



DAS LAGERWEY WINDTURBINES LIMITED

Plot No.34/1, Sedarapet Village, Pondicherry - 605 101

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Ref: DLWL/WIL/200100

January 20, 2000

M/s. Wescare (India) Ltd
"Wescare Towers"
16, Cenotaph Road
Teynampet
Chennai 600 018

Dear Sir,

This is with reference to your purchase order dt. 4th January 2000 for 54 Nos of Wind Electric Generators.

As there is a supply constraint in respect of some components, we wish to supply 4 Nos. of Pioneer Wincon Make. This decision is in view of the requirement of commissioning of all WEG's by March 2000.

The technical specifications of the Pioneer Wincon WEG's are enclosed herewith. All the other terms & conditions applicable in the purchase order for those of Lagerwey make are applicable in toto to the above 4 WEG's too.

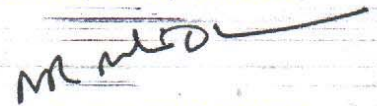
We request your concurrence on the above and await your immediate response.

Thanking you,

Yours faithfully,
For DAS LAGERWEY WIND TURBINES LTD,


Authorised Signatory

Accepted.
For WESCARE (INDIA) LIMITED


Authorised Signatory

WESCAM (INDIA) LIMITED

Wescare Towers, Cenotaph Road
Teynampet, CHENNAI - 600 018.
TEL : (91) 44 - 4360581
FAX : (91) 44 - 4360583
E-mail : wescare@vsnl.com

Date: 4th January 2000

M/s. Das Lagerwey Windturbines Ltd.
Plot No.34/1, Sedarapet Village,
Pondicherry - 605 101

Dear Sir,

Sub.: Supply, Erection, Testing, Commissioning of 54 nos. of 3 phase 400 V, 50 Hz, Grid connected Wind Electric Generators 250 KW each – Das Lagerwey 30/250 at Puthuru, Kadavakallu, Andhra Pradesh.

Further to our various discussions with you, we are pleased to place our order for the above equipment.

Sl.No	Description	Qty	Amount
1.	Design, Manufacture, Supply at Site, Engineering, Erection, Testing, Commissioning of Das Lagerwey Wind Electric Generators type LW 30/250 complete in all respects including civil works and 2 nos. 400V / 33 KV Grid Interface Transformers of 315 KVA supplied by Lagerwey Wind Turbines B.V. Holland through Das Lagerwey Wind Turbines Ltd, Chennai to be erected at Kadavakkallu Village, Putluru, Anantapur Dist, Andhra Pradesh as per the Terms and Conditions stipulated below: (Rupees Sixty Four Crores Only)	54 nos	64,00,00,000/- _____ 64,00,00,000/- _____



SPECIAL TERMS AND CONDITIONS:

1. **SCOPE OF THE CONTRACT:** This contract shall be taken on a totally turnkey basis and includes:
 - 1.1 Design, Manufacture, Testing at Works, Supply at Site 400 V, 50 Hz, 250 KW, upwind, horizontal axis Wind Electric Generator (WEG)
 - 1.2 Design and construction of towers including foundation for WEGs duly conducting soil testing analysis, control room for housing the power and control panels of WEGs, micro-siting, erection, testing, commissioning and handing over of WEGs after synchronization with the electricity grid of State Electricity Board.
 - 1.3 Supply, Erection and commissioning of step-up transformer and the associated electrical works and fencing around the transformer.
 - 1.4 Supply of consumables and maintenance tools for trouble free operation of wind farm for the warranty period.
 - 1.5 Supply of critical spares
2. **SUPPLY OF DAS LAGERWEY WIND ELECTRIC GENERATORS LW 30/250 WITH:**
 - a. Nacelle
 - b. Two Blades with 30 M dia
 - c. Hub / Pitch Mechanism
 - d. Gear Box
 - e. Yaw Mechanism
 - f. Generator
 - g. Protection Equipment
 - h. Tower (Lattice)
 - i. Foundation
 - j. Electrical Switch Gear
 - k. Delivery
 - l. Installation and Commissioning
 - m. 33 KV grid
 - n. Grid Interface and transformer and adaptation

The tower shall be of Lattice type with 36.5 M height.

3. LOCATION:

The Wind Electric Generators together with the accessories and connections shall be in Puttur, Anantapur Dist, Andhra Pradesh.

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4. **DELIVERY SCHEDULE:**

The erection of Wind Electric Generators shall be completed and connected to the APSEB Grid on or before 31st March 2000

5. **WARRANTY:**

You shall provide a warranty to us covering rectification of any and/or all defects in the design or equipments, materials, engineering, workmanship, construction or corrosion of equipment for a period of twelve months from the date of commissioning.

The amount or charge shall be payable by you for any repair, rectification or replacement of any spares or parts or components during the warranty period. This warranty however shall not be applicable to damages caused by lightning, flood, strike or any other natural calamities such as fire, storm, war, riot, civil commotion or any force majeure factors including acts of God.

6. **CONSUMABLES AND MAINTENANCE TOOLS:**

You shall arrange to stock sufficient consumables and maintenance tools as required for regular maintenance.

7. **LOCAL CONTROL SYSTEM**

The Local Control System (LCS) shall be designed for automatic unattended operations and be based on a micro processor controlled system with a power pack up for two months. The micro processor and power control units shall be located separately and well ventilated.

8. **ENERGY METER**

You shall supply for every Wind Electric Generator, a three-phase energy meter of rotating type with a provision of backstop, which will prevent the meter from rotating backwards when the power is drawn from the grid. The energy meter shall be of 5 amps rating with suitable current transformer.



9. EARTHING AND LIGHTNING PROTECTION

The earthing of the Wind Electric Generators and transformer structure is in your scope of supply. All electrical frames will be effectively connected to earth at least at two points. Materials required for each electrode as well as earth current carrying conductor shall be supplied by you. The combined earth resistance at each Wind Electric Generators shall be less than 1 Ohm. The earth electrode must be designed to withstand the maximum possible short circuit current and length of the electrode shall be such that the combined earth resistance is less than 1 Ohm.

The nacelle and tower shall also be protected against lightning by providing earthing system. Effective earth resistance of individual electrode shall be less than 5 Ohms and combined earth resistance shall be less than 1 Ohm. The work shall be executed as per IS 2309.

10. INTERFACING WITH THE GRID:

Each Wind Electric Generator shall be connected to a step up transformer. The transformers and Wind Electric Generators shall be interconnected by an under ground cable of suitable rating to match the output of the Wind Electric Generators. Each transformer shall be protected by a 33 KV air brake switch, horn gap fuse and lightning arrestor mounted on a two pole structure. The transformer shall be mounted on a suitable designated plinth.

The transformers, cables and all other equipments shall conform to the relevant ISS. The double pole structure shall be designed to withstand the speed of the Wind Electric Generators.

11. INSPECTION / TESTING

All items shall be carefully inspected and tested during manufacture and prior to dispatch in accordance with the standard practice of the manufacturer and the applicable standards. Test certificates in triplicate shall be supplied before the dispatch of the equipments.

You shall strictly comply with the quality requirements suggested by the inspecting authorities from time to time.



12. **ERECTION, TESTING AND COMMISSIONING:**

You shall arrange to carry out the erection, testing and commissioning and be responsible to bring to site and deliver all tools, cranes and other instruments for this purpose.

13. **PAYMENT**

We shall release the payment on the completion of works specified in the purchase order.

14. **ARBITRATION:**

If, at any time, any question dispute or difference whatsoever shall arise out of or in connection with this Purchase Order, the same shall be referred to arbitration in accordance with the Provisions of the Arbitration and Conciliation Act, 1996.

We now request you to accept this Purchase Order in toto and acknowledge.

Thanking you,

Yours faithfully,
For WESCARE (INDIA) LIMITED,



Authorised Signatory