Turn renewables gas (and other energy commodities) into a "weather derivative" in Europe?

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Introduction

Stefan Judisch's speech will focus on the interdependencies between the increased influence of renewables in Europe and its effect on power production, gas consumption and gas storage requirements with further elaboration on the role of LNG. This will also be discussed in the context of the German nuclear exit.

Aims

The presentation will highlight that "the golden decade for gas" could rather be "leaden" in Europe as the investment signals for new gas plants are missing and the capacity utilisation of existing plant is declining as photovoltaic power has removed the requirement of peak generation from gas-fired power plants in the summer.

Results

One could say the Fukushima disaster has provided a boost for renewables and that the volume of renewable power generation on the grid will most likely increase. With its ability to quickly ramp up power generation, gas-fired plants are the best backup capacity for intermittent generation and should be the big winners of the accelerated nuclear phase-out in Europe. The "back-up" nature of gas-fired power capacity already indicates it has a limited primary role.

Incentives to invest in gas are currently limited. German clean spark spreads are below clean dark spreads as gas is relatively more expensive than coal and this makes coal generation more economical to run in the generation stack. Ample reserve margins during most of the year reduce spark spreads even further. In addition, the carbon market is not sending a strong enough and long-term price signal to invest in low-carbon technologies at the moment either.

Not only are price signals for new investments missing, but the utilisation rate of gas-fired power generation is also likely to decline further with the boost in renewables. Power generated by renewables is pushed into the spot market as an offer without a price tag as the guaranteed feed-in tariff for renewables is passed on to end-consumer via the grid fees. This power, without a wholesale price nor marginal costs, leads to less full load hours for the remaining conventional thermal generation units. Photovoltaic generation is highly seasonal: it makes a high supply contribution to an already low peak load demand in summer, but its output is much less in winter. Consequently, photovoltaic generation reduces peak demand for gas during the summer but does not contribute much during the winter.

If only large capacities of photovoltaic power production existed in the North-European system, the se seasonal effects and gas storage requirements would amplify the role of natural gas in the home heating market. Nevertheless, as there are also large capacities for wind power generation in the same market, the picture changes. Wind power generation is highest in winter during periods of low pressure weather systems when the temperature is

also relatively mild. However, wind power production is much less predictable than photovoltaic power production and therefore short term gas storage flexibility is also required to make power available during periods with high pressure systems in the winter. Here, the "finest" hours for gas will be winter mornings between 06:00 and 08:00 and early evening hours from 17:00 to 20:00 during the working week when wind does not blow. The combination of gas consumption for both heating purposes and power generation in a power market dominated by renewables will increase the correlation of gas usage and therefore gas (spot) prices with weather patterns.

Summary
As a leading European energy trading house and as one of the strong competitors in the European gas industry with an annual gas procurement volume of roughly 50 billion cubic metres, RWE Supply & Trading has understood the challenges of European energy markets including the gas market . These challenges, for example, have implications on the company's gas and flexibility strategy. RWE Supply & Trading has been employing five meteorologists for a number of years who run proprietary weather models. Against this background, Stefan Judisch, as CEO of RWE Supply & Trading, will highlight the threats to the "golden gas decade" in Europe. He will also point out the interdependencies of the global gas value chain, which is linked via LNG with the European and increasingly renewable-dominated power market.