



## Project Summary

### Development of a new principle 3 MW direct drive generator and wind turbine

#### NEWGEN3MW

**Action Line:** Cost-effective supply of renewable energies

**Contract Type:** Specific targeted research projects

**Activity area:** Wind Energy

#### Coordinator:

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#### Project details

<b>Reference:</b>	Wind/019796/2005	<b>Start Date:</b>
<b>Status:</b>	Execution	<b>End Date:</b>
<b>Project Cost (€):</b>	4.959.721	<b>Duration (months):</b> 42
<b>Project Funding (€):</b>	2.000.000	

#### Summary

Wind turbines with direct drive generators today have a 15% market share world-wide, although the cost level is higher than for conventional solutions with gear-box and high-speed generator. The new direct drive generator - the NewGen - has the potential to reduce the weight and thus the cost of the generator installation by 70%. This is mainly achieved by applying a novel mechanical solution, which drastically reduces the stiffness requirements and therefore permits a larger diameter of the generator. In this way both the amount of electrically active material and the amount of construction material are reduced. Thus the total wind turbine cost will decrease by roughly 20%. The reduced cost level will increase the potential for and use of wind power, which is highly relevant for the European and world supply of energy and for the environment. It will also increase the political and public acceptance of wind power. European manufacture of this generator, and of the wind turbines using it, is relevant for the industrial development. The introduction of a new type of rotating electrical machine has an impact on the European scientific community due to the new areas that the work initiates. The competent project consortium consisting of five members makes use of complementary resources in three European countries (five including major sub-contractors), which gives the project a strong European dimension. The consortium members plan to exploit the results by marketing electrical systems and wind turbines respectively, based on the findings.

The project aims to develop and test a commercial size (3 MW) NewGen generator, and to demonstrate this generator in a large wind turbine, based on an existing wind turbine design. The work will utilise the just finished development and laboratory testing of a pilot scale (140 kW) generator. A preliminary study reveals that a 20 MW generator is feasible and compatible.



## Partners

1	VG Power AB	SE
2	SKF Sverige AB	SE
3	Verteco OY	FI
4	ScanWind Group AS	NO
5	Teknikgruppen AB	SE