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THE FORUM GREETS NEW ENERGY LEADERS

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जन-जन तक पहुँचते हुए - खुशियां बिखेरते हुए

यह एक वादा है जिसे एनएलसी इंडिया ने 1962 से विश्वसनीयता से निभाया है।

विकास का तात्पर्य विघटन से है। यह हमारे संस्थापकों की उस बुद्धिमता को श्रद्धांजलि है जहाँ उन्होंने उन लोगों की आवश्यकताओं को अंगीकृत किया जिन्होंने परियोजना की सफलता हेतु एक आरोपित जीवनशैली का त्याग कर दिया। अवसरों एवं पोषण द्वारा, एनएलसी इंडिया ने नेयवली को अपना नया घर बनाने वालों के लिए एक नवीन जीवन भी सुनिश्चित किया है। यह एक ऐसे समय पर हुआ जब सीएसआर की अवधारणा अपनी शैशवावस्था में थी। आनेवाले वर्षों में, खनन एवं विद्युत उत्पादन को अपनी मुख्य गतिविधि के रूप में जारी रखने के बावजूद एनएलसी इंडिया ने निगमित सामाजिक दायित्व का एक आदर्श स्थापित किया है जिसने अन्य संगठनों के लिए भी मानदंड निर्धारित किए हैं तथा अपने स्व-प्रतिष्ठानों के विकास हेतु समाज की सहजीवी शक्ति को पहचाना है।

परिधीय क्षेत्रों में सीएसआर पहले :

- आस-पास के गाँवों के लिए पेयजल सुविधा।
- 20,000 एकड़ के घेराव में सिंचाई अवसंरचना का निर्माण।
- विशेष बच्चों के लिए स्नेहा संस्थान तथा गरीब एवं बुजुर्ग महिलाओं के लिए दैगई की स्थापना।
- जयपुर किस्म के कृत्रिम अंग बनाने हेतु इकाई की स्थापना।
- निःशुल्क चिकित्सा शिविर।
- श्रावणी – बोलने एवं सुनने में अक्षमों के लिए एक विद्यालय।

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- कर्मचारियों हेतु 21000 से अधिक आवासों का उपनगर।
- 350 बिस्तरों के आधुनिक अस्पताल तथा परिधीय औषधालयों के साथ चिकित्सा बीमा व्याप्ति।
- शिक्षण संस्थानों में स्वास्थ्य सेवा।
- महिला सशक्तिकरण केंद्र।
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- खेल संबंधी अवसंरचना।
- सेवानिवृत्ति पश्चात् चिकित्सा लाभ।
- बच्चों के लिए शिशु सदन तथा प्ले-स्कूल।

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(पूर्व में नेयवेली लिग्नाइट कार्पोरेशन लिमिटेड)
(भारत सरकार का 'नवरत्न' उद्यम)

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भारत की दृष्टि का निष्पादन

From the Editor

Soaring Energy Demand Challenges for the New Government

India has now become the fastest-growing energy market. The International Energy Agency says investments in the energy sector in India went up by 12% in 2018, which is the highest rate globally.

Yet, there's crying need for sustained reforms in the energy economy, to shore up energy efficiency, revamp market design and modernise taxation across the board in oil, power et al. Per-capita energy consumption nationally is low, barely a third of the global average.

The challenges that the new Government faces now are more fundamental. The current industry structure is growing obsolete and increasingly ill equipped to cater to the new demands. The Power Minister will have to work with the State Governments to build consensus for a new reform agenda and a new industry structure.

The incoming Government has the benefit of a stable power industry to usher in the fundamental reforms needed. The two transitions viz., to move from a monopoly to competition in retail supply, and from a long-term to short-term contracting, are both necessary and economic. If the policy makers hesitate to take these tough steps now, the old burning issues will not take too long to come back to the government agenda.

The next round of power distribution, coal supply and thermal power generation reforms should be high on the agenda of the second tenure of the Government.

The Ministry of Power had put its faith in the second leg of power distribution company (Discom) reforms under the Ujwal Discom Assurance Yojna (UDAY) 2.0. It is expected that these will plug the gaps that were left from UDAY-1.

"Opening up of commercial coal mining for the private sector is the most ambitious coal sector reform since the nationalisation of this sector in 1973,". The enabling provision to allow commercial mining was approved in January 2016 but thus for success has eluded the programme.

Sadly, distribution sector despite a credible improvement in their operating performance and securing debt relief under the UDAY scheme is far from being ideal. The past efforts to raise Discom tariffs to recover their actual costs has not worked, given the independent regulators' proclivity to pass on most of the gains to consumers. It is unlikely to happen in future, as it is politically expedient for any incumbent Government to not raise tariffs.

ONGC and OIL, who are battling stagnation in output from largely ageing fields, have a total of 184 fields. The national oil companies have been asked to provide enhanced production profile for 66 of these fields, which contribute 95 per cent of the 36 million tonne of annual oil production in the country, and given freedom to induct private and foreign partners or technology providers. The success is still to come. The imperative to increase exploration activity remains.

Efforts in the past to clean up the environment have struggled to clear the test of affordability. India's fleet of coal-burning power plants, among the biggest sources of air pollution and a dominant provider of cheap energy, have dragged their feet over implementing emission standards, citing cost.

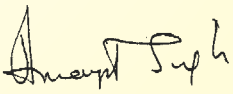
A campaign to replace firewood with clean cooking fuel in rural homes needs to be affordable. Ujwala is a commendable scheme to replaces fire wood with clean cooking fuel in rural houses. The success, however, is only partial because of both availability and affordability issues.

A suggestion is that clean fuels such as natural gas be brought under the national sales tax regime, helping them compete with dirtier options, such as coal and petcoke. Boosting local production of gas will make it more affordable and help raise its share in the mix to 15%, more than double from now.

Renewable Energy despite, a commendable progress is facing connectivity challenges and is unlikely to meet target of 175 Gigawat for various reasons.

Some known solutions are: accelerate capacity addition in Renewable Energy, while enabling the grid to deal with the rising flow of intermittent power. Increase use of biomass for energy to help reduce the dependence on crude oil imports and prevent burning of crop residue, a leading air polluter in northern India.

Challenges are enormous but strong political will both at the Centre and States exists!



Amarjit Singh

Sectoral News

Rooftop Solar Scheme: Second Phase Approved

The Government has approved the second phase of the scheme to set up grid-connected rooftop solar power projects with a central financial support of Rs 11,814 crore to be spent over four years, the Ministry of New and Renewable Energy said recently.

The scheme, which aims at achieving total rooftop solar power generation capacity of 40,000 megawatt (MW) by 2022, has two components. The first component involves setting up 4,000 MW grid-connected rooftop solar plants in the residential sector with Central financial assistance.

The second component involves incentives to Discoms based on achievement for installing additional grid-connected rooftop capacity in all sectors over and above the base level, with the incentives being limited to the first additional 18,000 MW of rooftop capacity added.

The plants to add 38,000 MW of capacity under the second phase with a total Central financial assistance of an estimated Rs 6,600 crore for achieving 4,000 MW capacity for residential sector.

The additional financial outlay for providing incentives to Discoms stand at Rs 4,950 crore, apart from Rs 66 crore for capacity building and Rs 198 crore for service charges. “The detailed operational guidelines for implementation of the scheme will be issued separately,” the Ministry said in the order.

Rooftop Solar needs a Helping Hand

Stakeholders

Industry stakeholders have welcomed the policy and have made many suggestions to promote the growth of rooftop solar. For instance, they say, the metering for rooftop solar could be combined with the regular Discom billing such that any default would lead to disconnection of power. Warehouses, sheds, etc., have space but inadequate consumption. So installation and injection into the grid from these locations should be allowed and consumers should be permitted to draw at another location.

Mr. Vivek Subramanian, Fourth Partner Energy, a distributed solar energy solutions provider, says that safeguard duty of 25 per cent on import of modules has slowed demand as this is a mixed signal to the market, especially when the Government has set an ambitious target of 40 GW by 2022 for rooftop solar. The recent GST uncertainty and revised rate of around 9 per cent on solar have also affected the profitability of the sector.

“While policies such as net metering have been successfully implemented across the country, given that electricity is a State subject, policies have differed from State to State, making it difficult for developers, financiers and consumers to adopt solar,”.

Most States impose a cap on installable capacity under net-metering of 1 MW. Further, some restrict the installable capacity to a certain percentage of the total contract demand. “We have many clients who have large demand for power, space and intent to adopt solar, but the policy is restrictive,”.

Community solar is where the hyper local energy markets are. In such places a real-time exchange for power is created and settlement between buyers and sellers (prosumers) happens instantly. This has already been indicated in the latest UP State Policy.

Penetration into off-grid and rural through distributed solar — using storage solutions, payment solutions and policy for creating an energy efficient ecosystem — is necessary.

The Discoms could be incentivised to support rooftop solar and net metering by allowing them to charge a fee and making them a stakeholder. In this context, Mr. Ashish Khanna of Tata Power Solar says his company plays a role across the entire power spectrum, including Discoms. There is a need to strike the right balance to promote solar rooftop installations.

Sector experts also stress that there is a need for improved regulations for dispute resolution giving more comfort to developers, financiers and consumers of solar given the long duration of contracts under the operating expenses (OPEX) model, which varies from 10 to 25 years.

100 GW Solar Target by 2022 Challenging

In spite of a sizeable increase in India's solar generation capacity, the country might still not be able to meet the 100 gigawatt (GW) solar target by 2022, Rishab Shreshta, solar analyst at research and consultancy firm Wood Mackenzie said recently.

"As bid prices stabilise and costs continue to drop, long-term development remains positive but still not sufficient to meet the 100-GW solar target by 2022. India faces short-term uncertainty due to the imposing of various taxes and levies on solar products, the cancellation of tenders and tariff renegotiations," said Shreshta.

He added that India's grid-connected power generation capacity increased 4 per cent in the January to October period in 2018 to reach about 347 GW -- 13 GW more as compared to the corresponding period last year.

"Renewables accounted for 9.7 GW of the total increase of 13 GW, highlighting the significant investment flowing into the sector. India is and will be the third-largest solar market globally in 2018 and 2019, respectively," the research firm added.

It added that the year-on-year growth rate of annual solar installed capacity is expected to reduce to over one per cent in 2018, from 63 per cent in 2017, and expected to rebound to over 12 per cent in 2019.

"Despite strong domestic demand and safeguard duties on imported solar modules, domestic solar manufacturers still struggle to compete with foreign suppliers," added Shreshta.

According to WoodMac, the 7.2 per cent annual growth in grid-connected power demand helped improve the capacity factor for all fuels in 2018.

The gross domestic product and industrial production growth continued to drive electricity demand in India. WoodMac has expected electricity generation to grow 5 per cent year-on- year in 2019.

Solar Manufacturing

Support scheme approved

The Cabinet Committee on Economic Affairs (CCEA) has approved a Rs. 8,580-crore scheme under which companies owned by the Central Government will set up 12,000 MW of solar power plants over the next four years using India-made solar modules.

This is to provide a boost to local solar module manufacturing industry which has been listless ever since India lost its case at the World Trade Organization (WTO) over mandatory local procurement for certain solar power projects.

With this, the Government has made good a promise it had made as a proposal via a December 2017 'concept note' of the Ministry of New and Renewable Energy (MNRE).

"The 12,000 MW or more capacity of grid connected solar power projects will be set up by the Government producers in 4 years period, i.e. 2019-20 to 2022-23, as per the terms and conditions specified in Government Producer Scheme," said a statement issued by the Centre recently.

"The scheme will mandate use of both solar photovoltaic cells and modules manufactured domestically as per specifications and testing requirements fixed by MNRE," the statement said. (These cells, made by etching electricity-conducting lines over ultra-thin silicon wafers, are connected together and made into modules, which are the sun-facing blue panels that we see in solar plants)

The scheme is expected to engender investments of Rs. 48,000 crore and create around 200,000 jobs.

Most of the Indian solar manufacturers make only modules using imported cells. The leading companies are Tata Power Solar, Vikram Solar, Waaree Energies, Indo Solar and Surana Solar. Some of them also have cell manufacturing capacity. India has about 3 GW of cell and 9 GW of module manufacturing capacity, though only 1.5 GW and 3 GW of them, respectively, are actively in use.

MNRE's concept note touched upon poor technology with India. "(Dometic) capacity is not being fully exploited because of obsolete technology as the existing capacity is mainly under the conventional technology of multi-crystalline Al-BSF (Aluminium-Back Surface Field) solar cells, which have efficiency limitations. Very few players have ventured into the superior PERC (Passivated Emitter Rear Cell) technology," the concept note said.

Bids for $5 billion Transmission lines

Mr. Anand Kumar, Secretary MNRE

India will launch $5 billion of transmission-line tenders in phases, beginning in June, to route a targeted 175 gigawatts (GW) of power from renewable sources into the country's grid by 2022, the Secretary at the Ministry of Renewable Energy announced.

India, the world's third-largest emitter of greenhouse gases, has pledged to cut emissions and have clean energy account for at least 40 percent of its installed capacity by 2030, up from 21.4 percent now, while looking to manage its energy appetite as its population becomes more prosperous. The renewable energy targets would require investment in feeder lines and infrastructure upgrades.

India has awarded tenders for 12 GW of transmission lines since December, while bids for a further 16 GW will be launched by the end of June. Another 38 GW will be bid out before March 2020, he said.

Building transmission lines for 66 GW worth projects would need an estimated investment of 430 billion rupees, the secretary for renewables, Anand Kumar, said.

India, which receives twice as much sunshine as European countries, wants to make solar central to its renewable expansion as part of the fight against climate change.

Consultancy firm WoodMac and research firm CRISIL have said India would not meet its Renewable Energy Target due to policy issues, including cancellations of auctions of tenders, rights to land use and tariffs.

A Renewable Energy project typically takes two years to build. Kumar expressed confidence that bidding for the remaining projects would be finished by March 2020 and help India meet its 2022 target.

India now fastest-growing energy market in the World

India has finally acquired the long-awaited tag of the fastest growing energy market in the world. The country's investment in the energy sector grew at a rate of 12 per cent in 2018 -- the highest growth rate as compared to any other country, according to the International Energy Agency (IEA).

The report said that the lower-middle and low-income countries accounted for less than 15 per cent of the energy investment in 2018 despite containing well over 40 per cent of the world's population. "In recent years, the fastest investment growth within this group has come from India with rising power sector spending, while spending in sub-Saharan Africa has declined, mostly due to less investment in fuel supply," the report said.

The IEA's WEI report -- among the most credible publications in the energy space globally -- also

said that India is an emerging source of industrial energy efficiency investment in the Asia and Pacific region, which grew by nearly 5 per cent (in 2018). Modernisation of industrial facilities coupled with strong mandatory Government policy, through the Perform, Achieve, Trade (PAT) Scheme, are important factors driving greater levels of investment.

India also led the world in the growth of air conditioner sales in 2018 -- which grew by their largest annual increase with 16 per cent growth to over 175 million units in 2018 -- and also driving down the investment in coal-fired power along with China.

“In India, solar PV spending exceeded that for coal power for the first time, supported by Government auctions. Total renewable power investment topped fossil fuel-based power for the third year in a row, supported by tendering and uncertain financial prospects for new coal power. Grid investment rose by 4 per cent, with one-fifth increase in transmission, but spending in distribution remained flat,” the report said.

The IEA also said that India was the largest market for coal-fired power (based on Final Investment Decision) in 2018, which is now largely oriented towards super-critical technology but levels were 80 per cent lower than in 2010.

Coal supply investment in India grew by 5 per cent in 2018, underpinned by policy favouring domestic production while reducing imports as much as possible, amid a substantial growth of coal consumption driven by economic growth and higher power demand.

Govt successfully propelled Green Growth

Renewable Energy CEOs Survey

A survey of CEO’s reveals that they appreciate Government’s renewable energy policies to reach target of 175 Gigawatt. 78 per cent of the respondents in a survey of CEOs of the industry feeling that this Government has propelled industry growth by increasing the renewable target to 175 Gigawatt (Gw).

Despite policy reversals and various other operational challenges faced by the industry, a bulk of the respondents (73 per cent) are optimistic about its growth prospects, the survey, conducted by consultancy firm Bridge to India, finds.

The Government however said that has failed in maintaining a consistent policy and business environment. Imposition of trade barriers and GST has added uncertainty and confusion. Industry expects the new Government to improve business execution and provide policy stability,”.

It added that India is expected to add 80 GW of renewable energy capacity in the next 5 years and a bulk of this capacity addition (47 GW) is expected in utility scale solar segment while floating and grid scale storage are also expected to pick pace.

However, the most pressing issue for the industry is offtake risk, followed by challenges in land acquisition and uncertainty in overall policy environment, according to the CEO survey.

“49 per cent of the industry feels that bidding in the sector is irrationally aggressive. The industry remains unenthusiastic about the prospects of domestic manufacturing. However, in comparison to last year, the outlook has considerable improved,” according to the survey.

Based on the survey of the top honchos of the industry, Gujarat, Andhra Pradesh and Karnataka top the list of preferred states on overall ease of doing business whereas Tamil Nadu, Uttar Pradesh and Haryana occupy the bottom three spots.

‘Step-change’ in Energy Investment needed to meet Climate Goals: IEA

The world must double spending on renewable power and slash investment in oil and coal by 2030 to keep the Paris climate treaty temperature targets in play, the International Energy Agency (IEA) said Tuesday. For that to happen, however, trend lines on both fronts moved in the wrong direction last year, the agency

reported in its 4th annual World Energy Investment overview.

Money going into new upstream oil and gas projects -- exploration, drilling and infrastructure -- rose four per cent in 2018, while investment in new coal sources went up by two per cent, the first increase in that sector since 2012.

At the same time, investment in new renewable power of all kinds dipped by about two per cent.

In total, global energy investment in 2018 -- split across the fuel supply and electric power sectors -- totalled USD 1.85 trillion, about the same as in 2017, the IEA reported.

This two-year plateau following three years of slow decline reflects uncertainty across the industry as to what the future holds. “Governments have not clearly committed, nor have they clearly not committed, to reaching the Paris Agreement goals,” Mike Waldron, an IEA energy investment analyst, told journalists ahead of the report’s release.

“The world in not investing enough in traditional elements of supply to maintain today’s consumption patterns,” IEA executive director Fatih Birol said. “Nor is it investing enough in cleaner energy technologies to change course.” “Whichever way you look, we are storing up for risks in the future.” The IEA report projected energy sector investment against two possible futures.

Under the New Policies Scenario, current patterns of investment continue on a similar trajectory, adjusted for voluntary national carbon-cutting plans that would -- if fulfilled -- see the planet warm by just under 3C above pre-industrial levels within 80 years.

The Sustainable Development Scenario “is fully aligned with the Paris Agreement,” according to the IEA.

Renewable

Capacity Addition becomes flat

There is bad news for the global renewable energy sector. After nearly two decades of strong annual growth, renewables around the world added as much net capacity in 2018 as they did in 2017, an unexpected flattening of growth trends that raises concerns about meeting long-term climate goals.

2018 was the first time since 2001 that growth in renewable power capacity failed to increase year on year. New net capacity from solar PV, wind, hydro, bioenergy and other renewable power sources increased by about 180 Gigawatts (GW) in 2018, the same as the previous year, according to the International Energy Agency’s latest data. That is only around 60% of the net additions needed each year to meet long-term climate goals.

Renewable capacity additions need to grow by over 300 GW on average each year between 2018 and 2030 to reach the goals of the Paris Agreement. But the latest analysis shows the world is not doing enough. Last year, energy-related CO2 emissions rose by 1.7 per cent to a historic high of 33 Gigatonnes. Despite a growth of 7 per cent in renewables electricity generation, emissions from the power sector grew to record levels.

Since 2015, global solar PV’s exponential growth had been compensating for slower increases in wind and hydropower. But solar PV’s growth flattened in 2018, adding 97 GW of capacity and falling short of expectations it would surpass the symbolic 100 GW mark. The main reason was a sudden change in China’s solar PV incentives to curb costs and address grid integration challenges to achieve more sustainable PV expansion. Moreover, lower wind additions in the European Union and India also contributed to stalling renewable capacity growth in 2018.

Despite slower solar PV growth, China accounted for almost 45 per cent of the total capacity increase in renewable electricity last year. With new transmission lines and higher electricity demand, China’s wind additions picked up last year, but hydropower expansion continued to slow, maintaining a trend observed since 2013.

Capacity additions in the European Union, the second-

largest market for renewables, saw a slight decline. Solar PV grew compared with the previous year, while wind additions slowed down. Policy transition challenges and changing renewable incentives resulted in slower growth of onshore wind in India and of solar PV in Japan.

In the United States, the third-largest market, renewable capacity additions increased slightly in 2018, mainly driven by faster onshore wind expansion while solar PV growth was flat.

India must De-risk Solar Power Sector: Ajay Mathur, DG, TERI

India has made phenomenal progress on its renewable energy agenda but needs to take urgent measures to mitigate perceived risks by investors on multiple fronts, believes Mr. Ajay Mathur, Director General of The Energy and Resources Institute (TERI). In an exclusive interview with ETEnergyworld, Mathur shares a perspective on the development of the country's energy systems and the major highlights of the institute's own work. Edited excerpts.

It is evident that the progress in solar has been phenomenal. However, perceived risks by the investors have increased manifold in the recent past on account of various reasons, including cancellation of tenders, lack of clarity on the impact of GST, and imposition of safeguard duty on imported panels. This has dampened the investors' sentiments as substantial capacities are under implementation. In order to ensure continuity in growth of the solar sector with downward trend in tariffs, it is important to work on these issues and initiate de-risking measures. These may include, for example, design of bid conditions to provide level playing field to all investors, adhering to bid provisions post culmination of transparent selection process, introducing steps to handle delays in a reasonable and timely manner where developers have no control (such as, construction of transmission and evacuation infrastructure and land acquisition/ availability). Several of the risks mentioned herein have been addressed to some extent; however, the process should be seen as dynamic and needs to be continued in dialogue with the stakeholders.

As India moves rapidly towards having an electricity system with high levels of solar and wind energy, it is extremely important for the country to start looking at mechanisms that can make the electricity system absorb these variable sources of energy. By making both electricity supply and demand more flexible, India can achieve grid integration of fairly high levels of clean energy, thus creating a modern, low cost energy system with reduced carbon emissions. Hence, it is important for India to work on increasing flexibility requirements of the grid using a combination of investment, incentives and technologies that change how and when consumers use energy (including Demand Response Programs); increase the flexibility of power generation, and; encourage development of new energy storage options.

In the global arena, its technical inputs to the national government help inform the climate negotiations and put forth the developing countries' perspective. Creating a robust monitoring and transparency framework is necessary to achieve the set climate targets. With specific focus on Articles 4, 13 and 14 of the Paris Agreement, TERI is working towards elaborating on various elements of the Articles, and providing inputs for national communications and Biennial Update reports to the Government of India.

India's developing economy has potential for energy efficiency through improvement in the existing technologies as well as introducing new ones in the cooling space. The institute has undertaken research work towards developing various techno-economic feasibility scenarios for HFC phase down in the country, and integrating energy efficiency with the Montreal Protocol. The work carried out by TERI culminated into the India Cooling Action Plan as an integrated policy framework.

Boosting Oil & Gas Output

The Prime Minister has urged the industry to enhance oil & gas output. The Government has consequently, rolled out major incentives in royalty rates to attract investments into the oil and gas exploration and maximise production.

The Government has given its go ahead to concessional royalty if production commences before four years for onland / shallow water blocks and before five years for deepwater / ultra deepwater blocks from the effective date of contract, top officials said. “Concessional royalty at the rate of 10%, 20% and 30% has been proposed for category-I, II and III basins respectively,”.

“In case commercial production is not commenced in the time period mentioned, then royalty at existing rates will be applicable.” Even additional gas production from APM (administered pricing mechanism) fields would be incentivised in the form of royalty reduction at the rate of 10% of applicable royalty on additional production over and above business as usual scenario, officials said.

As per the hydrocarbon exploration licencing policy (HELP), royalty rate for offshore blocks in shall water has been fixed at 7.5% for both oil and gas, while for deep water blocks it is 0% in first seven years and 5% after seven years for both oil and gas. For ultra-deep blocks royalty rate has been fixed at 0% and 2% for the first seven years and after seven years, respectively.

A royalty interest in the oil and gas industry refers to ownership of a portion of the resource or revenue that is produced. A company or person that owns a royalty interest does not bear any of the costs of the operations needed to produce the resource, yet gets a portion of resource or revenue produced.

The Union Cabinet had recently rolled out sweeping reforms to expedite oil and gas exploration by completely doing away with revenue/production sharing for unexplored areas in category-II and III basins, while bidding in category-I basins is to be based on exploration cum revenue sharing basis in 70:30 proportion

This was in line with the recommendations of a committee headed by Niti Aayog Vice Chairman Rajiv Kumar on enhancing domestic oil and gas exploration. The Committee had laid out the policy framework, suggesting reforms in exploration and licencing regime, enhancing production from existing producing fields of national oil companies (NOCs), and simplifying the approval processes. Category-I basins include basins with reserves already being exploited, category-II basins include ones with contingent resources to be developed and monetised, and category-III basins include ones with only prospective resources to be explored and discovered.

Revised Rules

for Hydrocarbon Bids

In a move that is meant to attract investments in India’s oil and gas exploration sector, the Government has said that in assets where income is below $2.5 billion, annually, it will not take revenue share.

The Government had recently come out with revised norms for hydrocarbons exploration. In a recent interview, Minister for Petroleum & Natural Gas Mr. Dharmendra Pradhan said, “In case of windfall gain, the contractor would be sharing revenue with the Government on a graded scale ranging from 10 per cent to 50 per cent on incremental revenue over $2.5 billion in a financial year.”

But, royalty and statutory levies will be paid by the

contractor. At present, Mr. Pradhan said that there are only two blocks — Vedanta's Rajasthan Block and ONGC's Mumbai High — where revenues exceed $2.5 billion every year.

Meanwhile, ONGC and Oil India are likely to offer 66 of their explored oil fields to private companies for enhancing domestic hydrocarbon production. The auction can now be done exclusively on the basis of the proposed exploration work programme without any revenue or production share to the Centre.

9th and 10th round of CGD Auctions

Indian Oil Corporation (IOC), the country's largest fuel retailer, and Gautam Adani-led Adani Gas have emerged as the largest winners for City Gas Distribution (CGD) licenses, winning 17 and 15 Geographical Areas, respectively, under the ninth and tenth rounds of CGD auctions.

Overall, the winners of the two rounds of auction combined are expected to provide 4.13 crore Piped Natural Gas (PNG) connections and set-up 7,924 Compressed Natural Gas (CNG) stations across the country by 2029. Also, laying of 170,873 Km of steel pipeline network is expected up to 2029.

Other companies which won significant number of GAs under both the rounds were Bharat Gas with 13 GAs, Torrent Gas with 12, a consortium of AG&P LNG Marketing & Atlantic Gulf & Pacific Company of Manila with 11 GAs, IOC-Adani consortium with 10 GAs, Gail Gas with 8 and Gujarat Gas with 7 GAs.

Under the just concluded tenth round, IOC, Hindustan Petroleum (HPCL) and the Consortium of LNG Marketing and Atlantic Gulf & Pacific Company of Manila won 9 GAs each.

"225 bids from 25 entities were received in February 2019, the bid closing date. Based upon the bids evaluations, PNGRB in its board meeting held on 26 February 2019 approved issuance of Letters of Intent (LoI) to the 12 successful entities for 50 Geographical Areas," PNGRB said.

The regulator added that post the completion of the tenth round, city gas would be available in 228 GAs comprising 402 districts spread over 27 states and union territories covering around 70 per cent of India's population and 53 per cent of its geographical area.

As per the work commitments made by winning entities under the tenth round, the companies are expected to provide 2.02 crore domestic PNG connections and set-up around 3,578 CNG stations for transport sector, along with laying of 58,177 inch-km of steel pipelines over an 8 year period ending March 2029.

A major challenge will be execution of the projects and penalties could subsequently take center stage. "With execution challenges in sight, penalties could indeed take center stage. Penalties here are on the lower side esp for domestic PNG connections that have the highest weightage (Rs 750 per shortfall, or 15 per cent of security deposit)," it said.

India becomes World's 2nd largest LPG Consumer

The Government's push to provide clean cooking fuel to every household has turned India into the world's second largest LPG consumer whose demand is projected to rise 34 per cent by 2025, Oil Secretary Dr. M M Kutty said recently.

Speaking at the Asia LPG Summit here, he said active LPG consumers have grown at a compounded annual growth rate (CAGR) of 15 per cent - from 14.8 crore in 2014-15 to 22.4 crore in 2017-18.

"Rapid increase in population combined with LPG penetration in rural areas has resulted in an average growth of 8.4 per cent in LPG consumption, making India the second largest consumer of LPG in the world at 22.5 million tonnes.

"As per (oil) Ministry's projections and forecasts, LPG consumption is expected to grow to 30.3 million tonnes by 2025 and 40.6 million tonnes by 2040," he said.

The Government, he said, has taken a number of initiatives to promote usage of LPG across the country especially in rural households which otherwise depend on traditional fuels that are hazardous to health and polluting in nature.

Under Pradhan Mantri Ujjwala Yojana (PMUY) of providing free cooking gas (LPG) connection to poor, over 6.31 crore connections have been provided since the launch of the scheme on May 1, 2016.

"Before March 31, 2020, we will provide LPG connections to 8 crore households under PMUY," he said, adding that "LPG connection is issued in the name of the women member of the household."

"With the successful implementation of this programme, this scheme has been revised to target 8 crore LPG connections by the financial year 2020. With the revised targets, the scheme now covers all the vulnerable and disadvantaged sections of the society having no LPG connections," he said.

Piped Gas to cover 70% of India's Population

Shri Dharmendra Pradhan

More than 70% of India's population will get access to piped natural gas services, up from 20% five years back, once the projects awarded in the 10th auction of licences for setting up CNG and PNG networks are completed, Oil Minister Shri Dharmendra Pradhan said.

Handing over the latest batch of 12 LoIs (letters of intent) covering 50 geographical areas auctioned in the 10th round, Pradhan said the Government is concentrating on increasing domestic production of gas along with the expansion of the gas distribution network.

"This will greatly help India become self-sufficient for its energy needs, lower our import dependence and help save foreign exchange," Pradhan said. The minister's statement underpins the fact that CNG and PNG cost less than convention fuels – petrol or diesel and LPG, respectively – because these services are fully run on domestic gas, which is cheaper than natural gas imported in ships.

Expansion of PNG networks will not only benefit consumers in terms of cost advantage and convenience, it will also free up funds of state-run fuel marketers that are locked up in LPG cylinders.

The city gas projects in the 50 geographical areas underway will entail rollout of over 2 crore PNG connections and 3,578 CNG stations. During the current bid round, state-run Indian Oil has won licences for 10 cities and HPCL for nine geographical areas. IOC won city gas distribution licences for nine cities, most of them in Bihar and Jharkhand, on its own and one in a joint venture with Adani Gas.

Petroleum Products Exports

To hit 8-year Low in 2019

India's total exports of petroleum products, which account for over a tenth of the gross value of outbound shipments, are set to drop below the 1.2 million barrel per day (mbpd) mark in the current calendar year, the lowest level of annual exports in the past 8 years.

The worrisome trend for export earnings is attributed to a robust rise in domestic demand coupled with a mega maintenance-led refinery shut down slated for 2019. The country exported petroleum products – mainly petrol, diesel, naphtha, fuel oil and lubricants -- worth $35 billion last financial year (2017-18).

"Overall, heavier maintenance program is to be expected this year, which will affect refinery throughput. This, coupled with robust domestic demand (expected to grow at 235 mbpd for the year as a whole), would likely pull India's total oil product exports below the 1.2 mbpd mark this year for the first time since 2010," Jy Lim, Director of Asia-Pacific oil market analysis at S&P Global Platts told ETEnergyworld.

He added domestic refinery upgradation will be required as India plans to shift to Bharat-VI standard fuel in April

2020 coupled with the upgradation required to meet the International IMO 2020 bunker fuel specifications.

The impact of the twin factors – robust demand and refinery upgradation activities – is already visible in the export numbers of the current financial year. "India's total oil product exports dropped by 355 mbpd (or 24 per cent) year-on-year to 1.1 mbpd in January 2019, marking it the sharpest year-on-year decline in 9 months and the lowest monthly level since April 2018," Lim said.

Largest export destinations for India's petroleum products include Singapore, United Arab Emirates, Netherland, Malaysia, United States, Israel and Nepal, according to data sourced from the Directorate General of Commercial Intelligence and Statistics (DGCIS), an arm of the commerce ministry.

Crude Oil Production lowest in nine years

India produced 31,349 Thousand Tonne (TMT) of crude oil in the first eleven months (April-February) of the current financial year (2018-2019), the lowest output recorded in the past nine years during the same period, according to fresh data sourced from the oil ministry.

The declining trend in the country's domestic crude oil production is coming at a time when the country's oil import bill has already ballooned 29 per cent to $102.9 billion during the April-February period of the current fiscal.

Also, the decline in domestic crude oil production has pushed India's oil import dependence to 83.8 per cent, the highest recorded in the April-February period in the last five years for which data is publicly available.

India's crude oil production in February 2019 declined 6.4 per cent to 2,564 TMT, as compared to 2,731 TMT produced in the corresponding month a year ago, primarily due to fall in production from fields operated by Oil and Natural Gas Corporation (ONGC), private players and fields operated under a Joint Venture, data showed. Cumulatively India's crude oil production in April-February period declined 4 per cent to 31,349 TMT, as compared to 32,643 TMT recorded in the corresponding period a year ago.

Adani, IOC, GAIL among 225 bidders for City Gas Licences in 50 cities

As many as 225 bids by companies such as Adani Gas, Indian Oil Corp (IOC), Torrent and GAIL Gas were received recently at the close of bidding for city gas licences for 50 cities, official sources said.

Without disclosing the names of bidders, the Petroleum and Natural Gas Regulatory Board (PNGRB) said "about Rs 50,000 crore" of investment would be plowed in the cities offered for bidding for a licence to retail CNG to automobiles and piped cooking gas to households kitchens.

The cities on offer included Gwalior in Madhya Pradesh, Mysore in Karnataka, Ajmer in Rajasthan and Howrah in West Bengal.

"About 225 bids were received in respect of all the 50 geographical areas (GAs) offered in the 10th City Gas Distribution (CGD) bidding round. The technical bids would be opened between February 7 and 9," PNGRB said in a statement here.

Deteriorating air quality

EV Revolution Needed

The air quality in our cities is deteriorating at an alarming rate. Today, 14 out of the 15 most polluted cities in the world are in India. Left unchecked, we are staring not only at severe health costs but also losing highly skilled work force to migration abroad.

Transportation is an outsized contributor to this

situation, if not the sole one. Battery electric vehicles (BEVs) are an integral part solution to this problem, which justifies strong public support for their adoption. However, despite generous tax subsidies, and other forms of support, adoption is not occurring at the pace and scale needed to have a meaningful impact on oil imports and urban air quality. Also, subsidies have proven unsustainable even for the wealthy countries (e.g. Norway). Nevertheless, there is reason for optimism. The basic point here is that policymakers should recognise some new realities, and tweak our policies to take full advantage of such facts.

Two recent economic developments justify an even more aggressive but a smarter policy agenda. First, is the dramatic reduction in the global cost of battery storage. The last decade has witnessed a six-fold reduction in the international price of Li-ion storage batteries (about $1000 per kilowatt hour (kWh) in 2010 to about $170 per kWh in 2018).

This has substantially mitigated the disadvantage of BEVs in terms of upfront cost and propelled them ahead of other zero emissions technologies, the most notable being hydrogen fuel-cells. Indeed, BEVs cause pollution during power generation, and during battery production and disposal. It is, therefore, imperative we decarbonise electricity and ensure the batteries are environmentally sustainable.

Second, is the fall in cost of solar and wind electricity as evidenced in the prices discovered in repeated auctions by the Solar Energy Corporation of India.

So, what is a smarter way to ushering in the electric vehicle revolution? A central feature of such an approach is targeting electrification of those vehicle segments that offer the greatest environmental and socio-economic return on investment.

The basic reality is that more intensive the utilisation (i.e., more kilometres / day) of a BEV, greater are its fuel cost savings and environmental benefits. This means a focus on commercial vehicles over private household vehicles. In contrast, BEV policies world-over have prioritised adoption by private households.

City bus fleets are the ideal first segment for full electrification given their straightforward charging infrastructure demands (install fast chargers at bus stations). A study by University of California Los Angeles (UCLA) and Lawrence Berkeley National Lab (LBNL), concludes BEVs would not only improve air quality but also increase ridership and revive loss-making bus agencies. Alongside buses, taxi fleets (Uber, Ola, Merucabs etc), and short- and medium-haul light commercial trucks and delivery vans that mostly operate within city-limits are ripe for electrification right away.

Realising this dream hinges foremost on the establishment of a widespread, reliable, network of fast-chargers within cities and along highways, which is the second key task for Government. This is a class and uncontroversial role for Government, especially for new industries in their infancy, for the large benefits that accrue to society and are not fully appropriable by private investors.

Policy Interventions needed to realise the EV Vision:

100 per cent EV pilots: We need to select a few major cities and select major state and national highway corridors to serve as pilots that demonstrate both the technical feasibility and economic viability.

Building of infrastructure: Having identified the locations for pilots, the next step is to fund the building of the fast-charging infrastructure.

Subsidy targeting: To reduce the total burden on public finances, the subsidy regime needs to be reformed to ensure that the vast majority of the vehicle subsidies are directed to high-mileage vehicles.

Industry buy-in: In order to ensure that the public investments in infrastructure and subsidies are put to their full and best use, we should require that both public transportation agencies and private operators of commercial vehicles (taxis, buses and trucks) commit to mandatory targets.

Make in India: The above efforts must be complemented with supporting policies to ensure that in the long run we do not end up swapping oil imports and fuel insecurity for battery imports.

IEA Sees Oil Demand Growth Defying Economic Slowdown

Global oil demand remains on course to be stronger this year than in 2018 as a boost from lower fuel prices counters slowing economic activity, according to the International Energy Agency. “We have seen prices fall very significantly since the peak at the beginning of October, and that is providing some relief to consumers,” Neil Atkinson, head of the IEA’s oil industry and markets division, said in a Bloomberg television interview recently. Still, in its monthly report the agency acknowledged “the mood music in the global economy is not very cheerful” and the outlook could change.

Crude prices remain almost 30 percent below the four-year peak reached in October amid concerns over economic growth in China and the U.S., the world’s two biggest oil users, who remain locked in a trade dispute. To prevent markets tipping into oversupply, the OPEC cartel and its partners have announced substantial production cuts.

Oil consumption will expand by 1.4 million barrels a day – about 1.4 percent -- in 2019, slightly higher than last year’s expansion of 1.3 million, according to the Paris-based IEA, which advises most of the world’s major economies on energy policy. Brent crude traded near $62 a barrel in London recently, having surpassed $86 in October.

Faltering manufacturing and slumping exports have stirred concerns that China’s economy, the oil market’s engine of growth for more than a decade, is slowing. A prolonged trade battle with the administration of U.S. President Donald Trump is only darkening the outlook.

“Our expectation for slightly faster global demand growth in 2019 is maintained even though economic growth is likely to be slower than in 2018,” the agency said. “The impact of higher oil prices in 2018 is fading, which will help offset lower economic growth.”

Output cuts planned by the Organization of Petroleum Exporting Countries and its partners should stabilize world markets, though the process will be slow, the IEA said. To fully implement its agreed cutbacks, OPEC would need to cut by a significant 900,000 barrels a day this month, with its allies reducing by a further 370,000.

“The journey to a balanced market will take time, and is more likely to be a marathon than a sprint,” it said. “If the producers deliver on their promises, the market could return to balance in the first half of 2019.”

While OPEC’s biggest member, Saudi Arabia, has made an early start on production cuts, unplanned losses have steadied in fellow members Iran and Venezuela. At the same time, the shale-oil boom is continuing unabated in the U.S., which by the middle of the year will be producing more crude than either Saudi Arabia or Russia is able to.

Production in the U.S. will rise by 1.3 million barrels a day this year, the IEA said. That’s slower than the record 2.1 million increase in 2018, but the agency pointed out that such rapid expansion had been “unexpected” given that its initial estimate was for growth of less than half that amount. Refiners around the world also face a challenge this year as the industry adds 2.6 million barrels of daily processing capacity, the biggest increase in the records of the agency, which was set up in the 1970s. “By the end of the year, all industry players, upstream and downstream, may feel as if they have run a marathon,” it said.

FAME-II Launched

In the recent past, the Government has taken positive steps to promote Mobility and the Cabinet has approved Rs 10,000 cr FAME India Phase II Scheme.

"The Scheme with a total outlay of Rs 10,000 Crores over the period of three years will be implemented with effect from 1st April 2019, over three years from 2019-20 to 2021-22," an official statement said.

This Scheme is the expanded version of the present scheme titled 'FAME India 1 which was launched on 1st April 2015, with a total outlay of Rs 895 crores.

Through this scheme, the emphasis is on electrification of the public transportation that includes shared transport. Demand incentives on operational expenditure mode for electric buses will be delivered through state/city transport corporation (STUs).

In three and four wheeler segment incentives will be applicable mainly to vehicles used for public transport or registered for commercial purposes. In the e-two wheelers segment, the focus will be on private vehicles. The Government plans to support ten lakhs e-2W, five Lakhs e-3W, 55,000 4Ws and 7,000 buses.

To encourage advanced technologies, the benefits of incentives, will be extended to only those vehicles which are fitted with advanced battery like a lithium-ion and other new technology batteries.

The scheme proposes establishment of charging infrastructure, whereby about 2,700 charging stations will be established in metros, other million-plus cities, smart cities and cities of hilly states across the country so that there is availability of at least one charging station in a grid of 3 km x 3 km.

Establishment of charging stations is also proposed on major highways connecting major city clusters. On such highways, charging stations will be established on both sides of the road at an interval of about 25 km each.

Auto Industry Welcomes FAME-II

The auto industry has welcomed the FAME-II (Faster Adoption and Manufacturing of Electric Vehicles) that was approved by the Cabinet recently.

The scheme, with a total outlay of Rs.10,000 crore over three years to be implemented from April 1, is an expanded version of the present scheme — FAME-I, which was launched in April 2015 with a total outlay of Rs.895 crore.

The industry has said that it will address key issues including national energy security, mitigation of adverse impact of vehicles on environment and growth of domestic technology, and manufacturing capabilities. Through the scheme, the Government plans to support 10-lakh electric two-wheelers, five-lakh three-wheelers, 55,000 four-wheelers and 7,000 buses.

The scheme also envisages establishment of charging infrastructure with around 2,700 charging stations in metros, other million-plus cities, smart cities and in of hilly States.

"The revised FAME-II removes all the uncertainty and will put electric vehicles (EVs) in the fast lane. Mahindra supports the Government's focus to boost EVs in public transportation and now requests local authorities to help facilitate plying of electric vehicles on Indian roads," Mr. Pawan Goenka, Managing Director, Mahindra & Mahindra, said.

According to the Society of Indian Automobile Manufacturers (SIAM), the industry is poised to make huge investments in manufacturing EVs in all categories of vehicles and developing an indigenous supply chain to ensure 'Make in India'. "As per our understanding, FAME-II will focus on EVs used for commercial applications and two/three wheelers and in creating the necessary infrastructure and ecosystem for EVs, which is a welcome move," Mr. Rajan Wadhera, President, SIAM, said.

Also, the extension of the scheme will instil confidence in the auto and component industry, while taking long-term investment decisions in EV development and manufacture, with minimum risk, Mr. Wadhera added.

According to Mr. Sohinder Gill, Director General,

Society of Manufacturers of Electric Vehicles, the support would encourage associated industry players to invest in the sector, which will further help in creating an ecosystem, locally.

Mr. Ayush Lohia, Chief Executive Officer, Lohia Auto, said that the subsidy will make two- and three-wheeler electric vehicles very attractive to customers as it will bring down costs vis-a-vis petrol vehicles.

EV Promotion Measures

PMO Okays suggestions

The Prime Minister's Office (PMO) has given its go-ahead to at least a dozen measures proposed by a committee of secretaries to help achieve a 15 per cent share of electric vehicles (EVs) in total vehicle sales in the next five years.

The Government will, however, not formulate a separate comprehensive policy on electric mobility, as was being discussed earlier, said officials."This will hasten rollout of respective decisions," a senior Government Official said.

The approved proposals include recent decisions by ministries to provide incentives to manufacturers, buyers as well as electric mobility infrastructure creators.

The Department of Revenue had, on January 29, calibrated basic custom duty and goods and services tax (GST) rates on EVs to make them competitive in domestic and global markets, as well as lowered duties on raw material imported for manufacturing components.

The Power Ministry has issued guidelines for facilitating setting up of charging stations across cities and highways, while the housing and urban affairs ministry has notified an amendment to building code and town planning rules for provisioning of EV charging stations in private and commercial buildings.

Since transport comes under the jurisdiction of states, NITI Aayog, which is acting as a nodal body for smooth roll-out of the plan, has written to states to consider waiver of registration charges and road charges on electric vehicles. This could be a pre-condition for states eyeing incentives under the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles in India (FAME-II) scheme.

"We are suggesting states consider exempting e-vehicles from such taxes, opting for a sunset period for exemptions or putting a cap on e-vehicles to be exempted from such taxes," the official said. The Government is seized of the fact that India needs to adopt effective strategies to position itself as a key driver in the global mobility revolution and this can be done only by large-scale domestic manufacturing of electric vehicles, along with all their components including batteries.

Prime Minister Mr. Narendra Modi had, in September last year, assured a stable policy regime for e-vehicles that would cut down carbon emissions, create new job opportunities and reduce use of crude oil, about 80 per cent of the requirement of which is met through imports.

Though never formally articulated as a policy statement, India had earlier wanted to ensure that by 2030 all new vehicles on the country's roads are powered by electricity. That target has, however, been scaled down to ensure 15 per cent share of e-vehicles in total vehicle sales in the next five years.

Roadmap for Manufacture of Electric Vehicles, Assemblies and Parts

The Centre has approved a phased manufacturing programme of electric vehicles (EVs), its assemblies and parts with the objective of development of domestic manufacturing.

In a notification issued by the Union Ministry of Heavy Industries recently, the phased manufacturing of EVs is aimed at increasing the domestic value addition and creating employment opportunities. As per the plan, benefits set in from April 2020 and April 2021 onwards respectively.

The notification comes in the backdrop of the recent announcements made to encourage electric mobility and after a meeting held with at least seven Original Equipment Manufacturers (OEM) at New Delhi.

As per the proposals, it covers bus and trucks, passenger vehicles, two wheelers and three wheelers. These include in manufacture of these EVs in various modes of CBU, SKD and CKD.

According to a representative of one of the OEMs, the move augurs well for the growth of the nascent industry having immense potential for growth.

The move covers Lithium Ion cells for use in manufacture of Lithium Ion accumulator for EVs, Battery Packs for use in manufacture of EVs and covers various parts that go into manufacture of EVs. These include AC or DC charger and controller, Power Control Unit including inverter, AC/DC Converter and Condenser, Energy Monitor, Contactor, Brake System for recovery and Electric Compressor.

The Centre had approved the National Mission on Electric Mobility in 2011 and subsequently National Electric Mobility Plan 2020 in 2013. As a part of that scheme, the Department of Heavy Industry had notified Faster Adoption and Adoption and Manufacturing of (Hybid) Electric vehicles (FAME) India scheme in April 2015 to incentivise EVs.

Latter to promote electric mobility, its assemblies and parts, basic custom duty and GST were reduced and rationalised in June 2017.

In order to promote further impetus to electric mobility and promote indigenous development of electric vehicles, the Government on January 29, 2019 further reduced and rationalised basic custom duty on electric vehicles, its assembles, parts and inputs of sub-assemblies.

Following these developments, the Government had come up with the proposal for phased manufacturing roadmap keeping in view the present status of manufacturing ecosystem in the country.

As per proposals there will be graded duty structure for indigenous manufacture of electric vehicles, its assemblies and sub parts as also inputs for the sub-assemblies over a period of time.

The Government's intends to substantially increase value addition and capacity building within the country for the electric mobility seen to have immense scope for growth.

National Mission on Transformative Mobility

The Cabinet had approved setting up of the National Mission on Transformative Mobility and Battery Storage

Niti Aayog CEO Mr. Amitabh Kant will head the National Mission on Transformative Mobility and Battery Storage, which is being set up to promote clean and sustainable mobility initiatives in the country.

According to a notification by the Niti Aayog, other members of the panel include secretaries of Ministry of Road Transport and Highways, Ministry of Power, Department of Heavy Industry, Department of Science and Technology, Department for Promotion of Industry and Internal Trade, and Director General of Bureau of Industrial Standard.

The terms of reference of mission includes ensuring implementation and compliance of the decisions and recommendations of the Steering Committee.

The panel will also propose and recommend policy guidelines and Government interventions and possible strategies for holistic, sustainable and transformative mobility and energy storage in India.

Rs 31,560-crore for New Power Projects

The Government recently cleared investment proposals worth over Rs 31,560 crore in power projects, including two coal-based thermal plants and a hydro project on river Chenab in Jammu and Kashmir.

The thermal power plants in Buxar, Bihar, and Bulandshahr, Uttar Pradesh, are expected to become operational by 2023-24. Briefing media after the meeting of the Cabinet Committee on Economic Affairs (CCEA), Finance Minister Arun Jaitley said approval has been given to an investment of Rs 10,439.09 crore for the 2x660 MW Buxar Thermal Power Project (Buxar TPP) in Bihar.

The project is expected to generate substantial direct and indirect employment apart from various other socio-economic developments in the project area. The Buxar TPP will start yielding benefits from 2023-24," said an official release.

The CCEA, chaired by Prime Minister Mr. Narendra Modi, also gave nod to the investment proposal for a 2x660 MW Khurja Super Thermal Power Plant (STPP) in Bulandshahr at an estimated cost of Rs 11,089.42 crore and Amelia Coal Mine in the Singrauli district of Madhya Pradesh. The Khurja STPP, too, will start yielding benefits from 2023-24, the Government said.

Mr. Jaitley also said the CCEA gave approval to the investment for acquisition of Lanco Teesta Hydro Power Ltd (LTHPL) and the execution of balance work of the Teesta Stage-VI Hydro Electric Project by NHPC in Sikkim.

The project would generate 2,400 million units in a 90 per cent dependable year with installed capacity of 500 MW (4x125 MW).

The Finance Minister further said the CCEA has approved the investment for the construction of Kiru Hydro Electric Project (624 MW) by Chenab Valley Power Projects Pvt Ltd (CVPPPL) in Jammu and Kashmir. The project will be implemented at an estimated cost of Rs 4,287.59 crore which includes IDC and FC of Rs 426.16 crore and an infusion of equity of Rs 630.28 crore by NHPC in CVPPPL.

The project is located on river Chenab in the Kishtwar district of Jammu and Kashmir. "It envisages construction of a 135 m high concrete gravity Dam above deepest foundation level, 4 Nos circular, Pressure Shaft of 5.5 m internal dia of length varying from 316 m to 322 m, an underground Power House and 4 Nos Tail Race Tunnel, Horseshoe shape, 7 m dia and length varying from 165 m to 190 m," said another release.

Piling Dues Choking Power Generation Companies

Power generating companies are in a funk. Nearly half the States and Union Territories and power distribution companies aren't paying them on time. This includes all the Southern States (excluding Telangana), all the northern States (except for Bihar) and a couple of them from the North-East. Data from the Power Ministry's PRAAPTI portal shows that the amount outstanding touched nearly Rupees 40,500 crore at the end of November 2018.

Out of the 17 generation companies' data available on the portal, dues of two listed companies – NTPC at Rupees16,509 crore and Adani Power at Rupees 7,321 crore – are the highest. The pending dues varies from 0 days to over 60 days. Compared to this, Tata Power Co. Ltd., another listed company, has outstanding dues of just aroundRs.980 crore as of November.

In terms of generation capacity, NTPC is miles ahead when compared with Adani Power and Tata Power. It has an installed generation capacity of 53,166 MW while Tata Power has 10,587 MW and Adani Power 10,480 MW. Tata Power also houses its renewable energy and power distribution business in the larger

Tata Power Group of companies. But still, a majority of Tata Power's business comes from thermal power, as does Adani's and NTPC's.

Apart from unpaid dues, power generators also deal with under recovery of fuel costs. Since most of thermal power plants use coal as a fuel, change in prices of this raw material directly affects their profitability. Although all three have been plagued by the impact of rising international coal prices, and a domestic shortage of coal, Tata Power and Adani Power have, in particular, seen their profits take a hit due to under recoveries.

The under recovery issue has been plaguing the power sector ever since the Government introduced a clean energy cess on coal consumption in 2015. In additional, there was a spike in prices of coal prices, both domestically and in international markets. According to power generating companies' tariff agreement, they can only pass those increases in costs to consumers which the State or Central power regulator allows.

When delayed payments from power distributions companies are added into the midst, power generators will have to borrow to serve their working capital needs sheets further. Even after sweeping reforms for State distribution companies that were unveiled under the UDAY scheme by this Government, it seems unpaid bills of distribution companies might cause another crisis in the sector.

Is India Power-Surplus?

India has again missed the target of becoming an electricity-surplus nation by a whisker as its peak power deficit stood at 0.8 per cent and the overall energy deficit remained 0.6 per cent in 2018-19.

In its load generation balancing report (LGBR) for 2018-19, the Central Electricity Authority (CEA) had pegged overall energy and peak power surpluses at 4.6 per cent and 2.5 per cent, respectively, indicating that India would be a power-surplus country in the financial year.

In 2017 also, the CEA in its LGBR had projected that India would become a power-surplus nation in 2017-18. But, the peak power deficit was 2.1 per cent, while overall electricity deficit was 0.7 per cent across the country in that financial year.

According to the latest CEA data, during peak hours, as much as 175.52 gigawatt (GW) was supplied against demand of 177.02 GW leaving a deficit of 1.49 GW or 0.8 per cent in 2018-19.

The data showed that as much as 1,267.29 billion units (BUs) of electricity was supplied against the demand of 1,274.56 BUs leaving an overall electricity or energy deficit of 7.35 BUs or 0.6 per cent during 2018-19.

A power sector expert said, "The deficit is primarily due to Discoms not being able to buy power. Their total outstanding due was Rs 40,698 crore toward power generators till January this year."

He added that India can be a power-surplus state as its installed power generation capacity is around 356 GW against the peak demand of about 177 GW. The power generation can be doubled provided distribution companies (Discoms) pay their dues promptly.

During March 2019, the overall energy deficit was 0.4 per cent. As much as 108.19 BUs of electricity was supplied against the demand of 108.66 BUs in March. The peak power deficit in the month was 0.4 per cent as 168.74 GW power was supplied against the demand of 169.46 GW.

Peak Power Deficit at 0.8% in 2018-19

India has again missed the target of becoming an electricity-surplus nation by a whisker as its peak power deficit stood at 0.8 per cent and the overall energy deficit remained 0.6 per cent in 2018-19.

UDAY – A Review

The delays faced by most States in achieving financial and operational goals under the Ujwal Discom Assurance Yojana (UDAY), launched in 2015,

are raising niggling questions on the efficacy of the scheme.

An analysis of data from the Power Ministry reveals that overdues by State power distribution companies (Discoms) to power generators (Gencos) have been rising, indicative of the dismal performance of Discoms in most States.

At the end of February 2019, of the total outstanding amount of Rs. 41,707 crore owed by Discoms to Gencos, more than half was overdue. This implies that Rs. 27,466 crore of dues have not been settled within the mandated credit period.

States such as Rajasthan, Madhya Pradesh, Andhra Pradesh, Karnataka, Tamil Nadu and Maharashtra had overdues of 60-70 per cent (as a proportion of their overall outstanding amount) as of February 2019.

The financial performance of most States under UDAY is well below the targets agreed upon by the Discoms.

The targets set out in UDAY — reduction in aggregate technical and commercial (AT&C) losses, reduction in the gap between the average cost of supply (ACS) per unit of power and per unit average revenue realised (ARR), and tariff revisions by Discoms — have not been met.

UDAY required States to reduce their AT&C losses to 15 per cent by March 2019. However, the AT&C losses-average for all States as of February stood at 19.97 per cent.

Data relating to 25 States available on the UDAY portal shows that only seven had AT&C losses below 15 per cent. The losses of 17 States had breached the 20 per cent mark.

Under UDAY, States were also supposed to reduce the gap between ACS and ARR to nil by March 2019. The overall ACS and ARR gap as of February was still hovering around Rs. 0.35/unit of electricity sold.

The financial losses at State Discoms have come down from the pre-UDAY period, but the gap between ARR and ACS per unit persists, says Sabyasachi Majumdar, Senior Vice-President and Group Head of Corporate Ratings at ICRA Ltd. This has led to high overdues to banks and power generating companies by Discoms. Power tariff revisions, as envisioned under UDAY, have also not been implemented by the States.

A November 2018 study by the National Institute of Public Finance and Policy on the efficacy of UDAY says the failure to achieve the financial and operation parameters could derail the turnaround of the power sector through the scheme. The study points out that many States have not been able to meet the commitment of raising tariffs due to political compulsions. The ACC-ARR gap will persist if there is a delay in tariff hikes.

Govt owe Discoms overs Rupees 30,000 crore

The quantum of dues is staggering even after netting off the Electricity Duty that is to be paid to State Governments by the Discoms. According to data compiled by the Centre, Discoms are left with dues worth over Rs.16,000 crore from Government Departments, after offsetting the Electricity Duty. Power distribution companies (Discoms) need to recover over Rupees 30,000 crore from State Government Departments alone.

The Electricity Duty is used to cross subsidise power consumption in a State. The duty is usually paid by industrial consumers and the amount collected is used to offer cheaper power to agricultural and domestic consumers. The State Government uses this tax to subsidise needy consumers.

Uttar Pradesh, Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh, Tamil Nadu and Punjab figure in the list of top 10 States with the highest quantum of dues to Discoms.

It appears that the State Government Departments are not paying their Discoms and then using the

Electricity Duty to offset the bills. This has been red flagged by the Centre. In a presentation to the State Governments, the Ministry of Power said high Government Department dues exist with high liabilities of Electricity Duty on the balance sheet of Discoms. “Proper transactions between the States and Discoms for each other’s dues (Electricity Duty and Government Department usage of electricity) and their correct accountal would improve collection efficiency, which is highly understated,” the Centre said.

Uttar Pradesh tops the list with Rs.11,176 crore outstanding Government Department dues and Maharashtra comes second with Rs.5,419-crore dues as on March 2018.

But the Discoms also have a high quantum of Electricity Duty payable to the State Governments as on March 2018-end. According to the Ministry of Power, Uttar Pradesh will recover Rs.7,057 crore (63 per cent of the dues) from its Discoms through the Electricity Duty. Maharashtra seeks to recover Rs.4,435 crore or 82 per cent of the total dues from its Discoms through the duty.

It is remarkable that electricity has reached all of India, thanks to a sustained 20-year effort. It needs to be clean, affordable and reliable for it to lift the economic and general wellbeing of 1.3 billion people. Schemes like UDAY need a periodic reality check.

Regulators Contributing to Losses

Union Power Secretary Mr. Ajay Bhalla has said state distribution companies cannot be blamed for rising debt and dues. These Discoms have improved their operational efficiency, but state regulators in some cases have not allowed electricity tariffs to keep pace with inputs costs, he told in an interview.

Mr. Bhalla’s comment is at odds with the near-unanimous view that state distribution companies are responsible for their financial mess.

As mounting debt and overdues of distribution utilities are drawing criticism to the Centre’s Discom revival plan Ujwal Discom Assurance Yojana (Uday), Bhalla supported the scheme. “We can’t discount Uday just like that.”

He said Uday helped Discoms improve their billing efficiency to about 85% and collection efficiency to about 97%, while the aggregate technical and commercial losses are below 19%. “If we look at gap between average cost of supply and revenue recovery, we have reduced it from 59 paise in the beginning of Uday to 17 paise in FY18”, Bhalla said.

100% Rural Electrification

Supply Challenges Remain

It is highly likely that the Central Government declares that all houses in India have electricity connections. As per the latest reports on the Saubhagya website, only around 20,000 households in Chhattisgarh remain to be connected. But while we celebrate, it is also necessary to register that this is just a good beginning. The connection challenge may have been met, but the supply challenge remains. To improve the quality of life and to aid economic activities, it is essential to ensure affordable, reliable electricity supply.

This has largely been neglected in the rush to reach household connection and village electrification milestones. Supply is managed by cash-strapped distribution companies which have no financial incentive to supply to the rural poor.

A supply-focussed rural electrification drive is required to overcome this problem. This drive is necessary to accelerate the transition away from the current poor levels of supply and service. Once there is noteworthy improvement, there will be pressure from consumers to hold the distribution companies accountable for supply quality, and this momentum will sustain itself.

As the focus has been on connections, there is limited data on problems with electricity supply quality. Available data indicate that metering, billing

and payment complaints dominate the list. There are inordinate delays in issuing bills for newly connected households, mistakes in bills, meter faults and difficulties in bill payments. Delays or mistakes in bills lead to very high bills, which small consumers find tough to pay, thus leading to disconnection.

The second complaint is about power outages. Government reports indicate 16 to 24 hours of supply in rural areas. Consumer surveys and sample measurements report much lower hours. One survey by Smart Power reports that half the households experience eight hours of power cut in a day and nearly half the rural enterprises use non-grid supply options. The nationwide village survey by the Ministry of Rural Development in 2017 indicates that only half the villages get more than 12 hours of supply.

Sell 100% Power in Spot Market-CERC

India proposes to move to the global practice of selling entire power generation through spot market to lower tariffs, promote efficient plants and withstand periodical aberrations that benefit a few plants. It is also expected to ensure that power plants with low tariffs do not get into 'stressed assets' category in future even without power purchase contracts with states.

However, Association of Power Producers Director General Ashok Khurana said the operational and settlement issues have to be looked into for implementation. The proposal put forth by sectoral regulator and followed in Europe and many parts of the US is expected to result in savings of crores of rupees to the state-owned electricity distribution companies.

An exercise by the Central Electricity Regulatory Commission (CERC) showed that the mechanism could have last year resulted in savings of nearly Rs 6,000 crore to distribution companies of five states. If implemented, pan-India the savings are expected to be higher.

CERC has begun consultations on the proposal on market-based economic dispatch of electricity. The mechanism proposes to pool all electricity generated in the country, including from projects which have signed power supply pacts with Discoms. The buyers and sellers will place their bids for required quantities and a settlement price will be discovered, as per the normal practice on power exchanges.

Making Gas a Viable Option For Power Generation

by B Bhambhani, Convenor, Power Group, IEF & Former ED, BHEL

India is today one of the fastest growing energy markets in the world. Driven by its thriving economy, rapid industrialisation and pressing needs to deliver electricity and clean cooling fuel to large sector of its population. India will emerge as the world's largest energy growth market, surpassing CHINA by the mid-2020s. The alarming air quality levels across all major cities in the country and an ambitious Intended Nationally Determined Commitments (INDC) has brought an unprecedented push to renewable sources and Natural Gas. To achieve the Prime Minister's Vision of Shifting towards Gas Based Economy, a flurry of forward looking policy interventions have benefitted the upstream and downstream segment of Natural Gas.

The idea of creating a gas based economy implies that the gas consumption in each consuming sector must grow. In India there are two major anchor consuming sectors of Natural Gas, Fertilisers and Power. Both these sectors are extremely price sensitive in nature while gas consumption from the fertilizers sector has witnessed a robust growth, the gas based power generators in the country are struggling to compete with Coal and renewables. The Power Sector has the potential to provide an unparalleled boost to natural gas consumption in India. However, due to extreme price sensitivity of the power sector, Government is forced to explore incremental gas demand from other segments vis-a-viz transport, Piped Natural Gas

(PNG) etc. As a result, the under-utilization of gas based power plants has turned them into stressed assets only to worsen the on-going Non-Performing Asset (NPA) crises.

India has a net installed power generation capacity of over 349 GWs. The final mix of power generation in the country is dominated by coal (56.5%) followed by renewables (21.2%) and hydro (15%). India also has 24.9GWs of natural gas based capacity, which constitutes roughly 7.2% of the total power generating capacity.

The present power generation mix of the country is heavily skewed towards coal because of the low generation cost of coal based power. Coal based power is produced at a levelized cost of Rs 2.5 – 3.0 per unit, along with an additional carbon tax of Rs 0.14 per cent, cost of Gas based power produced from imported LNG amounts to Rs 4.50 – 5.0 per unit. About 85% of the coal based power plants in the country are based on sub-critical boiler technology and have a low efficiency of 35%. This has led to a low carbon efficiency of coal based plants, producing 1100g of CO2 per unit of power produced in India against 600g produced from gas based power plants.

The above cost of Coal based power does not take into account the externalities due to emissions, climate change, health issues amongst miners. International environmental studies indicate that the cost of externalities of coal based power plants in India is – Rs 5.40 per unit. This cost of externalities which added to cost of power production from coal gives an overall cost of Rs 8.0 – 8.5, much higher than an overall cost of Rs 5.0 – 6.0 per unit for Gas. For India to keep up with its emission reduction targets, it is imperative that Natural Gas plays a more significant role in the country's power mix.

More than half of India's gas based power generation capacity is presently not being used and is on the verge of becoming a NPA. According to a 2018 Report of the Steering Committee on Energy, the country has over 14 GWs of natural Gas based power generating capacity that is stranded due to non-availability of domestic gas and high cost of imported LNG. India has 25 GW of gas based power generating capacity with an estimated gas demand of 42 BCM/yr (at 85% PLF). In 2017-18, gas based plants received 12 bcm of natural gas i.e. less than 30 per cent of its requirements. Due to unavailable of natural gas, the PLF of gas based power plants in the country have shrunk from 43% in 2010-11 to more 22% in 2017-18. To alleviate this situation, the Government had launched the E-4 LNG Scheme in March 2015 but was forced to discontinue the scheme in 2017 just after two rounds, due to aggressive bidding by Companies.

The low utilization of Gas based power plants has placed the investment of over US$ 15 billion in these plants at risk. The sub-optimal returns from these plants have presented a concerning NPA situation from the country. Further, less gas flow to these gas based power plants, have led to low utilization of gas pipelines, which in turn have affected the financial returns of the cross country pipeline projects. The low return on investment is adding to the financial risks of the LNG importer and posing a major challenge to all upcoming pipeline projects in the country, delaying the completion of a Natural Gas Grid. Doing away with the impeding NPA situation and making gas based power plants an integral part of the India's power mix will require innovative application supported by targeted policy intervention by the Government. In this regard, the following could be considered:

1. Integrating Gas based power with Renewables
2. Replace Diesel Generators with Gas based power in the industries
3. Using NCEEF (National Clean Energy and Environment Fund) to support Gas based Generation.
4. Revival of E-RLNG Scheme

Government of India had collected Rs 86,440 crores as Carbox tax. Out of this, NCEEF received Rs 29,645 crores. This fund needs to be used to support the ailing gas based power plants in the country.

Coal Allocation to Power Plants

CIL Plans 9% increase

State-owned Coal India Ltd (CIL) aims to increase the allocation of coal to power plants by nearly 9 per cent to around 530 million tonne (mt) during 2019-2020.

Coal supply by CIL to power sector was 488 mt during 2018-19 almost 7.5 per cent higher than the 454 mt registered during 2017-18.

Supply during 2018-19, CIL's share of despatch to power sector increased to 80 per cent from 78 per cent during the previous two years.

"Boosting despatch to power sector remained the focal area of CIL throughout 2018-19, as a result of which coal stocks with the power plants had increased from the low of 9.424 mt (equivalent to 6 days consumption level) to 30.947 mt (equivalent to 18 days consumption level) at the close of March 31, 2019," said a press statement issued by CIL. The State-owned miner also succeeded in bringing down the number of power stations in critical stock list from 34 as on May 5, 2018 to 'nil' as on March 31, 2019.

The window of special forward e-auction for power utilities was introduced mainly to cater to the needs of the power plants whose coal blocks had been deallocated and as the result of which tapering linkages were done away with. However, the introduction of 'Shakti' policy by the Central government in 2017-18, paved the way for such utilities to secure linkages from CIL.

Coal linkages worth close to 27 mt per annum had been allocated in the first round of linkage auction conducted in 2017-18. Further, CIL signed Fuel Supply Agreements (FSA) for a capacity of 5,230 MW with power plants who were earlier issued LoA (Letter of Assurance), but whose commissioning was delayed beyond the stipulated timelines.

This apart, CIL also issued linkages to 13 power plants with total capacity of 13,980 MW under various stages of commissioning. As many as 15 power plants which were allocated coal blocks for their captive use, but could not start coal production from the blocks, were also allocated bridge linkages to meet their coal requirement or shortfall of production during 2018-19.

"All these plants were otherwise dependent on special forward e-auction window of CIL for sourcing domestic coal requirements. With the grant of regular and bridge linkages, dependency of large numbers of power plants had shifted from the special window of e-auction to institutional mechanism of supplies from CIL through FSAs and MoUs," the release said.

In the wake of thrust to the power sector, the share of coal allocated under e-auction segment has come down to 12.6 per cent of production from 16.9 per cent in 2017-18 and 20.5 per cent in 2016-17.

Coal India to increase auction offering by 14% in FY20

Coal India (CIL) plans to ramp up auction offerings by 14% during the current fiscal against the previous year when similar supplies declined 5%.

It is expected to bring down premiums in the auctions market and offer respite to independent power, cement, sponge iron companies among others that depend on coal available through auction.

"This year CIL has decided to auction 137 million tonnes of coal which would include long term supply contract auctions, spot e-auctions and forward e-auctions," a senior Coal India executive told ET.

Last year, the dry fuel supplier offered 120 million tonnes through similar auctions which was a 5% drop compared to the previous year (2017-18). Increased offerings this year is expected to bring down premiums that touched 92% in the spot market last year as

availability through spot e-auctions had dwindled 38% among other reasons like higher international coal prices and rupee depreciation.

“Cost of imports shot up during the year due to higher international coal prices and rupee depreciation during first half of 2018-19. Higher e-auction prices reflected partial value extraction by domestic producers by managing volumes put to auction. However, premiums over notified prices has come down since then and could remain modest in coming months,” said Kameswara Rao, leader at PWC India.

“Almost 20% of the coal sold would be through various e-auctions mechanisms. Last year it was 19.7% while during 2017-18 it was almost 22%,” the CIL executive said. Last year, unforeseen demand from power generators forced Coal India to send them additional coal as the sector was grappling with dwindling inventory and many power plants were stranded with critical coal stocks.

Last year, unforeseen demand from power generators forced Coal India to send them additional coal as the sector was grappling with dwindling inventory and many power plants were stranded with critical coal stocks.

Coal Imports by State Power Plants Growing

Coal imports by state government-run power producers were up 2.6-fold in the first 10 months of the current fiscal as domestic supply dwindled, but overseas purchases by private generators and central entities declined 2.5% during the period.

Overall imports by thermal plants rose 4.6% to 47.96 million tonnes (MT) in this period. A senior executive at a state-owned power generator said increased demand for thermal power forced some of them to step up imports as domestic coal was scarce last summer. The Centre had allowed government-owned generators to import.

According to data compiled by the Central Electricity Authority (CEA), imports by state-run producers doubled to 5.4 MT during the first 10 months of fiscal 2018-19 from 2.05 MT a year ago.

State-owned plants which increased imports were GSECL from Gujarat, APPDCL from Andhra Pradesh and TANGEDCO from Tamil Nadu. Imports by West Bengal, however, declined by 34% during the same period, while other state did not import any coal, neither this year, nor last year.

GSECL imported 2.16 MT during the period, up 2.47 times from the previous corresponding period. APPDCL imported 7.05 lakh tonnes between April 2018 and January 2019 — 1.55 times the volume recorded a year ago. TANGEDCO imported 1.2 times more coal this year to 2.5 MT. Central power producers, however, reported a 1.6% drop in imports compared to the year ago period.

Three central entities, including NTPCNSE -1.07 %, collectively imported 9.62 lakh tonnes during the period as against 9.78 lakh tonnes a year ago.

Most of the coal imports are done by private power generators and those with plants designed to run on imported coal only. Imports by these producers, too, declined marginally during the period. Plants using only the imported variety bought around 31.62 MT of coal during the period as against 32.76 MT a year ago, posting a 3.5% drop.

Independent private sector power producers, who use a blend of local and foreign coal, imported close to 10.9 MT — 1.3% less than 11.1MT in the previous period.

Coal India on Rs 10,000 crore equipment shopping spree

Coal India has embarked upon a Rs 10,000 crore shopping spree for latest highcapacity mining equipment as it aims to meet a target of producing 660 million tonnes of black diamond in 2019-20, a move that will require raising annual output by 8-9% in the current fiscal.

"Coal India's journey began with 700 mines and seven lakh workers after it was created through nationalisation of coal mines. Today, there are 369 mines and three lakh workers. We closed 2018-19 with a production of 607 million tonnes. Some 70% of this production came from 40 mines, where we have modern equipment and technology. Equipment has to be upgraded in other mines to raise output quickly and efficiently," company chairman Anil Kumar Jha told TOI. He said the company would be spending Rs 2,000 crore a year over the next five years to acquire high-capacity earth-moving and excavating equipment.

"Decision on Rs 7,500 crore worth procurement has been taken. Some of the contracts are in the process of being awarded, while tenders for others have either been floated or are being prepared," Jha said. The company will spend Rs 2,500-3,000 crore on new equipment in 2019-20.

This is the first major equipment purchase drive in 3-4 years by the world's largest coal miner, which meets more than 80% of the country's requirement. Efforts to upgrade equipment on a large scale had remained stalled in the past due to rivalry among a limited number of manufacturer-suppliers globally, prompting allegations of bias every time a contract was on the anvil.

But introduction of a transparent e-procurement process with reverse auction in 2016 has changed the scenario, allowing the management to take decisions without fear of falling foul of oversight bodies. The company needs high-capacity machines since most of its production comes from open cast mines. These equipment will help raise production quickly by faster removal of overburden (earth and rock layers covering coal seams) and heavy-duty mining.

Annual Flagship Events 2019

CHENNAI CONFERENCE
6th September 2019, L&T Centre, Chennai
Theme: Challenges, Innovation & Emerging Technologies in Power Sector

7th ROUND TABLE CONFERENCE ON COAL
Tuesday, 24th September 2019, Hotel Le Meridien, New Delhi
Theme: Indian Coal: Potential and Diversification

11th NUCLEAR ENERGY CONCLAVE
Friday, 18th October 2019, Desire, Hotel Le Meridien, New Delhi
Theme: Economics of Nuclear Energy

22nd INDIA POWER FORUM
Wednesday, 27th November 2019, Hotel Le Meridien, New Delhi
Theme: Power Sector Agenda beyond 2020 - Challenges and Imperatives

19th RENEWABLE ENERGY SUMMIT
January 2020

16th PETRO INDIA

URJA VICHAR MANCH

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US to help India build six Nuclear Power Plants

India and the US have agreed to build Six Nuclear Power Plants in India as part of measures to strengthen security and civil nuclear cooperation, the two nations said in a joint statement.

The agreement came after two days of talks in Washington between Foreign Secretary Mr. Vijay Gokhale and top American officials. Besides foreign office consultations, Gokhale participated in the bilateral Strategic Security Dialogue with Andrea Thompson, Under Secretary of State for Arms Control and International Security.

The two sides “Committed to Strengthen Bilateral Security and Civil Nuclear Cooperation, including the establishment of Six US Nuclear Power Plants in India”, the joint statement said. The US “reaffirmed its strong support of India’s early membership in the Nuclear Suppliers Group”, it added.

The statement did not give details of the nuclear projects.

The two countries signed a historic agreement on civil nuclear cooperation in 2008.

As part of the deal, the NSG granted a special waiver for India to access nuclear technology. This helped India ink nuclear cooperation pacts with countries such as the US, France, Russia, Argentina, Australia, the UK, Japan and Bangladesh.

India and the US have discussed the supply of atomic reactors for more than a decade, but an obstacle has been the need to bring Indian liability rules in line with global norms, which require costs of any accident to be borne by the operator, and not the manufacturer of a nuclear plant.

Westinghouse has been negotiating with New Delhi to build reactors, though progress has been slow due to India’s nuclear liability law. Despite Westinghouse filing for bankruptcy in 2017, the firm has received support from US Energy Secretary Rick Perry for building Six Reactors in Andhra Pradesh.

Dr. A K Mohanty Appointed BARC Director

Dr. A.K. Mohanty, a well-known scientist, has been appointed the new Director of Bhabha Atomic Research Centre (BARC).

Dr Mohanty graduated from the 26th batch of the BARC Training School and thereafter he joined the Nuclear Physics Division of BARC in 1983. During his 36 years of stint, Dr Mohanty worked in innumerable areas of nuclear physics covering collision energy from sub-Coulomb barrier to the relativistic regime.

India Must Market Nuclear Plants

Civil nuclear commerce for India should not mean just buy. India can and must become an active seller, as well. Westinghouse, has had crippling time and cost overruns lately, and it makes perfect sense for us to leverage domestic expertise abroad.

The fact is that Nuclear Power Corporation of India (NPCIL) has now purposefully streamlined nuclear plant construction pan-India. It is currently erecting as many as nine nuclear power reactors, and the target is to build 21 new nuclear plants with an installed capacity of 15,700 MW by 2031, mostly with indigenously developed Pressurised Heavy Water Reactors (PHWRs). Project delays can make nuclear plants unviable, and it is noteworthy that NPCIL has innovated plant specifications, design parameters and standardised equipment to adhere to scheduled timelines. The US remains the largest producer of nuclear power. But construction expertise appears distinctly rusty in America, as it has taken to building new plants after a long hiatus. There seems much scope for NPCIL and Westinghouse to join hands for project follow through both in India and the US. France’s Areva also faces delays and cost overruns, and NPCIL can well offer to help streamline construction across regions.

India must utilise the full potential of the Indo-US

Nuclear Deal. The way forward surely is for global majors like Westinghouse and Areva to form joint ventures in India for manufacture and export of equipment and forgings for modern modular nuclear plants. Some 150 such plants are on order globally, and 300 more are planned, to rev up dependable power other than from fossil fuels. India must market its expertise.

Nuclear Power can reduce Greenhouse Gases: M Venkaiah Naidu, Vice-President

Vice-President of India Mr. M. Venkaiah Naidu said recently that nuclear electricity as a reliable and safe energy option can significantly reduce greenhouse gas emissions and that it has the potential to meet the ever-increasing energy demand in the country.

Addressing the scientists and staff of the Atomic Minerals Directorate for Exploration and Research (AMD) here on the occasion of 70 years of exploration and research by the organisation, Naidu underlined the importance of nuclear energy in the context of climate change, which was one of the foremost environmental concerns.

Naidu stressed on the need to make modern technologies safer and reliable. Noting that India had a commendable record of operating its nuclear fleet for over 40 years without any serious incident, he exuded confidence that more safety features would be added with constant technological advancements.

The Vice President said India's abiding interest in nuclear energy grew out of a deep conviction that the power of atom could be harnessed to help the country to achieve human and societal development.

He said that India consciously made a strategic choice to pursue a low-carbon growth model in the coming decades and added that reducing pollution was a major challenge.

Appreciating the efforts of the AMD in adopting state-of-the-art exploration techniques in search of different strategic minerals, he said it was heartening to know about the availability of more than 3 lakh tonnes of uranium oxide reserves and around 1,200 million tonnes of beach sand mineral resources in our country.

"More significantly, the quantum leap in uranium resource augmentation by the AMD from around 1 lakh tonnes during the first 60 years of activities and a subsequent addition of around 2 lakh tonnes in the next 10 years is really commendable," he said.

Naidu also expressed confidence that AMD's exploration efforts in different parts of the country, including the Cuddapah basin in Andhra Pradesh, would lead to more uranium mines.

With several favourable geological domains spread across the length and breadth of the country which can host potential uranium, rare metals and Rare Earth Elements (REE) deposits, the Vice President said it would be possible to achieve self-sufficiency in atomic mineral resources for sustainable growth of the country's Nuclear Power programme.

Considering the steep demand for power in the country, the role of nuclear energy in future would be quite significant. "We need to develop new and more efficient technologies to utilise our resources to the maximum," he added.

12 more Nuclear Plants in India soon: DAE Chief

India will soon have 12 more nuclear plants soon to improve the power situation and ensure there is a free flow of uninterrupted power supply for both industries and residential use, a statement issued recently quoted Secretary of the Department of Atomic Energy (DAE), Mr. K.N. Vyas, as saying.

"Nuclear technology helps in betterment of lives

through varied usages and is an irreplaceable source of clean, pollution-free energy," the statement quoted Vyas, who is also the Atomic Energy Commission of India's Chairman, as saying at the 11th International Forum AtomExpo 2019, sponsored by Rosatom State Atomic Energy Corporation, held in Sochi, Russia, recently.

He said the founder of Indian nuclear programme, Homi J. Bhabha, had envisaged that nuclear technology is going to be "very essential" and not just in the power sector but for other societal uses intended for betterment of life.

"We believe that when it comes to clean energy, there is no substitute to nuclear energy as it is sustainable and without interruption, one can have clean energy," the statement said citing the Secretary's remarks.

Citing the record run of Kaiga Nuclear Power Station, he said a small unit of indigenously-developed 220-250MW reaction has completed 962 days of uninterrupted run at about 99.3 per cent capacity and the amount of electricity it has generated is "tremendous".

Vyas said the first stage of India's indigenous nuclear power programme has now attained maturity with 18 operating Pressurised Heavy Water Reactors (PHWRs).

The AtomExpo was held in Sochi with the the motto this year being 'Nuclear for better life', with over 3,600 participants from 74 countries in attendance, including new ones like Qatar, Bahrain and Nicaragua.

"Peaceful atom is associated with all aims and goals fo the UN Sustainable Development Program. The Forum became a space for discussing the latest technologies thus ensuring a base for the future of the planet," said Rosatom State Corporation Director-General Alexey Likhachev.

In a message, Russian President Vladimir Putin lauded the AtomExpo in advancing the stature of the country in the field of nuclear technology.

Vyas added that the government of Prime Minister Narendra Modi has sanctioned 10 PHWRs in fleet mode, besides plans afoot for constructing two light water reactors. Indian industry has gained a lot through the process, nuclear energy and instruments require a guided and systematic way of manufacturing and quality assurance which raises the standard of industry participating in the manufacturing of equipment, he added.

Nuclear technology is not only intended for generating power, but is also useful for doctors and scientists and huge improvement in technological innovations in the medical field has cancer patients undergoing radiotherapy feel better by up to 60 per cent.

INDIA ENERGY FORUM

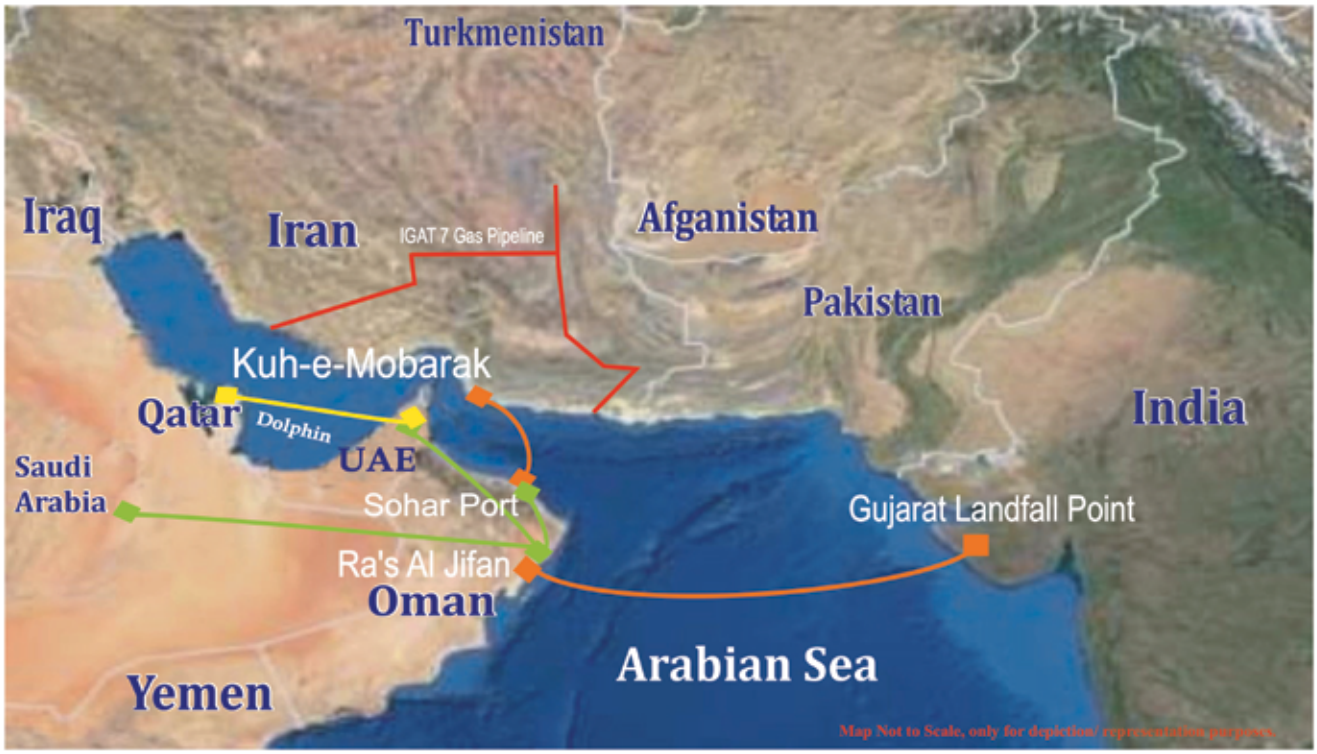
Urja Vichar Manch – 30th April 2019

India Energy Forum organised its monthly meeting of the Urja Vichar Manch on 30th April 2019 at Shriram Hall, PHD House, New Delhi. The Theme of the meeting was “National Gas Grid”. The keynote Speakers were Dr Ashutosh Karnatak, Director (Projects), GAIL India Ltd and Shri B B Mohanty, Former Member, PNGRB. Shri S C Tripathi, Patron, IEF and Former Secretary, Ministry of Petroleum and Natural Gas chaired the meeting. While Shri Anil Razdan, President, IEF and Former Secretary, Ministry of Power, welcomed the dignitaries on the dais and participants, Shri Y R Mehta gave the introductory remarks.

Dr. Ashutosh Karnatak said that GAIL is actively involved in developing the Grid because Government’s ultimate goal is to make India a gas-based energy economy. Mr. Mohanty agreed on the need to urgently develop the Grid but said that the development is not as fast as needed.

The Meeting was attended by large number of members of the Forum and sectoral leaders likely Mr. R.S. Sharma, Dr. S.C. Sharma, Mr. N.M. Borah and Dr. C.R. Prasad. There was very interesting discussion on the need for the Grid and the hurdles in its development.

Undersea Natural Gas Pipeline from Oman 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 Oman to Gujarat coast in India, through the Arabian Sea.
(A route via Oman is being looked at, in order to explore options to import gas from UAE/Saudi Arabia/Iran/Turkmenistan/Qatar, a region with 2500 TCF Gas Reserves).

Gas Qty: 31.1 mmscmd under a 20/25 years Long-Term Gas Supply Contract.
Pipeline tariff: USD 1.75 to 2.00 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. Increasing gas share in Energy basket will create a demand of 800/900 mmscmd gas.

Alternative & safer route to bring/swap Turkmenistan/Russian & other region's Gas to India Gujarat coast. There have been new gas discoveries in Oman/UAE/ Saudi Arabia too.

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.

A Reconnaissance Survey already done in 2013 by Fugro OSAE for Oman-India route.

DNV-GL, Norway / Engineers India Ltd. (EIL) / SBI Capital Markets Ltd. confirmed Project Feasibility.

GOI/MOPNG diplomatic & political support required to move Project on Fast Track.

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Middle East to India
Deepwater Gas Pipeline

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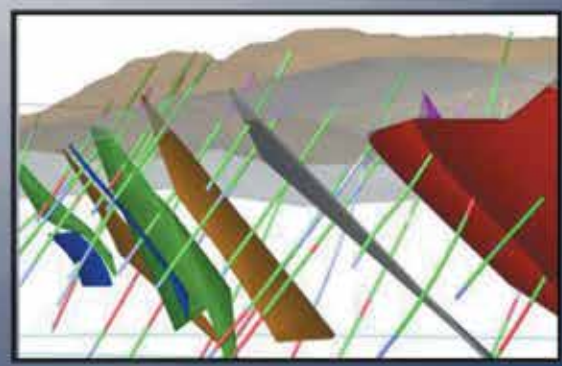

Our Search is Limit less, Our Strive is Endless...

A Nodal Agency of Govt. of India under National Mineral Exploration Trust (NMET)

Vayunandana Power Limited

Environmental Protection through Renewable Energy

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