

TOTAL ENERGY

Vol - 14 | Issue - I

January - February 2019

Energy Index 2018

- ◆ **Deen Dayal Upadhyaya Gram Jyoti Yojana**
100% Villages Electrified
- ◆ **Ujala Scheme**
31.68 crore LED bulbs distributed and 74.79 lakh LED street lights installed
- ◆ **Generation Capacity**
Around 1,07,000 MW Generation Capacity has been added till October 2018.
- ◆ **UDAY**
 - More than Rs.34,000 crores interest cost saved by DISCOMs within two years
 - Reduction in AT&C losses in 22 States within two years of operation. AT&C losses have come down to 18.76% in FY 18 as compared to 20.77% in FY16
- ◆ **Pradhan Mantri Ujjwala Yojana**
6 Crore Cooking Gas connections given
- ◆ **Saubhagya Yojna**
16 States achieved 100% Household Electrification
- ◆ **India Emerged Energy Surplus Country**
Energy deficit reduced to almost zero and India emerges as net exporter of electricity to Nepal, Bangladesh and Myanmar
- ◆ **Renewable Energy**
101.83 billion units were generated.
- ◆ **Solar Capacity**
Reached 27400 MW – Upto September 2018
- ◆ **Roof Top Solar**
Capacity Reached 3399 MW
- ◆ **Nuclear**
KAIGA Generating Station created world record for continuous operation of 941 days



Undersea Natural Gas Pipeline from Iran to India



In India's quest for Energy Security, through a New Route, **SAGE**, a Global Consortium, is developing a \$4.5 Billion world's deepest Common Carrier Natural Gas Pipeline, directly from Iran to Gujarat coast in India, through the Arabian Sea. (A route via Oman is also being explored).

Gas Qty: 31.1 mmscmd under a 20/25 years Long-Term Gas Supply Contract with Iran.
Pipeline tariff: USD 2.5 per mmbtu range.

Fuelling India's 'Make in India' plans and Gas based Economy vision by this path-breaking infrastructure Project, for higher economic growth.

Meeting needs of Power/Fertilizer Industry for affordably priced gas, while moving to a low carbon economy, after Paris Climate Change Deal.

Alternative & safer route to bring/swap Turkmenistan/Russian & other region's Gas to India Gujarat coast.

Gas Pipelines are more competitive than LNG upto a distance of 2500/3000 kms, due to high cost of gas liquefaction/transportation/re-gasification (5-6 USD / mmbtu).

Annual saving of USD one billion approx. (Rs.6000/7000 Cr.) in comparison with similar quantity LNG import.

SAGE 
Middle East to India
Deepwater Gas Pipeline

South Asia Gas Enterprise

(Siddho Mal Group)

A-6, Connaught Place, New Delhi-110001

Ph: +91-11-23324245 / 43581237

E-mail: siddhomalage@vsnl.net

www.sage-india.com

From the Editor

Power for All Imperative to Avoid Distortions



The programme to provide power to all is commendable and is progressing smoothly. The Government claims that 100 of villages have been electrified. It is also reported that by end January 2019, 99.11 per cent of the targeted 24.8 million households have received electricity connections. Only

about 221300 households are left to be electrified in four States – Assam, Rajasthan, Meghalaya and Chattisgarh. A great achievement indeed.

The bigger challenge is to ensure that the electricity supply to the newly electrified villages and households is sustained. The World Bank has recently published a Report which suggests that Indian Power Sector losses \$86 billion annually to Distortions.

“The greatest source of waste is excessive coal-fired power generation, which leads to substantial health and environmental damages. The impact of power shortages on downstream rural households and firms is the second-largest source of economic cost estimated at 1.42 per cent of GDP a year. The third-largest cost is downstream social distortions from the use of kerosene lamps, which are estimated to cost the economy the equivalent of 0.31 per cent of GDP,” the report said.

These distortions are followed by regulatory distortions upstream, including the under-pricing of coal and the cross-subsidisation of passenger railway service from

Editorial Advisory Board

Dr R K Malhotra
DG, FIPI

Dr Malti Goel
Former Senior Scientist, DST, MoST
Convenor, Renewable & Environment Group, IEF

Dr M M Seam
Former Advisor, Essar Minerals

Mr B Bhambhani
Convenor, Power Group, IEF
Former ED, BHEL

freight, both of which exacerbate coal shortages, resulting in a combined welfare loss of 0.19 per cent of the GDP.

Further, groundwater depletion induced by electricity subsidies costs 0.12 per cent of GDP; inefficient electricity generation and distribution cost the economy an estimated 0.1 per cent of GDP a year; and electricity cross-subsidies, which undermine the international competitiveness of manufacturing, cost 0.1 per cent of GDP.

The analysis only provides a qualitative discussion of the social cost of coal mining and captive power generation because the data needed for an economic valuation of these impacts do not exist. “In addition, non-performing power sector loans threaten the stability of India’s financial sector. Their impact on economic growth was not quantified due to lack of data,” the report said.

In addition, there are many India specific challenges including connectivity, affordability, fuel availability which may derail the programme. The stressed Assets, slow demand growth, stagnation of hydro power projects are other significant challenges. The greatest issue is finding an acceptable solution to de-stressing the stressed assets. We have committed at the last COP meeting on environment to cutting down emissions, supply clean energy to the consumers and strictly adhere to emission targets. This is a tall promise and would need concentrated efforts to fulfil it.

Power for all is a great goal but achieving sustained power supply to all, in real term, is a Highly challenging target.

Amarjit Singh

Sectoral News

Page No.

• RENEWABLES	4-13
• OIL & GAS	5-22
• POWER	23-29
• COAL	30-33
• NUCLEAR	34-35

World Bank praises India's Renewable Energy Success



The World Bank praised India's success in renewable energy auctions that delivered record-setting low prices for solar power and said that the number

of countries with strong policy frameworks for sustainable energy more than tripled -- from 17 to 59 -- in the eight years till 2017.

Many of the world's largest energy-consuming countries significantly improved their renewable energy regulations since 2010, said the World Bank's report -- Regulatory Indicators for Sustainable Energy (RISE) 2018, charting global progress on sustainable energy policies.

The report was released on the sidelines of the 24th Conference of the Parties to the UN Framework Convention on Climate Change (COP24).

Progress was even more marked in energy efficiency, with the percentage of countries establishing advanced policy frameworks growing more than 10-fold between 2010 and 2017.

Among countries with large populations living without electricity, 75 per cent had by 2017 put in place the policies and regulations needed to expand energy access. But there were still significant barriers to global progress on sustainable energy.

While countries continue to be focused on clean energy policies for electricity, policies to decarbonize heating and transportation, which account for 80 per cent of global energy use, continued to be overlooked.

Senior Director for Energy and Extractives at the World Bank Riccardo Puliti said that the report contained a warning that without accelerated adoption of good policies and strong enforcement, the world's climate goals and Sustainable Development Goal 7 were at risk.

This momentum was particularly marked in Renewable Energy. Among the countries covered by RISE, only 37 per cent had a national renewable energy target in 2010. By 2017, that had grown to 93 per cent, the report said. By last year, 84 per cent of countries had a legal framework in place to support renewable energy deployment, while 95 per cent allowed the private sector to own and operate renewable energy projects.

Among the four SDG7 Target Areas -- Renewable Energy, Energy Efficiency, Electricity Access and Access to Clean Cooking -- the last one continued to be the most overlooked and underfunded by policymakers.

There had been a little progress on standard-setting for cook stoves or on consumer and producer incentives to stimulate adoption of clean technologies, the report said.

"How did India structure its renewable energy auctions to deliver record-setting low prices for solar? At the same time, we need urgent action to address critical gaps, such as failing utilities, clean cooking, and the slow progress on decarbonizing heating and transport," said Puliti.

Green Energy Carries Hidden Costs

Brooking Study

Edited Excerpts

The euphoria over solar power needs to be tempered. Dependence on coal-based power is here to stay for the next 2 decades

However, to say that renewable energy has already become cheaper than coal-based thermal energy "masks", "system level costs as well as disproportionate impact on selected state generators and stakeholders". Hidden costs are involved.

1. What are the direct and indirect costs of the focus on Renewable Energy?

2. Who bears this cost?

3. Is the manner in which renewable energy mission being rolled out in the country sustainable?

There is no doubt about the fact that India is a “sun rich” country with bright sunshine available for better part of the year. However, there would still be issues that will need to be considered as we proceed towards increasing our dependence on solar energy.

(i) The first step for higher solar is improving predictions. However, even perfect predictions only go so far — we know monsoons reduce the output, and the sun sets every evening. India will have to step up its game for learning to balance variable renewables, like other countries have done. But we lack some tools to do so, such as flexible markets and dynamic pricing — most power is sold via static Power Purchase Agreements (PPAs).

(ii) Price “grid parity” will be another issue that will have to be resolved. To meet peak demand in the evening, some other source of power will required to be built. Similarly, when solar power is available (typically during the day) some other power source has to back down. Both have a cost, which someone has to bear.

(iii) Rooftop solar plants sound exciting but would sound the death knell for the power distribution companies, who risk losing their best customers. These small localised plants will use grid-like battery as they (the solar plants) will be used only when the sun is shining. The “net metering” will enable them to push power into the grid when the requirement is relatively low and there is already “surplus” power. This could lead to what is termed as “utility death spiral”.

(iv) There are issues relating to setting up of solar plants as well as financing. Right now everyone

seems to be rushing in, but there is some resistance from States (the discoms).

(v) Does solar perform as envisaged? There are issues relating to maintenance of solar panels, especially in the context of dust and pollution. The quality of solar panels manufactured on mass scale is already causing problems. Land costs, availability, and bankability are also growing concerns, especially as we scale. Recall the 175 GW is only for 2022 — much more is to come in future years.

Storing Solar Power- What has been the response to these challenges? Yes, there is enormous amount of research taking place in the western world and China to find the “storage” solution that is critical to the sustainability of this “solar drive”. The rest of the world is waiting with bated breath as the power of solar energy is being unleashed.

However, no one seems to be bothered about the adverse impact on the coal-based power plants that provide for most of the energy requirements in the country. The generation companies (Gencos) are already in trouble on account of shortage of coal and demand growth not being good enough to service the investments made.

The proposed amendments bring in concepts like Renewal Energy Obligation (RGO) and Renewal Purchase Obligation (RPO) along with stringent penal provisions that will adversely impact the Gencos that are already under pressure.

Green energy is the way forward but it is not likely to end the need for coal-based thermal plants in India. Hence, it would not be advisable to promote it at the cost of pushing thermal power plants to become unviable on account of solar power.

The two have to co-exist and supplement each other. The dependence of coal-based thermal power plants will continue for at least the next couple of decades.

Small Players May Exit Green Energy

Sumant Sinha, CEO, ReNew

The Renewable Energy Sector in India is on the road to consolidation and players with smaller portfolios are looking at exiting the market as returns are shrinking in the face of lower tariffs and uncertainty on the policy front, Mr. Sumant Sinha, Chairman and CEO of ReNew Power, has said.

“With tariffs dipping and some uncertainty coming in on the policy front, project developers with a relatively lower appetite for growth or risk, are exiting the business at fair valuation of their asset assets”.

ReNew Power, backed by big-ticket investors like Goldman Sachs, Asian Development Bank and Abu Dhabi Investment Authority among others, has a total capacity of 3,500 MW of wind and solar projects, both operational and under construction. Mr. Sinha declined comment on the company's acquisition plans but said ReNew is open to inorganic growth in wind and solar businesses.

The Sector has seen a wave of M&A deals by various companies including ReNew Power in the past two years.

These include Tata Power's buyout of Welspun Energy's renewable portfolio of 1140 MW for Rs 9,249 crore in June 2016; Greenko Energies takeover of the Indian assets of around 500 MW of US-based Sun Edison for \$392 million in October 2016, after the latter went bankrupt. In June last year, CLP India, a wholly-owned subsidiary of Hong Kong-based CLP Holdings, bought a 49% stake in Suzlon's solar subsidiary SE Solar for Rs 73.5 crore. In July, Vector Green Energy, the renewable energy arm of IDFC Alternatives, acquired 190 MW of solar assets from US-based First Solar for an undisclosed amount.

While companies with small portfolios are looking for buyers, those with long term outlook are

looking at making more acquisitions, as clean energy business is capital-intensive and not everyone can raise that kind of capital in the long run, he said.

Solar Power Declines

Wood Mackenzie

After a decade of stellar growth, solar power's demand in the Asia-Pacific region is set to decline for the first time this year, according to Wood Mackenzie, a global energy research and consultancy firm.

As compared to 2017, the region's solar demand will dip 18 per cent to 59 Giga Watt (GW) in 2018 due to declining installations in China, India and Japan. “Traditionally the leader of the pack in Asia-Pacific, China's solar installations are expected to fall 30 per cent this year as it is adopting various policy instruments which will reduce subsidies,”.

China has had an unprecedented growth in photovoltaic (PV) installations over the past few years. The 13th five-year plan, published in 2016, set a minimum target of 105 GW by 2020. It met the target in 2017 - three years ahead of plan - as the cumulative capacity reached 131 GW.

During 2016-2018, costs declined at a faster pace than the Feed-in-Tariff (FIT) levels as module oversupply continued. As a result, installation frequently surpassed the annual provincial construction quota for utility-scale projects and led to delays in subsidy payments and curtailment.

In Japan, high levels of FIT have attracted more than 80 GW of solar pipeline capacity despite the high-cost environment. Developers pushed back on grid connection timeline to realise module cost savings and significant projects remained in development status.

The Government re-evaluated the pipeline to only permit projects -- of around 50 GW capacity including

operational ones -- that have sound business plans that would be grid-connected within the next three years.

By 2023, Wood Mackenzie expects the levelized cost of electricity (LCOE) to fall by 25 per cent to US\$ 55 per Megawatt-hour (MWh). This makes solar energy more competitive compared to traditional energy sources such as gas and coal, and could drive additional demand from emerging markets in the region.

Solar Power

Capacity Addition Down 44%

Bridge to India

India's solar power capacity addition is slowing down as the country added only 1,900 Megawatt in the first six months of the current financial year (April-September 2018-19), down 44 per cent as compared to the solar capacity added in the same period last year, according to consultancy firm Bridge to India.

The generation capacity of 1,200 MW added in the quarter ended September, too, was 43 per cent less than the capacity addition achieved in the corresponding quarter last fiscal. "Indian solar market has grown spectacularly over last four years but is struggling to sustain because of policy and execution challenges. The slowdown is worrying for all stakeholders," said Mr. Vinay Rustagi, Managing Director, Bridge to India.

He also said the sector is witnessing increasing volatility in tender issuance, auctions and capacity addition because of poor coordination between different Government agencies and constraints in transmission capacity and land acquisition.

The country's total solar capacity reached 27,400 MW at the end of September 2018, including 223,200 MW of utility scale and 3,400 MW of rooftop solar projects apart from 800 MW off-grids solar. "Including estimated utility scale capacity addition in the next two quarters, total installation in financial year 2018-19 is expected

at only 4,100 MW, down a very significant 55 per cent over previous year and well short of MNRE's 16,000 MW annual plan," the consultancy said.

According to Rustagi, the best case estimate for solar capacity by March 2022 stands at 67,000 MW -- well short of the 100,000 MW target set by the Government unless "decisive remedial steps" are taken immediately.

However, rooftop solar has come up as a bright spot -- which is growing at 70 per cent annually-- within the solar power market. The rooftop solar segment is benefiting from a sharp fall in module prices, which have slumped 30 per cent in the past nine months. The segment is also unaffected by policy uncertainty and is not reliant on land or transmission infrastructure.

India to Achieve Climate Goals Before Deadline

Environment Minister Mr. Harsh Vardhan



India is set to surpass its commitment to increase the share of renewables in its energy generation basket and reduce the amount of carbon dioxide pollution produced for every dollar of GDP by 33 to 35% ahead of 2030.

"In terms of our commitment we are already on track. This has been officially acknowledged by the United Nations Environment, all related stakeholders and agencies. We are already achieving our goals much ahead of the deadline," said Environment Minister Mr. Harsh Vardhan.

India's national climate action plans, known in UN parlance as nationally determined contributions (NDCs), under the Paris Agreement set three major goals—increase the share of non-fossil fuels to 40% of the total electricity generation capacity, to reduce the emission intensity of the economy by 33 to 35% by 2030 from 2005 level, and to create additional

carbon sink of 2.5 -3 billion tonnes of CO2 equivalent through additional forest and tree cover.

Independent assessments show that India's commitments are keeping with the Paris Agreement goal of keeping temperature increase to well below 2 degrees Celsius. More recent independent assessments find that India is likely to meet its goals, particularly on increasing non-fossil generation capacity and reducing emissions intensity, ahead of the deadline set by India in its Paris climate pledges.

"We are on our way to achieving our NDC targets much before the deadlines we had set for ourselves. We are in a position from where we can over-achieve our targets," said Environment Secretary Mr. C.K. Mishra.

An analysis by Australia-based think tank Institute for Energy Economics and Financial Analysis (IEEFA) finds that India is likely to achieve its energy capacity and emissions intensity goals by 2020, that is a decade before the deadline of 2030 it set in its NDC.

On increasing the non-fossil fuel capacity target, IEEFA estimates that by March 2019, India's thermal power capacity will be 226GW or 63% of India's total of 360GW. At that pace, by the end of calendar 2019 the share of non-fossil fuel capacity is likely to exceed 40%.

The National Electricity Policy finalised in 2018 forecasts a decline in fossil fuel capacity from 218GW or 67% of 2017 installed capacity to 264GW or just 43% of total installed capacity by 2027.

The emissions intensity of GDP, India has been able to bring it down by 21% below 2005 levels by 2014. At this average annual rate of 2%, India will meet its Paris goal nearly a decade ahead of 2030.

India has made it clear that it is aware of that the world needs to do more and neither did it shy away from the idea of stepping up its own efforts. "We realise that everyone in the world needs to do much more than

what they are currently committed to doing, because that is not enough. We hope that all the developed countries also fulfil their commitments. This includes their obligations to provide money and technology to the developing countries, so that countries like us are able to do much more than we are currently doing," said Mishra.

Solar Rooftop Installations At Record High

Report

India witnessed record installation of 1,538 MW of solar rooftop in the year ended September 30, taking the total capacity in the category to 3,399 MW, according to a report. "There was record installation of 1,538 MW (rooftop solar) in last 12 months (up 75 pc year-on-year) ended September 2018. Total rooftop solar capacity reached 3,399 MW on September 30, 2018," said the report by consulting firm Bridge to India.

It said rooftop solar capacity is expected to touch 15.3 GW by March 2022 in a status quo scenario. This is about 38 per cent of the government's 40 GW target.

According to the report, commercial and industrial installation consumer segment dominates the market with 70 per cent share, while residential segment continues to lag with just 9 per cent.

It also stated that OPEX model where third party developers own and develop projects on customer sites, is still growing faster than rest of the market and added 559 MW capacity in the last 12 months (35 per cent of the market share).

The study also highlighted that Maharashtra (473 MW), Tamil Nadu (312 MW), Karnataka (272 MW), Rajasthan (270 MW) and Uttar Pradesh (223 MW) are the top five states accounting for 54 per cent share of the total market.

It said the CAPEX market (where entire rooftop is owned by rooftop owners) is even getting more

fragmented with top 10 players having a share of only 18 per cent (21 per cent last year). The top 3 players include Tata Power (4.4 per cent), Mahindra (2 per cent) and Sunsure (2 per cent).

The study also stated that in inverter market, Chinese players are growing and command a combined share of 43 per cent.

Bids for Wind Power Projects

Mr. R.K. Singh



India has finalized bids for setting up wind power projects of over 8,000 Megawatt (MW) capacity through Solar Energy Corporation of India (SECI) and National Thermal Power Corporation Ltd (NTPC), Power Minister Mr. R K Singh said.

“As on date, the bids for setting up of wind power projects of aggregate 8389.90 MW capacity have been finalized through SECI and NTPC,” Singh said in the Lok Sabha.

The wind power projects in the country are installed on the basis of commercial viability through tariff based competitive bidding process. Beside above projects, bids of 500 MW each have been finalized by the states of Tamil Nadu, Gujarat, and Maharashtra, Singh informed.

The Government has set a target of installing 60 GW of wind power capacity by 2022, against which 35 GW capacity has already been installed.

The Government is promoting wind power projects in the entire country by providing various fiscal and financial incentives such as Accelerated Depreciation benefit; concessional customs duty exemption on certain components of wind electric generators. Besides, Generation Based Incentive (GBI) is being provided to the wind projects commissioned before 31 March 2017.

In addition to these incentives, various steps have been taken to promote installation of wind capacity in the country comprising technical support that includes wind resource assessment and identification of potential sites through the National Institute of Wind Energy, Chennai.

In order to facilitate inter-state sale of wind power, the inter-state transmission charges and losses have been waived off for wind and solar projects to be commissioned by March, 2022.

The Government has also issued guidelines for the tariff-based competitive bidding process for procurement of power from grid-connected wind power projects. These Guidelines aim to enable the distribution licensees to procure wind power at competitive rates in a cost-effective manner.

India to bid out 500 GW Renewable Energy capacity by 2028

Mr. Anand Kumar, Secretary, MNRE



India is planning to bid out 500 giga watt (GW) of renewable energy generation capacity by 2028 to achieve its goal of 40 per cent electricity generation from non-fossil fuels by 2030, said Mr. Anand Kumar, Secretary, Ministry of New and Renewable Energy (MNRE) at the India-Norway Business Summit 2019.

Of this, 350 GW would come from solar, 140 GW from wind, and the remaining from small hydro, biomass, he added.

“This figure excludes large hydro. If we take large hydro into account the figure will grow to 560 GW to 575 GW. To reach this figure we have to bid out 30 GW of solar energy and 10 GW of wind energy every year,” Kumar said.

He further added that if the country’s Gross Domestic Product (GDP) grows at a rate of 6.5 per cent, the

requirement for electricity generation capacity would reach 840 GW by 2030.

“Out of 840 GW, we plan to install a little more than 500 GW in renewables. We have installed 75 GW renewable energy capacity in the country and another 46 GW is under various stages of installations,” added Kumar.

He also said that if large hydro projects were considered under renewable energy, additional 46 GW would be in the process of installation, taking the total figure to 163 GW.

The existing 75 Gw base of green energy capacity constitutes around 22 per cent of the total installed power generation capacity.

Kumar said that the share of non-fossil fuel based capacity in total would be 33 per cent by 2022 without considering large hydro plants. The country would achieve 40 per cent by 2022 itself rather than 2030 in case large hydro is also taken into account.

Solar and Wind Energy Projects

Bids for 80 GW by 2020

MNRE

India has declared the trajectory of bidding 60 giga watt (GW) capacity of solar energy and 20 GW capacity of wind energy by March 2020, leaving two years' time for execution of projects, Ministry of New and Renewable Energy (MNRE) said.

A total of about 73.35 GW renewable energy capacity has been installed in the country as of October, 2018, from all renewable energy sources.

This includes about 34.98 GW from wind, 24.33 GW from solar, 4.5 GW from small hydro power, and 9.54 GW from bio-power. Further, projects worth 46.75 GW capacities have been bid out under installation.

Solar Power Sector: 2019 outlook

Summarised views of stakeholders

The outlook for the solar power industry looks positive in 2019 on the back of improved capacity addition, favourable policy push and rising demand for non-fossil fuel based energy, industry CEOs and sector experts told ETEnergyworld. They, however, caution against low tariffs hurting the viability of projects and quality of installations.

The solar energy sector was full of uncertainties in 2018 with respect to the imposition of safeguard duty, falling tariffs and continuous fall of the Indian rupee against the US dollar. The country's solar power generation capacity grew to 26,000 megawatt (MW) by end of September 2018 which comprises 87 per cent (23 GW) of utility-scale solar and about 13 per cent (3 GW) of rooftop solar projects.

According to Mr. Girish Kumar Kadam, Vice President, and sector head of corporate ratings at research and ratings agency ICRA, the overall outlook for solar power's demand remains favourable in India, given the improved tariff competitiveness of solar energy and strong policy thrust.

“Even in the conservative estimates, assuming 5 per cent energy demand growth and 8 per cent solar Renewable Purchase Obligation (RPO) requirement by FY22 (as against policy target of 10.5 per cent), incremental solar capacity addition requirement is estimated at about 40-45 GW over next three to four period,” he said.

However, the continuous fall in tariffs witnessed last year has brought viability of projects under question. “With low tariffs, there may be a compromise in the quality of the products used in setting up of the plants,” said Mr. Sanjeev Aggarwal, Founder, and CEO, Amplus Energy Solutions. He added increasing scepticism regarding quality would be an alarming trend for 2019.

More than 90 per cent of solar panels and modules used in Indian solar projects are imported from China and Malaysia. Therefore, domestic price fluctuation is also dependent upon supply trends in these markets. According to Mr. Maxson Lewis, Managing Director, Magenta Power, the year 2019 would be driven by cost optimisation and stabilisation of solar panel prices, and the crash in solar prices as a result of the overcapacity in China in 2017-18 is set to taper off.

“The demand is picking up in Africa which is a logical market for China and, hence, the pricing scenario is likely to get back to demand-driven price points rather than oversupply driven dips,” Lewis said.

In order to address the issue of Chinese imports and to boost local manufacturing, the government had floated a 10 GW tender in May 2018, which received a lukewarm response from the industry. The manufacturing-linked tender was first floated by Solar Energy Corporation of India (SECI) but the industry has not been keen on the model and the bid submission was postponed six times.

India needs to focus on strategies for the long-term growth of the Renewable Energy Sector in addition to chasing ambitious solar deployment targets, says Mr. Rajendra Kumar Parakh, Chief Financial Officer at Vikram Solar, a large solar power developer.

“Investing in domestic manufacturing can help in building the supply chain, control prices, and earn foreign exchange through exports besides creating jobs, increasing gross domestic product for the country and stabilising the adverse balance of payments,” he said.

India’s solar deployment plan has also received a boost from multinational corporations who are increasingly declaring themselves net carbon zero companies. More and more of these corporates are working to lower their carbon footprints and moving to adopt solar.

“We believe that adoption of solar energy by corporates will continue to grow at a fast pace as they

recognise climate change and sustainability as the need of the hour, coupled with the cost advantages of switching to solar,” said Mr. Nikunj Ghodawat, CFO of Clean Max Solar.

Among the other factors helping quicker pickup in demand for solar is the government’s focus on electric mobility. “Additional clarity is likely to come in with regards to regulations and fiscal incentives in the EV space. This may have an impact on the adoption of EV charging infrastructure (augmented by solar energy), as well as EV accessories (eg, storage),” said Mr. Ramnath Vaidyanathan, CEO of Wish Energy, a subsidiary of Bangalore-based Enzen Group.

Other industry leaders believe India’s solar power sector is set to witness a technology-led growth at a massive scale. Technological innovation is at the centre of solar power development in India, say Mr. Sunil Rathi, Director at Waaree Energies, a large solar player. “With disruptive techniques that put us on a par with international counterparts, we believe floating solar, energy storage and flexible modules will prove to be important tools in taking solar energy to the next level,” he said.

175 GW Target Difficult

CSE

India would fall short of the Government’s target of achieving 175 GW of solar capacity by 2022, city-based think tank Centre for **Science and Environment** (CSE). CSE Director General Ms. Sunita Narain said this at a National Conference where she released a report titled the “State of Renewable Energy in India 2019”.

Emphasising the need for a Renewable Energy Policy to meet the needs of the poorest people in the country, she said there were several challenges like air pollution, climate change and lack of clean fuel for cooking for which renewable energy was essential.

“We believe that India needs a Renewable Energy Policy that is less about industry and more about

ensuring supply to meet the needs of the poorest in the country. It should be a means to both de-carbonise the economy and provide access to large numbers of people who are energy-deprived.

“Renewable Energy is not just another infrastructural challenge, rather this sector is important to achieve the challenges of modern era,” Ms. Narain said.

During the two-day Conference on Renewable Energy, International Solar Alliance Director Mr. Upendra Tripathy said the ISA is going to propose a new bank exclusively for financing energy access to billions.

Citing a recent World Bank report, Mr. Tripathy said 600 million people would not have access to energy even in 2040.

The existing banks do not focus on universal energy access and those still deprived are the poorest of the poor. Thus, out of the ambit of these banks, special finance mechanism is needed to target these people, he said.

Mr. Priyavrat Bhati, Advisor, Energy group, CSE, said that Renewable Energy got a boost in 2015 when India decided to install 175 GW capacity of such energy by 2022, but the momentum seems to have slowed down in the last year.

The CSE report recommended increase in the share of distributed renewable generation - solar rooftops and mini-grids -- besides encouraging ‘smart grids’ that use communications infrastructure, control systems and information technology for efficient delivery.

It also suggested investing in developing inexpensive energy-storage capacity, adding that an indigenous research can improve existing technology in terms of cost and performance.

The First floating Project

India’s first large-scale floating solar project is on its way with Shapoorji Pallonji winning the first block in

Solar Energy Corporation of India’s auction of 150 MW of such projects on the Rihand Dam.

“This is the country’s first floating solar project at such a scale,” said a Solar Energy Corporation of India (SECI) official. “There are a few others but they are in kilowatts.” The remaining 100 MW will also be shortly auctioned in blocks of 50 MW, the official said. “We had considered bringing out such a tender two years earlier, but our initial inquiries showed tariffs would have been in the range of Rs 7-8 per unit, and so we decided not to go ahead,” the official said.

Since then, solar tariffs have fallen dramatically, with those of ground mounted projects dropping to Rs 2.50-3.50 per unit. In UP, where solar radiation is not as strong as in states like Rajasthan, the average tariff have been more than Rs3 per unit.

Opportunity to bring Integrated Energy and Climate Change Policy

Ted Surette, KPMG

Power utilities are going through an enormous digital transformation with the adoption of smart meters, battery storage, and renewables, etc. There is an opportunity to bring integrated energy policy and climate change policy together. We need to bring greater clarity to our policies and responses so that we have a durable, scalable and flexible energy policy that can help us reduce our carbon emissions in the long run. India has a huge opportunity to leverage rooftop solar in terms of having potential subsidies and tariffs. It has to be affordable and cost-effective. In Australia, we have got a very high penetration of rooftop solar.

The whole ecosystem of players has to work in a more cohesive manner and understand things across the whole energy demand and supply. There are decisions made in silos. We need a common platform where the entire outlook of the energy landscape can be discussed.

Demand management is not well understood in some countries and it is going to play a very important role in the energy sector. The issues are with the rapid flow of renewables coming up with firming capacities. A few years back countries were only aiming to push renewables into the grid. The network supervisors today are closely monitoring how the rise in renewable energy is directly impacting the grid. There is a lot more focus to connect to the network and all the ecosystem of the assets.

The National Clean Air Programme

India finally unveiled a national plan to tackle air pollution last week. The National Clean Air Programme (NCAP) sets a time bound target — a Five-Year Action Plan to be implemented from this year, and which can be extended on the basis of reviewing the outcomes — of reducing the concentration of particulate matter by 20-30% from 2017 levels by 2024 in 102 cities and towns with the highest levels of pollution.

To achieve its target, the Environment Ministry will work with State Governments and local authorities, augmenting monitoring and data collection, strengthening institutions and increasing public awareness.

Air pollution is a serious public health issue that adversely affects productivity. The NCAP is a signal of

how seriously GoI views the problem of rising levels of air pollution.

Acknowledging that improving air quality must be collaborative, multi scaled and cross-sectoral. Tackling air pollution requires an airshed approach, hence the focus on cities. The plan is based on time-bound programmes, with set systems for review and constant assessments.

Improving institutional capacity is essential for not just improving air quality but also preventing future deterioration. One key area of action that the government must focus on is augmenting the capacity of the pollution control boards to enforce the laws and ensure compliance. Without proper enforcement, there will be much hot air.

The plan's focus is overwhelmingly on the abatement of particulate matter pollution. It must evolve to include long-term and systemic measures to reduce the generation of pollutants at source. This requires changes in the way that goods and services are produced and consumed. While not perfect, the NCAP is a long overdue first and welcome step towards improving air quality. Now the focus must be on proper implementation.



'70% of Population to have Piped Gas in 3 years'

Prime Minister Modi flags off CGD projects implementation across 129 districts



Reiterating his commitment to developing a gas-based economy, Prime Minister Narendra Modi said that in the next 2-3 years, 70 per cent of the country's population will be connected with the city gas distribution (CGD) network.

Speaking at an event organised to lay the foundation stones for multiple CGD projects awarded during the ninth round of bids, Mr. Modi said, "More than 400 districts covering 70 per cent of India's population will have access to the CGD facility in the next 2-3 years after the completion of work under the on-going 10th round of bidding."

The CGD projects flagged off by Mr. Modi are spread across 65 geographical areas (GAs) in 129 districts. These were awarded under the ninth bidding round. During the event, the Prime Minister also launched the 10th CGD Bidding Round in 50 GAs spread over 124 districts in 14 States covering 24 per cent of the country's population.

PM called for enhancing of the domestic production to reduce the energy import bill of the country by at least 10 per cent by 2022. He also said that his Government aimed to extend the reach of Piped Natural Gas (PNG) to one crore houses in the next five years.

In 2014, only 66 districts were covered by the City Gas Distribution network. But today, CGD projects are being implemented in 174 districts, the Prime Minister said. As per the commitment made by

various entities in the ninth bidding round, around 2 crore PNG (domestic) connections and 4,600 CNG stations are expected to be installed in the next eight years across the country. This has expanded the potential coverage of the CGD network to about 50 per cent of population spread over 35 per cent of India's geography.

In total, 86 GAs were awarded during the ninth round. Of these, two awards were challenged and therefore are sub-judice. Some fall in regions where elections are due, and hence, are under the model code of conduct. This is why the PM laid the foundation stones for projects in just 65 GAs from New Delhi. "The Government is focussed on developing a gas-based economy. LNG terminals, a nationwide gas grid and a city gas distribution network are being developed to strengthen the gas infrastructure across the country," Modi said.

The aim is to reach the 15 per cent mark of gas in country's energy mix.

"Efforts are being made to not only increase the use and supply of gas, but also to produce gas through agro-wastes and other products and include the same into the CGD network," Pradhan.

Energy Security Plan on Track

Dharmendra Pradhan



Oil Minister Mr. Dharmendra Pradhan has said the increasing dependency on imported fuel should not be seen as a challenge to the energy security programme that the country is building on.

Mr. Pradhan said

Government has taken many initiatives to increase the capacities of alternative sources of energy like solar, wind, biogas, among others.

The country imports more than 82 per cent of its daily oil demand, making crude imports the biggest drain on the nation's foreign exchange, as domestic production has either been stagnant or even declining for long but demand has been on a steady rise, clipping at 4-6 per cent per annum.

"The rise in oil imports and the dependency on the imported fuel are not going to be hurdles in our energy security programme. Even large economies like Japan and Korea are also net importers of oil. On the contrary, because of our energy diplomacy, we have been able to, for the first time, get a say in oil production in the GCC," he said.

Addressing a recent Summit, Mr. Pradhan said Government has taken initiatives to create a gas-based economy considering the easy and cheaper availability of natural gas.

"To increase domestic gas production, we have undertaken many reforms and made a lot of amendments in ease of doing business in the oil sector. Besides, we have also increased our ethanol production and now we are experimenting with converting coal into synthetic gas," he said.

Reiterating his call to oil producers to take into consideration the interest of their large consumers like India, Mr. Pradhan said that "we have been stressing that our consuming capacity should be recognised by the oil cartel OPEC. They cannot continue to determine both the quantity and price and that there has to be space for consumers as well."

"Why should Europe get oil at a lower rate while we pay higher prices to the same quality crude?. This is what we have been telling the OPEC and finally they are now revisiting their strategies," he added.

Demand for OPEC Oil Falling

"Although the oil market has reached a balance now, the forecasts for 2019 for non-OPEC supply growth indicate higher volumes outpacing the expansion in world oil demand, leading to widening excess supply in the market," the group wrote.

OPEC sees demand for its own crude falling even faster than expected in 2019 as a slowing global economy crimps demand and rival supplies surge.

The figures, published in the cartel's monthly report, underline why Saudi Arabia and some other members are talking about cutting production again. The data could bolster their case for a significant supply reduction before a crucial meeting in Vienna next month.

Global appetite for the group's crude will be about 31.5 million barrels a day next year, OPEC said. That's 500,000 barrels a day lower than its forecast just two months ago and about 1.4 million below current production.

OPEC Secretary General Mr. Mohammad Barkindo said recently that the resurgence of non-OPEC supply was beginning to look "alarming," adding that he saw the need for the group and its allies to agree on a cut of 1 million barrels a day when the cartel meets next month. While no decision to reduce supply was taken over the weekend, this month's report will add to the chorus of views within the group, pushing for new cuts.

Forecasts for non-OPEC supply growth in 2019 were increased by 120,000 barrels a day. This was despite production outlooks for Canada, China, Brazil and Mexico all being revised down. The U.S. is among the nations expected to lead supply growth from outside of OPEC.

At the same time, global oil demand growth forecast was cut by 70,000 barrels a day as concerns continue to swirl over the health of emerging market

economies. The non-OECD region is facing “economic adjustments” and there are still uncertainties about the overall health of the global economy.

OPEC’s crude production rose by 127,000 barrels a day in October, according to outside estimates compiled by the group. The biggest increases were from the United Arab Emirates and Saudi Arabia, while Iranian supply continued to tumble.

Oil PSUs to add 55,000-plus Petrol Pumps to maintain Dominance

State oil companies are seeking to double the number of petrol pumps they operate across the country to cater to the rising fuel demand and sustain their dominance of the sector.

Indian Oil, Bharat Petroleum and Hindustan Petroleum have together sought applications for petrol pump dealership at 55,649 locations across the country.

Indian Oil, the industry leader, is seeking to open 26,982 retail outlets while BPCL and HPCL are planning to add 15,802 and 12,865 outlets, respectively. The advertisement for so many dealerships won’t necessarily result in as many pumps since the success ratio is rarely more than a third. But such massive expansion plans show state companies are sanguine about the future of oil in transport and little worried about the rise of electric vehicles.

Three state oil companies already operate 57,257 filling stations, with Indian Oil leading with 27,377 outlets. State companies together control 90% of retail outlets in the country with private players such as Reliance Industries, Nayara Energy (formerly Essar Oil) and Shell expanding in recent years to take the balance share.

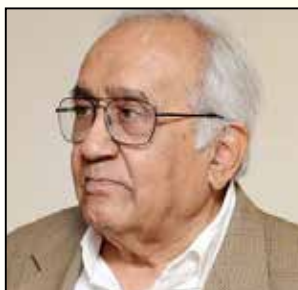
“Expansion of retail outlet network is undertaken by oil marketing companies primarily to meet the growing fuel needs and convenience of customers in emerging markets like upcoming highways, agricultural pockets and industrial hubs,” the three companies said in a joint statement.

“The retail outlet networks in rural, remote and far-flung areas are also being expanded with the intention of reaching product, predominantly diesel, ensuring quality and correct price to meet the rural agricultural demand and people living in remote areas.”

Availability of suitable land at the advertised location/stretch is the most important requirement, the companies said in the statement. Applicants without land can also apply but they will be expected to offer land when asked to.

Oil Retail Decontrol

Kirit Parikh Committee Set up



It is welcome and significant that the Centre has reportedly set up a Committee headed by economist Shri Kirit Parikh to suggest a roadmap for decontrol of petroleum product retailing.

It is anomalous that downstream marketing in the oil sector is monopolistic, ring-fenced for oil companies and separated from the larger retail industry. The result is scope for cost-padding, fat margins and missing efficiency pricing.

We need a competitive and efficient market design in the retailing of petro-products, the most lucrative segment in the oil sector. Abroad, in the mature markets, the retailing of petro-goods is liberalised and marketers can gainfully seek custom with attractive pricing and services.

The opening up of oil retailing brooks no delay, to create an enabling environment for competitive pricing and efficiency improvement across the board in the oil sector.

The way forward is to integrate the retail oil sector with India’s fast growing retail industry. A pre-requisite would be proactive norms for sharing storage and distribution infrastructure in the capital-intensive petroleum sector.

Efficiency and productivity gains in oil marketing would have beneficial effects economy-wide. In the main markets abroad, the opening up has meant that oil retailers can compete with oil companies, and such independent retailers have chalked up a market share of nearly 50%.

We too need to modernise the retail oil segment without further delay. The likely change in the techno-economic paradigm in favour of electric vehicles and away from the oil-fuelled internal combustion engine makes decontrol of oil retailing all the more pressing and imperative.

The efficiency gains would manifest themselves as cheaper fuel, which would do no harm to the popularity of the political leadership.

Petrol, Diesel Prices to Remain High

With impending elections and uncertainty in oil markets, Govt. in wait-and-watch mode Indian consumers may have to wait till next year, when a new Government takes charge, for any tinkering in the auto fuel retail pricing mechanism to make it more transparent.

At present, the Governments, both at the Centre and the States, seem to be in no hurry to part with the benefits of softening global oil prices at the retail end stating that they would rather wait and watch the market.

The price at which Indian refiners buy their crude oil in last 20 days alone has fluctuated from \$73.09 a barrel on November 1 to \$60.38/ barrel on November 23. Though the retail prices are changed daily, it is calculated taking the previous 15 days' average.

Due to heavy tax components, petrol which would actually cost close to Rs40 a litre and diesel about Rs45 a litre ends up being sold as high as Rs80 a litre and Rs70 a litre respectively. This distortion in pricing at the retail end is also because of informal control of the Government.

Mr. R.S. Sharma, Former Chairman of ONGC,

said recently that “The current policy framework of daily revision in prices of petroleum products lacks transparency. Indirect interventions, based on political considerations, have been obvious in the recent past. Let the Government institute an independent audit mechanism to validate the daily price fixations by the three public sector oil marketing companies.”

When prices fell last time the Government did increase tax to fill its coffers. Given the current reverse trend, expectations were that it will react. But according to analysts, the Government would rather make up for the losses they had when they reduced the taxes.

Sri Paravaikkarasu, Director - Asia, Oil at FGE, a global oil & gas consultancy firm, said: “Before addressing this question (on deregulation) we must keep in mind two things — the US-Iran sanctions played a key role in the Government interfering in prices in the recent times, as no one expected the US to impose sanctions on Iran leading to a sharp spike in crude prices, and it also coincided with the Karnataka elections. This had led to the Government stepping in.”

“We should also remember that the uncertainty on Iran sanctions has not gone away. Waivers have been given, and the US production is up because of which crude prices are seeing a downward trend. But, uncertainty still remains. To me, the Government is also on a wait and watch mode. We should also remember that we have the general election next year,” she said adding “possibly the Government will not do anything big on retail pricing side from now until it wins the next general elections and establishes a new Government.”

In fact, even the market is not prejudging how crude oil will behave. According to Vanda Insights, “More analysts have joined the chorus by predicting that OPEC and non-OPEC ministers will most likely agree on a deeper cut when they meet — something we have been saying for a few weeks — but the oil market has been unable to shrug off scepticism, kept intact by a conspicuous lack of firm signal from the producers.”

Oil Prices will be Below \$70 a Barrel in FY19:

HPCL Chairman



With speculations that crude oil prices may go up again after Qatar deciding to pull out of the oil cartel OPEC and an expected supply cut this week, Hindustan Petroleum Corporation (HPCL) Chairman and Managing Director Mr. M K Surana said recently that while the prices may go up, they will still be below \$70 a barrel for the rest of the current financial year.

This comes after the Brent crude prices increased by 2.76 per cent to \$62.22 a barrel at one point recently, arresting the recent declining trend. "The exit of Qatar is depending on the individual interests of the country. Despite all the geo-political situations, prices will still be below \$70 a barrel for the rest of this financial year," Mr. Surana told Business Standard. This comes close to the statement by Qatar Energy Minister Saad al-Kaabi that his country will be exiting the Organization of Petroleum Exporting Countries (OPEC) shortly, to focus on gas production.

Moreover, a recent OPEC meeting come up with a supply cut to arrest the drop in prices. "The sharp slump in crude prices over the past few weeks amid fears of oversupply may reverse gradually, if OPEC is able to pull off a production cut of around 1-1.5 million barrels per day in its upcoming meet shortly, which we believe will be adequate to balance the market in CY2019," said a report by Kotak Institutional Equities. It added that the supply surplus may also taper off on the plausible imposition of full sanctions on Iran's crude exports by the US Government from early-May 2019.

Using Domestic Gas can Save Rs 23,000 cr

Reassigning priority to the fertiliser industry in domestic gas allocation may help the Government save up to Rs23,000 crore in fertiliser subsidy, the Fertiliser Association of India (FAI) has said.

Replacing every Million Standard Cubic Metre per Day (MMSCMD) of imported liquefied natural gas (LNG) with domestic gas can cut down the urea subsidy bill by Rs870 crore, said FAI Director-General Mr. Satish Chander.

"If the entire requirement of the urea industry is met through domestic gas, the urea subsidy will go down by more than Rs23,000 crore per annum," he added.

Mr. Chander was briefing the media on the eve of FAI's annual seminar, an event that will see industry captains and experts from all over the world deliberate on ways to make the Indian fertiliser industry viable and vibrant.

The demand comes at a time when the subsidy burden on fertilisers is going up. While the Government has made a budgetary allocation of Rs70,000 crore towards fertiliser subsidy, the industry claimed that the actual subsidy requirement has overshoot by an additional Rs14,000 crore on account of the 34 per cent increase in gas cost for urea and the increase in subsidy rate for phosphatic and potassic fertilisers.

IOC Aims to be Global Refinery Tech Provider



Oil major plans to take giant leap forward with new Rs2,300-cr R&D facility in Faridabad

With the edge proffered by its R&D centre, Indian Oil Corporation Ltd (IOC), the over-\$70-billion public sector oil

giant, is transitioning from an adopter to provider of indigenously developed refinery technology to the world.

Its R&D now has the capability to supply about 90 per cent of the technology needed to set up a modern Greenfield refinery. Meanwhile, the company's R&D operations are getting strengthened for the future with two major developments.

First, it is on the verge of becoming a full-fledged refinery technology player from concept to commercialisation. Second, its upcoming Rs2,300-crore world-class R&D facility, about 8 km from the existing one in Faridabad, is expected to provide a significant technological edge to IOC not just in its core refinery and lubricants segment, but also in alternative energy areas.

“The time has come now for us to cross national boundaries to license our INDMAX technology. At least six overseas refineries are in advance stage of dialogue with our licensing partner to deploy INDMAX,” said Mr. S.S.V. Ramakumar, Director - R&D, Indian Oil, in Faridabad. The R&D centre is on the verge of acquiring engineering and other related capabilities.

Mr. Ramakumar said the construction work for the second R&D unit — Technology Development and Deployment Centre - is being taken up. It will be a net zero power and water usage campus.

Selling 149 fields of ONGC - OIL

A Committee set up

The Government has constituted a six-member committee to look at selling as many as 149 small and marginal oil and gas fields of state-owned ONGC and OIL to private and foreign companies to boost domestic output.

The panel is headed by NITI Aayog Vice Chairman Mr. Rajiv Kumar and includes Cabinet Secretary Mr. P.K. Sinha, Economic Affairs Secretary Mr. Subhash Chandra Garg, Oil Secretary Mr. M.M.

Kutty, NITI Aayog CEO Mr. Amitabh Kant and ONGC Chairman and Managing Director Mr. Shashi Shanker.

Sources said the Committee is a follow up of the Prime Minister Narendra Modi to have a roadmap for cutting import dependence by 10 per cent by 2022.

At a recent meeting, the Oil Ministry made a presentation showing that 149 smaller fields of Oil and Natural Gas Corp (ONGC), Oil India Ltd (OIL) and other explorers accounted for just 5 per cent of the domestic crude oil production. It was suggested at the meeting that these smaller fields could be given out to private and foreign firms and ONGC could concentrate on the big ones where it could rope in technology partners through production enhancement contracts (PEC) or technical service arrangements.

Sources said the Ministry was of the view that ONGC should concentrate on the large fields as they contribute to 95 per cent of its production and leave out the rest for private firms.

On the anvil is some kind of extended version of the Discovered Small Field (DSF) bid round where discovered and producing fields of ONGC are auctioned to firms offering the maximum share of output to the Government.

In October last year, the Directorate General of Hydrocarbons (DGH) had identified 15 producing fields with collective reserve of 791.2 million tonnes of crude oil and 333.46 billion cubic metres of gas of national oil companies for handing over to private firms in the hope they would improve upon the baseline estimate and their extraction. The plan, however, could not go through as ONGC strongly countered the DGH proposal with its own proposal that it be allowed to outsource operations on the same terms as the Government plan.

The Government gave out 34 fields to private firms by offering them pricing and marketing freedom for oil and gas they produced from the fields in the first round of DSF. The second round of DSF with 25 fields on offer is currently under bidding.

The fields offered in DSF were taken away from ONGC and Oil India Ltd on the pretext that they were lying idle and unexploited. But under the present proposal,

the Government plans to take away discovered and producing fields.

Sources said ONGC feels it too should be allowed to seek revenue sharing partnership for its fields. Field operations could be outsourced to foreign or private firms that offered the highest revenue or production share over and above a baseline production.

The Ministry is reasoning that the areas where the fields were discovered by ONGC were given to the state-owned firm on nomination basis. In the proposal that was mooted in October last year, the plan was to give out 60 per cent stake in 15 fields -- 11 of ONGC and four of Oil India. These included Kalok, Ankleshwar, Gandhar and Santhal -- the big four oil fields of ONGC in Gujarat.

The DGH too had identified 44 fields of ONGC and OIL which could take on partners for production enhancement work where bidders would get the 'tariff that they bid as a return for increasing the output 'over the baseline production' for an initial period of 10 years.

Crude Over-Supply and Demand Slow-Down in 2019

OPEC

The Organization of Petroleum Exporting Countries (OPEC) in its recent meeting weighed the prospects of facing an over-supplied crude oil market in 2019, along with a slow-down in oil demand, Suhail Mohamed Al Mazrouei, Minister of Energy and Industry at UAE and President of the OPEC Conference said in Vienna.

Mazrouei added that the recent developments in oil and gas market require a change in strategy decided earlier in June 2018. "As we look forward to 2019, we see a new set of challenges. This includes the general consensus that prospects point to higher supply growth than expected global requirement and there are signs of a potential slowdown in demand," Mazrouei said.

Saudi Arabia has indicated it wants OPEC and its allies to curb output by at least 1.3 million barrels per day, or 1.3 percent of global production, news agency Reuters reported from Vienna.

"Today, it is vital that we thoroughly examine the potential gap between supply and demand in 2019, and how this might impact inventory levels and the extremely hard won market balance we have achieved over the past two years," Mazrouei said.

OPEC, along with its non-OPEC allies led by Russia, earlier this year decided on increasing their respective production levels, in a bid to cap crude oil prices and bring balance to the market. OPEC decided to maintain 100 per cent conformity on the cuts announced in 2016 as compared to 152 per cent observed in May.

According to information published in OPEC's monthly oil report, Saudi Arabia's crude oil production in the third quarter ended September 2018 increased to 10,422 thousand barrels per day (tb/d), from 9,992 tb/d from the recorded corresponding quarter a year ago.

Similarly, Russia's crude oil production increased to 11.44 million barrels per day (mbd) during the third quarter ended September as compared to 10.95 mbd recorded in the corresponding quarter a year ago.

Ann-Louise Hittle, vice president, macro oils, at consultancy Wood Mackenzie said: "We expect the group to agree to a production cut lasting until at least the first half of 2019. A number of factors make a six-month cut likely. Firstly, it would allow OPEC to assess the state of the market in June 2019. This is particularly important as the US President Donald Trump has called on the group to exercise price restraint.

Hittle added that Wood Mackenzie's short-term outlook projects key OPEC producers -- Saudi Arabia, United Arab Emirates and Kuwait - together with Russia and Oman, will push through a moderate reduction in output in place through 2019.

"We assume a cut of around 1.0 million barrels per day in the first quarter of next year, using October 2018 production levels as a reference. Given the recent ramp-up in supply from these producers, this represents a year-on-year decline in crude output of just 0.2 million barrels per day for 2019," Hittle said.

OPEC -- together with a group of non-OPEC producers led by Russia -- started withholding oil supplies up

to 1.8 Million barrels per day since 2017 to prop up prices and reduce oil inventories.

Global Oil Supply Tightening

IEA



The global oil market could move into deficit sooner than expected thanks to OPEC's output agreement with Russia and to

Canada's decision to cut supply, the International Energy Agency said

IEA kept its 2019 forecast for global oil demand growth at 1.4 million barrels per day, unchanged from its projection last month, and said it expected growth of 1.3 million bpd this year.

Uncertainty over the global economy stemming from U.S.-China trade tensions could undermine oil consumption next year, as growth in supply gathers pace.

"For 2019, our demand growth outlook remains at 1.4 million bpd even though oil prices have fallen back considerably since the early October peak," the IEA said.

"Some of the support provided by lower prices will be offset by weaker economic growth globally, and particularly in some emerging economies."

The Organization of the Petroleum Exporting Countries agreed last week with Russia, Oman and other producers to cut oil output by 1.2 million bpd from January to stem a build-up in unused inventories of fuel.

The decision by the Government of Canada's Alberta province to force oil producers to curtail supply will bring the largest reduction to crude output next year, the IEA said.

Alberta crude and oil sands output will drop by 325,000 bpd from January to force down vast inventories that built up because of pipeline capacity constraints.

The oil price has fallen by nearly a third so far this quarter to around \$61 a barrel, from a four-year peak close to \$87 in early October.

In its previous report in November, the IEA said it expected the global oil market to remain in surplus throughout 2019. Now, it expects a deficit to materialise by the second quarter of next year, provided OPEC sticks to its supply deal.

"Time will tell how effective the new production agreement will be in rebalancing the oil market," the IEA said.

The OECD in November projected that world economic growth would slow to 3.5 percent in 2019 from 3.8 percent this year.

Completely Reframe Oil Policy

Amitabh Kant, NITI Aayog



India needs to completely reframe its oil policy and the country's oil companies must venture into storage technology because that is where the energy future lies, according to NITI Aayog Chief Executive Officer (CEO) Mr. Amitabh Kant.

"The Rocky Mountain Institute study shows that India has a potential to set-up 20 Giga factories. Why are none of our oil companies thinking along these lines. The future belongs to storage and batteries and when both the world of energy and transportation converge at the point of storage, that is where the future of India lies,"

Mr. Kant said that India's energy imports are predominantly fossil fuels and there is a huge need for reduction in imports and emissions. He said the country can achieve this only by pushing consumption of renewables.

Mr. Kant emphasized upon the need to develop research and technology in the areas of energy storage and batteries. "India has a great ability to get into sunset industries rather than sunrise industries

and the future belongs to only two things and the country needs to put its entire scientific community behind two aspects - storage and batteries. Without storage and batteries India has no future.”

Oil Demand Growth

India to lead China

Wood Mackenzie

India is expected to become the second-largest oil demand growth centre globally in 2019, behind US but ahead of China, research and consultancy group Wood Mac said recently.

According to the firm, petrol, diesel, and liquefied petroleum gas (LPG) would continue to be the two main drivers of oil demand growth for the country.

“India’s demand growth recovered strongly in 2018, overcoming the aftermath of the goods and services tax (GST) and demonetisation, and contributing to 14 per cent of the global demand growth or 245,000 barrel per day. We forecast oil demand to grow at the same level in 2019,” said Wood Mac.

According to official data analysed by ETEnergyWorld, India’s overall fuel demand grew 4.47 per cent to 210 million tonne (MT) in calendar year 2018, as compared to 201 MT consumed in calendar year 2017.

Wood Mac has projected diesel demand to grow 6.4 per cent to 1,12,000 barrels per day in 2019 as compared to 93,000 barrels per day in 2018, primarily on the back of: Robust commercial vehicle sales, increased demand for heavy and medium-duty trucks due to removal of interstate taxes, and increased travel activity due to general elections in May.

The group said that LPG demand growth would remain robust in 2019 at 5 per cent to 40,000 barrels per day, lower than the 56,000 barrels per day growth achieved in 2018.

“The number of new household LPG customers continued to surge, driven by the Ujjwala scheme to promote clean cooking fuel in rural areas. That said, there is a large untapped market, as about 50 million households remain deprived of LPG,” WoodMac said.

According to the firm, electric two-wheelers would dominate the personal electric mobility transport sector.

“We believe that two-wheelers are a more effective option, given their utility in intra-city travel, less need for a public charging infrastructure and availability of battery technology. Two-wheelers will eventually leapfrog four-wheelers towards the goal of a greener and sustainable mobility future,” it said.

According to WoodMac, electric car sales in India declined 40 per cent to a mere 1,200 units in financial year 2018 over financial year 2017, while electric two-wheeler sales rose 138 per cent to 54,800 units during the same period.

Russia to Construct Iran-India Gas Pipeline

Iranian Oil Minister Bijan Namdar Zanganeh said the country has accepted Russia’s proposal to construct a subsea pipeline for exporting natural gas from the Islamic Republic to India.

Speaking to reporters at a Press Conference in Tehran recently Zanganeh dismissed as “untrue” claims that he had not accepted the Indians’ proposal to construct the subsea pipeline, saying that the suggestion was put forward by the Russians and Iran welcomed it.

He further said during a visit to Iran by Russian President Vladimir Putin in the last Iranian year (March 2017- March 2018), a Memorandum of Understanding (MoU) was signed with the Russian Energy Minister and the Gazprom in this regard.

Currently, Russians are responsible for pursuing the construction of the pipeline, the Oil Minister said.

Back in 2015, the then Managing Director of the National Iranian Gas Export Company, Alireza Kameli, said the country was in talks on a plan to lay a \$4.5 billion subsea pipeline to export natural gas to India.

The planned pipeline from the Iranian coast via the Oman Sea and Indian Ocean to Gujarat was proposed to carry 31.5 million standard cubic meters gas per day and will be built in two years, from the date necessary approvals and a gas sale and purchase agreement are signed, he said at the time.

'24X7 Power for All by March 2019'

Mr. R.K. Singh, Minister of Power



The Government has connected about 96 per cent of households across the country with electricity supply, and hopes to take power lines to the rest by January 26. That's a significant achievement.

It all started with Mr. Jaitley announcing at the **Deen Dayal Upadhyaya Gram Jyoti Yojana** in Budget 2014-15. Aimed at providing 24x7 uninterrupted power supplies to all homes, the scheme for feeder separation would augment power supply to the rural areas and strengthen sub-transmission and distribution systems. Jaitley set aside a sum of Rs. 500 crore for the new scheme.

In his first budget Mr. Jaitley announced several other proposals for the power sector such as a scheme for solar power driven agricultural pump sets and water pumping stations for energizing one lakh pumps and reducing the basic customs duty from 10 per cent to 5 per cent on certain components used in the manufacture of wind-operated electricity generators.

In his Budget 2016 speech, Mr. Jaitley informed that as on April 1, 2015, a total of 18,542 villages were not electrified. As on February 23, 2016, 5,542 villages have been electrified, which was more than the total combined achievement of previous three years, he said. He provided Rs 8,500 crore for Deendayal Upadhyaya Gram Jyoti Yojna and Integrated Power Development Schemes. In Budget 2017-18, he increased the allocation for Deendayal Upadhyaya Gram Jyoti Yojna to Rs 4,814 crore, a 25 per cent jump from the outlay in the previous fiscal.

Mr. Jaitley also announced solar power supply at about 7,000 railway stations in the medium term though a beginning had already been made at 300 stations. He gave a boost to renewable energy, announcing another 20,000 mw of solar park development in

phase II and a slew of duty reductions on components for fuel cell-based power generating systems.

In his Budget 2018 speech, Mr. Jaitley lauded the government's efforts for providing electricity to all households of the country through the Prime Minister Saubhagya Yojana under which poor households are given free electricity connections. He said the Government was spending Rs 16,000 crore under this scheme. He allocated Rs 3,800 crore for Deendayal Upadhyaya Gram Jyoti Yojna and Rs 4,900 crores for Integrated Power Development Scheme. He also allocated Rs 16,000 crore for the Saubhagya Yojana to enable last mile connectivity for rural households.

Rural Electrification

One of the Greatest Success Stories

IEA



India's move to energise every village in the country with electricity is one of the greatest success

stories in the world this year; providing clean cooking fuel to people is another laudable achievement that will reduce premature deaths from pollution, the International Energy Agency (IEA) said.

IEA, the global energy watchdog for the developed world, said such initiatives boost productivity that improves economic well-being, and can spur innovation that can boost micro businesses, farm yields and help growth of schools, banks and medical services, experts in the IEA said.

The Government is now making rapid progress in the next phase of its programme by ensuring that power lines are connected with major institutions and administrative centres of every village as well as every household that asks for access to electricity.

This has helped taking electricity lines to 95%

households as on October 11 this year, up from 86% a year ago as 19 million of the 30 million homes without access were energised, mostly in Uttar Pradesh, Bihar, Madhya Pradesh, Odisha, Rajasthan and Jharkhand, Government data showed.

“India’s success, in electrifying all villages households, is far more noteworthy given the large population, distances, and low affordability. The last 10-15% of the target is always the most challenging, and it took a strong political will and diligent work by the utilities to get it done,” PwC Partner Mr. Kameswara Rao said.

“This means that for the first time ever, the total number of people without access fell below 1 billion. The agency said in another report that “while this next ‘last mile’ challenge will be not be easy to meet, particularly in a country as large and geographically diverse as India, the social and economic benefits are significant”.

“Electricity can increase productive hours in a household leading to positive outcomes on education and economic wellbeing. It can also spur innovation and lead to entrepreneurial micro businesses ventures and, in time, lead to greater agricultural yields. Benefits also flow to the likes of schools, banking and medical services,” the agency said.

Resurgent buys 75% Stake in Jaiprakash’s Prayagraj

Tata Power backed: Resurgent Power Ventures Pte. Limited (Resurgent Power) has announced closing the deal for acquiring 75 per cent stake in Jaiprakash Associates Ltd’s Prayagraj Power, a 3X660MW coal-based power plant in UP from the consortium of lenders led by SBI.

The SPA will be subject to customary approvals from regulatory authorities and the transaction is expected to be closed over the next few months, it added.

Resurgent Power, a joint venture between Tata Power International Pte. Ltd, a subsidiary of Tata Power, and

ICICI Bank as well as other global investors including Kuwait Investment Authority, State General Reserve Fund of Oman, has submitted its Rs. 6,000 crore bid for Prayagraj Power earlier this year offering a 15 per cent stake to the lenders. The 10 per cent stake would remain with the original promoter, Jaiprakash Associates.

The deal for Prayagraj Power marks the second resolution of stressed power asset outside of the National Company Law Tribunal (NCLT). SKS Power’s 1,200 MW Chhattisgarh thermal power project was first stressed power asset that was resolved after it was acquired by Singapore-based Agritrade resources for Rs 2,170 crore.

Efficient Energy Use

Progressing Slowly

BEE

India’s policy-makers have, for almost two decades, been grappling with the challenge of communicating the importance of energy efficiency to State Government officials, with limited success. While significant progress has been made since the enactment of the Energy Conservation Act in 2001 and the subsequent creation of the Bureau of Energy Efficiency, India has not done too well when it comes to the implementation of some of the flagship energy efficiency policies, where States had to show leadership.

A case in point is the Energy Conservation Building Code (ECBC), which has been incorporated by just nine States despite it being one of the most effective means of ensuring that code-compliant buildings have a lower energy intensity (kwh/m²) than non-compliant ones.

BEE, with support from USAID and GIZ, has tried to address energy efficiency at the State level through different programmes, such as supporting State Designated Agencies (SDAs) of Maharashtra, Gujarat and Punjab to develop strategic energy

efficiency roadmaps. However, actual implementation of energy efficiency measures with proven energy savings are few and far between. While States have taken up Energy Efficiency Services Ltd's (EESL's) programmes such as UJALA for LED bulbs, they need to significantly expand energy efficiency programmes in order to meet the saving targets proposed in the National Electricity Plan 2018.

Three factors have led to the development of India's first **State Energy Efficiency Index (SEEI)**, where Alliance for an Energy Efficient Economy (AEEE), worked closely with BEE, NITI Aayog, EESL and SDAs. NITI Aayog has ensured that States take the lead in providing policy interventions in specific sectors. An acute need was felt to develop a balanced and comprehensive framework to baseline the energy efficiency situation in each State and then, from the second year onwards, start evaluating the progress.

AEEE has four objectives for the Index: help drive energy efficiency policies and programme implementation at the State and local levels; highlight best practices and encourage healthy competition among States; track progress in managing States' and India's energy footprint; and set a baseline for energy efficiency efforts to date and aid in setting State-specific targets.

The **SEEI** assesses States using qualitative and quantitative indicators across all demand sectors — buildings, industry, municipalities, transport, agriculture — and electricity distribution. The Index appraises States in five domains: Whether the States have policies and programmes to drive energy efficiency? Have the States committed financial resources to implement these programmes? Do the States have a strong institutional framework to foster and enforce energy efficiency measures? How effective have the aforementioned measures been in increasing the adoption of energy efficiency? How much energy has been saved through energy efficiency?

The first SEEI launched in August this year, categorises States as 'Frontrunner', 'Achiever', 'Contender' and 'Aspirant'. Frontrunners (Andhra Pradesh, Kerala, Maharashtra, Punjab, Rajasthan) and Achievers (Karnataka, Gujarat, Haryana, Tamil Nadu) have performed better than other States primarily due to their efforts in implementing State-level programmes in addition to the national programmes.

The overarching priority for States is to capitalise on the SEEI to put in place a rigorous system for energy data collection and analysis across all sectors that would prioritise actions in future years.

Power Crisis Looming Large in Coal Based Plants

ICICI Report

A power crisis is looming large on India and the country needs to immediately start planning coal-based power plants and transmission corridors to avert it, experts have cautioned.

Adding only renewable generation capacity will add to the woes in tackling the unprecedented rise in demand due to higher industrial activity, new domestic connections and states' resolve to improve power availability, industry.

"Not factoring incremental peak demand from revival in industrial activity, our existing capacity and pipeline can at best meet projected peak demand till FY23, post which we will start running peak deficit," a recent report by ICICI Securities said .

According to the ICICI Securities report, the country reported peak power demand of 177 GW in September, an increase of 13 GW over FY18 peak demand — the highest year-on-year growth since 1993-94.

"Record peak demand increase in FY19, driven by increased domestic demand, new connections under Saubhagya and reduction in load shedding, appears structural," the report said. "Against this, adjusting

installed capacity and pipeline with historical availability factor, foretells the end of current 'peak surplus' scenario by FY23.

To prepare for life beyond FY23, we need to ramp up capacity addition planning, or prepare to face another high price/supply deficit scenario," it said.

India's installed capacity is 346 GW with ability to meet about 190 GW peak demand, to which 5-10 GW is likely to get added through plants under construction.

"We have come to the conclusion that Saubhagya's impact has been and is expected to be much sharper on peak demand than base demand... Pickup in industrial demand will positively impact both base and peak demand, which will require generation and transmission capacity additions, something we do not believe is being currently built-in," the report said.

The ICICI Securities report said that with improvement in financials after debt transfer or re-pricing under UDAY and the Central Government's push for '24x7 Power for All', there had been 32% reduction in declared load shedding in 2017-18 over FY17 to 7.7 hours per month from 11.3 hours per month.

Sale of REC to PFC

Cabinet Clearance given

Deal will help Govt reach Rs 80,000-cr disinvestment target

The Cabinet Committee on Economic Affairs (CCEA) has given an in-principle approval for the strategic sale of 52.63 per cent stake in Rural Electrification Corporation to Power Finance Corporation along with transfer of management control.

According to the present evaluation, this deal is expected to fetch the exchequer around Rs15,000 crore. This transaction will help the Government meet its Rs80,000-crore disinvestment target for this fiscal.

This is in line with Finance Minister Mr. Arun Jaitley's Budget announcement of integrating PSUs in the

same line of business. The transaction will be through the acquisition route.

Speaking to reporters after the decision, Mr. Jaitley said, "It was announced in the Union Budget that if there are multiple public sector undertakings operational in the same space, we will adopt a merger, acquisition or takeover model for consolidation. For this transaction, PFC will be acquiring REC...REC will become a PFC subsidiary."

"This is as per the proposal of the Ministry of Power," he added. The modalities will be worked out by the alternative mechanism — a Committee headed by the Finance Ministry. As at September-end, the Government held 57.99 per cent in REC, and 65.64 per cent in PFC.

But the Government holding in REC came down to 52.63 per cent after stake-sale through Exchange-Traded Funds (ETFs).

Conventional Power Growth outlook Stable – ICRA



ICRA has estimated a healthy 6 per cent demand growth for the power sector during FY 2019 and has maintained a stable outlook for the segment. This coupled with the slowdown in addition of new capacity and slow progress in resolution of stressed thermal assets would enable a steady improvement in the utilisation of the existing capacity. If demand growth of 6 per cent sustains over the next three years, utilisation of the thermal capacity would improve to about 63 per cent in FY2020 and further inch upwards to about 67 per cent by FY2022.

During the seven months of FY2019, national power demand growth has remained at a steady 6.5 per cent which is higher than the 5.5 per cent reported in the first seven months of FY2018 and the full year growth of 6.2 per cent reported in FY2018.

Rising demand is being met from higher generation by thermal and renewable energy plants. This is reflected in improvement in capacity utilisation of thermal power plants to 61.1 per cent in the first seven months of FY2019 against 59.0 per cent in the first seven months of FY2018, as well as 29.5 per cent higher generation from renewable energy sources - (y-o-y basis).

Sabyasachi Majumdar, Group Head & Senior Vice President at ICRA said: "Increased demand for electricity coupled with shortfall in coal supply from domestic sources, has led to higher dependence on costlier imports in FY2018 and FY2019. Higher dependence on imports is augmented by rising international coal prices and depreciation of rupee against dollar. The Indonesian coal price index has increased by about 16 per cent in the first eleven months of Calendar 2018 on a Y-o-Y basis. It has resulted in an upward pressure on cost of power purchase for the distribution utilities. Given this, augmentation of domestic coal supplies through both higher mining activity and improved rail infrastructure, remains crucial for the sector from a cost control perspective."

Relatively higher energy demand growth amid state and Central Government elections over the next 6-month, coupled with the domestic coal shortages led to a sharp rise in spot power tariff in recent months.

On the distribution front, implementation of UDAY scheme has enabled a reduction in losses for discoms at all India level, by about 43 per cent for FY2018, mainly from reduction in interest costs.

Estimates of the Ministry of Power suggest that aggregate losses of all discoms have fallen below Rs20,000 crores for FY 2018. However, the improvement in the operational profile of the DISCOMS remains slow, given that the reduction in AT&C losses is much lower than expected across majority of the states.

Further, tariff revision approved by state regulators have remained lower than revisions agreed under

UDAY MoUs. Going forward, progress of improvement in operating efficiencies as well as securing timely and adequate tariff hikes along with the subsidy support from the respective State Governments remain important for improving the DISCOM finances.

Strategy for New India @75

Niti Aayog

Strategy for New India @75, the latest strategy document published by Government's Think-Tank **NITI Aayog**, has recommended a slew of measures to reform the country's energy sector. These include privatisation of power distribution companies, operationalizing commercial coal mining, and breaking up the functions of the oil regulator.

The paper, launched by Finance Minister Arun Jaitley, also calls for bringing oil, natural gas, coal, and electricity under the Goods and Services Tax (GST). Reform the subsidy regime to allow consumers to choose the energy form most suitable to them. And provide farmers an upfront subsidy per acre of land through Direct Benefit Transfer (DBT) rather than providing separate subsidies for fertilisers, electricity and crop insurance.

The paper highlights multiple issues being faced by the energy sector including low per capita energy consumption, heavy reliance on imports and coal use, delays in implementing the expansion of natural gas pipeline network, precarious financial position of power discoms and the need to further improve energy intensity of the economy.

Highlighting the challenges being faced across the sub-sectors, the paper says: "A variety of subsidies and taxes distort the energy market and promote the use of inefficient over efficient fuels. Old inefficient plants continue to operate whereas more efficient plants are underutilised. Non-discriminatory access for private and public sector companies to the gas pipeline network does not exist."

The paper has called for strengthening the regulatory bodies, promoting use of solar pumps, separating the development and regulatory functions of Petroleum and Natural Gas Regulatory Board, making contract terms flexible to make stranded oil and gas assets functional, and allowing market pricing for blocks that are not functional because of low gas prices.

Prepaid Metering Across India from April, 2019

Edited Excerpts from an interview by Mr. R.K. Singh

The Central Government is planning to introduce prepaid electricity recharge cards like in case of mobile phones at the fag end of its tenure from April 2019. Union Minister of State for Power and Renewable Energy Mr. R.K. Singh.

We are pushing for net metering. But there is a problem of technology. ...meters are not available. We are, however, pushing it. We have added 2.26 crore new consumers. It is a record. The fact that we have added so many consumers means billing and collections have become difficult. Most DISCOMs [electricity distribution companies] had to outsource it. But consumers complained about inflated bills etc. Due to this, we will be making it mandatory for all states to shift to smart prepaid meters from April 1, 2019.

It will automate the entire billing and collection process. DISCOMs will benefit as they will get payment in advance. This means just like a prepaid SIM connection for a mobile, which can be recharged and used again, electricity will be used in the same form. This will help poor consumers. Instead of mandatorily paying for 30 days, they can now pay for the days or hours they would like to consume as per their requirements.

Meeting rising demand given an acute coal shortage, the rate at which the demand is growing is unprecedented as we are adding so many users.

Per capita income has also gone up. Now, even in villages, you will see refrigerators and air conditioners. Coal supplies have increased by almost 8%, but the demand is growing... Coal can be imported where supply is short of contractual requirements, and the extra cost will be allowed by the regulator. At the same time, efforts are on to expand coal production as much as possible.

Load Shedding: I am bringing it in the tariff policy. If DISCOMs do load shedding, they will have to pay a penalty. We noticed that the demand, which was increasing, was not being shown in Power Purchase Agreements [PPAs] because of that capacity addition would not come. So, in the revised tariff policy that we are introducing, we have added that regulators will review every year the power supply situation. And if there is a shortfall, they will have to come with PPAs to meet the demand. It cannot depend on the spot market, which is currently happening. Whenever prices increase in the spot market, they DISCOMs do load shedding. We are, therefore, penalising load shedding and if they do not comply, their licenses will be suspended. The draft note of revised tariff policy has been sent for circulation before being sent to the cabinet.

Fresh Auctions for Power Pacts

The Government is likely to launch a fresh round of auction of power purchase contracts while also allowing escalation and fixed charges to power companies in a bid to alleviate stress in the sector.

Ahead of polls and setting in of summer demand, the auctions will help stranded and underutilised power plants sign agreements with state distribution utilities for three years. There are 14,000-mw stranded and underutilised power units, of which close to 8,000-mw have coal supplies but no power purchase agreements. These include plants of companies like Sembcorp Energy India, SKS Ispat & Power, Lanco Infratech and Meenakshi Energy.

Recent tenders by discoms seeking short-term power supply have received high bids as generators expect coal shortage, higher demand for electricity from states due to summers and elections. Bids floated by state utilities of Chhattisgarh and Uttar Pradesh for supply in May – June received bids as high as Rs 5 per unit-Rs 6.5 per unit

The second round of PPA auctions is proposed to be in line with the pilot bids but with certain relaxations to the power generators. “The proposal is to align the scheme with the existing medium term power procurement agreements. This will address the developers’ concerns of fixed tariff for three years and the fixed costs issue,” said the official. The power and the coal ministries are also working on the recommendations of an empowered committee headed by Cabinet Secretary Mr. P K Sinha asking them to auction PPAs along with pre-determined coal supplies, the official said.

The Government had in April last year kicked-off the pilot scheme for procurement of aggregate power of 2,500-mw on competitive basis for three years from commissioned projects without PPAs. PFC Consulting

Limited acted as the nodal agency and PTC India was the PPA aggregator for the scheme.

The scheme assured minimum off-take of 55% of contracted capacity to the power plants but the tariff has been fixed for three years without any escalation. Also the fixed cost for the PPA auction has been kept at 1 paisa per unit.

In the first round of auctions, seven plants won 1900-mw power contracts. These include RKM Powergen, Jhabua Power Ltd, MB Power Ltd, SKS Power, Jindal India Thermal Power Ltd, IL&FS Energy and JP Nigrie. Electricity distribution companies of Telangana, Tamil Nadu, West Bengal, Bihar and Haryana have agreed to procure the power.

The scheme was kicked off to address the issues of stressed power assets. Lack of PPAs is one of the key reasons for stress in the power sector besides other factors such as promoters’ equity crunch, no coal supply, and regulatory and contractual issues. Electricity distribution companies have not called enough medium and longterm contracts in the last few years.



Coal Self- Sufficiency

NITI Aayog Working on a Policy

NITI Aayog plans to come out with a policy prescription on how India should meet its demand for coal in domestic power and non-power sectors to cut imports of the fossil fuel over the next 10 years.

The think tank has invited bids for research/ study on linking coal production and consumption requirements in the country based on which the Aayog is expected to draft a comprehensive policy. "The aim is to arrive at the policy prescriptions on the issue and to have more focused feedback for future policy-making," the Aayog said.

This would be a comprehensive policy for production and consumption of coal in the country within the framework of the National Energy Policy which is being worked out by the NDA Government since 2015.

"The scope of the study is to suggest long-term infrastructure and planning requirements for coal production and transportation (evacuation) to meet India's long term coal demand as far as possible from domestic sources," it said in the notification.

This would include estimated need of coal for power and non-power sectors by 2030, domestic production feasibility of different types of coal, assessments of demand-supply gaps and requirements of rail infrastructure and rakes. It would also assess the need of coal import infrastructure including terminals, ports and other facilities such as washeries, road transportation and handling systems.

The study is expected to develop three scenarios for production, demand and infrastructure and suggest the best possible scenario, besides analysing and identifying likely locations of production, import and consumption. "To minimise financial, social and environmental costs, the study should also suggest any policy or legal changes that may be required while developing reasonable estimates for feasible coal production and coal demand in the country," it said.

Coal : Monopoly to Competition

Journey begins

By opening the door to private players for commercial mining, the coal sector this year witnessed its biggest reform in over four decades.

However, it may still take some five-seven years before coal blocks are auctioned and results become visible as exploration and mine development for actual production of private commercial mines begin But, this has not deterred the management of Coal India to sensitise its employees about the looming threat that the private sector poses in the long run. The world's biggest coal miner has asked its staff to pull up their socks and embrace the new challenges facing them.

Former Coal India Chairman Mr. Partha Bhattacharyya observed that revenue maximisation should not be the only focus of the auction methodology and mining experience and core competence should get more weightage in the bidding process.

He emphasised that in order to attract large domestic and global miners it is important to offer larger coal blocks, such as 50 MT annual capacities or more, for a period of about 25-30 years.

Coal Minister Mr. Piyush Goyal had earlier said the reform is expected to bring efficiency to the coal sector by moving from an era of monopoly to competition.

According to observers, CIL is unlikely to face major issue from privatisation beyond competitive pressure, as its prices are not import-linked and always been at a sharp discount despite its monopolistic position.

Overall, coal and coke imports during the first half of the current fiscal increased by 13.9 per cent to 119.42 MT.

There had been allegations of the shortage of coal by several power plants during the last peak summer season. But, the allegations of short supply were also from non-power consumers also.

Coal India to get 10 Coal Mines



With the coal demand from power sector exceeding the supply in 2018, the Government is hopeful of higher output in the new year from already allocated mines and plans to further allot 10 mines to state-run behemoth Coal India Ltd (CIL) in 2019.

Of the 85 mines already allotted, 23 have already started production and the Coal Ministry expects 20 more mines to begin production in the current financial year ending March 2019 or early in the next fiscal.

“This will increase our production substantially. This will also address additional coal demand from power sector,” Coal Joint Secretary Mr. Ashish Upadhyaya said. Moreover, the Government also plans to allot 10 mines to CIL in 2019, he said. This would be in addition to 10 mines allotted to the PSU this year. “Our aim is to make all subsidiaries (of CIL) 100 million tonnes plus units in the long term,” he said.

Talking about the coal shortage in 2018, Mr. Upadhyaya said it has happened because of the power sector demand having gone up substantially and attempts were made to meet this challenge of increased demand consistently through the year.

He said the Government was actually able to meet the coal demand, but fuel stocks available at the power houses at times went down to the level of 3-4 days.

“And the number of critical power houses had gone up to 33 in the month of May, but gradually it is coming down. Now it is around 10. And the stock available at the power houses has also gone up to approximately 10 days. We hope to improve it further,” he said.

He said the Government is committed to make coal available as per the demand in 2019 and the target is for 10 per cent growth rate in the next fiscal.

“The momentum which is being seen this year will continue in the next year. We will be able to do much

better next year in terms of production. Ultimately, it is the availability of coal that matters and how much coal we produce and put in the system,” he explained.

“The effort was to supply more and more from the domestic sector and so it had put more pressure on the coal sector to supply from our own resources. So it has been overall a mixed feeling of satisfaction of doing 8 per cent growth,” he said.

Coal Demand Zooms

India’s domestic coal supplies will continue to struggle to meet the zooming demand in the next fiscal year too. According to NITI Aayog, the country’s total coal demand will rise to 991.35 million tonne in the current financial year (2018-2019). This is 9.13 per cent higher than the 908.40 million tonne demand reported in FY18.

Domestic production is also on the rise. In the current year, during April-November, 2018, coal production across India was 433.90 million, with a growth rate of 9.8 per cent over the corresponding period of the last financial year. Despite similar percentage increases (in demand and production), the gulf between requirement and supply has widened, putting pressure on the need to ramp up imports.

In a reply to a query by the Lok Sabha, the Ministry of Coal blamed the demand for coking coal and the power plants that are designed to run on imported coal for the huge quantity of imports.

Till September this financial year, the coal imports stood at 111.6 million tonne. Hook for polls

“Imports will increase not just to cater to the demand for coking coal, but also to cater to demand for thermal coal. This will be because of coal supply issues and prioritised allocations to public sector companies undertaking power plants”.

“With the general elections approaching, the State and Centre Governments are expected to try and improve the power supply to domestic consumers, as a poll pitch to reflect developmental achievements.

COAL

This will come at the cost of supplies to captive and independent power producers who will resort to imports to keep their industries running,” he added.

Even if the Government does not divert any committed coal supplies, the lack of rail evacuation infrastructure will continue to make it difficult to meet demand.

25% Coal to Non-Power Sector

Coal India has decided to supply 25% of its planned production to the non-power sector, while the rest would be supplied to the ‘high-priority’ thermal power generators. “Non-power is expected to start receiving 25% of Coal India’s production beginning January, which would continue into 2019-20 as well,” a senior Coal India executive told ET.

The dry fuel supplier is expected to supply 680 million tonnes of coal during the current fiscal. Between January and March next year, it is scheduled to produce a minimum of 170 million tonnes, 25% of this is about 42 million tonnes.

India’s Coal Import Rises 12 per cent

India’s coal import rose 11.9 per cent to 78.7 million tonnes in the first four months of the current fiscal.

The country had imported 70.3 million tonnes (MT) coal in April-July period of the last fiscal, mjunction services, a joint venture between Tata Steel and SAIL. “Overall, coal and coke imports during the first 4 months (April-July) of 2018-19 stood at 78.79 MT, about 12 per cent higher than 70.33 MT recorded for the same period last year,” it said.

The country’s coal import in July increased by 42 per cent to 20.79 MT (provisional), over 14.64 MT (revised) in the same month previous year.

“Coal import in July 2018 stood at 20.79 million tonnes (MT) (provisional), higher than 18.75 MT (revised) in June 2018 and also higher than 14.64 MT (revised) in July 2017,”. The increase in coal and coke imports in July is mainly due to a 12.9 per cent growth (month-on-month) in non-coking coal shipments. There was

also a marginal growth in coking coal imports in July on a monthly basis, it added.

“Steam coal imports went up in July as the power plants continued to face shortage despite the best efforts by domestic miners to mitigate the gap. Also, there was a slight easing of prices in the international markets and expectation of further corrections, going forward, prompted the buyers to take fresh positions,” mjunction CEO Mr. Vinaya Varma said.

The Government earlier said that during 2017-18 coal imports increased to 208.27 MT due to increase in demand by consuming sectors.

The country’s coal import fell from 217.7 million tonnes in 2014-15 to 190.9 MT in 2016-17.

Coal India Projects

A Review



The delay in timely completion of Coal India projects worth Rs 11,000 crores is a matter of concern, not just because it aggravates the coal shortage but also leads to increasing project costs. India, for instance, imports over 200 million tonnes of coal a year, with a huge outgo of foreign exchange. It’s a Catch-22 situation, because while India has a lot of coal resources, other issues like getting environmental clearances and land acquisition, among other things, are monumental hurdles. The Government has tried various ways of combating these delays. There is a whole department like the Online Computerised Monitoring System in the Ministry of statistics and programme implementation to track the progress of projects, in addition to the setting up of a revised cost committee for fixing responsibility for time and cost overruns, and to regularly review infrastructure projects. Despite this, around 253 of 1,332 projects are running behind schedule. The loss to the public exchequer is estimated at Rs 2.23 lakh crores, as costs escalated from Rs 16,26,675.52 crores to Rs 18,49,766.91 crores.

India, with 55 per cent delays, is one of the worst performers as far as delayed projects are concerned, followed by countries like China, Bangladesh and Thailand. The power sector faces the most delays, accounting for 61 of the 114 projects, followed by the railways, with 46 out of 330 projects facing delays.

The Government needs to tackle this problem either sector-wise or case by case. There was an earlier decision to give sanctions only to those projects that had fulfilled all requirements of getting environmental clearances, land and whatever else is required. The fate of this decision is not known.

Globally, there is a move to avoid using coal as a source of energy due to environmental issues, and perhaps India should do the same. India is blessed with sunshine almost 365 days of the year, and should go in for the use of renewable energy. Solar and wind energy is ideal, and this should be taken up on a mass scale. The costs of both solar and wind energy are now almost down to that of electricity. It is really a matter of regret, therefore, that they are not being used on the scale that is needed. They are still treated as something esoteric. Perhaps Coal Minister Mr. Piyush Goyal can discuss this issue with his colleagues in the relevant ministries.

To cut down on the import of coal due to the poor quality of Indian coal, the Government should think of acquiring the technologies available to clean coal and

remove or reduce the pollutant emissions. Globally, chemicals are used to wash minerals and impurities from coal and treat flue gases to remove pollutants. They reduce the emissions of ash and sulphur dioxide while the coal is burned.



Heartfelt Condolences

Shri K A Sinha, Former Director (Technical) of Coal India Ltd and a Senior Member of the India Energy Forum, left for his heavenly abode on 11th January 2019. We will sadly miss his participation and leadership.

May the Almighty grant peace to the departed noble soul and give strength to the family to bear this irreparable loss.

Editor

Edited and Printed by **Mr. Amarjit Singh**, MBE Secretary General

Published by **Mr. R. M. Sodhi** on behalf of

INDIA
ENERGY
F O R U M

Registration No. DELENG/2007/20915

408, PHD House, 4/2 Siri Institutional Area, August Kranti Marg, New Delhi-110 016

Tel: 011-41021422-23 Email: iefindiaenergyforum@gmail.com

Disclaimer: The information has been taken from reliable sources but no responsibility can be accepted for its correctness.

First Nuclear Plant in North India

Dr Jitendra Singh



North-India's first Nuclear Power Plant is coming up at village Gorakhpur in district Fatehabad of Haryana. The work is in progress and the first phase of the project, comprising two units (2×700 MW), is expected to be

completed in 2025.

The Nuclear Power Plant in Haryana is a major initiative of the Government, considering the fact that most of the Nuclear Power Plants in the past have been confined to either the South Indian States like Tamil Nadu and Andhra Pradesh or Western States like Maharashtra and Gujarat.

The Nuclear Project in Haryana is expected to generate employment for over 2,000 persons on becoming operational, in addition to which, large employment potential is generated with the contractors/vendors and business opportunities that emerge consequent to the increased economic activity at the site.

The Minister's reply also stated that the expenditure incurred on this project till November 2018 was Rs. 1,484 crore. However, the approved completion cost of the project is Rs. 20,594 crore. The Nuclear Power Corporation of India Ltd. (NPCIL) has also undertaken several welfare activities in and around the vicinity of this Nuclear Plant under the Corporate Social Responsibility (CSR) initiatives.

These activities particularly focus on four major areas, i.e. education including skill development, health and sanitation, infrastructure development and environment sustainability. Construction of inter-connecting roads, construction of toilets in schools and public places, and mid-meal shelters in the school, are some of the other key initiatives undertaken by the Department of Atomic Energy under the CSR initiatives.

India's Kaiga Nuclear Power Plant creates a Record

Kaiga Power Plant has created a world record for continuous operation by working 941 days without break.

Bharat Heavy Electricals Ltd (BHEL) had built and supplied the complete main plant equipment including the 220 MW Steam Turbine Generator set and all the four Steam Generators of the unit.

"This landmark achievement has demonstrated the country's indigenous capability in design, manufacture, erection, commission and efficient operation of Pressurized Heavy Water Reactors (PHWR)," BHEL said in a statement today.

The first stage of India's indigenous nuclear power program has now attained maturity with 18 operating Pressurized Heavy Water Reactors (PHWRs). Twelve PHWRs accounting for 74 per cent of the Nuclear Power capacity are equipped with BHEL-supplied Steam Turbine Generator sets (10 units of 220 MW each and two units of 540 MW).

Nuclear Capacity Building

Currently, India has 21 nuclear power reactors with an installed capacity of 6,680 MW. The Prime Minister Narendra Modi, who is also the Minister in-charge of Atomic Energy, in June 2017 had given its administrative approval and financial sanction for construction of 10 units each of 700 MW of indigenous PHWR in fleet mode.

The work on pre-project activities at sites like land acquisition at Greenfield sites, obtaining statutory clearances, site investigations etc., are in progress. The manufacturing and supply orders for the special materials required for long delivery items like steam generator forgings, Incoloy tubes etc., have been placed. Tendering of other long delivery equipment for the fleet mode reactors has been initiated. The

annual requirement of fuel for operating the 10 PHWRs of 700 MW capacity each will be about 1,250 MT of natural Uranium dioxide (UO₂) fuel.

A total of 8,100 MW nuclear power projects are under commissioning / construction / sanctioned. In addition, the Government has accorded 'in principle' approval of 40,900 MW capacities of nuclear power plants. Thus, a total of over 56 GW capacity of nuclear power plants are at various stages of implementation and planning besides the existing 6.6 GW operational.

DAE has said that 21 new nuclear power reactors with a total installed capacity of 15,700 MW are expected to be set up in the country by 2031. There are nine nuclear power reactors at various stages of construction that are targeted for completion by 2024-25. In addition, 12 more nuclear power reactors were accorded administrative approval and financial sanction by the Government in June 2017. Five sites – which would have total 28 nuclear reactors – have been accorded 'in principle' approval by the Central Government. Each of the five states – Haryana, Rajasthan, Karnataka, Madhya Pradesh and Tamil Nadu – have been accorded administrative approval and financial sanction to establish two nuclear reactors.

Gujarat, Rajasthan and Haryana each has two reactors under construction currently. Tamil Nadu has three reactors under construction.

Jaitapur in Maharashtra, Kovvada in Andhra Pradesh, Chhaya Mithi Viridi in Gujarat, Haripur in West Bengal and Bhipur in Madhya Pradesh are the five sites that have been accorded 'in principle' approval to establish nuclear reactors.

BHEL is currently installing two units each of its highest rating 700 MW nuclear sets at Kakrapara, Gujarat and Rawatbhata, Rajasthan and is fully geared for enhanced contribution in NPCIL's upcoming 700 MW PHWRs.

Jaitapur Plant likely to Reach 60% Indigenisation

EDF, the state-owned French power major, says the aim is to progressively raise the participation of Indian companies for the reactors to be supplied for the proposed mega nuclear power plant at Jaitapur.

There are six reactors to be supplied, jointly by EDF and US multinational GE. The former is to supply the needed technology for the nearly 10 Gw plant; a previous agreement says the local (Indian) content could go up to 60 per cent for the last two of the six reactors.

EDF says raising the local content would depend on the Indian supply partners making the relevant investment in their facilities and processes.

Ramany said the project was in line with India's ambitious energy policies, where nuclear power is to become an important part. The stability of nuclear generation supports the development of renewable energy, as it compensates for the latter's naturally fluctuating output.

"The offer draws on 50 years of experience of the French nuclear industry. According to the (March agreement), EDF will primarily act as the supplier of EPR (the pressurised reactor) technology. Hence, the offer covers the whole design engineering phase and procurement of components," he said.

EDF will also be involved in securing the funds required, he said. The group will be assisting NPCIL in both the construction and commissioning phases. "During the operation, we will continuously improve safety standards and maintain the viability of these crucial assets over the longer term".

ENCOURAGING GREEN-POWER TODAY
ENERGISING INDIA'S TOMORROW



FROM MEGA WATTS TO GIGA WATTS

Envisioning a Greener Tomorrow with Renewable Energy

ENERGY FOR EVER



Govt's target of 5x increase in renewable energy capacity to 175,000 MW by 2022



4th largest wind installations in the world

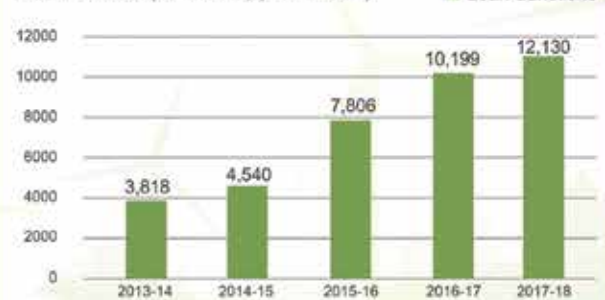


One of the largest solar programs in the world with planned capacity of 100 GW by 2022

CO₂

All IREDA funded projects are helping in avoiding CO₂ emissions

Loan Sanctions (Rs. Crores) (2013 - 2018)



Funded more than 2400 renewable energy projects



Indian Renewable Energy Development Agency Ltd.
 (A Govt. of India Enterprise)

A Mini Ratna PSU under Ministry of New and Renewable Energy

Corporate Office : 3rd Floor, August Kranti Bhawan, Bhikaiji Cama Place, New Delhi 110 066, Tel: +91 11 26717400 - 26717412

Registered Office: India Habitat Centre, East Court, Core-4A, 1st Floor, Lodhi Road, New Delhi 110003, Tel: +91 11 24682206 - 24682219