FORUM OF REGULATORS

REPORT ON "OPEN ACCESS"

DECEMBER 2017

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Introduction

1.1 The Forum of Regulators (FOR)was constituted as per notification dated 16th February, 2005 in pursuance of the provision under section 166(2) of the Electricity Act, 2003 with the primary objective of harmonization of regulations in the power sector framed by the Central Electricity Regulatory Commission (CERC), State Electricity Regulatory Commissions (SERCs) and Joint Electricity Regulatory Commission (JERCs). The Forum consists of Chairperson of CERC and Chairpersons of SERCs and JERCs. The Chairperson of CERC is the Chairperson of the Forum.

2. Working Group of FOR

2.1 In the 55th Meeting of Forum of Regulators held on 22nd July 2016, issues affecting the implementation of Open Access were discussed. A decision was taken to carry out detailed examination of all the issues connected to Open Access for consumers

2.2 Accordingly Chairperson CERC/ FOR decided to constitute a Working Group which would study the issues and submit a report to the FOR. Accordingly, the Working Group was constituted with the following composition:

i. Chairperson, Central Electricity Regulatory Commission (CERC) – Chairman
ii. Chairperson, Rajasthan Electricity Regulatory Commission (RERC) - Member
iii. Chairperson, Assam Electricity Regulatory Commission (AERC)- Member
iv. Chairperson, Gujarat Electricity Regulatory Commission (GERC)– Member
v. Chairperson, Maharashtra Electricity Regulatory Commission (MERC)– Member
vi. Chairperson, Tamil Nadu Electricity Regulatory Commission (TNERC)- Member
vii. Chairperson, West Bengal Electricity Regulatory Commission (WBERC)– Member
viii. Chairperson, Punjab State Electricity Regulatory Commission (PSERC)- Member
ix. Chairperson, Chhattisgarh State Electricity Regulatory Commission (CSERC)– Member

2.3 The Terms of Reference of the Working group includes

i. Detailed examination of Tariff and Non-Tariff barriers for Open Access

ii. Impact of Open Access on revenue inflow of distribution utilities

iii. Examination of Rules on captive generation and their impact on Open Access

iv. Suitable measures for implementation of Open Access

2.4 Two Working Group meetings was held on 29th March 2017 and 11th October 2017 at CERC, New Delhi for detailed deliberation on the subjects after which the report was finalised.

2.5 The FOR in its 62nd Meeting held on 15 December, 2017 at New Delhi, deliberated on the Report of the Working Group and endorsed the Report of the Working Group on Open Access.

3. Deliberations of the FOR Working Group: 1st Meeting

3.1 The 1st Working Group meeting was held on 29th March 2017 at CERC, New Delhi and issues related to Open Access including examination of Tariff and Non-Tariff barriers for Open Access, Impact of Open Access on revenue inflow of distribution utilities and Examination of Rules on captive generation and their impact on Open Access were discussed.

3.1.1 Tariff Barriers: The tariff barriers to the Open Access are classified under three categories i.e. Open Access Charges, Cross Subsidy Surcharge and Additional Surcharge. The basic criteria for applicability of these charges are discussed below.

a) **Open Access Charges:** The Electricity Act, 2003, provides for open access, mechanism that allows generators to sell power to the highest bidders while consumers can source their needs from the most economic seller. Section 42(2) of the Electricity Act,2003, mandated provision of open access to all generators and utilities in a bid to promote competition and open market for electricity trade. The details of these charges for different States are placed at ***Annexure-I***

b) **Cross Subsidy Surcharge:** Cross-subsidy surcharge shall be payable by all intra-State open access consumers except those persons who have established captive generating station and are availing open access for carrying the electricity to a destination for their own use. Cross-subsidy surcharge shall also be payable by such Open Access consumer who receives supply of electricity from a person other than the distribution licensee in whose area of supply he is located, irrespective of

whether he avails such supply through transmission/distribution network of the licensee or not. The consumers located in the area of supply of a distribution licensee but availing Open Access exclusively on inter-State transmission system shall also pay the cross-subsidy surcharge as determined by the Commission. The details of these charges for different States are placed at ***Annexure-II***.

c) **Additional Surcharge:**

- An open access consumer, receiving supply of electricity from a person other than the distribution licensee of his area of supply, shall pay to the distribution licensee an additional surcharge in addition to wheeling charges and cross-subsidy surcharge, to meets the fixed cost of such distribution licensee arising out of his obligation to supply as provided under sub-section (4) of Section 42 of the Electricity Act 2003.

- Additional surcharge shall not be levied in case open access is provided to a person who has established a captive generation plant for carrying the electricity to the destination of his own use.

- This additional surcharge shall become applicable only if the obligation of the licensee in terms of power purchase commitments has been and continues to be stranded or there is an unavoidable obligation and incidence to bear fixed costs consequent to such a contract. However, the fixed costs related to network assets would be recovered through "Wheeling charges".

- The details of these charges for some States (wherever applicable) are placed at ***Annexure-III***.

3.1.2 Non-Tariff Barriers: There are several non-tariff barriers which act against implementation of Open Access. Some of these have been listed below

a) Provisions related to restrictions and special conditions imposed on consumers connected to grid through Independent feeder or Mixed Feeder (all on Mixed to opt for OA) refrain consumers from opting for Open Access. Such provisions exist in the Open Access (OA) Regulations of Haryana, Uttarakhand, Punjab,

Delhi and Telangana. The relevant clauses from Open Access regulations of a few States have been placed at **Annexure IV**

b) Operational issues due to constraints related to scheduling power through Open Access have also been introduced by SERCs. For example, OA consumers have to submit daily schedule of power to be purchased through Open Access to SLDC with copy to DISCOM by 10 am for the next day. In the state of Rajasthan, the schedule so given shall be uniform at least for a period of 8 hours and the minimum schedule during the day shall at any time not be less than 75% of the maximum schedule of the day.

c) Implementation of OA required installation of ABT meters and Special Energy Meters and other infrastructure requirements. Increased metering cost to be incurred by OA consumers and space availability at substations are other issues that are considered as bottleneck in purchase of power through OA.

d) Many States invoke Section 11 of Electricity Act, 2003 wherein OA to generators is restricted by State government by citing extraordinary circumstances. Under Section 37, State governments can direct Load Dispatch Centre to restrict sale of power outside the State in lieu of maintaining smooth and stable supply within the State.

3.1.3. **Impact of Open Access on revenue inflow of distribution utilities:** The impact of OA on distribution utilities has been analysed with respect to financial issues. Considering the financial impact, the loss of revenue to distribution utilities will be on account of the following factors.

a) There will be loss of revenues on account of industrial and commercial consumers opting for open access which will have an impact on the cash flow of the DISCOMS.

b) As per different State Government policies, Cross Subsidy Surcharge and Wheeling Charges are not applicable for OA from non-conventional and renewable sources. The DISCOMS incur financial loss on account of no recovery of Cross Subsidy Surcharge and Wheeling Charges from renewable energy generators.

c) The provisions for procurement of power through captive route imposes restriction on recovery of surcharge from OA consumers that have shifted to captive route

d) The Truing up exercise also has significant impact on Actual Cost of Supply (ACOS) as the cost incurred changes during truing up.

e) The operational issues being faced by distribution utilities includes the effect of non-Open Access consumers due to increase in tariff. This occurs due to low level of revenue from cross subsidy and cross subsidy surcharge. The power purchase cost of the distribution companies will also increase. Apart from this, as a result of granting partial Open Access, there will be issues in managing the peak load.

3.1.4. Examination of Rules on captive generation and their impact on Open Access

a) In the Electricity Act, 2003, provisions regarding Captive generation mainly relate to wheeling of power from Captive generating plants to the associated industries (in case they are not within the same premises) through the transmission system under "open access". The relevant Clauses of the Electricity Act 2003 related to Captive Generation are placed at (***Annexure V-A)***.

b) As per the section 3 of the Electricity Rules, 2005 (***Annexure V-B)*** the electricity required to be consumed by captive users shall be determined with reference to such generating unit or units in aggregate identified for captive use and not with reference to generating station as a whole; and the equity shares to be held by the captive user(s) in the generating station shall not be less than twenty six per cent of the proportionate of the equity of the company related to the generating unit or units identified as the captive generating plant.

c) The relevant Clauses of the National Electricity Policy related to Captive Generation are placed at ***Annexure VI***. Based on the provisions of the Electricity Act 2003, The Electricity Rules 2005 and the National Electricity Policy, at present, a power project is considered 'captive' if consuming entity or entities consume at least 51% of the power generated and owns at least 26% of the equity. Various capital structures have evolved to qualify as captive

under the rules. For example, a major portion of the capital could be preference shares, with only a small portion being equity capital. Thus, owning 26% of the 'equity capital' actually translates to a very small amount relative to the overall investment in the project. Further, equity shares of different face values are issued with the low value shares being subscribed by the consumers while the higher value shares are owned by the investor.

Captive Generation is prevalent in the RE rich States including Gujarat, Orissa, Andhra Pradesh, Tamil Nadu, Karnataka and Madhya Pradesh. Bihar, and Maharashtra.

3.6 In the meanwhile, FOR Secretariat had been intimated by the Ministry of Power that they have received many representations raising issues with respect to Open Access. To overcome the issues faced by consumers in Open Access, MoP has published a Consultation Paper on same. As the concept paper addressed the issues faced by OA consumers, competent authority decided to deliberate on the same in the following meeting of the Working Group.

4. Consultation Paper on Open Access by MoP

4.1 In the 2nd Working Group meeting held on 11th October 2017, issues raised by MoP in their Consultation Paper on Open Access was discussed. **(Annexure VII)**

4.2 The Consultation Paper primarily focussed on the following five issues which are impacting a fair play between consumers and utilities on open access/group captive.

a. Frequent shifting of Open Access consumers – DISCOMs unable to procure power efficiently.

b. Cross Subsidy Surcharge (CSS) – Insufficient to recover entire loss of cross subsidy.

c. Additional Surcharge – Not been calculated appropriately leading to under recovery of power procurement expenses.

d. Stand-by charges – Structure and calculation not uniform across States, lack of periodic review leading to revenue loss of DISCOMs

e. Tariff design and rationalization – Structure of demand and energy charges not reflective of actual proportion of fixed and variable cost.

5. Deliberations of the FOR Working Group: 2nd Meeting

The Working Group deliberated on the concept papers on open access as under:.

5.1 Issue1 :-Frequent shifting of open access consumers: -

5.1.1 As per the proposal in the consultation paper, Open access customers should be required to schedule power for at least 24 hours whenever they seek open access. WG Members were of the opinion that open access is sought by short term open access consumers who procure energy from collective market or power exchanges. There is high degree of uncertainty in their power procurement from Power Exchange and DISCOMs frequently switch purchases according to their benefit. This causes huge losses to the DISCOMs.

5.2.2 The concept paper also envisages that, in order to manage the schedule efficiently and minimize the risk related to deviation in schedule and impact of charges under deviation settlement mechanism, the load profile has to be developed efficiently. In view of this, prior communication with respect to arrangements and quantum of power purchase needs to be provided. The Working Group felt that considering the planning requirements of Distribution Licensee/ SLDC, the proposal of Ministry of Power that open access customers should be required to schedule power for at least 24 hours whenever they seek open access is acceptable

5.2 Issue2:- Cross Subsidy Surcharge (CSS)

5.2.1 The concept paper discusses that; Cross Subsidy Surcharge has been one of the key factors that is having an impact on the Open Access Consumers. The Tariff Policy 2016 mandates SERCs to determine roadmap for reduction of cross subsidy and bring tariff at +/- 20% Average Cost of Supply. However, it restricts Cross Subsidy Surcharge at 20% of the consumer tariff. In case the consumer tariff is more than 120% of Average Cost of Supply, DISCOM will not be able to recover losses through cross subsidy surcharge in case consumer opts for open access. It is essential for SERCs to implement both Para 8.3.(2) and First proviso to para 8.5.1 of the Tariff Policy 2016 simultaneously. If one of the provision could not be implemented due to some reason, the second provision should also not be implemented to that extent.

5.2.2 The papers also discuss that SERCs should determine Cross Subsidy Surcharge (CSS) based on category wise cost of supply, thus identifying real cross subsidy. SERCs may initially determine CSS on Voltage wise Cost of Supply and also based on Category wise Cost of Supply. As a first step, SERCs should develop guidelines for DISCOMs to calculate Voltage wise cost of supply. DISCOMs should capture and maintain details of voltage wise and consumer category wise details of assets and costs. In the next phase, SERCs should develop guidelines for DISCOMs to calculate category wise cost of supply.

5.2.3 The paper also proposes that SERCs may introduce differential Cross Subsidy Surcharge - for peak, normal and off-peak hours based on the ToD tariff. Time of the day sensitive pricing can also help address the issue of uneven scheduling by Open Access consumers during the day.

5.3 Issue 3- Additional Surcharge

5.3.1 The WG studied the proposal in the consultation paper for the additional surcharge. The paper proposes that the Additional Surcharge may comprise of three components to cover for Stranded power under long-terms PPAs, stranded physical assets and Cost of carrying regulatory assets or amortization of regulatory assets, as the case may be.

5.3.2 The consultative paper states that a number of SERCs have started taking steps to develop methodology for calculation of additional surcharge. However, in order to bring about certainty and uniformity in the approach, a suggested detailed methodology for stranded long term PPAs has been developed. This methodology envisages determination of additional surcharge for peak and off-peak hours of each season. The method calculates fixed charges of stranded PPAs for immediate past and applies the same as additional surcharge for the same season next year. To ensure only power stranded due to open access is considered for computation of additional surcharge, only minimum of un-requisitioned power and open access quantum should be considered.

5.3.3 Ministry of Power feels that there is also a need to define the criteria for classifying an asset as “Stranded” and the methodology for calculation of additional surcharge on account of such assets. It is also important to remove the cost of stranded assets from the ARR of the DISCOM to prevent socialization of stranded asset cost and avoid any double charging to consumers.

5.3.4 Cost of carrying Regulatory Assets or amortization of Regulatory Assets, as the case may be, should be one of the component of additional surcharge. SERCs should calculate Regulatory Asset and surcharge to recover the same for each year separately. Surcharge for Regulatory Assets should be payable by Open Access consumers also based on year till they had availed supply from DISCOM. DISCOMs should maintain accounts against Regulatory Assets for each year separately. Further, SERCs should ensure that Open Access consumer should not be required to pay for Regulatory Assets for a particular year, if the same has been paid earlier as part of cross subsidy surcharge.

5.4 Issue 4:- Stand-By charges

The issues related to Stand-By Charges were deliberated by the WG. The concept paper recommended the followings:

5.4.1 Standby charges should be designed to reflect the actual fixed cost and variable cost liability incurred by the DISCOMs to supply back up power to Open Access consumer.

5.4.2 SERCs should design two- part standby charges with fixed charge and variable charge components. In line with the provisions specified under Para 8.5.6 of the Tariff Policy 2016, the limit of 125% should be applied separately on the rate for fixed charge and variable charge.

5.4.3 Standby charge should be determined annually by SERCs to reflect the variation in costs over time or Auto- indexation mechanism may be designed for periodic (quarterly/annual) revision of standby charges

5.5 Issue 5:- Tariff Design and Rationalization

The consultation paper identified various points with respect to Tariff Design and Rationalization.

5.5.1 Firstly, the tariff design should progressively, reflect actual break-up between fixed charges and variable charges as per the DISCOMs prudent and efficient cost structure. SERC's should develop a phased implementation plan over a three to five-year horizon to progressively bring in fixed charges in retail tariff to reflect 75% -100% of the fixed cost liability of DISCOMs.

5.5.2 Consumer categories with low load factor (load factor less than 15%) such as Domestic Category and Small Commercial consumers etc. may be partially exempted from fixed charges being linked to actual fixed cost liability. As such consumers shall not be able to absorb the tariff reflective of actual fixed cost liability.

5.5.3 For the States where demand/fixed charge are recovering wheeling cost incurred by DISCOMs (no separate tariff for recovering wheeling cost), Open Access consumers should get credit for wheeling charges paid by them towards fixed/demand charges payable by them subject to 100% fixed cost recovery. For example, if through fixed/demand charges, Open Access consumers are paying 80% of the fixed cost and including wheeling charges, this recovery becomes 110% Open Access consumers should get 10% reduction in the fixed cost payable by them.

6. Deliberation in FOR

6.1 The Report of Working Group was taken up for discussion in the 62nd FOR Meeting held on 15th December 2017 at New Delhi, where they deliberated on the barriers to implementation of Open Access and issues raised by the Ministry of Power in its Consultative Paper.

7. Conclusions and Recommendations

7.1 Recommendations on Barriers to Open Access

7.1.1 While the Tariff barriers in the implementation of Open Access include open access charges, cross subsidy surcharge, additional surcharge or any other charge levied under the Open Access Regulations, the Non-Tariff Barriers are operational issues, restrictions and special conditions on Open Access Consumers, Installations of ABT meters, invoking section 11 by States etc.

7.1.2 Examination of Rules on captive generation and their impact on implementation of Open Access were also discussed. The FOR observed that suitable changes in the Rules related to Captive consumption were planned to be introduced by the Ministry so as to manage the issues related to captive consumption and to make up for the concerns of DISCOMS.

7.1.3 The suggestions of the FOR that have emerged after the analysis data of 4-5 States are:

a. Need for uniform methodology for the determination of various charges such as OA charges, Cross Subsidy Surcharge and additional surcharge.

b. Leverage technology solutions and automate processes for NOC issuance, energy scheduling and energy settlement.

c. Conduct impact assessment for DISCOMS as well as OA users

7.2 Recommendations on the Consultative Paper of the Ministry of Power

7.2.1 Issue1:-Frequent shifting of open access consumers:-

It is necessary to have a schedule for Open Access Consumers so that DISCOM can easily schedule power. Members agreed that the measures taken by Rajasthan Electricity Regulatory Commission as also that suggested in consultation paper (that Open access customers should be required to schedule power for at least 24 hours whenever they seek open access) is acceptable. It is however suggested that Open Access Consumers should schedule minimum continuous 8 (eight) hours of supply through Open Access.

7.2.2 Issue 2:- Cross Subsidy Surcharge (CSS)

Determination of Cross Subsidy Surcharge (CSS) based on category wise or voltage wise cost of supply(CoS) is not a suitable method. For high voltage consumers like industrial consumers where Cost of Supply(CoS) is less than Average Cost of Supply (ACoS), using ACoS would result in lower CSS. It would affect the economic condition of DISCOM severely. Members agreed that one must be guided by the philosophy of the Tariff Policy 2016, which states that CSS must be calculated on the basis of average cost of supply.

7.2.3 Issue 3- Additional Surcharge

The proposal suggested in the Consultation Paper to have three components of Additional Surcharge to fully recover the losses due to stranded capacity and regulatory assets is accepted.

7.2.4 Issue 4:- Stand-by charges

It was agreed that only 125% of variable charges for each category should be applicable as stand-by surcharge. This is so because fixed charges are already recovered in the demand

charges and is in line with Tariff policy 2016. FOR members also felt that tariff structure is not uniform across all SERCs and the concept of standby Charge can be only for long term Open Access Consumers.

7.2.5 Issue 5:- Tariff Design and Rationalization

FOR concurred to the proposal of MoP and agreed that the tariff should reflect actual breakup of fixed and variable charges. However, demand charges are kept low to have minimal impact on low load and domestic consumers. Open access customers are also benefitted from the same and they move to open access by paying low fixed charges. Hence, SERCs may revise fixed charges gradually.

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Annexure I

Details of Open Access Charges levied by different States on Open Access Consumers

State	Discoms	11 kV	22 kV	33 kV	66 kV	132 kV
		2016-17	2016-17	2016-17	2016-17	2016-17
Haryana	**All**	0.71	0.71	0.71	0.71	0.71
Uttar Pradesh	**All**	0.458	0.286	0.286	0.286	0.286
Karnataka	**All**					
Gujarat	**All**	0.14	0.14	0.14	0.14	0.14
Meghalya^	**All**	1.36	1.36	1.36	1.36	1.36
Daman & Diu	**All**					
DNH	**All**					
Chhatisgarh	**All**			0.279		0.279
Bihar	**All**					
Orissa	**CESU**	0.53	0.53	0.53	0.53	0.53
	NESCO	0.69	0.69	0.69	0.69	0.69
	WESCO	0.43	0.43	0.43	0.43	0.43
	SouthCO	0.62	0.62	0.62	0.62	0.62
Himachal Pradesh	**All**					
Uttrakhand*	**All**	0.04	0.04	0.04	0.04	0.04

All rates mentioned above are in Rs./ unit

* charges converted to per unit. The applicable charges are Rs. 861/MW/day for HT industry consumers

^ charges converted to per unit. The applicable charges are Rs. 38840.29/MW/Day for HT industry consumers

Annexure II

Details of Cross Subsidy Surcharge levied by different States on Open Access Consumers

State	Discoms	11 kV	22 kV	33 kV	66 kV	132 kV
		2016-17	2016-17	2016-17	2016-17	2016-17
Haryana	**All**	1.57	1.57	1.57	1.57	1.57
Uttar Pradesh	**All**	1.05	0.63	0.63	0.63	0.63
Karnataka	**All**	0.86		0.86	1.18	
Gujarat	**All**	1.45	1.45	1.45	1.45	1.45
Meghalya	**All**	1.75	1.75	1.75	1.75	1.9
Daman & Diu	**All**	0.42	0.42	0.42	0.42	0.42
DNH	**All**	0.22	0.22	0.22	0.22	0.22
Chhatisgarh	**All**			1.21		1.16
Bihar	**All**	0.78		0.78		0.69
Orissa	**CESU**	0.79		0.79	0.79	1.44
	NESCO	0.58		0.58	0.58	1.32
	WESCO	0.66		0.66	0.66	1.27
	SouthCO	1.29		1.29	1.29	2.04
Himachal Pradesh	**All**	0.41	0.41	0.41	0.41	0.41
Uttrakhand	**All**	0.47	0.47	0.47	0.47	0.47

All rates mentioned above are in Rs./ unit

Annexure II

Details of Additional Surcharge levied by different States on Open Access Consumers

State	Year	Additional Surcharge (Rs./ unit)
Haryana	**2016-17**	**0.87**
Punjab	**2016-17**	**1.13**
Gujarat	**2016-17**	**0.44**
Himachal Pradesh	**2016-17**	**0.49**
Maharashtra	**2016-17**	**1.11**
Rajasthan	**2016-17**	**1**

CHAPTER 3

General Provisions for Open Access

10. Eligibility for Open Access and conditions to be satisfied :

(1) Subject to the provisions of these regulations, the licensees, generating companies, captive generating plants and consumers shall be eligible for open access to the intra-State transmission system of the State transmission licensee on payment of transmission and other charges as may be determined by the Commission in accordance with Chapter 5 of these regulations.

(2) Subject to the provisions of these regulations, the licensees, generating stations, captive generating plants and consumers shall be eligible for open access to distribution system of a distribution licensee on payment of the wheeling and other charges as may be determined by the Commission in accordance with Chapter 5 of these regulations.

(3) Subject to the provisions of these regulations, open access shall be permissible to the consumers, located within the area of the distribution licensee of the State having a contracted load of 100 kVA and above and connected to the distribution system of licensee at 11 kV or above, and are connected through an independent feeder emanating from a substation of licensee or industrial feeder :

Provided that when the consumer is connected to a industrial feeder, open access shall be allowed only if all the consumers on such industrial feeder opt for open access and are having simultaneous schedule of drawl under such open access :

Provided that when two or more consumers connected to industrial feeder are availing continuous supply option then they need not have simultaneous schedule of drawal under open access :

Provided that the consumers who are not on independent feeders, shall be allowed open access subject to the condition that they agree to rostering restrictions imposed by utility on the feeders serving them :

Provided further that duties of the distribution licensee with respect to such open access customer shall be of a common carrier providing non-discriminatory open access as per Section 42(3) of the Act.

(4) A person having been declared insolvent or bankrupt or having outstanding dues against him of more than two months billing of distribution/transmission licensee at the time of application shall not be eligible for open access.

11. Criteria for granting long-term access or medium-term or short-term open access :

(1) Before awarding long-term access, the STU/distribution licensee shall have due regard to the augmentation required for their respective intra-State transmission/distribution system.

(2) Medium-term open access or short-term open access to any applicant shall be granted if the resultant power flow on account of such open access transaction can be accommodated in the existing/ expected transmission/distribution system or the transmission/distribution system under execution after duly taking into consideration the existing power flow *vis-à-vis* capacity of the aforesaid systems :

Provided that no augmentation shall be carried out of the transmission/distribution system for the sole purpose of granting medium-term open access or short-term open access.

Provided further that construction of a dedicated transmission/ distribution line shall not be construed as augmentation of the transmission/distribution system for the purpose of this regulation.

GUIDELINES/PROCEDURE FOR IMPLEMENTATION OF SHORT TERM OPEN ACCESS (STOA)

1. Preface:

1.1 This procedure for Short Term Open Access (STOA) is being issued in compliance to the "Delhi Electricity Regulatory Commission (Terms and conditions for Intra State Open Access) Regulations, 2005" dated 3 January 2006, and subsequent amendments thereof, if any, hereinafter referred to as "Principal Regulations" or "the Regulations".

1.2 This procedure covers guidelines, terms and conditions and application formats for availing Intrastate short term open access of Transmission and/or Distribution system of the licensee(s)

1.3 This procedure, terms and conditions and charges will also be applicable to embedded Open Access consumers who use transmission and / or Distribution system in conjunction with the Central Transmission System through bi- lateral or collective transactions through Power Exchanges, in line with DERC and / or CERC regulations for Short Term Open access, as amended from time to time.

1.4 This procedure shall be applicable for reservation of Transmission and Distribution capacity for short term sale or purchase of power by Open Access consumer or existing consumers of Distribution licensees as well as bulk consumers / CPPs / IPPs or a state utility or an intrastate entity as a buyer or seller as entitled to avail short term Open Access under Open access Regulations, referred to as Short Term Open Access Consumer or Consumer(s) herein after.

1.5 The procedures along with requisite formats as described herein, shall also be available on SLDC web site "www.sldcdelhi.org".

2. Mandatory Requirements:

2.1 The following eligibility requirements /pre-conditions are required to be fulfilled by the Open Access consumer before applying/availing the Short Term Open Access (STOA):

A) Eligibility Requirements:

The eligibility requirements/conditions for grant of STOA shall be as laid down in the Principal Regulations, as amended from time to time, read with following requirements:

i) Availability of spare transmission & distribution capacity:

The short term consumer shall be eligible for STOA over the surplus capacity available on the intra-State transmission system/distribution system after use by the long term consumers and the medium term consumers, by virtue of

a) Inherent Design Margins;
b) Margins available due to variation in power flows; and
c) Margins available due to in-built spare transmission / distribution capacity created to cater to future load growth. Provided that construction of a dedicated transmission line/distribution system shall not be construed as augmentation of the transmission system/distribution system for the purpose of grant of Short Term Open Access.

ii) **Contract Demand (CD) & voltage Level**

The STOA shall be permissible to a consumer having demand of 1 MW and above (except generating plants), connected at 11 KV or above. However, all the generating plants will be allowed open access for wheeling of power.

For the consumers of distribution licensee, the demand in MW shall be computed based on sanctioned CD and Power factor as 0.9

For allowing STOA for purchase of power above contract demand, the specific permission of distribution licensee to draw the open access power above the sanctioned contract demand is required.

iii) **Connectivity**

The consumer/buyer or generating station/sellers seeking STOA should be connected to Transmission/Distribution System of STU / Distribution Licensees at 11KV or above.

An Open Access Consumer shall be eligible to obtain connectivity at the voltage level specified in the Conditions of Supply of the licensee approved by the Commission, unless already connected, and shall apply for connectivity in accordance with the State Grid Code/Principal Regulations.

iv) **Feeder status / category supplying power to consumer:**

Open Access shall be allowed on all feeders except feeders serving mixed loads of urban / industrial consumers Provided that, the consumers connected to mixed industrial feeders, shall be allowed open access subject to the condition that they agree to roastering restrictions imposed by the utility on such feeders.

v) **Registration of Open access Consumer**

An Open Access Consumer connected with Intrastate Transmission System shall be Registered with SLDC on prescribe format ST-7A for generator & ST-7B for the Purchaser &One time registration charges of Rs. 10,000/- shall be payable to the **'Delhi SLDC R&E'** Accounts through Bank draft/cheque payable at Delhi. This registration charge is valid for a specified injection / drawal point with respect to Intrastate Transmission System. Any change in the injection / drawal point shall be treated as a new connection and the charges for registration shall have to be paid by the applicant.

vi) A person having been declared insolvent or bankrupt or having outstanding dues against him for more than two months billing of distribution/transmission licensee at the time of application shall not be eligible for open access. Provided that, if the dispute regarding outstanding dues is pending with any Forum or Court and stay is granted by the competent authority, in that case the person shall be eligible for seeking open access.

vii) In case of Generators, besides fulfilling the connectivity requirement to Licensees system, they shall also be required to furnish copy of compliance report to the feasibility clearance issued by STU or Distribution Licensees, as applicable, along with any other statutory clearance.

2.2 On meeting the mandatory eligibility requirements, the applicant shall be issued the approval for grant of Short Term Open Access / NOC / Standing clearance / concurrence whichever is applicable by the Nodal Agency.

The consumer should ensure that the application for open access for whole day and minimum period of one day.

There after, the following pre-conditions are required to be fulfilled by the Open Access applicant:-

Punjab State Transmission Corporation Ltd.

PROCEDURES / GUIDELINES FOR SHORT TERM OPEN ACCESS

1. Preface:

1.1 This procedure for Short Term Open Access (STOA) is being issued in compliance to the "Punjab State Electricity Regulatory Commission (Terms and conditions for Intra State Open Access) Regulations, 2011" dated Ist July 2011 , and subsequent amendments thereof, if any, hereinafter referred to as "Principal Regulations" or " the Regulations".

1.2 This procedure covers guidelines, terms and conditions and application formats for availing Intrastate short term open access of Transmission and/or Distribution system of the licensee(s) i.e Punjab State Transmission Corporation Ltd (PSTCL) and/or Punjab State Power Corporation Ltd. (PSPCL)

1.3 This procedure, terms and conditions and charges will also be applicable to embedded Open Access customers of PSPCL who use transmission and/or Distribution system of PSTCL / PSPCL in conjunction with the Central Transmission System through bi- lateral or collective transactions through power exchange, in line with PSERC and/or CERC regulations for Short Term Open access, as amended from time to time.

1.4 This procedure shall be applicable for reservation of Transmission and Distribution capacity for short term sale or purchase of power by Open Access customer or existing consumers of PSPCL as well as bulk consumers/CPPs/IPPs or a state utility or an intrastate entity as a buyer or seller as entitled to avail short term Open Access under Open access Regulations, referred to as 'Short Term Open Access Customer' or 'Customer' herein after.

1.5 The flow chart indicating broad activities involved for approval of Short Term Open Access and time lines thereof are described in **Appendix I-A & Appendix I-B** respectively.

1.6 The procedures along with requisite formats as described herein ,shall also be available on SLDC, PSTCL and PSPCL web site "www.punjabsldc.org" , "www.pstcl.org " and "www.pspcl.in" respectively.

2. Mandatory Requirements:

2.1 The following eligibility requirements /pre-conditions are required to be fulfilled by the Open Access customer before applying/availing the Short Term Open Access (STOA):

A) Eligibility Requirements:

The eligibility requirements/conditions for grant of STOA shall be as laid down in the Principal Regulations, as amended from time to time, read with following requirements:

i) Availability of spare transmission & distribution capacity:

The short term customer shall be eligible for STOA over the surplus capacity available on the intra-State transmission system/distribution system after use by the long term customers and the medium term customers, by virtue of

a) Inherent Design Margins;
b) Margins available due to variation in power flows; and
c) Margins available due to in-built spare transmission / distribution capacity created to cater to future load growth.

Provided that construction of a dedicated transmission line/distribution system shall not be construed as augmentation of the transmission system/distribution system for the purpose of grant of Short Term Open Access.

ii) **Contract Demand (CD) & voltage Level**

The STOA shall be permissible to a customer having demand of 1 MW and above (except generating plants), connected at 11 KV or above. However, all the generating plants will be allowed open access for wheeling of power.

For the consumers of distribution licensee, the demand in MW shall be computed based on sanctioned CD and Power factor as 0.9

For allowing STOA for purchase of power above contract demand, the specific permission of distribution licensee to draw the open access power above the sanctioned contract demand is required.

iii) **Connectivity**

The consumer/buyer or generating station/sellers seeking STOA should be connected to Transmission/Distribution System of PSTCL/PSPCL at 11KV or above.

An Open Access Customer shall be eligible to obtain connectivity at the voltage level specified in the Conditions of Supply of the licensee approved by the Commission, unless already connected, and shall apply for connectivity in accordance with the State Grid Code/Principal Regulations.

iv) **Feeder status/category supplying power to customer:**

Open Access shall be allowed on all feeders except urban pattern supply feeders, AP feeders and category - I feeders serving mixed loads of urban / industrial consumers.

Provided that, the customers connected to Category - II mixed industrial feeders, with no agricultural load on the feeder, shall be allowed open access subject to the condition that they agree to rostering restrictions imposed by the utility on such feeders.

v) A person having been declared insolvent or bankrupt or having outstanding dues against him for more than two months billing of distribution/transmission licensee at the time of application shall not be eligible for open access.

Provided that, if the dispute regarding outstanding dues is pending with any Forum or Court and stay is granted by the competent authority, in that case the person shall be eligible for seeking open access.

vi) In case of Generators, besides fulfilling the connectivity requirement to PSPCL/PSTCL system, they shall also be required to furnish copy of compliance

Where TC = Transformer capacity of the sub-station in MVA

SP = Sub-station peak in MVA

AC = Already allotted capacity in MVA but not availed

NC = New transformer capacity in MVA expected to be added.

(c) The STU shall update these values on monthly basis on the first calendar day of the month and post the updated open access capacity availability in the transmission and distribution system on its own website and e-mail the requisite data to other transmission licensees and the distribution licensees who shall ensure immediate posting of the same on their respective websites.

8. Eligibility and other conditions for open access. – (1) Any licensee, generating company, captive generating plant and consumer / person other than consumer of the distribution licensee, having a demand of 1 MW and above and connected at 11 KV or above, shall be eligible for availing open access to the intra-State transmission of STU and or transmission licensee other than STU and or distribution system of the distribution licensee on payment of various charges as per chapter VI of these regulations.

(2) Any consumer of the distribution licensee having a contracted demand of 1 MVA or above and connected to the distribution system of the licensee at 11 kV or above, shall be eligible for seeking open access provided he is connected through an independent feeder emanating from a grid sub-station.

Provided that the Commission may consider allowing open access to individual consumers with contracted demand of less than 1 MVA at such time it may consider feasible having regard to operational constraints and other factors.

(3) A group of two or more consumers of the distribution licensee having a combined contracted demand of 1 MVA or above and connected to the distribution system of licensee at 11 kV or above through an independent feeder emanating from a grid sub-station, shall also be eligible for seeking open access if all such consumers collectively apply for open access through a group leader to be nominated by all such consumers on that feeder and also agree to the rostering restrictions that may have to be imposed by the utility.

Provided that a person covered by a policy of the State Government, existing on the date of coming into force of these regulations, relating to captive generation or generation from non conventional energy sources, shall be eligible to avail open access irrespective of contract demand

(4) The consumers with contracted demand of 1 MVA or above who are not on independent feeders shall be allowed open access subject to the condition that they agree to the system constraints as well as the power cut restrictions imposed by the utility serving them. In such cases the duty of the distribution licensee shall be of a common carrier providing non – discriminatory open access as per section 42 (3) of the Act.

(5) A person having been declared insolvent or bankrupt or having outstanding dues against him for more than two months billing of the distribution / transmission licensee at the time of application shall not be eligible for open access.

9. Special provision for distribution licensees, generating companies and existing consumers. – (1) For distribution licensees: (i) The distribution licensees using intra-State transmission and or distribution system in the State on the date of coming into force of these regulations under an existing arrangement shall be entitled to continue to avail open access to such transmission and / or distribution system on the same terms and conditions for the term of existing agreement or arrangement on payment of transmission and wheeling charges and other applicable charges as may be determined by the Commission.

(ii) The existing distribution licensee shall, within sixty (60) days of coming into force of these regulations, furnish to the STU and the SLDC details of their use of the transmission system and or distribution system and the terms and conditions for such use.

(2) For existing consumer and generating companies: (i) The exiting consumers or an existing generating company other than the licensees availing open access under agreements or government policy shall, within sixty (60) days of coming into force of these regulations, submit to the STU and SLDC details of capacity utilised, point of injection, point of drawal, duration of availing open access, peak load, average load or such other information as the STU or SLDC may require.

(ii) The existing consumer or generating company under sub regulation (2) (i) above may continue to avail open access as per existing agreements or government policy for the period specified in those agreements or policies.

Provided that the open access for subsequent period in respect of such consumers and generating company shall be governed by provisions of these regulations and the existing consumers shall pay the surcharge as specified by the Commission from time to time.

(iii) Person (s) in the State to whom Bhakra Beas Management Board (BBMB) is supplying power on behalf of its partner States as per directions / instructions of Government of India will continue to get supply without payment of any surcharge / additional surcharge. However, BBMB would supply requisite details of such arrangement to STU and SLDC within sixty (60) days of coming into force of these regulations.

4. **Amendment of Regulation 4 of the Principal Regulations:-** Regulation 4 (5) of the Principal Regulations shall be substituted as under:-

"(5) The person seeking application form for connectivity or intra-State open access or for obtaining no objection or standing clearance for inter-State open access shall also be provided a copy of the detailed procedure, including the latest amendments if any, along with each application form. The application form and detailed procedure shall be given on payment of charges of Rs. 100/-. However, in case of subsequent application, detailed procedure may not be required to be given along with the application form but a copy of subsequent amendment(s), if any shall be provided. The STU shall also host the application form, the detailed procedure and subsequent amendments, if any, on its website so that an open access consumer may download the application form as and when required, in which case no charges towards cost of application form shall be recoverable from such open access consumer."

5. **Amendment of Regulation 8 of the Principal Regulations:-** Regulation 8 of the Principal Regulations shall be substituted as under:-

"**8. Entitlement and other conditions for open access.** – (1) Subject to the provisions of these regulations, any licensee, generating company, captive generating plant or a person other than consumer of the distribution licensee, connected at 11 KV or above and who has a capacity/maximum demand of 1 MW and above, shall be entitled for availing open access to the intra-State transmission system of STU and/or of any transmission licensee other than STU and/or distribution system of the distribution licensee on payment of various charges as per chapter VI of these regulations.

Provided that in case of generating plants based on non-conventional / renewable energy sources there will be no capacity restriction for availing open access for wheeling of power.

(2) Any consumer of a distribution licensee having a contract demand of 0.5 MVA or above and connected to the distribution system of the licensee or to the transmission system of STU or of a transmission licensee other than STU at 11 kV

or above, shall be entitled for seeking open access provided he is connected through an independent feeder emanating from a grid sub-station. In case of more than one consumer on such independent feeder, the conditions as in (3) below shall apply.

(3) A group of two or more consumers of a distribution licensee having a combined contract demand of 0.5 MVA or above and connected to the distribution system of licensee at 11 kV or above through an independent feeder emanating from a grid sub-station, shall also be entitled for seeking open access if all such consumers collectively apply for open access through a group representative to be nominated by all such consumers on that feeder provided that all such consumers shall have necessary infrastructure for time-block wise energy metering and accounting installed at their premises and provided further that schedule of power through open access of individual consumers shall also be supplied by the group representative. However all the individual consumers of the group shall have to separately pay the prescribed application fee and SLDC charges. Alternately if such a group of consumers agree for a single point connection, the group as a whole shall be treated as a single HT industrial consumer for all practical purposes including scheduling, metering and billing and in that case individual ABT metering equipment will not be required. The application fee and SLDC charges shall also be charged for a single application. The billing shall be done based on ABT meter installed on the independent feeder at the sub-station and the contract demand of the group shall be taken as the sum of the contract demands of the individual consumers. Other terms and conditions applicable under this alternative shall be as may be prescribed by the Commission in the HERC Regulations for single point supply to industries as and when the same are notified.

(4) If a group of industrial consumers of a distribution licensee who may or may not be connected on 11 KV but are all fed from the same 11 KV feeder with no other consumer connected to that feeder, get together to avail open access, the same shall be admissible provided such consumers agree for supply at a single point under HT industrial category with single point energy meter / ABT meter provided at the substation for billing purposes. In that case all the conditions including levy of peak load exemption charges and levy of penalty for exceeding contract demand as given in these Regulations shall apply in the same manner as

to a single HT open access consumer. The contract demand of the single point connection of the group shall be equal to sum of the connected loads of LT consumers (80% to be counted) plus contract demands of HT consumers (converted to kW at 0.9 power factor). The division of bill amount among the members of the group and payment of bill amount against single point supply shall be the responsibility of the group and shall be subject to same terms and conditions and consequences for nonpayment as applicable to HT consumers. Other terms and conditions applicable shall be as may be prescribed by the Commission in the HERC Regulations for single point supply to industries as and when the same are notified.

(5) The consumers of a distribution licensee with contract demand of 0.5 MVA or above who are not on independent feeders may be allowed open access subject to the condition that they agree to the system constraints as well as the power cut restrictions imposed by the distribution licensee serving them. In such cases, under drawl, if any, on account of power cut restrictions shall not be compensated.

(6) The grant of open access to any licensee, generating company, captive generating plant or a person other than consumer of the distribution licensee covered under sub clause (1) shall be subject to the condition that if power is scheduled to be sold/procured through open access in any time slot of the day, it shall not be less than 250 kW in case of capacity / maximum demand upto 1.5 MW, shall not be less than 500 kW in case of capacity / maximum demand above 1.5 MW but upto 5 MW and shall not be less than 1 MW in case of capacity/maximum demand of 5 MW and above.

(7) The grant of open access to the consumers of the distribution licensee covered under sub clauses (2), (3) and (4) above shall be subject to the condition that if power is scheduled to be procured through open access in any time slot of the day, it shall not be less than 250 kW for consumers with contract demand upto 1.5 MW, shall not be less than 500 kW for consumers with contract demand above 1.5 MW but up to 5 MW and shall not be less than 1 MW for consumers with contract demand above 5 MW. In case of a group as per regulation 8 (3) and 8 (4) above, these conditions shall apply to the group as a whole.

(3) The other commercial conditions for transmission charges, wheeling charges and scheduling & system operation charges, such as, terms of payment, creditworthiness, indemnification, and force majeure conditions shall be as provided in the detailed procedure.

25. Adjustment of Energy

(1) The priority of adjustment of energy drawal by an open access consumer from different sources shall be as per the following sequence of reducing priority and shall be implemented for each time block:

(i) Renewable power generation;
(ii) CPP;
(iii) Banked Energy to be settled in 15 min time block = Banked energy available at the end of previous month in kWh / (96 time blocks* Actual no. of days in current month);
(iv) Long Term Bilateral purchase;
(v) Medium Term Open Access;
(vi) Short term inter-State open access including Power Exchange Transaction;
(vii) Short term intra-State open access;
(viii) Distribution Licensee.

(2) In case of generators selling power to multiple persons/ consumers, the priority for adjustment of energy sale shall be as follows:

(i) Distribution Licensee;
(ii) Captive use;
(iii) Long term bilateral sale followed by medium term bilateral sale and further by short term bilateral sale;
(iv) Sale through power exchange.

Provided, the generator selling power to Distribution Licensee may make an application to the Distribution Licensee for change in priority of sale which shall be governed as per the existing agreement between the generator and the Distribution Licensee.

26. Compliance and Grid Discipline

(1) The open access customer shall abide by the Indian Electricity Grid Code, the State Grid Code and instructions given by State Transmission Utility and State Load Dispatch Centre as applicable from time to time.

(2) The open access customer shall also comply with the requirements of the CEA (Technical Standards for Connectivity to the Grid) Regulations, 2007 as amended from time to time.

(3) The open access consumer shall restrict the sum of his total drawal from all sources including open access and Distribution Licensee up to the total sanctioned contract demand with the Distribution Licensee.

Provided that open access may be allowed over and above the contract demand to a consumer who sources power both by captive generation and Discom to the extent of captive power supply subject to availability of transmission and/or distribution system as the case may be.

Provided further that long term open access may be allowed over and above the contract demand to the extent of sanctioned open access capacity.

(4) The consumer shall be levied fixed charge based on the maximum demand recorded in the ABT meter as per tariff applicable from time to time.

Provided that if the open access is allowed over and above the contract demand in terms of proviso to sub regulation (3) above, the fixed charges shall be levied based on the total demand recorded in the ABT meter less open access demand scheduled in terms of proviso of sub regulation (3) above.

(5) The long term/ medium term open access customer shall provide the injection schedule at the generator end and drawal schedule at the supply end to SLDC, RDPPC, supplier end Distribution Licensee and to the consumer end Distribution Licensee before 10.00 AM of the day preceding the day of scheduling. The Injection schedule shall have the open access consumer and supplier identification. Where open access is provided to more than one open access consumer, supplier shall provide a break up of injection schedule as applicable to each open access consumer considering that the adjustment of energy in such case shall be as per Regulation 25.

(6) The short term open access customer shall provide the injection/ drawal schedule for intra-State transactions every day to the SLDC, RDPPC and the Distribution Licensee before 10:00 AM of the day preceding the day of drawal/injection as per the open access capacity sanctioned.

(7) The power purchase under short term inter-State open access including transactions through power exchange shall be subject to the following:

(i) The consumer shall schedule power from open access for complete 24 hours of the day.

(ii) The consumer shall intimate in writing the block wise maximum power to be scheduled from inter-State open access each day to the SLDC, RDPPC and Distribution Licensee before 10:00AM of the day preceding the day of drawal.

(iii) The schedule so given shall be uniform at least for a period of eight hours and the minimum schedule during the day shall at any time not be less than 75% of the maximum schedule of the day.

(iv) The schedule so given shall be used to calculate the block wise maximum admissible drawal from the Discom.

(v) If actual schedule approved in inter-State transactions is less, then the admissible drawal shall be reduced to that extent.

(8) If the actual drawal in a block is higher than the admissible drawal, then the percentage excess drawal shall be calculated on the admissible drawal and the highest percentage of such excess drawal of all blocks during a month shall be considered as excess capacity (demand) utilized during that month and shall be billed as per regulation 21(v).

(9) Annual maintenance outage, other maintenance outage and forced outage shall be subject to the provisions of the State Grid Code. Intimation of the forced outage shall be sent to SLDC and to the Distribution Licensees, within 30 minutes of the outage and shall incorporate the estimated outage/rectification time. Restoration of unit under outage shall be conveyed to SLDC at least 30 minutes prior to its synchronization with the State Grid.

Annexure V-A

Relevant Clauses of the Electricity Act 2003 related to Captive Generation

- **Section 2(8):** "Captive generating plant" means a power plant set up by any person to generate electricity primarily for his own use and includes a power plant set up by any co-operative society or association of persons for generating electricity primarily for use of members of such cooperative society or association"

- **Section 9(1):** Notwithstanding anything contained in this Act, a person may construct, maintain or operate a captive generating plant and dedicated transmission lines:

  Provided that the supply of electricity from the captive generating plant through the grid shall be regulated in the same manner as the generating station of a generating company.

  Provided further that no licence shall be required under this Act for supply of electricity generated from a captive generating plant to any licencee in accordance with the provisions of this Act and the rules and regulations made thereunder and to any consumer subject to the regulations made under subsection (2) of section 42

- **Section 9(2):** Every person, who has constructed a captive generating plant and maintains and operates such plant, shall have the right to open access for the purposes of carrying electricity from his captive generating plant to the destination of his use:

  Provided that such open access shall be subject to availability of adequate transmission facility and such availability of transmission facility shall be determined by the Central Transmission Utility or the State Transmission Utility, as the case may be

  Provided further that any dispute regarding the availability of transmission facility shall be adjudicated upon by the Appropriate Commission.

- **Section 38(2)(d)(ii):** The functions of the Central Transmission Utility shall be - to provide non-discriminatory open access to its transmission system for use by- any consumer as and when such open access is provided by the State Commission under sub-section (2) of section 42, on payment of the transmission charges and a surcharge

thereon, as may be specified by the Central Commission:…… Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use.

- **Section 39(2)(d)(ii):** The functions of the State Transmission Utility shall be - to provide non-discriminatory open access to its transmission system for use by- any consumer as and when such open access is provided by the State Commission under sub-section (2) of section 42, on payment of the transmission charges and a surcharge thereon, as may be specified by the State Commission:….. Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use.

- **Section 40(c)(ii):** It shall be the duty of a transmission licensee - to provide non-discriminatory open access to its transmission system for use by- any consumer as and when such open access is provided by the State Commission under sub-section (2) of section 42, on payment of the transmission charges and a surcharge thereon, as may be specified by the State Commission:… Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use.

- **Section 42(2):** Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use.

Annexure V-B

Relevant Clauses of the Electricity Rules 2005 related to Captive Generation

Section 3. Requirements of Captive Generating Plant.

(1) No power plant shall qualify as a 'captive generating plant' under section 9 read with clause (8) of section 2 of the Act unless

(a) in case of a power plant

(i) not less than twenty six percent of the ownership is held by the captive user(s), and

(ii) not less than fifty one percent of the aggregate electricity generated in such plant, determined on an annual basis, is consumed for the captive use:

Provided that in case of power plant set up by registered cooperative society, the conditions mentioned under paragraphs at (i) and (ii) above shall be satisfied collectively by the members of the cooperative society:

Provided further that in case of association of persons, the captive user(s) shall hold not less than twenty six percent of the ownership of the plant in aggregate and such captive user(s) shall consume not less than fifty one percent of the electricity generated, determined on an annual basis, in proportion to their shares in ownership of the power plant within a variation not exceeding ten percent;

(b) in case of a generating station owned by a company formed as special purpose vehicle for such generating station, a unit or units of such generating station identified for captive use and not the entire generating station satisfy (s) the conditions contained in paragraphs (i) and (ii) of sub-clause (a) above including-

(2) It shall be the obligation of the captive users to ensure that the consumption by the Captive Users at the percentages mentioned in sub-clauses (a) and (b) of sub-rule (1) above is maintained and in case the minimum percentage of captive use is not complied with in any year, the entire electricity generated shall be treated as if it is a supply of electricity by a generating company.

Explanation :

For (1) Above:

(1) The electricity required to be consumed by captive users shall be determined with reference to such generating unit or units in aggregate identified for captive use and not with reference to generating station as a whole; and

(2) the equity shares to be held by the captive user(s) in the generating station shall not be less than twenty six per cent of the proportionate of the equity of the company related to the generating unit or units identified as the captive generating plant. Illustration: In a generating station with two units of 50 MW each namely Units A and B, one unit of 50 MW namely Unit A may be identified as the Captive Generating Plant. The captive users shall hold not less than thirteen percent of the equity shares in the company (being the twenty six percent proportionate to Unit A of 50 MW) and not less than fifty one percent of the electricity generated in Unit A determined on an annual basis is to be consumed by the captive users.

For (2) Above:

For the purpose of this rule.
a. "Annual Basis" shall be determined based on a financial year;
b. "Captive User" shall mean the end user of the electricity generated in a Captive Generating Plant and the term "Captive Use" shall be construed accordingly;
c. "Ownership" in relation to a generating station or power plant set up by a company or any other body corporate shall mean the equity share capital with voting rights. In other cases ownership shall mean proprietary interest and control over the generating station or power plant;
d. "Special Purpose Vehicle" shall mean a legal entity owning, operating and maintaining a generating station and with no other business or activity to be engaged in by the legal entity.

5.2.25 The provision relating to captive power plants to be set up by group of consumers is primarily aimed at enabling small and medium industries or other consumers that may not individually be in a position to set up plant of optimal size in a cost effective manner. It needs to be noted that efficient expansion of small and medium industries across the country would lead to creation of enormous employment opportunities.

5.2.26 A large number of captive and standby generating stations in India have surplus capacity that could be supplied to the grid continuously or during certain time periods. These plants offer a sizeable and potentially competitive capacity that could be harnessed for meeting demand for power. Under the Act, captive generators have access to licensees and would get access to consumers who are allowed open access. Grid inter-connections for captive generators shall be facilitated as per section 30 of the Act. This should be done on priority basis to enable captive generation to become available as distributed generation along the grid.

Towards this end, non-conventional energy sources including co-generation could also play a role. Appropriate commercial arrangements would need to be instituted between licensees and the captive generators for harnessing of spare capacity energy from captive power plants. The appropriate Regulatory Commission shall exercise regulatory oversight on such commercial arrangements between captive generators and licensees and determine tariffs when a licensee is the off-taker of power from captive plant.

5.4 While it is recognized that the State Governments have the right to impose duties, taxes, cess on sale or consumption of electricity, these could potentially distort competition and optimal use of resources especially if such levies are used selectively and on a nonuniform basis.
In some cases, the duties etc. on consumption of electricity is linked to sources of generation (like captive generation) and the level of duties levied is much higher as compared to that being levied on the same category of consumers who draw power from grid. Such a distinction is invidious and inappropriate. The sole purpose of freely allowing captive generation is to enable industries to access reliable, quality and cost effective power.

Particularly, the provisions relating to captive power plants which can be set up by group of consumers has been brought in recognition of the fact that efficient expansion of small and medium industries across the country will lead to faster economic growth and creation of larger employment opportunities. For realizing the goal of making available electricity to consumers at reasonable and competitive prices, it is necessary that such duties are kept at reasonable level.

Annexure VI

Relevant Clauses of the National Electricity Policy related to Captive Generation

National Electricity Policy 2005

Captive Generation

5.2.24 The liberal provision in the Electricity Act, 2003 with respect to setting up of captive power plant has been made with a view to not only securing reliable, quality and cost effective power but also to facilitate creation of employment opportunities through speedy and efficient growth of industry.

5.2.25 The provision relating to captive power plants to be set up by group of consumers is primarily aimed at enabling small and medium industries or other consumers that may not individually be in a position to set up plant of optimal size in a cost effective manner. It needs to be noted that efficient expansion of small and medium industries across the country would lead to creation of enormous employment opportunities.

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ANNEXURE-VII

No-23/40/2005-R&R
Government of India
Ministry of Power

Shram Shakti Bhawan, Rafi Marg,
New Delhi, 24th August, 2017

To,

1. The Chairperson, Central Electricity Authority, SewaBhavan, R.K. Puram, New Delhi
2. The Secretary, Central Electricity Regulatory Commission (CERC)/FOR, Janpath,New Delhi
3. Principal Secretaries/Secretaries (Power/Energy) of all State Governments/UTs
4. Secretaries of All State Electricity Regulatory Commissions/JERCs.
5. Chairman/CMDs of all PSUs under administrative control of Ministry of Power
6. CEO, POSOCO, New Delhi
7. CMDs/MDs of Discoms of all State Governments

Subject: Consultation paper on issues related to Open Access-Reg

Sir/Madam,

Electricity Act, 2003 provides Non-Discriminatory Open Access to the customers for the use of transmission lines or distribution system or associated facilities with such lines or system. Ministry of Power has received many representations raising some issues in connection with the Open Access.

2. In view of the above, a "Consultation Paper on issues pertaining to Open Access" is forwarded herewith with request to furnish comments/suggestions on the consultation paper, if any, to this Ministry by 08/09/2017. The consultation paper is also uploaded on the website of the Ministry i.e. www.powermin.nic.in. The comments may be mailed at raj.singh66@nic.in and sandeep.naik68@gov.in.

Encl: as above

Yours faithfully

(D. Guha)
Under Secretary to Govt. of India

Copy to- with request to furnish comments/suggestions, if any

1. Director General, Association of Power Producers, New Delhi
2. President, FICCI, House No. 1, Tansen Marg New Delhi
3. Member, PRAYAS Energy Group, Pune

Copy also to:

All JSs of Ministry of Power/JS&FA & Economic Adviser, Ministry of Power

Copy to: Technical Director, NIC Cell for uploading on MOP's website under "Current Notices " with the heading of **"Consultation Paper on issues pertaining to Open Access"**

CONSULTATION PAPER

ON

ISSUES PERTAINING TO

OPEN ACCESS

AUGUST 2017

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1. BACKGROUND

1.1 The Electricity Act 2003 envisaged competition in the retail supply of electricity by introducing the concept of "Open Access" in a phased manner. The Electricity Act 2003 specifies that:

> *"Definition (47) " open access" means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission;"*
>
> *"Clause 42 (2) The State Commission shall introduce open access in such phases and subject to such conditions, (including the cross subsidies, and other operational constraints) as may be specified within one year of the appointed date by it and in specifying the extent of open access in successive phases and in determining the charges for wheeling, it shall have due regard to all relevant factors including such cross subsidies, and other operational constraints:*
>
> - *Provided that such open access may be allowed before the cross subsidies are eliminated on payment of a surcharge in addition to the charges for wheeling as may be determined by the State Commission :*
> - *Provided further that such surcharge shall be utilised to meet the requirements of current level of cross subsidy within the area of supply of the distribution licensee :*
> - *Provided also that such surcharge and cross subsidies shall be progressively reduced and eliminated in the manner as may be specified by the State Commission:*
> - *Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use."*

1.2 Subsequently the Central Electricity Regulatory Commission (CERC) and the State Electricity Regulatory Commissions (SERCs) notified Open Access Regulations which facilitated procurement of power through the Open Access route. Such Regulations have been developed in line with the prevailing Legislative and Policy provisions as well as considering the operational challenges faced by all stakeholders.

1.3 The introduction has been largely successful in promoting competition with the incumbent distribution licensees by providing consumers access to alternate sources of power. However, a number of issues have come up in the operationalization of Open Access. These issues impact all stakeholders - Open Access Consumers, Power Sellers, Distribution Licensees and non-open access retail supply consumers of distribution licensees. To examine these issues along with issues relating to amendments in provisions relating to captive Generating plants in the Electricity Rules, 2005, a committee was constituted by CEA on the advice of Ministry of Power. The Committee was headed by Member (E&C), CEA with members drawn from CERC, POSOCO, MSEDCL, GUVNL, PFFCL and Chief Engineers from relevant Divisions of CEA. This consultation paper is based on the report of the above mentioned Committee and decision held in a meeting taken by Secretary (Power), GoI on 31.03.2017 wherein recommendations of this Committee were deliberated.

1.4 There are primarily five issues that are impacting a fair play between consumers and utilities on open access/group captive -

(a) **Frequent shifting of Open Access Consumers:**

DISCOMs are unable to manage power procurement efficiently due to the high frequency of shifting of Open Access consumers between DISCOM and other source of power

(b) **Cross Subsidy Surcharge:**

The Cross Subsidy Surcharge calculated by State Electricity Regulatory Commissions (SERCs) and recovered from Open Access consumers is often insufficient to recover

the entire loss of cross subsidy on account of consumers procuring power through the Open Access route.

(c) **Additional Surcharge:**

Majority of power procurement by DISCOMs is long term in nature. Additional surcharge to recover stranded cost on account of stranded Power Purchase Agreements (PPAs) and stranded assets due to consumers procuring power through Open Access have in most cases not been calculated appropriately. This has led to under recovery of power procurement expenses incurred by DISCOMs.

(d) **Stand-By charges:**

The methodology adopted by DISCOMs for calculation and structuring of Stand-By charges is inconsistent across States. Further, lack of periodic review of these charges can lead to revenue loss for DISCOMs.

(e) **Tariff design and rationalisation:**

Although two part tariff has been introduced in most States, the structuring of fixed and variable components of tariff is not reflective of the actual proportion of fixed and variable cost liability of the DISCOMs.

1.5 The ensuing sub-sections of the Consultation Paper analyses each of the above issues along with existing practices and contains proposals to mitigate these issues.

2. ISSUE I - FREQUENT SWITCHING BY OPEN ACCESS CONSUMERS

Issues:

2.1 Grid frequency is an important indicator of the health of the grid. Progressive tightening of the frequency band, enforcing limits on volume of deviation along with other deterrents and enforcement of Central Electricity Regulatory Commission (CERC) Deviation Settlement Mechanism (DSM) Regulations have contributed to maintain a stable frequency profile and secure system operation.

2.2 As per the prevailing regulatory framework, the DISCOMs are required to provide their energy drawal schedule at their periphery on the day ahead basis to the SLDC of its state in order to facilitate latter to maintain secure grid operations.

2.3 Many DISCOMs regularly deviate from their schedule, primarily due to uncertain load forecasts as the scheduling is undertaken on the basis of DISCOMs forecast for energy requirement for the following day. With open access consumers revising / deviating from schedule, it becomes more difficult for the DISCOMs to accurately predict the requirement for the following day.

2.4 Particularly for short term open access consumers who procure energy from collective market or power exchanges, there is high degree of uncertainty in their power procurement from Power Exchange and DISCOMs. Considerable variation in schedule and actual energy drawl is observed on regular basis for short term open access consumers. Also, based on the market clearing price determined in exchanges for each block, the energy drawal of open access consumer fluctuates significantly within a day. Despite of such uneven drawl throughout the day, the Open Access consumers continue to enjoy the freedom of rescheduling their energy drawal on the basis of their daily load requirement and the price at which energy is available in the power exchange markets. Such variations in energy drawal makes it difficult for the DISCOM to forecast time block wise energy requirement for the following day.

2.5 DISCOMs incur heavy penalties for deviation from their schedule in the form of applicable DSM charges.

2.6 SERCs also disallow a large share of short term power procurement costs incurred by DISCOMs for meeting demand variation by capping purchase price.

2.7 A part of this deviation is attributed to the variation in energy drawal by open access consumer purchasing power from sources other than DISCOM, which results in underdrawl/over-drawal in particular time blocks.

2.8 Whereas open access consumers are allowed to re-schedule their energy drawal based on the daily energy requirement, DISCOMs irrespective of the drawal pattern of the open access consumers, under universal service obligation is required to keep its entire generation and transmission capacity available for the consumers. In such a scenario forecasting demand for the ensuing day becomes challenging for the DISCOMs.

2.9 Considering the immense growth in number of open access consumers and the fluctuation in the energy drawal from open access, it is now imperative that frequency of switching is modulated in such a way that DISCOMs are not unduly burdened by their obligation to provide supply.

2.10 Taking into account the difficulties faced by DISCOMs and to ensure that the provision of open access granted under the Electricity Act, 2003 to promote efficiencies and competition does not unduly burden DISCOMs, few SERCs have restricted frequency of switching of consumers from open access to distribution licensee in various ways.

- RERC, HERC, MERC, etc. have adopted measures such as:
  - Mandatory to schedule power from open access for the entire duration of 24 hours in a day,
  - Maintain uniform energy drawal for at least a period of continuous 8 hours,
  - Restriction on variation in drawal to maximum of 25% of maximum schedule, penalizing variation in drawal, etc.
- GERC Regulations provide that Quantum of drawl from DISCOM during any time of the day should not exceed the drawl of electricity from the DISCOM in such time block wherein Open Access drawal is the maximum.

2.11 It has been brought out that DISCOMs are incurring costs to run specific thermal generation unit(s) on technical minimum so that capacity of such unit is available to meet unforeseen increase in demand. DISCOMs have also pointed out that frequent shifting during a day by short term open access consumers is one of the reasons due to which such thermal capacity needs to maintained at technical minimum. Some of the short term Open Access consumers', based on cost of power from other sources (mostly from day ahead market of power exchange), provide schedule of drawl of power from DISCOMs. This is one of the reason, due to which DISCOMs are facing difficulties in making accurate demand projections, and needs to be discouraged.

2.12 **Proposal:**

Open access customers should be required to schedule power for at least 24 hours whenever they seek open access.

3. ISSUE II - DETERMINATION OF CROSS SUBSIDY SURCHARGE

Issues & Prevailing Practices:

3.1 Section 8.3 (2) of the Tariff Policy 2016 specifies that:

"For achieving the objective that the tariff progressively reflects the cost of supply of electricity, the Appropriate Commission would notify a roadmap such that ***tariffs are brought within ±20% of the average cost of supply.*** *The road map would also have intermediate milestones, based on the approach of a gradual reduction in cross subsidy"*

The Tariff Policy provides that SERCs should notify a roadmap such that tariffs are in ±20% of ACoS. The First proviso to para 8.5.1 of Tariff Policy 2016 also specifies that Cross Subsidy Surcharge (CSS) should be capped at 20% of the tariff applicable to the category of the consumers.

3.2 It has been observed that some SERCs have implemented only the second point, which can result in lower recovery of CSS by DISCOMs.

Table 1: Existing Practices for levy of CSS

Cost coverage in tariff order	Within ±20%	Outside ±20%
Basis ACoS	4 states	9 states
Basis Cos	2 states	1 state
Do not publish	-	13 states

3.3 Further the methodology and formulae adopted by SERCs for determination of CSS over the years is also inconsistent.

The formulas used for calculation of CSS by various SERCs:

CSS = T-[C(1-L/100)+D +R]

CSS = (ABR - CoS) * Factor

CSS = (ABR - ACoS) * Factor

CSS = T - (avoided PPC + Wheeling Charge)

T - applicable Tariff
C - Weighted average cost of power purchase by the Licensee, including meeting the Renewable Purchase Obligation renewable power
L - System losses D - Wheeling Charge R -Cost of carrying Regulatory Assets

3.4 Some SERCs use Average Cost of Supply (ACoS) for calculation of CSS instead of category wise Cost of Supply (CoS). For high voltage consumers like industrial consumers, where CoS is less than ACoS, using ACoS would result in lower CSS. This will also promote economic inefficiency as availing power from other than DISCOM at a rate higher than CoS of DISCOM but lower than ACoS will still be beneficial for Open Access consumers.

3.5 SERCs do not consider impact of Time of Day (TOD) tariff while calculating CSS. In case where ToD tariff is in vogue, Open Access consumers end up paying lower CSS if Open Access system is used during peak time when the retail tariffs are higher.

3.6 **Proposal:**

(a) The Tariff Policy 2016 mandates SERCs to determine roadmap for reduction of cross subsidy and bring tariff at +/- 20% Average Cost of Supply, however it restricts Cross Subsidy Surcharge at 20% of the consumer tariff. In case the consumer tariff is more than 120% of Average Cost of Supply, DISCOM will not be able to recover losses through cross subsidy surcharge in case consumer opts for open access. It is essential for SERCs to implement both Para 8.3 -2 and First proviso to para 8.5.1 of the Tariff Policy 2016 simultaneously. If one of the provision could not be implemented due to some reason, the second provision should also not be implanted to that extent.

(b) SERCs should determine Cross Subsidy Surcharge (CSS) based on category wise cost of supply, thus identifying real cross subsidy. SERCs may initially determine CSS on Voltage wise Cost of Supply and later based on Category wise Cost of Supply. As a first step SERCs should develop guidelines for DISCOMs to calculate Voltage wise cost of supply. DISCOMs should capture and maintain details of voltage wise and consumer category wise details of assets and costs. In the next phase SERCs should develop guidelines and for DISCOMs to calculate category wise cost of supply.

(c) SERCs should introduce differential Cross Subsidy Surcharge - for peak, normal and off peak hours based on the ToD tariff. Time of the day sensitive pricing can

also help address the issue of uneven scheduling by Open Access consumers during the day.

4. ISSUE III - DETERMINATION OF ADDITIONAL SURCHARGE

Issues & Prevailing Practices:

4.1 Under the sub section (4) of the Electricity Act 2003, DISCOMs have a universal supply obligation and are required to supply power as and when required by the consumers in its area of supply.

4.2 Considering the sales forecast approved by the State Commission while determining Annual Revenue Requirement, the DISCOM enter into long term Power Purchase Agreements (PPA) with sellers (generators/ traders etc.) so as to ensure supply of power for the envisaged increase in the load.

4.3 While contracting energy through such long term PPAs, the tariff payable to the generators usually consists of two part i.e. capacity charges and energy charges. Therefore, the DISCOMs have to bear the fixed cost even when there is no off take of energy through such source.

4.4 Whenever any consumer opts for open access and takes intermittent supply through open access, the DISCOMs continue to pay fixed charges in lieu of its contracted capacity with generation stations. However, DISCOMs are unable to sufficiently recover such fixed cost obligation from the open access consumers.

4.5 The cost recovered from fixed charges in the tariff schedule is less than the fixed cost incurred by the DISCOM for supplying energy. This leads to the situation where the DISCOM is saddled with the stranded cost on account of its universal supply obligation.

4.6 Also, the DISCOMs, in a number of cases, establish assets for supplying power to certain specific consumers. There may be certain cases wherein such assets become redundant. In such cases, fixed charges for such stranded assets should be borne by the customers as part of additional surcharge.

4.7 In view of the adverse financial situation caused by arrangements made for complying with the obligation to supply, Section 42(4) of the Electricity Act, 2003 provides as under:

"Where the State Commission permits a consumer or class of consumers to receive supply of electricity from a person other than the distribution licensee of his area of supply, such consumer shall be liable to pay an additional surcharge on the charges of wheeling, as may be specified by the State Commission, to meet the fixed cost of such distribution licensee arising out of his obligation to supply."

4.8 Section 8.5 of the Tariff Policy 2016 also provides;

"The additional surcharge for obligation to supply as per section 42(4) of the Act should become applicable only if it is conclusively demonstrated that the obligation of a licensee, in terms of existing power purchase commitments, has been and continues to be stranded, or there is an unavoidable obligation and incidence to bear fixed costs consequent to such a contract. The fixed costs related to network assets would be recovered through wheeling charges"

4.9 Further, clause 5.8.3 of the National Electricity Policy notified by the Ministry of Power, Govt. of India, reads as under.

"5.8.3...
An additional surcharge may also be levied under sub-section (4) of Section 42 for meeting the fixed cost of the distribution licensee arising out of his obligation to supply in cases where consumers are allowed open access.

..."

4.10 In spite of clear provisions allowing levy of additional surcharge on consumers opting for open access, only few SERCs have notified additional surcharge to be recovered. This is primarily due to the Tariff Policy and regulations putting the onus on DISCOMs to conclusively demonstrate that the power purchase commitments have been and will continue to remain stranded. However, with consumers frequently switching their mode of supply between DISCOM and open access, it becomes difficult for the DISCOM assess the quantum of power that will continue to remain stranded. Moreover, the quantum of stranded power does not remain constant throughout the year or a month or a week or even a day.

4.11 In an energy deficit scenario, determining additional surcharge may have held lesser importance. However, with India progressing towards an energy surplus scenario, denial of additional surcharge to DISCOMs may severely impact their financial viability.

4.12 Many SERCs have directed that Additional Surcharge shall be calculated on case to case basis. However, computation of additional surcharge on case to case basis is practically impossible.

4.13 Considering the adverse financial impact, some SERCs have developed methodologies to assess the quantum of additional surcharge to be levied on consumers opting for open access.

- **DERC** considers the difference between UI rate and average long term PPA tariff as additional surcharge. As UI rate varies from time to time, there is seasonal additional surcharge which varies substantially from Rs. 0.3 per unit to Rs. 3 per unit.
- **GERC** computes the average capacity remaining stranded on account of open access. To compute the capacity remaining stranded on account of open access
    - The hourly data of surplus capacity vis-à-vis scheduled capacity of OA consumers is determined.
    - The lower of the surplus capacity and capacity scheduled by OA consumers is considered as stranded capacity for the hour.
    - Accordingly, the GERC has worked out the average stranded capacity due to open access. Average fixed charges per MW of available power multiplied with the average stranded capacity due to open access forms the basis of total additional surcharge to be recovered from open access consumers.
    - The demand charges paid by the open access consumers are adjusted after deducting the transmission and wheeling charges related to energy drawn by Open access consumers from the Distribution Licensees.
    - The per unit additional surcharge recoverable from open access consumers was computed by deducting net demand charges from the fixed charges on account of stranded capacity divided by energy scheduled through open access.
- HERC and RERC have used data of backed down energy and open access scheduled energy for every 15 minute time block and considered the minimum of two as energy backed down due to open access.
- HERC and RERC utilized the source wise details of backed down energy to compute weighted average cost of energy backed down and effective fixed cost per unit of stranded power.

4.14 DISCOMs may also surrender power due to other reasons like seasonal variations, purchases from Power Exchange, RTC short term power purchases of DISCOMs etc. In some cases, additional renewable capacity may have been added to ensure compliance to RPO and not to meet demand. The burden of surrender of power to that extent should be shared by all consumers.

4.15 To ensure only power surrendered due to open access is considered for computation of additional surcharge, only minimum of power backed down/ surrendered and open access quantum should be considered.

4.16 One of the changes in the formula for surcharge calculation made in the revised Tariff Policy issued in January 2016 is explicit inclusion of cost of Regulatory Asset in the cost of supply. This has been done presumably to ensure that CSS reflects only prevailing level of cross subsidy and nothing else. However, this bring us to another issue that Regulatory Asset was created when open access customer was part of the system. Such customers had enjoyed the benefit of suppressed tariff when Regulatory Asset was being created. Thus, when such customers leave the tariff base of the DISCOM, part of Regulatory Assets become stranded. Therefore, one of the component of additional surcharge should cover for Regulatory Asset.

4.17 **Proposal**:

(a) Additional Surcharge could have three components to cover for (i) stranded power under long-terms PPAs, (ii) stranded physical assets and (iii) cost of carrying regulatory assets or amortization of regulatory assets, as the case may be.

(b) A number of SERCs have started taking steps to develop methodology for calculation of additional surcharge. However, in order to bring about certainty and uniformity in the approach, a suggested detailed methodology for stranded long-term PPAs has been developed, which is enclosed at Annex. This methodology envisages determination of additional surcharge for peak and off-peak hours of each season. The method calculates fixe charges of stranded PPAs for immediate past and applies the same as additional surcharge for the same season next year. To ensure only power stranded due to open access is considered for computation of

additional surcharge, only minimum of un-requisitioned power and open access quantum should be considered

(c) There is also a need to define the criteria for classifying an asset as "Stranded" and the methodology for calculation of additional surcharge on account of such assets. It is also important to remove the cost of stranded assets from the ARR of the DISCOM to prevent socialization of stranded asset cost and avoid any double charging to consumers.

(d) Cost of carrying Regulatory Assets or amortization of Regulatory Assets, as the case may be, should be one of the component of additional surcharge. SERCs should calculate Regulatory Asset and surcharge to recover the same for each year separately. Surcharge for Regulatory Assets should be payable by Open Access consumers also based on year till they had availed supply from DISCOM. DISCOMs should maintain accounts against Regulatory Assets for each year separately. Further, SERCs should ensure that Open Access consumer should not be required to pay for Regulatory Assets for a particular year, if the same has been paid earlier as part of cross subsidy surcharge.

5. ISSUE IV - STANDBY CHARGES

Issues:

5.1 Standby arrangements could be required by Open Access consumers to tide over deficits in cases of situations such as outages of generator, transmission assets etc. In such situations the Open Access consumer has to take power from an alternate source e.g. from the DISCOM. The charges for maintaining standby arrangements for such consumers should be reflective of the costs incurred by DISCOMs for providing these support services.

5.2 Standby charges for long term open access consumers is as per contract signed with distribution licensees whereas standby charges for short term open access consumers are generally defined from time to time by the SERCs.

5.3 In case of determination of stand by charges, there are inherent issues which have been highlighted below:

(a) No uniform approach for determination of stand by charges

(b) Standby charges are not necessarily linked to the actual cost incurred by the DISCOMs to maintain capacity for standby power

(c) Charges determined by SERCs are not revisited in a periodic manner resulting in inefficient recovery of the costs incurred to maintain capacity for standby power and socialization of costs through the ARR

5.4 Clause 8.5.6 of the Tariff Policy 2016 specifies that:

> *"In case of outages of generator supplying to a consumer on open access, standby arrangements should be provided by the licensee on the payment of tariff for temporary connection to that consumer category as specified by the Appropriate Commission. Provided that such charges shall not be more than 125 percent of the normal tariff of that category."*

Prevailing Practices - Determination of Stand by charges

1. **Two Part Structure -**

Fixed and Energy charges are determined separately by adopting various approaches

Fixed Charges

- Rate defined by SERC (Rs/kVA)
- Applicable fixed charges as per tariff schedule (with cap of Minimum no. of day in a year of applicability)

Energy Charges

- Applicable variable charges as per tariff schedule
- Applicable temporary tariff

2. ***Factor x ABR category*** - SERC notifies Standby Charges through separate Orders

3. ***Negotiated/ agreed standby charges*** between the Open Access Consumer and the provider of alternate source of power to the Open Access consumer.

5.5 **Proposal**:

(a) Standby charges should be designed to reflect the actual fixed cost and variable cost liability incurred by the DISCOMs to supply back up power to Open Access consumer.

(b) SERCs should design two- part standby charges with fixed charge and variable charge components. In line with the provisions specified under Para 8.5.6 of the Tariff Policy 2016 the limit of 125% should be applied separately on the rate for fixed charge and variable charge.

(c) Standby charge should be determined annually by SERCs to reflect the variation in costs over time or Auto- indexation mechanism may be designed for periodic (quarterly/annual) revision of standby charges.

6. ISSUE V - TARIFF RATIONALIZATION

Issues:

6.1 One of the critical aspects of tariff setting is to enable recovery of efficient and prudent costs incurred by regulated entities to ensure viability of the entire value chain while facilitating power supply at reasonable rates to consumers. In this regard, the National Tariff Policy 2016 in Paragraph 5.10 and Paragraph 8.3 specifies that:

> *"5.10 Consumer interest is best served in ensuring viability and sustainability of the entire value chain viz., generation, transmission and distribution of electricity, while at the same time facilitating power supply at reasonable rate to consumers. The financial turnaround/restructuring plans are approved by the Appropriate Government from time to time to achieve this objective. The Appropriate Government as well as the Appropriate Commission while implementing such plans shall ensure viability of the generation, transmission and distribution in terms of recovery of all prudent costs.*
>
> *"**8.3 Tariff design: Linkage of tariffs to cost of service***
>
> *It has been widely recognized that rational and economic pricing of electricity can be one of the major tools for energy conservation and sustainable use of ground water resources.*
>
> *In terms of the Section 61(g) of the Act, the Appropriate Commission shall be guided by the objective that the tariff progressively reflects the efficient and prudent cost of supply of electricity.*
>
> *....."*

6.2 Most State Electricity Regulatory Commissions (SERCs) have by now introduced two part tariff in order to make the tariff more reflective of the nature of costs incurred by the DISCOMs.

6.3 In the two-part tariff mechanism, the retail supply tariffs are divided into two components viz. fixed charge/demand charge and energy charge. Fixed charge/demand charge is designed to recover the costs of the DISCOM which are fixed in nature such as the capacity charges payable to power generators, transmission charges, operation & maintenance expenses, depreciation, Interest on loans, return on equity etc. This is generally recovered on the basis of connected load / contract demand or maximum demand of the consumer. Energy charge is designed to recover the costs of the DISCOMs which are variable in nature such as variable cost component of power purchase etc. These costs are recoverable on the basis of the actual consumption of the consumers during the billing period (per kWh or per kVAh basis).

6.4 Even though two-part tariff has been introduced by SERCs, mismatch between the actual fixed and variable cost liability incurred by DISCOMs to the proportion of cost recoverable through fixed charge and energy charge still exists. For example, in case of MSEDCL, the fixed cost was approximately 57% of total cost for the year 2015-16 (as approved in the Tariff Order), however the recovery through demand/ fixed charges were far lower at approximately 19% of the total revenue.

6.5 For a Short Term Open Access consumer who is moving to open access, DISCOM save only on the variable cost of power procurement whereas DISCOM still has to incur the fixed cost (capacity charges) which should in turn be recoverable from consumers. If the tariff designed is not reflective of the proportion of fixed and variable cost liability of DISCOMs, there will be insufficient recovery of the fixed charges by the DISCOM. However, DISCOMs in some states have attempted to address this issue through recovery of additional surcharge from Open Access consumers. Rationalization of tariff would also lead to transparent determination of cross subsidy surcharge and additional surcharge.

6.6 Some Open Access consumers maintain at least part of their contract demand with the DISCOM in order to save on the payment of standby charges. This practice tends to have an adverse impact on the DISCOM. However, if demand/fixed charges are reflective of actual fixed cost liability of DISCOM, Open Access consumer may be less inclined to maintain contracted demand with the DISCOM and for Open Access consumers

maintaining part of their contract demand, tariff shall be reflective of the prudent incurred cost.

6.7 In most of the states, fixed costs includes the cost of wheeling business of the DISCOMs, which will be recovered through fix/demand charges. Only few states, like Maharashtra, have specified a separate component in the retail tariff to recover the wheeling cost. As all the DISCOMs are recovering wheeling charges from the Open Access consumers as a separate charge, charging entire fixed cost including wheeling cost from Open Access consumers will lead to over recovery.

6.8 **Proposal**:

(a) The tariff design should progressively reflect actual break-up between fixed charges and variable charges as per the DISCOMs prudent and efficient cost structure. SERC's should develop a phased implementation plan over a three to five-year horizon to progressively bring in fixed charges in retail tariff to reflect 75% -100% of the fixed cost liability of DISCOMs.

(b) Consumer categories with low load factor (load factor less than 15%) such as Domestic Category and Small Commercial consumers etc. may be partially exempted from fixed charges being linked to actual fixed cost liability as such consumers shall not be able to absorb the tariff reflective of actual fixed cost liability.

(c) For the states, where demand/fixed charge are recovering wheeling cost incurred by DISCOMs (no separate tariff for recovering wheeling cost), Open Access consumers should get credit for wheeling charges paid by them towards fixed/demand charges payable by them subject to 100% fixed cost recovery. For example, if through fix/demand charges, Open Access consumers are paying 80% of the fixed cost and including wheeling charges this recovery becomes 110%, Open Access consumers should get 10% reduction in the fixed cost payable by them.

7. Conclusion

7.1 After examining the current scenario of Open Access in the Indian Power Sector, it is clear that there are a number of issues that are hindering stakeholders while operationalizing open access. These issues along with suggested action points have been discussed in in the preceding sections of this Report.

7.2 Solutions arrived at based on this exercise of consultation need to be implemented in a time bound manner to facilitate growth of the Indian economy while maintaining the viability of the regulated entities and protecting smaller consumers from undue burden of socialization of costs.

7.3 It is important to look at the underlying causal factors of these issues and ensure that solutions developed address these factors in a sustainable manner. A large proportion of issues regarding charges levied on Open Access Consumers stem from the inadequacies in the design of retail supply tariff.

7.4 Therefore, in order to have economic and efficient charges for facilitating open access, it is important to design prudent cost reflective retail tariff using economic principles while fulfilling social objectives in electricity pricing through direct subsidies. Section 8.3 of the Tariff Policy 2016 envisages this aspect:

> *"Direct subsidy is a better way to support the poorer categories of consumers than the mechanism of cross subsidizing the tariff across the board. Subsidies should be targeted effectively and in transparent manner. As a substitute of cross subsidies, the State Government has the option of raising resources through mechanism of electricity duty and giving direct subsidies to only needy consumers. This is a better way of targeting subsidies effectively"*

7.5 SERCs should ensure that DISCOMs develop the requisite capability and infrastructure to assess the costs incurred in supply of power to each consumer category. SERCs should develop and approve procedures for accounting and allocation of costs into different voltage levels of the network/ consumer categories of the DISCOM.

7.6 SERCs should design tariff linked to the cost of supply of each consumer category. Such tariff would then allow SERCs to factor in cross subsidy which are within the limits specified in the National Tariff Policy 2016.

7.7 SERCs should calculate Regulatory Asset and surcharge to recover the same for each year separately. Surcharge for Regulatory Assets should be payable by Open Access consumers also based on year they had availed supply from DISCOMs.

7.8 SERCs should also introduce differential Cross Subsidy Surcharge as per ToD Tariff- for peak, normal and off peak hours.

7.9 There is also need for rationalising tariff by SERCs, which enables DISCOMs to recover fixed cost through fixed/demand charges and variable charges through energy charge.

7.10 With respect to Additional Surcharge SERCs need to implement a mechanism to determine quantum of stranded power purchase commitment in each time block and the charges for same. Such charges should be recoverable from Open Access consumers only thus protecting retail supply consumers from such costs.

7.11 Two Part Standby charges need to be determined by the SERCs periodically. Stand-by charges should reflect cost of power procurement on short term basis and deviation settlement charges liable to be paid by DIOSCOMs in lieu of supply of such power.

ANNEX

Proposed detailed methodology for arriving at Additional Surcharge for stranded power under long-term PPAs

1. The assessment of Additional Surcharge should be carried out for peak and Off-peak periods for each season. The period of 12 months in a financial year may be divided into two or more seasons based on shape of load curves. Peak and off-peak period for a state should be decided by the SERC.

2. The method basically calculates additional surcharge based on actual parameters for the immediate past and assumes that conditions would remain same for corresponding period next year.

3. Assessment of stranded power attributable to Open Access customers during each 15-minute time block of peak period of a season may be done as under:

SP = Minimum [(UR - LS), OA]

Where

SP is Stranded Power (MW) attributable to Open Access customers during the time block

UR is un-requisitioned power (MW) during the time block from various Power Stations with which Discom has long-term PPA duly approved by the SERC

OA is the quantum of Open Access granted (MW) during the time block

LS is the quantum (MW) of load shedding carried out or load restrictions imposed on various categories of consumers or areas during the time block

In the above calculation, load shedding or load restrictions in the command area of Discom, is subtracted from the un-requisitioned power to arrive at actual stranded power during the time block. By using minimum of stranded power and open access quantum, it is ensured that only the power stranded because of Open Access Consumers is used for assessment of Additional Surcharge.

Thereafter, average stranded power during the peak period can be calculated as under:

$AVSP_{pk}$ = Average of Stranded Power attributable to Open Access customers (SP) over all the time blocks during peak period of the season

Similarly, average Stranded Power during off-peak period should also be assessed for each season.

4. Next, effective per MW fixed cost for stranded power is calculated for each season. This rate is equal to the weighted average of fixed cost per MW of the stations in which power remained un-requisitioned, with quantum of un-requisitioned power used as weight.

Thus,

$R = (\sum AVUR_i \times FC_i) / \sum AV\ UR_i$

Where

R is effective fixed cost in Rs /MW of stranded power

FC_i is the fixed cost of i^{th} generating station in Rs/MW where there was un-requisitioned power (this can be calculated by dividing the annual fixed charge of the generating station with its Installed Capacity in MW)

$AVUR_i$ is the average un-requisitioned power (MW) (during the season) from i^{th} generating stations

5. Next, total Additional Surcharge recoverable during peak period of the season is calculated as under:

$$A_{pk} = (AVSP_{pk} \times R \times HR_{pk}/8760) - I_{pk}$$

Where

A_{pk} is the total additional surcharge (Rs.) recoverable for the peak period of the season

$AVSP_{pk}$ is average Stranded Power attributable to Open Access customers (MW) during the peak hours of the season

R is effective fixed charge (Rs/MW) of stranded power for the season

HR_{pk} is number of hours during peak period of the season

I_{pk} is the amount credited by generator (Rs.) for sale of un-requisitioned power in accordance with para 6.2 (i) of the Tariff Policy

Similarly, total Additional Surcharge recoverable during off-peak period of the season (A_{op}) can also be calculated.

6. Now, Additional Surcharge (Rs/Unit) can be calculated as:

$ASC_{pk} = A_{pk} /(OA_{pk} \times HR_{pk} \times 1000)$

Where

ASC_{pk}	is additional Surcharge (Rs/Unit) for the peak period of the season
A_{pk}	is the total additional surcharge (Rs.) recoverable for the peak period of the season
OA_{pk}	is the average quantum of Open Access granted (MW) during peak hours of the season
HR_{pk}	is the number of hours during peak period of the season

Similarly, additional surcharge (Rs/unit) for off-peak period of the season can also be calculated.