

# Comments on National Tariff Policy (NTP)

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## 1. General Approach to Tariff:

### (i) Deferring competition for the Public Sector

“Even for the Public Sector projects, tariff of all new generation and transmission projects should be decided on the basis of competitive bidding after a period of five years or when the Regulatory Commission is satisfied that the situation is ripe to introduce such competition.” (emphasis added) (NTP 5.1)

The philosophy of the reform process, in general, and the Electricity Act 2003, in particular, emphasises competition in the sector and aims at improving efficiency of the power sector long characterised by public ownership. In this context, allowing public sector entities to setup generation and transmission projects without competitive bidding basis provides a safe heaven for inefficiency in the sector often in terms of time delays and cost escalation. This is reflected in higher cost of power procurement for the distribution utilities.

The NTP also leaves the issue open ended by relegating its future review it to the regulatory commissions.

### (ii) Cost of Debt

“Structuring of debt, including its tenure, with a view to reducing the tariff should be encouraged. Savings in costs on account of subsequent restructuring of debt should be suitably incentivised by the Regulatory Commissions keeping in view the interests of the consumers.” (NTP 5.3 (d))

This approach provides a loophole for restructuring poor debt deals and then rectifying these to garner incentives. Another alternative to incentive efficient in negotiating debt deals would be by adopting “cost of capital” approach against the existing “cost of equity approach”.

Further, this approach should not be applicable in the case of a Multi-year Tariff regime since this would be a part of the controllable costs.

## **2. Approach to Transmission Pricing:**

National Electricity Policy (NEP) mandates introduction of a 'direction' sensitive transmission pricing regime, the NTP provides a choice of MW-mile and zonal postage stamp, both of which are price sensitive. Nodal or zonal pricing are directionally sensitive. Zonal pricing approach which is direction sensitive could be a more easily amenable to the existing regional postage stamp pricing.

“Transmission charges, under this framework, can be determined on MW per circuit kilometer basis, zonal postage stamp basis, or some other pragmatic variant, the ultimate objective being to get the transmission system users to share the total transmission cost in proportion to their respective utilization of the transmission system. The overall tariff framework should be such as not to inhibit planned development/augmentation of the transmission system, but should discourage non-optimal transmission investment.” NTP 7.1 (3)

Further the NTP also suggests that sharing of total transmission cost to continue as per their respective utilization. This also defeats the philosophy of direction sensitive transmission pricing wherein a user of transmission services may be relieving congestion and hence may not be charged for transmission services. Having such a stipulation (NTP 7.1 (3)) would defeat the purpose of graduating to a direction sensitive pricing.

Also the NTP has not addressed the existing practice wherein cost of transmission corridor connecting two regions (for e.g.. NR and ER) and continued to be shared by both the regions whereas the actual beneficiary of the inter-regional transmission link is primarily the northern region.

“Transactions should be charged on the basis of average losses arrived at after appropriately considering the distance and directional sensitivity, as applicable to relevant voltage level, on the transmission system.” NTP 7.2 (1)

Provision 7.2 (1) of NTP is also incompatible with the provision 7.1 (2). If transmission pricing is direction sensitive, energy transactions can not be charged transmission losses on average basis as per existing practice.

## **3. Harnessing Captive Generation: Role of Energy Banking**

The existing practice of harnessing captive generation in some states also includes 'energy banking'. If not implemented properly, this facility could be easily misused for extracting power from the state grid during peak hours and injecting power during the off-peak hours. Hence, NTP should emphasise energy banking facility to be accounted for respective duration of the day. The intra-state ABT regime under consideration in many states may not address this issue and this should be incorporated in the power purchase agreements with captive generators.

#### **4. Procurement of Renewable Sources of Energy:**

##### **(i) “Renewable” and “Non-conventional” Sources of Energy**

Section 86 of the Electricity Act 2003 refers to “promotion of generation of electricity from co-generation and renewable sources”. The NTP interprets this in a wider sense as “non-conventional” source of energy. A non-conventional source of energy may not necessarily be a renewable one. For e.g. power generation from urban / industrial waste (for e.g. used tyres) could not be categorised as a renewable source of energy.

##### **(ii) Competitive Procurement of Renewable Sources of Energy**

While stipulating procurement of electricity from co-generation and renewable sources of energy, competition among these energy sources could not be overlooked. SERCs should highlight competitive procurement of electricity from amongst co-generation and various renewable sources of energy. This would lower the cost of power procurement from such sources by the distribution utilities.

Further, SERCs should specify a dynamic framework for fixing a percentage of electricity generated from renewable energy sources, gradually raising it to a specified long-term target. This would ensure policy certainty and provide signals for investment in developing such resources.

#### **5. Share of Purchase from Renewable Energy Sources (Renewable Portfolio Standard) and Developing a Market for Green Electricity Certificates:**

Endowment of renewable sources of energy differs across states and these would be harnessed to the extent financially viable. Distribution utilities would often meet their renewable portfolio requirements through purchases from such sources located in other states. This could be constrained by the availability of transmission network and would also raise the landed cost on account of transmission charges and transmission losses.

Alternatively, a market based mechanism<sup>1</sup> could allow for trading of what could be called as Green Electricity Certificates among distribution licensees across the country. These would essentially represent the embedded ‘renewable’ nature of the generation and which could be credited to the owner of such certificates. Such certificates can be traded on commodity exchange or an electricity exchange to come up in future. This would drive economic efficiency in the system by allowing distribution licensees to meet their portfolio obligations in spite of constraints in the transmission system. This

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<sup>1</sup> This would essentially work like tradable permits, a market based mechanism often utilised in the context of environment standards for e.g. SO<sub>x</sub> standards in the US and other such instruments in other countries. In the case of a market for “tradable certificate for renewable electricity”, distribution licensees purchasing with easy access to renewable generating capacities can purchase electricity far beyond their obligation and then trade such additional purchase of ‘green electricity’ through a commodity / power exchange. Alternatively, electricity from renewable electricity sources can be offloaded by the generators as conventional electricity which would usually be at a price lower than that one can get for green electricity. Such generators can then bridge the revenue gap by selling ‘green electricity’ certificates.

would also lower the overall cost of meeting such standards as this would provide correct signals for setting up generation plants and choice of appropriate renewable energy source and technology to harness the same. This would also lower the system losses while accounting such credits. The NTP should clarify position with respect to such purchases made from sources located across the border.

#### **6. Benefits under CDM to Co-generation and Renewable Sources:**

“Tariff fixation for all electricity projects (generation, transmission and distribution) that result in lower Green House Gas (GHG) emissions than the relevant base line should take into account the benefits obtained from the Clean Development Mechanism (CDM) into consideration, in a manner so as to provide adequate incentive to the project developers.” (NTP 5.3 (i))

The above provision is inconsistent in its parts. If benefits from CDM are to be ‘taken into account’, the incentive to development of such projects would be taken away. Even if part of the benefits is taken away, the incentive to develop CDM related projects would be reduced. This would also require that appropriate government notification for preferential price of electricity generated from renewable energy sources would also mention that the price is exclusive / inclusive / part inclusive of CDM benefits. To some extent sharing of benefits under CDM would be justifiable since power procurement from such projects would not bear demand risk up to the specified limit of power procurement by the SERCs and would also not be subjected to price risk due to predetermined price level. Such sharing of benefits would be desirable till a competitive market for procurement of electricity from renewable and co-generation sources are developed. In a competitive scenario higher appropriation of CDM benefits would provide signal for additional investment in such technologies thereby leading to a reduction in market price for power procurement.

#### **7. Benefits under CDM for Transmission and Distribution Projects:**

In case of transmission and distribution projects majority of benefits from CDM projects should accrue to customers since the desired investment would be borne by the consumers and hence benefits should largely accrue to them. Part of the benefits should be allowed to the licensees so that there is sufficient interest in developing project documentation for claiming benefits under the CDM.

#### **8. Unbundling of Consumer Tariffs:**

Restructuring in the Indian power sector has led to structural unbundling of in generation, transmission and distribution segments. However, unbundling of tariff holds key to enhanced competition, especially in the retail electricity supply. This would require that consumer tariff include separate charges for electricity supplied, network charges for transmission and distribution, customer services etc. Though the Electricity Act 2003 does not specifically provide for this, the NTP should endeavour to promote

such a framework to SERCs for enhancing competition in the sector over long-run. This could evolve with improved metering, consumer awareness and market conditions.

## **9. Implementation of Multi-Year Tariff (MYT) framework :**

“In the first control period the incentives for the utilities may be asymmetric with the percentage of the excess profits being retained by the utility set at higher levels than the percentage of losses to be borne by the utility.” (emphasis added) (NTP 8.1.2)

The NTP proposes a MYT tariff regime wherein ‘excess profits’ (i.e. increment over a predetermined level) as well as ‘loss’ (i.e. total loss?, not an increment over a predetermined level of loss) would be shared in an asymmetric fashion. Further, the asymmetry on the loss sharing would not effectively deter inefficiency the hallmark of the system at present.

## **10. Framework for revenue requirements and costs:**

### **(i) Pass through of past losses or profits**

“Pass through of past losses or profits should be allowed to the extent caused by uncontrollable factors. During the transition period controllable factors should be to the account of utilities and consumers in proportions determined under the MYT framework.” NTP 8.2.1 (5)

While losses could be attributed to ‘controllable / uncontrollable factors’, profits would mostly result due to ‘controllable factors’ as there are few situations to expect ‘uncontrolled’ windfall profits for distribution utilities (one such case is mentioned below).

SERCs approve a revenue requirement and issue a tariff order to meet revenue shortfall, if any. Under public ownership a number of state utilities, under political compulsions, do not seek tariff revision even though there is a significant revenue gap. This results in losses. Should this be classified as controllable or uncontrollable factor? How the treatment of past losses would be addressed if ownership status changes from public to private? Would the new private owner be allowed to recoup past losses?

### **(ii) Profits due to Receipt of UI Charges**

One case of windfall profit due to sale in the UI market under the regime should be clearly identified. A number of generating companies as well state utilities are net recipient of significant amount of payment from UI account. How should profit on such sales be treated? Such profits may occur on account of controllable as well as uncontrollable factors, an issue which may be difficult to resolve. Similar issue would also arise with the implementation of intra-state ABT. Payment on account of UI charges for distribution utilities could be mostly on account of controllable factors and hence loss

on this account would be disallowed by the SERCs unless it can be shown that UI payment liability occurred due to uncontrollable factors.

## **11. Tariff Design**

### **(i) Targeting Subsidy – Replacing Price Subsidy with Direct (Lump Sum) Subsidy**

Effective targeting is key to the success of any scheme to provide subsidy to the needy consumers. Section 65 of the Electricity Act 2003 empowers the SERCs to specify the manner in which subsidy may be disbursed. SERCs continue to rely on price (tariff) subsidy, which interferes with the market mechanism. Price subsidy is an inefficient way of providing subsidy as it leads to inefficient consumption as well as its inability to target the subsidy to the needy consumers. It disconnects consumers from the market interaction of demand-supply and hence aggravating demand-supply mismatch.

“As a substitute of cross-subsidies, the State Government has the option of raising resources through mechanism of electricity duty and giving direct subsidies to only needy consumers. This is a better way of targeting subsidies effectively.”  
(emphasis added) NTP 8.3

Although NTP advocates adoption of direct (lump sum) subsidy the message does not seem to percolate effectively. NTP may like to elaborate on the need for replacement of the prevailing ‘price subsidy’ with ‘lump sum subsidy’ to support electricity consumption by needy consumers. A specific amount of subsidy can be worked out on the basis of a normative consumption<sup>2</sup> and unsubsidised price. This would effectively subsidise electricity consumption up to the normative limit only.

Direct subsidy provides effective price signals beyond the normative consumption. This ensures effective targeting as only consumption up to the normative level is subsidised and the rest is being charged at un-subsidised level. Such effective targeting would also lower subsidy burden for the respective state government. However, implementation of direct subsidy should be supplemented with effective metering to avoid perverse incentives. Since, it may be difficult to implement such a scheme in one step, a transition path could be utilised to gradually reduce price subsidy and replace this with lump sum subsidy.

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<sup>2</sup> Though direct subsidy can also be specified in terms of units of electricity allowed free of charge, direct subsidy as a flat reduction in bill is a preferable option as the consumer’s bill would display the consumer’s liability waived off. In case of free units, the consumers liability to the allowable free units would be nil and this may not carry necessary message to the consumer.

## 12. Definition of tariff components and their applicability

### (i) Adoption of Two-part Tariff

A number of SERCs continue to prescribe a single part tariff structure for different category of consumers. Single part tariff with only energy charges (sometime supplemented with minimum consumption charges) do not encourage economic efficiency and reduces incentive for meter tampering and other malpractices.

The NTP should emphasise adoption of two-part / multi-part<sup>3</sup> consumer tariff over single part tariff prevalent in many states. This has following advantages,

- It is reflective of cost structure since most of the cost components including power purchase are of two-part nature.
- It brings revenue stability for distribution licensees.
- It provides signals for efficient consumption and reduces incentives for theft / meter tampering.

“Two part tariffs featuring separate fixed and variable charges and Time differentiated tariff shall be introduced on priority for large consumers (say, consumers with demand exceeding 1 MW) within one year. This would also help in flattening the peak and implementing various energy conservation measures.”  
NTP 8.4.1

A two-part tariff should be introduced for all consumer categories as far as possible. In transition, two-part (multi-part) tariff structure should be introduced for all consumers with demand of 2 kW and above (much lower than suggested the suggested threshold of 1 MW). Due to special metering requirement, time of day tariff could be implemented initially for consumers above 1 MW. This limit should be brought down to 10 KW later when cost for appropriate metering is substantially reduced.

In a two-part tariff, the fixed part of the tariff could be based on maximum demand known as demand charges. In case of lack of appropriate metering especially for small consumers, a fixed charge based on sanctioned/connected load<sup>4</sup> could be introduced. This could be the basis for a two-part tariff design<sup>5</sup> for domestic, LT commercial and LT industrial consumers and could also be introduced for agricultural consumers over a time.

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<sup>3</sup> A two part tariff has a fixed and a variable component. The former one can be related to the load size or max demand. Variable component is directly related to units consumed. In a three part tariff, another component called ‘customer service’ charge is introduced. This could be same for all consumers in a category but could differ across categories and is not dependent on the size or consumption profile of the consumers. This could cover costs related to meter reading, billing etc.

<sup>4</sup> This would require load audit of all consumers by the distribution licensees as such data may either be non-existent or incorrect.

<sup>5</sup> A few states have a fixed part that is not related to the demand or load of the consumer. This discriminates against small consumers as larger consumer get away with small fixed charge in spite of larger sanctioned / connected load or max demand.

**(ii) Differential Agricultural Tariff by Depth of Water Table:**

“While fixing tariff for agricultural use, the imperatives of the need of using ground water resources in a sustainable manner would also need to be kept in mind in addition to the average cost of supply. Tariff for agricultural use may be set at different levels for different parts of a state depending of the condition of the ground water table to prevent excessive depletion of ground water. Section 62 (3) of the Electricity Act 2003 provides that geographical position of any area could be one of the criteria for tariff differentiation. A higher level of subsidy could be considered to support poorer farmers of the region where adverse ground water table condition requires larger quantity of electricity for irrigation purposes subject to suitable restrictions to ensure maintenance of ground water levels and sustainable ground water usage.” (emphasis added) NTP 8.3.3

While the NTP emphasises sustainability of ground water usage, it proposes lower agricultural tariffs for regions with lower water table. Charging lower tariff in the lower water table regions would lead to continuance of high water use crops, which can not be sustained due to the prevailing low water table. The suggested philosophy would lead to further lowering of water table as there would not be sufficient incentive to switch to crops requiring lower quantity of water.

**13. Definition of tariff components and their applicability**

**(i) Differential Assignment of PPAs would Penalise Efficient Discoms**

“The National Electricity Policy states that existing PPAs with the generating companies would need to be suitably assigned to the successor distribution companies. The State Governments may make such assignments taking care of different load profiles of the distribution companies so that retail tariffs are uniform in the State for different categories of consumers. Thereafter the retail tariffs would reflect the relative efficiency of distribution companies in procuring power at competitive costs, controlling theft and reducing other distribution losses.” (emphasis added) NTP 8.4.2

If the state governments were to assign existing PPAs in a differential manner to the successor distribution companies in the state so as to apply uniform tariff across the state, the efficient discoms would be penalised. Need to make uniform tariff across state would mean that – in efficient discom, consumers would be charged higher than what is cost to serve them and in an inefficient discom, consumers would be charged lower than their cost to serve. In this manner, consumers in efficient discom would cross-subsidise those in the inefficient discom. Hence, those discoms which has lower distribution losses including lower theft would now have to bear on account of high historical distribution loss in the other discoms.

The NTP does suggest that ‘initial’ allocation of PPAs would be a one time exercise and ‘thereafter’ tariffs may differ across discoms in the state. There is a need to



clarify this in the NTP else state governments may continue to reassign cost of PPAs every year so as to match tariff across the state under various political compulsions. If this practice continues, consumers in the efficient discom would continue to cross-subsidise those in the inefficient ones. This would not only be inequitable but would also not provide appropriate incentive to the inefficient discom to improve efficiency.

The above scheme may work for states where all discoms are under public ownership. However, in the case of discoms under private ownership, it may be difficult to apply differential allocation of costs under the existing PPA for e.g. in Orissa and Delhi.

Differential allocation of costs under PPAs would also undermine competition in the distribution segment by imposing higher cost burden on efficient licensee. This would protect an inefficient incumbent discom from potential competition from an entrant discom in the case of multiple distribution licensees.