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Products and producer responsibility: Wind turbines

Further to legislation on producer responsibility for electrical and electronic equipment DPA-System decides whether equipment or products are covered by or exempt from the rules on producer responsibility, cf. the WEEE Order. Also, if the product is covered by the rules DPA-System will assign the product to one of the categories described in the Order[1]. In addition, it will be assessed whether the product is used in private households or only in businesses[2].

The following assessment has been made for wind turbines.

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Assessment

Wind turbines are generally covered by producer responsibility for electrical and electronic equipment provided that the wind turbine depends on electric currents or generates such currents. In pursuance of Danish legislation producer responsibility applies to:

- Equipment which is dependent on electric currents or electromagnetic fields.
- Equipment for the generation, transfer and measurement of electric currents or electromagnetic fields.

It follows from the above that a wind turbine generating electric currents and other electrical and electronic equipment used in the construction of a turbine is subject to producer responsibility for electrical and electronic equipment.

Mechanical wind turbines, which exclusively contain mechanical components that do not contain electrical or electronic equipment and do not generate electric currents, are by contrast not subject to producer responsibility.

Definition and explanation

The assessment is based on the design of the wind turbine and a distinction is made between compact integrated wind turbines and modular wind turbines. This distinction between compact integrated wind turbines and modular wind turbines is made on a concrete assessment of the equipment in question. Below are examples of the two types of product design:

If a wind turbine is assembled in a way that the electrical and electronic equipment does not constitute individual modules, the turbine is regarded as compact integrated. The entire wind turbine is therefore an assembled product, i.e. the product placed on the market. Such turbines are subject to producer responsibility in Category 4. Large equipment. Such turbines may be described as small, so-called domestic wind mills. These turbines are characterised by being placed on the market as a finished unit that may be erected and connected to the power grid, in some cases through a control board.

[1]Read more about the WEEE Categories on the DPA-System website under WEEE categories.
[2]Read more about end-users on the DPA-System website under Identification of the end-user.

The official definition of a domestic wind mill further to the Danish Energy Agency is as follows:
Maximum height of 25 meters from base to upper wing tip, rotor diameter not exceeding 13 meters and maximum effect of 25 kilowatts.

The control board may be integrated in the turbine and in this case the control board is part of the compact integrated turbine, or it may be a separate module that is covered by producer responsibility as separate equipment in line with other control boards.
The control board and its modules will be subject to producer responsibility in Category 4. Large equipment, if an outer dimension is equal to or more than 50 cm, or Category 5. Small equipment, if an outer dimension is less than 50 cm.

A large turbine is in principle also a finished product, but the structure of the turbine is characterised by being made of non-electrical parts, which are not covered by producer responsibility, and a number of separate electrical or electronic modules, which are individually covered by producer responsibility. This is regarded as a modular structure.

Parts of wind turbine <u>not</u> covered by producer responsibility
The outer structure of the wind turbine in the form of a tower or pylon, wings and nacelle is considered as an industrial structure and is not covered by producer responsibility.

Hydraulic systems and gear box will not be covered by producer responsibility if they are only mechanical, hydraulic parts.

Modules for wind turbine covered by producer responsibility
Wind turbines normally contain much electrical and electronic monitoring equipment in the form of control boards, computers, electrical wind vanes for measurement of wind direction and speed, measurement of cooling need for generator and hub, electronic monitoring and brakes. In addition, they contain much IT and telecommunications equipment allowing for storage of data and/or submission of measurement data to measurement stations located outside the turbine. This equipment is covered by producer responsibility for the relevant categories that may be, respectively, Category 4. Large equipment, Category 5. Small equipment, Category 2. Screens and monitors, or Category 6. Small IT and telecommunications equipment

In addition, many turbines contain different forms of emergency power equipment which is covered by producer responsibility in the above-mentioned categories, while batteries or accumulators are covered by producer responsibility for batteries. If emergency power is based on a generator this will be covered in Category 4. Large equipment.

If lighting equipment has been installed outside or inside the turbine this is covered by producer responsibility for this category, which is Categories 4 or 5, and for lamps Category 3. Lamps. This rule also applies to other electrical or electronic equipment from other categories.