

INTERNATIONAL JOURNAL OF LAW MANAGEMENT & HUMANITIES

[ISSN 2581-5369]

Volume 3 | Issue 2

2020

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A Study on India's New Energy Policy and its Scope in the New World

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ABSTRACT

India is the world's largest economy and world's 4th largest consumer of energy with 1.4 billion populations. In 2014, the government of India came up with a new policy concerning energy that aimed to achieve "energy independence" by the year 2030. When a state can produce enough energy in terms of fuel and electricity to meet its demands, it is considered to have attained energy independence. The new policy objective is to conduct large-scale renewable energy auctions, promote access to oil and gas market for foreign investors and privatization of coal mining. Currently, India imports 80% of its total crude oil, 18% of its total gas and 23% of its total coal, which is expected to be double by 2040. International Energy Agency (IEA) has termed India's plan to become energy independent by 2030 as a "very ambitious" and an "idealistic challenge".

Although, in the year 2020, in partnership with NITI Aayog, IEA released an in-depth review of India's energy policy. The report highlights the achievements of India's energy policies and provides recommendations to support the government's goals of promoting well-functioning energy markets and boosting the deployment of renewables.

India has ranked 9th in climate change performance index in 2019 and its composite score under sustainable development goals index have improved from 57 to 61. This is a big achievement by India but with the new policy it has a long way to go

I. INTRODUCTION

India is the world's largest economy and world's 4th largest consumer of energy with 1.4 billion populations. In 2014, the government of India came up with a new policy concerning energy that aimed to achieve "energy independence" by the year 2030. When a state can produce enough energy in terms of fuel and electricity to meet its demands, it is considered to have attained energy independence. The new policy objective is to provide affordable, secure and cleaner energy. Currently, India imports 80% of its total crude oil, 18% of its total gas and 23% of its total coal, the demand of which is expected to be double by 2035. India cannot afford to fulfill its 80% requirement through the import and carry a burden of subsidy to the

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tune of Rs 1 lakh crore per annum².

The majority of India's electricity generation is through fossil fuel that is perishable and non-renewable in nature. Hence it has shifted to a renewable source, focusing majorly on the solar and wind sector that is understandable considering the environmental and economic factors. But renewable energy is found to be not enough to produce and supply to power industry, manufacturing, and other large-scale economic enterprises.

Further, with an increase in global warming and climate change, the worldwide solution is to invest in clean technology that may lessen the effect of carbon emission at the global level or replace fossil fuel. That will require an advance technology that is yet to be invented. Today, we can invest in a sustainable energy that may reduce the emission and lower the burden of carbon emission.

II. ENERGY INDEPENDENCE

Energy independence when it is independent in terms of energy resources, supply, and generation by the energy industry. A state can produce enough energy to sustain its need in terms of fuel and electricity. One of the most efficient manners to achieve energy independence is by switching to renewable resources. For example, Iceland has utilized the earth natural warmth to supply 85% of the country's housing with heat. The electrical energy is derived from the geothermal and hydroelectric power plant.

But, Energy independence in its totality is perceived as idealistic considering today's technology and resources. Whereas energy independence can be achieved in certain factors but not all. For example, the majority of cars function on diesel or petrol instead of electricity. It will take another few decades to shift from fuel-based cars to electric cars that can be driven as fast as the electric one.

The achievable goal for any country in today's world and economics is to procure energy security. Unlike the former, the goal of which is to become self-sufficient in the production of energy, the latter focuses on increasing the supply of energy by exploiting all of the sources available to us³. Energy security aims towards the uninterrupted availability of energy sources at an affordable price. This is obtained by considering various factors such as economic development and environmental needs.

India is highly dependent on fossil fuel. Around 80% of its energy generation is through fossil

²<https://economictimes.indiatimes.com/industry/energy/oil-gas/india-can-achieve-complete-energy-independence-by-2030-oil-minister-veerappa-moily/articleshow/17888958.cms>

³ <https://ashbrook.org/publications/oped-owens-07-energy/>

fuel. Therefore, its economic fortunes continue to be tied to the fluctuating international price of oil. The government aims to have a well-defined action plan to reduce the import dependence by 50% by 2020, 75% by 2025 and 100% by 2030. Hence, in other words, the state aims to achieve energy independence in terms of energy generation and oil imports.

III. INDIA'S ENERGY POLICY

Initially, petroleum exploration and production activities in India were carried out by the public sector oil companies such as Oil and natural gas corporation limited (ONGC) and Oil India Limited (OIL). In 1992, with the new era of liberalization in India, the government decided to form a new policy concerning the energy sector.

(A) New Exploration Licensing Policy (NELP)

In 1997, the government of India formulated a policy called New exploration Licensing Policy. It aimed to attract significant risk capital from Indian companies as well as Foreign companies, state of art technologies, new geological concepts and best management practices to explore oil and gas resources in the country to meet rising demands of oil and gas.⁴ NELP was approved in 1997 and subsequently, came into effect in 1999 with a nodal agency called Directorate General of Hydrocarbon (DGH). The policy had provided an equal platform to the foreign companies and National Oil Companies (NOCs) to compete in a bidding system for the licenses for the exploration of oil and gas in the country. The licenses secured were known as Petroleum Exploration Licenses (PELs). This policy significantly boosted the activities of the exploration and production sector for hydrocarbons and opened the gates to foreign investment. Nine rounds of bids have so far been concluded under NELP, in which production sharing contracts for 254 exploration blocks have been signed.⁵

Salient Features

Salient features of NELP are as follows⁶:-

- 100% Foreign Direct Investment (FDI) is allowed under NELP
- No mandatory state participation through ONGC/OIL or any carried interest of the Government.
- Blocks to be awarded through open international competitive bidding

⁴ https://www.ndrdgh.gov.in/NDR/?page_id=589

⁵ *ibid*

⁶ [http://www.arthapedia.in/index.php?title=New_Exploration_and_Licensing_Policy_\(NELP\)](http://www.arthapedia.in/index.php?title=New_Exploration_and_Licensing_Policy_(NELP))

- ONGC and OIL to compete for obtaining the petroleum exploration licenses (PEL) on a competitive basis instead of the existing system of granting them PELs on nomination basis.
- ONGC and OIL to get the same fiscal and contract terms as private companies.
- Freedom to the contractors for marketing of crude oil and gas in the domestic market.
- Royalty at the rate of 12.5% for the on land areas and 10% for offshore areas.
- Royalty to be charged at half the prevailing rate for deep water areas beyond 400 m bathymetry for the first 7 years after commencement of commercial production.
- Companies to be exempted from payments of import duty on goods imported for petroleum operations.
- No signature, discovery or production bonuses.
- Agreement between government and contractor is governed by a Production Sharing Contract. A Model Production Sharing Contract is created which is reviewed for every NELP round.
- Contracts to be governed in accordance with applicable Indian Laws.

Drawbacks of NELP

▪ The major drawback of NELP was that it provided separate licensing policies for different hydrocarbons such as oil and gas, coal-bed methane and shale oil and gas. Multiple policies caused inefficiencies in exploiting natural resources. For example, a different hydrocarbon is found while exploring for hydrocarbon, a separate licensing will be required which will be adding to the cost. Moreover, the policy was silent on the existence of the unconventional hydrocarbons found in blocks.

▪ Production Sharing Contracts (PSCs) were signed for profit sharing according to which the contractors should share the profit with the government as provided by the bidding percentage. So the government could keep a check on contractors and held them accountable. To track the revenue, the Government demanded approval from itself at certain stages to have a check, which left the approval to the Government's discretion. This resulted in cost delayed and disputes between the parties.

▪ The bidding was given for blocks, thus putting the bidders whose interests extended to other areas discouraged.⁷

⁷ <https://www.financialexpress.com/market/commodities/from-nelp-to-help-can-a-new-policy-transform-the-oil-and-gas-exploration-and-production-sector-in-india/428346/>

- The Government fixed the prices of Oil, which resulted in a loss.
- Revenue was fixed for both the Shallow water fields which involved lower risks than that of Deep/Ultra water fields

Hence, it failed to keep up with the growth of production and attract foreign investments.

(B) Hydrocarbon Exploration licensing policy (HELP)

In 2016, the Government of India introduced a new policy known as the Hydrocarbon Exploration policy that replaced the New Exploration Licensing Policy (NELP). The main objective of the policy is to enhance domestic oil & gas production, bring substantial investment in the sector and generate sizable employment. The policy is also aimed at enhancing transparency and reducing administrative discretion.⁸

Sailent Features

- Provided a uniform license to the contractors to explore conventional and unconventional oil and gas resources. It proved an opportunity to explore coal bed methane, shale gas, gas hydrates under a single license. Whereas NELP provided separate licenses for exploring various hydrocarbons. This resulted in the reduction of excessive cost bearing on individual licensing.
- Oil companies are allowed to choose the blocks from the designated area under the regime of Open Acreage Policy.
- Earlier, the contracts were based on the concept of “profit-sharing” where profits are shared between the Government and the contractor after recovery of cost. Under the profit sharing methodology, it became mandatory for the Government to scrutinize cost details of private participants and this led to many delays, disputes and excessive interference of the government. This discouraged various companies from stepping into the field. Under the new regime, the Government will not be concerned with the cost incurred and will receive a share of the gross revenue from the sale of oil, gas, etc⁹.
- The government has also recognized the higher risks and costs involved in exploration and production from offshore areas, lower royalty rates for such areas have been provided as compared to NELP royalty rates to encourage exploration and production. A graded system of royalty rates has been introduced, in which royalty rates decrease from shallow water to

⁸ <https://pib.gov.in/newsite/PrintRelease.aspx?relid=137638>

⁹ *ibid*

deepwater and ultra-deepwater. At the same time, the royalty rate for onland areas has been kept intact so that revenues to the state governments are not affected.¹⁰

- This policy also provides for marketing freedom for crude oil and natural gas produced from these blocks. This is in tune with the Government's policy of "Minimum Government – Maximum Governance". It is to incentivize investment and production.¹¹

Advantages

The new policy is the right step in the right direction. It has eased out the disputes, delays, and corruption involved in the Exploration and Production sector by removing the government's discretion. The earlier policy provided governments discretion on every decision to check for any malpractice. It resulted in a lack of investments and discouraged competitors. The Open acreage licensing policy which forms a part of HELP removed unnecessary restrictions on exploration and provided a choice to the companies to explore the area of their own choice. Under the new regime, there will not be a yearly auction of a cluster of identified blocks. Instead, investors can access data about all the blocks available and would be encouraged to bid at any time of their choice under the open acreage principle.¹² It will encourage companies to invest and create a competitive market.

The biggest step taken by the government is to shift from government control to government support based policy. The policy is in accordance with the government's effort to promote "Ease of Doing Business".

Challenges

Although HELP is a very well thought policy, it is not free from some drawbacks. The government is facing some challenges with the implementation of the new policy. The primary failure of the policy is that it has failed to attract foreign and domestic investors in the sector. Only Reliance Industries had submitted an Expression of interest, among the major participants in the sector. Pertinently, no foreign company has submitted an EOI. Further, The OALP provides discretionary powers to the Directorate General of Hydrocarbons (DGH) to accept the area for which EOI has been submitted or alter/modify the area after due evaluation. Moreover, the EOI applicant will be obliged to participate in the subsequent bidding. The obligation to participate will not be waived unless the deviation in the area finalized by DGH to be put up for bidding is more than 50% of the area for which EOI is submitted. Participation bond

¹⁰ *ibid*

¹¹ <https://economictimes.indiatimes.com/industry/energy/oil-gas/gas-pricing-marketing-freedom-to-help-companies-draw-investments/articleshow/68088944.cms?from=mdr>

¹² <https://www.civildaily.com/hydrocarbon-exploration-and-licensing-policy/>

submitted along with the EOI will be forfeited if the EOI submitting party doesn't participate in the bidding process.¹³

(C) Pradhan Mantri Ujjwal Yojana (PMUY)

On 10th March 2016, the Government launched a scheme known as Pradhan Mantri Ujjawala Yojana” (PMUY) that provided LPG connections to Below Poverty Line (BPL) families with the objective to provide clean cooking fuel solution to poor households. The scheme provided LPG connections to over 5 crore women over a period of 3 year starting from FY 2016-17. Since use of Fossil Fuel and conventional fuel like cow dung, kerosene, biomass, etc. has serious implications on the health of rural womenfolk and children.

Salient features

- LPG connection is release in the name of adult woman of the BPL family with a prior condition of no other existing LPG connection in the name of any member of the family of the household.
- Eligible families are identified through the Socio Economic Caste Census (SECC) list.
- The scheme includes the cash assistance upto Rs 1600/- for providing new LPG connection that is provided by the Central Government.

(D) Unnat Jyoti by Affordable LEDs for All (UJALA),

Light-Emitting Diode (LEDs) consumes one tenth of energy used by ordinary bulb to provide the same or better light output. However, LEDs are costlier in comparison to a normal bulb that has been a barrier in adoption of such efficient lighting system. The government have established a new scheme to overcome this barrier called UJALA - an acronym for Unnat Jyoti by Affordable LEDs for All. Under the scheme, 20W LED tube lights and BEE 5-star rated energy efficient fans are also distributed to the consumers. The 20W LED tube lights are 50% more energy efficient than conventional 40W tube lights and are available for Rs. 220/- per tube, as against the market price of Rs. 400-600. The energy efficient fans under the UJALA scheme come with a BEE 5 Star rating. These ceiling fans are rated 30% more energy efficient than conventional fans and are priced at Rs. 1200/- per fan. The government have aimed to promote efficient lighting, enhance awareness on using efficient equipment which reduce electricity bills and help preserve environment.

¹³<https://www.expertguides.com/articles/hydrocarbon-exploration-licensing-policy-of-india-a-new-open-culture/ARTNVFJH>

IV. IEA – ENERGY POLICY REVIEW

International energy agency published their first review on the India's energy policy in collaboration with NITI Ayog. IEA commended the government of India on its progress in increase in access to electricity and clean fuel especially in rural household. Government has also made improvement in energy market reform and huge renewable electricity deployment, notably in solar energy. The government has also achieved outstanding results in reaching the isolated areas and ensuring around the clock reliability of electricity supply. But coal is still the primary source of energy supply and electricity generation. And in order to provide a stable and lower emission power plant the government is identifying those plants that need to run more flexible in the system and design to improve the remuneration of the system services that they provide. An efficient coal sector is critically important not only for electricity generation, but also for industrial development in areas such as steel, cement and fertilizers.

IEA is also optimistic about the about the India's policy in exploration of oil and gas reserves. "The Hydrocarbon Exploration and Licencing Policy (HELP), and is progressively building up dedicated emergency oil stocks. India's strategic petroleum reserve supplements the commercial storage available at refineries. India's current strategic reserve capacity of 40 million barrels can cover just over 10 days of current net imports. However, given the expected growth in oil consumption, the same volume may cover only four days of net imports in 2040. Therefore, it is important that the government pursue the second phase of its strategic stockholding policy, which would add an additional 50 million barrels, and also prepares subsequent phases."

Recommendations

IEA has the international experience and has made recommendations as follows¹⁴:-

- Establish permanent energy policy co-ordination in the central government, with an overarching national energy policy framework to support the development of a secure, sustainable and affordable energy system.
- Continue to encourage investment in India's energy sector by:
 - ensuring full non-discriminatory access to energy transport networks
 - working with the states to implement power sector and tariff policy reforms with a focus on smooth integration of variable renewable energy and power

¹⁴ IEA (2020), *India 2020*, IEA, Paris <https://www.iea.org/reports/india-2020>

system flexibility

- moving from government allocation of energy supplies to allocation by market pricing
- further rationalising subsidies and cross-subsidies.
- Prioritise actions to foster greater energy security by:
 - reinforcing oil emergency response measures with larger dedicated emergency stocks and improved procedures, including demand-restraint action and proper analysis of risks by using oil disruption scenarios and capitalizing on international engagement
 - Strengthening the resilience of India's energy infrastructure, based on a robust analysis of the water–energy nexus and cooling demand, notably when planning future investment.
- Improve the collection, consistency, transparency and availability of energy data across the energy system at central and state government levels.
- Ensure India's international energy collaboration continues to be strong and mutually beneficial, highlighting the country's energy successes and supporting continued opportunities to learn from international best practices.

V. CONCLUSION

The recent reforms made by the government in the energy sector by the Indian government have made way to energy security. A clean, reliable and renewable energy is reaching the houses of rural India. There is an overall improvement in power and gas markets with the help of new reforms that have been introduced. The government has invested in solar that in return has had a positive effect on the environment and health. The overall air and water quality has improved and health hazards have reduced. The citizens are now aware of the positive impact of the clean energy and have been educated on its importance. Although, the reforms have had a positive impact but it has failed to attract foreign investments. The government needs to add more schemes to promote investment and have a centralized framework for better coordination and implementation. India has taken a positive step towards a better, cleaner and ecofriendly future but it still has a long road ahead to reach its goals in energy sector.
