

Statement of Compliance



GL Renewables Statement No. **DAC-GL-004-2014**

This Statement of Compliance for the C-Design Assessment of the Wind Turbine

SWIRL Estreya L2

is issued to **SWIRL SECS**
3, Rue Thomas Edison
1445 Strassen
Luxembourg

on the basis of the GL Rules and Guidelines – IV Industrial Services – Part 1 – Guideline for the Certification of Wind Turbines, Edition 2010, Section 1.2.2.3. The assessment is based on plausibility checks of the calculation and design documentation submitted by the manufacturer. The C-Design Assessment is issued for the erection of the prototype with the technical specifications listed in the Annex for the following site:

Site: **Berdorf, Luxembourg**
Coordinates 49.8136 N, 6.35028 E

Owner: **Gemeinde Berdorf, Administration Communale**
5, Rue de Consdorf, 6551 Berdorf, Luxembourg

A building license is to be applied for at the responsible building authority. The calculations and drawings examined as well as the conditions for operation are listed in the following Certification Report:

74574 2014-07-10 C-Design Assessment of prototype

Changes in design are to be approved by GL Renewables Certification (GL RC), otherwise this statement loses its validity.

There are no objections against the temporary testing and measuring of the prototype of the wind turbine SWIRL Estreya L2 provided that the obligations for operations are observed.

Valid until: **10th July 2016 or up to 8,000 kWh production**

Hamburg, 10th July 2014
Morb

Germanischer Lloyd Industrial Services GmbH *Morb*

ppa Mike Woebeking
ppa Mike Woebeking
Head of Certification Body

i.V. Fabio Pollicino
i.V. Fabio Pollicino
Service Line Leader

By DAkkS according DIN EN IEC/ISO 17065
accredited Certification Body for products
The accreditation is valid for the fields of certification
listed in the certificate



Renewables Certification
Germanischer Lloyd Industrial Services GmbH
Brooktorkai 18
20457 Hamburg, Germany

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Annex

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Technical specifications for SWIRL Estreya L2 turbine

Main data	Type	vertical axis wind turbine
	Rotor diameter	2.4 m
	Rotor Height	2.7 m
	Power regulation	Torque controlled
	Rated power	2 kW
	Hub height	2.9 m
		mounted on a 55m high water tower
	Rated rotational speed	160 - 170 rpm
	Operating range rotational speed	50 – 225 rpm
	Cut-in wind speed	4 m/s
	Mean wind speed	11 m/s
	Cut-out wind speed	25 m/s
	50 year extreme wind speed	50 m/s
	Design life time	20 years
	IEC 61400-2 Class	I
Rotor	Manufacturer	SWIRL
	Drawing No.	435-000000-A, Rev. A.00
	Type	Welded
	Material	S235 / S355
Blade	Material	Telene 1650
	Blade length	2.7 m
	Number of blades	3
	Manufacturer	Courbis Synthese S.A..
	Drawing No.	13781-901, Rev. B
Brake	Manufacturer	Coremo Ocmea
	Type	ID 800N
Tower	Design	Foot of 1.5m Height
	Drawing No.	AMD-13-0082b
Safety system	Description	The turbine is equipped with a spring activated hydraulically operated mechanical brake.

End of Annex

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