Reconditioning LW**/200KW (250) wind turbines

Reconditioning of these wind turbines will be done according to Dutch MEP standards.

1. The wind turbine will be overhauled as prescribed by Dutch Ministry of Economic Affairs as part of regulations for MEP subsidy.
   a. Tower:
      i. Tower is inspected and where necessary, pairs have been done inside and outside tower;
      ii. Inspection of security lines and connections,
      iii. Inspection of outside steps, correct bend steps.
      iv. Inspection of tower connection box
   b. Nacelle:
      i. Chassis:
         1. Physical inspection of chassis and bolt connections, correct oxidation where necessary.
         2. Physical inspection of sub-chassis, attach an new layer of paint against corrosion.
         3. Optical and physical inspection of rubber mountings of sub-chassis for anti-vibrating system (low noise erosion only).
         4. Attached an new layer of paint on the cover of the nacelle.
      ii. Yawing system:
         1. Physical and optical inspection of main cogwheel on yaw, where necessary, smooth teeth to ensure wear during operation.
         2. Opening of complete main cogwheel for cleaning and inspection of bearing, cleaned and new greasing agent, complete new separator for ball bearings installed including dust protection.
         3. Overhaul of yawing gearbox, all bearings replaced, flexible connection inspected and adjusted.
         4. Inspection and new insulation (thermal injection under high pressure) added to 60,5KW yawing engine.
         5. Filled with new Castrol gear oil as prescribed by Lagerweij.
         6. Inspected and checked for proper operation of the cable twist system.
      iii. Generator:
         1. Complete overhaul of generator, new bearings, winding are cleaned and insulation applied (thermal injection under high pressure).
         2. Check for resistance of winding and checked for proper operation.
         3. Flexible coupling of generator inspected and renewed.
         4. Greased bearings as prescribed by Lagerweij.
   iv. Main gearbox:
      1. Completely overhauled, new bearings placed.

Details for payments:
EkoEnergija d.o.o. Barja Luka
Catunjska 1
78000 Barja Luka BIH

Volksbank a.d. Barja Luka
Javrejska 71
78000 Barja Luka BIH

SWIFT/IBAN:
BBA2
IBAN: BA30687241000315016

Reconditioning LW**/200KW (250) wind turbines
2. Optical and physical check of all cogwheels on wear and where necessary corrected. Cogwheels and axes are mounted with specifications as prescribed by Lagerweij.
3. Main axle checked for hair cracks with use of dye-spray.
4. Physical and optical check of gearbox system for correct operation.
5. Resistance of (oil filled) gearboxes adjusted assuming proper operation at low wind speeds.
6. Physical and optical check on back-run once system filled with new Castrol gear oil as prescribed by Lagerweij.
7. All closing parts of gearboxs smoothly to avoid leaky free operation.

v. Rotor; (optional, depending on current agreement)
1. Completely overhauled
   a. 2 New main bearings placed at each blade axle
   b. 2 New Teflon bearings placed at each centrifugal axle
   c. Shock absorbers tested for proper operation
   d. Springs adjusted to dimensions as specified by Lagerweij
   e. Blade angle system completely adjusted to factory settings, blade angle adjusted to 6,7 degrees
   f. All covers checked for future aerogear holes
   g. Rotor balanced as specified by Lagerweij with blades attached and numbered (under clinical conditions)
   h. Rotor physically tested for proper operation of blade angles system and blade angle system
   i. Note: During first 500hrs of operation final power adjustments need to be made to the rotor blade system (>12m/s max 200KW (250KW) output) by adjusting the springs and/or blade angles system.

vi. Blades; (optional, depending on current agreement)
1. Completely cleaned, repaired and repainted
2. Holes due to wear repaired
3. Optical inspection of complete outer surface
4. Attached an anti-corrosion layer for protection with 2-component paint
5. Attached wear protection at tip of the blades

vii. Control housing, chassis housing and connection points and instruments

1. Main control housing
   a. Physical and optical inspected
   b. Cleaned from dust
   c. All connection points checked and cleaned from any corrosion
d. All relays contactors checked for proper operation, cleaned and labeled

e. All fuses checked and replaced if necessary

f. All capacitors checked for proper operation and replaced when necessary

g. All transformers inspected and checked for resistance and proper operation

h. Mutator checked for proper operation

i. Transducer checked and adjusted

j. PLC inspected and checked for proper operation

k. Latest software in EEPROMs bade

2. Chassis housing

a. Physical and optical inspected

b. Cleaned for dust

c. All connection points checked and cleaned from any corrosion

d. PLC inspected and checked for proper operation

3. Instruments

a. Wind vane checked for proper operation, bearing replaced (needs final adjustments during installation of wind turbine)

b. Anemometer checked for proper operation

c. Imbalance with checked for proper operation

d. Rotations sensor checked for proper operation

e. Cable twist system checked for proper operation

CEO

P.J.M van Engelen - Sofij

Banja Luka 12-05-2015

Detalii op ayments:
EkoEnergidj d.o.o. Banja Luka
Catina 1, 78000 Banja Luka, BiH

Volksbank a.d. Banja Luka
Javejka 71, 78000 Banja Luka, BiH

SWIFT: BBBAZ

IBAN: BA36 6724 1000 03 15016