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Dear Reader,

The main article this month analyses the proposed changes in the National Tariff Policy (NTP). The changes mainly pertain to RPO & REC, tariff design and in Discom operations. Some changes proposed are radical, and if implemented will have a drastic impact on the electricity sector. For example, the NTP proposes to do away with subsidies of all types and move to a Direct Benefit Transfer mechanism.

In this volume we also provide details about various regulatory changes, including about the new Hybrid Wind- Solar Policy by MNRE, KERCs announcement about an increase in the wheeling and banking charges for renewable energy projects, comparison of Average Power Purchase Cost (APPC) between CERC and various SERCs, CERCs extension on the validity of RECs till 31st October 2018, formation of RPO compliance cell and other regulatory updates.

Further included are the monthly RE Generation status in the country, REC Trading results, Year-on-Year growth and clearance ratio trend. April saw the resumption of trading in Solar RECs at the reduced floor price of Rs 1,000 per REC. Demand has been robust so far.

- Team REConnect
The Ministry of Power (MoP) has proposed several amendments to the National Tariff Policy (NTP).

These amendments broadly cover the following areas:

- **Renewable purchase obligation and renewable energy certificates** - the policy aims to make the RPO trajectory published by the Ministry of power mandatory on States, and also make certain exclusions to RPO right from hydropower and from Waste heat gases. Further references to REC are proposed to be deleted.

- **Distribution Company operations** - the policy aims to bring in some form of universal supply obligation and also implement penalties for power cuts.

- **Tariff design** - There are several changes proposed for tariff design. The most for reaching of which is elimination of all subsidies and payment of subsidies through Direct Benefit Transfer (DBT).

- **Open Access and Cross Subsidy** - Another radical change proposed is that cross subsidy surcharge will be applicable only for one year from the date of opting for open access.

These and other changes are analysed in detail in this article.

At the outset it must be kept in mind that the NTP is only recommendatory in nature. The State Electricity Regulatory Commissions are expected to follow the policy but are not mandatorily required by law to do so. In practice, it is often seen that the policy is not followed - a prime example of this is the setting of cross subsidy surcharge. Since the time of the Electricity Act 2003, various measures including the NTP itself has proposed rationalisation of CSS. There is little evidence that SERCs have followed it.

**Renewable Purchase Obligations and Renewable Energy Certificates:**

The draft NTP implies that the “Long Term Trajectory of RPOs” issued by the MoP will be mandatory. The draft states:

“All SERCs will adopt the RPO trajectory issued by the Central Government”
However, the draft NTP also proposes to change the basis of calculation of RPO. It states that consumption from hydro power and from “waste heat gases as a byproduct of industrial process” shall be deducted to calculate RPO. This is a significant change.

However, in our opinion, it is also contradictory to the wordings in Sec 86(1)(e) of Electricity Act 2003 (EA 2003), which requires RPO on “total consumption”. In this case, it is unlikely that the NTP can override the EA 2003. The requirement of applying RPO on “total consumption” has also been upheld by the Supreme Court.

The draft policy also proposes to include co-gen from non-RE sources in the calculation of RPO.

Further, the draft policy proposes to delete the 2 paragraphs that refer to the RECs. These para’s relate to the promotion of RECs mechanism as an alternate mechanism to meet RPO, and for providing vintage or technology multiplier to different projects.

This proposal is not a good development for the projects already in the REC mechanism, and also for overall RPO compliance. The fundamental premise of developing the REC mechanism is that RE resources are unevenly distributed across the country, and a national market will enable the most cost-efficient development of RE resources.

It is unclear whether with this proposed deletion, the MoP is proposing to stop supporting the REC mechanism or it believes that it is matured enough to not need any further support from the NTP.

Distribution Company operations

The NTP proposes two key changes: the first one relates to “continuity and reliability of supply”, providing 24X7 power supply to all by March 2019, and says that Discoms shall be penalised for power cuts (other than in force majeure conditions).

Further, the NTP states that it will be mandatory for the Discom to “tie up long term/ medium term power to meet the annual average power requirement”. It further states that failure to do so may result in suspension of their licence.

The second proposal states that SERC will not consider AT&C losses beyond 15% for determination of tariff.

In our opinion, well meaning as these provisions are, they are likely to prove to be very difficult to implement at the state level.

Tariff design

It is in this category that the most radical changes are proposed. The most significant of these is that the draft NTP proposes to do away with any sort of subsidy to any tariff category and instead proposes that any subsidy shall be given to the consumer by way of Direct Benefit Transfer directly into their accounts. Consequently, existing provisions for subsidy to below poverty line consumers and to farmers are also proposed to be deleted.
If implemented, this will be a radical change. A significant part of losses incurred by the discoms are due to subsidized tariffs set for farmers and household consumers.

The draft NTP also proposes to completely shift to pre-paid metres over a period of 3 years. The policy lists several advantages of this approach particularly to do away with all the problems associated with metre reading billing, collections and disconnection.

Another category of changes pertain to rationalisation of tariff categories. This is a welcome change, especially given that the National Economic Survey also highlighted the need for rationalisation of tariff categories. However in the same breath, the draft NTP proposes a different tariff category for electric vehicle charging stations.

The policy also proposes to move to TOD and two part tariff for consumers before the end of this financial year.

**Open Access and Cross Subsidy**

Changes are also proposed in the Cross Subsidy Surcharge (CSS) area. One change requires SERCs to reduce cross subsidies and ensure that tariffs are within +/-20% Of the cost of power.

Another change proposal that CSS will be applicable only for one year from the date of opting for open access by the consumer. These proposed changes to CSS are well meaning but nothing new. Further, every policy has came to rationalize CSS but without success.

For Open Access consumers who maintain their contract demand the policy proposes that temporary tariff will not be imposed.

At the same time the policy also states that consumers opting for Open Access will schedule their power at least for eight consecutive hours (four hours in the case of renewable energy).

**Conclusion**

The proposed changes in the NTP pertaining to RPO and RECs, when taken in entirety, are to the detriment of the sector. This is because the trajectory proposed by the central government is unlikely to be adopted by SERCs. At the same time, diluting the support to RECs, and providing exemptions from RPO are likely to weaken the overall RPO mechanism.

The proposal to implement Direct Benefit Transfer in the electricity sector is indeed radical and welcome. If implemented this will have a significant impact on the health of the discoms.

Overall, we believe that some of the more bold changes proposed in the NTP will actually require changes in the Electricity Act 2003 itself before they can be implemented. The draft amendment has been pending before the Parliament since 2014. Only when the Parliament passes that can some of the reforms proposed in the NTP be implemented.
A brief comparison of CERC APPC cost and various state costs

Average Pooled Purchase Cost, also known as APPC, is defined as “the weighted average pooled price at which the distribution licensee has purchased the electricity including cost of self generation, if any, in the previous year from all the energy suppliers long-term and short-term, but excluding those based on renewable energy sources, as the case may be.”

- APPC rate is used for generators that are not in long-term PPAs. such as Open Access entities, as per the regulation.

“Fixed Rate for Open Access participants selling power which is not accounted for RPO compliance of the buyer, and the captive wind or solar plants shall be the Average Power Purchase Cost (APPC) rate at the National level, as may be determined by the Commission from time to time through a separate order. A copy of the order shall be endorsed to all RPCs.”

- The national APPC rate is obtained by averaging out the APPC rates of all states and union territories. Weighed by the volume of conventional power purchased by the respective state/UT.

- The total cost of APPC excludes cost of generation or procurement from renewable energy sources and transmission.
- Below stated graph compares the CERC APPC cost to five states with high activities related to wind and solar.
- These states are Gujarat, Maharashtra, Karnataka, Rajasthan and Tamil Nadu.
- The state has the liberty to use the CERC generated APPC or obtain individual APPC rate as per its available energy resources.
- APPC rates have varied between various states depending upon their electricity generation from different energy sources.
- The Central Electricity Regulatory Commission (CERC) every year announces a standard APPC rate and it depends on the individual state if it wishes to follow the rate or calculate a new rate.
- The APPC rate has seen huge variation in past few years both at the central and state level.

<chart>APPCCostComparison</chart>
Creation of an RPO compliance cell, MNRE declares in its order

According to a recent order by Ministry of New and Renewable Energy (MNRE) dated 22 May 2018, a creation of Renewable Purchase Obligation (RPO) Compliance cell is in process. This cell will be handling all the matters related to RPO compliance across states and publishing monthly reports on the updates.

The cell is expected to work in accordance with Central Electricity Regulatory Commission (CERC) and SERCs. The cell is also expected to coordinate on publishing a periodic report with the Government of India and take up non-compliance issues with appropriate authorities.

In the past, there have been several efforts initiated by MNRE to increase awareness among RPO obligated entities regarding RPO obligations, and explaining its advantages to them.

With the help of this cell, data management, a repository of obligated entities, preparing state-wise defaulters lists and storing authorities specific information would be convenient.

Currently, there are some gaps in the implementation of RPO in some states, and with the creation of this cell, the issues can be taken care of state-wise, bringing the country closer to achieving its national target of installing 175 GW of renewable energy till 2022.

Hybrid Wind-Solar policy by MNRE

Ministry of New and Renewable Energy (MNRE) announced the National Wind-Solar Hybrid policy on 14th May 2018. The objective behind this is to provide a framework for promoting large grid-connected wind and solar PV hybrid system for efficient utilization of transmission infrastructure and land. Along with this, it also aims to help reduce the inconsistency in the renewable power generation and in turn achieve better grid stability.

The policy also intends to encourage new technologies, methods and solutions related to combined operation of wind and solar PV plants.

The summary of the policy is as below:

- The Wind Turbine Generators (WTGs) and Solar PV systems both will be configured to operate at the same point of grid connection.
The integration of wind and solar can vary depending upon the size of each source and their technology type.

Depending on the size of the respective renewable capacity, the other resource can be integrated. However, a plant will only be considered hybrid if the power capacity of any one resources is at least 25% of the rated power capacity of the other resource. (i.e. wind and solar).

The hybrid power generated from the wind-solar hybrid project can be used for captive, sale to third-party through Open Access, sale to the distribution company (ies) either at tariff determined by the respective SERC or at tariff discovered through transparent bidding process; and sale to the distribution company (ies) at APPC under REC mechanism and avail RECs.

In case of bidding, the Central/State can follow competitive bidding process and can select the winner on the basis of tariff.

The additional power generated from the hybrid plant can also be used for solar/non-solar RPO fulfillment.

Battery storage is also enabled in the hybrid projects.

Conclusion: We feel, this is a good step taken by MNRE. With the policy in place, states across the country will be able to utilise the renewable energy. Since Solar’s working hours are limited, wind energy can be utilised and co-generation can happen without any interruption.

However, timely implementation of the plants should be the priority for proper functioning and infrastructural aid should be provided to all the plants.

CERC gives a positive nod to extend the validity on RECs

CERC recently announced in its order dated 15th May 2018 that the RECs will be valid till 30th October 2018, which were otherwise expired/likely to be expired between 1st April 2018 and 15th October 2018.

The commission declared this in accordance to its power under Regulation 15 of REC regulations.

The issues which were prevailing since early 2017 and saw petitions from various parties seems to have finally come to rest.

More than 10 lakh RECs (9,52,533 Solar RECs & 1,09,520 Non-Solar RECs) were being affected due to the pending petitions. Majority of these RECs were solar which saw a halt in trading for almost 11 months since 8th May 2017.
Since ApTel was in the reviewing process of the petitions, the commission could not take any action on the extension of REC validity before 31st March 2018.

ApTel in its judgement as on 12th March 2018 has disposed all the petitions and upheld the commission’s order dated 30th March 2017 to continue the REC Floor and Forbearance Price applicable from 1st April 2017 onwards.

The Commission was of the view that there was a requirement to extend the validity since the appeals were dismissed by the ApTel and there was no stay.

Based on the recent order, the expired RECs will be added back to the seller’s account which were then removed by NLDC till 31.03.2018.


The key impact from this years tariff’s order is the reduction in attractiveness of RE and open access power. This is done through reduction in tariff (through TOD discounts and removal of higher slab tariff), and increase in wheeling charges for RE project.

Incentive scheme:
- Any excess energy consumed by the eligible consumers during the non-peak period between 10.00 Hours and 18.00 Hours, over and above the average base consumption as stated, will be allowed a discount of Rs.1.00/- per unit in the bill, to the eligible consumers.

<table>
<thead>
<tr>
<th>Duration</th>
<th>Status of RECs</th>
<th>Validity as per the order</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st April 2018 to 14th May 2018</td>
<td>Expired</td>
<td>Extended till 10th October 2018</td>
</tr>
<tr>
<td>15th May 2018 to 30th October 2018</td>
<td>Likely to be expired</td>
<td>Extended till 10th October 2018</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trading portal</th>
<th>Solar</th>
<th>Non-solar</th>
</tr>
</thead>
<tbody>
<tr>
<td>IEX</td>
<td>6,44,151</td>
<td>1,36,979</td>
</tr>
<tr>
<td>PXIL</td>
<td>2,30,967</td>
<td>50,564</td>
</tr>
</tbody>
</table>

Since ApTel was in the reviewing process of the petitions, the commission could not take any action on the extension of REC validity before 31st March 2018.
As seen in the graph, various types of HT consumers will be experiencing different rate reduction from their previous rates.

There are also some amendments in the wheeling charges applicable to the renewable generators.

- The RE generators will be liable to pay 25% of the normal transmission charges and/or wheeling charges.
- They will be liable to bear the applicable lines losses as decided by the commission.
- Also be liable to other applicable charges including 2% of banking charges.
- The RE projects commissioned on or after 1.04.2018 will be liable to all the charges stated above.
- The captive generators having REC benefits will be liable to pay normal transmission and wheeling charges as per 2013 order.
- With the announcement of KERC to levy the wheeling and transmission charges on the renewable energy plants, the overall tariff will increase. The per unit impact on the tariff will also increase.
- The RE generators will now have to keep in my, the charges included and determine the tariff accordingly, which might cause inconvenience to them.

Telangana announces Forecasting and Scheduling regulations, 2018.

Recently TSERC announced regulations on wind and solar forecasting, scheduling regulations, 2018. This is the final regulation and Telangana became the sixth, and latest, state to implement Forecasting and Scheduling regulations.

The regulations are applicable on all grid connected Wind and Solar Power Generators (except Rooftop PV Solar Power Projects) connected to a pooling substation of capacity not less than 5 MW irrespective of commissioning date.

KEY POINTS

- Unlike in Karnataka and AP, Telangana’s order of F&S does not have a provision to provide aggregated forecast.
- **DSM Settlement will be done on a Weekly basis**, with Meter data to be provided by SLDC, and verification to be done in coordination with SLDC.
- The wind and solar generator or the QCA will provide payment security to SLDC by the way of BG or revolving LC which will cover the DSM payment for 6 months.
- De-pooling will be done in proportion to energy injected in each time block by each generator.
Analysis of Trading:

From April onwards, the new floor price of Rs 1,000 became applicable for both, Non-solar and Solar RECs category. The market scenario for both categories is very different - Non-solar RECs is a “sellers market”, having seen demand exceeding supply in March, and huge sales volumes in FY 17-18. Solar RECs, on the other hand, started trading in April after a break of 11 month. Thus, significant inventory was available in the market.

Overall, demand for both categories was robust. In the case of Non-solar RECs, prices also increased marginally. This is the first time since August 2012 that RECs have traded above the floor price.

Non Solar – A total of 401214 RECs were traded, despite demand being at 629069 (as compared to 538,371 RECs traded April 2017; an increase of 16.84%). Clearing ratio were 86.25% at IEX and 94.23% at PXIL . RECs traded at the floor price of Rs 1,000/ REC at PXIL, but increased to Rs 1,010/ REC at IEX.

Solar – A total of 914412 RECs were traded in the month of May (Increase of 4.4% over April 2017). Clearing ratio stood good at 14.20% and 23.38% in IEX and PXIL respectively.
Central Electricity Authority (CEA) is a statutory organization constituted under the Electricity Act, 2003. The organisation publishes monthly and yearly reports of the total installed capacity of renewable and non-renewable sources in the country. As per the March 2018 report, a total of 21651.48 MW solar power and 34046 MW of wind power was installed in the country. Overall states like Karnataka and Tamil Nadu in the South and Gujarat, Maharshatra and Rajasthan in the West have the highest installed capacity.

In terms of sector distribution, 2003 MW was installed by State governments, 1502 MW by Central government and leading with 65516 MW installation was private sector.

If we look at the renewable energy generation for the month of March and compare it yearly, wind and solar generation have seen a considerable increase. Wind generation increased by 23.39% as compared to March 2017 and solar generation was a huge jump of 98.17% to last year. Generation via Bagasse also saw an increase of 76.31%. However, Biomass and small hydro generation declined as compared to March 2017 with -43.22% and -25.92% respectively.
About REConnect Energy: REConnect Energy is India’s largest renewable energy services company with services offered under energy transactions management and predictive analytics for energy markets. In predictive analytics, the Company offers its energy forecasting and scheduling services to various utilities and wind/solar project developers. The current renewable energy forecasting portfolio stands at about 10,500MW at wind/solar farm level forecast and about 26,000MW at utility scale forecast where state/regional level forecasting is provided to some of the largest utilities in India. Under renewable energy certificate (REC) market, the Company represents about 45% of the market at national level. The Company is also supported by INFUSE Ventures, a venture fund supported by MNRE.

Awards & Industry Recognition

★ Best Indian Start-up, Indo-German Boot Camp (GIZ), Social Impact Lab - Berlin, Germany
★ Top 50 Indian Start-ups, The Smart CEO - 2016, Bangalore, India
★ Best Wind Energy Forecaster of the Year (2014/15/16), Indian Wind Energy Forum
★ Technology Start-up Enterprise of the Year (Energy & Utilities) - 2017, 24MRC Network, India
★ Top 100 Global Energy Start-ups, Start-up energy transition Awards, Berlin, German
★ Times Network Award in Innovation in Digital Energy Solutions, New Delhi, May 2017
★ Smart Start-up of the year- ISGF Innovation Awards , New Delhi February 2018.