

## STUDENTS PRIZE

INNOVATE FOR THE CITY OF TOMORROW

# WIND MY ROOF

## COMPACT WIND TURBINES TO HARVEST THE ENERGY OF THE WIND HITTING BUILDING FACADES

 [vimeo.com/238605007](https://vimeo.com/238605007)

### HEAD OF PROJECT

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### THEME

In the digital era, what would the city of your dreams look like?

### CENTRAL ACTIVITIES REGION

### Context

The European Union countries aim to generate 20% of their total energy consumption from renewable sources looking to 2020. Wind energy is expected to provide a large share of this renewable energy and it is therefore important to exploit all the potential sources. There is one that is as yet under-exploited: the energy produced when wind hits the facades of buildings.

### Description

A team of students at the École des Ponts ParisTech conceived an innovative solutions for harvesting facade wind. It takes the form of small, horizontal wind turbines set in rectangular pods. When assembled, these 2 m long x 1 m high modules can be installed on the roof at the junction with the facade, where the wind is at its strongest. The compact modules are designed to attenuate the noise of the blades and fit harmoniously into the urban landscape.

### Benefits

The Wind my Roof turbines have already successfully completed several development stages. Models have been tested in a wind tunnel and the shape of the blades has been optimised. The next step is to build a functional prototype. However, it is a promising idea: these compact and modular wind turbines adapted to flat roofs avoid transmission losses for local consumption and should rapidly become profitable. A case study based on 50 modules installed on the roof of a supermarket and generating 200 MWh a year could yield savings of €20,000 a year after five years of operation.

- 1 The roof wind turbine uses the energy of facade wind for local electricity generation and consumption.
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