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ROBUST

WP 4: Use of light steel systems to upgrade roofs in residential and commercial buildings Contribution RWTH Aachen

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1 WP 4.2 Simulation of thermal performance

(General introduction, relation to WP 5)

2 WP 4.5: Integration of energy creation systems

The options to integrated active energy “creation” systems in the roof are partly similar to the solutions presented for the facades in WP 1 and WP 2.

As further technical solution with a connection to the roof the use of small wind turbines should be pointed out:

A small scale wind turbine was developed in the last few years (RWTH Aachen, Aerodynamisches Institut / Innoenergie AG, Aachen, see Fig. 1). This product was developed referring the integration in buildings.



Fig. 1: Small scale vertical axes wind turbine

A view on the technical data makes clear, what are specific properties of this turbine:

Height	2,20 m
Diameter	2,70 m
Weight	50 kg
Nominal wind speed	14 m/s
Surviving wind speed:	50 m/s
Nominal power:	3 kW

Due to these small dimensions an application on various building types should be possible. For large flat roofs it will be possible to install an array of these turbines (Fig. 2)

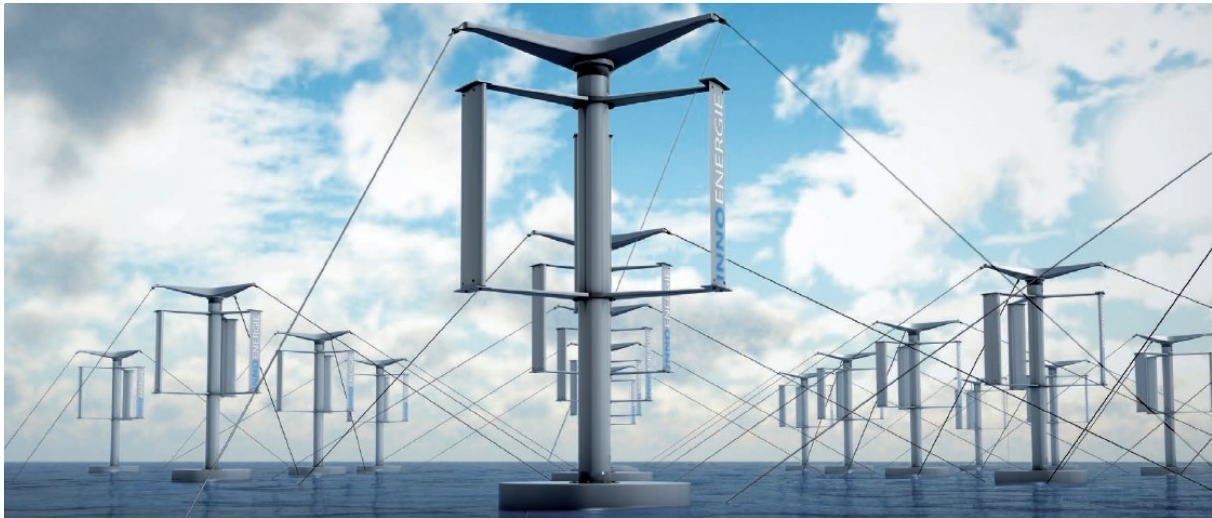


Fig. 2: Array of Small scale vertical axes wind turbine on a flat roof (rendered picture, www.innoenergie.de)