



Prayas

Prayas (Energy Group)

Unit III A and B, Devgiri, Joshi Museum Lane, Kothrud Industrial Area, Kothrud, Pune - 411 038, India
Phone: +91-20-2542 0720, 6520 5726, Fax: 2543 9134; Website: www.prayaspune.org/peg

21st September, 2020

To,
Secretary, KERC,
Bengaluru.

Subject: Comments/Suggestions on 'Discussion Paper on Wheeling Charges and Banking Facility for Renewable Energy Projects'.

Dear Sir,

Please find enclosed comments/suggestions by Prayas (Energy Group) on above mentioned discussion paper. We request the commission to take our submission on record.

Thanking you,

Ashwin Gambhir, Shantanu Dixit, Ann Josey
Prayas (Energy Group).

Comments/Suggestions on 'Discussion Paper on Wheeling Charges and Banking Facility for Renewable Energy Projects', by Prayas (Energy Group), Pune.

Our comments on some aspects of the discussion paper are noted below.

1. The discussion paper clearly lays down the history of wheeling charges, losses and energy banking framework for Renewables as it evolved over the years. Essentially, from June 2005 – 2018, there were concessional wheeling and annual energy banking charges of 5% and 2% of energy in kind respectively. Further as per the May, 2018 order, concessional charges were continued till March, 2020.
2. As pointed out in the paper, the state has moved from a power deficit to a surplus situation, along with having a 50% share of RE in generation capacity (April, 2020) and more than 30% share in generation by FY 2019.
3. As section 7 notes, other states are also moving away from concessions/waivers for RE based OA. It is also clear from the paper that there is a wide range of banking frameworks with various categories of OA/ CPP/REC transactions being allowed/not allowed energy banking and with differing conditions like monthly/annual banking, varying charges and buy-back rates and constraints on injection/withdrawal.
4. Apart from the states mentioned in the paper, we would like to bring attention to the energy banking framework in Maharashtra. As per its first amendment to its OA regulations in 2019 (Regulation 20.1-20.5), it allows for monthly energy banking. Further, within the month, energy banked is adjusted as per the respective ToD slots. However, while energy banked during peak ToD slots may also be drawn during off-peak TOD slots, energy banked during off-peak TOD slots may not be drawn during peak TOD slots. Further, unutilised banked energy at the end of the month, limited to 10% of the actual total generation would be considered as deemed purchase by the DISCOM at the generic rate of that specific RE technology as per the ERC and this would get counted towards the DISCOM's RPO. Further, the amendment retains the choice of contract demand with the consumer and has provided two concessions to RE based open access transactions. First, such OA consumer's demand can be more than their contract demand with the distribution licensee (regulation 3.2). Second, the amendment (regulation 4.2) has also introduced a concept of notional contract demand and incremental demand charge for non RE based open access transactions that will not be applicable to RE based transactions.
5. Further, the paper notes that the GoK, as per its letter dated Feb, 2020 is recommending removal of banking, in part since it is not mentioned in the E Act, 2003. Further the letter states that allowing using power injected in the off-peak period in the peak period and buy back of power at 85% of the generic RE tariff is causing hardship on the DISCOM finances.

6. Considering all these developments, the KERC is proposing to
 - a. Levy 50% of wheeling and transmission charges and 100% of applicable losses as decided by KERC.
 - b. Discontinue banking facility for all types of RE projects. It further states that any energy banked and remaining un-utilized at the end of the month shall be deemed to have been supplied to the concerned ESCOM, free of cost. Further the removal of banking would be in effect from the date of this order or any Govt. order issued in this matter, whichever is earlier.
 - c. This would be applicable to all projects signing the Wheeling and Banking Agreement (WBA) after this order comes into effect. Control period for wheeling charges would be until March, 2022.

Prayas (Energy Group's) suggestion on the KERC proposal

1. We fully concur with the discussion paper in that new RE (esp. wind and solar at a 25-year fixed tariff of Rs 2.5-3/kWh) is certainly competitive with new thermal power and even some existing high marginal cost plants. Thus, there is no need for further concessions/waivers for RE based open access and captive power plants. We would recommend that the KERC levy the full normal charges and losses for RE based OA for all these four categories, namely
 - a. Transmission charges and losses
 - b. Wheeling charges and losses
 - c. Cross subsidy surcharge
 - d. Additional Surcharge
2. Thus, levying the full charges on RE based OA transactions would be appropriate since '*RE investments would not get hampered since RE-OA is cheaper than HT tariffs*' as noted in the paper. However, RE based OA transactions would not be able to thrive without some form of energy banking arrangement. Hence, with regard to the energy banking framework and its charges, we do not think that discontinuing the energy banking framework in its totality is an appropriate strategy going forward.
3. The crux of the energy banking issue is that it an annual service provided by the DISCOMs to OA/CPP consumers, for which they are paid a very nominal and adhoc rate of 2% of the energy in kind. This is significantly low compared to the alternative of installing energy storage as a counterfactual. Further, the time of injection and withdrawal and the value of such injection/withdrawal changes by time of the day and by seasons, depending on the load and generation mix available with the DISCOM. This is not captured by the 2% energy in kind rate for energy banking. Thus, there is certainly a hardship caused to the DISCOMs due to this arrangement.

An alternative potential energy banking framework for RE based Open Access

The banking mechanism has been a major facilitator for promotion of renewable energy based open access. The banking mechanism allows for the difference between variable (seasonal and diurnal) generation and load of open access consumer to be absorbed by the distribution utility. Banking is presently allowed by SERCs upon levy of a banking charge which differs in magnitude across states. Additionally, as noted above, various attributes of the energy banking framework such as seasonality constraints, buy back rates, accounting for RPO etc. also differ by states.

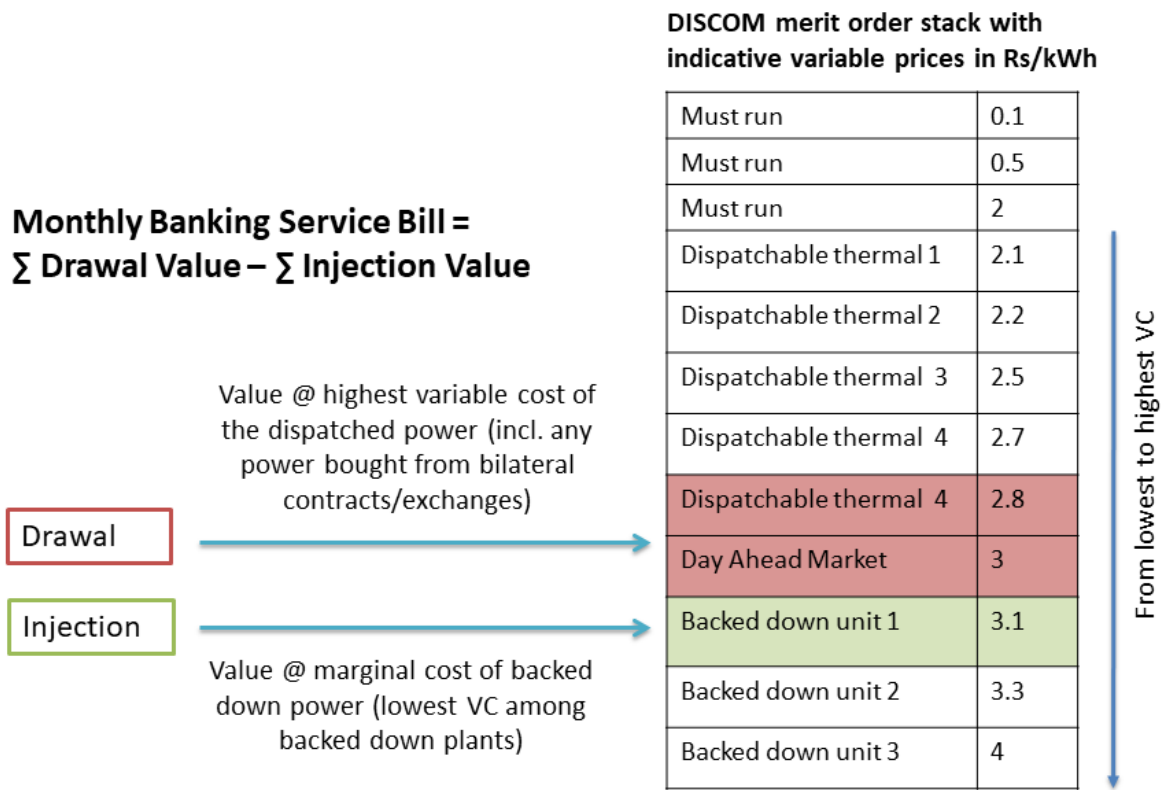
An alternative banking framework could be a banking charge on a per unit basis (Rs/kWh), instead of the present energy in-kind practice). This charge is to be determined based on the difference between power purchase cost at the time of banking of energy and its drawl, which is revenue neutral to both the DISCOM and the consumers eligible for banking. This is done by linking energy banking with the actual Merit Order Dispatch of the distribution utility. Thus energy banking framework could be as follows:

- a. For each 15-minute block, energy banked would be valued by the DISCOM at the lowest variable cost of the backed down power or the cost of power on the Day Ahead Market (or possibly a Green-TAM or Green-DAM in the future when liquidity increases, as this includes the value of the RPO) at that time, whichever is lower. If there is no backing down, then the energy banked for each 15-minute block would be valued at the cost of power on the Day Ahead Market (or possibly a Green-TAM or Green-DAM in the future when liquidity increases, as this includes the value of the RPO).
- b. Energy drawl for each 15-minute block would be charged by the DISCOM at the highest variable cost of the dispatched power (incl. any power bought from bilateral contracts/exchanges).
- c. Credit for energy banking and charges for drawl would be calculated for each 15-minute block and would be settled at the end of the month. Such monthly settlement will also avoid the need for specifying any buy-back rate for excess power banked with the DISCOM at the end of the year as was needed in the erstwhile banking framework.
- d. The green attribute for any un-utilised banked energy at the end of the year would be credited to the DISCOMs RPO.
- e. Since the banked energy is objectively valued both at the time of banking and drawl (thereby making the DISCOM revenue neutral for such transactions), there should not be any seasonal or Time of Day (ToD) based constraints on the banking and drawl of the banked energy subject to technical network constraints.
- f. Since wind and solar power have relatively low CUFs (20-35%), open access consumers may seek open access permission for capacity greater than their stated drawl requirement. However, to ensure that the energy banking service provided by the DISCOM is not misused, there is a need to cap the maximum RE generation capacity that can be procured in relation to the contract demand. A principle which can be considered for this is that the renewable energy capacity contracted should be such that there is no significant excess generation (say up to 10%) over the yearly energy demand of the consumer.

- g. Linking the banking charge to merit order dispatch of the distribution utility will also enable the market to compare the cost of flexibility and value addition by other options like storage.
- h. The ERC could also consider a nominal 5-10% mark up in banking charges for this specific service provided by the DISCOMs to consumers and not just keep it revenue neutral for the DISCOMs.

A schematic of the above banking proposal is shown in the Figure 1 below.

Figure 1: An alternative Energy Banking Service Valuation Framework

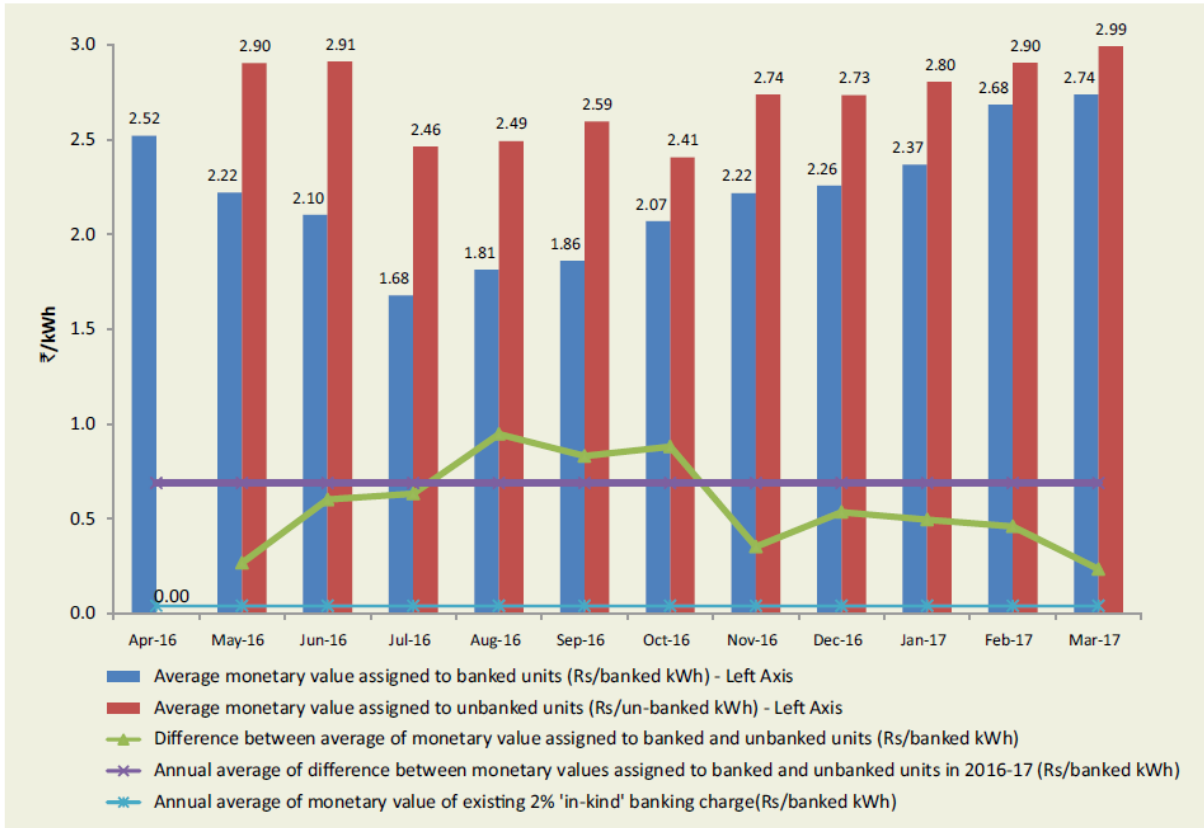


In fact, MSEDCL facing similar issues of RE variability and revenue loss had suggested a very similar proposal (in case 85 of 2017) to MERC for a new energy banking framework.

The analysis by Prayas (Energy Group) based on MSEDCL data provided in petition 85 of 2017 shows that the RE-OA consumer would have to pay anywhere between Rs 0.22 to Rs 0.81/kWh of banked energy as the banking charge. On average this works out to be Rs 0.69/kWh of banked energy for the year 2016-17. The monetary value of the 'in-kind' banking charge (2% of the banked energy), valued at the average lowest variable cost of backed down power per month, works out to a mere Rs 0.04/kWh of banked energy. If we assume that roughly 40% of the total renewable energy based OA

consumption is banked, this would increase the landed cost of each unit of power by Rs 0.28/kWh (40% of Rs 0.69/kWh). As the figure below shows, the landed cost of wind/solar power based OA in the MSEDCL area in 2017-18 is estimated to be ~ Rs 7.69/kWh. This assumes a power price of Rs 3.5/kWh, and includes the existing 2% in-kind banking charge which is valued at Rs 0.06 per kWh consumed. A move to the proposed banking valuation framework would increase the landed cost of each unit of power by Rs 0.22/kWh (Rs 0.28/kWh - Rs 0.06/kWh), resulting in a 3% increase in price.

Average monetary value of banked and un-banked energy (Rs/kWh) in MSEDCL area in FY 16-17



A detailed description of the energy banking framework is given in Section 3.5 of the 'Choosing Green: the status and challenges of RE-OA' report (pp. 29-36), which is attached with this submission.

* * * * *