

Central Electricity Regulatory Commission

New Delhi

Draft of Fees and Charges of Regional Load Despatch Centre and Other related matters) Regulations, 2014

Explanatory Memorandum

1.0 Background

The Central Electricity Regulatory Commission (CERC) (herein after referred as “the Commission”) was constituted under the erstwhile Electricity Regulatory Commissions Act (ERC), 1998 which has been deemed to be constituted under the Electricity Act, 2003 (herein after referred as “the Act’), after enactment of the Act. The Commission has been vested with the power to make regulations in terms of clause (h) of sub-section 2 of section 178 read with sub-clause (4) of section 28 of the Act to specify the levy and collection of fee and charges by the Regional Load Dispatch Centre (RLDC) from the generating companies or licensees.

1.2 The Commission, in exercise of the powers under Section 178 of the Act, had notified the Regulations for fixation of RLDC Fees and Charges called as CERC (RLDC Fees and Charges Regulations and other related matters) Regulations, 2009 (short as ‘RLDC Regulations, 2009’). The Commission had also determined the RLDC Fees and Charges for the period 2009-14 for RLDCs and National Load Dispatch Centre (NLDC) on application filed by them under the existing RLDC Regulations, 2009.

1.3 The control period has come to an end on 31.3.2014. The Commission has now, proposes to specify the RLDC (Fees and Charges and other related matters) Regulations, 2014 (short as “draft Regulations’) for the next control period applicable from 1.4.2014 to 31.3.2019.

2.0 Salient Features

The Commission has reviewed the various provisions of existing RLDC Regulations, 2009 keeping in view the developments in the power system, challenges faced by the system operators and experience of determining fees and charges of RLDCs and NLDC during 2009-14 period. The salient features of the draft RLDC Regulations, 2014 as under *inter-alia* contain the following:

2.1 Definitions

- a) 'Bank Rate' has been defined which is used for settlement of the interest of the amount under-recovered or over-recovered by the RLDCs.
- b) Registration by the users has been linked with commencement of 'Grid Access'. Since the term 'Grid Access' has been used for the first time, it has been defined as 'integration of the generating station or stage of the generating station or licensees, buyers and sellers with the Regional Grid'.
- c) The major part of the CPAEX of RLDCs and NLDC comprise the computer hardware, software and communication equipments. These assets are to be replaced in short span period due to high depreciation rate. It is, therefore, important that the RLDCs should also envisage and plan the replacement of the assets so that de-capitalization of the assets is taken into account to work out the annual charges. Thus, in order to take into account the replacement of the assets, the rolling five year CAPEX plan of RLDCs should also include corresponding replacement of capital expenditure plan for obsolete assets to be designed using a life cycle approach. Accordingly, the definition for "Replacement Expenditure (REPEX)" has been introduced.
- d) The definition of the 'User' has been modified to include 'the agency designated by Government of India for coordinating the scheduling, metering and energy accounting for the transactions carried out for import and export of power through the ISTS connected to the transmission grid of a foreign country. Further, a

transmission licensee shall be considered as a separate user in respect of its transmission assets in each region. In other words, if a transmission licensee has assets in all five regions, it will be registered as a separate user for each region.

2.2 Registration

2.2.1 The registration of the users with the grid has been made pre-requirement for grid access. The generating stations and licensees who are in operation as on 31.3.2014 have already been registered with RLDCs. The new generating stations or sellers, and licensees or buyers likely to integrate their projects with the grid and intend to avail the services of RLDCs or NLDC, they will be required to apply for registration with the concerned RLDC. After registration, the users will avail the grid access for the purpose of transmission of electricity in accordance with the Grid Code.

2.2.2 The traders are generally availing services of RLDCs for the purpose of scheduling of power through short term open access or medium term open access and that of NLDC for the purpose of collective transactions. The RLDC Regulations for 2009-14 period provides for registration of Power Exchanges with NLDC. There is no provision for registration of traders who also avail the services of RLDCs. Accordingly, the traders are proposed to be registered with RLDCs as users.

2.3 Capital Expenditure (CAPEX) and Replacement Expenditure (REPEX) Plan

2.3.1 The use of efficient technology, scalability of the equipments procured by the RLDCs to accommodate the dynamic requirement of system operation and reasonableness of capital cost are to be ensured while planning capital expenditure for RLDCs. Thus, in line with the recommendation of Satnam Singh Task Force set up by the Ministry of Power, the Commission has considered a provision for approval of the CAPEX plan.

2.3.2 The CAPEX plan would cover the capital expenditure for communication system for data transfer, control centre augmentation, off-line software and other infrastructure facilities. The major portion of the CAPEX of RLDC involves control centre up-gradation and communication system for data transfer primarily useful for system operation function. These equipments used at RLDCs have a lower life compared to the equipments of generating station and transmission system due to technological obsolescence which may require replacement. It is therefore important that the RLDCs should also envisage and plan the replacement of the assets so that de-capitalization of the assets shall also be taken into account to work out the annual charges. Thus, in order to take into account the replacement of the assets, the rolling five year REPEX plan of RLDCs using life cycle approach has been proposed along with CAPEX plan.

2.4 Capital Cost

2.4.1 The determination of annual charges of RLDCs shall be considered on the basis the capital cost admitted by the Commission as on 31.3.2014 for the respective RLDC and NLDC and the additional capital expenditure projected to be incurred from 1.4.2014 to 31.3.2019. The capital cost will also include the expenditure incurred or projected to be incurred during the control period, including Interest during construction (IDC) and financing charges, any gain or loss on account of Foreign Exchange Rate Variation (FERV) during construction, and Incidental Expenditure During Construction (IEDC) in line with the CAPEX plan. The gross value of the assets not in use shall be excluded from the capital cost. The Commission shall carry out prudence check of the capital cost claimed before admitting the same. In addition, the system operator would be required to furnish the year wise capital cost projected to be incurred corresponding to the CAPEX and REPEX Plan for the control period.

2.4.2 The additional capitalisation will be considered on the basis of this CAPEX and REPEX Plan. The de-capitalization, if any, as per

REPEX plan will be taken into account to work out the admissible capital cost. Any expenditure on acquiring the minor items or the assets is excluded for additional capitalization for determination of fees and charges as it is covered under Repairs and Maintenance expenses under operation and maintenance (O&M) expenses.

2.5 Debt/Equity Ratio

The debt-equity ratio as admitted on 31.3.2014 duly tried up will be considered for the capital assets already capitalized by NLDC and RLDCs. For an investment made on or after the 1.4.2014, the actual equity, subject to a maximum of 30%, will be considered for determination of charges. In line with the requirement of Tariff Policy, 2006, equity invested in foreign currency will be designated in Indian rupees on the date of investment.

2.6 LDC Development Fund

2.6.1 The purpose of the LDC development fund is to take care of the capital requirement of NLDC/ RLDCs out of internal resources. The revenues arising out of return on equity, interest on loan, depreciation and other income of the NLDC and RLDCs (such as registration fee, application fee, short-term open access charges etc.) were required to be deposited into this fund according to RLDC Regulation, 2009.

2.6.2 In the draft Regulation, it has been proposed that while the fee and charges and registration fee shall form part of LDC development funds, elements of other income such as the STOA charges and the charges allocated from REC mechanism towards the use of NLDC infrastructure shall be deposited under separate head known as "Other income" and shall be utilised for meeting the contingency expenditure. The balance amount at the end of the year shall be deposited to the LDC development fund.

2.7 Structure of RLDC Fees and Charges

2.7.1 The revenue stream of NLDC/ RLDCs comprises registration fees and annual charges. The Commission, for the purpose of recovery of the annual charges, had apportioned the annual charges to the system operation and market operation functions in the ratio of 80:20 in RLDC Regulations, 2009.

2.7.2 The role of Load Despatch Centres has diversified into many areas as the electricity market is growing rapidly. The users of system operation and market operation are different. In case of system operation, those generating stations or distribution licensees connected with inter-state transmission system are the users. In case of market operation, the buyers and sellers participating in the market are qualified as users of market operation. It is appropriate that users of market operation and system operation shall bear the respective charges.

2.7.3 The Commission, at the time of specifying RLDC Regulations, 2009, had recognized that the power market was in the nascent stage and a small portion of the resources of RLDCs and NLDC are utilised for the market operation function. Accordingly, in the RLDC Regulations, 2009, 80% of the total revenue requirement was apportioned to system operation function and 20% to market operation function. The Commission has recognized that volume in short term market as well as the number of buyers/sellers is increasing. There are various measures initiated to develop the electricity market including the issuing of CERC (Market Development) Regulations, 2010. The number of market users has increased during recent years. The responsibilities of NLDC/ RLDCs with respect to market operation have increased during 2009-14 and are expected to increase further on account of entry of private generating companies, transmission licensees and open access consumers. The expenditure of NLDC/RLDCs attributed to market operation function will also correspondingly increase. In view of this,

the share of market operation charges has been proposed as 30% of the annual charges.

2.7.4 The system operation charges for the inter-State transmission licensees is recovered on the basis of the circuit-kilometer (ckt-km) of the lines owned by the users. The system operation charges for the generating companies and sellers is on the basis of their installed capacity and contracted capacity, as the case may be. The distribution licensees and buyers shall bear the system operation charges in proportion to the sum of their allocations and contracted capacities, as the case may be, as on the last day of the month prior to billing of the month. This criteria to recover the system operation charges from inter-state transmission licensee, generating station and distribution licensee worked satisfactorily during 2009-14 period and therefore, it has been proposed to continue the same with minor modification.

2.7.5 The market operation charges were allocated equally among all the users except inter-State transmission licensees. A need has been felt to recover the market operation charges on the basis of their respective usages. The market operation function involves the scheduling of electricity as per the agreements and associated function of energy accounting. The scheduling and dispatch depends on the transmission capacity allocated through short term, medium term or long term open access. The buyers and sellers may schedule the electricity transaction upto transmission capacity allocated to them. In view of the above, it has been proposed that the market operation charges shall be worked out corresponding to the transmission capacity allocated to the buyers and sellers.

2.8 Return on Equity

2.9.1 The Commission had specified return on equity as 16% for 2009-14 tariff period. It is observed that the schemes conceived by NLDC and RLDCs are largely dominated by the communication and information technologies. The gestation period of the projects based on these technologies are generally short as compared to the generation and transmission projects. Thus, the equity invested in

these projects will start fetching return earlier than the generating and transmission projects. Further, the risk associated with this scheme of RLDCs/NLDC is less as compared to the generation and transmission projects.

2.9.2 It is observed from the balance sheet of the Power System Operation Company (POSOCO) that there is huge surplus amount lying at the end of the financial year. One of the possible reasons is the large variation between projected capital expenditure as per CAPEX plan and actual capital expenditure. Since, the true up of capital expenditure for the tariff period 2009-14 is pending, the exact variations and reasons attributable to those variations cannot be studied at this stage.

2.9.3 In view of the short gestation period and low risk associated with the capitalization scheme planned for NLDC/RLDCs, it has been proposed a return of 15.50%. It is expected that return of 15.50% will provide adequate internal accruals to the system operator. Further, in line with the provision of Tariff Regulations, 2014, we have considered the grossing up of return on equity at effective tax rate.

2.10 Interest on Loan

While determining cost of debt, an appropriate balancing of the interest of the consumers and regulated entities needs to be maintained as debt component has significantly higher share in the normative capital structure. It is observed that POSOCO has no debt due at present. However, the debt will be required for NLDC/RLDCs for future capital expenditure. It has been proposed to retain the existing provision for interest on loan with minor modification.

2.11 Depreciation

It has been proposed to retain the existing method of calculating depreciation based on Straight Line Method by applying the weighted average rate of depreciation. In the draft Regulation, REPEX plan has been proposed which involves the de-capitalization

of the assets and suitable treatment of de-capitalization. Accordingly, the treatment of de-capitalization for working out depreciation has been considered.

2.12 Operation and Maintenance Expenses and Human Resource Expenses

2.12.1 During 2009-14, the human resource expenses were excluded from O & M expenses and considered separately. Further, NLDC charges and corporate office expenses were excluded from O & M expenses and considered separately. The O&M expenses were allowed on the basis of the actual expenses of the past available data.

2.12.2 The Commission vide letter dated 13.5.2014 sought details of O&M expenses and human resource expenses incurred by the RLDCs/NLDC from 2008-09 to 2013-14 to explore the normative O & M expenses (excluding human resource expenses) and to work out escalation rate. However, NLDC/ RLDCs have not submitted the requisite data. It is gathered from the NLDC/ RLDCs that segregation of data for each RLDC is found to be difficult as such requirements not envisaged earlier. It is recognized that since there are only five RLDCs, it would not be difficult for each RLDCs to work out Operation and Maintenance. It has been proposed that O&M expenses would be considered based on the data submitted by RLDCs at the time of filing the petitions. The normalised O & M expenses, after prudence check, for the years 2009-10 to 2013-14, are proposed to be considered to work out the O&M expenses. The average normalized O & M expenses at 2013-14 price level will be escalated at the escalation rate. The escalation rate will be worked out on the basis of compounding annual growth rate and inflation rate.

2.12.3 The human resource expenses has been proposed to be considered based on actual data after prudence check. The human resource expenses will be normalized by excluding abnormal Human resource expenses, ex-gratia, VRS expenses, prior-period adjustments, claims and advances written-off, provisions, etc, if any, after prudence check by the Commission. The methodology to work out

the human resource expenses will be similar to the O&M expenses as discussed in above Para.

2.12.4 In the RLDC Regulations, 2009, the employee incentives such as Performance Related Pay (PRP) have been considered as part of the Human Resource expenses. Further, vide Para 3.7.3 of Statement of Reasons to RLDC Regulations, 2009, it was decided that the Commission would come out with suitable Key Performance Indicators (KPIs) for NLDC/RLDCs and the pass through of PRP expenses would be linked to the performance of the NLDC/RLDCs vis-à-vis these KPIs. It is pertinent to note that the Satnam Singh Task Force had also recommended the same. The grid disturbance of 30 & 31st July, 2012 in Northern and Eastern part of the grid has posed specific challenges to system operators to improve the reliability, safety and security. It is felt that the performance of the system operator shall also be monitored periodically through key performance indicator. Thus, to begin with, suitable key performance indicator (KPI) have been proposed.

2.12.5 In regard to performance related pay, the Commission, during the framing of existing Tariff Regulations, 2014 for generating Companies and inter-state Transmission licensees, already mentioned that performance related pay are to be paid out of the incentive amounts available to these companies on account of higher availability or scheduled plant load factors. Similar to the Tariff Regulations, 2014 as the Key Performance Indicator (KPI) has been proposed for RLDCs/NLDC by excluding performance related pay from human resource expenses and to be met from incentives. The provision for incentive has also been proposed in this regulation.

2.13 Interest on Working Capital

The provision of interest on working capital has been retained in line with the existing RLDC Regulations, 2009.

2.14 NLDC Charges and Corporate Office Expenses, Contingency expenses

2.14.1 The NLDC charges is to be computed by following the methodology specified for computing annual charges of RLDC except interest on working capital. Interest on working capital does not form a component of the NLDC charges as in the case of RLDCs. The apportioning of NLDC charges and corporate office expenses would be on the basis of the peak demand served (in MW) in the respective region as indicated in CEA's website for the preceding year. It has been proposed to continue with the existing methodology of apportioning of NLDC Charges and corporate office expenses.

2.14.2 The STOA charges and allocation from REC income are of the nature of other income for the NLDC/RLDCs. It has been proposed that STOA charges and allocation from REC income towards the use of infrastructure of NLDC etc. shall not form a part of the LDC development fund and shall be kept under the head "Other income". RLDCs and NLDC may meet the cost of dynamic requirement of grid operations which was not envisaged to be met from LDC development fund. Moreover, any shortfall in revenue expenditure allowed as part of the annual charges shall be met out of the "Other income". The RLDCs and NLDC have to meet dynamic requirements of grid operation and other functions assigned by the Commission. The balance amount lying in the "Other income" shall be deposited in LDC development fund which shall be further used to fund the future capital expenditure thereby reducing the annual charges and burden on the users.

2.15 Registration Fees

2.15.1 The provision for the registration is considered in the proposed Regulations. It is observed that the registration by the users includes the submission of the contractual documents, project details and information related with grid interface. The registration process was followed by the acceptance of system operator after scrutiny of documents. It is noticed that the registration process involve the

manpower expenses. These expenses are not recoverable prior to commencement of grid access by the user with the grid. Thus the registration fee has been considered separately for each category of users. The registration fee of the generating station is considered on the basis of installed capacity.

2.15.2 In the RLDC Regulations for 2009-14, the registration fee was not envisaged for trading licensee. Separate registration fee for traders has been proposed for the period 2014-19.

2.16 Computation and Payment of Annual Charges

2.16.1 The annual charges are collected through system operation and market operation charges. The Commission has considered the ratio of system operation charges and market operation charges as 70:30. The system operation charges have been further allocated as 10%, 45% and 45% to inter-state transmission licensee, distribution licensee and buyer, and generating station and seller respectively. The basis of recovery of these charges from each user are considered separately. The computation and payment of annual system operation charges and annual market charges are considered for unambiguous and uniform implementation in all the regions.

2.16.2 The market operation charges have been recovered equally from users during 2009-14 period. It is felt that the market operation charges shall also be recovered on the usage of market function. The market function includes the scheduling and energy accounting. The scheduling and energy accounting depends on the open access capacity allowed to the users. Thus it is appropriate that market operation charges shall be recovered on the basis of open access capacity allowed. It is considered that the market operation charges on the basis of aggregate long term and medium term open access granted by the CTU.

2.17 Performance Indicators

2.17.1 Vide Statement of Reason to the RLDC Regulations, 2009, the Commission has recognized the need for specifying the key

performance indicators. The extract of the relevant Para of the Statement of Reason is as under :

“3.7.1 The human resource expenses shall be normalized by excluding abnormal Human resource expenses, ex-gratia, VRS expenses, prior-period adjustments, claims and advances written-off, provisions, etc, if any, after prudence check by the Commission. While determining tariff of the generation and transmission companies in the past, the employee incentives were not considered part of the employee cost as the Commission was of the view that these are to be paid out of the incentive amounts available to these companies on account of higher availability or scheduled plant load factors. The services provided by RLDCs/NLDC however fall in a different category. The Commission believes that employee incentives such as Performance Related Pay (PRP) need to be considered as part of the Human Resource expenses. However in a regulatory regime 100% pass through of such expenses would necessarily have to be linked to performance. For this purpose, the Commission would come out with suitable Key Performance Indicators (KPIs) for RLDCs/NLDC and the pass through of PRP expenses would be linked to the performance of the RLDCs/NLDC vis-à-vis these KPIs. This had been a recommendation of the Satnam Singh Task Force also.”

Apart from the purpose of incentive, the key performance indicators of RLDCs are also necessary due to following reasons:

- a) It will bring the transparency in power system operations and ensure the credibility of system operators among stakeholders ;
- b) There is no provision in the existing regulation such as Indian Electricity Grid Code, 2010 which provide for assessment of performance of RLDCs/NLDC. The overall performance assessment of RLDCs/NLDC for maintaining reliability and grid discipline, administration of wholesale electricity markets and organizational effectiveness are not available in existing regulations;
- c) The increasing number of market participants, capacity addition in generation and transmission business increases expectation from load dispatcher to administer wholesale

- market operation effectively in a non discriminatory manner as envisaged under the Act;
- d) The RLDCs/NLDC are invested with the statutory functions under the Act and regulations of the Commission. Therefore, performance of RLDCs and NLDC is required to be assessed through the suitable performance indices;
 - e) Earlier, RLDC function was exercised under Central Transmission Utility and fees, charges were recovered through ULD&C Charges which was collected with transmission charges. The performance of the RLDCs was not separately identified for NLDC/RLDCs. At present, Power system operation function has been separated from transmission activities. Therefore, the performance of power system operation is required to be evaluated separately for each RLDCs and NLDC;
 - f) The reliability of power supply to end consumer reflects combined effect of distribution, transmission and system operator's contribution. In order to know the contribution of system operator, the performance indices will be helpful.

The performance measurement of system operator is accepted internationally. It is noted that a Federal Energy Regulatory Commission (FERC) of the USA has specified the performance metrics for Independent System Operator and Regional Transmission Operator which will track the performance of ISO/RTO operations. It is felt that the performance measurement of RLDCs/NLDC needs to be carried out to track the performance of RLDCs/NLDC in order to analyze their contribution towards the efficiency of the grid operations.

2.17.3 The performance indicators of RLDCs should be relevant with their role of power system operation function, market operation function and other functions as assigned by the Commission. RLDC is apex body to ensure integrated operation within region. The responsibilities of RLDCs are scheduling, dispatch, economic

operation, supervision and monitoring of grid operation. As per Indian Electricity Grid Code, 2010, the prime objective is "to ensure the safe operation, integrity and reliability of the grid". The Grid Code provides the exclusive responsibilities to RLDCs/NLDC. The safe and secure grid operation managed by the RLDCs/NLDC is important to deliver the energy to beneficiaries and end consumers reasonably. In view of above consideration, the Commission has considered the key performance indicators in three different areas namely system operation, market operation, and ancillary and support functions. The RLDCs would be required to submit the KPIs on annual basis for the year ending on 31st March along with the petition. The Commission would assess the KPI as per the weightage which will be used to work out the incentive.

2.18 Girish Pradhan Committee in its report recommended for certification of system operators. The report provides for the monetary incentive once the certification is introduced. The relevant extract of the recommendation is as under :

6.3 Recommendation 3 The Committee recommends

(a) Introduction of a system certification of System Operators by an independent Central body, similar to the system followed in case of Air Traffic Controllers.

6.4 Recommendation 4: The highly specialized and technical nature of LDC function necessitates a suitable compensation structure to attract and retain talent. The Committee recommends

(a)....

(b)....

(c) Once the certification system is introduced, monetary incentives similar to Air Traffic Controllers can be provided to the system operators based on their ratings.

Further, Satnam Singh Task Force set up by MOP has recommended the incentive for the Basic level, Specialist level and Management Level as 10%, 15% and 10% respectively. It is felt that the certification shall be introduced and linked with the incentive mechanism. Accordingly, the Commission has considered certification linked incentive as under:

The Regional Load Dispatch Centres and National Load Dispatch Centre shall identify the manpower deployed for the system operation. The Regional Load Dispatch Centres

and National Load Dispatch Centre shall be allowed certification linked incentive as a percentage of basic pay for acquisition of basic level, specialist level and management level in their respective areas of specialization:

<i>Sr.No.</i>	<i>Certification Level</i>	<i>Percentage of ceiling</i>
<i>1</i>	<i>Basic Level</i>	<i>10.00%</i>
<i>2</i>	<i>Specialist Level</i>	<i>15.00%</i>
<i>3</i>	<i>Management Level</i>	<i>10.00%</i>

Provided that certification linked incentive shall be in addition to the performance related incentive as defined under clause (3) of this Regulation.

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Abbreviations

Abbreviation	Full Form
REPEX	Replacement Expenditure Plan
CAPEX	Capital Expenditure Plan
CC	Contracted Capacity
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
Ckt-km	circuit kilometres
CPI	Consumer Price Index
EMS	Energy Management System
HR	Human Resources
HVDC	High Voltage Direct Current
IC	Installed Capacity
ISO	Independent System Operator
IEGC	Indian Electricity Grid Code
IWC	Interest on Working Capital
IT	Information Technology
KPI	Key Performance Indicators
MAT	Minimum Alternative Tax
MoP	Ministry of Power
MW	Mega Watt
MOC	Market Operation Charges
NLDC	National Load Dispatch Centre
O&M	Operation and Maintenance
Powergrid	Power Grid Corporation of India Limited
PRP	Performance Related Pay
PX	Power Exchange
POSOCO	Power System Operation Corporation Limited
SCADA	Supervisory Control and Data Acquisition
RLDC	Regional Load Despatch Centre
R& D	Research and Projects
RTO	Regional Transmission Operator
ROE	Return on Equity
RPI	Retail Price Index
SOC	System Operation Charges
SBI	State Bank of India
SEB	State Electricity Board
SERCs	State Electricity Regulatory Commissions
SOR	Statement of Reasons
SLDC	State Load Despatch Centre
STOA	Short Term Open Access
ULD&C	Unified Load Despatch & Communication Scheme
WPI	Wholesale Price Index

