# THINK ACT POINT OF VIEW



# The future of onshore wind power

Authorities, regulators, grid operators and wind farm operators should act now



# Onshore wind is Europe's main renewable energy source. Governments must encourage grid investments – and operators must improve their profitability.

Wind power is an essential renewable energy source for Belgium to reach its 2020 "energy-climate" objectives and the 2030 objectives already agreed at the EU level. The share of wind energy in Belgium's electricity production mix should reach 14% by 2020, of which 8.5% for onshore wind. We believe that Europe should invest €150 billion in the development of smart grids to maximize the share of renewables, and in trans-European grid connections to ensure the security of supply. As well as the authorities, regulators and grid operators, wind farm operators too should act now. The competitiveness and profitability of wind power installations can still be considerably improved, as operational costs could be reduced by up to 45%.

# ONSHORE WIND WILL CONTINUE TO GAIN MARKET SHARE

Global installed wind power capacity has increased 50-fold over the last 20 years and these wind farms are a competitive source of electricity in many European markets. At the same time, the cost of electricity production has decreased by a third since 2010. The production cost of the best-located onshore wind turbines is lower than most other renewable and fossil fuel technologies. Only hydro power plants (more or less maxed out in Belgium) and historical nuclear power plants manage to produce at a lower cost. Therefore, wind power is an essential renewable energy source for Belgium to reach its 2020 "energy-climate" objectives and the 2030 objectives already agreed at the EU level. Moreover, Belgian wind power will be crucial to offset the nuclear phase-out by 2025. By 2020, wind power is expected to cover 14% of total electricity demand in Belgium, in line with the expected European average. Onshore wind turbines will cover 8.5% of total demand while offshore will account for 5.5%. By 2030, wind power is expected to cover 25% of total electricity demand, half of which is to be provided by onshore wind farms.  $\rightarrow A$ 

### **RAPID GROWTH IS REACHING ITS LIMITS**

The rapid growth experienced in recent years is reaching its limits. First of all, the best locations for wind farms, in terms of production efficiency, have already been taken. Second, the "Not in my Back Yard" effect and lengthened approval procedures are increasing the duration of projects while sometimes even calling their existence into question (in Wallonia, 520 MW of wind power are currently under examination by the administration). Third, the reduction of subsidies means that the market will no longer be artificially stimulated. Flanders has already banned any kind of subsidies towards renewables, while in Wallonia, rules for granting green certificates are being reviewed. To overcome these hurdles, wind farm operators should encourage local residents to co-invest and reap the benefits of wind power.

#### **SMART GRIDS WILL BE A PREREQUISITE**

Europe should invest much more in the development of smart grids, to allow for the development of renewable energy sources, including onshore wind energy. China and the United States are investing two to three times more than all the European countries combined (approximately €400 million in Europe). In making their investment decisions, wind farm operators are looking at the quality of the grids and their capacity to absorb renewable energy at minimal cost. Smart grids will be required to manage the volatility of renewable energy production (through demand management systems and storage) and its injection into the grids (bringing production and consumption together). The "Distribution Management Systems" that are currently being introduced by the grid operators are a first step toward smart grids. → **B** 

Next to smart grids, large trans-European investments are required to increase international energy flows and ensure the security of supply. The current bottlenecks in the international transmission network should be removed. For example, the UK should triple its transmission capacity by 2030 while the Iberian Peninsula should invest 10 times as much. In the short to medium term, €150 billion should be invested in the European electricity grids.

However, at the same time, the cost of connecting to and using the grids must remain acceptable, so as not to jeopardize the competitiveness of renewable energy sources.

## B NET TRANSFER CAPACITIES (NTC) TO AND FROM BELGIUM IN 2015 [GW]



#### Source: Elia, Roland Berger analysis

1 Nemo - In construction; operational from 2019

2 Alegro – In construction; operational from 2020



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### WIND PARKS COULD BE MORE EFFICIENT

As well as the authorities, regulators and grid operators, wind farm operators too should act now. Low fossil fuel prices and changes in the regulatory agenda (removal of subsidies, tender procedures, etc.) are forcing wind farm operators to reduce costs in order to stay competitive. Operational costs of wind farms could be reduced by up to 45%, by focusing mainly on maintenance and repair, insurance, management and financing. Simultaneously, wind turbine OEMs must significantly increase their R&D budgets. Innovation is the only way to resist the competition from China, South Korea and the United States and to avoid a loss of competitiveness, as we have seen in the European solar industry a few years ago. The level of maturity and professionalism of the wind power industry is steadily increasing, which is reflected in the decrease of production costs. This will continue to improve the competitive positioning of wind power, so that it will be an essential component of a sustainable energy mix.

## **Publisher**

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