



NEW ENERGY POLICY-A PROPOSAL
FOR
CONSIDERATION OF GOVERNMENT OF INDIA

Submitted by:

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ANNEXURE-1
FACTORS CONSIDERED AS ISSUES IN ENERGY SECTOR



MAJOR FACTORS CONSIDERED FOR POLICY FORMULATION:

Suggestions made in the proposed Energy Policy are based on following major factors/ problems/issues observed in India's energy sector which we have considered relevant for addressing in new policy formulation:

- Energy sector policies are determined by different ministries which many times result in conflicts and coordination issues. Further, it also suffers from lack of consistency in policy direction amongst different energy sources. There is no longterm vision and commitment to follow such vision from Government. Hence potential investors are very apprehensive.
- Energy subjects are covered in Union, State and Concurrent Lists under the Constitution of India whereby there are issues arising about legislative competencies and differences in regulations in different states for same energy source.
- Exploration and mining of mineral energy sources is still highly concentrated in Government owned companies. Private sector participation has been marred in controversies with respect to manner of allocation of resources, legal/commercial provisions for such resource allocation agreements, sanctity and enforcement of such contracts/agreements, issues with respect to abuse of competitive bidding and regulatory processes etc.
- Pricing policies for energy in India are most confused ones that one can come across anywhere in the world. Obviously, this has resulted in limited liquidity and depth in energy markets and transparent price discovery mechanisms are almost nonexistent. This has resulted in disputes, litigations, agitations etc. making it one the most controversial political issue. Governments have been feeling political compulsions to arbitrarily intervene in energy pricing leading to high fiscal burden on central and state Governments and poor creditworthiness of state utilities in power sector. This factor



is also a major negative in attracting private investments, to the extent required, in energy sector.

- Regulators in certain areas of energy sectors have not been very effective and seem to be confused about their role whereby objectivity in their decisions is affected. This again is a bad sign and investors do not get necessary confidence to take investment decisions.
- 'Global warming' and 'Climate change' are considered to be real, serious international issues posing threat to existence and quality of life on planet earth. International agreement like 'Kyoto Protocol' in the past failed to take off mainly due to reluctance of USA to join in such agreement. With recent discovery of shale gas in USA, ability of USA to take serious emission reduction obligation is substantially enhanced and this has led to their revived interest in global negotiations on this subject. It is expected that post 2015, we will see a new global agreement on emissions from economic activities and this is going to have serious implications for growth prospects of China and India, if they continue to follow the same energy mix as it exists today. We feel China has done considerable advance planning and has secured cleaner energy sources for itself as compared to India being completely ill prepared. Historic political argument about per capita emissions and right to emit as much as developed economies emitted in the past may not be workable strategy as emission levels have reached very near threshold identified by international scientific community and limiting absolute emissions globally is going to be a necessity. Emission intensity of India's energy mix at 3.2 kg CO₂ per kg OE of energy used is very high compared to world average of 2.7 and considering further reduction of 25-40% in world average required to limit atmospheric levels of carbon dioxide, India has to rethink its energy mix if it wants sustained high economic growth.



- India's Hon'ble Prime Minister has made voluntary commitment, at highest international forum in recent past, to reduce emission intensity of GDP by 25% by year 2020. As per our analysis of 2011-12 data, India's emission intensity of GDP was about 23 kg CO₂ per thousand INR of GDP value. Thus, India has to at least aim for emission intensity of about 17 kgs. of carbon dioxide per thousand INR value of GDP by 2020.
- There are multiple schemes in operation for creating market structures to incentivize emission reduction initiatives eg. PAT scheme, REC trading etc. However, such multiplicity of schemes and their complicated administrative structures have made their effective implementation difficult.
- As per existing Company Law requirements under Companies (Disclosure of the particulars in the Report of the Board of Directors) Rules, 1988; Indian companies, in 21 identified sectors, are required to report considerable details of their energy consumption as part of the Directors' Report included in the Annual Report. We have analysed published information of about 250 large listed companies (accounting for almost 300 million TPA of total GHG emissions from energy use) on India's stock exchanges, having obligation to disclose such information, to evolve a unique index which reflects their 'Carbon risk' if exposed to emission reduction obligations. We have done extensive analysis to use such index for its linkage to corporate tax liability of a company to incentivize cleaner energy use. Our analysis has helped in evolving a model to consider the impact of proposed liberalized energy pricing and its impact on viability of existing operations of such companies and corresponding Government's tax revenue implications.
- The disclosure of details of energy consumption referred above does not require any major administrative efforts on part of the companies as these details are anyway part of



annual accounts and they are only reported separately in a specified uniform format for easy analysis.

- Hence, we believe, that extending such disclosure requirements for all companies which have obligation for statutory audit of accounts would help in evolving a mechanism (without need for any other elaborate scheme administration and, also, consistent with financial reporting) which will help in linking Corporate tax rate to 'Carbon risk' which will incentivize cleaner energy use to achieve low carbon risk. This will create a very robust foundation for ensuring a 'Sustainable' low carbon growth path.



ANNEXURE-2
PROVISIONS RELATED TO EMISSION CONTROL/MONITORING



- Central Electricity Authority (CEA) currently monitors emissions from thermal power plants and its role would be enlarged to monitor from all the economic activities including that of energy sector so as to develop a centralized database for proper emission measurement, reporting and monitoring.
- Each power consumer having power demand in excess of 1MW individually and all local distribution companies will have obligations to maintain a minimum stipulated share of different categories of power in their total power purchase basket. Consumers having captive generation will have to calculate such share by including the captive generation quantity also in appropriate category of power generation.
- Such requirements would be published by the Regulator as minimum purchase obligation (on the lines of RPO as it exists today). These purchase obligations would be strictly enforced and deterrant penalties would be levied by the Regulator on defaulters and such penalty amount would go to the Central Government. Compliance to min. purchase obligation will be required to be submitted by way of documentary evidence of contracts settled on energy exchange.
- Such minimum purchase obligation targets would be announced for longterm to generate confidence in investors for cleaner power. Typical timebound minimum purchase obligations could be as follows:

Year of minimum purchase obligation	Category of power with min. % of total		
	A	B	C
2015	1	19	10
2016	1.5	19.5	12



2017	2	20	15
2018	3	20.5	18
2019	4	21	20
2020	5	21.5	22
2025	10	25	30
2030	15	25	35

- Corporate tax structure would be simplified by eliminating all specific exemptions and concessions being granted and by introducing a taxation rate regime (with a floor and ceiling, say of 5 & 25%) which is linked to 'Carbon risk' of the company.



ANNEXURE-3
PROVISIONS RELATED TO
EXPLORAION/DEVELOPMENT/PRODUCTION



- DEE will develop a digital map of India clearly indicating areas (both onland and offshore) which are already licensed for development of fossil energy sources under existing Laws, alongwith expiry year for each of such license. Digital map would also incorporate data about current land use eg. Forest, agriculture or non agriculture as per current data and keep updating it based on new detailed surveys to be carried out by concerned Government agency simultaneously.
- Information on each of such blocks would be available on website of DEE with above demarcations of existing licenses (which would be excluded area till expiry of existing license) and available land use data for review of prospective bidders.
- Any prospective bidder for any of such block can then submit an online expression of interest in that block. As soon as first such expression is received, DEE will highlight such block online and mention that the block is under bidding and all interested bidders will have to submit their online bid within 30 days of such first expression of interest.
- Interested bidders will have to submit a bid indicating the signature bonus amount they are willing to pay to get rights on that block. The highest bidder of signature bonus will get license for 20 years. The license will give right to bidder to produce anyone or more fossil energy source from such block for the period of license and would have full marketing rights at market determined pricing for that energy source.
- Various other license rights & obligations will be published by the Regulator, as a standard license agreement, including requirements related to environment preservation and payment of; (a)20% flat royalty to State Govt. and (b)10% production share to Central Govt.; on product value realized from such block.



- Signature bonus will be divided equally between the central and concerned state Government.
- No extension in term of the license, beyond 20 years, would be granted under any condition and on expiry the block would be again available as open acreage block for bidding. Existing licensee can rebid for the same block.



ANNEXURE-4
PROVISIONS RELATED TO ENERGY INFRASTRUCTURE



- **National gas grid:**
 - (a) National gas grid would be planned and developed, by the Central Govt., as a standalone gas transportation infrastructure with “open access” to all gas buyers and suppliers having demand/supply requirements in excess of 3 MMSCMD.
 - (b) This grid would be owned and operated by an independent entity (could be a joint venture of Govt.) which will have no interest in gas production, imports, marketing or enduse.
 - (c) This grid planning would involve NS and EW corridors (with multiple intersections of NS & EW gridlines) at a suitable spacing so as to ensure that the grid passes through each of the state of India.
 - (d) Plans made would be such that all the existing high pressure gas pipelines connecting more than one states are integrated as part of national gas grid and existing companies would be obliged to get integrated with such National Gas Grid. Suitable service agreements would be suggested by the Regulator between such existing pipeline companies and national grid company. All existing customers connected to such existing pipelines would continue to be served as customers of national gas grid.
 - (e) This grid would be planned and implemented so as to ensure that each state has connectivity to national gas grid by 2020.
- **State gas grid:**
 - (a) Each state Govt. would be encouraged to plan and develop a standalone gas transportation infrastructure in the state with “open access” to all gas buyers and suppliers from state having gas demand/supply in excess of 50000SCMD.
 - (b) State gas grid would also be high pressure transmission system, having atleast one point of linkage with national gas grid, and would be planned in such a way that all



cities/towns with population in excess of 10,00,000 are covered on the route of such pipelines by year 2018 ; all towns with population in excess of 500,000 are covered by year 2020 and finally all towns/villages are to be connected by year 2022.

(c) State Govt. may develop such grids either on their own or by involvement of private investment.

(d) All gas demand customers would have freedom to buy gas either through pipelines or through any other supply schemes eg. LNG/CNG supply through road tankers etc.

- **Gas distribution networks:**

(a) Development of gas distribution networks in every city/ town/ village would be encouraged by decentralizing the approval process at local Govt. level i.e. municipality/ corporation or village panchayat.

(b) Current scheme of awarding CGD licence through centralized system would be abolished.

(c) Local Govt. would provide necessary right of ways/use for laying of such low pressure gas distribution networks within the territory of such local Govt.

(d) They would invite expression of interest from interested developers of such distribution networks and bidders would be asked to state share of distribution tariff they are willing to share with the local Govt.(distribution tariff would get determined as per provisions covered under 'Tariff /Price determination' head in this policy).

(e) The highest share bidder shall be selected for such development of distribution network.

(f) Selected distribution company would have to follow technical standards prescribed by the Regulator and would be obliged to provide gas connection to all interested households, commercial establishments, industrial customers etc. within six months (after expression of



customer interest or commencement of network operation, whichever is later).

- (g) There would be exclusivity for such developer and the validity of license would be for 30 years. There would be no extension possible in license period. At the end of thirty years the network would be the property of local Govt. and they would be required to invite fresh competitive bids for taking over of such network and the existing developer could participate in such bidding process, if they so wish.
- (h) Distribution licensee would sell gas to consumers for which the manner and quantum of charges that can be levied are covered under the head of “Tariff/Price determination”.
- (i) In order to have widespread development of such networks in all parts of India, in quick time, developers would be encouraged to consider gas supply models by rail/road tanker movement of LNG/CNG so that such networks come up quickly to create a robust base demand for state and nation wide gas grid as and when it is developed.
- (j) All existing CGD licenses issued by PNGRB will continue to be valid as per their terms. However, all future developments will be as per this new policy. Existing licensees would have an option to get regulated as per this new policy, if they so wish.
- (k) Customers in distribution circle area, however, would have right to source their own supplies of gas through any other means like rail/road tankers or from high pressure transmission systems (as per their eligibility to get such direct connectivity).

- **National power grid:**

- (a) Powergrid Corporation of India will be the operator of national power grid. It will lay necessary power transmission lines at high voltage to interconnect all eligible



customers and such network would be managed by it through operations of NLDC.

- (b) All SLDCs, power generation facilities with capacity in excess of 500 MW, all power consumers having power demand in excess of 100MW would be eligible to get direct connectivity with national power grid.
- (c) National power grid will operate on 'Open access' principle for all eligible customers and facilitate nationwide free power trade as envisaged in this policy.

- **State power grid:**

- (a) All power transmission lines operating above 11KV within any state would be classified as state transmission grid.
- (b) State power grid would be within operation control of state transmission utility company.
- (c) All power generators in the state (including state owned generators and IPPs), all power distribution networks within the state, all captive power generators having capacity in excess of 1MW, all power consumers in the state having power demand in excess of 1MW would be eligible customers for getting connection with state power grid and such grid would be managed by state transmission utility through operations control of SLDC.
- (d) State power grid would operate on the principle of 'Open access' for all its eligible customers and facilitate power trade of its customers as envisaged under the policy by coordinating SLDC operations with NLDC accordingly.

- **Power Distribution Networks:**

- (a) All state distribution companies would be obliged to reorganize by dividing their network into a separate unit for each of city /town/ village within the state. Such a scheme would ensure more transparency and accountability and would help in reducing huge T&D losses reported by states.



- (b) State utilities would be encouraged to involve private sector in management of such local distribution areas by leasing out their network and allowing the new local distribution companies to source and supply power.
- (c) The selection of private operator of such localized networks would be based on competitive bidding, to be done by the State Government, wherein lease rental per year payable by the interested bidder to the distribution company would be the evaluation criteria.
- (d) However, if the state utilities do not opt for private participation then such localized distribution companies would remain state owned by creating separate company structures at local level from larger distribution entities.
- (e) Primary objective of dividing distribution in such small manageable areas is to ensure involvement local entrepreneurs and, also, to reduce T&D losses substantially.
- (f) The Regulator will publish a yearwise maximum allowable T&D losses (starting from the current level of state level distribution losses in 2015 to 5% by year 2020 by reducing allowable losses in five equal yearly slabs).
- (g) The Power Distribution company will not be allowed to recover charges, from consumers, for power losses in excess of stipulated targets. This regulation will be strictly enforced without any Government interference.
- (h) Local Distribution entity would be obliged to ensure 24X7 power availability, by year 2018, except subject to Force Majeure.
- (i) All future investments for augmentation and/or upgradation or repairs/maintenance of distribution network would be borne by the local distribution company and it will have to be serviced from the share of distribution tariff retained by him as well as the savings made in losses compared to allowable losses.



- (j) In states where the distribution networks for each village are not developed, state Govt. would be encouraged to invite private sector investment for such network development.
- (k) Selection of developer for such new Power Distribution Network would be based on competitive bidding by state Government. Bidder selection would be based on the % of distribution tariff to be shared with state transmission utility. The state transmission utility would be obliged to lay a transmission line upto the proposed local distribution network interconnection point.
- (l) Small power generators in the local grid would have right to feed excess power into the distribution network and get paid for such power at the rate equivalent to average purchase cost of electricity for that distribution area in previous year.
- (m) Power Distribution Network operators would sell power to the consumers and would be eligible to recover costs as per details of this policy given under the head of "Tariff/Price".
- (n) Private sector operators, if selected for operations of existing or development of new Power Distribution Network would have to be given operations right for 30 years by the State Government.



ANNEXURE-5
PROVISIONS RELATED TO ENERGY EXCHANGE



- All registered and/or licensed entities under this policy, as well as registered users of energy products, would have right to get membership of this exchange.
- Energy exchange will trade contracts in categories of term ahead (5 years), year ahead, month ahead, week ahead, day ahead. All contracts other than day ahead would imply uniform hourly supply rate whereas in dayahead category there would be hourly time slots for which trade would happen (in case of gas and power). Detailed mechanisms for settlement via allocation would be worked out by energy exchange in consultation with the Regulator.
- All gas contracts would initially be with Hazira hub reference, power contracts would be with NLDC as reference hub and for coal three or four hubs near major coal mines and import terminals would be identified for reference trade.
- To facilitate physical delivery for settlement 'Open access' would be used for gas and power transmission lines whereas for coal warehouses will be created at identified hub locations for facilitating physical delivery.
- At the time of taking delivery Buyer will be obliged to pay transmission tariff to the 'Open access' systems of national and/or state grid operators (in case of power and gas) as notional cost for carrying the product from Hub to the delivery point of buyer. Whereas at the time of delivery the seller would be obliged to pay transmission tariff to the 'Open access' systems of national and/or state grid operators (in case of power and gas) as notional cost for carrying the product from his location to the Hub. (Transmission charges are notional because actually these products are fungible and difficult to identify as specific molecule/electron movement).



ANNEXURE-6
PROVISIONS RELATED TO TARIFF/PRICE



- Tariff as payable by any user of the Energy Infrastructure (including 'Open access' transmission system operators for gas and power) would be computed on following principle:
 - (a) Annual revenue requirement (ARR) of such Energy Infrastructure company would be computed as a % (to be notified by the Regulator as a uniform rate applicable for each entity every year) of its 'Networth' as per its previous year's annual report.
 - (b) ARR would be divided by the total quantity of energy product handled by the infrastructure company (including notional quantities as mentioned above for trade on exchanges) so as to arrive at unit rate of tariff payable in the current year.
 - (c) Energy Infrastructure companies providing access to their facilities (mandatory or otherwise) would be obliged to calculate these every year and publish it on their website as well as the Energy Exchange. Such infrastructure companies would also be obliged to put their annual audited accounts on their website for cross verification by its customers.
 - (d) In case any customer finds a large discrepancy in the tariff as calculated by infrastructure company and as estimated by him based on annual audited accounts of the company, then such aggrieved customer can approach the Regulator for verification of the tariff and tariff as approved by the Regulator, would be the final applicable tariff.
- Annual Revenue Requirements (ARR) for Power and gas Distribution companies would be notified by the Regulator, from time to time, by classifying the distribution circles in different categories based on total number of connected customers.
- Such ARR would then be divided by previous year's total energy sale to arrive at Distribution Tariff to be charged.