

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 159/MP/2020**

**Coram:  
Shri P.K. Pujari, Chairperson  
Shri I.S. Jha, Member  
Shri Arun Goyal, Member**

**Date of Order: 27<sup>th</sup> January 2021**

**In the matter of**

Submission under sub-section (4) of section 28 of Electricity Act 2003 read with Regulation 6 & Regulation 29 of Central Electricity Regulatory Commission (Fees & charges of Regional Load Despatch Centre and other related matters) Regulations, 2015 for approval of Performance Linked Incentive for ERLDC for the financial year 2018-19 with reference to ERLDC Charges for the control period 1.4.2014 to 31.3.2019.

**And  
In the matter of**

Eastern Regional Load Despatch Centre  
14, Golf Club Road, Tollygunge, Kolkata - 33  
Power System Operation Corporation Ltd. (POSOCO)  
(A Govt. of India Enterprise)

**....Petitioner**

**Vs.**

1. Chairman, Bihar State Holding Co. Ltd.,  
Vidyut Bhavan, Bailey Road, Patna,  
Bihar 800021
2. Chairman, Jharkhand Urja Vikash Nigam Limited,  
Dhurwa Road, Ranchi, Jharkhand 834002
3. Chairman, Damodar Valley Corporation,  
DVC Tower, VIP Road, Kolkata, WB 700054
4. Chairman, Grid Corporation of India Ltd,  
Janpath, Bhubaneswar, Odisha 751022



5. Secretary, Power Deptt., Govt. of Sikkim,  
Kaji Road Sikkim Gangtok 731101
6. Chairman, West Bengal State Electricity  
Distribution Corporation Limited,  
Bidyut Bhavan, Saltlake, Kolkata WB 700091
7. Executive Director, ERTS – I,  
Power Grid Corporation Limited, Board Colony,  
Shastri Nagar, Patna-800023
8. Addl. General Manager,  
NTPC Vidyut Vyapar Nigam Limited,  
Lodhi Road New Delhi 110003.
9. The DGM(Commercial),  
Power Grid Corporation Of India Ltd.,  
RHQ, ERTS-II, CF-17, Action Area-1C,  
New Town, Kolkata 700156, West Bengal.
10. General Manager,  
Farakka Super Thermal Power Plant-I&II,  
NTPC Ltd., Farakka, WB 742236
11. General Manager,  
Kahalgaon Super Thermal Power Plant-I  
NTPC Ltd, Bhagalpur Bihar 813214
12. General Manager,  
Kahalgaon Super Thermal Power Plant-II NTPC Ltd,  
Bhagalpur Bihar 813214
13. Executive Director,  
Talcher Super Thermal Power Stn-I NTPC Ltd,  
Nayapalli, Odisha 751012
14. Chief Engineer (Elect),  
Teesta V HEP, NHPC,  
Singtam, East Sikkim 737134
15. Chief Engineer,  
Rangit Hydro Electric Project NHPC,  
P.O. Rangit Nagar South Sikkim 737111
16. Chairman, Damodar Valley Corporation DVC Tower,  
VIP Road West Bengal Kolkata 700054
17. General Manager,



Farakka Super Thermal Power Plant-III,  
NTPC Ltd., Farakka, WB 742236.

18. CEO, Maithon Power Limited MA-5 Gogna Colony,  
P.O: Maithon, Dhanbad, Jharkhand 828027

19. Addl. General Manager,  
National Thermal Power Corporation Limited,  
BARH Thermal Power Station, Patna, Bihar 803213

20. President & Director - Projects,  
GATI Infrastructure Pvt.Ltd, 268,  
Udyog Vihar, Phase-IV, Gurgaon, Haryana 122001

21. DGM (Electrical),  
Adhunik Power & Natural Resource Limited Village: Padampur,  
PS: Kandra Tata-Seraikela Road, Jharkhand 832105.

22. Addl. General Manager (Commercial),  
Talcher Solar PV, ER-II Headquarters,  
NTPC Limited, 3rd Floor, OLIC Building,  
Plot No.: N-17/2, Nayapalli, Odissa  
Bhubaneswar 751012.

23. GM (Power Sales & Regulatory),  
GMR Kamalanga Energy Ltd, Plot No.-29,  
Satyanagar, Bhubaneswar, Odissa-751007.

24. Head Power & Sales,  
Jindal India Thermal Power Ltd.,  
Plot No.12, Local Shopping Complex,  
Sector-B1, Vasant Kunj, New Delhi- 110070.

25. Head Commercial,  
Tata Power Trading Co. Ltd.,  
C-43, Sec-62, UP Noida 201307.

26. Sr. General Manager (PP),  
Grid Corporation of India Ltd.,  
Janpath, Orissa, Bhubaneswar 751022.

27. AGM, Dans Energy Pvt. Ltd. 5th Floor,  
DLF Building No. 8, Tower C, DLF Cyber City,  
Phase – II, Gurgaon-122002, Haryana.

28. The General Manager(O&M),  
Bharatiya Rail Bijlee Company Ltd. Nabinagar,  
Khera Police Station Dist.-Aurangabad, Bihar-824303.



29. Sr.Vice President(O&M),  
Teesta Urja Ltd. (Teesta -III HEP) Vijaya Building,  
2nd Floor, 17 Barakhamba Road, New Delhi 110001.
30. VP(Commercial),  
Sneha Kinetic Power Project Private Ltd,  
1366, Road no. 45, Jubilee Hills,  
Hyderabad 500033, Telangana.
31. President –Technical,  
Shiga Energy Private Ltd., 5th Floor,  
DLF Building No.8, Tower C, Phase-II,  
Gurgaon 122002, Haryana.
32. GM (C&RA), OPGC, Zone-A, 7<sup>th</sup> Floor,  
Fortuna Towers, Chandrashekharapur,  
Bhubaneswar, 751023, Odisha.
33. General Manager (O&M),  
Darlipali Super Thermal Power Project, NTPC Ltd.  
Odisha Darlipali, Sundergarh 770072.
34. AGM(EEMG), Nabinagar Power  
Generation Corporation Ltd, NPGC Nabinagar,  
Bihar Aurangabad 831014
35. Chairman, East North Interconnection Company Ltd.,  
C-2, Mathura Road, New Delhi 110065
36. Executive Director, ER-I,  
Power Grid Corporation (I) Ltd,  
Board Colony, Shastri Nagar, Patna- 800023.
37. General Manager,  
Powerlinks Transmission Limited, Vidyut Nagar,  
Siliguri WB 734015.
38. Head- Asset Manament/O&M,  
Purulia & Kharagpur Transmission Comp. Ltd,  
634A-Tulip New Minal Residency, J.K Road  
Near Ayodhya Bypass Road, Bhopal-462023.
39. Sr.Vice President, Teestavalley Power  
Transmission Ltd., Vijaya Building, 2nd Floor, 17  
Barakhamba Road, New Delhi -110001.



40. Project Director, Odisha Generation Phase-II Transmission Limited, F-1 Mira Corporate Suites, 1&2 Ishwar Nagar, Okhla Crossing, Mathura Road, New Delhi-110065.

41. The General Manager, Darbhanga-Motihari Transmission Company Ltd., A-26/03, Mohan Cooperative Industrial Estate, Mathura Road, New Delhi 110044.

.....Respondents

**Parties Present:**

Shri Vivek Upadhyay, ERLDC  
Shri Manas Das, ERLDC

**ORDER**

The Petitioner, Eastern Regional Load Despatch Centre (ERLDC), has filed the present petition under Section 28(4) of the Electricity Act, 2003 (hereinafter referred to as 'the Act') read with Regulations 6 and 29 of Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2015 (hereinafter referred to as the "Fees and Charges Regulations 2015") for approval of Performance Linked Incentive (hereinafter referred to as "PLI") for ERLDC for the financial year 2018-19 with reference to ERLDC Charges for the control period 1.4.2014 to 31.3.2019.

2. Brief facts of the case leading to filing of the petition and subsequent developments after the filing of the petition are capitulated as under:

(a) The Petitioner setup under Section 27 of the Act performs functions specified in Section 28 of the Act. National Load Despatch Centre (NLDC) and Regional Load Despatch Centres (RLDCs) are operated by Power System Operation Corporation Limited (POSOCO) in accordance with the Notification dated 27.9.2010 of Ministry of Power, Government of India.



(b) As per Regulations 29(1), 29(2) and 29(3) of the Fees and Charges Regulations 2015, the recovery of performance linked incentive by NLDC and RLDCs shall be based on the achievement of Key Performance Indicators (KPIs) as specified in Appendix V of the Fees and Charges Regulations 2015 or other such parameters as specified by the Commission.

(c) As per Regulation 29(6) of the Fees and Charges Regulations 2015, RLDCs or NLDC are required to compute the KPIs on annual basis for the previous year ending 31<sup>st</sup> March and submit to the Commission for approval as per Appendix V and VI of the Fees and Charges Regulations.

(d) As per methodology specified in Appendix-V and VI of the Fees and Charges Regulations 2015, KPI score for ERLDC for the financial year 2018-19 ending 31.3.2019 has been submitted by the Petitioner as under:

Sl. No	Key Performance Indicators	Weightage	Previous Year (as allowed by CERC (2017-18))	Current Year (2018- 19)
1	Interconnection Meter Error	10	10.00	10.000
2	Disturbance Measurement	10	10.00	10.000
3	Average processing time of shutdown request	10	10.00	10.000
4	Availability of SCADA system	10	10.00	10.000
5	Voltage Deviation Index (VDI)	10	10.00	10.000
6	Frequency Deviation Index (FDI)	10	10.00	10.000
7	Reporting of System Reliability	10	10.00	10.000
8	Availability of Website	10	9.99	10.000
9	Availability of Standby Supply	5	5.00	5.000
10	Variance of Capital expenditure	5	3.83	2.877
11	Variance of Non-Capital	5	4.96	5.000
12	Percentage of Certified Employee	5	5.00	5.000
	<b>Total</b>	<b>100</b>	98.78	97.877

(e) As per the methodology provided in the Regulation 29(5) of the Fees and Charges Regulations 2015, NLDC/ RLDCs shall be allowed to recover 7% of



annual charges for aggregate performance level of 85% for three years commencing from 1.4.2014. The incentive shall increase by 1% of annual charges for every 5% increase of performance level above 90%.

(f) Further, the Commission in its Order dated 10.6.2019 in Petition No. 344/MP/2018 has decided as under:

“62.

*....in exercise of provisions of “Power to Relax” under Regulation 35 of Fees and Charges Regulations, 2015 we hereby relax Regulation 29(5) of Fees and Charges Regulations, 2015 and direct that RLDCs or NLDC, as the case may be, shall be allowed to recover incentive of 15% of annual charges post implementation of pay revision w.e.f 1.1.2017 subject to ceiling as per DPE Guidelines in place of 7%, keeping other provisions of Regulation 29(5) same. In case of shortfall as per DPE Guideline, the balance amount shall be paid from the LDCD fund”*

(g) Accordingly, as per the Petitioner, recovery of Performance Linked Incentive comes at 16.575% as in the following table (For 90-95% additional 1% and for 95% to 97.877% additional 0.575%) of the Annual charges for the year 2018-19:

	<b>Score</b>		
Slabs	>85%	90-95 %	95-97.877 %
% age Incentive (Slab wise)	7	1	0.575
As Per Order in 344/M/2018	15	1	0.575
Net Incentive as %age of Annual Charges	<b>16.575</b>		

3. Against the above background, the Petitioner has filed the present petition with the following prayers:

*(a) Approve the proposed performance linked incentive based on the KPIs computed by ERLDC for the year ending 31.3.2019 given at para 5, the KPI score given at para 6 and PRP percentage of Annual Charges of the year 2018-19 as per para 8 of the Petition.*

*(b) Allow the Applicant to recover the fund for PLI from the users for the year 2018-19 as approved by the Hon’ble Commission.*

*(c) Pass such other order as the Hon’ble Commission deems fit and appropriate in this case and in the interest of justice.*



4. The petition was heard on 25.2.2020 and notices were issued to the Respondents to file their replies. Vide Record of Proceedings for hearing dated 25.2.2020, the Petitioner was directed to submit the following on affidavit, by 16.3.2020:

*“(a) Detailed note on methodology followed by POSOCO as per DPE OM dated 3.8.2017, for yearly Performance Linked Incentive claimed/recovered from users;*

*“(b) As per above methodology, detailed calculations showing limiting amount as per DPE OM and its annexures, with audited actual data for 2014-18 period for Performance Linked Incentive; and*

*“(c) Annual Reports/Financial Statements for the year 2018-19.”*

5. The Petitioner vide affidavit dated 16.3.2020 has submitted the aforementioned information. Petitioner has submitted the PRP (performance related pay) as paid and PRP payable as per OM (office memorandum) dated 3.8.2017 of the Department of Public Enterprises, Government of India (DPE) for the FY 2016-17 and FY 2017-18. Further, Petitioner has submitted that POSOCO commenced functioning as a separate Schedule-A CPSE (Central Public Sector Enterprise) with effect from 3.1.2017. Prior to that, POSOCO was a wholly owned subsidiary of Power Grid Corporation of India Ltd. (PGCIL). During the financial years 2014-15 and 2015-16, when POSOCO was a subsidiary of PGCIL, all the calculations of performance linked incentive/ performance related pay (PLI/PRP) and approvals thereof from the competent authority were being taken by PGCIL. As no calculation was made by POSOCO for PRP/PLI payment for these years, same is not available with POSOCO and is, therefore, not submitted. The Petitioner has submitted following figures of PLI/PRP for ERLDC:

(Figures in Rs. Lakh)

ERLDC	2014-15	2015-16	2016-17	2017-18
Maximum PRP	-	-	245.54	506.37





payable as per DPE OM				
PLI actually disbursed/paid to Employees	114.62	140.17	193.18	480.9
PLI recovered from the users	211.62	180.45	204.19	465.45

6.The petition was further heard on 29.5.2020. Vide Record of Proceedings for hearing dated 29.5.2020, the Petitioner was directed to submit copy of approval of Board of POSOCO on PRP/PLI payments for each year (2014-15 to 2018-19) of the 2014-19 tariff period.

7.In compliance with directions vide RoP in hearing dated 29.5.2020, the Petitioner vide affidavit dated 19.6.2020 has submitted the copy of approval of Board of POSOCO on PRP/PLI payments for each of years from 2014-15 to 2018-19.

### **Analysis and Decision**

8.The present petition has been filed under Regulations 6 and 29 of the Fees and Charges Regulations 2015 for approval of Performance Linked Incentive for the financial year 2018-19. Regulations 6 and 29 of the Fees and Charges Regulations 2015 are extracted as under:

*“6. Application for determination of fees and charges:*

*(1) The RLDCs and NLDC shall make application in the formats annexed as Appendix I to these regulations within 180 days from the date of notification of these Regulations, for determination of fees and charges for the control period, based on capital expenditure incurred and duly certified by the auditor as on 1.4.2014 and projected to be incurred during the control period based on the CAPEX and the REPEX.*

*(2) The application shall contain particulars such as source of funds, equipments proposed to be replaced, details of assets written off, and details of assets to be capitalized etc.*



(3) Before making the application, the concerned RLDC or NLDC, as the case may be, shall serve a copy of the application on the users and submit proof of service along with the application. The concerned RLDC or NLDC shall also keep the complete application posted on its website till the disposal of its petition.

(4) The concerned RLDC or NLDC, as the case may be, shall within 7 days after making the application, publish a notice of the application in at least two daily newspapers, one in English language and one in Indian modern language, having circulation in each of the States or Union Territories where the users are situated, in the same language as of the daily newspaper in which the notice of the application is published, in the formats given in Appendix II to these regulations.

(5) The concerned RLDC or NLDC, as the case may be, shall be allowed the fees and charges by the Commission based on the capital expenditure incurred as on 1.4.2014 and projected to be incurred during control period on the basis of CAPEX and REPEX duly certified by the auditor in accordance with these Regulations:

Provided that the application shall contain details of underlying assumptions and justification for the capital expenditure incurred and the expenditure proposed to be incurred in accordance with the CAPEX and REPEX.

(6) If the application is inadequate in any respect as required under Appendix-I of these regulations, the application shall be returned to the concerned RLDC or NLDC for resubmission of the petition within one month after rectifying the deficiencies as may be pointed out by the staff of the Commission.

(7) If the information furnished in the petition is in accordance with the regulations and is adequate for carrying out prudence check of the claims made the Commission shall consider the suggestions and objections, if any, received from the respondents and any other person including the consumers or consumer associations. The Commission shall issue order determining the fees and charges order after hearing the petitioner, the respondents and any other person permitted by the Commission.

(8) During pendency of the application, the applicant shall continue to bill the users on the basis of fees and charges approved by the Commission during previous control period and applicable as on 31.3.2014, for the period starting from 1.4.2014 till approval of the Fees and Charges by the Commission, in accordance with these Regulations.

(9) After expiry of the control period, the applicant shall continue to bill the users on the basis of fees and charges approved by the Commission and applicable as on 31.3.2019 for the period starting from 1.4.2019 till approval of fees and charges under the applicable regulations.”

**“29. Performance linked incentive to RLDCs and NLDC:**

(1) Recovery of incentive by the Regional Load Despatch Centre shall be based on the achievement of the Key Performance Indicators as specified in Appendix V or such other parameters as may be prescribed by the Commission.



*(2) Each Regional Load Despatch Centre shall submit its actual performance against each of the key performance indicators to the Commission on annual basis as per the format specified in Appendix V.*

*(3) NLDC shall submit the details in regards to each Key Performance Indicator in the format specified in Appendix V along with the methodology for approval of the Commission.*

*(4) The Commission shall evaluate the overall performance of the RLDCs or NLDC, as the case may be, on the basis of weightage specified in Appendix V. The Commission, if required, may seek advice of the Central Electricity Authority for evaluation of the performance of system operator.*

*(5) The RLDCs or NLDC, as the case may be, shall be allowed to recover incentive of 7% of annual charges for aggregate performance level of 85% for three years commencing from 1.4.2014 and for aggregate performance level of 90% from 1.4.2017. The incentive shall increase by 1% of annual charges for every 5% increase of performance level above 90%: Provided that incentive shall be reduced by 1% of annual charges on prorata basis for the every 3% decrease in performance level below 85%.*

*(6) The RLDCs or NLDC, as the case may be, shall compute the Key Performance Indicators on annual basis for the previous year ending on 31st March and submit to the Commission along with petitions for approval of the Commission as per Appendix V and Appendix VI of these Regulations:*

*Provided that the key performance indicators of previous year ending on 31st March shall be considered to recover incentive on each year and shall be trued up at the end of the control period.”*

9. In light of the above provisions, we have considered the Petitioner's claim for PLI.

The Petitioner has submitted that the Commission has notified various performance indicators and their weightage for determination of fees and charges in the Fees and Charges Regulations 2015 and performance on these KPIs has been quantified to make it measurable. The Petitioner has submitted KPI-wise details which have been dealt with in the succeeding paragraphs:

#### **KPI-1: Reporting of Inter-connection metering error**

10. The Petitioner has submitted that the meter readings are processed on weekly basis and an error could only be detected after processing the same and after going through the validation process. According to the Petitioner, RLDCs are reporting the



meter errors on weekly basis and these are made available on websites as per the provisions in the Regulation. Therefore, the possible number of reports in a year is 52 which have been converted to percentage based on the actual reporting. Percentage performance has been proportionately converted to marks scored.

11.The total weightage given for this parameter is 10. The Petitioner has submitted performance-wise details as under:

Performance during financial year 2018-19 (In %) A* =	100
Marks scored (In proportion of the percentage performance above)	10
*Formula for performance calculation	[No. of weekly reports issued /52 (Total no. of Weeks)]*100

12.The Petitioner has submitted that as per Regulation 2.3.2 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (hereinafter referred as the “Grid Code”), RLDCs are responsible for meter data processing. Accordingly, problems related to meters including those installed at inter-regional/ international tie points are reported by concerned RLDCs to the utilities for corrective action. It has submitted that as per Regulation 6.4.22 of the Grid Code, computations on metering data are to be made available to the regional entities for checking/ verifications for a period of 15 days. Accordingly, the data on inter-connection meter error is made available in public domain on regular basis for checking/ verifications of regional entities. This information on inter-connection meter error is published on the website <http://erldc.in/market-operation/metering-error/> on a weekly basis.

13.We have considered the submission of the Petitioner. Since the Petitioner has complied with the provisions of Regulation 6.4.22 of the Grid Code, the claims of the



Petitioner for weightage factor for reporting of inter-connection meter error is allowed for the purpose of incentive. As per Appendix VI of the Fees and Charges Regulations 2015, the weightage factor for reporting of inter-connection meter error is considered 10 out of 10.

**KPI-2: Reporting of Grid Incidents and Grid Disturbance:**

14.The Grid Incidents and grid disturbances are reported by the RLDCs to NLDC on monthly basis. The same are then compiled and independently verified by National Load Despatch Centre. Afterwards reports are sent to the Commission on monthly basis as a part of monthly operational report issued by National Load Despatch Centre in accordance with the Grid Code. As the reporting on grid incidences and grid disturbances are generated on monthly basis, target reports to be generated have been considered to be 12. Percentage performance has been measured based on the actual number of reports generated, which has been proportionately converted to marks scored.

15.The Petitioner has submitted that as against the total weightage of 10 for the parameter “reporting of grid incidents and grid disturbance”, actual incidents of such events during the financial year 2018-19 are as under:

<b>Grid Incidents and Grid Disturbances for financial year 2018-19</b>			
Category	Count (Nos.)	Recovery Period (HH:MM:SS)	Loss of Energy (MUs)
GI-1	4	3:10:00	0.00
GI-2	25	29:06:00	0.00
GD-1	54	62:17:00	5.32
GD-2	0	0:00:00	0.00



GD-3	0	0:00:00	0.00
GD-4	0	0:00:00	0.00
GD-5	0	0:00:00	0.00
<b>All</b>	<b>83</b>	<b>94:33:00</b>	<b>5.32</b>

16.A copy of the report is also available in public domain on POSOCO website (<https://posoco.in/reports/monthly-reports/monthly-reports-2018-19/>). The details for the report as well as the relevant page numbers for the financial year 2018-19 are as follows:

Sl. No.	Month	Date of Reporting	Concerned Page Numbers
1	April 2018	23 <sup>rd</sup> May 2018	Page 44 – 60
2	May 2018	22 <sup>nd</sup> June 2018	Page 44 – 60
3	June 2018	23 <sup>rd</sup> July 2018	Page 44 – 59
4	July 2018	23 <sup>rd</sup> August 2018	Page 44 – 53
5	August 2018	23 <sup>rd</sup> September 2018	Page 44 – 59
6	September 2018	23 <sup>rd</sup> October 2018	Page 44 – 55
7	October 2018	22 <sup>nd</sup> November 2018	Page 44 – 51
8	November 2018	21 <sup>st</sup> December 2018	Page 44 – 52
9	December 2018	23 <sup>rd</sup> January 2019	Page 44 – 51
10	January 2019	22 <sup>nd</sup> February 2019	Page 44 – 53
11	February 2019	22 <sup>nd</sup> March 2019	Page 44 – 52
12	March 2019	23 <sup>rd</sup> April 2019	Page 44 – 56

17.The Petitioner has submitted performance-wise details as under:

Performance during financial year 2018-19 (In %) * =	100
Marks scored (In proportion of the percentage performance above)	10
<b>*Formula for performance calculation:</b>	(No. of Monthly reports issued /12)*100

18.We have considered the submissions of the Petitioner. Perusal of the above reveals that the Petitioner is reporting incident of grid disturbance each month. Accordingly, as per Appendix VI of the Fees and Charges Regulations 2015, the weightage factor for reporting of grid incidents and grid disturbance is considered 10



out of 10 and the claims of the Petitioner for weightage factor for reporting of grid incidents and grid disturbance is allowed for the purpose of incentive.

### **KPI-3: Average processing time of shut down request**

19. The Petitioner has submitted that the shutdown coordination process, uniform across all the RLDCs, has been discussed and approved at regional power committee (RPC) level. Time allowed to NLDC for approval of shut-down requests is 26 hours and to RLDCs, it is 50 hours (including NLDC time of 26 hours). This methodology has been devised considering primarily the planned outages approved in the monthly Operation Coordination Committee (OCC) meetings of RPCs which are processed by RLDCs on D-3 basis (3-day ahead of actual day of outage) based on confirmation from the shutdown requesting agency and the then prevailing grid conditions. Procedure to streamline the process of transmission outage coordination between SLDCs, RLDCs, NLDC, RPCs and Indenting Agencies was developed by NLDC in 2013 and approved in OCC fora of different regional power committees (RPCs). As per the approved process, RLDC approves the shutdown requests of inter-State transmission lines and NLDC approves the shutdown requests for inter-regional and all 765 kV transmission lines. RLDCs after processing the shut down requests at regional level forward the list to NLDC for impact assessment at national level. After clearance from NLDC, the final list of cleared shut down requests is intimated by respective RLDCs to the requesting agencies on D-1 (i.e. one day ahead of the proposed date of outage). Relevant extract of approved procedure is as under:

*“e) The Detailed outage procedure will be as per NLDC “Procedure for Transmission Elements Outage Coordination” as amended from time to time enclosed at Annexure 20”*



20.The relevant Extracts of NLDC Outage Procedure is as under:

**“6. Procedure for approval of outage on D-3 basis**

6.1. Planned Outages which have been approved in the OCC meeting of a region shall be considered for approval by RLDCs/NLDC on D-3 basis. This practice is necessary to realize the seriousness and readiness of the agency which indented the outage request in the first place as it is observed that many outages are not availed as per the monthly scheduled. IN case the agency indenting the shutdown does not plant to avail the outage, RLDCs must be informed at least 3 days in advance.

6.2. Request for outage which are approved by OCC must be sent by the owner of the transmission asset at least 3 days in advance to respective RLDC by 1000 hours. If an outage is to be availed on say 10<sup>th</sup> of the month, the indenting agency would forward such requests to the concerned RLDC on 7<sup>th</sup> of the month by 1000 hours.

6.3. In case the owner is not availing the OCC approved outage, the same shall be intimate to the respective RLDC at least 3 days in advance.

6.4. Any planned outage which is not approved in OCC shall not be considered.”

21.As per above outage procedure, shutdown processing time for NLDC/ RLDCs is

as tabulated below:

Sl. No.	Activity	Day	Time (hrs.)
1	Request of shutdown from indenting agency to concerned RLDC.	D-3	1000
2	Forwarding request of shutdown requiring NLDC approval from RLDC to other concerned RLDCs and NLDC (along with the recommendations and study result)	D-2	1000
3	Comments of other RLDCs or NLDC	D-2	1600
4	Approval or Rejection of Request	D-1	1200

As per table above:

Shutdown Processing Time for NLDC is Calculated as: Sr. No (4) - Sr. No (2) = 26hrs

Shutdown Processing Time for RLDC is Calculated as: Sr. No (4) - Sr. No (1) = 50hrs

22.The total weightage for the parameter “average processing time of shut down request” is 10. The Petitioner has submitted average processing time of shut down request during the financial year 2018-19 as under:





S.No.	Month	Total No of shutdown request in a month (B)	Total time (hrs) taken to approve the shutdown in a month(A)	Total time(hrs) taken to approve the shutdown in a month/Total No of shutdown requests in a month(C=A/B)
1	April'18	54	1393.57	25.81
2	May'18	52	1586.62	30.51
3	June'18	76	1716.55	22.59
4	July'18	62	863.20	13.92
5	August'18	65	1618.58	24.90
6	September'18	61	855.70	14.03
7	October'18	63	1343.28	21.32
8	November'18	77	2615.48	33.97
9	December'18	83	2040.35	24.58
10	January'19	93	2539.08	27.30
11	February'19	96	2367.75	24.66
12	March'19	66	1218.90	18.47
	Total	848	20159.07	23.77

#### For ERLDC

Performance during the financial year 2018-19 (In %)	100
Marks scored (In proportion of the percentage performance above)	10
*Formula for performance calculation	$IF((A-B*50)>0, (1-(A-B*50))/(B*50))*100,100)$

23.We have considered the submission of the Petitioner and verified its claims. As per Appendix VI of the Fees and Charges Regulations 2015, weightage for average processing time of shut down request is considered as 10 out of 10.

#### KPI-4: Availability of SCADA

24.SCADA systems installed in RLDCs and NLDC is a collection of software and hardware modules which provide essential functions like (i) real time data reporting from field; (ii) real time data exchange between various Load Despatch centres; (iii) historical data archiving & retrieving; (iv) network analysis studies; (v) grid dispatcher training; (v) document management system; and (vi) MIS reporting:



25. SCADA system at NLDC acquires real time data from RLDCs through dedicated communication links either on communication network implemented through Unified Load Despatch & Communication Scheme (ULDC) or through POWERTEL (communication network provided by the CTU).

26. Similarly, SCADA system at RLDC acquires real time data from Remote Terminal Unit (RTU)/ Sub-Station Automation System (SAS) for central sector stations and IPP stations installed in respective region through ULDC communication network. In case ULDC communication network is not available, POWERTEL communication network is used. Real time data from various SLDCs of the region is fetched through ICCP protocol on dedicated communication links provided through ULDC (with redundancy)/ POWERTEL.

27. Main reasons of outages of real-time data are:

- a. Failure of critical SCADA servers (hardware level)
- b. Failure of critical SCADA applications (software level)
- c. Communication failure

28. Critical infrastructure of SCADA is redundant at server and network level to ensure standby operation and availability in case of any contingency. In case, data at Main control centre is not available, then Back-up control centre is utilized to visualize the real-time data.

29. SCADA systems are covered under long term maintenance contract by System Integrator/ OEM having financial implications in case of outages even in the component level. The System Integrator is required to attend the issues as per timelines defined in the maintenance contract, failing which a portion of the



maintenance charges can be deducted as penalty measure. Records of all incidences are maintained along with resolution details. Measures for the maintenance contract have been kept stringent so that it does not affect the overall SCADA system availability to the grid operators. The records for KPI are generated in line with above philosophy.

30.Both Main and Back-up SCADA systems have two SCADA servers working in redundant mode with one of the servers in master role and the other in standby role. Consequently, services of SCADA system are considered available when at least one of the redundant servers is up. In the event of failure of both the SCADA servers at Main control centre (CC), monitoring of regional grid can be done through SCADA system of Backup control centre. Accordingly, for the purpose of computation of SCADA availability, the status of main and standby SCADA servers at Main control centre and Backup control centre is checked. If any one of the servers is working at any instant and real time SCADA data is available to the control room, the SCADA system is considered to be available.

31.The SCADA system at Main control centre and Back-up control centre is checked for healthiness on daily basis based on server logs and system alarms of SCADA system in hardware and software levels. Daily check on healthiness of SCADA system components such as servers, networks, and processes etc. is made by the System Integrator and kept in record.

32.There are different levels of severities depending upon the criticality of the failures. Loss of SCADA system to control room is categorised as Severity 1. If due



to any fault/ malfunctioning, the real time grid operations get affected, down time is recorded for the period for which the malfunctioning persisted. The severity matrix as per maintenance contract is given below:

<b>Category</b>	<b>Definition</b>
Severity 1 - Urgent	Complete system failure, severe system instability, loss or failure of any major subsystem or system component such as to cause a significant adverse impact to system availability, performance, or operational capability
Severity 2 - Serious	Degradation of services or critical functions such as to negatively impact system operation. Failure of any redundant system component such that the normal redundancy is lost  Non-availability of System Integrator's Man-power at Control Centre during working hours, non-availability of spares
Severity 3 – Minor	Any other system defect, failure, or unexpected operation
Severity 4 - General/ Technical Help	Request for information, technical configuration assistance, "how to" guidance and enhancement requests

33.If both Main and Back-up servers of SCADA system are down and Grid operators are not getting any data through SCADA system, the incident is considered with highest severity and the same contributes to unavailability. However, as communication networks are provided by ULDC/ POWERTEL/ third party lease lines, RLDC does not have direct control over the availability of each links. As such, data outage due to communication network is not considered under SCADA availability calculation. Formula for monthly availability computation is as below:

$$\% \text{ Monthly system availability} = (\text{THM} - \text{D}) * 100 / \text{THM}$$

Where,

THM = Total no. of hours in that Month

D = Downtime recorded in that Month (In hours)



34.The total weightage for this parameter is 10. The Petitioner has submitted percentage availability of 12 months (April 2018 to March 2019) as 100. The marks claimed by the Petitioner are as follows:

Performance during the financial year 2018-19*	<b>100</b>
Marks scored (in proportion of the percentage performance above)	<b>10</b>
* Average of 12 months	

35.We have considered the submission of the Petitioner and verified its claims. Accordingly, as per Appendix VI of the Fees and Charges Regulations 2015, the marks scored for “availability of SCADA” has been allowed as 10 out of 10.

#### **KPI-5: Voltage Deviation Index**

36.The total weightage for the parameter Voltage Deviation Index (VDI) is 10. The Petitioner has submitted the details of VDI as under:

<b>KPI-5: Voltage Deviation Index (VDI)</b>				
Name of the Region: Eastern Regional Load Despatch Centre				
<b>S. No.</b>	<b>Name of the 400/765 kV substation</b>	<b>Intimation to utilities through Daily reports for corrective action or not</b>	<b>Intimation to utilities through weekly reports for corrective action or not</b>	<b>Intimation to utilities through monthly reports for corrective action or not</b>
A	B	C	D	E
1	Angul_PG_765	Yes	Yes	Yes
2	Jhars_PG_765	Yes	Yes	Yes
3	Nranchi_PG_765	Yes	Yes	Yes
4	Gaya_PG_765	Yes	Yes	Yes
5	Sasaram_PG_765	Yes	Yes	Yes
6	Angul_PG_400	Yes	Yes	Yes
7	Jhars_PG_400	Yes	Yes	Yes
8	Nranchi_PG_400	Yes	Yes	Yes
9	Gaya_PG_400	Yes	Yes	Yes
10	Sasaram_PG_400	Yes	Yes	Yes
11	APNRL_PG_400	Yes	Yes	Yes
12	Baharampur_PG_400	Yes	Yes	Yes
13	Banka_PG_400	Yes	Yes	Yes
14	Barh_PG_400	Yes	Yes	Yes



<b>KPI-5: Voltage Deviation Index (VDI)</b>				
Name of the Region: Eastern Regional Load Despatch Centre				
15	BHVDC_PG_400	Yes	Yes	Yes
16	Biharshariff_PG_400	Yes	Yes	Yes
17	Bolangir_PG_400	Yes	Yes	Yes
18	Durgapur_PG_400	Yes	Yes	Yes
19	Farakka_PG_400	Yes	Yes	Yes
20	Gazuwaka_PG_400	Yes	Yes	Yes
21	Indravati_PG_400	Yes	Yes	Yes
22	Jamshedpur_PG_400	Yes	Yes	Yes
23	Jeypore_PG_400	Yes	Yes	Yes
24	JITPL_PG_400	Yes	Yes	Yes
25	Kahalgaoan_PG_400	Yes	Yes	Yes
26	Kalabadia_PG_400	Yes	Yes	Yes
27	Keonjhor_PG_400	Yes	Yes	Yes
28	Maithon_PG_400	Yes	Yes	Yes
29	Malda_PG_400	Yes	Yes	Yes
30	MTHRB_PG_400	Yes	Yes	Yes
31	Muzaffarpur_PG_400	Yes	Yes	Yes
32	Patna_PG_400	Yes	Yes	Yes
33	Purnea_New_PG_400	Yes	Yes	Yes
34	Ranchi_PG_400	Yes	Yes	Yes
35	Rangpo_PG_400	Yes	Yes	Yes
36	Rengali_PG_400	Yes	Yes	Yes
37	Rourkela_PG_400	Yes	Yes	Yes
38	Binaguri_PG_400	Yes	Yes	Yes
39	Sterlite_PG_400	Yes	Yes	Yes
40	Subhasgram_PG_400	Yes	Yes	Yes
41	Tala_PG_400	Yes	Yes	Yes
42	Talcher_PG_400	Yes	Yes	Yes
43	Teesta_V_PG_400	Yes	Yes	Yes
44	Talcher_HVDC_PG_400	Yes	Yes	Yes
45	Darbhangga_PG_400	Yes	Yes	Yes
46	Dikchu_PG_400	Yes	Yes	Yes
47	IBEUL_PG_400	Yes	Yes	Yes
48	Chandwa_PG_400	Yes	Yes	Yes
49	Chaibasa_PG_400	Yes	Yes	Yes
50	Bokaro_a_DV_400	Yes	Yes	Yes
51	DSTPS_DV_400	Yes	Yes	Yes
52	Koderma_DV_400	Yes	Yes	Yes
53	Mejia_B_DV_400	Yes	Yes	Yes
54	Raghunathpur_DV_400	Yes	Yes	Yes
55	TISCO_DV_400	Yes	Yes	Yes
56	GMR_GR_400	Yes	Yes	Yes
57	Indravati_GR_400	Yes	Yes	Yes
58	Arambag_WB_400	Yes	Yes	Yes
59	Bakreswar_WB_400	Yes	Yes	Yes



<b>KPI-5: Voltage Deviation Index (VDI)</b>				
Name of the Region: Eastern Regional Load Despatch Centre				
60	Jeerat_WB_400	Yes	Yes	Yes
61	Kolaghat_TP_WB_400	Yes	Yes	Yes
62	PPSP_WB_400	Yes	Yes	Yes
63	Sagardighi_WB_400	Yes	Yes	Yes
64	Meeramundali_GR_400	Yes	Yes	Yes
65	Mendhasal_GR_400	Yes	Yes	Yes
66	Bidhannagar_WB_400	Yes	Yes	Yes
67	Haldia_WB_400	Yes	Yes	Yes
68	Alipurduar_PG_400	Yes	Yes	Yes
69	Kishanganj_PG_400	Yes	Yes	Yes
70	Pandiabili_PG_400	Yes	Yes	Yes
71	Gokarna_WB_400	Yes	Yes	Yes
72	Duburi(NEW)_GR_400	Yes	Yes	Yes
73	Nabinagar_PG_400	Yes	Yes	Yes
74	Lakhisarai_PG_400	Yes	Yes	Yes
75	Kharagpur_WB_400	Yes	Yes	Yes
76	Motihari_DMCTL_400	Yes	Yes	Yes
77	Daltongunj_PG_400	Yes	Yes	Yes
78	Chanditala_WB_400	Yes	Yes	Yes

37. The Petitioner has submitted that VDI is calculated in line with the methodology specified in Appendix VI of the Fees and Charges Regulations 2015. Voltage Deviation Index of important substations is calculated on daily, weekly as well as monthly basis and same is intimated to utilities via daily, weekly and monthly reports. VDI for each important station is calculated as the percentage of time the voltage was outside the range specified in the Grid Code (380-420 kV at 400 kV level, 728-800 kV at 765 kV level). For this purpose, data recorded by SCADA is used. The percentage of samples lying outside the range specified in the Grid Code constitutes VDI for the station. A sample calculation is shown below:

<b>Sub-Station</b>	<b>%age of time Voltage below 728 / 380kV</b>	<b>%age of time Voltage between 728 /380 kV &amp; 800/420kV</b>	<b>%age of time Voltage above 800/420kV</b>	<b>Voltage deviation index (%age of time voltage is outside</b>	<b>Maximum Voltage (kV)</b>	<b>Minimum Voltage (kV)</b>



				<b>IEGC band)</b>		
Ranchi New	0.00%	100.00%	0.00%	0.00%	792	769

38.The Petitioner has submitted that Clauses 3.5.1 and 3.5.2 of the ERLDC Operating Procedure 2018-19, gives the corrective actions to be taken in the event of voltage going high and low. Relevant extract from the procedure is reproduced below:

**“ 3.5.1 High Voltage:**

*In the event of high voltage (e.g. 400 kV voltage going beyond 415 kV and having a rising trend) following specific steps would be taken by the respective grid substation/generating station at their own, with intimation to ERLDC, unless specifically mentioned by ERLDC/SLDCs. Before taking any voltage control action the reason for high voltage as observed /reported be carefully studied. The network adjoining to the substation/s experiencing high voltage be also carefully studied and areas/substations /generating stations be identified where voltage control measures need to be taken in the following order of priority*

- a) *The switchable line/tertiary reactor are taken in ( a list of Bus reactors /line reactors and tertiary reactors available at ER grid is enclosed at Annexure VII ).*
- b) *The Generating units on bar at the stations in proximity to high voltage areas, absorb reactive power within the limits of their capability curves.*
- c) *Optimization of the filter banks at HVDC terminal (provided high voltage is being experienced in the vicinity of the terminal)*
- d) *Check the possibility of changing the transformer Tap if one side of ICT is witnessing High voltage while other side is having low voltage.*
- e) *Checking possibility of rerouting /change of power flow on HVDC terminals so that loading on parallel EHV network can be altered that may result in reduction in voltage.*
- f) *ERLDC/SLDCs shall consider opening one circuit of lightly loaded multi circuit lines around the area /substation where high voltage is reported, ensuring security of the balance network. In case it becomes essential to switch out one of the circuits of inter-regional lines to mitigate high voltage at one or more inter-regional sub-stations, due consent would be obtained from the concerned neighbouring RLDC (s) and NLDC.*

**3.5.2 Low Voltage Condition**

*In the event of low voltage(e.g. 400 kV voltage going below 390 kV and have a declining trend), following specific steps would be taken by the respective grid substation/generating station at their own, with intimation to ERLDC, unless specifically*





*mentioned otherwise by ERLDC/SLDCs. However, before taking any voltage control action, the reason for low voltage as observed /reported is to be carefully studied. The network adjoining the substation/s experiencing low voltage to be also carefully studied and areas/substations /generating stations to be identified where voltage control measures need to be taken in the following order of priority*

- a) Close the lines which were opened to control high voltage after obtaining due permission from ERLDC/SLDCs.*
- b) The bus reactor be switched out*
- c) The switchable line/tertiary reactor be taken out*
- d) All generating units on bar shall generate reactive power upto the limits of their respective capability curves.*
- e) Optimization of the filter banks at HVDC terminal*
- f) Check the possibility of changing the transformer Tap if one side of ICT is witnessing Low voltage while other side is having High voltage*
- g) Operate hydro generator for VAR generation i.e. at lagging p.f.*
- h) Check possibility of altering HVDC power flow settings on HVDC terminals so that loading on parallel EHV network goes down resulting in rise in voltage.”*

39.The Petitioner has submitted that corrective actions are taken in real time grid conditions, by ERLDC at 400 kV, 765 kV and inter-State level by opening/ closing shunt reactors, transmission lines etc. Apart from these, based on feedback from RLDCs, region-wise persistent high voltage and low voltage issues are being reported in ‘NLDC Operational feedback’ every quarter on website <https://posoco.in/documents/operational-feedback-on-transmission-constraints/>. For voltage deviations taking place in/ resulting from inter-State system, ERLDC writes regularly to the constituents/ utilities and also discusses in the OCC meetings of ERPC.

40.At ERLDC, reporting of VDI for important 400 kV and above substation was considered for KPI-5 for 2018-19. Weblink for reporting VDI for all 400 kV and above substations is as under:

KPI-5 (VDI)	Web Link on ERLDC website
Daily VDI	<a href="http://erldc.in/mis-reports/vdi-daily/">http://erldc.in/mis-reports/vdi-daily/</a>
Weekly VDI	<a href="http://erldc.in/mis-reports/vdi-weekly/">http://erldc.in/mis-reports/vdi-weekly/</a>
Monthly VDI	<a href="http://erldc.in/mis-reports/vdi-monthly/">http://erldc.in/mis-reports/vdi-monthly/</a>



41.The Petitioner has submitted that persistent problems of low/ high voltage are identified in the quarterly operational feedback submitted to CTU and CEA. The total weightage given for this parameter is 10. The Petitioner has submitted performance-wise details as under:

Performance during financial year 2018-19*	<b>100</b>
Marks scored (In proportion of the percentage performance above)	<b>10</b>
* Formula for performance calculation	$\frac{(((\text{No. of daily reports issued (to be derived from column C)/365}(\text{Total no. of days in financial year 2018-19}) * 100) + (\text{No. of weekly reports issued (to be derived from column D)/ 52}(\text{Total no. of weeks in financial year 2018-19}) * 100) + (\text{No. of monthly reports issued (to be derived from column E/12}) * 100))}{3}}$

42.We have considered the submission of the Petitioner and verified its claims. Accordingly, as per Appendix VI of the RLDC Fees and Charges Regulations 2015, weightage for VDI is allowed as 10 out of 10.

**KPI-6: Frequency Deviation Index**

43.The Petitioner has submitted that Frequency Deviation Index (FDI) is calculated as the percentage of time frequency is outside the band prescribed in the Grid Code. The total weightage for FDI is 10. The Petitioner has submitted month-wise details of FDI for the period from April 2018 to March 2019.

44.Ten second synchrophasor data is used for the calculation of FDI. The percentage of samples lying below 49.90 Hz and above 50.05 Hz together constitutes FDI. The sample is shown below:

Date	Percentage of time frequency is			Freq. Deviation Index (FDI)	Average Frequency (Hz)
	<49.90 Hz	49.90 - 50.05 Hz	>50.05 Hz		
1.5.2018	1.98	78.74	19.28	21.26	50.00

45. The frequency deviation indices are being reported on daily basis for the critical nodes along with weekly and monthly reporting as per provisions of the Regulations. The possible no. of reports which could be generated (365 for daily, 52 for weekly and 12 for monthly) has been converted to KPI scores based on the actual reporting. ERLDC uploads the information on Frequency Deviation Index (FDI) on website in daily, weekly and monthly reports. The relevant web links are as under:

KPI-6 (FDI)	Web Link on ERLDC website
Daily FDI	<a href="https://posoco.in/reports/frequency-profile/frequency-profile-2018-19/">https://posoco.in/reports/frequency-profile/frequency-profile-2018-19/</a>
Weekly FDI	<a href="https://erlhc.in/mis-reports/weeklyreports/">https://erlhc.in/mis-reports/weeklyreports/</a>
Monthly FDI	<a href="https://erlhc.in/mis-reports/weeklyreports/">https://erlhc.in/mis-reports/weeklyreports/</a>

46. The total weightage for this parameter Reporting of frequency deviation index (FDI) is 10. The Petitioner has submitted that it has issued daily, weekly and monthly Reports for the months of April 2018 to March 2019.

Performance during financial year 2018-19*	<b>100</b>
Marks scored (In proportion of the percentage performance above)	<b>10</b>
*Formula for performance calculation	$\left[ \left( \frac{\text{No. of daily reports issued}}{365} \times (\text{Total no. of days in financial year 2018-19}) \times 100 \right) + \left( \frac{\text{No. of weekly reports issued}}{52} \times (\text{Total no. of weeks in financial year 2018-19}) \times 100 \right) + \left( \frac{\text{No. of monthly reports issued}}{12} \times 100 \right) \right] / 3$



47. We have considered the submission of the Petitioner and verified its claims. Accordingly, as per Appendix VI of the Fees and Charges Regulations 2015, weightage for FDI is allowed as 10 out of 10.

**KPI-7: Reporting of System Reliability**

48. The Petitioner has submitted that deviation indices are being reported on daily basis for the critical nodes along with weekly and monthly reporting as per the Fees and Charges Regulations 2015. The Petitioner has submitted that the possible number of reports which could be generated (365 for daily, 52 for weekly and 12 for monthly) have been converted to KPI scores based on the actual reporting.

49. The weightage for this parameter is 10. The Petitioner has submitted that it has reported (a) (N-1) violations; (b) ATC violations; and (c) Angle difference between important buses through daily, weekly and monthly reports for the months of April 2018 to March 2019. The Petitioner has submitted the following reports of system reliability:

(a) Reporting of (N-1) violations

X*	<b>100</b>
*Formula	$\frac{[(\text{No. of daily reports issued} / 365 (\text{Total no. of days in financial year 2018-19})) * 100 + (\text{No. of weekly reports issued} / 52 (\text{Total no. of weeks in financial year 2018-19})) * 100 + (\text{No. of monthly reports issued} / 12 * 100)]}{3}$

(b) Reporting of ATC violations

Y*	<b>100</b>
*Formula	$\frac{[(\text{No. of daily reports issued} / 365 (\text{Total no. of days in FY 2018-19})) * 100 + (\text{No. of weekly reports issued} / 52 (\text{Total no. of weeks in FY 2018-19})) * 100 + (\text{No. of monthly reports issued} / 12 * 100)]}{3}$



(c) Reporting of angle difference between important buses

Z*	<b>100</b>
*Formula	$\left[ \left( \frac{\text{No. of daily reports issued}}{365} (\text{Total no. of days in FY 2018-19}) * 100 \right) + \left( \frac{\text{No. of weekly reports issued}}{52} (\text{Total no. of weeks in FY 2018-19}) * 100 \right) + \left( \frac{\text{No. of monthly reports issued}}{12} * 100 \right) \right] / 3$
Performance during financial year 2018-19*= Marks scored (In proportion of the percentage performance above)	<b>10</b>
*Formula	<b>(X+Y+Z)/3</b>

50. With reference to the System Reliability, the Petitioner has submitted that % of times N-1 criteria (i.e. Total Transfer Capability) was violated in the inter-regional corridors, ATC violation and angular difference between important buses are being reported by ERLDC on daily, weekly and monthly basis. The relevant web links is <https://erldc.in/mis-reports/system-reliability-indices/>.

51. We have considered the submission of the Petitioner and verified its claims. Accordingly, weightage for reporting system reliability is allowed as 10 out of 10.

**KPI-8: Availability of website**

52. In regard to the availability of websites the Petitioner has submitted the following:

**(i) Redundancy of ISPs & web servers:**

In order to maintain continuous availability of website, ERLDC maintains two websites (viz. erldc.org and erldc.in) which are identical to each other in all respects. The two web sites are hosted from two different servers through two different internet service providers (ISP). Each ISP supports one of the two websites (erldc.org and erldc.in). The selection of two service providers has been done judiciously after scrutinizing their infrastructure up to ERLDC



building. This ensures adequate redundancy necessary for uninterrupted access to ERLDC website.

(ii) **Checking the website availability:**

For evaluation of website availability, Each ISP availability is commercially linked to the quarterly payment through a service level agreement (SLA) mechanism. Further, each ISP link availability is verified from the firewall analyzer at ERLDC. Each website server generates its server logs, which automatically maintains the list of activities it performed. Thus, instance of server failure (if any) is captured through these server logs. These systems generated logs are used for calculation of monthly availability of ERLDC website. Depending upon the availability of website, month-wise %age availability has been calculated. Then, %age average availability of 12 months has been proportionately converted to marks scored.

53.The weightage for the parameter “availability of website” is 10. The Petitioner has submitted the details of percentage of availability of website for 12 months (April 2018 to March 2019). The details of marks claimed are as follows:

Performance during financial year 2018-19*	<b>100</b>
Marks scored (In proportion of the percentage performance above)	<b>10</b>
* Average of 12 months	

54.We have considered the submission of the Petitioner. Since the Petitioner is reporting availability of website as 100%. The weightage for availability of website is allowed as 10 out of 10.

**KPI-9: Availability of Standby power supply**

55.The Petitioner has submitted that power to all the critical infrastructures are supplied through redundant UPS system and battery system. Inputs to these are being supplied either through incoming feeders or through DG sets in case of failure of main inputs. These auxiliary systems are also under AMC and are being checked/



tested on regular basis. The Petitioner has submitted that trial runs are carried out on weekly basis to check the DG set availability and daily records are being maintained at each of the locations. The Petitioner has submitted the month-wise percentage in line with the methodology of incentive calculation prescribed in Regulation 29(5) of the Fees and Charges Regulations 2015. The Petitioner has submitted that percentage performance has been proportionately converted to marks scored.

56. The Petitioner has submitted the details of percentage of availability of standby power supply for 12 months (April 2018 to March 2019). The weightage for the parameter “availability of standby power supply” is 5. The Petitioner has submitted availability of standby power supply as under:

Performance during financial year 2018-19*	<b>100</b>
Marks scored (In proportion of the percentage performance above)	<b>5</b>
* Average of 12 months	

57. We have considered the submission of the Petitioner. Since the Petitioner has claimed availability of standby power supply as 100%, weightage allowed for availability of standby power supply is 5 out of 5.

**KPI-10: Variance of Capital expenditure:**

58. The weightage for the parameter “Variance of capital expenditure” is 5. The Petitioner has submitted the details of Variance of Capital Expenditure as under:

(Rs.in lakh)			
Capital Expenditure allowed by CERC (A)	Actual incurred (B)	Expenditure	% Variation C= ABS (A-B)/A)*100
55.90	325.69		482.63

59. The Petitioner has submitted that while calculating the performance under KPI-10, the figures as per the previous orders on fees and charges issued by CERC for



the control period 2014-19 have been considered as targets and the figures as per the Auditor Certificate have been taken as actual performance.

60. The Petitioner has further submitted that the variance in CAPEX/ REPEX expenses for FY 2018-19 though is 482.63% based on actual expenses incurred and expenses approved by the Commission. This variance is on account of backlogs/ differences in expenditure incurred during the previous years (i.e. FY 2014-15 to FY 2017-18) of the control period (01.04.2014 - 31.03.2019) due to various unavoidable circumstances and constraints such as criticality faced while executing the civil renovation works, technical challenges due to migration of technology, delay in resource availability etc. Total expense incurred for the control period 2014-19 is Rs.2365.10 Lakhs against an approved CAPEX/ REPEX of Rs.2366.87 Lakhs.

61. Marks claimed by the Petitioner for this KPI is as under:

Performance during FY 2018-19*:	57.54
<b>* Formula</b>	<b>IF(C&gt;10, 100-(C-10)/3,100)#</b>
Marks Scored (in proportion of the %age performance above)	2.877
<i>* Average of 12 months</i>	
<i># Up to 10% variation, performance is proposed to be considered 100% and for any additional 3% variation beyond initial 10%, performance shall be decrease by 1% in line with the methodology of the incentive calculation prescribed in Regulation 29(5) of the Fees and Charges Regulations 2015.</i>	

62. The Petitioner has submitted that limit of up to 10% variation has been considered for claiming 100% performance and for any additional 3% variation beyond initial 10%, performance shall decrease by 1% in line with the methodology of the incentive calculation prescribed in the Regulation 29(5) of the Fees and Charges Regulations





2015. The Petitioner has submitted that percentage performance has been proportionately converted to marks scored.

63. We have considered the submission of the Petitioner. We observe that for variance of 482.63% in capital expenditure allowed vs. actuals for FY 2018-19, performance comes out to be (-) 57.54% and accordingly score shall be zero out of 5. We do not agree with the claim of Petitioner to consider cumulative expenditure allowed vs actual during the previous years (i.e. FY 2014-15 to FY 2017-18) of Control period. Accordingly, weightage allowed for variance of capital expenditure is 0 (zero) out of 5 (five).

**KPI-11: Variance of Non-Capital expenditure**

64. The weightage for the parameter “variance of non-capital expenditure” is 5. The Petitioner has submitted the details of variance of non-capital expenditure as under:

(Rs.in lakh)

Non-Capital Expenditure allowed by CERC (A)	Actual Expenditure incurred (B)	% Variation $C = \text{ABS}(A-B)/A * 100$
3035.88	2758.66	9.13

Performance during financial year 2018-19*	<b>100</b>
<b>*Formula</b>	<b>IF(C&gt;10,100-(C-10)/3,100)#</b>
Marks Scored (in proportion of the percentage performance above)	5
<i>*Average of 12 months</i>	
<i># Up to 10% variation, performance is proposed to be considered 100% and for any additional 3% variation beyond initial 10%, performance shall be decrease by 1% in line with the methodology of the incentive calculation prescribed in Regulation 29(5) of the RLDC Fees and Charges Regulations 2015.</i>	

65. The Petitioner has submitted that for calculating the performance against KPI-11, the figures as per the orders on fees and charges issued by CERC for the control



period 2014-19 and CERC order in Petition no. 344/MP/2018 along with IA 26/2019, dated 10.06.19 have been considered as targets and the figures as per the Auditor Certificate have been taken as actual performance. Limit of up to 10% variation has been considered for claiming 100% performance and for any additional 3% variation beyond initial 10%, performance shall decrease by 1% in line with the methodology of the Incentive calculation prescribed in the Regulation 29(5) of the Fees and Charges Regulations 2015. Percentage performance has been proportionately converted to marks scored.

66. We have considered the submissions of the Petitioner. Based on the percentage variance, weightage for variance of non-capital expenditure is allowed as 5 out of 5.

**KPI-12: Percentage of certified employees**

67. The Petitioner has submitted that the certification framework was introduced in 2011 based on recommendations of G.B. Pradhan Committee Report, which called for “Introduction of a system of ‘certification’ of System Operators by an independent body such as the NPC/NPTI” and “Establishment of an Institute for training of system operators. National Power Training Institute (NPTI) may be entrusted with the responsibility of training initially”

68. Accordingly, a framework was developed for system operators from the States and POSOCO for training and certification, with NPTI appointed as the certifying agency. The framework provides for Basic Level, Specialist Level and Management Level Courses. Till date 7 (seven) Basic Level certification and 6 (six) Specialist Level certifications have been conducted (Three on regulatory framework in power



sector, two on power system reliability and one on power system logistics). The examinations are held online on all-India basis. Basic Level Certification is a foundation level exam where all system operators in the country can appear, whereas Specialist Level examinations focus on a particular area of expertise. Validity of both certificates is three years. System operators are required to have at least one certificate still in its validity period to be qualified as certified.

“Eligible”- includes all executives who are in technical functions posted in the respective RLDC/ NLDC on the cut-off date (excluding HR, Finance, Legal, Company Secretariat, Executive Secretaries etc.).

69.The weightage for the parameter “variance of percentage of certified employees” is 5. The Petitioner has submitted the details of variance of percentage of certified employees as under:

No. of Employees for Certification as on 31.3.2019(A)	No. of Employees for Certification as on 31.3.2019(B)	Percentage of Employees Certified as on 31.3.2019 (C=B/A*100)
44.00	42.00	95.45

Performance during financial year 2018-19*	<b>95.45</b>
<b>*Formula</b>	<b>IF [C&lt;85,(100-(85-C)/3),100]#</b>
Marks Scored (in proportion of the %age performance above)	5.00
<i>* Average of 12 months</i>	
<i>#Upto 85% certification, performance is proposed to be considered 100% and for certification below 85%, performance shall decrease by 1% for every 3 % decrease in the certification in line with the methodology of the Incentive calculation prescribed in the Regulation 29(5) of the RLDC Fees and Charges Regulations 2015</i>	



70.As per the methodology of incentive specified in Regulation 29(5) of the Fees and Charges Regulations 2015, for certification up to 85%, performance would be considered 100% and for certification below 85%, performance would be decreased by 1% for every 3% decrease in the certification. Accordingly, the weightage for percentage of certified employees is considered as 5 out of 5.

### Overall Achievement of KPIs:

71.The following KPIs are allowed as per the methodology specified in Appendix-V and VI of the Fees and Charges Regulations 2015:

Sl. No	Key Performance Indicators	Weightage	Petitioner's claim for financial year 2018-19	Allowed
1	Reporting of Interconnection meter error	10	10.000	10.000
2	Reporting of Grid Incidents and Grid Disturbance	10	10.000	10.000
3	Average processing time of shut down request	10	10.000	10.000
4	Availability of SCADA System	10	10.000	10.000
5	Voltage Deviation Index (VDI)	10	10.000	10.000
6	Frequency Deviation Index (FDI)	10	10.000	10.000
7	Reporting of System Reliability	10	10.000	10.000
8	Availability of Website	10	10.000	10.000
9	Availability of Standby Supply	5	5.000	5.000
10	Variance of Capital expenditure	5	2.877	0
11	Variance of Non Capital expenditure	5	5.000	5.000
12	Percentage of Certified Employee	5	5.000	5.000
	Total	100	97.877	95

72.Perusal of the above table reveals that the Petitioner has achieved 95% Key Performance Indicators out of possible achievement of 100%.



73.The Commission, under sub-clause (1) of Regulation 21 of the Fees and Charges Regulations 2015 has allowed Performance Related Pay to be met from the incentive allowed in accordance with sub-clause (5) of Regulation 29 of the Fees and Charges Regulations 2015, that provides as follows:

*“(5) The RLDCs or NLDC, as the case may be, shall be allowed to recover incentive of 7% of annual charges for aggregate performance level of 85% for three years commencing from 1.4.2014 and for aggregate performance level of 90% from 1.4.2017. The incentive shall increase by 1% of annual charges for every 5% increase of performance level above 90%: Provided that incentive shall be reduced by 1% of annual charges on pro rata basis for the every 3% decrease in performance level below 85%.”*

74.The Commission in its Order dated 10.6.2019 in Petition No. 344/MP/2018 has provided as under:

*“62.  
.....in exercise of provisions of “Power to Relax” under Regulation 35 of Fees and Charges Regulations, 2015 we hereby relax Regulation 29(5) of Fees and Charges Regulations, 2015 and direct that RLDCs or NLDC, as the case may be, shall be allowed to recover incentive of 15% of annual charges post implementation of pay revision w.e.f 1.1.2017 subject to ceiling as per DPE Guidelines in place of 7%, keeping other provisions of Regulation 29(5) same. In case of shortfall as per DPE Guideline, the balance amount shall be paid from the LDCD fund.”*

75.In view of Regulation 29(5) of the Fees and Charges Regulations 2015 read with Order dated 10.06.2019 in Petition No. 344/MP/2018 and aggregate KPI level of 95% for 2018-19, the Commission hereby allows the Petitioner to recover 16% of annual charges for the financial year 2018-19 to meet the Performance Related Pay for the financial year 2018-19 as detailed below:

Aggregate Performance Level	% of Annual charges
90%	15%
90%-95%	+1%
Total – 95%	Total - 16%



76.As provided in Regulation 21(1) of Fees and Charges Regulations 2015, the Commission directs that the Performance Related Pay be computed in accordance with DPE guidelines and shall be met from the incentive allowed above.

77.The Commission observes that Regulations 29(6) of the Fees and Charges Regulations 2015 provides as below

*“The RLDCs or NLDC, as the case may be, shall compute the Key Performance Indicators on annual basis for the previous year ending on 31st March and submit to the Commission along with petitions for approval of the Commission as per Appendix V and Appendix VI of these Regulations:  
Provided that the key performance indicators of previous year ending on 31st March shall be considered to recover incentive on each year and shall be trued up at the end of the control period.”*

Accordingly, the Petitioner is directed to file true up petition for control period 2014-19 within three months of issue of this order, taking into account the amount recovered from users and actual pay-out to the employees.

78.We further observe that the Board approvals submitted by the Petitioner cover only the executives and supervisors for payment of PRP. However, as per the details submitted by Petitioner, it is observed that the Petitioner has disbursed PRP to workmen also. The Petitioner is, therefore, directed to submit appropriate Board approval for same with the true up petition.

79.The Petition No. 159/MP/2020 is disposed of in terms of the above.

**sd/-  
(Arun Goyal)  
Member**

**sd/-  
(I. S. Jha)  
Member**

**sd/-  
(P.K. Pujari)  
Chairperson**

