

A proper market would reward cheap, clean wind

ANDERS RUNEVAD

With COP21 behind us and implementation of the Paris Agreement at the top of the international agenda, the wind sector is understandably upbeat. Having won the Why Wind? debate, we now need to pivot to address the How Wind? question in the year ahead. That is, what is needed to ensure that countries, companies, consumers and the climate get the full benefit of wind energy's potential to help decarbonise the power sector?

This entails creating a system that rewards different technologies for their respective merits and benefits to the overall power sector, so that the market chooses the cheapest, cleanest sources based on all parameters. Wind and other renewables should be rewarded for their price stability, environmental benefits and security of supply, whereas peak power plants delivering on-demand electricity and back-up to variable generation from renewables should be rewarded for their flexibility.

This is not the case today. The core issue centres on the basic design of electricity markets. Although unrivalled at maintaining efficient system-wide balance between supply and demand, the markets are typically geared towards rewarding large, highly centralised generation, with economic incentives based, among other things, on high marginal costs (primarily fuel). As wind and other variable

politically acceptable) price on pollution would contribute to reducing the energy sector's carbon emissions, most likely by prompting a coal-to-gas switch. Creating a "smart" system featuring dynamic management of supply and demand, while rewarding consumption at times of ample supply, would drive costs down further.

Greater grid interconnectivity and integrated power-trading markets across wider geographic regions, reducing the relevance of renewable energy's natural variability, are essential. Denmark and its neighbours provide an excellent example. The power networks in Denmark, Germany, Norway and Sweden are highly interconnected, and the well-integrated Nord Pool electricity market facilitates trading across borders and overall system balancing.

What's more, Denmark's combined heat and power plants are extremely flexible, in some cases having an effective operational range of between 10% and 100% of capacity. In this way, even more variable but predictable renewable energy can be integrated into a grid in which existing centralised power plants continue to play an important role.

Wind already produces about 40% of Denmark's electricity, and the country is well on the way to achieving 50% of wind in its energy mix by 2020. Combining that degree of penetration with new forecasting and storage technologies can make wind a true baseload source.

It has taken time to create the flexible market that exists in Northern Europe, and it will take time to expand that model across the continent and adapt it to specific circumstances elsewhere. But an essential

ingredient in Northern Europe's successful renewables recipe thus far has been more market-based systems, not fewer.

And that's the direction in which Vestas believe the energy industry should be going. Collectively, we should strive to achieve a market-based sector, in which well-integrated markets price power based on real costs of production and pollution, and take into account different sources' advantages. That way, the cheapest and cleanest technologies *would* naturally win — and would be fairly compensated to ensure adequate investments in the future.

This won't happen universally or overnight, but it is something we believe the energy industry should aspire to. ☐



Anders Runevad is president and chief executive of Vestas

/// We should strive to achieve a market-based electricity sector, in which power price is based on real costs of production and pollution, and takes into account different sources' benefits

renewable sources become increasingly widespread, however, power generation is becoming decentralised, with low marginal costs because the "fuel" is free.

As the penetration levels of low-marginal-cost generation such as renewables continue to rise (wind accounted for about 20% of new capacity globally in 2014), current market designs result in system prices dropping continuously lower. That is good in the short run, but raises the risk that incentives for investment in new generation could be too low in the long term.

Addressing this basic market failure is not simple, but pricing power to reflect its true costs and benefits is a critical starting point. Implementing a meaningful (though still