



Meteonorm web service

Factsheet including API and pricing

Imprint

Date	30.11.2020
Project number	13_002
File	Factsheet Webservice 2021

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1 Introduction

Since spring 2015, Meteonorm (www.meteonorm.com) is also available in form of a web service. Through this web service, Meteonorm datasets can be accessed online and thus directly be implemented in a **website**, a **web application** or a **standalone simulation software**.

The web service is based on the same core (dll) and meteorological data as the software **Meteonorm version 8.0**. It delivers **typical meteorological years** for any location by entering **latitude** and **longitude** of a site. Additionally we offer a web service which is calculating **the horizon line** of the topography as well as the altitude.

This document is a factsheet about the Meteonorm web service. It shows the main information and is based on the web service API and the web service agreement. In chapter 2 the API is shortly described. In chapter 3 the agreement and pricing is given.

To get detailed information including the full API as well as the web service agreement please send **a request to Meteonorm sales** (sales@meteonorm.com).

2 API

Two Meteonorm web services are provided:

- **Standardized Meteonorm datasets** online for websites, web applications or other software. A Meteonorm dataset is a stochastically generated typical meteorological year of irradiation parameters and other meteorological data.
- **Topographic horizon information**

Three request functions are available: **Two dataset request functions** which generate a typical meteorological year– one returning **hourly values** and one returning **monthly averages** and **one horizon request function** which retrieves the **topographic horizon** information at a specific point.

Datasets are provided as hourly information (8760 values per parameter) or monthly information (13 values per parameter – 12 monthly plus 1 yearly value). All internal calculations and the data basis are based on the Meteonorm software version 8.0 (www.meteonorm.com).

Data is returned as **XML**, **JSON** or as a text file with comma separated values (**CSV**). The service returns **most available Meteonorm parameters** (at the moment 39 parameters).

Accessing the web service needs authentication by a user specific key. All communication is done over a secure connection. Here three **examples of function calls** (the parameter "action" defines the type of function):

- `/api_v1?key=XXX&service=meteonorm&action=horizon&lat=7.0135&lon=46.9587&format=json`
→ Horizon information
- `/api_v1?key=XXX&service=meteonorm&action=calculatestandard&lat=30.0&lon=-90.0&format=csv`
→ Typical Meteorological Year, hourly values
- `/api_v1?key=XXX&service=meteonorm&action=calculatestandardmonthly&lat=58.8&lon=15.5&format=xml`
→ Typical Meteorological Year, monthly values

Mandatory input parameters are **latitude and longitude**. Nine optional input parameters are available.

Table 1: Mandatory and optional arguments per method

Method	Mandatory argument	Optional arguments
horizon	lat, lon	format
calculatestandard, calculatestandardmonthly	lat, lon	inclination, azimuth, altitude, format, parameters, randomseed (default is 1), local situation

The figure below gives a schematic overview of the web service.

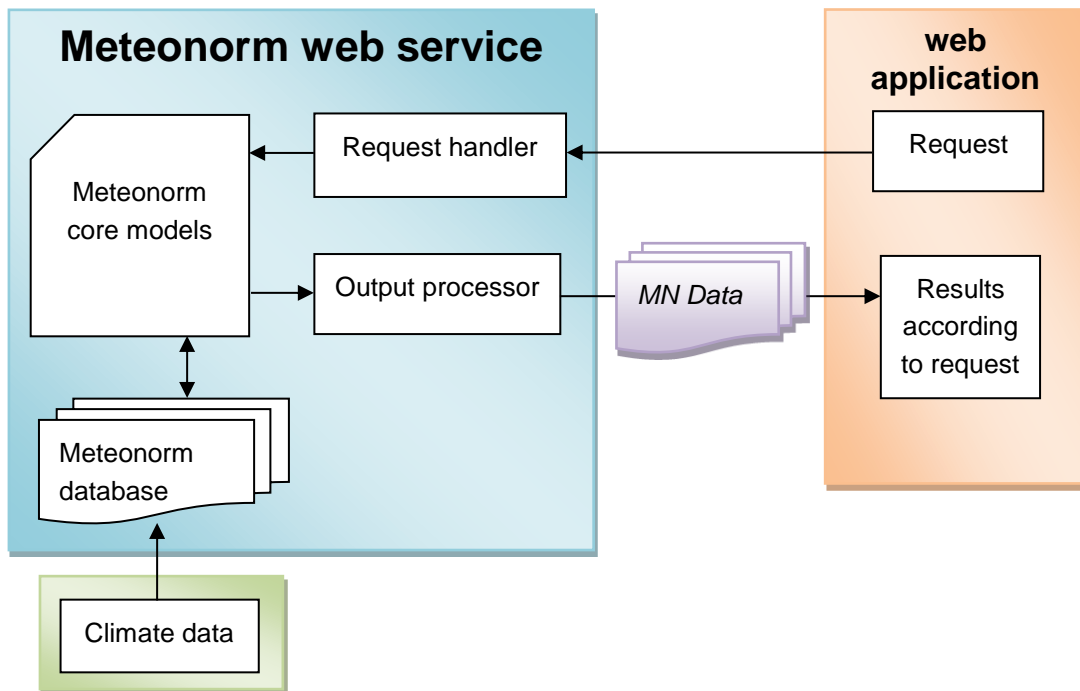


Figure 1: Schematic overview of the Meteonorm web service

3 Agreement and pricing

To use the web service, the **Meteonorm web service agreement** needs to be signed. In order to test the web service, Meteotest provides a temporary key valid for 2 months for free.

The calculation of the licence fee for using the Meteonorm web service is based on the **number of requests** ("request", see 3.1) and the **annual gross earnings** by the application ("turnover", see 3.2).

If the **annual gross earnings** (definition see 3.2) are **below 20'000 CHF**, the annual costs are calculated according to the cost model "request". If the annual gross earnings are **higher than 20'000 CHF**, the annual costs are calculated according to the cost model "turnover" or "licence" and the model "request" and the **higher costs is applied**.

If only the method "horizon" is used, the cost model "request" is applied.

For users of **Meteonorm plugins (dll)** for standalone software, which additionally wish to use the Meteonorm web service, a **special cost model** is applied (model "plugin user", see 3.3).

3.1 Cost model "request"

- a) The cost model "request" is based on a **credit system**. Different request types cost a different amount of credits. The request types and the corresponding equivalent of credits are listed in Table 2.
- b) The operator shall pay Meteotest a **monthly basic fee** per web application according to the licence type (Table 3). This basic fee includes a **number of credits per month**.
- c) If **more credits per month** are used by the individual web application than included in the basic fee, the operator is charged for these additional credits on a **per credit basis**. The number of credits is counted in the Meteonorm web service. The costs for additional credits are listed in Table 2.

Table 2: Licence types.

Licence Type	Basic costs per month [CHF]	Number of credits included per month	Costs for additional credits per month [CHF / credit]
Meteonorm web service basic	100.—	1'000	0.20
Meteonorm web service professional	300.—	4'000	0.10

Table 3: Credit costs per request type.

Request type	Credits/request
dataset hourly values	4
dataset monthly values	2
Horizon of the topography	1

3.2 Cost model "turnover"

The licence fee is based on the gross result of the **operator's earnings** from all its web applications which access the Meteonorm web service. It is defined as the proceeds achieved with the application directly or indirectly (part thereof is, e.g., service subject to a fee, sponsoring or advertisement revenue).

The percentage share of the licence fees **for hourly values** is calculated as follows:

$$annual\ costs = gross\ earnings \cdot share[CHF]$$

where

- Gross earnings **below CHF 20'000**:
costs calculated based on cost model "requests"
- Gross earnings **between CHF 20'000.— and <= CHF 419'000.—** :
share: $6.0 - 4.0 \cdot \frac{Gross\ earnings - 20000}{380000}$
- Gross earnings **above CHF 419'000** :
share: 1.8%

For the **use of monthly values** instead of hourly values in the web service, a **50% discount** is granted. If the licence fee of the model "turnover" is **below CHF 20'000 or lower compared to the licence fee of the cost model "request"**, the cost model "request" is applied.

3.3 Cost model "plugin user"

Customers which already have signed a Meteonorm data distribution agreement based on the cost model "turnover", **use a Meteonorm plugin (dll)** and wish to use the web service as an add-on tool within their standalone software, the cost model "request" is applied for the use of the web service **in addition to the annual fee** based on the existing Meteonorm data distribution agreement.

In such a case, the basic fee of the licence type **Meteonorm web service basic** of **CHF 100 per month** (Table 2) is charged **in addition to the annual fee** based on the existing Meteonorm data distribution agreement, as long as the number of credits stay **below or equal 4'000 credits per month**. If more than 4'000 credits

per month are counted, the licence type Meteonorm web service professional will be applied.

4 References

The globally renowned software **Meteonorm** (www.meteonorm.com) is a product by Meteotest. Meteonorm is a comprehensive meteorological reference, incorporating a catalogue of meteorological data and calculation procedures for solar applications and system design at any desired location in the world. It is based on over 25 years of experience in the development of meteorological databases for energy applications.

Meteotest's experts keep their knowledge up to date through regular participation in international conferences and cooperation with international research projects, namely:

- IEA PVPS Task 14¹: "High Penetration of PV Systems in Electricity Grids"
- IEA SHC Task 46²: "Solar Resource Assessment and Forecasting"
- IEA PVPS Task 16³: "Solar resource for high penetration and large scale applications"
- EU FP7: DNICast⁴: A research project addressing shortest-term DNI forecasts for Southern Spain.
- COST Action ES1002⁵: Weather Intelligence for Renewable Energies WIRE

¹ www.iea-pvps.org/index.php?id=58

² www.iea-shc.org/task46

³ <http://www.iea-pvps.org/index.php?id=389>

⁴ <http://dnicast-project.net/>

⁵ www.wire1002.ch