

Wind Energy in Flanders

Early wind energy development in Flanders

In the early years of wind energy development, Flanders was in many ways a pioneer. In 1987, Flemish engineers installed an offshore wind farm. Flanders was amongst the first regions to develop gearboxes for wind turbines, and was an early leader in manufacturing. These first pioneering companies remain world leaders today, continually investing in research and development. Their early work was followed by success in new areas, from crane companies to dredging experts. At the end of 2008, another new step will be taken for the wind industry, as an offshore wind farm of 5 MW turbines will become operational in the North Sea 30 km from shore, in a water depth of 15-25 m.

As the price of traditional fuels keeps rising, the public and industry have rediscovered the potential of wind energy. Although Flanders has a high average wind speed, onshore electricity production from wind is still to be fully developed. However, there are very positive signs. In 2001, the distributor Colruyt installed a wind turbine to provide the electricity it needed, and since then, industrial companies have followed its example, managing to cover a large share of their electricity needs with wind power. Over three-quarters of the Flemish people are favourable towards wind energy, and the many Flemish companies who are active in the sector will ensure the support of the authorities.

Current situation and perspectives

At the time of writing (March 2008) 126 wind turbines are in operation in Flanders, with a total capacity of 170 MW. Detailed information about the wind farms can be found [here](#). In the coming months, 37 wind turbines are to be built, with a total capacity of 82.5 MW. By the end of 2009, installed capacity will reach 250 MW, which is still far off the Flemish target of over 450 MW¹ installed capacity in 2010. The development is slower than expected for several reasons, such as the general ban on putting wind turbines in agriculture areas. This can be overruled, but it involves a lengthy administrative procedure.

By the end of 2008, the first offshore wind turbines in Belgium will go into production. In the first phase, six turbines of 5 MW will be installed as part of the C-Power project. By the end of the decade, the farm should be finished, containing 60 x 5 MW turbines on the Thornton Bank, 27 to 30 km into the North Sea by the end of the decade. The Eldepasco and Belwind projects will follow, more than tripling the installed offshore capacity, in an area up to 46 km off the coast.

¹ Circular letter 12/05/2006 wind energy EME/2006/01 – RO/2006/02

Wind energy framework

Most of the legal framework is defined by the regional Flemish government:

- The legal and administrative framework for wind turbine installation is summarised in a circular letter (EME/2006/01 – RO/2006/02), entitled ‘[Omzendbrief afwegingskader en randvoorwaarden voor de inplanting van windturbines](#)’
- A [green certificate mechanism](#) for the promotion of green electricity is operational in Flanders. A green certificate (GC) is delivered for each MWh produced. The current market price for GC is €10 per certificate. The minimum price for onshore wind is guaranteed by the government for 10 years at €80 per certificate. [For more information on the GC system click here](#)

The regulations concerning marking and aviation safety are set by the federal government.

- The regulations were changed in 2004 to become more in line with those in other countries (e.g. Germany) [For more information click here](#)

The set-up is different for offshore wind farms. The federal government is the authority that has jurisdiction over the North Sea and so also over offshore wind farms. For offshore wind the minimum guaranteed certificate value is set at €107.

Market potential for onshore and offshore wind energy in Belgium

Based on several studies² and its market knowledge, VWEA has formulated wind energy scenarios for Belgium up to 2030:

Target	Onshore	Offshore
2010	850 MW	200 MW
2015	1,500 MW	650 MW
2020	2,000 MW	1,500 MW
2030	3,000 MW	3,800 MW

² De Ruyck estimates, Apere-EDORA-Valbiom Memorandum (2006), *Renewable Energy Evolution* [2004], *Optimal Offshore Wind Energy Developments in Belgium* [2004]

Fulfilling Belgium's wind energy potential

In order to achieve the targets mentioned above, the following key issues need to be addressed:

- The transport and distribution grid has to be developed in order to connect local and offshore wind farms to the electricity network.
- The permit process for wind turbines in agricultural zones should be simplified to stimulate wind energy development.
- The military safety restrictions on zones suitable for wind turbines should be made less stringent, as should geographical restrictions due to possible interference with radar.
- The green certificate system, which sets targets up to 2010, needs to be extended further into the future.
- Due to the still immature electricity market, balancing costs for wind energy are too high.
- Cultural barriers and structural misinformation need to be tackled through new communication campaigns on wind energy myths, and by encouraging the public to participate in wind energy projects.
- Binding wind energy targets should be set up to 2020.
- A framework for small and medium sized projects (from 50 kW to 3 MW) needs to be set.

To find out more

Please see the following links:

- [The Flemish Wind Energy Association, VWEA](#)
- [List of wind farms in Flanders](#)
- [Report on wind energy potential and other studies](#)
- [Discussions in the federal parliament on wind energy potential up to 2030](#)
- [Flemish Regulation Entity for the Electricity and Gas market \(VREG\)](#)
- [Flemish Energy Agency, information on wind energy](#)
- [Federal Regulation Entity for the Electricity and Gas market \(CREG\)](#)