

**BEFORE THE HON'BLE KERALASTATE ELECTRICITY
REGULATORY COMMISSION, KERALA**

IN THE MATTER OF:

Proposal for introducing incentive for prompt payment of electricity charges, load factor and bulk consumption submitted by KSEB &Petition of Binani Zinc Ltd on LF Incentive, PF Incentive and ToD Demand Charges

SUBMISSIONS FILED BY:

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Submissions of HT & EHT Association on Incentives

Table of Contents

A1: BACKGROUND.....3

A2: SUBMISSIONS.....4

 Incentive for Prompt Payment4

 Load Factor Incentive6

 ToD Maximum Demand.....11

 Power Factor Incentive12

A3: SUMMARY14

Submissions of HT & EHT Association on Incentives

A1: BACKGROUND

- 1.1 The Hon'ble APTEL in its Judgment dated 31-05-2013 in Appeal No. 179 of 2012 directed KSERC as given below

63. However, since the State Commission has decided that the question of introduction of incentive for load factor and prompt payment would be decided after examining the implications of these proposals and the Board has been directed to submit a detailed study on these issues, we feel that a time bound direction is necessary. Accordingly, we direct the Electricity Board to submit the relevant information on these issues as sought by the State Commission within 3 months from the date of this judgment and thereafter the State Commission shall decide the issue after hearing all concerned within 120 days for adoption by the State Commission in the subsequent tariff order. This issue is decided accordingly.

- 1.2 KSEB has now submitted their proposals and opinion on various incentives. We beg to submit that we strongly differ with many opinions of KSEB. Our submissions are given in the following pages.
- 1.3 M/s Binani Zinc Ltd has submitted a petition on Load Factor Incentive, PF Incentive and ToD Demand Charges. Our submissions on the same are also included in following pages.

Submissions of HT & EHT Association on Incentives

A2: SUBMISSIONS

Incentive for Prompt Payment

- 2.1 We, in our objections dated 5th June-2012 on petition filed by KSEB for revising the tariff applicable for the year 2012-13 had suggested that, an incentive @0.25% be given for payment within 10 days of the bill being received by the consumer.
- 2.2 Quoting the above, KSEB has proposed that, if the payment is made at least seven days in advance of the due date of payment, an incentive for prompt payment @0.20% of the bill amount (excluding electricity duty and Cess) shall be given to the consumers.
- 2.3 However, in our Objections to ARR & ERC Petition of KSEB for 2013-14 we had submitted as:

“4.21 The Commission should also introduce incentives / rebates for prompt payments, of 2% on energy bill on similar lines of other Commissions viz. Maharashtra, etc, which is equivalent to the incentive that the Board gets for prompt payment of its power bills”

- 2.4 Even though we had requested that a prompt payment incentive of 0.25% be introduced in our earlier objections, we now stand by the latest request of 2.0% made in our Objections dated 20-02-2013 on ARR & ERC Petition of KSEB for 2013-14. The justifications for the above request of 2.0% incentive are given below.
- 2.5 All the Licensees are getting ‘Prompt Payment Incentive’ of 2.0% for payment done within 7 to 10 days of bill date from CGS and Power Traders. This is uniformly accepted across India. Therefore, it is only fair that the same kind of treatment is given to the consumers of KSEB also.

Many Licensees across India are offering Prompt Payment Incentive to their consumers up to 2.0% of the bill amount. A list of a few States giving such incentives is given below:

Submissions of HT & EHT Association on Incentives

| State | % Incentive | Remark |
|---------------|-------------|----------------------------|
| Jharkhand | 2 | Within 2 days of bill date |
| | 1.67 | Within 3 to 5 days |
| | 1.2 | Within 6 to 12 days |
| | 0.67 | Within 13 to 20 days |
| | 0.13 | Within 21 to 28 days |
| Bihar | 10 ps/unit | Within 15 days |
| Maharashtra | 1.0% | Within 7 days |
| Delhi | 1.0% | Within 7 days |
| Odisha | 1.0% | Within 3 days |
| Chhatthisgarh | 0.5% | Within 7 days |

- 2.6 In our original request dated 5th June 2012, we had requested for an incentive of 0.25% for payment within 10 days of receipt of the bill by the consumer. But, KSEB has now proposed an incentive for payment before 7 days of the due date. 'Prompt payment' means a payment made within the due date and an "incentive for prompt payment" is for the payment within due date and not before due date.
- 2.7 **In the light of the above, we propose a prompt payment incentive of 2.0% of billed amount for payment made within 7 days of the bill date.**
- 2.8 There is considerable delay in receiving bills sent by KSEB to consumers. To avoid this, the Hon'ble Commission may direct KSEB to publish the monthly electricity bill in the case of HT & EHT consumers on the bill date itself in the website of KSEB and also send the same by e-mail to respective consumer on the bill date itself.

Submissions of HT & EHT Association on Incentives

- 2.9 Further, KSEB has also proposed that consumers in 'arrears' shall not be eligible for prompt payment incentive. To this we would like to comment that the term 'arrears' has created lot of confusion in the past. We, feel that KSEB has misrepresented the term and used it unfairly to the detriment of the consumers. In order to avoid such confusions in future we request that a clarification on the term 'arrears' be also given. Payment of any amount stayed by a court of law or referred to high power committee constituted by Government of Kerala shall not be considered as arrears.

Load Factor Incentive

- 2.10 On Load Factor Incentive KSEB's opinion in the petition is given below.

The HT&EHT consumers has been consistently demanding load factor incentives and also incentives for bulk energy consumption. The load factor and bulk consumption aims at increasing the energy consumption by the consumers. However, considering the scarcity of fuel and also for optimum utilization of the resources, the need of the hour is to conserve the electricity to the possible extent and to avoid the wasteful usage of electrical energy.

- 2.11 We would like to submit that 'Bulk Consumption Incentive' is not under consideration as APTEL has not directed KSERC to consider it. The purpose of Load Factor Incentive is not to incentivise bulk energy consumption as stated by KSEB. On the contrary it is for reducing the transmission losses, transformer losses and for better capacity utilisation of infrastructure of KSEB. Load Factor Incentive will not result in wasteful use of electricity. On the contrary it will result only in reducing losses. To substantiate this argument, we quote from the Tariff Order of West Bengal ERC for 2012-13.

8.2.1.1 In order to reduce the overall system T&D loss and to flatten the load curve by improving the existing system load factor of WBSEDCL the voltage- wise graded load factor rebate applicable for EHV and HV industrial consumers and L&MV industrial consumer under rate (B-ID) will be as per the following table.

- 2.12 We would like to deliberate on the advantages of high load factor as below.

- 2.13 Transmission Losses: High load factor of consumers reduces the transmission losses and consequently power purchase cost. Reduction in power purchase during 'peak' reduces purchase of expensive power. High LF reduces the transformer losses of licensee also.

Submissions of HT & EHT Association on Incentives

- 2.14 Capacity Utilization: Improved LF reduces the load on transmission lines and transformers. This permits additional loading of transmission lines and transformers. This results in better utilization of the available infrastructure of licensees and delays the requirement of additional transmission lines & transformer capacity.
- 2.15 LF incentive is a win-win proposition. Consumer gets paid for the extra effort for improving LF. The licensee gets benefited by way of reduction in transmission losses and better infrastructure utilization.
- 2.16 Now going into the mechanism of introducing load factor incentive we would like to submit as below.
- 2.17 Definition of Load Factor: Several States have adopted definitions based on Contract Demand. E.g. West Bengal and Maharashtra. We would like to point out that this is not the right method for defining Load Factor. Consider the following example:

A consumer with a CD of 10000 KVA draws 8000KVA during day, 6000KVA during peak and 9000 KVA during off-peak. He operates at 0.9PF at 85% LF during day, peak and off peak.

$$\begin{aligned} \text{Total energy consumption} &= 8000 \times 12 \times 30 \times 85\% \times 90\% \\ &+ 6000 \times 4 \times 30 \times 85\% \times 90\% \\ &+ 9000 \times 8 \times 30 \times 85\% \times 90\% \\ &= 44,06,400 \text{ units} \end{aligned}$$

$$\begin{aligned} \text{LF as per CD based formula} &= (44,06,4000 \times 100) / (10000 \times 0.9 \times 30 \times 24) \\ &= 68\% \end{aligned}$$

From the above example it can be seen that in the case of consumer having 85% LF the computed LF based on contract demand is only 68% which is not correct.

- 2.18 This discrepancy has to be overcome. The consumers who reduce their load during peak time and increase their load during off peak should not lose the LF incentive if they are operating during day, peak and off peak separately at high LF.

Submissions of HT & EHT Association on Incentives

2.19 Another drawback of the CD based formula is that the consumer will have to operate at load close to CD for availing LF incentive. This is not practical. Hence we propose the following formula for Load Factor calculation.

Load Factor is defined as the ratio of units consumed in a month to the product of number of hours of the month and Maximum Demand of the month in KW.

Thus in a 30day month,

Load Factor = Energy consumed in KWh/ (30X 24X Max Demand KVA X PF)

Maximum Demand:

In the context of 3 MDs in a month due to ToD tariff, a suitable definition of Maximum Demand is necessary.

Maximum Demand = (MD1 X 12 + MD2 X 4 + MD3 X 8)/ 24

where

MD1 = MD recorded during day

MD2 = MD recorded during peak

MD3 = MD recorded during off-peak

2.20 Alternatively, the definition prevailing in West Bengal which is given below may be adopted.

For the purpose of billing, the load factor of a consumer for a billing month shall be determined in accordance with the following formula:

Load Factor (%) =

(Energy Consumed in Kwh for the billing period × 100)/ (H – ΣHi) × MD+ Σ(Hi × RD_i)

Where

H = Total Hours in the billing period

MD = Maximum Demand for Load Factor Calculation

Submissions of HT & EHT Association on Incentives

= Recorded maximum demand in the billing period or 85% of the contract demand whichever is higher

Hi = The duration involved for ith incidence of interruption / total shed/ partial restriction on load in supplying power to the consumer by the licensee as specified under regulation 3.9.3 of these regulations.

RD_i = Restricted load imposed on the consumer corresponding to ith incidence or actual drawal during the period of such restriction whichever is higher.

2.21 Several states in India have introduced Load Factor incentives. Examples: West Bengal, Madhya Pradesh, Maharashtra, Odisha etc.

2.22 Examples of LF incentives in other States:

(1) West Bengal

Load Factor Rebate (Ps / kWh)

| Range of Load Factor (LF) | | Supply Voltage | | |
|---------------------------|-----------|----------------|------|------------|
| | | Below 33kV | 33kV | Above 33kV |
| Above 55% | Up to 60% | 1 | 2 | 3 |
| Above 60% | Up to 65% | 7 | 8 | 9 |
| Above 65% | Up to 70% | 14 | 29 | 39 |
| Above 70% | Up to 75% | 20 | 35 | 45 |
| Above 75% | Up to 80% | 25 | 40 | 50 |
| Above 80% | Up to 85% | 30 | 45 | 55 |
| Above 85% | Up to 90% | 35 | 50 | 60 |
| Above 90% | Up to 92% | 40 | 55 | 65 |
| Above 92% | Up to 95% | 45 | 50 | 70 |
| Above 95% | | 50 | 65 | 75 |

Submissions of HT & EHT Association on Incentives

Industrial consumer whose contract demand is 1.5 MVA or above will get additional rebate as per following table subject to the condition that payment is made within the due date.

Additional Load Factor Rebate (paise/kWh)

| Load Factor | 2012-13 |
|------------------------|----------------|
| Above 65% but upto 80% | 22 |
| Above 80% | 42 |

(ii) Odisha (2013-14)

| Load Factor (%) | HT | EHT |
|------------------------|--------------------|--------------------|
| Up to 50% | 565 ps / kWh | 560 ps / kWh |
| >50% = <60% | 490 ps / kWh (25%) | 485 ps / kWh (13%) |
| >60% | 435 ps / kWh (27%) | 430 ps / kWh (11%) |

(iii) Maharashtra (2013-14)

| Load Factor(%) | Incentive |
|--|--|
| 75 to 85 | Rebate of 0.75% for every percentage point increase in load factor |
| Above 85 | Rebate of 1% for every percentage point increase in load factor |
| Total rebate will be subject to a ceiling of 15% of energy charges | |

2.23 In the case of consumers availing open access, for computing load factor, total energy drawn by the consumer (energy from KSEB + energy from open access) has to be considered. However, incentive may be for energy from KSEB.

Submissions of HT & EHT Association on Incentives

2.24 In view of the foregoing deliberations, we request the Hon'ble Commission to introduce load factor incentive in Kerala as per the formula proposed by us and in line with schemes prevailing in other states mentioned above.

ToD Maximum Demand

2.25 The very purpose of ToD tariff structure is to discourage peak loading and to encourage shifting of load from peak to off peak. In the Tariff Order for 2013-14, ToD structure for Demand charges was discontinued. ToD structure for Demand charges was prevailing in Kerala from 1998 onwards.

2.26 Several industries used to shift their load from peak to off peak. The discontinuation of ToD structure for demand charges has affected those industries very badly.

2.27 Prior to the current tariff order, normal, peak or off peak demand charges were calculated separately applying factors 12/24, 4/24 and 8/24 and 100%, 140% and 85% (number of hours and incentives). Now highest of the three Max demands is charged for the whole month.

2.28 On one side, consumers are asked to shift load from peak to off peak. Afterwards, the demand charges corresponding to the increased load is charged for the whole month. This is extremely unfair and it has to be corrected.

2.29 The tariff for demand charges which has been made uniform during normal, peak & off peak may continue to be uniform as decided by the Hon'ble Commission. We propose charging Demand charges for Normal, Peak and off peak applying factors 12/24, 4/24 and 8/24 as was done earlier. The method of billing as per our proposal is given below:

Demand charges:

(i) Normal = Normal demand X demand charges X 12/24

(ii) Peak = Peak demand X demand charges X 4/24

(iii) Off peak = Off peak demand X demand charges X 8/24

2.30 No change is proposed in the methodology for the billing of excess demand.

Submissions of HT & EHT Association on Incentives

2.31 The above proposal does not affect any consumer generally; but allows more incentive to consumers who shift their load from peak to off peak. But, it will affect a consumer owning a captive small hydel power plant and has a special billing agreement with KSEB. In their case, the existing billing system may be continued.

Power Factor Incentive

2.32 Higher Load power factor results in the reduction of reactive power generation at the source and reactive power flow in the network. This, in turn reduces the ampere loading of power network components such as transformers, switchgears and transmission lines which effectively release system capacity, enabling better utilization of power generators and transmission network in a given power system. Over and above it reduces transmission losses.

2.33 At present there is a Power Factor Incentive scheme which provides a rebate of 0.25% on energy charges for increase of every 1% above 90% PF. So the maximum incentive, for a consumer operating at unity PF is 2.5%. This is very low compared to PF incentives offered in many other states.

2.34 Power Factor Incentive schemes prevailing some of the other states are given below.

(1) Madhya Pradesh

Power Factor Incentive:

If the average monthly power factor of the consumer is equal to or more than 85%, incentive shall be payable as follows:

| Power Factor | Percentage incentive payable on billed energy charges |
|---------------------|---|
| Above 85% up to 86% | 0.5 |
| Above 86% up to 87% | 1.0 |
| Above 87% up to 88% | 1.5 |
| Above 88% up to 89% | 2.0 |
| Above 89% up to 90% | 2.5 |
| Above 90% up to 91% | 3.0 |
| Above 91% up to 92% | 3.5 |
| Above 92% up to 93% | 4.0 |
| Above 93% up to 94% | 4.5 |
| Above 94% up to 95% | 5.0 |
| Above 95% up to 96% | 6.0 |
| Above 96% up to 97% | 7.0 |
| Above 97% up to 98% | 8.0 |
| Above 98% up to 99% | 9.0 |
| Above 99% | 10.0 |

Submissions of HT & EHT Association on Incentives

(2) Maharashtra

| Sr. No | Range of PF | PF Level | Incentive |
|--------|----------------|----------|-----------|
| 1 | 0.951 to 0.954 | 0.95 | 0% |
| 2 | 0.955 to 0.964 | 0.96 | 1% |
| 3 | 0.965 to 0.974 | 0.97 | 2% |
| 4 | 0.975 to 0.984 | 0.98 | 3% |
| 5 | 0.985 to 0.994 | 0.99 | 5% |
| 6 | 0.995 to 1.00 | 1.0 | 7% |

(3) Bihar

5. Power Factor Rebate

In case the average power factor (monthly) of the consumer is more than 90% (0.90) a power factor rebate at the following rates shall be allowed.

| | |
|--|---|
| For each increase of 0.01 in power factor above 0.90 upto 0.95 | 0.5 (half) percent on demand and energy charge (Actual Recorded) |
| For each increase of 0.01 in power factor above 0.95 | 1.0 (one) percent on demand and energy charges. (Actual Recorded) |

(4) Gujarat

13.6.2 Power Factor Rebate:

If the power factor of the consumer's installation in any month is above 95%, the consumer will be entitled to a rebate at the rate of 0.5% (half percent) in excess of 95% power factor on the total amount of electricity bill for that month under the head "Energy Charges" for every 1% rise or part thereof in the average power factor during the month above 95%.

We request the Hon'ble Commission to modify the Power Factor Incentive scheme in Kerala as **"Rebate of 0.75% on energy charges for increase of every 1% above 90% PF."**

Submissions of HT & EHT Association on Incentives

A3: SUMMARY

3.1 In the light of the explanations in the foregoing paragraphs we request the Hon'ble Commission to

1. To introduce Prompt Payment Incentive of 2.0% of billed amount for payment made within 7 days of the bill date.
2. To introduce Load Factor Incentive with a proper formula and scheme similar to examples as detailed in the foregoing pages.
3. To modify the ToD demand charges on pro rata basis as given in the foregoing pages
4. To modify PF incentive scheme as "Rebate of 0.75% on energy charges for increase of every 1% above 90% PF."