

**IMBALANCE ENERGY ACCOUNTING  
WITHIN INTRA STATE**

**Procedure for  
Energy accounting within Intra State  
(Limited to quasi pool member)**

**Revision 1**

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# **Procedure for Imbalance Energy Accounting within Intra State**

## **(For the Interim Period till implementation of Intra State ABT)**

### **1.0 Preface:**

Introduction of open access in the state and decision of control area of TPL-Sugen and its associated beneficiaries leads a major change in electricity **grid operation** in the State and corresponding **energy accounting**. The present single buyer system has been changed into multi buyer system where different transaction between supplier and buyer other than transaction with GUVNL exist.

SLDC-Gujarat was facing difficulty in implementing open access within Intra State due to non existence of Intra State Availability Based Tariff (ABT) accounting system. ABT mechanism is effectively addressing grid operational and accounting issues of multi user system. In absence of such mechanism, SLDC-Gujarat was considering open access on case to case basis which was causing delay or rejection. Consequently, various legal cases of open access have been filed with GERC against SLDC-Gujarat and GERC has further directed SLDC-Gujarat to permit open access.

Control area of TPL-Sugen were decided as 'SLDC-Gujarat' in 50<sup>th</sup> WRPC CCM as per GERC order dated 7<sup>th</sup> May'2008 and accordingly operation, scheduling and energy accounting of TPL-Sugen falls within jurisdiction of SLDC-Gujarat. TPL-Sugen is supplying power to TPL-Ahmedabad and TPL-Surat. It leads the major change in Gujarat system as it does not involve the transaction through GUVNL unlike to other transaction.

Prevailing practice of energy accounting of generating plant exercised by GUVNL does not cover the above said transactions; therefore, it calls for change in operational strategy and energy accounting mechanism. It can be explained by illustrative example:

**Illustration 1:** Let us consider that GUVNL is having schedule of 7000 MW power through PPA whereas 2000 MW power is flowing through other transaction (TPL, OA user). Let us consider 6700 MW is total generation of generating station having PPA with GUVNL and 2400 MW generation from other generators and OA users.

1. Deviation in energy by all buyer/supplier with GUVNL is to be absorbed by GUVNL as per PPA terms =  $7000 \text{ MW} - 6700 \text{ MW} = +300 \text{ MW}$

*Hence, 300 MW is supplied to GUVNL from other generator/OA user who have no PPA with GUVNL.*

2. Deviation in energy by other buyer/supplier within Gujarat grid which is to be charged as per Open Access Regulation shall be =  $2000 \text{ MW} - 2400 \text{ MW} = -400 \text{ MW}$  i.e. 400 MW more power is injected in Gujarat Grid by these generator/OA users.

*Therefore, the net energy deviation by Gujarat with WR =  $300 - 400 = -100 \text{ MW}$  i.e. 100 MW power has flown to WR from Gujarat.*

Hence, the deficit of 300 MW arise to GUVNL is fulfilled by other generators who has generated excess power of 400 MW. In the above circumstances, GUVNL is also receiving payment of 100 MW from WRLDC as being pool member of WR whereas they are actually payable for 300 MW to other generator/OA users. Therefore, GUVNL has to transfer such charges to SLDC for 400 MW including the payment received from WRLDC and SLDC has to pass on the same to other OA users and generators who are not having PPA with GUVNL.

**Illustration 2:** Let us consider that Gujarat is drawing power of 2300 MW against central sector schedule of 1800 MW i.e. 500 MW over drawl. At the same time, Intra State utilities are deviating from schedule are as under:

Central Sector	UI	Intra State Entities	UI
Schedule(1800)- Drawal (2300) :	<b>+500</b>	STOA Supplier :Schedule(200) – Injection (200)	0
		TPL-Sugen : Schedule(1000)-Injection(1100)	-100
		AEC+SEC : Drawl(800) - Schedule(1100)	- 300
		GUVNL(Generator) : Schedule (6000)-Injection(5900)	+100
		GUVNL(Entities): Drawl(6800)-Schedule(6000)	+800
	+500		+500

In order to reduce drawl from Central sector, Intra State entities have to resort load curtailment of 500 MW which includes Discom, AEC & SEC. Prevailing practice of load curtailment by distribution licensee purchasing power from GUVNL does not address the above situation which result in cross subsidization among distribution companies.

It calls for the requirement of effective **operational protocol** for balancing demand –supply and **energy accounting** mechanism. The above situation can be addressed if Intra State ABT is implemented in the State. The operational issues shall be addressed separately. Intermittently, till implementation of Intra State ABT, SLDC-Gujarat has devised energy accounting mechanism and settlement mechanism for sharing the imbalance charges for Open Access users, TPL-Sugen and GUVNL. **The operational issues can be addressed separately.**

**2.0 Applicability of UI Charges:** Open Access Regulation 2008 issued by CERC provides that UI rate can be applied to such open access transaction where ABT based accounting mechanism is not in place. The relevant provision of CERC regulation is reproduced as under:

*“20.(4) Any mismatch between the scheduled and the actual drawal at drawal points and scheduled and the actual injection at injection points for the intra-State entities shall be determined by the concerned State Load Despatch Centre and covered in the intra-State UI accounting scheme.*

*(5) Unless specified otherwise by the concerned State Commission, UI rate for intra-State entity shall be 105% (for over-drawls or under generation) and 95% (for under-drawls or over generation) of UI rate at the periphery of regional entity.’*

Therefore, it is appropriate to apply UI charges as specified by CERC vide open access regulation 2008 till Intra Stat ABT mechanism is implemented. The applicability of UI charges as above is further extended for transaction of TPL-Sugen and Intra State open access users in order to maintain back to back mechanism.

**3.0 Imbalance Energy Account:** It is defined as energy account for imbalance arises due to deviation from schedule which is popularly known as UI account. The mismatch between scheduled and actual drawl at Intra state delivery points is calculated which provides imbalance energy. An imbalance energy charges is calculated by applying UI charges as specified by CERC Open Access Regulation 2008.

Imbalance energy account is prepared by creating pool among STOA supplier/buyer, WR, TPL-Sugen, TPL-Surat & TPL-Ahemedabad and GUVNL. Government of Gujarat has also emphasized to charge UI to TPL-AEC and TPL-SEC vide letter dated 31<sup>st</sup> July'2009. This imbalance energy accounting is settled through "quasi-pool" account.

#### **4.0 Guiding Principle**

The energy accounting is prepared on following guiding principle:

1. All transaction within intra state which includes GUVNL as well as other Open Access and TPL-Sugen are scheduled on 15 minute basis. All transactions are governed as per two part tariff mechanism except short term transactions.
2. The existing mechanism of energy accounting of GUVNL carried out as per Power Purchase Agreement shall remain intact without any change. The deviation from schedule by all entities shall be accounted as per provision of PPA which is to be absorbed into GUVNL account.
3. All other transaction which include short term open access and TPL-Sugen & its associated beneficiaries will be accounted as per UI mechanism as per ABT principle.

4. Transaction with Western Region would be a common transaction and same shall be balanced back to back with Intra State entities as per calculation received from WRPC on weekly basis.
5. Frequency and UI rate would also be considered same as calculated by WRPC in order to remove differential amount.
6. Penalty rate of 40 % for over drawl by beneficiaries and under generation by supplier would be applied as per “Unscheduled Interchange Charges and related matter 2009” issued by CERC for Intra State entities.
7. The deviation of all Short term Open Access users, TPL-Sugen & its associated beneficiaries other than PPA with GUVNL would be computed on the basis of implemented schedule and energy meter recorded at interface point.
8. The deviation of all entities having PPA with GUVNL will be calculated as net summation of Intra State entities participating in pool account and WR.

**Principle of calculation for deviation of GUVNL entities:**

The Intra State entities having PPA with GUVNL (hereinafter called as GUVNL entities) would be considered as common entities called as GUVNL entities.

UI between Gujarat-WR

$$= (\text{UI of STOA user}) + (\text{UI of TPL-Sugen}) + (\text{UI of TPL-AEC}) + (\text{UI of SEC}) + (\text{UI of GUVNL entities})$$

Therefore UI of GUVNL Entities

$$= (\text{UI between Gujarat-WR}) - \left( ((\text{UI of STOA user}) + (\text{UI of TPL-Sugen}) + (\text{UI of TPL-AEC}) + (\text{UI of SEC})) \right)$$

## 5.0 Procedure of Energy Accounting

- 5.0.1 Scheduling will be carried out for all generators/suppliers and beneficiaries/ buyers on 15 minutes basis. The scheduling of suppliers and beneficiaries having PPA with GUVNL will be governed as per PPA provision so that existing practice remain unchanged. All other transaction of short term open access and TPL-Sugen will be governed as per scheduling procedure mentioned in Intra State ABT regulation and IEGC.
- 5.0.2 The payment of fixed cost and variable cost would be made by respective buyers as per declaration and implemented schedule as per Power Purchase Agreement. The implemented schedule shall be issued by SLDC-Gujarat on monthly basis.
- 5.0.3 The deviation between injection schedule and actual generation for the generator having Power Purchase Agreement with GUVNL will be governed as per provision of PPA. The deviation from schedule by generator is calculated as deemed generation and non deemed generation.....(i)
- 5.0.4 Whereas the deviation of generator/supplier power having agreement other than GUVNL or agreement do not covers the provision of deemed generation and non deemed generation will be calculated by applying UI charges. ....(ii)
- 5.0.5 The deviation between drawl schedule and actual drawl by distribution licensee having Power Purchase Agreement with GUVNL will be governed as per provision of PPA. Presently, commercial base schedule to distribution licensee having PPA with GUVNL is not being issued. Therefore, deviation by distribution licensee having PPA with GUVNL will not be calculated and existing practice of raising bill to Discom by GUVNL will be continued.....(iii)

- 5.0.6 The deviation between drawl schedule and actual drawl by distribution licensee receiving power from supplier other than GUVNL will be governed as per provision of ABT and same would be computed by applying Unscheduled Interchange Charges. ....(iv)
- 5.0.7 The inter state transaction between Gujarat and CTU network will be the common transaction of all intra state entities and it is the responsibilities of all intra state entities to maintain the drawl of inter state transaction within schedule. Therefore, all intra state entities will be responsible to maintain drawl of inter state transaction within allowable range. The penalty received across Gujarat periphery with CTU network in terms of UI charges and addition penalty is to be shared among all intra state entities.....(v)
- 5.0.8 The deviation of entities mentioned in para 5.0.4 and 5.0.6 will be calculated as per energy recorded in ABT meter whereas deviation of Gujarat among inter state transaction as mentioned in para 5.0.7 will be furnished from WRPC on weekly basis. The difference of above would be considered as charges to be payable by all entities having PPA with GUVNL.

## **6.0 Ceiling Norms**

- 6.0.1 Ceiling norms will be applied as per Open Access Regulation 2005 issued by GERC for all short term open access transaction and the supplier & beneficiaries having agreement other than GUVNL. Whereas those generator having PPA with GUVNL are governed as per provision of PPA.

## **7.0 Frequency correction**

- 7.0.1 Frequency correction will be applied to generators as per provision of Tariff Regulation issued by GERC. Since it is covered under Tariff Regulation, same principle will also be applicable to all generators irrespective having provision available with PPA. However, the provision of frequency correction to captive generator opting for sale of surplus power will not be applicable.

## **8.0 Wind Energy Setoff**

8.0.1 Energy injected by WEG and wheeled to various customers located within area of TPL-Surat and TPL-Ahemedabad will be given set off as per certificate of GEDA. TPL-Surat and TPL-Ahemedabad have to furnished certificate of GEDA on monthly basis and set off of wheeled unit to the respective customers is to be given by them.

8.0.2 Whereas the effect of wind energy on Unscheduled Interchange charges will be incorporated as under :

- (i) The weekly energy allocation will be received from GEDA to SLDC-Gujarat. On the basis of allocation, the percentage allocation to respective distribution companies from each polling station of GETCO will be derived.
- (ii) Data of SEM (ABT compliant) meter installed at polling station will be furnished on weekly basis and the energy allocation in 15 minute block for distribution companies from each polling station will be calculated by multiplying percentage allocation derived as per para (i).
- (iii) Energy allocated in 15 minute block to TPL-Surat and TPL-Ahemedabad will be deducted from drawl of respective companies after adjustment of transmission losses approved by GERC.

## **9.0 Adjustment carried out by WRLDC/WRPC**

WRLDC & WRPC is carrying out adjustment within their pool account after deriving basic UI charges of inter state transaction of Gujarat. The above adjustment portion is apportioned to Gujarat in proportion to their deviation from schedule. Therefore, the difference exist for inter state transaction between charges calculated by WRLDC and SLDC-Gujarat. GUVNL presently dealing with settlement of such inter state transaction and have no objection on it as

represented by them vide letter dated 5<sup>th</sup> November'09 and requested to remove such adjustments. Therefore, adjustment component is excluded from pool account.

## **10.0 Account Issuing Procedure**

The account will be prepared on weekly basis and will be issued to all STOA users, TPL-Sugen and its associated beneficiaries and GUVNL. The account will be issued through website, email and hard copy will be sent to courier.

The accounting statement will cover the changes takes place during week in the form of general note to share the changes in account with all beneficiaries. The each statement will be signed by authorized signature. The person/officer preparing account is authorized to signed each statement. The statement showing the amount to be settled and covering letter will be signed by Chief Engineer(LD) indicates that entire account is endorsed by CE(LD).

The account will be prepared by one deputy engineer and two junior engineer who is responsible for data collection, data validation and computation of energy accounting. Same will be checked and verified by team of one executive engineer and deputy engineer before put up for issuing and settlement to CE(LD).

## **11.0 Account verification and confirmation**

In accordance with procedure stipulated in clause no 15(d) & 15( c) of Order no.(3) of GERC, SLDC will put up computation on website in each 15 minute block. The each constituent have to check and verify their account. The any observation in it is to be communicated to SLDC within next seven days.

## **12.0 Account Settlement Procedure**

The amount received by SLDC-Gujarat would be furnished by SLDC-Gujarat to next Saturday after the due date of payment is over. The amount received by SLDC-Gujarat on every Saturday will be distributed to receivable pool member proportionately on next Tuesday.

The amount settlement at the end of every month (comprises five weeks) will be completed before the end of next month. Any outstanding payment by pool members for the delay of more than 15 days after expiry of due date of payment will be recovered by encashment of bank guarantee.

The payment to SLDC-Gujarat can be made by pool member through electronic mode or Cheque or demand draft. A details of bank account is put up on SLDC website: [www.sldcguj.com](http://www.sldcguj.com)

## **13.0 Revision of Energy Account**

All pool members have to check and verify account published by SLDC-Gujarat. Any discrepancy in this regard is to be communicated by them to SLDC-Gujarat not later than seven days. However, as regards to the payment of imbalance charges, they shall have to settle the amounts as per clause 12 irrespective of any discrepancy raised or yet to be finalized/resolved.

In case of consideration of observation made by pool members and if revision is to be done by SLDC-Gujarat, the each pool members have to settle differential amount for such revision.

The retrospective revision will be limited for computational error or data discrepancy or revision in schedule. However, the revision due to change in procedure of methodology would be made effective from the date on which it is finalized by SLDC-Gujarat after concurrence of every pool members.

#### **14.0 Applicability of Procedure**

Procedure stipulated hereunder this document would be an interim arrangement till implementation of Intra State ABT. The accounting under this document would be ceased from the date of implementation of Intra State ABT issued by GERC.

#### **15.0 Exception of energy accounting procedure**

The energy accounting of GUVNL entities and other entities is being dealt by separate provision. UI charges are not applicable to GUVNL entities unlike to other entities. However, in order to implement open access, the such arrangement is necessary for the interim period till implementation of Intra State ABT. The treatment will be at par once intra state ABT will be implemented and all entities would be charged under UI mechanism.

#### **16.0 Settlement with WRLDC**

Settlement of UI charges with WRLDC for Inter State transaction will have to shared by Intra State entities. The UI charges received from WRLDC due to deviation of Intra State entities comprises share of Intra State entities. Such UI Charges is to be distributes among intra State entities. However, presently GUVNL is settling and dealing with WRLDC, same will be continued.

#### **17.0 Security Mechanism**

In case of default of payment by pool members and in order to safeguard the payment of receivable members, all UI members have to submit bank guarantee or Letter of credit equivalent to seven days billing for scheduled energy either receivable or payable.

In case of STOA users, revision is not allowed as per CERC regulation, bank guarantee would be equivalent to scheduled energy whereas in case of TPL-Sugen & its associated beneficiaries within intra state network where revision is allowed, bank guarantee should be calculated as 1/10<sup>th</sup> of scheduled energy of seven days. In case of TPL-Sugen & its associated beneficiaries, bank guarantee for short term transaction through inter state bilateral/collective is to be submitted equivalent to scheduled energy.

## 18.0 Comparison of Pool Member & treatment in distinguished Scenario

The comparison of pool member and their treatment for deviation from schedule is shown in Table.

	UI MEMMBER	EARLIER	AFTER IMPLEMENTATION OF ABT	PROPOSED (INTERIM)
1	GUVNL	PPA	ABT	PPA
2	STOA USERS	---	ABT	ABT
3	TPL-SUGEN	---	ABT	ABT
4	TPL-SEC& AE	PPA	ABT	ABT
5	WR-ISTS	ABT	ABT	ABT

The interim proposal prepared with a view that existing arrangement of PPA based treatment to GUVNL entities shall remain unchanged whereas UI will be applied subjected to consent of other.

## 19.0 Estimation of Losses

SLDC shall estimate the average energy losses for the all weeks of month on the basis of average energy losses calculated by SLDC on monthly basis. The losses will be estimated for the next month will be actual losses of previous month of last month. For example: The losses for the month of January will be considered as actual average losses of November. The losses will be applicable as estimated by SLDC in line with relevant provision of GERC.