

Company: ES Power AB
Location: Örebro, Sweden
Type: Contracted / Independent Remanufacturer
In reman: Since 2012
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Product

Wind Turbines

Core Sourcing

ES Power is specialized in dismantling wind turbines, and supports Swedish owners to contact and mediate purchases with the new owner.

Business Model

Value chain

ES Power contacts or is contacted by Swedish wind turbine owners with turbines that are 15 years or older. The first step is to contact a new owner and negotiate. This step is followed by, or is in parallel with, inspection and planning for the remanufacturing of the wind turbine structure, disassembly and transport to the new owner.

Remanufacturing process

The first step is a visual inspection of wear (e.g. regarding the physical status like rust and affected components) as well as examining existing documentation for the specific windmill. Examples of data checked are e.g. when components have been maintained or exchanged and the number of operation hours.

The next step is to take down the rotor (normally done with the blades still mounted) and place it on the ground. Once on the ground, the blades are dismantled and checked. In the following step, the nacelle is lifted off and placed on the ground. The nacelle consists of many components, e.g. the gearbox and generator. Normally, before assembly the windmill, gearbox and generator are checked and refurbished. If needed, ES Power sends those components to an appropriate sub supplier.

The following step is to take down the tower. Modern towers are normally made in sections with bolted connections, but old ones are normally welded and therefore require some extra work in order to disassemble them.

After taking down and checking the tower it is organized in an order to ease further transportation. Sometimes, smaller parts are put into larger parts of the tower. A problem when taking down old wind turbine towers is that they quite often are welded onto the foundation, i.e. the bottom ring is not possible to detach from the foundation. If the bottom ring is welded off, later on, when rebuilding the tower, it is replaced with a new bottom ring.

Economic Benefits

After approximately 20 years a windmill, especially an older one, still holds a high value and the second-hand market is huge, especially in Ireland and Italy. There, energy prices are much higher than in Sweden or any Nordic country. For a windmill owner, this implies an opportunity to get back approximately 50% of the initial investment after 20 years. This is especially the case for some of the old Vestas models, e.g. V27 and V29. These models are oversized and very robust, and this implies a long use phase.

Environmental and Social Benefits

Fewer windmills need to be produced, and more renewable energy can be produced from existing windmills. Remanufacturing of old windmills opens up new work opportunities.

Advanced Materials Recovery

No advanced material recovered.

