

CASE STUDY

MOVING YOUR WORLD



RENOCLEAN GMS 7205 SPRAY

Application: Cleaning the power slip ring unit in wind turbines

Background

One of the most important parts of a wind turbine is the generator. It is considered the “money-maker” because it converts the wind energy into electricity. The power slip ring unit is a critical component in the transfer of this energy. The energy is transferred through carbon brushes which touch the surface of the power slip ring unit, and over time, leaves accumulated conductive dust behind. This operation also creates a delicate patina layer on the power slip ring, which aids in reducing wear of the carbon brushes and works as a natural lubricant to ease the rotation, lower temperature, and improve power transfer.

Challenge

Accumulating dust poses an issue because it reduces the insulation value between the faces of the power slip ring, thereby creating the possibility of a flashover (or short circuit). In the event of a fault, the frequency inverter can cause the turbine to switch off. Cleaning this can be very challenging, and until now very few solutions have been developed. FUCHS has a proven solution to this problem, highlighted in this case study.

Issues

- Reduction of insulation value in power slip ring
- Potential for flashovers (short circuit), which can be very dangerous and a fire hazard
- Attack of the patina layer in power slip ring, harming overall efficiency and increasing potential for higher carbon brush wear
- Increased downtime for wind turbine.

Solution

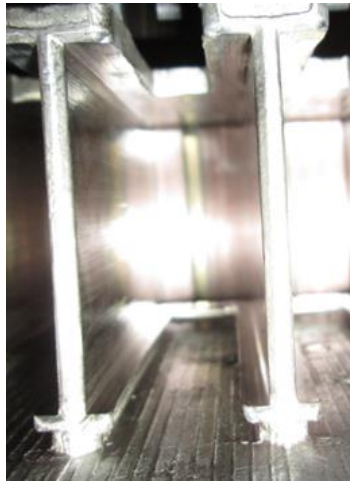
- Efficient cleaning procedure which can reach all of the parts in the power slip ring unit
- Does not attack other parts inside the power slip ring unit (carbon brushes, insulation material, plastics/ceramics, patina)
- Fast evaporation, without leaving behind residue
- Nonflammable

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Results



**BEFORE
RENOCLEAN GMS
7205 SPRAY**



**AFTER
RENOCLEAN GMS
7205 SPRAY**



Cleaning agent: RENOCLEAN GMS 7205 –
Special safety cleaner

Application device: High pressure spraying
device 4L

Working pressure: 5 bar (73psi)

The Procedure

The first step in this process after opening the power slip ring unit covers is to use a vacuum cleaner to remove any loose dust that may be resting on the surfaces. After this, you must remove the carbon brushes from their brush holders and vacuum any loose dust out again. After putting some rags on the floor of the housing, you are ready to clean. The flushing (and main cleaning) step consists of spraying from the top of the unit to the bottom, using **RENOCLEAN GMS 7205** applied by the high-pressure spraying device. This can be used on every surface in the unit, where reaching can often be a big challenge, without fear of harming any parts. Because this special cleaning agent does not leave residue, there is no need to wipe afterward.

