



INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)  
(Deemed to be University Estd. u/s 3 of the UGC Act, 1956)  
PALLAVARAM - CHENNAI

ACCREDITED BY **NAAC** WITH '**A**' GRADE  
INSTITUTION WITH **UGC 12B** STATUS  
*Marching Beyond 30 Years Successfully*

## TO WHOMSOEVER IT MAY CONCERN

An energy wheeling agreement (Ref. No. 8723; 29/07/2013) was executed between M/s. Vael's Educational Trust, Chennai, and TANGEDCO for wheeling power from the group I wind energy generator, which was commissioned before May 15, 2006. Vels Institute of Science, Technology, and Advanced Studies (VISTAS), Chennai, is a Deemed to be University established under section 3 of the UGC act, 1956 under the M/s. Vael's Educational Trust, Chennai. Hence, the wheeling to grid charges are adjusted by TANGEDCO in VISTAS, Chennai, electricity bills.

**REGISTRAR**  
**Registrar**  
**Vels Institute of Science, Technology**  
**& Advanced Studies (VISTAS)**  
**Pallavaram, Chennai - 600 117.**





8723  
29/9/13

Vael's Educational Trust  
WEG HT SC NO: 129.

AL 739174  
SANTHI KRISHNAMURTHI  
STAMP VENDOR,  
Licence No: 12144/अ1/96  
No: 336, Mount Road,  
Nandanam, Chennai-35.

ENERGY WHEELING AGREEMENT

Energy Wheeling Agreement executed between **M/s. VAEL's Educational Trust, Chennai and TANGEDCO** for wheeling of power from the Group I Wind Energy Generator, which is commissioned before 15.05.06.

This agreement made at Tirunelveli on this 18<sup>th</sup> day September of Two Thousand Thirteen between **M/s. VAEL's Educational Trust, Chennai**, with office in Velan Nagar, P.V. Vaithiyalingam Road, Pallavaram, Chennai - 600 117. (herein after called the Wind Energy Generator) (which expression shall wherever the context so permits means and includes the successors in interests, executors, administrators and assigns) represented by **Thiru. Dr. Ishari K. Ganesh acting as Managing Trustee** as party of the first part and the Tamil Nadu Generation and Distribution Corporation Limited, a body corporate constituted under the Electricity (supply) Act 1948 (Central Act 54 of 1948) before commencement of the Electricity Act 2003 (Central Act 36 of 2003) and authorized to function as the State Transmission Utility (STU) and a licensee as notified by the Government of Tamil Nadu under the provision to section 172 of the Electricity Act 2003 and having its office at Maharajangar, Tirunelveli (hereinafter called the Board), (which expression shall wherever the context so permits means and includes the successors in interest, and assigns) represented by the Superintending Engineer/TANGEDCO/Tirunelveli EDC as party of the Second part.

x For **VAEL'S EDUCATIONAL TRUST**  
Trustee

6/13  
x  
[Signature]



WHEREAS the Wind Energy Generator has sent to the Board, his proposal to wheel the wind energy generated from his Wind Energy Generator HT SC No: 129 with Two Nos. Generator of Pioneer Wincon Make having capacity of 2x250 KW installed at SF.Nos. 1.) 178/1D, 1C, 5A, 5B and 2.) 180/6A1 & 7C1 (P) of Pazhavoor Village, Radhapuram Taluk in Tirunelveli District. commissioned on 31.03.1995 and Re-Commissioned on 18.09.2013 through the Board's transmission and distribution network for captive use as below.

- a) to his own captive users bearing HT Service Number and Electricity Distribution Circle as mentioned below:-

SL No.	Name Of the Company	HTSC No	Circle
1.	VAEL's Educational Trust	558	Chennai (South) EDC

and to bank the surplus energy available after adjustment as per the Orders of the TNERC in force.

WHEREAS THE Wind Energy Generator has paid the open access registration fee of Rs.200/- (Rupees two hundred) and open access agreement fee of Rs.2,000/- (Rupees two thousand).

AND WHEREAS the Board has accepted the proposal of the Wind Energy Generator for wheeling and banking of surplus energy from their Generators and to wheel the power generated from the Generators through Boards transmission /distribution networks for the purpose mentioned in clause (a) or as per L1 No: CE / NCES / SE / SOLAR / EE / WPP / AEE2 / F. M/s. VAEL's Educational Trust, / WF. HTSC. No. 129 / D. 196 / 13, Dt: 13.08.2013 on the terms and conditions hereinafter mentioned.

**NOW THESE PRESENTS WITNESSETH AND THE PARTIES HEREBY  
RESPECTIVELY AGREE AS FOLLOWS**

**1. Interfacing and evacuation facilities:**

- a) The Wind Energy Generators agrees to interface his generators with the TANGEDCO's grid through 11 KV lines and shall bear the entire cost of interfacing including the cost of lines, switchgear, metering, protection and other arrangements from the point of generation to the TANGEDCO's nearest technically feasible interconnecting point.
- b) It is further agreed that the works of interconnecting the Generators up to the point of interconnection should be executed under DCW (Deposit Contribution Work) by the TANGEDCO.
- c) The Wind Energy Generator and the STU/Licensee shall comply with the provisions contains in Central Electricity Authority (CEA) (Technical standards for interconnecting to the grid) Regulations, 2007 which includes the following namely :
- I. Connection Agreement.
  - II. Site responsibility schedule.
  - III. Access at Connection site.
  - IV. Site Common Drawings.
  - V. Safety.
  - VI. Protection System and Co-ordination.
  - VII. Inspection Test, Calibration and Maintenance prior to connection.
- e) The Wind Energy Generator agrees to comply with the Safety measures contained in Indian Electricity Rules 1956 till such time Central Electricity Authorities (Safety and Electric Supply) Regulations come in to force:
- f) Both the parties shall comply with the provisions contained in the Indian Electricity Grid Code, Tamil Nadu Electricity Grid Code, the Electricity Act 2003, Other Codes and Regulations issued by the Commission/CEA and amendments issued thereon from time to time.

**2. Operation and Maintenance :**

- a) The Wind Energy Generator agrees that the starting current of the Generators shall not exceed the full load current of the plant and to provide the necessary current limiting devices like thyristor during starting.

*[Handwritten Signature]*  
2 sign



- b) The Wind Energy Generator agrees to minimize drawal of reactive power from the TANGEDCO's grid so that the power factor shall be maintained between 0.85 lag and 0.95 lead subject to payment of required charges for drawal of reactive power as per the Commission's order in force and to control the voltage regulation within 5% of the rated voltage at the point of supply.
- c) The Wind Energy Generator agrees to provide suitable automatic safety devices so that the Generators shall isolate automatically when grid supply fails.
- d) The Wind Energy Generator agrees to maintain the Generators and the equipments including the transformer, switchgear and protection equipments and other allied equipments at his cost to the satisfaction of the authorized officer of the TANGEDCO.
- e) The changing of the rupturing capacity of the switchgear and setting of the relays, if any, shall be subject to the approval of the authorized officer of the TANGEDCO.
- f) The interconnecting lines shall be maintained by the TANGEDCO at TANGEDCO's cost.
- g) There shall be no fluctuations or disturbances to the grid or other consumers supplied by the grid due to paralleling of the Generators. The Wind Energy Generator shall provide at his cost adequate protection as required by the TANGEDCO to facilitate safe parallel operation of the Generators with grid and to prevent disturbances to the grid.
- h) The Wind Energy Generator agrees that the TANGEDCO shall not be responsible for any damage to his generators resulting from parallel operation with the grid and that the TANGEDCO shall not be liable to pay any compensation for any such damage.
- i) The generators shall be maintained effectively and operated by competent and qualified personnel
- j) In case of unsymmetrical fault on HV Bus, the Wind Energy Generators shall share the fault current according to impedance of the circuit. To meet such contingency and for safe operation of the Generator, the Wind Energy Generator shall provide the following scheme of protection namely;
  - (i) Separate overload relays on each phase and earth fault relays shall be installed by the Wind Energy Generator. Under no circumstances, these relays shall be by passed.
  - (ii) With suitable current transformer and relay connections, the load sharing by the Wind Energy Generator and TANGEDCO shall be limited to their rated capacity.
  - (iii) Adequate indication and control metering for proper paralleling of the generators on the HV bus shall be made available.
  - (iv) Protection co-ordination shall be done by the Licensee/STU in consultation with Regional Power Committee and relays and the protection system shall be maintained as per site responsibility schedule
  - (v) Grid availability shall be subject to the restriction and control as per the orders of the SLDC and as per Tamil Nadu Electricity Grid Code.

### **3. Metering Arrangements:**

- a) The Wind Energy Generator shall provide special energy meters with facilities to record export and import of energy and as per the standards/procedures stipulated in the Central Electricity Authority's (Installation and Operation of Meters) Regulations 2006 and regulations/directions issued by the Commission there on, in respect of type, ownership, location accuracy class, installation, operation, testing and maintenance, access, sealing, safety meter reading and recording, meter failure or discrepancies, anti tampering features, quality assurance, calibration and periodical testing of meters, additional meters and adoption of new technologies.



- b) The Wind Energy Generator shall also adopt the standards and procedures as stipulated in the Tamil Nadu Electricity Grid Code and Tamil Nadu Electricity Regularity Commission - Intra State Open Access Regulations 2005 in respect of metering.
- c) The Wind Energy Generator may request STU/Distribution Licensee to provide Main Meters. In that case he shall provide security to distribution License and shall pay for its rent and Main Meter shall be maintained by STU/Distribution License.
- d) The STU/Distribution License may provide Check Meters of the same specification as Main Meters.
- e) The Wind Energy Generator can have a stand by meter of the same specification tested and sealed by the STU/License.
- f) The Main and check Meters shall be test checked for accuracy once in six months, and shall also be calibrated once in a year. The meters may be tested using NABL accredited mobile laboratory or at any accredited laboratory in the presence of parties involved. Both parties shall seal Main and check meters. Defective meter shall be replaced immediately.
- g) Reading of Main and check meters shall be taken periodically at appointed day and hour by authorized officer of distribution License/STU and generator or his representative, if present.
- h) Check meter readings shall be considered when Main Meters are found to be defective or stopped Provided that, if difference between the readings of main and Check meter vis-a-vis main meter reading exceeds twice the percentage error applicable to relevant class, both meters shall be tested and the one found defective shall be immediately replaced and reading of other will be considered.
- i) If during the half yearly test check or annual calibration, both the main meter and the check meter are found to have errors beyond permissible limits, the bill shall be revised for the previous 3(three) months or for the exact period if known and agreed upon by both the parties, by applying correction as determined by the meter testing Wing of the STU/License to the consumption registered by the meter with lesser error.
- j) The Wind Energy Generator shall check the healthiness of meters (due to blowing of the P.T. fuses or due to any other causes) by superficially checking indicator lamps or by taking readings as frequently as possible. If both the main meter and the check meter fail to record energy either due to the blowing of the P.T. fuses or due to any other causes, the energy imported /exported may be arrived at based either on the standby meter, if available, or by mutual agreement of the parties involved.
- k) The term 'Meter' shall mean a 'Meter' as defined in regulation 2 (p) of the Central Electricity Authority (Installation and operation of meters) Regulations 2006.

**4. Adjustment of Energy Generated and Wheeled:**

- a. The Wind Energy Generator shall adjust the energy in the above-mentioned HT services on unit-to-unit basis
- b. The energy generated in the wind mills shall be adjusted for captive use in the above services of the Wind Energy Generator as below.
  - (i) Peak hour generation with peak hour consumption
  - (ii) Off-peak hour generation with off-peak hour consumption and
  - (iii) The normal hour generation with normal hour consumption
- c. This adjustment shall be done within the banking period (wherever the Wind Energy Generator has opted for banking).

**5. Banking :**

- a. The Wind Energy Generator shall bank the energy generated in the windmill and the banking period shall be one year from April to March.
- b. The unutilized portion of banked energy if any shall be purchased by the licensee at the rate of 75 % of the normal purchase rate.
- c. The banking shall be done slot wise to enable unit-to-unit adjustment.



## 6. Billing :

- a) The TANGEDCO shall raise bills for the net energy consumed in the HT service after adjusting the wheeled energy where the consumption in the HT service is more than the wind mill generation.
- b) Wherever the wind energy generation is in excess of the consumption, the balance energy shall be banked available after adjustment to the TANGEDCO.

## 7. Charges :

- a) Transmission charges : The captive consumer shall have to pay Rs. 2593.20 per day per MW or part thereof (40% on Rs. 6483 per day per MW) as transmission charges.
- b) Wheeling charges: The captive consumer shall have to pay Rs. 9.31 paise per unit (40% on 23.27 paise per unit) on wheeled energy.
- c) Banking charges:
1. The WEG are permitted to bank their surplus energy available after adjustment against consumption in that month.
  2. The banking account shall be maintained at Wind Energy adjustment circle.
  3. The banking charges shall be 94 paise per unit. The banking charges would be levied on all the units drawn from the bank in the month in which it is drawn.
  4. The banking period commences on 1<sup>st</sup> April and ends on 31<sup>st</sup> March of the following year.
  5. The banking shall be maintained in slot wise.
- d) Energy Charges: The energy charges shall be payable by the Wind Energy Generator, for the energy supplied by the TANGEDCO at the rate as applicable for that category as per the tariff order in force.
- e) Grid availability Charges: The drawl of energy by the wind generator during the start up from the grid shall be adjusted on unit to unit basis against the generated energy. If the generated energy is less than the energy drawn for start up shall be billed at the tariff applicable to HT temporary supply on par with start up power charges applicable to fossil power generators.
- f) Demand charges : Since, TNERC withdrawn the deemed demand concept followed for wind energy under TNERC order No. 6, dt. 31.07.2012, the captive consumer are liable to pay the full demand charges applicable as per the tariff order in force.
- g) System Operation charges : A per order No. 6, dated 31-07-2012.
- h) Power Factor incentive / disincentive : Power factor incentive / disincentive shall be as per the Tariff order in force and based on the gross energy and applicable demand charges.
- i) Reactive energy charges : (i) for drawing reactive power up to 10 % of the net energy generated - 25 paise per kvarh. (ii) for drawing reactive power more than 10 % of the net energy generated - 50 paise per kvarh for the entire reactive power drawl.
- j) Peak hour extra charges and off-peak hour rebate : peak hour extra charges and off- peak hour rebate shall be on net energy consumption after deducting captive generation during the respective peak hour block and off-peak hour block.
- k) Third party sale through the grid will be as specified by the Tamil Nadu Electricity Regulatory Commission Intra-State open Access Regulations 2005 and order no.2 dated 15-05-2006 issued by the commission in respect of transmission and wheeling charges etc.
- l) The WEGs agrees to remit the amount at the rate of 1.60 lakhs per MW per year with 5% escalation every year for life period towards O&M charges from June 2011 onwards.

## 8. Payment of Security Deposit :

- a) The Wind Energy user shall pay security deposit equivalent to two times of maximum net energy supplied by the TANGEDCO in a month in the previous billing period.

**10. Agreement Period:**

a. This agreement shall come into force from the date of execution and shall remain in full force for a period of twenty (20) years.

b. In case of any breach or violation of any of the clauses in this agreement, by any party, the other party shall be at liberty to terminate this agreement after giving three months notice.

c. It is agreed that the change of utilization of wind energy, from captive consumption to Sale may be done after giving three months notice by the Wind Energy Generator to the TANGEDCO and after executing energy-purchase agreement on the terms applicable as per order Nos.2 and 3, dated 15.5.06.

**11. Settlement of Disputes – Arbitration:**

If any dispute or difference of any kind whatsoever arises between the parties relating to this agreement, it shall in the first instance, be settled amicably, by the parties failing which either party may approach the commission for the adjudication of such disputes under section 86 (1) (f) of the Electricity Act, 2003.

In witness where of **Thiru. Dr. Ishari K. Ganesh** acting as **Managing Trustee** for and on behalf of **M/s. VAEL's Educational Trust, Chennai,** and **Thiru. A. Subramanian, B.E. M.I.E., Superintending Engineer,** Tirunelveli Electricity Distribution Circle authorized officer acting for and on behalf of the TANGEDCO have here unto set their hands on the day, month and year herein above first mentioned.

In the presence of witnesses:

1) **ASHWIN K. VIGNAR, S/o. KAMALAKANNAN**  
No 18, Dr Ranga Rd, Mylapore, Ch-4  
*ASHWIN*

For VAEL'S EDUCATIONAL TRUST  
*[Signature]*  
Trustee

2) **V. SNATHARAJAN S/O V.R. SUBRAMANIAM**  
No 15, RUKMANI STREET,  
WEST MAMBALAM, CHENNAI - 33  
*Snatharajan*

In the presence of witnesses:

1)

*[Signature]*  
**SUPERINTENDING ENGINEER**  
Tirunelveli Elec. Distribution Circle,  
TANGEDCO  
Tirunelveli - 627 011.

2)

*[Signature]*  
**Accounts Officer / Revenue**  
Tirunelveli Elec. Distn. Circle,  
TANGEDCO  
Tirunelveli - 627 011.

*[Signature]*