policy is also in the pipeline," Modi said.

The governments National Energy Policy (NEP) aims to chart the way forward to meet PM Modi's bold announcements in the energy domain. The four key objectives of the new energy policy include access at affordable prices, improved energy security and independence, greater sustainability and economic growth.

The policy is being formulated by NITI Aayog, the country's think-tank, and the draft NEP has already been released for stakeholder comments. Oil Minister Dharmendra Pradhan while speaking at an event emphasised the need for an umbrella energy policy which will bring about synergy in the work being done by the five energy ministries in the country.

"The biggest challenge in front of the country is creating an over-arching policy which is able to bring synergies among the five energy ministries in the country and a long-term comprehensive energy policy till 2040," Pradhan said while addressing Enrich 2017, KPMG India's annual energy conclave.

The government is currently working on a plan to develop 14,765 Km of additional pipeline infrastructure as part of a larger goal to shift to a gas-based economy and increase the availability of natural gas across the country.

Currently, the country has over 15,000 km of natural gas pipeline infrastructure and an additional 15,000 kms of pipeline is required for completion of the National Gas Grid.

Cars should Run on Biofuels

Nitin Gadkari

Union transport minister Nitin Gadkari pushed for greater usage of biofuels to reduce India's annual oil import bill of Rs 7 lakh crore, putting the onus on local car makers to make more vehicles that can run on fossil-fuel substitutes.

The minister's exhortation comes a day after the GST Council recommended reducing the producer levy on biofuels to 12% from 18%, a move seen to simultaneously support the farm sector and use cash saved on oil imports to help achieve New Delhi's social-sector objectives.

"It is part of my conviction. We are importing crude oil worth Rs 7 lakh crore," Gadkari told top banking and capital-markets experts during a discussion at the ET Markets Pre-Budget Meet in Mumbai. "We don't need a timeframe. This is going to happen regardless of whether our auto industry likes it or not. They have to accept it." India imports more than four-fifths of its crude oil needs.

Cut Crude Oil Import Bill by $100 Bn - NITI Aayog

The government is working on a policy to bring down the annual oil import bill by USD 100 billion by 2030 through extensive use of methanol in cooking gas and transportation fuel, Union Minister Nitin Gadkari told Lok Sabha.

The government was "shortly" going to implement

a scheme under which 15 per cent methanol will be blended with petrol and which will reduce the cost of the fuel by 10 per cent, the Road Transport Minister said during the Zero Hour. India is the third biggest oil importer globally and the government has been making efforts to bring down imports by using alternative fuels such as methanol. "The final roadmap for 'Methanol Economy' being worked out by NITI Aaayog is targeting an annual reduction of USD 100 billion by 2030 in crude imports in line with our PM's vision," Gadkari said. He said a cabinet note on use of methanol in marine and water transport sector will be moved shortly.

Mr. Gadkari Minister, said use of methanol can result in "great environmental" benefits, adding its extensive use can reduce consumption of diesel by at least 20 per cent in next 5-7 years. Gadkari said 20 per cent blending of methanol with cooking fuel LPG will be low hanging fruit as it would result in an immediate savings of Rs 6,000 crore a year. Talking about the possible use of methanol in Railways, he said it can result in 50 per cent reduction in its diesel bills. Indian Railways consumes about 3 billion litres of diesel annually, costing Rs 15000 crore, he added.

Tax Uniformity on Petroleum Products Needed

Dharmendra Pradhan

Oil Minister Dharmendra Pradhan said he has requested the Ministry of Finance to bring petroleum products under the ambit of Goods and Services Tax (GST) in the interest of consumers. Justifying the move, he said there has to be a "uniform tax mechanism" all over the country. "This is the proposal of the Ministry of Petroleum. We have appealed to all the states and finance ministry (to bring petroleum items under GST). Looking into the consumer interest, there must be tax rationalisation. GST is a well thought mechanism by the Government of India and the states, they developed the GST Council.

"There are two kinds of taxes (on petroleum products). One is the central excise and the other one is state VAT. That is the reason we are expecting uniform tax mechanism from the industry point of view," Pradhan told PTI.

Justifying the daily price mechanism which is in place for petrol and diesel, Pradhan said states are getting 42 per cent share in whatever levy is being collected by the Centre and clarified domestic rates are determined by international prices.

"There is no communication gap or mismatch (between domestic and global prices). Whatever is the international price we are passing exactly that to the Indian consumer. When it is increasing, we have to increase, when it is declining we have to decrease it. That is the practice in the country."

Global Energy Meet

India to showcase oil reforms

India will showcase its oil sector policy reforms and investment opportunities at the 16th International Energy Forum (IEF) Ministerial, slated for April in New Delhi where scores of ministers, top officials and industry executives from across the globe are expected to participate, oil minister Dharmendra Pradhan said.

IEF, comprising 72 member countries, is one of the biggest global forums of oil and gas producers and is currently headed by Saudi Arabia.

Prime Minister Narendra Modi will inaugurate the ministerial to be held from April 10 to 12. China and South Korea are the co-hosts.

Ninety percent of oil and gas producers and

consumers would be represented at the event, which would thus be a good opportunity to present India as an investment destination, Pradhan said. The issue of "reasonable and responsible pricing" and Indian demand of junking the so-called Asian premium will also be discussed, he said.

Boosting Oil, Gas Output

The government floated a draft policy for boosting oil and gas output through projects using Enhanced Oil Recovery (EOR) techniques proposing major fiscal incentives including 50 per cent waiver of oil cess and reduced profit petroleum sharing for companies.

The draft "Policy Framework to Promote and Incentivize Enhanced Recovery Methods" floated by upstream regulator Directorate General of Hydrocarbons (DGH) has also proposed an incentive equivalent to 10 per cent of gas wellhead price on the gross production of gas from approved Enhanced Gas Recovery (EGR) projects for a period of 10 years.

The proposed policy for incentivizing EOR and Enhanced Gas Recovery (EGR) projects is aimed at arresting the declining oil and gas production of the country and meeting Prime Minister Modi's target of reducing the country's costly oil imports by 10 per cent by 2022.

"Average recovery factor from the oil and gas fields in India has remained below the global average and most of the major producing fields are ageing. As a part of the wider 'Energy Security' program, the government has set a goal to reduce 10 per cent of crude oil imports by 2022. EOR/EGR/Unconventional hydrocarbon production techniques have been envisaged as potential solution to increase domestic production," the draft policy states.

The draft policy has also provided for incentives under mixed projects as well as for production for shale oil, tight oil, oil shale and gas hydrates. Also, besides EOR and EGR any efforts made to increase production of oil and gas beyond 50% of current recovery for oil fields and beyond 75 per cent for gas fields will be considered as an ER process.

India, China, Huge Markets for LNG

IEA chief

There is a huge opportunity for the US to export LNG to India and China in the next five years as they push to replace coal, the head of the International Energy Agency has said as he highlighted the growing importance of the two nations in the energy market.

Fatih Birol, executive director for the agency, said both India and China use gas at a minimum level.

Globally, the share of gas in the global energy mix is about 25 per cent, and in both these countries, it is less than or around 5 per cent only.

"So, there's a big gap between the world average and them," Birol told US lawmakers during a hearing on domestic and global energy outlook held by Senate Committee on Energy and natural Resources.

"And both of them are facing major challenges in terms of environment, namely, local pollution in the cities. And this is an issue for both of these countries and others -- a reason for social unrest, in fact," he said, insisting that there is a huge opportunity to export Liquefied natural gas (LNG) to India and China in the next five years.

The Oil and Gas outlook 2018: Moody's and S&P

Moody's and S&P predict average oil price to be around $55 per barrel (b), whereas Goldman Sachs and Credit Suisse are predicting Brent price to be $62 and $60 per barrel in 2018.

The Oil & gas industry in 2018 received stimulus through upward oil and gas price corrections resulting in renewed interest in upstream investment. Downstream companies generated desirable returns

to remain in the hunt for growing business. Oil price showed less volatility in 2017, presented rising signs primarily owing to production cuts of around 1.8 million barrels per day (bpd) by both OPEC and some Non-OPEC producers. Moody's and S&P predict average oil price to be around $55 per barrel (b), whereas Goldman Sachs and Credit Suisse are predicting Brent price to be $62 and $60 per barrel in 2018. EIA forecasts Brent spot prices to average $57/b in 2018, up from an average of $54/b in 2017 and West Texas Intermediate (WTI) crude oil prices are forecast to average $4/b lower than Brent prices in 2018.

Based on emerging geopolitical factors, OPEC and some Non-OPEC oil producers' cohesive agreement to production cuts throughout 2018, Hedge funds are backing higher oil prices in 2018. WTI crude (Nymex) and Brent crude (ICE) were trading at $ 60.89/bbl and $67.09/bbl respectively, registering a rise of 23 percent and 16 percent over the previous year. The World Bank predicts Oil prices to average $56/b in 2018, higher than the average price in 2017. On the contrary, BofA Merrill Lynch 2018 predictions for WTI and Brent prices are $52/b and $56/b respectively, lower than their 2017 predictions. BofA Merrill Lynch predicts U.S. natural gas prices to average $3.30/ million BTU in 2018.

EIA projects US oil production to reach 10.0 million b/d in 2018, which could balance out production cut by the OPEC and Non-OPEC allies. Despite higher production from US, emerging global demand-supply scenario suggests that crude oil buyers will have to pay higher price in 2018 compared to 2017. Oil price recovery started towards the end of 2016 continued through 2017 and most likely stay on course in 2018.

Oil Markets in 2018

The two most critical forecasts of global oil markets offer contrasting visions for 2018: one in which OPEC finally succeeds in clearing a supply glut, and another where that goal remains elusive. In the estimation of the Organization of Petroleum Exporting Countries, production curbs by the cartel and its allies will finally eliminate the excess oil inventories that have depressed crude prices for more than three years. But in the view of the International Energy Agency, which advises consumers, that surplus will barely budge.

"Both cannot be right," said Ole Sloth Hansen, head of commodity strategy at Saxo Bank A/S in Copenhagen. "Whichever way the pendulum swings will have a significant impact on the market."

OPEC and Russia have eliminated almost two-thirds of a global glut this year as the former rivals jointly constrict their crude production to offset a boom in U.S. shale oil. At the heart of the clash between the 2018 forecasts is whether the alliance can deplete the rest of the overhang without triggering a new flood of American shale.

Both the IEA and OPEC agree that the coalition's cuts are working. The surplus oil inventories in developed nations -- OPEC's main metric for gauging success -- fell to 111 million barrels in October, from 291 million last November, according to the Paris-based IEA, established in 1974 in the wake of the Arab oil embargo.

Gas Exploration License in Israel

Israel will award an exploration license to a consortium of Indian state firms led by ONGC Videsh in an auction of its offshore gas fields that saw tepid response from global companies.

The decision to award the license, came just ahead of Israeli Prime Minister Benjamin Netanyahu's mid-January visit to India. The consortium of ONGC Videsh, Bharat Petro Resources, Indian Oil and Oil India will be granted an exploration license while Greece's Energean will receive five licenses, Israel's Energy Ministry said in a statement.

Indian consortium and the Greece firm were the only

bidders in the 1st Israeli Offshore Licensing Round that closed last month. The auction, launched in November 2016, was extended twice to attract more bidders. It offered 24 blocks with an estimated in-place reserve of 6.6 billion barrels of oil and 2137 billion cubic meters of natural gas.

Fuel Demand Growth Estimate Cut

India has cut its annual fuel demand growth estimate to 4.5 percent for 2017/18 from 5.8 percent, government data showed, indicating slower economic activity. The new forecast puts fuel demand growth at its slowest pace in three years.

India, the world's third biggest oil consumer, is expected to consume 203.4 million tonnes of refined products in the year to March 2018, data posted on the website of the petroleum ministry's Petroleum Planning and Analysis Cell showed. Introduction of a new tax regime had dented India's economic growth earlier this year. The country's central bank estimates the economy to grow at 6.7 percent in this fiscal year, its slowest pace in four years.

Gasoline consumption is seen growing at 9.8 percent, higher than the previous year, the data showed, reflecting a likely 9 percent rise in passenger vehicle sales. Diesel demand is estimated to recover and grow by 5.8 percent, compared to a 1.8 percent rise in the last fiscal year, mainly due to rising construction activity and local manufacturing. India is promoting use of liquefied petroleum gas, used for cooking, to replace kerosene and that would raise sale of the cleaner fuel.

World Bank to Cease Financing Upstream Oil and Gas After 2019

The World Bank will no longer finance upstream oil and gas projects after 2019, apart from certain gas projects in the poorest countries in exceptional circumstances, it said, drawing praise from environmental groups.

The announcement came as French President Emmanuel Macron told dozens of world leaders and company executives at a climate summit that they were losing the battle against climate change and needed to react.

"The World Bank ... has sent a damning vote of no confidence to the future of the fossil fuel industry," Greenpeace International climate campaigner Gyorgy Dallos said, challenging banks to follow suite.

Stephen Kretzmann, of the Oil Change International advocacy group, said it was time for all of the institutions, countries, investors and individuals who are still in the Paris Agreement to stop funding fossil fuels.

BPCL Aims To Spend Rs 1 Lakh Crore in 5 Years

Mr. D Rajkumar
CMD, BPCL

Bharat Petroleum Corporation will use its enhanced financial powers after acquiring 'maharatna' status to expand value chain and aim for a capital expenditure of over Rs 100,000 crore over next five years, Chairman D Rajkumar told ET in an interview. The company's key focus would be to expand its upstream and petrochemicals businesses. While BPCL aims to generate at least 5 per cent of revenue from non-fuel businesses, it has adopted a wait-and-watch strategy towards the push to electric vehicles and is taking measured steps in solar electrification of retail outlets.

We will have enhanced capacity to invest up to Rs 5,000 crore in a project. With the 'maharatana' status, we can look at larger projects and expand our value chain. We would be looking seriously at expanding our

petrochemicals business and investing in upstream to acquire some assets.

We will take up large projects but the focus would be on profitability. For instance, average sale at BPCL retail outlets is higher than the industry average, and we would want to continue that way. In petrochemicals too, we would look at high-margin products that can boost profits.

Mega Refinery

Edited Excerpts from an interview by Chairman Indian Oil Corporation Mr. Sanjiv Singh

Rationale If we look at the present demand numbers, last year the total domestic consumption of petroleum products was 194 mt. The country has an installed capacity of 230 mt, and refiners process a little over 240 mt. That may be a discount of nearly 9 to 10 per cent of internal fuel from refining capacity, although we have surplus. But that is not probably significant enough even today. Especially on the transportation fuel, you discount petcoke, sulphur, bitumen and fuel oil.

We are adequate if we discount the heavier product, in terms of transportation fuel. And if the same happens with Reliance Industries' 30 million tonnes export oriented refinery, the country is just self-sufficient. Either we take the call to import the products, or decide to build our own capacity, which can be done either by greenfield refinery, or by expanding existing capacity. Both have their own advantages. Capacity addition can be low cost and faster, but will be limited, especially when refineries are upgrading to BS VI. So, we strongly feel that 10 years down the line, there would be a deficit, if we don't build more capacity today. There would be a demand for more, and we have to be ready.

Impact of green fuel, electric vehicles

It is true that other forms of energy are also coming. Gas is taking a significant portion as far as transportation fuel is concerned, and tomorrow it will be also used as feedstock. It's not just CNG, but LNG is also coming in. We are hearing about a similar change in electric vehicles. Apart from that, even the transportation business models may change. The efficiency of the existing engines will improve with time. It will also impact the demand. Building our own capacities has its own advantages. We import crude from a variety of sources. If we depend upon product import, probably the sources will be lower than the crude ones. Secondly, it has indirect advantages like growth in ancillary industries, employment generation, and capability within the country.

Out-dated refineries

It is true that many of our refineries have aged. We have the oldest one in Digboi, Assam. But, if you look at the refineries then probably everything has been upgraded. All are digitally controlled, and making Euro IV or BS IV products, and are being upgraded to BS VI. Apart from their nameplate year or year of commissioning, probably everything has been continuously upgraded. But, upgradation has its own limitation, like the Barauni refinery, which is a 6 million tonnes one operating three units. By any standard, these units are very small. Baroda has a 13.7 million tonne refinery, operating seven crude units. When we are upgrading, we are revamping these refineries to large single units. We are revamping Barauni to 9 million tonnes and it will be a single 9 million unit.

It is not only that we are creating new capacity, we are also modernising these refineries in a true sense.

Standalone refinery Seeing the uncertainty of tomorrow, it is extremely logical to have an integrated refinery today, with required flexibility.

For the time being there are three partners. 50 per cent is with Indian Oil and 25 per cent each with Hindustan Petroleum Corporation Ltd and Bharat Petroleum Corporation Ltd. We have an understanding that the fuel products will be marketed by the three companies in the same way. The petrochemical products will be marketed by the joint venture itself. We are open to take a strategic partner, as time goes by.

Fuel Trade with Bangladesh, Myanmar

Indian Oil Corp, the nation's largest refiner and fossil fuel retailer, in in talks with Bangladesh and Myanmar to enhance trade of petroleum products and offer its expertise to set up oil infrastructure in the two countries.

Indian Oil will open offices in Bangladesh and Myanmar, with a plan to closely pursue business opportunities in the two countries. "For the neighbouring countries, we are not only looking for business, we are looking for association beyond business. Because these countries are also facing similar problems which we have encountered in past, we will be happy to share our experience with them and help them in solving whatever problems they are facing," Indian Oil Corp Chairman Sanjiv Singh told ET.

The first thing that may materialise in a month or so is a deal for liquefied petroleum gas (LPG), or cooking gas, under which Bangladesh would export LPG to Indian north-eastern states. "We are working on concepts that their trucks can come to India and give us LPG. Rather than we trying to feed those parts of North-East, all along from Haldia, it makes tremendous sense (to depend on Bangladesh trucks for supply)," Singh said. Bangladesh imports all LPG it needs, and the plan is to augment import for supply to North-Eastern states.

Indian Oil also plans to offer petrol, diesel and other petroleum products it produces at its coastal Paradip refinery to Bangladesh and Myanmar. Recently it sold spot cargoes of diesel and jet fuel to Myanmar and is hoping to strike long-term deals with the two countries for product supplies.

We need balance Growth : M.K. Surana, HPCL

Edited excerpts interview with ET.

Prices marketing margins I have said that the actual oil prices in India is a function of three things. One thing is what the international crude prices are, the product prices and the exchange rate is, the cracks on the products and the international prices in the market. We also need to balance the consumer comfort, the government budget and the company's financials.

Blended marketing margins it will be incorrect to keep on calculating the blended marketing margins on a day-to-day basis because what you people may be doing is that the actual selling price minus the crude prices or the refinery transport prices and that is the marketing margin. Then there is a marketing expenses, etc, taxation and the deals margin. As far as the oil companies are concerned, if your concern is for the health of marketing companies, as far as LPG and kerosene are concerned, they are controlled products and under recoveries are reimbursed by the government.

Price Hike of LPG and kerosene No, as far as domestic LPG and PDS kerosene are concerned, under recoveries are reimbursed by the government. It does not affect the financials of the companies.

Oil prices As far as the crude prices are concerned,

they are hovering around $65 right now. Sometimes, it goes to $67 but generally it is around $65 right now. Now the cuts in crude production which was announced by OPEC and non-OPEC countries, there being a reasonable compliance, has been extended till December 2018.

Mr. B Ashok Appointed CEO of Ratnagiri Refinery and Petrochemicals Ltd

Former chairman of Indian Oil Corporation B Ashok has taken over as the first CEO of the company that's setting up the world's biggest refinery on the west coast.

Ashok retired from Indian Oil six months ago after serving as its chairman and managing director for three years, during which the idea of setting up the 60 million tonnes refinery on the Maharashtra coast was conceived.

"It will be a great project, and do wonder for the industry and the country," Ashok said. "Technical configurations are being finalised. And the process of land acquisition is underway."

ONGC Buys 51.11% Stake in HPCL for Rs 36,915 Crore

Oil and Natural Gas Corp (ONGC) announced acquisition of government's entire 51.11 per cent stake in oil refiner HPCL for Rs 36,915 crore, paying a premium of over 10 per cent. ONGC will pay Rs 473.97 per share for 77.8 crore shares of the government in Hindustan Petroleum Corp Ltd (HPCL), the company said in a stock exchange filing. The price it is paying is 14 per cent higher than Friday's closing price of HPCL and over 10 per cent of the 60 -day weighted average of the scrip.

The transaction, which will help the government cross its annual sell-off (disinvestment) target for the first time ever, has been executed through an off-market deal. While the government started off talks for selling controlling stake in the country's third largest oil refining and fuel marketing company, seeking about Rs 1 lakh crore on grounds that an open sale would fetch no less than that, what ONGC paid was far less.

ONGC's own valuation adviser EY had put HPCL's valuation at Rs 475 a share plus a premium for getting the controlling stake, sources privy to the negotiations said. The outside advise the company took from Citi put the price at Rs 500 per share. ONGC negotiated hard and brought down the acquisition price, they said adding the company would do short-term borrowing to fund the acquisition that would be an all cash-deal to be completed by end of the month.

ONGC Discovers Oil & Gas In Arabian Sea

Oil and Natural Gas Corp. (ONGC) has made a significant oil and gas discovery to the west of its prime Mumbai High fields in the Arabian Sea, Oil Minister Dharmendra Pradhan said.

In a written reply to a question in the Lok Sabha, he said the discovery was made in the well WO-24-3 (WO-24-C) drilled west of Mumbai High fields. Though a holiday was declared for Parliament, replies to questions were posted on the Lok Sabha website.

"Based on the data generated during drilling, 9 objects/ zones were identified and on testing all the objects flowed oil/gas," he said. The discovery has indicated potential in-place reserves of about 29.74 million tonnes of oil and oil equivalent gas, he said.

ONGC is carrying out a further appraisal of the discovery and has intimated upstream regulator the

Directorate General of Hydrocarbons (DGH). The new find, which comes almost 50 years after ONGC began production in Mumbai High, will help the company maintain production levels from the basin for a longer time than currently estimated.

Crude Oil Prices to be Under Pressure in First Half of 2018: S&P

Oil prices are expected to come under some pressure in the first half of 2018. Crude oil prices rose after key Opec ministers expressed a preference for extending crude output cuts until the end of next year.

The benchmark US crude was up by 0.7 per cent to $57.69 per barrel on the New York Mercantile Exchange. Brent crude, used to price international oils, gained by 1.1 per cent to $63.20 in London. The gap between WTI and Brent oil has however marginally reduced following increased demand for US, that is WTI, oil due to high Brent prices.

S&P Global ratings says oil prices are likely to remain range-bound supported by Opec cuts and capped by US shale growth.

More and Better Oil Refineries Needed, IEA

Two years ago, the International Energy Agency said that India was moving to the centre stage of global energy markets. This prediction, found in the World Energy Outlook Special Report on India, is now increasingly evident across many parts of the energy sector, including in oil refining.

Moreover, given the projected increase in Indian oil demand in the next decades, its large refining industry, like many other parts of its energy sector, have the opportunity to play a role in improving the country's environmental footprint.

Rising incomes and higher car ownership mean that the number of passenger cars in India could be eight times higher in 2040 than it is today. While a growing share of these cars are likely to be fuelled by alternatives to oil, particularly if the push for electric cars gains further momentum, combustion-engine vehicles will remain the baseload of India's consumption for many years to come.

Twin challenges

Today, India's oil refining capacity of about 5 million barrels per day (mb/d) exceeds the country's demand for oil products, resulting in exports of more than 1 mb/d. But the expected sharp rise in demand for mobility could more than double demand for refined products to nearly 10 mb/d by 2040. This surge poses twin challenges for India. In IEA projections, India becomes a net importer of oil products in the not-too-distant future notwithstanding the excellent progress that is being achieved in increasing upstream investment through India's new Hydrocarbon Exploration Licensing Policy. Also, more oil burned for transport means more emissions in towns and cities across the county. This is a pressing issue for India where around 500,000 people die prematurely every year due to poor air quality.

But India can stem the growth in refined product imports and reduce air pollution at the same time. It is trying to minimise the impact of demand growth on the environment, particularly on air quality. The Government announced plans to move to full electric vehicle sales by 2030. Some vehicle fleets are also switching to natural gas. And India is one of a small number of countries, along with Canada, China, Japan and the US, that have introduced fuel-efficiency standards not only for cars but also for trucks.

The Government plans to move to an even more stringent standard by 2020 that limits sulphur content in transportation fuels to less than 10 ppm. The adoption of this BSVI standard, which leapfrogs BS V

entirely, was brought forward in New Delhi by two years to address serious pollution concerns.

The tightening of emission standards for transport fuels is a welcome development for India's sustainable future. However, its successful implementation depends in large part on the capability of domestic refineries to meet the more stringent BS VI standard. In the IEA's latest World Energy Outlook projection, India's refining capacity grows by around two-thirds over the next 25 years, adding some 3 mb/d of new capacity. As a result, India becomes the world's third-largest refining centre by 2040, behind the US and China. Headline capacity growth is important for India's energy future.

Reliance Projects in Bangladesh

ADB Agrees to Support

The Asian Development Bank's (ADB) board of directors has approved debt financing and partial risk guarantees totalling $583 million to develop Reliance Power's liquified natural gas (LNG) terminal and a 750-MW power project in Bangladesh.

The project, which includes a power generation facility to be located in Meghnaghat, near the capital city of Dhaka, and an LNG terminal near Kutubdia Island, south of Chiitagong, will significantly increase power generation and improve energy infrastructure in Bangladesh. ADB's financing package includes loans and partial risk guarantees for the power generation facility, as well as for the LNG terminal. The total project cost is approximately $1 billion. The company shares were trading down by 0.95 per cent at Rs. 36.40 on the BSE.

Six Firms Show Interest in 55 Oil, Gas Blocks on Offer

India is testing new waters in the oil and gas exploration segment with the launch of bids for the Open Acreage Licensing Programme (OALP), which allows companies to pick their own areas for hydrocarbon exploration.

Sounding optimistic, Oil Minister Dharmendra Pradhan said: "This is the first time that bidders have carved out blocks for themselves. This is also the first time that Uttar Pradesh and Haryana will be added to the oil and gas exploration geography." Pradhan's enthusiasm also stems from the spike in crude oil prices, which normally results in a surge in interest in a hydrocarbon hunt.

Asked how he perceives the response so far, Pradhan said: "India does not have a very prolific geology, but despite this, bidders have carved out 59,000 sq km of promising basins (indication enough)," he added. Fifty-five bidder-selected blocks were announced for bidding. This is the largest offering of acreage the government has announced in the past eight years.

"Six companies have expressed interest for the 55 blocks on offer," Atanu Chakraborty, Director General, Directorate General of Hydrocarbons, told reporters on the sidelines of the conference to launch the bids. While both the Minister and DGH refused to divulge the names of players who have envisaged interest, indications are that ONGC and Cairn were the most aggressive bidders.

While most of the mandatory clearances from the Ministries of Defence and Home Affairs have been received for most blocks, environmental clearances will have to be obtained by the operators. OALP will be conducted on the closed envelop format unlike the coal bids . "The EoI that carved out the block did not have a commercial bid component. The bidders will not know the number of bids or the revenue commitment received for a block. This will be decrypted only when the bids are opened," said Chakraborty.

Bidding for 55 Oil and Gas Blocks

India kicked off the bidding for the first round of Open Acreage Licensing programme (OAL), in which 55 blocks will be up for grabs.

This is the first major bidding round in India after the National Exploration Licensing Policy (NELP) round in 2010.

The bids will be closed on April 3, while blocks will be finally awarded by May. Releasing the notice inviting offers (NIO) for the blocks, covering an approximate area of 59,282 square kilometer, petroleum minister Dharmendra Pradhan said, “This bidding has seen many firsts, which included the fact that bidders carved out the area. Bidders have shown interest for the substantive area of 60,000 square kilometers, while in earlier times it used to be 25,000 sq km. The process will continue until April 3.”

The highlights of the round include a single licence for all forms of hydrocarbons and simplified revenue sharing model with marketing and pricing freedom. Pradhan added that at a time when the environment is investor friendly, the aim of the government is to bring maximum revenue to the exchequer.

“Now, bidding will be there twice in a year. The first time, activities have increased in Kutch offshore. It is a sign of collective effort. investors have shown keenness in Himalaya, Himachal Pradesh, and Uttar Pradesh too,” he said.

India Surpasses China as LPG Importer

India is set to surpass China as the biggest importer of liquefied petroleum gas (LPG) this month as a drive to replace wood and animal dung fires for cooking boosts consumption. Shipping data in Thomson Reuters Eikon shows LPG shipments to India will reach 2.4 million tonnes in December, pushing it ahead of top importer China, on 2.3 million tonnes, for the first time.

India’s LPG purchases have surged from just 1 million tonnes a month in early 2015 on the back of a government program to bring energy to millions of poor households relying on open fires. “The growth in India is amazing. The fact that they have grown from 140 million subsidized household connections in 2015 to 181 million now is very impressive,” Ted Young, chief financial officer at Dorian LPG told Reuters.

India’s average monthly imports in 2017 of about 1.7 million tonnes are well still behind China’s 2.2 million tonnes, but it has jumped ahead of third-placed Japan on about 1 million tonnes. Dorian LPG expects “plenty of upside for Indian LPG” imports due to rising use in cars following an Indian tax on gasoline, the company said in a presentation this month. China, India and Japan together make up about 45 percent of global LPG purchases.

World Oil Demand Could Peak In 2024 Goldman Sachs

Global oil demand could peak as early as 2024 if there are more efficiency gains in vehicles, greater market penetration by electric cars, lower economic growth and higher fuel prices, Goldman Sachs said in a research note on refining.

Economic expansion in emerging markets - led by India - may stave off reaching a peak until 2030, although demand growth will still slow over the next decade given improving mileage in cars and trucks and the greater use of electric vehicles, research analysts from the investment bank said. The global electric fleet, for instance, is expected to grow more than 40-fold to 83 million vehicles by 2030, from 2 million in 2016, the researchers said in the note.

“In our extreme case, we project peak oil demand in 2024,” the Goldman analysts said. Goldman Sachs projects annual oil demand growth between 2017 and 2022 at 1.2 percent, slowing to 0.7 percent by 2025 and to 0.4 percent in 2030. Oil demand grew by an annual average rate of 1.6 percent over 2011 to 2016.

US Could Become World's Oil King in 2018: Rystad Energy

The US could become the oil world's new king in 2018 as it was poised to ramp up crude oil production by 10 per cent to about 11 million barrels per day, according to a report. By research firm Rystad Energy said surging shale oil output should allow the US to dethrone Russia and Saudi Arabia as the planet's leading crude oil producer, reports CNN. The US has not been the global leader, nor ahead of both Russia and Saudi Arabia, since 1975.

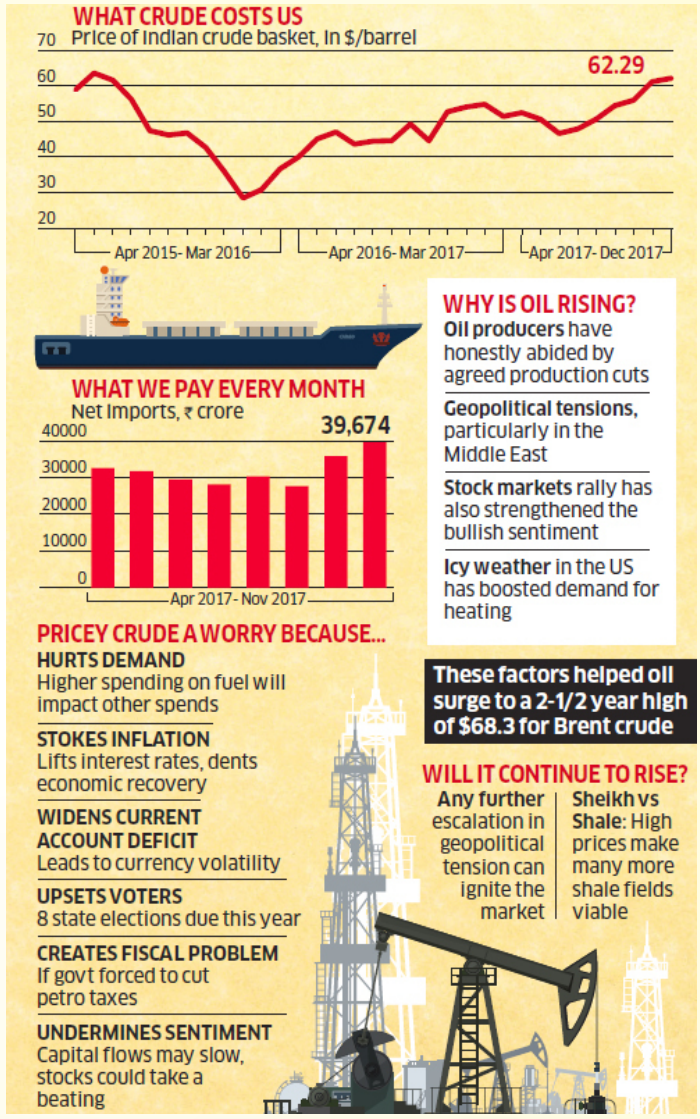
"The market has completely changed due to the US shale machine," said Nadia Martin Wiggen, Rystad's vice president of markets.

The prediction shows how the fracking revolution has turned the US into an energy powerhouse -- a transformation that President Donald Trump vowed to accelerate by cutting regulation. This long-term shift has allowed the US to be less reliant on foreign oil, including from the turbulent Middle East, the report said.

Oil's Not Well, Crude Worry on Horizon

International crude prices have rebounded to a two-and-half year high, almost doubling from the 11-year low they had hit in July 2015.

Being a major importer, India reaped big dividends from low prices, but worries are beginning to mount now. ET explains



Discoms Need to Get Their House in Order: RK Singh

Edited Excerpts

Giving cheap and reliable electricity without creating any turf wars between the producing and consuming States is a challenge before **RK Singh, Minister of State (Independent Charge) for Power and Renewable Energy.** Singh, has set stiff deadlines for his team to meet the targets, including electrification of all remaining inhabited un-electrified villages by this month end, connection to all willing households by December 2018 and infrastructure for seamless power by March 2019. Singh is also focussing on cleaning up the State distribution utilities' balance-sheets.

Rationalising of cross subsidy is not actually a new reform. It was envisaged in the Tariff Policy itself. Section 61 of the Electricity Act mandates that cross subsidy will be brought down and eliminated. The Tariff Policy takes it from there and specifies that cross subsidy should not be more than 20 per cent. But, the fact is that it is not being implemented. We are going to ensure that it is implemented.

Subsidies

Policy decisions regarding subsidies are taken by the State governments. We are saying that if you want to give subsidy, you give it directly to the consumers' account. This allows a clearer accounting and Discoms cannot hide their inefficiency behind the subsidised sector.

Right now if you ask Discoms about their losses, they will point to the agricultural sector, and it acts as an alibi to hide their inefficiencies. Besides, once DBT is introduced, the consumer behaviour will also change. Right now it doesn't make a difference to the consumer if the pump keeps running for seven or eight hours. When you credit that benefit into the account and tell him to pay the bill, then he will watch his consumption.

The existing tariff slabs

Currently, we have a ridiculous situation where there are about 80-90 power tariff slabs. There are different slabs for each sector like agricultural, industrial and consumer. What we can do is create one or two categories in each sector. Like for households we can have a category where a household consuming less than 100 units you can have a slab which is 20 per cent less than the supply cost. The next is neutral category, where the tariff is as per the supply cost. And then there is a third category where the tariff is 20 per cent more than supply cost.

In fact, all States have agreed to bring down losses to 15 per cent or less by January 2019, after which the losses will be capped at this percentage.

Tariff of renewable energy

This perception is artificially suppressed is incorrect. The tariffs have been discovered through open bidding.

Regarding wind projects, the problem is coming from manufacturers, who are saying that they are forced to sell equipment after leaving a margin of 15 per cent for the developer. And that they (the manufacturers) are left with a tariff of only about Rs. 2.15 a unit leading to companies either benching manpower or selling products at a less. We don't want the industry to make a loss, we want them to survive.

Is UDAY a success

Absolutely. In fact, I am going to accelerate it. The deadline is January 2019. By then, the loss must come down to below than 15 per cent. And I mean in

terms of units, not in terms of money. That means if you distribute 100 units, you should be able to realise the tariff for at least 85 units. Beyond that you won't be able to pass it on into your tariffs.

So if you make loss beyond that, then the State government will have to fund it from some other means. There has to be some conditionality that if the Centre is funding critical infrastructure, then the state must bring about efficiency in the power sector. If not then five years down the line, the electricity distribution infrastructure will at the same place where we started.

Power Plants must Follow Norms: Moef

The Ministry of Environment and Forests (MoEF) has assured the National Green Tribunal that it would not grant clearance to any new thermal power plant until they comply with the standards set by it, after a plea alleged that many plants were flouting norms and causing pollution.

The Environment Ministry in December 2015 had issued a notification revising the standards for coal-based thermal power plants across the country which aimed to reduce emissions like sulphur dioxide, nitrogen dioxide and particulate matter, besides water consumption. These power plants were given a deadline of December 2017 to install appropriate mechanism and technologies to cut emissions.

Stable Policies and Regulator Required in EV Sector

Mr. Sanjeev Sharma, MD, ABB India

Having a presence in the transport, infrastructure, renewables and the utility space, the Indian arm of Swiss capital goods company ABB is in a sweet spot. ABB India is also closely associated with the electric vehicles (EV) programme in the country.

The automobile world is moving towards EVs, thanks to the governments prodding by setting deadlines. India need to have a stable set of policies. A lot of announcements have been made but the stable policy formation, both on the commercial and design part of it, needs more attention. Here, some forces ask you to adopt the global technology, bring it in, localise it and scale it up like in the case of mobile technology and solar technology, but then there is a second thought going here wherein people have the opinion that we will do a very India-specific solution with either fast charging with batteries mounted in the cars and buses or using removable cassettes. Thirdly, India perhaps needs a regulatory or a design institute which actually defines the standard for this new area that you are entering, because you are making such a huge shift in terms of manufacturing standards, charging standard and how power will be bought and sold.

EESL Invites Bid for 2,000 Electric Vehicle Chargers for Phase II

Energy Efficiency Services Ltd (EESL) has invited a bid for 2,000 electric vehicle chargers for the second phase of its EV programme, which will see the rollout of 9,500 electric vehicles across different states.

"We have invited the bid for 2,000 electric vehicle chargers. We will need more chargers, of course, but we want to do it in phases," **Saurabh Kumar, Managing Director at EESL,** told ET.

EESL, which is a joint venture of PSUs under the power ministry, had floated a global tender for 10,000 electric vehicles to replace the government fleet. The tender was split in two parts, where 500 vehicles were to be procured in phase one, while the remaining would be procured in the second phase.

The roll out of the first 500 cars has already begun in Delhi, and the second phase will see 9,500 electric cars being leased to government authorities on a pan-India basis.

While the previously announced tender for 4,000 electric chargers was scrapped by EESL, they floated a pilot tender of about a 100 chargers for the first phase and the results have been satisfactory, Kumar said, adding, “Now, we have tested these (chargers) and everything is in place. Therefore we now feel that these specifications can work on the ground.”

The roll out of the first lot of cars in Delhi - NCR was initially planned for November last year, but was stymied because of the lack of charging infrastructure.

Lowering Tariffs for New Hydro Power Plants

India is considering lowering tariffs for new hydro-electric power projects to help them compete against cheaper forms of electricity, according to people with knowledge of the matter.

The Power Ministry has proposed excluding the costs of building infrastructure such as roads and bridges from tariffs to make new hydropower projects viable, the people said asking not to be named as the discussions are not public yet. Those costs might be borne by the federal government and the states where the projects are located, the people said, adding that the details haven’t been finalized.

Nearly 100 gigawatts of electricity potential in India’s rivers is lying untapped because of high tariffs. Hydropower projects, often located in remote regions, are crucial to stabilize the grid as India looks to add 175 gigawatts of renewable capacity. These plants can be swiftly turned on and off, helping the grid withstand fluctuations caused by intermittent supplies from solar and wind.

The proposals also include making it mandatory for power retailers to include a share of hydro-electricity in their purchases and providing longer-term loans for such projects to even out tariffs over time, the people said. The proposals have been sent to other ministries for consultation. Once finalized, the power ministry will seek approval from the cabinet, the people said.

Allow E-Vehicle Charging Stations to Sell Power - Saurabh Kumar

The Centre is set to make changes to the amendment to the Electricity Act, 2003 to allow electric vehicle charging stations to sell power.

“The NITI Aayog is preparing the roadmap for this. We will propose changes to the amendment to the Electricity Act,” a government official told BusinessLine.

“At the moment, there cannot be any private sector participation, unless the regulations allow private players to set up charging stations. This is something the government is working on and I hope it happens very soon, because unless you have charging stations across the country, you cannot expect e-mobility to really happen.”

But the government will also have to define a nodal authority to monitor these charging stations. To this Pujari said: “Since a small business cannot approach the State and Central electricity regulator, the government will also have to establish a nodal authority to regulate and license the charging stations. The discoms can act as regulators for these charging stations and can fix a rate of purchase for them to ensure that there is a margin for the business, too.”

Smart EV Charging Station

India is likely to get nearly 150 smart electric vehicle (EV) charging stations over the next 12-18 months. This was announced during the launch of a smart EV charger at the SCOPE Complex in New Delhi. The EV charger was installed by Fortum India, a wholly owned subsidiary of clean energy company Fortum Oyj. The charger will be powered by electricity from NTPC Ltd, the largest power generator in the country.

The charger is able to identify authorized users (owners or drivers of electric vehicles) using radio-frequency identification (RFID) technology. All they have to do is flash their smart cards at a specific point on the charger before recharging their vehicles. Necessary power cost will be deducted from the balance in the smart card.

"The energy landscape in India is undergoing a major shift towards cleaner means of generation and consumption. e-Mobility paves the road ahead with great impact on cleaner cities and reduce fuel imports as well. Keeping this in mind, we are in the process of exploring possible ways to put up charging stations across all NTPC stations and also in discussion with a few states," A K Gupta, director (commercial & operations), NTPC Ltd, said during the launch.

Fortum India Managing Director Sanjay Aggarwal, noted how the government's vision of selling only electric vehicles by 2030, relies heavily on developing a smart infrastructure for such vehicles. "The need of the hour is to fast track EV adoption. Fortum's supporting hardware agnostic infrastructure, equipped with a flexible payment gateway shall provide consumers a seamless experience of charging their vehicles in a friendly environment at a location, time and price of their choice. We have already started setting up pilot projects across the country as part of our plans of rolling out more than 150 charging stations over a period of 12-18 months," he added. Fortum intends to work together with NTPC for developing, operating and managing charging infrastructure for electrical vehicles (EVs) in India. Both the entities will also jointly explore ways to work towards collaborating further on EV charging ecosystem in India.

One In Six New Cars Will Be Electric by 2025 - UBS

Almost every sixth car sold in the world will be electric by 2025, according to a UBS global autos survey released. And if things go the way they have, those cars are more likely to be emblazoned with a Tesla logo than BMW's.

By the middle of the next decade, global sales of electric vehicles should hit 16.5 million, analysts led by Patrick Hummel said in the report, a 16 per cent increase from the previous estimate. They predict electric vehicles will make up 16 percent of all car sales by then, up from a previous estimate of 14 per cent.

"The shift to electric cars will come faster and in a more pronounced way, fuelled by the diesel demise in Europe, battery technology advancements and regulation in China and Europe," Hummel said. Europe will have the highest EV penetration, approaching 30 percent of new cars sold.

Established car manufacturers like BMW and Daimler are spending billions in a race to gain market share in the burgeoning electric-car market, hoping their existing scale will help them leapfrog newer companies like Tesla that focus exclusively on electric vehicles.

Delhi Govt to Buy 600 Electric Buses Out of Green Tax Fund

Getting 600 electric buses, infrastructure for charging points, upgrading inter-state bus terminals and midi-buses to plug last mile connectivity– this is how the Delhi government plans to spend its money collected as Environment Compensation Charge (ECC) from good vehicles.

After facing flak for leaving Rs 829 crore unused, the Aam Aadmi Party (AAP) government has finally chalked out an expenditure plan. Under this, Rs 400 crore collected as the 'green tax' will be used for buying around 500 electric buses. "The total cost of this comes to around Rs 600 crore, while major portion will be borne from the ECC, the remaining will be incurred by the Delhi government," a transport official said. An additional Rs 15 crore of the same fund will be used to create a charging infrastructure for these buses, the official added.

"The minister has also suggested that a part of the

fund be used to upgrade the inter-state bus terminals and for procuring 1,000 CNG - run standard floor buses for DTC," the official added.

India Can Lead the Fight against Climate Change with Energy Efficiency - IEA

India completes two years of signing the Paris Agreement this December and the world is sitting up and noticing our sincere efforts in mitigating climate change. For a developing country like India, there is no doubt that our commitments are ambitious, but our endeavours are not far behind. Our efforts in energy conservation have been commended globally. According to the International Energy Agency (IEA), India's renewable energy capacity is likely to grow more than twice its current state by 2022, making it enough to overtake renewable expansion in the European Union for the first time.

Another big story that the world is now acknowledging, is the leadership demonstrated in the area of energy efficiency. It is a known fact that energy efficiency is the best, fastest and cost-effective climate change solution. To bring in energy efficiency, India implemented the world's largest LED programme, led by EESL in the domestic and street lighting space - UJALA (Unnat Jyoti by Affordable LEDs for All). EESL delivers the largest energy efficiency portfolio in the world. In 2017 alone, it distributed over 9 crore 9W LED bulbs, 42 lakh 20W LED tubelights and 12.3 lakh 5-star energy-efficient fans. It also installed over 25.6 lakh LED street lights illuminating over 50,000 kilometers of Indian roads. EESL has also completed work in 86 buildings as part of the Buildings programme, which was launched this year itself. Together this has led to an annual savings of over 1,300 crore kWh for India.

But implementation of such transformative solutions such as efficient lighting or smart metering or even electric vehicles has not been without their share of concerns. Typically, across the world, efficient products face barriers — high cost, lack of information, and consumers lacking awareness of the performance of energy efficient equipment. From lack of confidence in financing, lack of commercial viability due to high financial risks, intangible measurement & verification methodologies to the lack of capabilities, the industry has been restrained in investing in energy-efficient, future-ready technology solutions in India. Besides, the prohibitive cost of their ownership constrained the mass adoption of such solutions.

To overcome these barriers, India adopted a market-led approach, with a conducive policy environment to boot. India has systematically addressed these issues and has emerged as one of the few countries to implement the world's largest energy efficiency programmes, with zero dependence on subsidies.

NTPC to buy Stressed Power Units via Reverse Bidding

NTPC, the largest thermal power generating company in the country, might be the white knight the languishing power sector has been looking for. The state-owned power company has issued a tender to buy stressed units via reverse bidding.

Power units on sale will bid for tariffs below NTPC's rate last year, which was Rs 3.18 per unit. Officials said the tariff would indicate the cost of the plant at which it is ready to sell-off. "At this capped tariff, the cost turns out to be Rs 3-4 crore per megawatt (Mw). Bidders would quote below it," said an official.

The bidding is open for units above 500 Mw, which were commissioned 2014 onwards and are capable

of running at 100 per cent domestic coal. Coal availability either through mine or linkages should be within a 500-km range of the plant. Those with no fuel linkage should have a coal source within 500 km, said the tender details. Officials said proximity to source of coal would help avoid washing cost.

"If the units which don't have any PPA (power purchase agreement), qualify in all other criteria, we are open to selling power from those units in the merchant market. Merchant power at current rates gives higher returns than regulated tariff, which is a win-win for NTPC," said another official.

The central government earlier this year had already initiated the exercise to resolve the issues close to 25,000 Mw of stressed power units, which are on the verge of converting to non-performing assets (NPAs). This was mostly due to lack of PPAs or fuel linkages and in some cases because of financial issues faced by the promoter. In some cases, the banks have taken over the assets or are evaluating to take over. Therefore, principal lenders, financial institutions and banks are also open to participate in the bidding, said the tender document.

Susanta Roy appointed NTPC's Director – Projects

Susanta Kumar Roy has been appointed as Director (Projects), NTPC. Roy, was Executive Director (Projects) of NTPC. A Mechanical Engineering Graduate from REC, Durgapur, Roy joined NTPC in 1981 as Executive Trainee and has more than 36 years of experience in large size coal power stations.

Create Standby Pool: CEA

Central Electricity Authority of India has called for creating a flexible standby capacity to protect electricity grid in case the generation from renewable energy plants drop. To enable this, the government should call bids from coal, gas and hydro power projects, and successful bidders should surrender the plants to the regional load dispatch centres for creating a common pool for a designated period, Central Electricity Authority (CEA) has said in a report.

While CEA is still evaluating the exact requirement of the supporting power generation capacity in a separate exercise, industry experts said 10% of the country average peak demand is likely to be required for grid balancing. India's peak demand is about 150GW and about 10% grid balancing capacity could mean a pool of about 15,000-mw plants. The move, if approved, will bring relief to some of the stressed assets in the power sector.

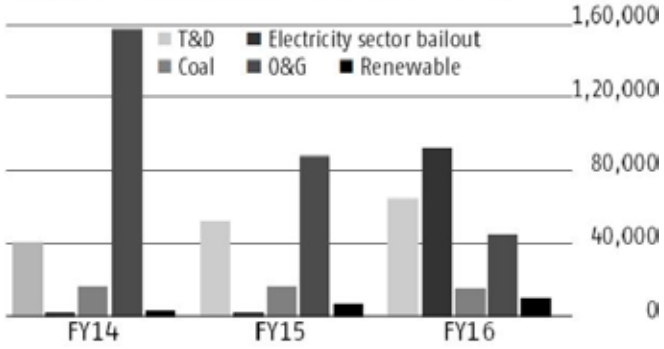
The pool will have to be a mix of hydro, gas and coal plants depending on their response time. Hydro and energy storage can be restarted in lesser time, followed by hydro and coal based plants. India has set up a target of renewable capacity addition of 175 GW by 2021-22 and thus requires flexible generation when wind or solar generation deviates.

"It is recommended that ancillary services in India may be started to ensure capacity on a permanent basis," CEA said in its report on types of balancing energy resources to facilitate grid integration of renewable energy sources. "It is proposed that the response times of different types of ancillary services, i.e., seconds reserves, 5 minute reserves as well as reserves which respond in about half an hour should be specified, under the functional requirements of ancillary services and any generator or bulk consumer (through demand response), which can achieve these functional requirements, should be allowed to bid for the same," it said.

India Saved $15 Billion on Energy Subsidies in Past Two Years

SUBSTANTIAL DECLINE

Subsidies to coal, oil & gas, renewables and electricity transmission & distribution, FY2014–2016 (₹ crore)



Source: GSI report

KEY SOPS

Largest subsidies provided by the government to each energy type in FY2016

Subsidy	To	Worth (₹ cr)
Concessional excise duty rates on coal production	Coal mining & power	6,886
Direct benefit transfer for domestic LPG	Consumption & production of oil & gas	16,056
Under-recovery of costs by utilities for keeping below-market prices for agriculture and small household users	Electricity transmission and distribution	7,680
Accelerated depreciation for renewable energy plants	Renewables	3,885

Former Power Secretary P K Pujari Appointed CERC Chief

Former Power Secretary Pradeep Kumar Pujari has been appointed the chairperson of Central Electricity Regulatory Commission (CERC). Pujari, a Gujarat-cadre retired officer of Indian Administrative Service. He had a highly successfull tenure as the power secretary.

Adding 20 GW Solar Capacity

Mr. R K Singh

The government plans to seek bids globally for 20 GW of solar generation capacity by companies ready to set up manufacturing facilities in India.

"Twenty GW will be auctioned with condition that only those companies can participate that will set up manufacturing here," RK Singh, Minister of Power and New and renewable energy, said at a conference.

"We have some aspirations... We want manufacturing in solar and when the fastest-growing installation is happening in India, there is no reason to import from other countries... so we are going to encourage manufacturing here," the minister added.

The government plans to install 175 GW of renewable energy by 2022. While the government is confident of surpassing the target 'comfortably,' it is exploring ways to add incremental capacity through floating solar, solar manufacturing and offshore wind projects, among other measures.

"We are trying to test the market at present. The ministry will soon float an expression of interest, which would mean that any person who is willing to set up manufacturing facilities in India can set up a capacity of 20 GW here," Anand Kumar, secretary in the ministry of new and renewable energy, told reporters.

"We are linking manufacturing of solar with developers." The government has not considered incentivising domestic manufacturers as the tender itself will create demand for solar equipment in the country.

Big Push to Solar Manufacturing-MNRE

The Ministry of New and Renewable Energy has released a concept note of a proposal to build India's manufacturing supply chain covering polysilicon, wafers/ingots, cells and modules to accelerate the growth of the solar photo-voltaic sector. MNRE is proposing a slew of subsidies and incentives, including direct financial support of more than Rs.11,000 crore for manufacturers to expand and upgrade, a 12 GW Central Public Sector Undertaking (CPSU) domestic content requirement (DCR) programme to create robust domestic demand, an increasing DCR requirement from modules to polysilicon, 30 per cent central financial assistance, cheaper loans, a custom duty exemption and cheaper power.

The concept note is open to comments and suggestions until December 31. The programme aims to strengthen the 'Make in India' campaign, reduce the country's dependence on foreign manufacturers, and make domestic manufacturers competitive with their international counterparts.

Indian solar installations have risen from just 6 MW in 2009 to a cumulative total of approximately 20 GW to date, with another 9.5-10 GW of installations expected this year alone, according to the Mercom India Q3 Market Update.

The government is planning a three-pronged approach to support local manufacturers that includes: providing a level playing field with the imposition of anti-dumping duty on cells and modules, creating demand through a DCR programme, and supporting manufacturers financially by providing multiple subsidies outlined in this policy proposal.

India Hits 20GW Solar Capacity Milestone

India has achieved 20 gw (giga watt) cumulative solar capacity, achieving the milestone four years ahead of the target for 2022 originally set in the National Solar Mission. The achievement comes on the back of a

major renewable energy push by Modi government, which after coming to power in 2014 had scaled up the target to 100 gw of solar capacity by 2022. According to the latest India research report by green energy market tracker Mercom Capital, the utility-scale cumulative installations now stand at approximately 18.4 gw, with rooftop solar accounting for another 1.6 gw. For the first time, solar was the top source of new power capacity additions in India during the calendar year 2017, with preliminary figures showing solar installations reaching 9.6 gw in this period and accounting for 45% of total capacity additions.

But the country has reached the milestone at a time when protectionist measures threaten to slow down activity in the industry. The pace of overall solar installations is expected to be less impressive in 2018 as several protectionist government policies appear poised to increase costs and uncertainty.

"The government's revised solar installation target of 100 gw by 2022 has recently been clashing with PM Modi's 'Make in India' initiative to promote domestic manufacturing. The recommendation for 70% safeguard duty on (solar panel) imports, the ongoing anti-dumping case, and a 7.85% port duty on imported modules are together creating an atmosphere of regulatory uncertainty that is taking a toll on the industry and slowing down installation activity," the Mercom report quoted CEO Raj Prabhu as saying.

Wind Power AuctionGuidelines

The power ministry said it has issued guidelines for transparent procurement of wind power through tariff-based competitive bidding in a bid to boost the clean source of energy.

The government has already auctioned 2 GW wind capacity so for in the first and second round this year. In the third round, it has floated tender for another 2 GW capacity.

The norms are significant because the government had decided to put for bidding 10 GW wind capacities each in 2018 -19 and 2019-20 to meet the target of 60 GW by 2022. At present, wind power installed capacity is 32 GW.

The government has issued guidelines under Section 63 of the Electricity Act, 2003, providing a framework for procurement of wind power through a transparent process of bidding including standardisation of the process and defining of roles and responsibilities of various stakeholders, a power ministry statement said.

According to the statement, these guidelines aim to enable the distribution licensees to procure wind power at competitive rates in a cost-effective manner.

It said the guidelines are applicable for procurement of wind power from grid-connected wind power projects (WPP) having individual size of 5 MW and above at one site with minimum bid capacity of 25 MW for intra-state projects.

Mobilisation of $350-Mn Solar Fund

International Solar Alliance

- ISA is partnership of solar resource rich 121 countries for harnessing solar as an energy resource
- Most of there are countries with a lagre participation from Africa, Southeast Asia, and Europe
- ISA is part of India's climate change commitments
- India will host the secretariat of ISA and put initial fund
- Nine firms, including NTPC, Amplus Solar, Gensol, CLP India, Yes Bank, etc

In order to kick-start fund mobilisation under the International Solar Alliance (ISA), the central government will set up a $350-million solar development fund. Nine companies and banks have agreed to develop and finance various solar projects, which include $1-billion partnership corpus of NTPC and CLP India to the ISA.

The fund was announced by R K Singh, Minister of Power and New

and Renewable Energy, at the first ever outreach programme of the ISA in Abu Dhabi's World Future Energy Summit (WFES) 2018. "Over the years, renewable energy has become cheaper and is set to replace conventional energy, which is a healthy development… India has one of the fastest-growing renewable energy programmes in the world and the country would achieve its target of 175 gigawatt of installed renewable energy capacity well before 2020. The ISA shall help mobilise sufficient funds for solar energy projects," Singh said in his address at the WFES.

Upendra Tripathy, interim director general, ISA, said the letter of intent/memoranda of understanding (MoUs) of nine solar-related projects of various companies and bankers had been signed at the WFES. The firms are: Vyonarc Development, Greenko Solar, Gensol Group and SOLARIG from Spain, Shakti Pump, Refex Energy, Amplus Solar, TATA Power, Jackson Solar, and Zodiac Energy.

International Solar Alliance Seeks Cheap Energy via Global Bids

The International Solar Alliance, championed by India and France, came into effect, aiming to promote affordable sun-powered electricity to its members through global tenders and cheap financing.

The inter-governmental agency, which has been ratified by 19 countries and has 46 signatories to its framework agreement, aims to mobilize $1 trillion of low-cost financing for solar energy by 2030, Upendra Tripathy, interim director general of the alliance said in an interview.

"There is no shortage of capital as trillions of dollars are lying in big funds and our program seeks to help divert this into renewable energy," Tripathy said, adding that the ISA is exploring green bonds for renewable energy projects and raising money in local currencies to remove hedging risks.

Headquartered in India, the alliance of countries clustered around the equator was first proposed by Prime Minister Narendra Modi and former French President Francois Hollande in 2015 to ramp up the use of solar power to provide cheap access to electricity. The member countries include Australia, Bangladesh and Somalia.

SRISTI Roof Top Solar Scheme Proposed

The Ministry of New and Renewable Energy has proposed SRISTI — Sustainable Rooftop Implementation for Solar Transfiguration of India — the scheme to incentivise the installation of roof top solar projects in India. An official statement said, "The concept, once approved, shall serve as the basis of revised scheme of MNRE for solar rooftop in Phase-II and will replace the Cabinet Committee on Economic Affairs note that has been submitted to cabinet since April this year."

The scheme will integrate discoms as an implementing agency in Phase-II of rooftop solar scheme, the statement added. The proposed scheme aims to achieve a national solar rooftop target of 40 GW till 2021-2022. It is proposed that a Central Financial Assistance will be provided only for installation of roof top solar plants in residential sectors.

The residential users may install the plant of capacity as per their requirement and the respective State Electricity Regulatory Commission regulation. But, the subsidy support will be limited up to 5 kWp capacity of plant.

India May Offer Green Investment Potential of $3 Trillion by 2030

International Finance Corporation

India, which has pledged to significantly reduce the emissions intensity of its GDP, offers a climate-smart investment potential of $3 trillion between 2018 and

2030, said a report released by International Finance Corporation (IFC).

India's efforts to fulfil its commitment to low carbon growth would require large investments in diverse fields such as agriculture, energy, infrastructure and transport, according to an analysis by the multilateral agency.

The world's third largest economy has said that by 2030 it will reduce its carbon emissions intensity by 35 per cent from 2005 levels, as part of the ambitious Paris agreement targets.

Green buildings represent the largest investment opportunity, as 70 per cent of buildings needed by 2030 have not yet been built in India.

This includes 20 million urban homes and 10 million rural homes that are required to meet the government's ambitious 'Housing for All by 2022' plan.

IFC has estimated that the housing sector offers an investment potential of $1.4 trillion, of which $1.25 trillion would come from the residential sector and $228 billion from commercial buildings.

Another green technology that could attract a lot of attention from investors is electric vehicles. The government recently announced that all new car sales in 2030 in the country should be electric. At current capital costs, this could mean an investment opportunity of about $667 billion between 2018 and 2030.

Steep Drop in Solar Power Auctions: Mercom

Solar tender and auction activity declined steeply in India during November, Mercom Capital Group said recently.

The solar capacity tendered across the country during the month fell by 25 per cent to 300 MW compared to October and the amount of solar auctioned dropped by 98 per cent to just 5 MW, a Mercom Capital Group statement said.

"Hopefully, tender and auction activity has bottomed out. The GST issue is almost behind us and the government is asking DISCOMs to refrain from PPA (power purchase agreement) renegotiations, even though the anti-dumping case is still looming," said Raj Prabhu, the CEO of Mercom Capital Group.

The largest tender seen during the month was issued by Karnataka Renewable Energy Development Ltd (KREDL) which re- tendered 200 MW of solar to be developed at the Pavagada Solar Park in Karnataka.

The Solar Energy Corporation of India (SECI) was responsible for the only solar auction held in November when it auctioned a 5 MW grid-connected solar PV project under the National Solar Mission Defense viability gap funding (VGF) programme for the Ordinance Factory in Kanpur, Uttar Pradesh. Giriraj Renewables Private Ltd emerged as the successful bidder by quoting a tariff of Rs 4.18 (USD 0.064)/kWh without VGF (viability gap funding).

According to Mercom's India Solar Project Tracker, cumulative solar installations in India surpassed 17 GW as of September 2017, with over 7 GW installed in the first nine months of 2017.

India's Ultra-Mega Solar Project to Be Discussed at France Summit: WB Chief

India's ultra-mega solar project will come up for discussion at the One Planet Summit in France, World Bank President Jim Yong Kim has said.

The ultra-mega solar power projects, also known as ultra-mega solar parks, are a series of solar power projects planned by India to enhance its capacity from 20,000 MW to 40,000 MW.

"Among one of the major projects that we're putting on the table at the summit is a ultra-mega project in

India for solar," Kim said yesterday in response to a question.

In an interaction with reporters on bank's continuing work on climate change mitigation and its efforts at helping developing countries implement the Paris Agreement, Kim said he and the World Bank has worked very closely with Prime Minister Narendra Modi.

"I am very optimistic about what could happen with renewable energy (in India)," Kim told reporters in a conference call ahead of the summit.

Noting that Modi is very personal, very public and very strong support of moving India to a lower carbon renewable energy future, Kim said the Indian leader has made a very ambitious target for India to reduce its carbon intensity.

RE 12 GW Capacity Added in 11 Months

The renewable energy sector in the country has added close to 12 GW of new capacity during the first 11-months of calendar year 2017. It is expected to end the year with the largest-ever annual capacity addition. A total of 11,788 MW of grid-connected power generation capacity from renewable energy sources has been added during January-November, according to Union Ministry of New and Renewable Energy. The solar segment has been the driver of capacity addition in the renewable energy sector, while the wind power sector has been struggling to bring in new capacity from April this year due to some challenges in tariff, though it accounts for a major share in the total installed capacity of the sector.

During January-November, the solar segment added 7.6 GW. In 2016, solar installations stood at about 4 GW (as against 2.3 GW installed in 2015). Mercom Capital Group, a global clean energy communications and consulting firm, projected new capacity addition of about 9 GW in the solar segment for 2017.

At present, a little less than two-thirds of India's solar pipeline is concentrated in four Southern States — Karnataka, Tamil Nadu, Andhra Pradesh and Telangana. Also, Telangana has surpassed Rajasthan, Andhra Pradesh and Tamil Nadu to become India's top state for solar capacity addition, according to solar energy consulting company Bridge to India. As of November 30, 2017, the total installed renewable power capacity in the country stood at 62,054 MW.

India Mulls 70 Per Cent Safeguard Duty on Solar Equipment Imports

India has proposed to levy a 70 per cent safeguard duty on import of solar power equipment from countries like China for 200 days to protect domestic industry from "serious injury".

The Directorate General of Safeguards recommendation to the finance ministry said solar cells are "being imported into India in such increased quantities and under such conditions so as to cause or threaten to cause serious injury to the domestic industry manufacturing like or directly competitive products."

The existing "critical circumstances" justify the immediate imposition of a provisional Safeguard Duty to save local units from further serious injury, which would be difficult to repair in case the safeguard measure is delayed, it said.

The safeguard duty would be levied if the finance ministry accepts the recommendations of the Directorate General of Safeguards (DGS). Acting on an application filed by an association of five domestic cell and module makers including Adani Group, DGS recommended "a provisional Safeguard Duty be imposed at the rate of 70 per cent ad valorem on the imports of solar cells whether or not assembled in modules or panels."

It also recommend that the provisional Safeguard Duty be levied for a period of 200 days, "which is

considered to be the minimum period of time required to protect the interests of the domestic industry."

Before final duties or import taxes are levied, DGS will hold further investigation into the injury caused by cheap imports. It would also hold a public hearing on the issue.

Safeguard Duty on Solar will Risk 12,000 Crore Projects-CRISIL

Levying 70 per cent provisional safeguard duty on imported solar panels and modules from China and Malaysia, as recommended by the Directorate General of Safeguards, will put solar power projects of around 3,000 Megawatt capacity worth over Rs 12,000 crore at risk, research and ratings agency CRISIL said.

India auctioned around 4,000 Mw of solar projects last year (2017) which are currently under implementation now. Orders for modules are typically placed with a lead time of one year. Around 3,000 Mw of capacities would be yet to tie up their module requirements, assuming 1,000 Mw of excess inventory to be in transit.

As these projects were auctioned at low tariffs, any rise in equipment cost after the safeguard duty would crimp the cushion that developers have to service debt. "The proposed 70 per cent safeguard duty will also inflate project costs by 25 per cent and crank up viable tariff to Rs 3.75 per unit from around Rs 3 estimated earlier, making solar power less attractive to discoms. That would also be more than the average power purchase cost of 10 out of 14 discoms last fiscal," said Subodh Rai, Senior Director, CRISIL Ratings

GAIL Commissions India's Second Largest Rooftop Solar Plant in UP

Gas utility GAIL India Ltd said it has commissioned the country's second largest rooftop solar power plant. The firm has installed a 5.76 MWp (Mega Watt peak) solar plant at its petrochemical complex at Pata in Uttar Pradesh, a company statement said. The plant over the roofs of warehouses covers a total area of 65,000 square meters.

"With an expected PLF of around 15 per cent annually, over 79 lakh KWh (or units) of electricity is targeted to be generated for captive use of India's largest gas-based petrochemcials plant," it said.

Tata Power Solar had in December 2015 commissioned a 12 MW solar rooftop project in Amritsar, which produces more than 150 lakh units of power annually and offset over 19,000 tonne of carbon emissions every year. India plans to have 40 GW of rooftop photovoltaics (PV) by 2022. This is part of its target of having 175 GW of non-hydro renewables capacity by 2022- made up of 60 GW onshore wind, 60 GW utility-scale solar, 10 GW bio-energy, 5 GW small hydro and 40 GW rooftop solar.

Reviving Rooftop Solar

There is no better way to illustrate how much out of kilter things are in India's rooftop solar programme than to juxtapose two figures. Against a target of 10,000 MW to be achieved by March 31, 2018, the country had 845 MW installed as of end-October this year. A failure of this order cannot but rankle and the Government has put out a 'concept note' for public comments, which outlines the Centre's thinking on how to fix things. The note recognises that the biggest hurdle to mass roll-out of rooftop solar plants is the electricity distribution companies (discoms), most of which are State government-owned. These discoms have provided languid support to rooftop projects because of their instinct of self-preservation. The discoms stare at instant financial turmoil if well-paying industrial and commercial customers get their own sources of energy. As such, these companies have effectively derailed their customers' rooftop ambitions by refusing to buy any surplus power from them. Therefore, factories and commercial establishments, like shopping malls, put up only as much rooftop solar capacity as would satisfy their demand, even if they have the space and wherewithal for more. As for

individuals, rooftop solar has never been an attractive proposition even if they got the subsidy given by the Central and State governments. Recognising the need to bring discoms on board, the concept note aims to put them in the driver's seat, by giving the discoms financial incentives for every MW of rooftop capacity created in their area of operation. However, to avail themselves of incentives, discoms should create the capacities through tariff-based competitive bidding. This, the Centre hopes, will egg the discoms on to creating an "enabling ecosystem for expeditious implementation" of rooftop projects.

In fact, the fundamental premise on which the proposals are based, is flawed. At a time when rooftop solar power is on a par with or cheaper than grid power, there is no need to ask discoms to create an enabling ecosystem. In fact, the need is to get discoms out of the way, perhaps with financial incentives.

YES Bank to Raise $1 B to Fund Solar Energy Projects

YES Bank said it will mobilise $1 billion till 2023 and $5 billion till 2030 towards financing solar energy projects in India. The private sector bank made this announcement at the International Solar Alliance (ISA) conference organised at the World Future Energy Summit 2018 in Abu Dhabi.

As part of this endeavour, the bank, in a statement, said it has signed five solar energy co-financing Letters of Intent (LoI) with Tata Power Delhi Distribution (up to 10 MW capacity), Hero Future Energy (up to 1.5 GW capacity), Greenko Group (up to 10 GW capacity), Amplus Solar (up to 1 GW capacity) and Jakson Group (up to 1 GW capacity) for their solar projects in India to be completed by 2023.

This development also comes on the back of the recent $400-million co-finance agreement by the Bank and European Investment Bank (EIB) for construction of new solar power plants and wind farms across the country.

Rana Kapoor, Managing Director and CEO, YES Bank, said, "Our proven renewable energy credentials with a demonstrated track record have enabled us to pursue achievement of our twin targets of financing 5 GW of renewable energy, and mobilising $5 billion for climate finance by 2020."

India to set up $350-M Fund for Solar Energy Projects-Mr. R.K. Singh

The government is going to set up a $350 million fund for financing solar projects. This announcement was made by Minister of State (Independent Charge) for Power and Renewable Energy, Raj Kumar Singh, during the Future World Energy Summit (WFES) 2018 in Abu Dhabi (UAE). Speaking at the International Solar Alliance (ISA) forum, Singh said that the ISA will help mobilise sufficient funds for solar energy projects. Interim Director-General of ISA, Upendra Tripathy, said that over 100 projects will be signed by April 2018 under the ISA umbrella. During the event, YES Bank committed to finance solar projects of over $5 billion. CLP and NTPC also announced a partnership deal with the ISA and committed to make a voluntary contribution of $1 million each to the ISA fund corpus.

Global Carbon Budget Report , Said

India Needs a Green Manifesto

According to the just-released **Global Carbon Budget Report**, India is expected to record a two-per cent increase in carbon emission this year. But before that happened, in the week leading up to Diwali, the Supreme Court banned sales of crackers in the NCR region. But soon, large parts of northern India was under a blanket of smog. And there was controversy surrounding the Odd-Even traffic management scheme in Delhi.

Even as these events were unfolding, the PM (particulate matter) pollution levels reached alarming levels, with the children and the elderly facing the risk of permanent lung defects, forcing schools to be shut down and sales of air masks and purifiers going through the roof.

So, in a span of a month, as a country and as a capital, we have tried to deal with the issue of air pollution in

myriad ways — from domestic use of mild explosives, farmer stubble burning in Punjab and Haryana and vehicle emissions.

A fresh take

As large parts of the northern and central India struggle to breathe, it is time to bring a breath of fresh air to the pollution problem. While civil society and citizens can and do play a critical role in solving environmental issues, institutional action is critical — from political establishments and the executive alike. Caring about the environment has now become both good politics and good governance.

Why? Because, for one, pollution costs India dearly — according to the Lancet Commission, 2.51 million Indians died in 2015 due to pollution-related causes. We rank No. 1 in pollution-related deaths and 25 per cent of all deaths are caused due to pollution.

Reaching a crescendo

While the problem is not a new one and the debate is not a first, but the issue has reached a crescendo both in terms of public consciousness and externalities.

Firstly, there is a need for a Green Manifesto when political parties gear up for elections at least in urban India. Not only is that a moral imperative, it is also tactically suave.

The recent manifestos of most major parties did not give sufficient space to a green agenda. Come 2019 and beyond, that should, and will, change. There is a need to have a separate environment vision document especially for urban India.

BATTLE OF GREEN

We are seeing early signs of the political boundaries being marked out in the battle of green. Various proposals are doing the round. These include creating a multi North Indian CM committee headed by the Prime Minister to floating a “Right to Clean Air” Private Member’s Bill.

There is also public debate around the RTI disclosure surrounding the high underutilisation of the Rs.787 crore Green Fund by the Delhi Government.

Wind Power Generation to Touch 9,500 MW in Current Fiscal: Minister

A cumulative capacity addition of 467 MW of wind power generation capacity has taken place till November end during the current financial year, according to RK Singh, Minister of State (Independent Charge).

In a written reply to a question on total wind capacity addition this year in the Lok Sabha, Singh said that Solar Energy Corporation of India had finalised the bids for 1,000 MW of Inter-State Transmission System (ISTS) connected wind power projects in February and bids for another 1,000 MW ISTS connected wind power projects were finalised in October.

The bids for an additional capacity of 2,000 MW ISTS connected wind power projects are scheduled for submission by January 16, 2018, he added.

In addition, Tamil Nadu, Gujarat and Maharashtra, have also issued bids of 500 MW each for installation of wind power projects in these States. While bids in Gujarat and Tamil Nadu have been finalised, the scheduled bid submission date in case of Maharashtra is January 20, 2018. This Ministry has proposed bids for another 4,000 MW capacity of ISTS connected wind power projects in the current financial year. After this, cumulatively 9,500 MW capacity of wind power projects would be bid out by the end of the current financial year, said Singh.

Wind Tariff Competitiveness to Remain a Challenge: ICRA

Even as the tariff competitiveness of wind energy has improved as against the conventional energy sources, its viability continues to be a challenge, says ICRA

According to the rating agency, while the government’s wind power bidding programme provides visibility to support capacity additions over the next four years, the renegotiation or cancellation of power purchase agreements (PPAs) by few states will be a major

challenge.

The ministry of New and Renewable Energy (MNRE) proposes to issue bids for 5,000 MW by March next year followed by 10,000 MW each in FY 2019 and FY 2020, so as to achieve the cumulative wind capacity target of 60,000 MW by FY2022.

The tariff discovered in the reverse auction under the second MNRE scheme conducted by SECI in October this year declined by 24 per cent to Rs 2.64 per unit as against Rs 3.46 per unit discovered in the first MNRE scheme.

While this significantly improves the tariff competitiveness of wind energy as against conventional energy sources, the viability of such tariffs remains a challenge, ICRA explained.

"This would depend upon the availability of long-tenure debt at cost competitive rates, capital cost, plant load factor (PLF) level and ability of the developer to identity locations with high generation potential," ICRA Ratings sector head and Vice President Girishkumar Kadam said.

Wind Auctions Destroying the Industry, INWEA

Small scale manufacturers of components for wind turbines are being squeezed by the relentless fall of wind energy tariffs in successive auctions, according to the petition filed by the Indian Wind Energy Association (Inwea) in the Supreme Court, whose admissibility will be decided.

The petition, opposing the 500 MW wind energy auction Gujarat's power utility Gujarat Urja Vikas Nigam Ltd (GUVNL) wants to hold, harps mainly on technicalities, maintaining that the auction is contrary to law because the Centre has not yet issued guidelines on the conducting of such auctions, as required by Section 62 of the Electricity Act, 2003, and Section 6.4(2) of the National Tariff Policy, 2016. Another industry body, the Indian Wind Power Association (IWPA), has also made an intervention in the matter, supporting Inwea's petition with similar arguments.

But Inwea's also draws attention to the plight of the segment due to the fall in wind tariffs. "Competitive bidding ...could squeeze the developers of wind generators to put more pressure on the original equipment manufacturers (OEMs) ...and in the absence of lowering of costs... developers would be forced to import the said equipment...thereby frustrating the Make in India policy," it said. "It will lead to sustainability issues for the small scale sector ...and would also affect scores of jobs, direct and indirect."

Wind energy tariffs, formerly fixed solely by the power regulators of the wind energy producing states, had varied between Rs 4 and 6 at the beginning of this year. The first 1000 MW wind auction, conducted by Solar Energy Corporation of India (SECI) in February, brought the winning tariff down to Rs 3.46 per unit, while the second, in October, lowered it further to Rs 2.64 per unit.

India's Wind Power Sector Losing Steam as Capacity Addition Tapers Off

Wind power tariffs have declined to Rs 2.43 a unit and capacity addition last year was a mere 435 Mw till October despite three rounds of project auctions, forcing turbine manufacturers to rue the surge in installations during 2016-17 when close to 5,000 Mw was added.

Spanish wind energy company Gamesa, which was bought by Siemens last year, said India was responsible for its global sales falling 12 per cent, year on year. "India contributed 626 million euros in revenues and 80 million euros in Ebit (earnings before interest and taxes) in H2 2016 (April-September), and 44 million in revenues and (-) 37 million in Ebit in H2 2017," it said while presenting its results in November.

India's largest wind turbine maker Suzlon Energy, which laid off workers a few months ago, has now asked its executives to take pay cuts. The company's order book was likely to remain slim in 2017-18 with no projects coming up, said an analyst.

No Proposal to Pass on Retrofit Cost to consumers: Power Secretary

Power Ministry is not mulling any amendment in laws for passing on the cost of retrofitting coal based-power plant to consumers, a top government official said. His comment came amid reports that the ministry is going ahead for changes in regulations to allow power generating firms to pass on the cost of retrofitting plants for meeting emission norms. “We do not need to change any law ...It is understood,” Power Secretary Ajay Kumar Bhalla said on the sidelines of India Energy Forum meet here. Power producers can always go to their respective regulators or electricity regulatory commissions to seek approval for increasing power tariff to recover any such expenditure citing new norms issued by Environment Ministry in December 2015.

Coal Blocks on Production or Revenue Sharing Model

System under Consideration

The system of coal blocks allocation could undergo an overhaul, with New Delhi leaning towards the oil-and-gas industry model that involves sharing production or revenue instead of the existing practice of auctions.

The coal ministry has set up an expert committee to examine challenges facing the current bidding system and to suggest changes to the process for conducting future auctions of coal mines, officials familiar with the development told ET.

The committee will be headed by former chief vigilance commissioner Pratyush Sinha, and former State Bank of India chairperson Arundhati Bhattacharya and exchief of Union Bank of India will be members of the panel. Industry experts say the new system is likely to generate much more enthusiasm in the corporate sector than the prevailing procedure of auctions, which helped clean up the process of allocation but received a tepid response from companies.

Former food processing industries secretary Rakesh Kacker, a 1977 batch IAS officer of Tamil Nadu cadre, is also part of the committee. Between March 2004 and February 2007, Kacker advised the Telecom Regulatory Authority of India on issues relating to radio and broadcasting. Prior to that, he handled facilitation of private investment in the power sector. Between June 1994 and 1996, he worked in the PMO on issues relating to finance and energy.

3,000-5,000 MW of Coal - Based Capacity Reduced to Near Junk

Coal-based capacity of 3,000-5,000 MW created by the private sector during the last 10 years at an estimated cost of Rs.15,000 - 25,000 crore, has been reduced to near junk, thanks to prolonged idling and lack of maintenance, said sources. India doubled its power generation capacity to 326 GW (one gigawatt is equal to 1,000 MW) between 2007 and 2017 as part of the ‘Power for All’ programme. Coal-based capacity nearly trebled to 194 GW, while gas-based capacity doubled to 25 GW.

But the capacity addition amidst slow demand growth created a large volume of stressed assets. According to a Reuters report earlier this year, over 50 coal- and gas-fired power plants were “operating at a bare minimum”.

The net result is that the power sector is the largest (12 per cent) contributor after steel (25 per cent) to the $150 billion bad debt pile of banks.

Revival plan

Following introduction of the insolvency and bankruptcy law, banks are paving the way for revival of stressed assets through merger and acquisitions (M&As).

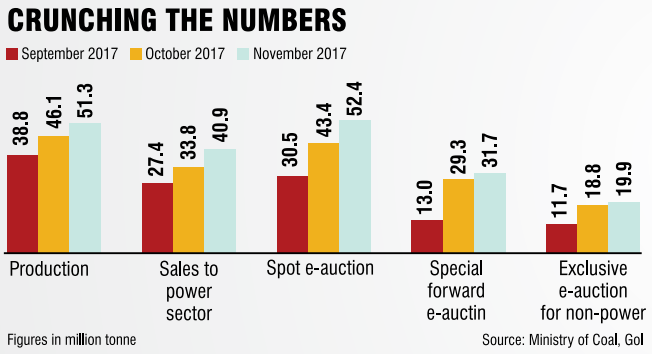
However, the bankruptcy proceedings have just

started and bigger defaulters are being picked up on priority basis. Meanwhile, smaller independent power producers (IPPs) are in worse shape.

According to Kameswara Rao, Partner, PwC, 4,000-5,000MW of coal-based capacity runs to meet short-term demand. Though stressed, these plants are well maintained and can find suitable buyers as and when the restructuring or insolvency proceedings begin.

Coal India Auction to Miss Spark

After a 76 per cent increase over the average notified price in e-auctions during October-December last year, Coal India might see auction prices falling as demand from the power sector is expected to remain muted in the near future.



Analysts are of the view that power demand usually declines in the winters and with Coal India stepping up its sales, the country's power generators would be returning to near-normalcy latest by mid-February.

"In turn, this is going to affect demand from the power sector in the e-auctions," an analyst from Motilal Oswal said.

In November 2017, despatches to the power sector rose by 9.1 per cent to touch 40.9 million tonne (mt) against the despatch of 37.6 mt in the year-ago period. Backed by robust demand from this sector, special forward e-auction prices rose by 35 per cent over the notified prices of the coal grades in November while for the Q1 to Q3 period, the increase over notified price stood at 25 per cent.

According to sector analysts, the average e-auction prices during the Q3 period would have hovered at more than Rs 2,100 a tonne, but in Q4, it is likely to fall to Rs 1,800 a tonne. "Trend in Q4 would depend upon the trend in the core sector and Index of Industrial Production growth numbers. However, allocation of fuel supply agreements to independent power producers holding power purchase agreements and further action on linkage auction would dampen the spot trade volumes," said Debasish Mishra, partner at Deloitte Touche Tohmatsu India LLP. Last December, 10 private power producers obtained a 27.18 mt annual linkage from the Maharatna company. Earlier, Coal India officials, too, had conceded the fact that e-auction sales volume as well as prices may get hit if linkage agreements are prioritised as the demand for coal in the auctions would fall.

E-auctions directly add up to Coal India's bottom line as the prices are often higher by at least 20 per cent over the notified price. Thus, effectively, while the miner spends the same amount of money to mine the coal which is either sold as linkage or put under the hammer, it earns 20 per cent higher in the auctions.

Power Tariffs Set to Rise

Power tariffs across the country are set to rise by 11 paise per unit or 2 per cent on the back of the 9 per cent hike in thermal coal prices announced by state-run miner Coal India Ltd (Ltd).

Coal-based power generators with an automatic pass-through of fuel costs account for around 60 per cent of the total power procured by discoms. Assuming a partial pass-through by other Independent Power Producers (IPPs) with competitively bid PPAs which account for balance, this translates into about 9 paise per unit increase in power procurement cost for discoms on an all India basis.

"In turn, assuming the average AT&C loss level at around 23 per cent in the country, we estimate the impact on cost of power supply per unit sold and retail tariffs (assuming full pass through by regulators) at

around 11 paisa per unit or about 2 per cent tariff hike," said Sabyasachi Majumdar, Senior Vice President at research and ratings agency ICRA.

CIL had issued a notification revising the prices of pit head run-of-mine (ROM) prices of all grades of non-coking coal effective. The price of thermal grade coal with Gross Calorific Value (GCV) of 3,100 kcal per kg to 4300 kcal per kg for supply to power sector has been increased by about 15-18 per cent. This, along with the levy of evacuation charges of Rs 50 per tonne is estimated to increase the cost of generation for coal-based power plants by about 13-15 paise per unit. Power generators and IPPs which have cost plus-based PPAs would be able to pass on this increase in fuel cost to their off-takers, mainly state-owned distribution utilities. For domestic coal-based IPPs which have competitively bid-based PPAs, the impact on the margins will be dependent on the extent of escalable energy charge component in the tariff.

Non-Coking Coal price

on Calorific Value Basis

Six years since replacing the erstwhile useful heat value (UHV) based pricing system with gross-calorific value-based pricing, Coal India adopted a new pricing policy on January 9 for non-coking coal, used primarily for electricity generation.

As per the prevailing policy, the fuel is divided in 17 grades, divided by 300 kilo calorie (Kcal) each. Each grade attracts the same price. As per the new policy, to be implemented on or before April 1, "coal sales bill will be raised on per unit calorific value of coal" (Rs./Kcal), as is the global practice. Apparently, the new system should benefit the consumer, as they will be charged precisely for the quality supplied. Currently, consumers getting 4,599 Kcal coal and 4,300 Kcal fuel pay the same price for G-10 fuel. In the future, price will vary for even one Kcal variance in energy value.

In an unsigned communiqué, circulated through a PR agency, CIL claimed the new system will be "transparent". No public announcement is made on the pricing plan. However, unofficial sources say as per the new system, CIL will divide fuel in seven brands with one price coefficient for each bands.

For example, the most consumed varieties from G10 to G14 — with gross calorific value ranging from 3,101 to 4,600 — will be sold at 23 paise per Kcal basis. It means the power plant getting 3,101 Kcal coal will pay Rs.713 a tonne, which is lower than the current G14 (3,101 Kcal to 3,400 Kcal) price band of Rs.748 a tonne. On the other hand, the power plant supplied with 4,600 Kcal fuel should pay Rs.1,058 a tonne, higher than the current G10 (4,300 Kcal – 4,600 Kcal) value of Rs.1,024 a tonne. Fuel of GCV value above 4600 Kcal (currently G2 to G9) will be charged in five different price coefficients ranging from 24 paise/Kcal to 48 paise/Kcal.

The industry welcomed the new pricing system with a pinch of salt. "Apparently this is a good system. But, considering the prevailing rate of grade slippage and the status of their machinery to measure fuel quality, I foresee trouble," said a power generation official.

Coal, Renewable, Spectrum Auctions Led to 'Winners' Curse: Economic Survey 2018

The Economic Survey expressed concern over aggressive bidding by private companies for bagging licences for spectrum, coal mining and renewable energy projects.

"In the case of spectrum, coal and renewables, auctions may have led to a winner's curse, whereby firms overbid for assets, leading to adverse consequences in each of the sectors; but they created transparency and avoided rent-seeking with enormous benefits, actual and perceptional," said the survey tabled in Parliament by Finance Minister Arun Jaitley.

It said the government's crackdown on corruption and weak governance have significant social and economic

benefits, but these are not without challenges. Calling for policies that minimise costs wherever possible, it suggested greater reliance on using incentives and carrots than on sticks.

Informal cash-intensive sectors of the economy were impacted by demonetisation and the GST, the Survey said, while banning promoters of insolvent companies from the auctions under the Insolvency and Banking Code (IBC) had its own issues. While this discourages loan defaults, it has created the possibility of fewer bidders and lower prices in the auctions of insolvent firms, it said.

Coal Block Auction Process

To B`e Revamp

India's Coal Ministry has initiated a revamp of the coal block auction process following the cancellation of two bidding rounds last year, owing to a poor response from non-power companies. The Ministry has set up a committee to prepare a report suggesting changes in the auction model and expects to put in place a new regime within the next six to eight months. Revenue sharing and/or production sharing contracts with successful bidders are among some of the changes under consideration.

The thinking is to align the coal sector with oil and gas, through the introduction of its own version of Open Acreage Licensing Policy (OALP) that governs crude oil and natural gas exploration and production.

Under OALP, which forms part of the new Hydrocarbon Exploration Licensing Policy, exploration companies can carve out blocks of choice and, once expressions of interests have been submitted and accepted, government will hold an auction every six months to allocate the asset to a successful bidder.

At the same time, under the liberalised exploration policy, any exploration company finding exploratory projects viable for development will have full production, marketing and pricing freedom and a revenue sharing contract with the government.

Coal Vision Document 2030

The Coal Vision Document 2030 suggests that no new coal mines need to be allocated or auctioned beyond the current pipeline.

According to the document, total capacity of mines allocated and auctioned, including Coal India, SCCL and Neyveli Lignite, as on date is about 1,500 million tonnes per annum at the current rated capacity. In view of the likely demand, there is limited requirement of starting new coal mines except the ones already auctioned or allocated.

In the scenario where actual demand is higher, focus could be laid on brownfield expansion of mines or re-rating of mines based on the parameters of each mine. Although there is limited business case for new mines in the immediate future, say 2022-25 horizon, it may be advisable to monitor the growth in coal demand and decide on new mines accordingly.

In the short term, coal production is likely to be significantly lower than the potential, although demand may be met. Majority of the mines currently auctioned or allocated (including CIL, SCCL) are scheduled to be completed by FY20. However, delayed clearances, land acquisition problems, R&R issues, evacuation constraints, etc., can delay materialisation of these plans. Based on the latest status updates, it is estimated that 33 per cent of the capacity is at risk of delay. Hence, the estimated coal production in short term, FY20-22, is 1,050MTPA which is comparable to the demand.

Production from captive mines is particularly at risk. More than 100 blocks have been allocated, auctioned or allotted, for captive and commercial mining till date. These blocks are estimated to have an overall capacity to 450-500 million tonnes per annum.

Based on the current status of these blocks, it is estimated that captive or commercial coal blocks may contribute 90-170 million tonnes per annum by 2020. However, this does not exclude the possibility of coal deficit at consumers' end driven by evacuation constraints, marketing policies and mismatch between regions of production vis-a-vis consumptions. Coal mining companies need to ensure continuous monitoring and portfolio planning to avoid coal deficit.

Kudankulam Nuclear Power Plant Generates Full 2,000 MW Capacity for the First Time

Both operating units of the Russian-aided Kudankulam Nuclear Power Project (KNPP) generated electricity to their full capacity of 1,000 MW each for the first time, according to a statement from Russia's atomic energy corporation Rosatom.

The Russian equipment supplier and technical consultant of the Nuclear Power Corporation of India Ltd (NPCIL)-operated KNPP said, in a statement, that the Kudankulam units recorded the highest ever production since the start of operations.

"Unit 2 of the Kudankulam nuclear plant in Tamil Nadu reached full capacity of 1,000 MW. For the first time both units 1 and 2 attained full generation capacity and KNPP and became the first nuclear plant in India to generate 2,000 MW of power," a Rosatom release said. While unit 1 was synchronised with the grid in October 2013, unit 2 completed the same function in August this year.

"The Kudankulam nuclear power plant has so far generated more than 20,000 million units of electricity, which helped to avoid around 17,083,874 tonnes of CO2 emissions," the statement said. The maximum generation attained at KNPP was confirmed by NPCIL sources at the site. Kudankulam, around 650 km from Chennai, has two 1,000 MW nuclear power plants, built with Russian equipment. Two more units — third and fourth — of similar size are being built with Russian collaboration at Kudankulam located in Tirunelveli district of the state.

Talks Underway with Westinghouse for Nuclear Power Project: Government

Discussions are underway with Westinghouse Electric Company for a "viable project proposal" to set up six nuclear power reactors, the government informed Rajya Sabha.

The project is planned to be set up at Kovvada in Andhra Pradesh and comprises six units of 1,208 MW each, Union Minister of State Jitendra Singh, who holds multiple portfolios, said in a written reply to a question.

"Presently, discussions with M/s. Westinghouse Electric Company (WEC) are in progress to arrive at a viable project proposal for setting up six nuclear power reactors," he said. Details on the cost and schedule of the project will emerge after the proposal is finalised.

Westinghouse Team's Visit Revives Hopes for Kovvada Plant

Westinghouse Electric, that went through bankruptcy proceedings last year, and was bought from Toshiba by a Canadian consortium, will visit India to discuss a reworked deal for nuclear reactors for the proposed nuclear plant in Andhra Pradesh's Kovvada. It is understood that the team of executives and engineers will travel to Mumbai to meet with officials of the Nuclear Power Corporation of India Ltd (NPCIL), which is the Indian operator, and with government officials including those from the Ministry of External Affairs (MEA) in Delhi.

The agreement that was expected to be signed by "July 2017" according to a deadline set in the Indo-U.S. joint statement of June 2016, had been further delayed after both Westinghouse Electric as well as Toshiba ran into major financial trouble.

A day before the announcement of the deal, Minister for Atomic Energy and Space Jitendra Singh had told Parliament that there was "no change in the plan to set up nuclear power reactors at Kovvada in cooperation with Westinghouse. Discussions are in progress between NPCIL and WEC to arrive at a viable project proposal." In December 2017, the Andhra Pradesh government said it had completed the land acquisition for the Kovvada "nuclear park" where the reactors are expected to be built.

Govt Approves Building of 12 Nuclear Power Reactors

The government has accorded administrative approval and financial sanction for construction of 12 nuclear power reactors in the country, Parliament was informed resently. Out of these, 10 will be indigenous Pressurised Heavy Water Reactors (PHWRs) with a capacity of 700 MW each and the remaining two will be Light Water Reactors (LWRs). The PHWRs will be set up in fleet mode and the LWRs will be established in cooperation with the Russain Federation, Minister of State in Prime Minister's Office Jitendra Singh said in a written reply in the Lok Sabha.

Two PHWRs each will be set up in Madhya Pradesh, Karnataka and Haryana, while four will be established in Rajasthan, he said, adding that the two LWRs each having a capacity of 1,000 MW will come up at Kudankulam in Tamil Nadu.

The security aspects are being reviewed by the Atomic Energy Regulatory Board (AERB) before giving clearance for various stages of the projects, the minister said. Currently seven nuclear power projects are being constructed in the country with a combined capacity of 5300 MW of capacity. Besides work for the construction of two nuclear reactors with total capacity 1,400 MW at Gorakhpur in Haryana has commenced, he said.

URJA VICHAR MANCH

Tuesday, 6th March, 2018, 3.00 p.m. Shriram Hall
PHD House, New Delhi

Theme

Role of Nuclear Power in Electricity Mix of the country

Speaker Dr. R B Grover, Homi Bhabha Chair, DAE & Member
Atomic Energy Commission

Edited and Printed by **Mr. Amarjit Singh, MBE Secretary General**
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Energy Cooperation between Ancient Civilisations

20th December 2017, PHD House, New Delhi

Think Tank Forum on Energy Cooperation among Ancient Civilisation was organised by India China Economic Council and CNPC Economics and Technology Research Institute China on 17th November 2017 in Beijing, China. Shri S C Tripathi, Patron, IEF and Former Secretary, MoPNG and Shri YR Mehtra, Treasurer, IEF and Former Director (Marketing), GAIL represented India Energy Forum at this conference.

They shared their thoughts and apprised the Members about the deliberations of the Conference, India Energy Forum at the meeting.

Shri Tripathi and Shri Mehta gave a joint presentation and informed the members that China is changing fast and is indeed looking for foreign cooperation especially with India. Mr. Tripathi said he was a bit surfaced to see a changed China since the vast of our mission in their commitment to resolve the issues and progress is commendable. Mr. Mehta gave the presentation.

Shri Anil Razdan, President, IEF welcomed the participants and gave introductory remarks and Shri G C Chaturvedi, Chairman, Oil & Gas Group, IEF gave the Vote of Thanks. The meeting was largely attended by the members.

We Will Miss Him

We sorry to inform you about the demise of Prof."Kargil" M. Subramaniam (MSR) on 19th January, 2018. He was Convenor of our South India Chapter and was instrumental in organising annual event in Chennai in collaboration with Madras Chamber of Commerce.

We express our deep appreciation for his support to the Forum's initiatives.

May his noble soul rest in peace. Our heartfelt condolences to his family and friends.

Indian Advance Ultra Super Critical (AUSC) Programme for More Efficient Power Generation

17th January 2018, PHD House, New Delhi

We had organised a URJA VICHAR MANCH Interactive meet on 17th January 2018, 3.00 p.m. The topic was Indian Advance Ultra Super Critical (AUSC) Programme for More Efficient Power Generation. The meeting was addressed by Shri S Biswas, Director (Engg, R&D), BHEL and Presentation by Shri S C Chetal, Mission Director, AUSC. While Mr B Bhambhani, Convenor, Power Group, IEF gave Introductory Remarks, Mr Anil Razdan, President, IEF and Former Secretary, Power welcomed the Speakers and participants and gave a background about the topic.

While Dr Biswas touched upon Introduction to supercritical power plant parameters and Background of AUSC development in India, Mr Chetal gave a presentation on the technical aspects of the programme.

The Advanced Ultra Supercritical (AUSC) technology for coal base thermal power plants is one of the ambitious projects sanctioned by Government of India is R&D Project for development of AUSC Technology for Thermal Power Plants on a Mission Mode.

The target for the plant efficiency has been set as 46% and the steam parameters (with single reheat) of 310kg/cm2, 7100C / 7200C have been selected. This gives a reduction in carbon dioxide emissions of about 11% compared to supercritical plant.

The R&D project objectives include indigenous design, design review by external experts/organisations, material testing and evaluation of special alloys employed for boiler and turbine, indigenous production of key wrought and cast products within the installed capacity, indigenous manufacturing technology development of key components in full scale prototype, and establishment of a few important experimental facilities for design validation.

Both the Speakers stated that is the largest R&D Project ever under taken and will be completed in next two years. Thereafter the commercial application will be taken up and a period of five years has been decided.

The meeting was attended by the large members of the Forum including Dr D V Kapur, who was member of the Committee which started discussion on this R&D projects.

INDIA ENERGY FORUM

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15th Petro India

16th March 2018, Hotel Le Meridien, New Delhi

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