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**THE ANDHRA PRADESH GAZETTE**

**PART-II EXTRAORDINARY  
PUBLISHED BY AUTHORITY**

No. 268 ]

HYDERABAD, FRIDAY, AUGUST 11, 2006.

**NOTIFICATIONS BY HEADS OF DEPARTMENTS, Etc.**

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**PUBLIC WORKS NOTIFICATIONS**

ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION

**INTERIM BALANCING AND SETTLEMENT CODE FOR  
OPEN ACCESS TRANSACTIONS**

Regulation No. 2 of 2006

**INTRODUCTION:**

In terms of provisions of Section 42(2) of the Electricity Act, 2003, the Commission notified the APERC (Terms and Conditions of Open Access) Regulation, 2005 (No.2 of 2005), which came into force w.e.f. 01-07-2005. Clause 19.4 of that Regulation provides that the balancing and settlement of energy and demand shall be done in accordance with the Balancing and Settlement Code to be approved by the Commission. The Commission has also been expressing its keenness to introduce the ABT regime at the State level. Pending finalization of a comprehensive settlement system for the State pool under ABT, the Commission considered it appropriate to specify an Interim Balancing and Settlement Code, envisaging a day-ahead wheeling schedule of energy on the basis of 15-minute time blocks, and monthly settlement of deviations. The Commission accordingly formulated a draft Regulation, published the same in the Andhra Pradesh Gazette on 06.08.2005, and issued a press release seeking comments/suggestions from all stakeholders and the public at large and also placed it on the website of the Commission. 36 persons/organizations including Transmission Licensee and Distribution Licensees have responded to the publication by sending their comments/suggestions in writing. The Commission has considered all these comments/suggestions, made modifications as considered appropriate and finalised the Regulation.

In exercise of the powers conferred by Section 181 read with Sections 42 (2), 66 and 94 (2) of the Electricity Act 2003 (36 of 2003) and all other powers enabling it in that behalf, the Andhra Pradesh Electricity Regulatory Commission hereby makes the following Regulation, namely: -

### 1 SHORT TITLE, COMMENCEMENT AND INTERPRETATION

- (a) This Regulation may be called the Andhra Pradesh Electricity Regulatory Commission (Interim Balancing and Settlement Code) Regulation, 2006.
- (b) This Regulation shall extend to the whole of Andhra Pradesh.
- (c) This Regulation shall come into force on 01.12.2006.

### 2 DEFINITIONS

In this Regulation, unless the context otherwise requires: -

- (a) "Act" means the Electricity Act 2003 (36 of 2003);
- (b) "APERC" or "Commission" means the Andhra Pradesh Electricity Regulatory Commission;
- (c) "Billing month" means the period between any two successive meter-reading dates, as provided in the Open Access Agreement;
- (d) "Distribution Licensee" or "DISCOM" means a licensee authorised to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;
- (e) "Losses" means the energy losses in percentage for an EHT system as a single system and for all other voltage levels, the losses in percentage as provided in the applicable Tariff Order of the Commission, or the actual levels of energy losses as provided in this Regulation.

Explanation -

- (i) If the wheeling of electricity is through the distribution system of more than one distribution licensee or if the Entry/Exit point is connected to EHT system, the losses would include the transmission loss and the distribution loss up to the voltage level of the distribution licensee in whose area of supply such exit/entry point (whichever is lower) is located
  - (ii) If the entry and exit points are located within the distribution system (33 kV and below) of the same distribution licensee, the losses would include only the distribution loss of the distribution licensee up to the voltage level at the relevant exit or the entry point(s), whichever is lower.
- (f) "Scheduled Consumer" means a consumer who has a supply agreement with the distribution licensee in whose area of supply the consumer is located and also has a supply agreement with a person other than the distribution licensee under the Open Access Regulation and includes a consumer of a distribution licensee who also avails of wheeling facility for carrying the electricity from his captive generating plant to the destination of his own use.
  - (g) "Time Block" means each block of fifteen (15) minutes for which the energy meters record specified electrical parameters and quantities, with the first time block for a day starting at 00:00 hours.
  - (h) "Open Access Agreement" means an agreement entered into between the Transmission and / or Distribution Licensees and the persons availing Open Access facility under clause 12 of the Open Access Regulation.

- (i) "Open Access Consumer" or "OA Consumer" means a consumer not having a supply agreement with the distribution licensee in whose area of supply the consumer is located, but availing or intending to avail supply of energy from a person other than that distribution licensee under the Open Access Regulation and includes a consumer availing wheeling facility for carrying the electricity from his captive generating plant to the destination of his own use without having a supply agreement with the distribution licensee of the area in which the consumer's premises is located.
- (j) "Open Access Regulation" means the A. P. Electricity Regulatory Commission (Terms and Conditions of Open Access) Regulation, 2005 (Regulation No.2 of 2005).
- (k) "Open Access Generator" means a generating company using or intending to use the transmission system and / or the distribution system of the licensees in the State for supply of electricity to a Scheduled Consumer or OA Consumer under the Open Access Regulation.
- (l) "State" means the State of Andhra Pradesh.
- (m) "Wheeling schedule" means the schedule for a fifteen (15) minute time block provided by the Scheduled Consumer, an OA Consumer or an OA Generator, to the SLDC, pursuant to clause 4 of this Regulation, read with clause 6.
- (n) The words and expressions used in this Regulation and not defined herein but defined in the Open Access Regulation shall have the same meaning as assigned to them in the Open Access Regulation and those not also defined in the Open Access Regulation but defined in the Act, shall have the same meaning as assigned to them in the Act.

### 3 EXTENT OF APPLICATION

The Interim Balancing & Settlement Code set out in this Regulation shall apply to Open Access Generators, Scheduled Consumers and OA Consumers.

### 4 SCHEDULING

4.1 Each Open Access Generator, Scheduled Consumer and OA Consumer shall provide a Wheeling Schedule in the format as at Appendix- 1(a), to the SLDC/DISCOM for each fifteen (15) minute time block for a day, on a day-ahead basis by 10:00 a.m. on the day preceding the commencement of the first time block for which the wheeling of energy is scheduled, with a copy each to the State Transmission Utility (APTRANSCO) and the concerned DISCOM:

Provided that an Open Access Generator, Scheduled Consumer and OA Consumer requiring to wheel electricity from more than one generating station with the interface points located at different locations (with separate metering at each entry point) shall provide separate wheeling schedule for the entry point(s) of each generating station:

Provided also that the Wind-based or Mini-hydel Open Access Generators shall not be required to provide a day-ahead wheeling schedule and the actual electricity injected by them shall be deemed to be the scheduled energy.

4.2 The OA generators scheduling their supply to more than one scheduled/OA consumer or the scheduled/OA consumer receiving supply from more than one OA generator shall communicate to the SLDC/DISCOM (along with the day-ahead schedule) the inter-se order of allocation of the actual generation among the Schedule/OA consumers or the inter-se order of allocation of the actual consumption among the OA generators as the case may be. Such communication of inter-se order of allocation/consumption to the SLDC/DISCOM shall be deemed to have been done with prior consent of all the parties involved and binding on all the OA generators, Scheduled consumers and OA consumers.

4.3 In the event of failure to submit the wheeling schedule in accordance with clause 4.1, the latest wheeling schedule available with the SLDC/DISCOM shall be treated as the effective wheeling schedule.

4.4 SLDC shall communicate the final day-ahead schedule to the respective parties along with inter-se order of allocation of consumption/generation capacities wherever applicable as per the time-frame setout in the State Grid Code and the same shall be binding on all parties.

#### **5 ALLOCATION OF CAPACITY BY OA GENERATORS**

5.1 The sum total of the capacity allocations by an OA Generator for any time block to all the Scheduled Consumers and OA Consumers shall not exceed the available capacity from his generating plant being not higher than the installed capacity or contracted Open Access capacity, whichever is lower.

5.2 The OA Generator shall also indicate the allocated capacity in kW at the exit point(s) for each consumer in the Format at Appendix - 1 (a) using the loss levels as specified in the applicable Tariff Order of the Commission. The energy account of the billing month shall be finalized based on the transmission and distribution losses specified by the Commission in the applicable Tariff Order.

5.3 The SLDC/DISCOM shall verify the capacity allocated at the Exit point(s) and correct it in case of discrepancy, if any. The computations of SLDC shall be final and binding on all.

#### **6 REVISION OF WHEELING SCHEDULE**

In case of any system constraint, the SLDC/DISCOM may modify the schedules of Open Access Generators, Scheduled Consumers and/or the OA Consumers, as the case may be, at any time in accordance with the Grid Code and the Open Access Regulation, which shall be conveyed to them. Compliance with the instructions of SLDC shall not be reckoned as a deviation by the concerned Generator/Consumer from the schedule. The Open Access Generator, Scheduled Consumer or OA Consumer, shall not, however, be entitled to revise a wheeling schedule during the course of a day.

#### **7 METER READING, ENERGY ACCOUNTING AND SETTLEMENT**

7.1 SLDC shall undertake the accounting of energy for each time block on monthly basis with the assistance of the Energy Billing Centre (EBC) of the State Transmission Utility (STU) in respect of the Open Access Generators, Scheduled Consumers and the OA Consumers who are connected to the transmission system, In respect of the Open Access Generators, Scheduled Consumers and the OA Consumers who are connected to the distribution system, it is the EBC that shall be responsible for energy accounting and settlement in co-ordination with the DISCOMs.

7.2 Such Account shall be examined and signed by a Committee comprising the STU, DISCOMs and Generators:

Provided that in the case of Generators, only one representative, as approved by the Commission, from each class of Generators mentioned below shall be represented on the Committee:

- Central Generating Stations (CGS)
- APGENCO
- Independent Power Producers (IPPs)
- Non-conventional Energy (NCE) Developers (Biomass, Mini-hydel, Hydro, Wind, etc.)
- Captive Power Plants (CPPs)

7.3 The monthly meter readings shall be taken by the respective DISCOM at all the entry points at 33 kV and below and at all the exit point(s) of the Open Access Generators located in its licensed area, as identified in the wheeling schedules. Where, however, the entry point is connected to the Transmission system, such monthly readings shall be taken by the Transmission Licensee:

Provided that the readings for each time block shall be retrieved through a Meter Reading Instrument (MRI) or otherwise by the respective Licensees mentioned above once in a week and shall be transmitted to the SLDC. The meter readings as and when taken shall also to be made available to the Open Access Generator/Consumer in whose premises the readings are taken, or to his representative, if available.

In case of failure of metering equipment or non-availability of MRI data, a suitable methodology as approved by the Commission may be employed for finalising the energy account. The Licensees may submit proposed data-substitution methodology for Commission's approval within one month of issue of this Regulation.

7.4 The SLDC shall finalize the energy account of the Open Access transactions of a billing month with the assistance of EBC and arrive at the deviations for each time block and the consequent adjustments integrated over the month in respect of all Open Access Generators, Scheduled Consumers and the OA Consumers in accordance with the procedure specified herein.

#### **8 SETTLEMENT OF ENERGY/DEMAND AT EXIT POINT IN RESPECT OF SCHEDULED CONSUMER**

8.1 The Scheduled energy (in kWh) at exit point shall be calculated for each time block from the scheduled capacity (kW) at the Exit point, as provided in the wheeling schedule, by multiplying it with the period of time block in hours.

8.2 The Scheduled demand at exit point shall be calculated by dividing the scheduled capacity (kW) at exit point by the power factor for the time block, for which purpose the Power factor shall be equal to the recorded kWh divided by kVAh.

8.3 The Scheduled energy of a Scheduled Consumer from an OA Generator for each time-block shall be deducted from the recorded energy (in the inter-se order of such Generators, as and if intimated by the consumer, in case the consumer is availing of energy from more than one Generator) as a first charge. The balance energy shall be deemed to have been supplied by the DISCOM and shall have to be paid for as per the terms of the supply agreement with the DISCOM:

Provided that where there is a deviation between the scheduled capacity and actual capacity being injected at an Entry point in a time block, the shortfall, if any, in the capacity allocated to the Scheduled Consumer shall be deemed to have been drawn by the Scheduled Consumer from the DISCOM and the energy corresponding to such shortfall shall be paid for by the party which has contracted for the Open Access capacity with the Licensee to the DISCOM as per the energy tariff applicable for the same consumer category of DISCOM under which the Scheduled Consumer would normally fall.

8.4 The Scheduled demand at Exit point or the actual demand made available to a consumer from each OA Generator at that Exit point in a time-block whichever is less, shall be deducted from the recorded demand (in the inter-se order of such Generators, as confirmed by the SLDC while finalising the day-ahead schedule, in case the consumer is availing of energy from more than one Generator). The balance demand for each time-block shall be deemed to have been consumed from the DISCOM and shall be paid for as per the terms of the supply agreement with the DISCOM.

**9 SETTLEMENT OF ENERGY AT EXIT POINT IN RESPECT OF OA CONSUMERS:**

- 9.1 The Scheduled Energy at Exit point of an OA Consumer shall be calculated from the Scheduled capacity from an OA Generator at the Exit point for each time block as provided in clause 8.1 above.
- 9.2 In case the Open Access Consumer is receiving supply from more than one Open Access generator, the total energy and demand recorded shall be deemed to have been consumed from the respective Open Access Generators in the inter-se order of Generators as confirmed by the SLDC while finalizing the day-ahead schedule.
- 9.3 The excess energy recorded, if any, at the exit point for any time block with reference to scheduled energy or the actual energy available at that Exit point, whichever is less, shall be deemed to have been consumed by the Generator or the OA consumer whoever has contracted for the Open Access capacity with the Licensee, from the DISCOM and shall be paid for by the Open Access Generator/Consumer at the energy tariff applicable for the same consumer category of DISCOM to which the OA Consumer would normally belong. Such excess consumption shall also attract all penal provisions provided in the applicable Tariff Order like those in respect of Low Power Factor, voltage surcharge, etc and wherever applicable, the relevant charges shall also be paid for by the OA generator/OA consumer.
- 9.4 The Scheduled demand at Exit point or the actual demand made available to a consumer from each OA Generator at that Exit point in a time-block whichever is less, shall be deducted from the recorded demand (in the inter-se order of such Generators, as confirmed by the SLDC while finalising the day-ahead schedule, in case the consumer is availing of energy from more than one Generator). The balance demand for each time-block shall be deemed to have been consumed from the DISCOM and shall be paid at twice the demand charges applicable for the same consumer category of DISCOM to which the OA Consumer would normally belong.

**10 SETTLEMENT FOR OA GENERATORS AT ENTRY POINT:**

- 10.1 The excess drawals of energy and demand by Scheduled Consumers on account of under-generation by the Generator for each time block shall be deemed to have been drawn from the DISCOM. The energy and demand charges for such excess drawls shall be paid for by the Scheduled Consumer in accordance with the proviso to clause 8.3 and as per clause 8.4 respectively.
- 10.2. The excess drawal of energy and demand by an OA Consumer on account of under-generation by the Generator for each time block shall be deemed to have been drawn by the Generator (or Open Access Consumer whoever has contracted for Open Access Capacity) and shall be paid for by the Generator/Consumer as per the normal energy tariff and twice the demand charges applicable for the same consumer category to which the OA Consumer would normally belong.
- 10.3. The underdrawals by Scheduled Consumers and/or OA Consumers shall have impact on the Generator and on the DISCOM in whose area of supply the Exit point is located. Such underdrawals at Exit point shall be treated as inadvertent energy supplied by the Generator to the DISCOM(s) and shall not be paid for by the DISCOM.
- 10.4. Injection of energy by an OA Generator over and above the scheduled capacity at an Entry point shall not be accounted for. In such cases, only the scheduled capacity at exit point shall be accounted for as having been supplied by the Generator to the Scheduled Consumer or the OA Consumer, as the case may be.
- 10.5. In case of wind and mini-hydel OA generators the actual generation during the month shall be deemed as scheduled energy. For the purpose of settlement in respect of scheduled/OA consumer availing supply from these OA generators, the actual generation during the month will be apportioned for each time block of the month and deviations reckoned accordingly.

**11 LEVY OF SURCHARGE AND ADDITIONAL SURCHARGE:**

Each Open Access Generator, Scheduled Consumer and OA Consumer shall, in addition to the tariff and other charges mentioned in the preceding clauses, also be required to pay, wherever applicable, the surcharge in accordance with the provisions of the Open Access Regulation as also the applicable additional surcharge, if any, under Section 42 (4) of the Act.

**12 BANKING**

12.1 No generators other than the Wind and Mini Hydel power generators shall be allowed the facility of banking the electricity generated by them:

Provided that in the case of existing users of wheeling facility, the energy already banked as per the subsisting agreements as on the date of coming into force of this Regulation, shall be allowed to be wheeled as hithertofore till the expiry of the balance period available for utilization of the banked energy:

Provided, however, that in the case of generators whose cases are pending appeals in the Hon'ble High Court of Andhra Pradesh and/or the Hon'ble Supreme Court, this provision shall be applicable subject to the final decision of the High Court and / or the Supreme Court, as the case may be.

12.2 The banking facility to the Wind and Mini Hydel power generators shall be subject to the conditions specified in Appendix - 3.

**13 DISPUTE RESOLUTION**

All disputes and complaints shall be referred to the SLDC for resolution, which shall not decide a matter without first affording an opportunity to the concerned parties to represent their respective points of view. The decisions of the SLDC shall be binding on all parties.

**14 ISSUE OF ORDERS AND PRACTICE DIRECTIONS**

Subject to the provisions of the Act, the A.P Electricity Reform Act, 1998, and this Regulation, the Commission may, from time to time, issue orders and practice directions in regard to the implementation of this Regulation, the procedure to be followed and other matters, which the Commission has been empowered by this Regulation to specify or direct.

**15 POWER TO REMOVE DIFFICULTIES**

In case of any difficulty in giving effect to any of the provisions of this Regulation, the Commission may by general or special order, issue appropriate directions to Open Access Generators, Scheduled Consumers, OA Consumers, Transmission Licensee(s), Distribution licensee(s) etc., to take suitable action, not being inconsistent with the provisions of the Act, which appear to the Commission to be necessary or expedient for the purpose of removing the difficulty.

**16 SAVING**

Nothing contained in this Regulation shall affect the rights and privileges of the Consumers under any other law for the time being in force, including the Consumer Protection Act, 1986 (68 of 1986).

**17 POWER TO AMEND**

The Commission may from time to time add, vary, alter, suspend, modify, amend or repeal any provisions of this Regulation.

(BY ORDER OF THE COMMISSION)

S. SURYA PRAKASA RAO,  
Commission Secretary

**APPENDIX - 1 (a)**

**Format for the Day-ahead Wheeling Schedule for each 15-minute time block of the day**

**Date:**

**Declared capacity for the day**

**Name of the Generator:**

**Address of the Generating Station:**

**Entry point voltage:**

<u>Time block</u>	<u>Available Capacity</u>

<b>DISCOM</b>	<b>Name of the consumer</b>	<b>Voltage level of Exit point</b>	<b>Time Blocks</b>	<b>Allocated capacity at Entry point kW</b>	<b>Net capacity at Exit point kW</b>

**Any other information to be provided:**

**Signature of the OA Generator  
/Scheduled Consumer/ OA Consumer**

**Note: An example each for computation of Net capacity at Exit point is given in Appendix - 1(b) and examples for Settlement are given in Appendix - 2**



## APPENDIX - 1 (b)

## Computation of Net capacity at the Exit point

Date:

Declared capacity for the day

Name of the Generator: Z in SPDCL

Entry point voltage: 132 kV

DISCOM	Name of the consumer	Voltage level of Exit point	Time Blocks	Time block	Available Capacity
SPDCL	1. Sch. Consr.	11 kV	1 to 96	1,000	830.80
	2. Sch. Consr.	132 kV	1 to 96	2,000	1900.00
	3. OA Consr.	33 kV	1 to 96	1,000	893.40
Total for SPDCL					
CPDCL	1. Sch. Consr.	11 kV	1 to 96	1,000	827.20
	2. Sch. Consr.	33 kV	1 to 96	3,000	2676.60
	3. OA Consr.	132 kV	1 to 96	5,000	4750.00
Total for CPDCL					
NPDCL	1. Sch. Consr.	11 kV	1 to 96	1,000	821.00
	2. OA Consr.	33 kV	1 to 96	2,000	1778.60
Total for NPDCL					
EPDCL	1. Sch. Consr.	11 kV	1 to 96	1,000	818.90
	2. OA Consr.	33 kV	1 to 96	3,000	2636.70
Total for EPDCL					
Grand Total				20,000	17983.20

N.B.: In the Table above, the following loss levels have been taken into consideration, sourced from the Commission's Tariff Order for FY 2005-06. The loss levels of corresponding FY as per the Tariff Order of the Commission for the relevant year should be taken for computation of the net capacity at exit point.:

Transmission losses = 5%

Distribution losses up to the Voltage level of exit point (Percentage)

Voltage	SPDCL	CPDCL	NPDCL	EPDCL
33 kV	5.66	5.78	6.07	7.11
11 kV	11.92	12.28	12.90	13.11
LT	20.44	20.50	23.05	21.30

Example for calculation of Losses: OA Consumer 3 of SPDCL

$$\rightarrow 132 \text{ kV} + \text{Losses up to 33 kV} \rightarrow (5+5.66=10.66\%) \rightarrow 1000 \times 10.66/100 = 106.60 \text{ kW}$$

## APPENDIX - 2

**(A). Where Generator is Generating at the level of Scheduled Capacity:**

(kW)

DISCOM	Consumer	Sch. Cap at Exit Point	Recorded consumption	Accountable to Generator	Accountable to DISCOM	Deviation at Exit point
SPDCL	1. Sch. Consr.	830.80	1000	830.80	169.20	Nil
	2. Sch. Consr.	1900.00	2000	1900.00	100.00	Nil
	3. OA Consr.	893.40	1200	893.40	306.60	306.60
CPDCL	4. Sch. Consr.	827.20	600	600.00	0.00	(-) 227.70
	5. Sch. Consr.	2676.60	3000	2676.60	323.40	Nil
	6. OA Consr.	4750.00	4000	4000.00	0.00	(-) 750.00
NPDCL	7. Sch. Consr.	821.00	1100	821.00	279.00	Nil
	8. OA Consr.	1778.60	1900	1778.60	121.40	121.40
EPDCL	9. Sch. Consr.	818.90	1200	818.90	381.10	Nil
	10. OA Consr.	2636.70	2500	2500.00	0.00	(-) 163.30

**(B). Where Generator is under Generating w.r.t Scheduled Capacity:**

Scheduled capacity = 20,000 kW Actual capacity = 18,000 kW

(kW)

Consumer	Sch. Cap at Entry Point	Sch. Cap at Exit Point	Actual capacity at Entry point	Actual capacity at Exit point	Recorded consumption	Deviation
1. Sch. Consr.	1000	830.80	900	747.72	1000	83.08
2. Sch. Consr.	2000	1900.00	1800	1710.00	2000	190.00
3. OA Consr.	1000	893.40	900	804.06	1200	395.94
4. Sch. Consr.	1000	827.20	900	744.48	600	(-) 144.48
5. Sch. Consr.	3000	2676.60	2700	2408.94	3000	267.66
6. OA Consr.	5000	4750.00	4500	4275.00	4000	(-) 275.00
7. Sch. Consr.	1000	821.00	900	738.90	1100	82.10
8. OA Consr.	2000	1778.60	1800	1600.74	1900	299.26
9. Sch. Consr.	1000	818.90	900	737.01	1200	81.89
10. OA Consr.	3000	2636.70	2700	2373.03	2500	126.97

## APPENDIX - 3

**Terms and Conditions for banking facility allowed to  
Wind power and Mini-hydel Power Generators**

1. Banking allowed during all the 12 months.
2. Drawals are subject to the following:
  - (a). The banking year shall be from January to December.
  - (b). The banking charges shall be in kind @ 2% of the energy delivered at the point of injection.
  - (c). Drawals shall be permitted only during the 6-month period, from July to December. The banked energy remaining unutilized as on 31<sup>st</sup> December shall be treated as lapsed.
  - (d). Drawal of banked energy during the peak hours i.e. 06:00 to 09:00 hours and 18:00 hours to 21:00 hours shall not be permitted.

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