

Background

Speedwell Climate and EPEX SPOT are pleased to announce the release of our Renewable Power Quanto Indices. These indices combine Speedwell's existing Wind & Solar Power Production Indices with EPEX SPOT price data. For renewable power producers, asset holders and investors, these indices can be used to hedge the impact of shape risk, renewables cannibalisation and total revenue risk over a period of time (month, quarter, season, etc.).

Over the past five years the energy and climate risk markets have used Speedwell indices for OTC risk transfer relating to volume risk. These original indices model wind and solar energy production based on a frozen asset base. They have been successfully used in a number of Australian, European and U.S. generation areas to manage renewable energy volume risk.

Renewable Power Quanto Indices represent a natural evolution combining generated energy volume and price information, thus covering the additional hedging needs arising from the relationship between renewable energy production volume and energy price. These indices may be of value as hedging tools to renewable energy companies, PPA buyers and sellers as well as fossil fuel generators.



Renewable Energy Risks

Both the timing and the volume of renewable energy production are highly variable and create unique risks for producers, investors, off-takers and the energy markets as a whole. These Renewable Power Quanto Indices are designed to facilitate the management of three types of risk impacting this market.

Shape Risk

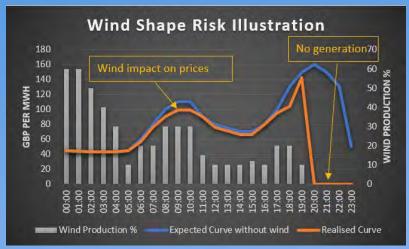
Renewable energy producers may hope to generate revenues according to an estimated day-ahead power curve but in practice their own output is intermittent and modifies the price curve. The risk corresponding to the difference between the expected price curve and the realised curve is known as Shape Risk.

Cannibalisation Risk

With no fuel to burn when producing power, renewable energy companies can offer low auction prices. This competition can drive prices down and lead to a cannibalisation of revenues.

This cannibalisation can be directly quantified using the Quality Factor (QF) index. This is equal to the ratio between the achieved price and the baseload price.

Achieved Revenue Risk
Achieved Revenue Risk integrates all the
risks faced by a renewable energy
company including Shape Risk,
cannibalisation and Achieved Price risk.



The above image depicts a day in which the realised hourly price curve deviates significantly from the curve that would have applied had there not been any production coming from wind. This risk between the expected and realised is known as Shape Risk.



The above image demonstrates the cannibalisation effect (decrease in Quality Factor) for wind power companies in the GB market since 2011. Wind power generation now captures a reduced fraction of the baseload price than it did historically.

Index Description



- Achieved Revenue Index revenues generated for each hour (volume multiplied by market price)
- Achieved Price Index measure of the actual price received on a weighted basis per MWh
- Quality Factor Index ratio of the Achieved Price Index to baseload price

Index Access - Historical Values

Historic index values are available for analysis and structuring. Regions

Belgium (solar & wind)

France (wind)

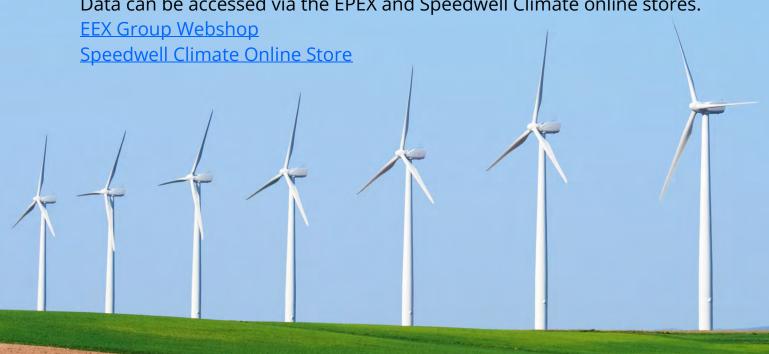
Germany (solar & wind) Great Britain (solar & wind)

Netherlands (solar & wind)

Achieved Revenue, Achieved Price, Quality Factor **Index Type**

Historical Period 2011 to present (with a 3-month delay) **Index Periods** Monthly, Quarterly, Extended Periods

Data can be accessed via the EPEX and Speedwell Climate online stores.



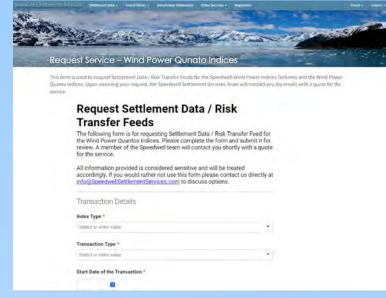


Index Access - Real-Time Data for Risk Transfer

Real time data for Risk Transfer is available from Speedwell Settlement Services on request via the Speedwell Settlement

Services website.

- The fee is dependent on underlying transaction size in MW and the term of the transaction.
- Standard Periods available: monthly, quarterly, seasonal.
- Tailored Periods: any non-standard period can be provided on request



Standard-Period Refund Scheme (SPRS)

The SPRS scheme is designed for more frequent users of the Speedwell - EPEX SPOT Renewable Power Quanto Power Indices. For users of standard period contracts, SPRS allows self-reporting of trades and netting against offsetting trades in the same contract. In addition, discounts are applied to the charge depending on the total accumulated charges paid in the current quarter. Total charges are capped irrespective of volumes transacted. Paperwork is also simplified with a single master contract replacing the need for individual contracts.





