



GAIL commissions solar power plant

New Delhi: GAIL on Monday said that it has commissioned India's second largest rooftop solar PV power plant at its Petrochemical Complex at Pata, UP. "The 5.76 MWp solar plant is spread over the roofs of warehouses covering a total roof area of 65,000 square meters. With an expected PLF of around 15 per cent annually over 79 lakh KWh of electricity is targeted to be generated for captive use," said GAIL. "As a marketer of benign natural gas, GAIL is thrilled to integrate captive solar PV towards achieving lower carbon footprint," said B. C. Tripathi, CMD of GAIL.



UP gets 2nd largest rooftop solar plant

New Delhi: State-owned gas utility GAIL has commissioned the country's second-largest rooftop solar power plant with a capacity of 5.76 MWp (mega watt peak) at its Pata petrochemicals complex in UP.

GAIL chairman B C Tripathi said the solar plant will reduce the company's carbon footprint and reduce carbon emissions by 6,300 tonne per year. The plant is expected to save the company Rs 5.5 crore annually in energy bill and pay back the project's cost in about four years. The plant covers 65,000 square metres roof area of two warehouses at the petrochemical complex. "With an expected PLF (plant load factor) of 15% annually, over 79 lakh units of electricity is targeted to be generated for captive use of India's largest gas-based petrochemicals plant," the company said.

India's largest rooftop solar plant is located in Amritsar and has a capacity of 12 MW. Built by Tata Power Solar, the plant produces more than 150 lakh units of power annually and offsets over 19,000 tonne of carbon emissions every year.



GAIL commissions India's 2nd-largest rooftop solar plant

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Solar: GAIL commissions 2nd largest rooftop plant

PRESSTRUST OF INDIA
NEW DELHI, JANUARY 1

STATE-OWNED GAS utility GAIL India Ltd on Monday said it has commissioned the country's second largest rooftop solar power plant.

The firm has installed a 5.76 MWp (Mega Watt peak) solar plant at its petrochemical complex at Pata in Uttar Pradesh, a company statement said.

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GAIL commissions India's second largest rooftop solar plant in UP

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GAIL Commissions India's Second-Largest Rooftop Solar Plant

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Tata Power Solar had in December 2015 commissioned a 12 MW solar rooftop project in Amritsar, which produces more than 150 lakh units of power annually and offset over 19,000 tonnes of carbon emissions every year.—PTI



Second-largest rooftop solar unit commissioned

NEW DELHI

State-owned gas utility GAIL India Ltd. on Monday said it had commissioned the country's second-largest rooftop solar power plant. The firm has installed a 5.76 MWp (Mega Watt peak) solar plant at its petrochemical complex at Pata in U.P., the company said in a statement. "With an expected PLF of around 15% annually, over 79 lakh units of electricity is targeted to be generated for captive use," it said. PTI



**GAIL opens
solar plant**

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GAIL commissions second largest rooftop solar plant

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**VIKRAM
S MEHTA**

Chairman & Senior Fellow,
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● **OVER THE BARREL**

Towards a unified energy market

The NITI Aayog must carry out a detailed study on what will be required to shift from the incumbent fossil fuel energy system to a clean energy system based on 'horizon' technologies

ning process that factors in the implications of decisions concerning fossil fuels on renewables and vice-versa, and by developing a policy mindset that enables the fulfilment of short-term objectives without compromising longer-term goals.

The short-term challenge is to correct the imbalances in the energy value chain, to minimise avoidable losses and to create a unified energy market. There is currently, for example, surplus generating power capacity, but approximately 40% of the country still faces power shortages and/or has no access to electricity. There is a potpourri of 100 varying power tariffs. There are leakages across the transmission and distribution chains. The government is familiar with the problems and knows what needs to be done. But they have difficulty implementing the solutions because of competitive Centre-state politics, status-quo-driven vested interests and lack of resources. There is no easy answer on how they can overcome these obstacles, but the 'successful' conclusion of GST offers a direction. The government could contemplate something similar for the energy sector—a nationwide system that condenses the existing variances into a simplified, transparent and national regulatory, tariff and policy platform.

The medium- to long-term challenge is to redesign and restructure the institutions of energy governance to enable and facilitate holistic energy planning and an integrated energy market. As a first step in that direction, the government should consider legislating an omnibus 'energy responsibility and security act'. This will raise public awareness of the embedded interconnections between the various components of energy and between energy and the rest of the economy.

Cities are the reasons for surging energy demand and air pollution. The government should devolve energy administration of cities to autonomous and constitutionally safeguarded 'city energy ombudsmen'. These ombudsmen should be empowered to tackle issues related to energy efficiency, demand conservation, waste management, urban redesign and

NEWYEAR'S DAY is an opportune occasion for reflection and re-emphasis. I do just that in this article. I summarise below 10 energy-related suggestions that I made last year, in part to remind and in part to influence the government's future agenda.

The underlying energy conundrum is how to square the circle between the government's commitment to provide uni-

versal access to affordable and reliable energy, on one hand, and the imperative to weaken the linkage between economic growth, energy demand and environmental degradation, on the other. The former requires the securing of 'dirty' fossil fuels. The latter a focus on 'clean' renewables. The conundrum exists because both fossil fuels and renewables have to be part of our energy solution. The conundrum can be tackled by establishing an integrated plan-

transportation, and to develop and implement focused, small-scale and distributed solutions.

India imports more than 80% of its crude oil requirements. The international oil market is, therefore, a matter of strategic and commercial significance to the country. Currently, this market appears to be a no man's land. Analysts cannot make up their mind whether prices will breach \$70/barrel or fall below \$50/barrel. Their discussion centres around geopolitics (the impact, in particular, of the volatility in the Middle East?), the sustainability of the OPEC-Russia agreement to cut production (will it hold or breakdown?), the elasticity of response of US shale to higher prices (how quickly will the 'shut in' production reach the market?) and demand. Irrespective of the eventual trend, India should hedge against an unexpected volatility.

The growing energy bonhomie between Russia and China and their increasing engagement with the energy sector in the Middle East presents India with both an opportunity and a threat. An opportunity is to move into the space vacated by the US. Russia and China are looking to fill that space, but they do not have the 'soft power' that India can exercise. Also, the opportunity to resurrect economically-compelling projects of mutual interest to all three countries (viz. transnational gas pipelines). The threat is that China will use its economic weight to secure oil on preferential and exclusionary terms to the possible detriment of India's supply relations.

China's and Russia's growing involvement in the Middle East is one further reason to pro-actively reduce our import dependence on this region.

Exploration and production is a long-gestation, capital-intensive and high-risk business; India does not have undiscovered reserves of 'low-cost, easy oil'. And oil is a tradable (i.e. it can be bought on the high seas). So, we need to ask whether ONGC should remain a predominantly petroleum exploration and production company or broaden its footprint to become a world-class energy company, and whether it should contemplate integration with not just the downstream petroleum companies but also the renewable companies.

India does not have the luxury to develop now and 'clean up' later. Given the long lead times involved in transiting from one energy system to another, it needs a 'bridge' fuel. Natural gas is that fuel

Aside from the business logic, these questions have relevance, given the desirability of creating an integrated energy system.

The government has set itself ambitious, if not audacious, targets for renewables and electric vehicles. To give itself a reasonable chance of success, it will have to invest in the supportive infrastructure (for example, grid system, charging network, etc), regulations (for example, standardised protocols), skills and innovation. A cross-country analysis of 104 technologies across 161 countries by two Dartmouth

economists concluded that it takes almost 45 years for countries to fully adopt a new technology. The NITI Aayog must carry out a similar detailed study on what will be required to shift from the incumbent fossil fuel energy system to a 'clean energy' system based on 'horizon' technologies.

India does not have the luxury to develop now and 'clean up' later. Given the long lead times involved in transiting from one energy system to another, it needs a 'bridge' fuel. Natural gas is that fuel. Unfortunately, GAIL has been stymied in its efforts to create a national gas pipeline grid by jurisdictional, land use, financial and bureaucratic hurdles. The Prime Minister cut through this tangled undergrowth in Gujarat and created a state-wide pipeline grid. He should now bring the weight of his office and experience to do the same, nationally.

CNG supply line lies unused

SANJEEV SINGH BARIANA
TRIBUNE NEWS SERVICE

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Infrastructure worth several crores of rupees of Gas Authority of India Limited (GAIL) for supplying compressed natural gas (CNG) to the state is lying useless because companies who were allotted the work of providing gas to users from the supply line in 2015 have not done so till date.

Companies which were to lay the "last mile connectivity" of the gas from the GAIL supply line have failed to deliver. Besides industry, the state is waiting for the CNG supply for its vehicles and even use at homes.

Official communication pointed out that the work for gas supply to the Jalandhar and Ludhiana areas was

awarded to Jay Madhok in 2015. The work for supply to the Mandi Gobindgarh area was allotted to IRM Energy Private Limited. Except for the direct supply lines to the National Fertilisers Limited plants at Nangal and Bathinda, CNG is not being supplied anywhere in the state.

The issue has cropped up fresh in context of different communications from the office of Punjab Pollution Control Board Chairman Kahan Singh Pannu to the Secretary, Petroleum and Natural Gas Regulatory Board, seeking "guidelines to GAIL to start connecting industry in Ludhiana and Jalandhar without further delay so that cleaner fuel options are made available to the industry at the earliest".

The pipeline was laid after the Ministry of Environment, Forest and Climate Change had designated the Mandi Gobindgarh-Khanna region as the critically polluted area.

In a separate communication, Pannu has sought the regulatory board to "either expand the operations of GAIL from Fatehgarh Sahib till Khanna or direct GAIL to develop local gas network for the Khanna industrial cluster at a war footing. An early action in this regard will go a long way in improving the air quality of the Mandi Gobindgarh-Khanna cluster".

Secretary of the regulatory board Vandana Sharma could not be contacted for comments, despite repeated efforts.

The Punjab Chapter of the

Steel Furnace Association of India in a separate communication to the member of the Petroleum and Natural Gas Regulatory Board has pointed out that the work for the city gas distribution network in Ludhiana was awarded to a company four-five years back. "Till date neither the party approached us (industry) nor can we see any activity on ground," it wrote.

The association wrote that "the Supreme Court has banned sale and use of furnace oil and pet coke in Delhi, Haryana, Rajasthan and UP. The furnace oil has high sulphur content which is harmful for human beings. There is an immediate need to switch over to eco-friendly cleaner fuel (natural gas) for industrial operations".