Lack of Wind Cover

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Even in relatively windless years you will meet your operating costs, financing obligations and return targets.

Experience over the last ten years has shown time and again that the strength and duration of wind in individual regions and in individual years or months can sometimes fall far short of expectations. The concomitant decrease in power generation results in reduced turnover, even though operating costs, financing and return targets still have to be met.

To ensure that on- and offshore wind power projects do not cause financial distress in such low-wind years, Munich Re offers covers against turnover losses resulting from a lack of wind.

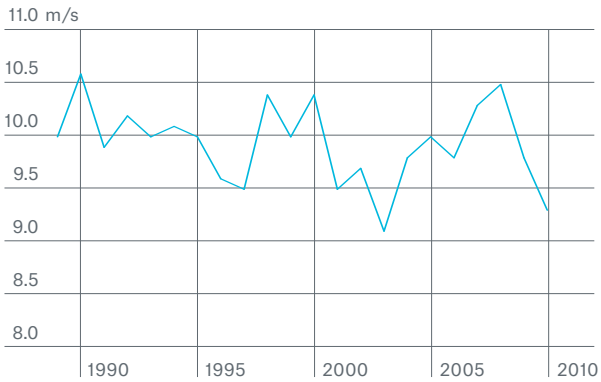
Our cover concepts are based on a modelled turnover that is calculated from wind data at hub level (1), the specific turbines' power curves (2), the wind farm's efficiency and a stipulated price per megawatt-hour (3). If the modelled turnover fails to reach a pre-defined threshold (strike), the cover cushions the impact of the loss (4). Whenever the modelled turnover falls below the red line, Munich Re steps in.

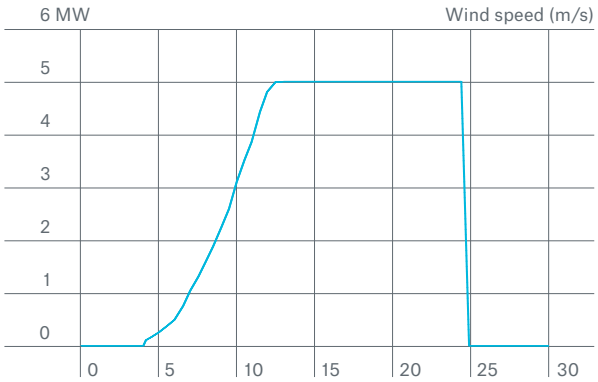
Since this cover can also be concluded for several consecutive years, it offers investors maximum protection against loss of income due to lack of wind. In this way, the cover helps investment planning, secures profits and facilitates the financing of new projects.

Another possibility is to agree on structures such as collars or swaps, in which the investor trades parts of its upside in order to (partially) finance its premiums.

Our cover offers many benefits: operators and investors receive steady revenue from wind farms and are able to concentrate on growing their business without worrying about lack of wind – even in relatively windless years.

Example: Covers for modelled output (North Sea)

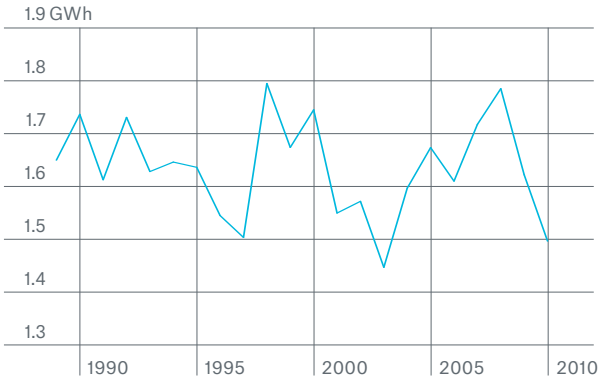


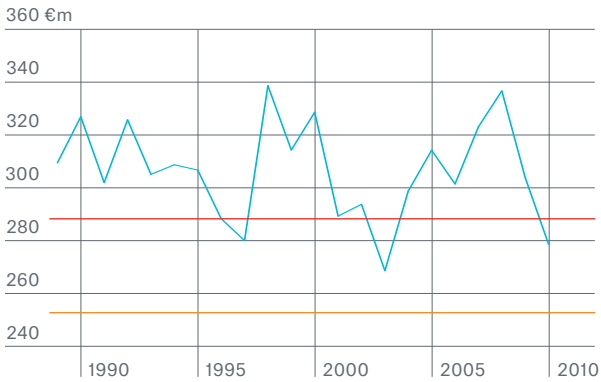


1 The annual average wind speed 100 metres above the water at any given point in the North Sea fluctuates considerably. The long-term average is in this case just under 10 m/s, but the average in particularly low-wind years such as 2003 may remain far below expectations. Our historical wind data are based on re-analyses by the European Centre for Medium Range Weather Forecasts (ECMWF).

2 Wind-speed readings can be translated into energy yield figures by means of turbine-specific power curves, which make allowance for the fact that WTGs switch on only when the wind speed reaches a specified threshold value and achieve their full output as the wind speed increases.

3 A wind farm's modelled annual energy yield (expressed in gigawatt-hours [GWh] per year) is the sum of the hourly energy yield figures. This takes into account both the number of WTGs and the efficiency of the wind farm.





4 A wind farm's modelled annual turnover (in millions of euros) is calculated by multiplying the modelled annual energy yield with a factor reflecting the feed-in tariff or a negotiated price per MWh. In 2003, for example, the yield turned out to be €35m less than the expected value of about €310m per year (long-term average). The two lines indicate the range which would be covered by a lack of wind policy. If the turnover falls below the red line, the cover cushions the loss up to an agreed limit (orange line).