

# Solar forecast - Pricing & Ordering

Price information and ordering procedure for your solar product

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## 0 Introduction

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### 0.1 Company

meteoblue is a Swiss specialist company producing high precision weather data for the entire world, using observation data, high-resolution Numerical Weather Predictions (NWP) and specialised data output methods adapted to the needs of different user groups.

meteoblue produces weather data since 2007, and produces the largest daily available data volume of any private EU weather service. The available weather archives cover 30 years in maximum detail which is important for any verification purposes. Quality verification results are shown on:

<https://content.meteoblue.com/en/verified-quality/verification>.

Based on these simulations, meteoblue produces solar radiation forecast and data validation services.

### 0.2 Distribution

meteoblue offers products, services and project resources to clients worldwide.

For representation in certain countries or market segments, meteoblue works with selected distributors, who represent, sell and service meteoblue products, services and /or project resources.

meteoblue offers data feeds specifically designed for the needs of solar power generators, electricity traders, grid or building management. More information is provided in these documents:

- >>meteoblue\_Solar\_Technical\_Specification\_EN.pdf<<
- >>meteoblue\_Solar-history\_Pricing+Ordering\_EN.pdf<<
- >> meteoblue\_Solar\_Controlled\_Quality\_EN.pdf<<

## 1 Solar forecast products

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### 1.1 Site specific forecast

meteoblue site specific solar forecasts are offered for different customer segmentations:

- Standard - low support level, standard quality, 2 requests per day.
- Premium - highest quality and support level, 12 requests per day

Standard solar services are designed for applications with low budget and can be quickly configured with only basic information, while Premium services were especially developed to deliver the highest accuracy possible.

### 1.2 Transmission

The data can be accessed via API, which is for customers that need automatic integration in their web applications. For customers with very high volume request we deliver the data via web download in meteoblue standard JSON or CSV format. Furthermore forecast can be archived on meteoblue SFTP server or transmitted via Email at specified time intervals.

### 1.3 Solar Standard Services

The meteoblue Standard Services include:

- **Direct client access via http-request, using APIkey:**  
We provide you with a customized URL, so you can access the data via the web.
- **Plug & Play:** API setup available within 48 hours, no measurements required
- **Free calibration:** we calibrate your power efficiency based on your on site measurements
- **solar:** Forecast of various radiation parameters for any location worldwide. Updated min. 24 times a day, 144 hours ahead.
- **pvpro:** Forecast of PV reference yield of a defined PV system for any location worldwide. Updated min. 24 times a day, 144 hours ahead. Power efficiency, snow correction, axial tracking, horizon implementation available.
- **pv-multi:** Forecast of multiple PV reference yield of a defined PV system for any location worldwide. Updated min. 24 times a day, 144 hours ahead. Power efficiency, snow correction, axial tracking, horizon implementation available. Gives back forecast data from all available weather models within specific region, and the standard deviation for estimation of P10 and P90.

### 1.4 Solar Premium Services

The meteoblue Premium Services require on-site measurement data and includes:

- **Solar report - Quality Control:**  
This report summarizes the quality of your on-site measurements assessing data availability, plausibility and time reference. QC-Report is obligatory for MOS operation.
- **Solar report - Model validation-Report:**  
This report summarizes the accuracy of the meteoblue Standard and MOS forecast comparing these to the quality controlled on-site data. The conclusions contain a product recommendation, depending on the accuracy of the different forecasts.
- **MOS datafeed:**  
The best possible forecast for your power production using 30 different parameters and best fit algorithms on your measurement data. Updated 2 times a day; 144 hours ahead. The access

cost of 2400 € includes one MOS training per year.

➤ **Nowcasting datafeed:**

The best possible short-term forecast for power production (0-6 hour ahead) using real-time observation data derived from satellites and best fit algorithms for your system. Updated as frequently as satellite observations are available (maximum every 15 minutes). The nowcasting function is automatically integrated in all systems covered by the MSG satellite. For more information consult the technical specifications. The access cost of 2400 € includes 12 request per day.

## 1.5 Solar custom services

- History time series and API
- Animations, Maps, Reports, Images
- Email or FTP-transmission
- Specific data formatting (e.g. CSV, JSON, XLSX, XML; Daylight Saving Time correction)
- Global location search
- System layout detection (finds the orientation or tracker type of your PV system)

## 1.6 Solar service quality standards

Solar forecasting services have been developed and tested for quality on many sites over 8 years and 4 continents. All data and products are constantly validated on measurement station and satellite data worldwide. The achievable accuracy, depends on the climatic region and the forecast horizon. An overview is shown in **Fehler! Verweisquelle konnte nicht gefunden werden..** More information is provided in the document:

>>meteoblue\_Solar\_Controlled\_Quality\_EN.pdf<<

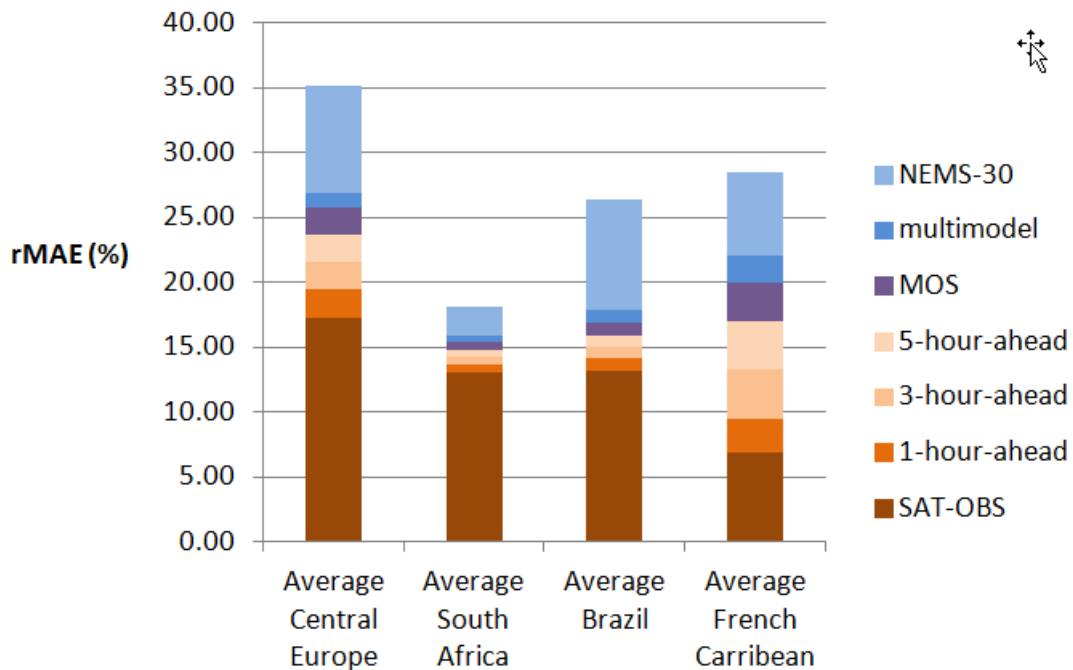


Fig. 1.1: Hourly mean absolute errors (rMAE) of meteoblue day-ahead (MOS, NEMS30 & multimodel) and intraday (SAT-OBS & hour-ahead) radiation data averaged for all stations in a specific region.

## 2 Prices

### 2.1 Pricing principle

The cost for solar services are 100 € per year for each SITE. The general fee structure is shown in Table 2.1:

Table 2.1: Pricing principle of solar services

Type	Description	Description
ACCESS	Support level, data license, disposability of data interface	Yearly
SITE	Maintenance and data price of the data feeds by site	Yearly
CUSTOM	Services tailored for special customers	Once / Yearly

### 2.2 Pricing of Standard Services

The Standard Service allows 2 requests each day per SITE and has 400 € yearly ACCESS cost. A test API can be provided on request. Table 2.2 gives an overview of all products and their prices:

Table 2.2: Pricing of solar standard services: Fee structure

#	Name	Type	Price	Description
1	Access USE	ACCESS	400 €	>> mail support within 7 days >>Standard quality level (2 requests/day) License: No resale of data or images
2a	solar	SITE	100 €	Forecast API with all radiation parameters (GHI, DIF, DNI, GNI, ExRad) for the next 6 days
2b	pvpro	SITE	100 €	Forecast API with all PV specific parameters (PV, GTI, PR, mT, IAM, snow) for the next 6 days
2c	pv-multi	SITE	200 €	Forecast API with PV reference yield from multiple models and standard deviation for the next 6 days

### 2.3 Pricing of Premium Services

Premium Services allows 12 requests each day per SITE and has 2400 € yearly ACCESS cost. A test API can be provided on request. Reports may support your product decision and can be offered to special conditions. The Access RESALE includes:

- Telephone support
- Mail support within 48 hours
- Quality Control and Validation Report (one variable, one report per year)
- MOS training per year (one variable, one training per year)
- Nowcasting with updates every 15 minutes (12 requests per day), only available within the spatial range of MSG satellite (Europe, Africa, Arabian Peninsula and Brazil)
- FTP data archiving with additional cost
- EMAIL delivery
- Special data formats (CSV, JSON, XLS, XML)
- System layout detection (finds the orientation or tracker type of your PV system)

Table 2.3: Pricing of solar premium services: Fee structure

#	Name	Type	Price	Description
1	Access RESALE	ACCESS	2400 €	>> Email support within 24 hours, telephone support (09.00-17.00 CET; Monday to Friday) >> MOS & NOW service (including 12 requests per day) License: Free use and resale of raw data and images High volume rebates available
2a	solar	SITE	100 €	Forecast API with all radiation parameters (GHI, DIF, DNI, GNI, ExRad) for the next 6 days
2b	pvpro	SITE	100 €	Forecast API with all PV specific parameters (PV, GTI, PR, mT, IAM, snow) for the next 6 days
2c	pv-multi	SITE	200 €	Forecast API with PV reference yield from multiple models and standard deviation for the next 6 days
3a	EMAIL	CUSTOM	400€	Yearly fee for each Email Setup
3b	FTP Archive	CUSTOM	400€	Yearly fee for archiving your forecast on a FTP folder
3c	FTP Write	CUSTOM	400€	Yearly fee for writing observation data on a FTP folder

## 2.4 Pricing of Custom Services

For customized services we submit specific offers on request. Please tell us your specific needs.

## 2.5 Pricing for customer with high volume requests

For customers that have a very high number of sites, special conditions with reduced SITE cost can be negotiated and defined within a LSA (License and Service Agreement).

## 2.6 Pricing overview

Table 2.4: Pricing of all solar services

#	Type	Name	Standard	Premium
1.	ACCESS	USE	400 €	-
		RESALE	-	2400 €
2.	SITE	solar	100 €	100 €
		pvpro	100 €	100 €
		pv-multi	200 €	200 €
3.	CUSTOM	EMAIL	-	400 €
		FTP archive	-	400 €
		FTP write	-	400 €
		Quality controlling	-	400 €
		Model validation	-	400 €

## 3 Ordering procedure

### 3.1 Your personal offer

We will calculate the price for your personal offer within maximum 5 business days, if you send us the information required in Table 3.1:

Table 3.1: Solar service order: required information.

#	Topic	Item	Information required	Please fill in here
1	Customer	Responsible	Name & Email	
2	Customer	Institution	Company or Society Name	
3	Customer	Address	Postal address	
4	Customer	Address	Country	
5	Service	Type	Solar forecast	
6	Service	Duration	Start date – end date	
8	Service	Places	Number of installations	
9	Service	Places	File with list of locations	
10	Service	Data	PV production data	

If only radiation parameter are needed (solar feed) the standard location list must contain only the "Necessary" parameters listed in Table 3.2. It must be provided as a single file in .csv or .txt format (we can provide sample files on request). The coordinates must be in WGS84 format (see <https://content.meteoblue.com/de/hilfe/standards/position>). Information quoted as "Only for pvpro" are obligatory for all orders concerning pvpro services. To optimize calibration we require at least one month of production data from your PV system.

Table 3.2 Solar standard location list with necessary and optional information.

#	Necessary						Only for pvpro			
	Station Name	Short Name	State	Latitude <sup>1</sup>	Longitude <sup>1</sup>	Altitude <sup>2</sup>	kWp <sup>3</sup>	Inclination <sup>4</sup>	Orientation <sup>5</sup>	PR <sup>6</sup>
1.	Basel-Messe	BS_02	Switzerland	47.34	7.58	233	352	25	170	83%
2.	Milano	M_03	Italy	45.46	9.19	122	78	20	200	73%

Note: <sup>1</sup> in WGS84: Western WGS84 decimal longitudes are NEGATIVE (-0.0001 to -179.9999); Southern WGS84 decimal latitudes are NEGATIVE (-0.0001 to -90). <sup>2</sup> in meter above sea level. <sup>3</sup>KiloWatt Peak Power of the installation. <sup>4</sup>Inclination in degrees from horizontal: 0° is horizontal; 90° is vertical. <sup>5</sup>Orientation in degrees clockwise from 0° is facing North; 90° is facing East, 180° is facing South and 270° is facing West. <sup>6</sup>PR= mean performance ratio: percentage of measured and theoretical energy output at standard test conditions (STC).