

# Speedwell - EPEX Wind Power Quanto Indices

Indices for Renewable Energy Risk Management



# Background

Speedwell Climate and EPEXSPOT are pleased to announce the release of three families of indices combining Speedwell's existing Wind Power Production Indices with EPEXSPOT price data. For wind power producers, asset holders and investors, these Wind Power Quanto 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 Climate's Wind Power Indices for OTC risk transfer relating to wind volume risk. These original indices model wind 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.

The Wind 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 Wind Power Quanto Indices are designed to facilitate the management of three types of risk impacting this market.

### Shape Risk

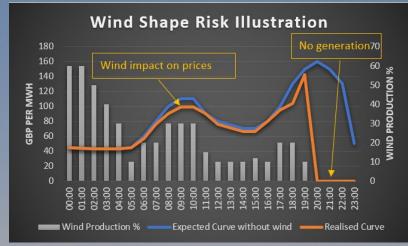
Renewable energy producers may hope to generate revenues according to an estimated day-ahead power curve but in practice their own output is intermittent and modifies the price curve. The risk corresponding to the difference between the expected price curve and the realised curve is known as Shape Risk.

#### 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 Availability

Three Wind Power Index types are available for Great Britain (i.e. UK excluding Northern Ireland):

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

> epexspot

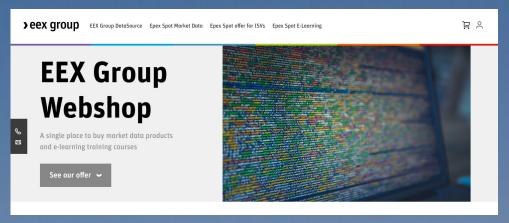
Historic index values are available for analysis and structuring.

Region Great Britain

Index Type Achieved Revenue, Achieved Price, Quality Factor

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.



https://webshop.eex-group.com/



https://www.SpeedwellClimate.com/

Historic index values are available free-of-charge till March 2023. Licenses for consultants, resellers and distributors are available on a chargeable basis.



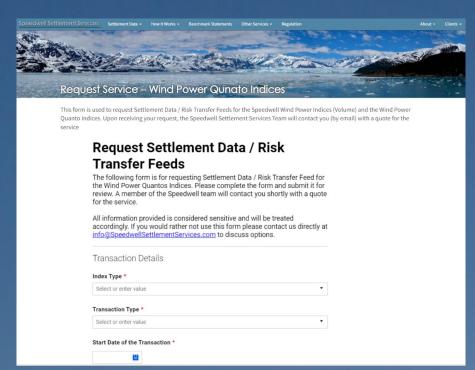
## Index Access - Real-Time Data for Risk Transfer

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 nonstandard period can be provided on request



## Standard-Period Refund Scheme (SPRS)

The SPRS scheme is designed for more frequent users of the Speedwell - EPEX Wind Power Quanto 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.

Please <u>contact</u> Speedwell Settlement Services for further information.

