



Speedwell SuperPack makes available an unprecedented range of quality historical weather data and weather data feeds for a single annual fee. SuperPack dramatically simplifies the administration of your weather data needs. A single contract covers all users, group-wide, across multiple office locations.

Subscription Highlights

Station Data

- Instant access to our primary historical data archive of observed data from 20,000+ stations in 130+ countries, including cleaned data for over 10,000 sites.
- On-request access to Speedwell's secondary archive of over 100,000 weather stations.
- Multiple weather variables including hourly and daily temperature, precipitation, snowfall, wind speed, sunshine, cloud cover, dew-point, and solar radiation.
- Provision of historical data and feeds.

Gridded Data *(SuperPack Premium only)*

- Access to Speedwell's gridded data archives providing centralized access to over 10 different gridded data sources (ECMWF, BoM, DWD, CHG, NOAA....) synthetic time series, proprietary derived high-resolution indices and proprietary Wind Benchmarks.

Indices

- Access to over 300 world-wide agriculture area indices and over 150 population-weighted indices used for modelling energy consumption in over 60 countries

Smoothed Climatology

- We provide smoothed climatology for any daily or hourly weather variable.

Web Tools

- Map Tool shows the weather data sets available in Speedwell's primary archive. Immediate access to data inventories, analytics, and data downloads.
- Access to the Speedwell suite of data analysis and visualization tools including Weather Index Cone, Actuals Vs. Climatology, Analogue Years...

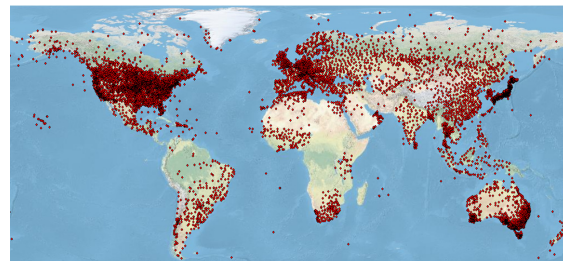
Settlement Data

- Provision of Settlement Data (daily temperature and precipitation) for "Standard Sites". Contact [Speedwell Settlement Services](#) for additional details.

Data Delivery

- FTP, web download, Speedwell Weather System, or direct access via the Speedwell API (tradable stations).

Global Data Availability



| | | |
|--------------|---------------|--------------|
| Albania | Gibraltar | Norway |
| Algeria | Greece | Oman |
| Antarctica | Greenland | Panama |
| Antigua | Guatemala | Pakistan |
| Argentina | Honduras | Paraguay |
| Armenia | Hong Kong | Philippines |
| Aruba | Hungary | Poland |
| Australia | India | Portugal |
| Austria | Indonesia | Puerto Rico |
| Bangladesh | Iran | Romania |
| Barbados | Ireland | Russia |
| Belarus | Israel | Saudi Ar. |
| Belgium | Italy | Senegal |
| Belize | Jamaica | Serbia |
| Benin | Japan | Singapore |
| Bolivia | Kazakhstan | Slovakia |
| Bosnia | Kenya | Slovenia |
| Botswana | Korea S. | S. Africa |
| Brazil | Latvia | Spain |
| Bulgaria | Lebanon | Sri Lanka |
| Burkina Faso | Liechtenstein | Syria |
| Canada | Lithuania | Sweden |
| Cape Verde | Lux. | Switzerland |
| Chile | Macedonia | Taiwan |
| China | Malaysia | Tajikistan |
| Columbia | Maldives | Tanzania |
| Croatia | Mali | Thailand |
| Cyprus | Malta | Togo |
| Czech R. | Mauritania | Trinidad |
| Denmark | Mauritius | Tunisia |
| Dominican | Myanmar | Turkey |
| Egypt | Mexico | Turkmenistan |
| Estonia | Moldova | UK |
| Ethiopia | Mongolia | Ukraine |
| Faroe Isles | Montenegro | Uruguay |
| Finland | Morocco | USA |
| France | Netherlands | Uzbekistan |
| Georgia | New Zeal. | Vietnam |
| Germany | Niger | Zambia |
| Ghana | Nigeria | Zimbabwe |

Station Data

Historical data and ongoing feeds are sourced directly from relevant National Meteorological Services. For each country, we have an agreement in place such that we are able to obtain the highest quality data. Upon processing the data into our database the data is cleaned in order to fill missing values and detect and replace erroneous observations. The cleaning process is performed upon historical data with data feeds being cleaned on a daily basis. The result of this process is a dataset ready for your use.

Data Sources

Speedwell has direct supply agreements with many National Meteorological Services worldwide allowing us to supply official climate data for many countries.

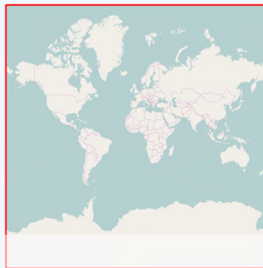


Gridded Data (SuperPack Premium only)

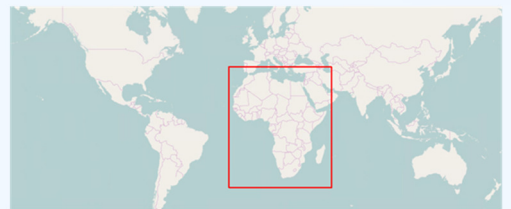
Speedwell processes a number of gridded datasets in their native format:

- ARC2
- Bureau of Meteorology (“BoM”)
- CHIRPS version 2.0
- ECMWF ERA-Interim
- MODIS—MOD 13C1
- NOAA—CPC Unified Rain Gauge
- DWD (Regnie Project)

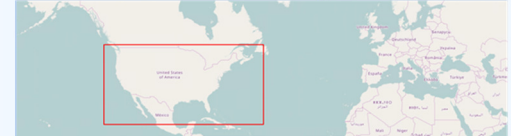
ECMWF ERA-Interim



ARC2



NOAA – CPC Unified Rain Gauge



In addition to the datasets listed above Speedwell has produced proprietary high-resolution versions of the following gridded datasets:

- ECMWF ERA-Interim (5km global)
- MERRA 2 (5km global)

SuperPack clients are provided with access to historical data as well as ongoing updates.

Gridded data is supplied in gridded data format, as synthetic weather stations, or as indices representative of a geographical region.

SuperPack Premium users are also able to access Speedwell’s proprietary national Synthetic Wind Benchmarks which model total energy wind power output.

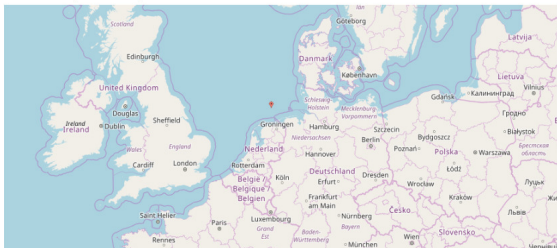
Gridded Data Download Web Tool

Gridded Data Downloader

[Data](#) [Map](#)

Gridded data can be downloaded our archives in CSV files.
Gridded data comes in different quality and may be valid only for certain purposes. Where possible we recommend to use station ground truth data instead. Please contact us for further information.
Trial accounts don't have access to this feature.

Please click on map to enter Lat long



Elements

Data Provider: Element:

Location

Latitude: Longitude:

Date

Date Period: All Past 1 Year Past 2 Years Past 5 Years Custom

Start Date: End Date:

Compress File

Smoothed Climatology

A selection of standard smoothed climatologies are available from the Speedwell web site. SuperPack clients can also request a smoothed climatology for any variable - hourly or daily - for any site where cleaned data is available.

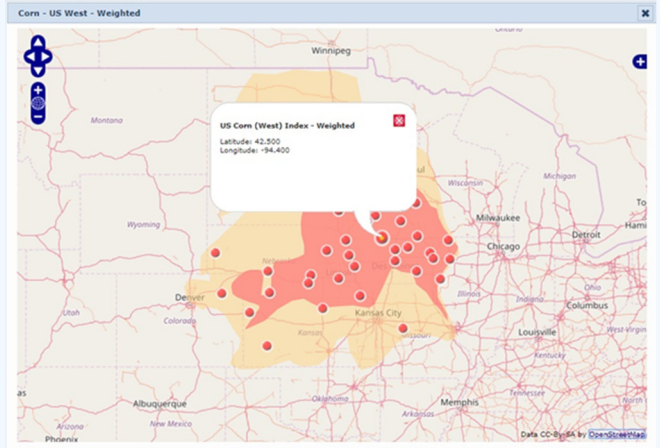
Indices

Speedwell has produced indices for the following sectors:

- Agriculture (250 world-wide)
- Energy (150 population / energy weighted)
- Renewables (hydropower, wind, solar)

Historical data and ongoing feeds are available for all indices.

Custom indices are available for an additional fee.



Web Tools

A number of web-tools are provided at no additional charge which can be used to analyse and interrogate data for the 20,000+ sites in the primary archive

- Map Tool (access to data inventories)
- Actuals vs. Climatology Calculator
- Weather Statistics Calculator
- Weather Index Cone Viewer
- Correlation Analysis Calculator
- Analogue Years Calculator
- Weather Data Inventory Tool
- Historical Data Download

| Station | WMO | Full Data Available | Area | Actual Data Available | Station Type | Country | State | Time Zone | Time | Lat | Long | Altitude | WMO | ICAO | COOP ID | WMO ID |
|-----------------|-------|---------------------|---------|-----------------------------|--------------|---------|--------|-----------|--------|-----|------|----------|-----|------|---------|--------|
| AACHEN | 10001 | Yes | Germany | Northrhine-Westphalia (Net) | 100.00 | 100.00 | 100.00 | 50.783 | 6.180 | 202 | | | | | | 100001 |
| Aachen Ostbach | 10009 | Yes | Germany | Northrhine-Westphalia (Net) | 100.00 | 62.79 | 100.00 | 50.769 | 6.225 | 211 | | | | | | 100004 |
| ARLUS | 10000 | Yes | Germany | Northrhine-Westphalia (Net) | 100.00 | 100.00 | 100.00 | 52.002 | 6.970 | 46 | | | | | | 100002 |
| Aachen-Hospital | 10002 | Yes | Germany | Northrhine-Westphalia (Net) | 100.00 | 100.00 | 100.00 | 49.401 | 10.691 | 340 | | | | | | 100003 |
| ARLUS | 10042 | Yes | Germany | Hessen (Lower Sd) | 100.00 | 87.10 | 100.00 | 51.947 | 9.830 | 149 | | | | | | 100005 |
| Aachen | | Yes | Germany | Hessen (Lower Sd) | 100.00 | 100.00 | 100.00 | 52.480 | 7.920 | 65 | | | | | | 100005 |
| Aachen Hls | | Yes | Germany | Hessen (Lower Sd) | 100.00 | 100.00 | 100.00 | 50.740 | 9.300 | 200 | | | | | | 100004 |











| Date | Daily Actual Value | Daily Actual Value - Clim | Cumulative Actual Value | Cumulative Avg Clim | Cumulative Actual Value - Clim | Actual Data Availability |
|------------|--------------------|---------------------------|-------------------------|---------------------|--------------------------------|--------------------------|
| 2017-02-01 | 2.83 | 0.17 | 2.66 | 2.83 | 0.17 | 2.66 |
| 2017-02-02 | 0.14 | 0.17 | -0.03 | 1.49 | 0.17 | 1.31 |
| 2017-02-03 | 0.43 | 0.18 | 0.25 | 1.13 | 0.17 | 0.96 |
| 2017-02-04 | 0.00 | 0.18 | -0.18 | 0.85 | 0.17 | 0.68 |
| 2017-02-05 | 0.00 | 0.18 | -0.18 | 0.68 | 0.18 | 0.50 |
| 2017-02-06 | 0.01 | 0.18 | -0.17 | 0.57 | 0.18 | 0.39 |
| 2017-02-07 | 0.35 | 0.19 | 0.16 | 0.54 | 0.18 | 0.36 |
| 2017-02-08 | 0.00 | 0.19 | -0.19 | 0.47 | 0.18 | 0.29 |
| 2017-02-09 | 0.00 | 0.19 | -0.19 | 0.42 | 0.18 | 0.24 |
| 2017-02-10 | 0.00 | 0.19 | -0.19 | 0.38 | 0.18 | 0.19 |
| 2017-02-11 | 0.00 | 0.19 | -0.19 | 0.34 | 0.18 | 0.16 |
| 2017-02-12 | 0.00 | 0.19 | -0.19 | 0.31 | 0.18 | 0.13 |
| 2017-02-13 | 0.00 | 0.19 | -0.19 | 0.29 | 0.18 | 0.11 |
| 2017-02-14 | 0.00 | 0.19 | -0.19 | 0.27 | 0.19 | 0.08 |
| 2017-02-15 | 0.00 | 0.19 | -0.19 | 0.25 | 0.19 | 0.06 |
| 2017-02-16 | 0.00 | 0.19 | -0.19 | 0.24 | 0.19 | 0.05 |
| 2017-02-17 | 0.00 | 0.19 | -0.19 | 0.22 | 0.19 | 0.03 |
| 2017-02-18 | 0.00 | 0.19 | -0.19 | 0.21 | 0.19 | 0.02 |
| 2017-02-19 | 0.44 | 0.19 | 0.45 | 0.23 | 0.19 | 0.04 |
| 2017-02-20 | 0.51 | 0.19 | 0.32 | 0.25 | 0.19 | 0.06 |
| 2017-02-21 | 0.15 | 0.19 | -0.04 | 0.24 | 0.19 | 0.05 |
| 2017-02-22 | 0.00 | 0.19 | -0.19 | 0.22 | 0.19 | 0.03 |
| Avg = 0.18 | | | | | | |

Data Delivery: Observed Data

Speedwell offers a number of solutions for data delivery. Customizable file formats as well as API access to SuperPack tradable stations are all included with the subscription.

- FTP delivery of historical and ongoing data feeds
- Direct download by multiple users from the Speedwell website
- Direct access via Speedwell API
- Data can be made available through ZE Group's Zema data management tool

Features Summary

| Feature | SuperPack® | SuperPack® Premium |
|--|---|---|
| Station Data | | |
| A choice of over 20,000+ core sites shown on the Speedwell map tool including over 10,000 cleaned data sets |  |  |
| Access to Speedwell's secondary archive of over 100,000 weather stations* |  |  |
| Access to daily data, hourly data, and sub-hourly data |  |  |
| Data cleaning on request* |  |  |
| Access to all weather variables |  |  |
| Custom Data Requests* |  |  |
| Gridded Data | | |
| Access to native and derived gridded data sets for multiple weather elements. Includes proprietary gridded data sets eg Speedwell high resolution turbine-height wind series. Delivery in gridded data format, as synthetic stations or computed geographical indices. Data access via website single-point download, FTP, SWS Access or [coming soon] API | |  |
| Indices | | |
| Access to Speedwell's world wide agriculture, hydro and population-weighted energy indices histories and feeds. |  |  |
| Smoothed Climatology | | |
| Unlimited access to historical data sets* |  |  |
| Unlimited access to data feeds* |  |  |
| Web Tools / Data Delivery | | |
| Access to web-delivered data tools |  |  |
| Custom Delivery Formats** |  |  |
| Access to the Speedwell API (tradable stations) |  |  |
| Speedwell Settlement Data | | |
| Access to 1,300+ Standard Settlement Sites of daily temperature and precipitation |  |  |
| Data required to be a Protection Seller on the weatherXchange® Platform | | |
| Subscription to SuperPack Premium is required to function as a Global Broker-Advisor or Protection Seller on the weatherXchange Platform | |  |

* On a reasonable-request basis.

** A single data format for delivery is supported as standard

About Speedwell Weather Limited

Speedwell Weather provides quality weather data, weather forecasts, software, and weather-risk consultancy. With offices in the UK and the USA we serve clients in sectors including weather-risk, insurance, energy and agriculture world-wide. We are the major provider of Settlement Data for parametric weather risk contracts.

Other Companies in the Speedwell Weather Group

weatherXchange

weatherXchange® is an independent platform which helps companies access index-based weather risk protection

Speedwell Calculation Services

Speedwell Calculation Services Ltd provides weather derivative valuation services for weather risk positions providing profit and loss and other risk metrics

Speedwell Settlement Services

Speedwell Settlement Services Ltd act as a neutral third-party providing Settlement Data during the life cycle of an index-based weather transaction.

Contacts

For more information about Commodity Product or other data and forecast services please see www.SpeedwellWeather.com or contact:

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**Environmental
Finance
Winner**

2013 2014 2015 2016 2017

Annual Market Rankings

Best advisory/data service in the Weather Risk Management – Global Category