



# Speedwell Weather System

**The Open Weather Derivative Pricing and Risk Management System**

## **SWS Version 11 Features Summary**

## SWS: Weather Risk Contracts Pricing Features

Feature	Included?
Pricing of vanilla contracts, baskets, spreads and exotic structures using historical burn, fitting of multiple distributions and simulation. Stand-alone and portfolio pricing. Run multiple pricing methods at a single press of a button. SWS supports user-script based definition of super-exotics and indices based on average of N lowest/highest values.	
Support for a wide range of structures including call, puts, swaps, digitals, strangles, collars, barrier up-and-outs, barrier down-and-outs; all capped or uncapped.	
Support for indexes based on daily and or hourly values.	
Daily rainfall and temperature simulation models.	
Multiple detrending methods including linear, bi-linear, Lowess and polynomial detrending. All detrending methods available for underlying weather parameters as well as indices. Seasonal based data de-trending: trends broken down into individual months.	
Option to exclude specific days of the week or occasional days (e.g. bank holidays) when building an index.	
Facility to specify user-specified index weightings to different historical years to account for the El Nino and La Nina weather effects or to eliminate certain years.	
Support for indices based on CDDs, HDDs, GDDs, CTDs, CATs, GTZ, cumulative values, average values, critical values and many others including user-specified indices based on user-entered formula and compound structures.	
Support for strips and multi year deals.	
Support for back-pricing: ie pricing a transaction retrospectively with then-available data	
Support for Weather Data Scenarios: it is possible to look at the prices under conditions like: what happens if it is 1 degree warmer or if it rains 10% more on every single day of the period. Also available at the portfolio level.	
Automatic leap year adjustment (six methods available).	
Valuation of in-period contracts	
Distribution Analysis tool: automatically assess best descriptive distribution, with Kolmogorov Smirnov goodness of fit tests and Maximum Likelihood Estimation Fitting engine. Helps objective assessment of optimal pricing methods.	
Full support and automatic integration of deterministic <i>and</i> ensemble forecasts for pricing and risk management of weather derivative structures.	
 Power curve scripting tool: simplifies the transformation of a power curve table into an SWS-compatible index for weighting wind speeds	
 Automation of Request for Proposal Processing: SWS 11 automates the import and export of weatherXchange Request for Proposals (“RFP”s)	











## SWS: Portfolio Features

Feature	Included?
Portfolio VaR calculation comprising expiry and daily / or period-VaR.	
Ability to create an unlimited number of portfolios.	
Ability to create Umbrella Portfolios by assigning any chosen portfolios	
Ability to test what-if scenarios by booking fictitious trades to a "Working Portfolio" which does not impact back office.	
Ability to create "Mirrored Portfolios" to allow testing a different portfolio method	
Automatic counterparty credit risk report.	
Multi-normal and Copula simulation engines.	
Option to globally override option pricing parameters for marking to model.	
Support for super-exotic structures via "back door" entry of index values for subsequent use in portfolio.	
Transaction report showing daily, year to date and from-inception P&L.	
Summary of Greeks by portfolio and by index.	
Historical portfolio analysis: best, worst, averages, burn.	
Screens to analyse the marginal impact of forecasts on portfolio risk	
Middle office can apply different models for analysis of risk.	
Stochastic Dominance methodology applied to portfolios.	
Principal Component Analysis report	
Ability to import interest rate curves	
Export and import any data to / from Microsoft Excel including facility to override means and volatilities used in portfolio.	
Automatic update of FX rates available	

## SWS: Back-Office and Administrative Features

Feature	Included?
Full User Permissioning module	
Full user auditing	
Ticket booking and back-office trade flow.	
Monitoring weather derivative trade life cycle	
Ability to add any additional stage to Transaction Life Cycle	
Transaction Report	
Open Position Report	
Payment Report	
Settlement processing and reporting. Settlement data values persisted for audit.	
Automatic calculation of settlement values	
Post-settlement adjustment processing and reporting and automatic alert to any requirement for post-settlement adjustment	
EMIR, MiFID, Dodd Frank Reporting	
Ability to attach documents to transactions such as invoices and confirmations	
Ability to schedule report run time and send by notifications by email	
Ability to link transactions for netting purposes	
Invoices and Contracts Module allowing generation of standard ISDA contracts and invoices	<b>Optional</b>

## SWS: Data and Forecast Warehouse Features

Feature	Included?
 weatherXchange Data Integration: Seamless Integration with the new weatherX-change cleaned database of tradeable sites	
 Gridded Data Services integration: direct access to several gridded data catalogues supported by Speedwell	
 Direct Access to Speedwell Forecast Archive: Archived forecasts can be viewed and imported into SWS.	
Automatic import of daily, hourly and sub-hourly weather observations for 100+ weather elements in sub-hourly, hourly or daily type.	
Automatic import of multi-member and deterministic forecasts	
SWS is open to receive weather data and forecasts from any source, subject to meeting SWS data and forecast specification	
Ability to create any new weather element (or other time series eg gas price)	
Ability to import other time series eg energy prices as required	
Support for multiple weather data quality types and conventions	
Support for CME weather futures and options contracts.	
Easy copy and paste of weather data from spreadsheets.	
Data viewing tools	



## Contacts

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Regarding weather risk software and consultancy services:

Please see [www.SpeedwellWeather.com](http://www.SpeedwellWeather.com)

or contact:

Stephen Doherty (Europe) [Stephen.Doherty@SpeedwellWeather.com](mailto:Stephen.Doherty@SpeedwellWeather.com)  
David Whitehead (USA) [David.Whitehead@SpeedwellWeather.com](mailto:David.Whitehead@SpeedwellWeather.com)

Telephone:

Europe: +44 (0) 1582 465 569  
USA: + 1 843 737 4843

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Regarding world-wide weather data and weather forecasts:

Please see [www.SpeedwellWeather.com](http://www.SpeedwellWeather.com)

or contact:

Phil Hayes (Europe) [Phil.Hayes@SpeedwellWeather.com](mailto:Phil.Hayes@SpeedwellWeather.com)  
David Whitehead (USA) [David.Whitehead@SpeedwellWeather.com](mailto:David.Whitehead@SpeedwellWeather.com)

Telephone:

Europe: +44 (0) 1582 465 569  
USA: + 1 843 737 4843

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Office Addresses:

*Europe: Mardall House,  
9-11 Vaughan Rd,  
Harpenden,  
Herts, AL5 4HU, UK*

*USA: 418 King St  
Floor 2,  
Charleston,  
SC 29403, USA*

**Environmental  
Finance 2015**  
**Annual Market Rankings**  
**Winner**

Best Global Weather Risk Management Advisory /  
Data Service Winner for the 8<sup>th</sup> consecutive year