



ECcloud

User manual

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Document change log

2019-09-24	First version
2020-01-18	Updated for version 1.06.0
2020-03-30	Updated for version 1.09.0
2020-05-19	Updated for version 1.14.0
2020-06-12	Updated for version 1.17.0
2020-07-09	Updated for version 1.20.0
2021-01-08	Updated for version 1.24.0
2021-02-07	Updated for version 1.25.0
2021-03-11	Updated for version 1.28.0
2021-04-26	Updated for version 1.30.0
2022-01-19	Updated for version 1.36.0
2022-02-07	Updates made about ENcombi Online
2022-02-28	Update made for site history delete
2022-05-20	Update made for FTP
2022-08-02	Update made to executive page
2023-02-13	Added section about Load
2023-03-06	Added DC coupled PV
2023-04-25	Updated Sitepage with status indication and current production from PV and eventually ESS

Introduction

ECcloud is the ENcombi web app for live and historical data visualization and analysis of your ENcombi controlled plants. ECcloud is part of ENcombi Online and is found at www.encombi.online. From here you will be guided to the actual ECcloud portal associated with the specific ENcombi product that you are able to monitor. Just select the cloud product type in the drop down menu and click the Continue button.



Welcome to ENcombi Online
The portal for all the online ENcombi products
Please select your product type and press the continue button to proceed

ECcloud - ECpv × ▾

CONTINUE

ECcloud runs on any platform and in any web browser. Register your ENcombi product and you get the first 90 days free of charge. You can set yourself, your team and any outside partner as a user and create your own passwords. If you have access to multiple sites, you will automatically have access to them all after logging in. With the ENcombi **ECcloud** you will always have an overview of your plants performance from your PC or mobile device.

ECcloud features

- Easy and straightforward user interface and menu system
- Use it with almost any brand of PV inverter, power meter and genset controller.
- Past 24 hours graphs of production, references and measures from inverters, power meters, gensets, sensors etc.
- Past 30-days, 12 month & 10-years analyses of energy generated and curtailed, revenues, savings etc.
- Automatically generated reports via email.
- Alarm & events notifications via email.
- Automatic forward of data to up to two FTP servers.
- Manual download of data.
- 5 days ahead weather report from the site location.

ECcloud is plug and play monitoring meaning that it automatically adapts to a given site in terms of numbers and vendors of genset controllers, power meters, inverters, sensors etc.

The data that is visualized in ECcloud differs from product to product but the overall layout, the various features and the way of navigating etc. are common for all of them. This manual uses the ECpv portal part of ECcloud as a basis but the manual applies for them all.

Requirements

Every ECombi controller comes with a 90 days free of charge ECcloud trial period included. Hereafter the C-extra "Cloud Service" software option needs to be present in the controller. The C-extra "Cloud Service" comes with a yearly fee. If the C-extra is not included initially in an ECpv, upgrading it post delivery can be done easily.

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Extras:

A:		Acquisition only	License and extras page. Contact dealer for purchase of license and extras. When purchased, the license or extras can be fetched by the device either online or from a USB stick. If online, the device must have access to the internet. If from USB stick, goto www.encombi.online to download license.	
C:		Cloud service		
C TRIAL:		Cloud service free trial		
H:		Hybrid as a Service		
L:		PV/genset plants, unlimited PV capacity		Search online: 
M:		PV/genset plants, 500kW PV capacity limitation		Search on USB: 
S:		PV/genset plants, 100kW PV capacity limitation		

2020-07-09-14:37:44

The controller needs to have a connection to the internet in order to feed data to ECcloud.

For SW upgrades please contact ENcombi on sales@encombi.com.

Account structure

Each controller needs to be registered individually in ECcloud.

You can only become a user in ECcloud either by registering a controller or by being invited by an administrator of a site (controller). The user registering a controller in ECcloud automatically becomes an administrator of that site (controller).

An administrator of a site (controller) can grant an infinite number of users access to view the same site (controller) free of charge. The administrator can assign the users to be either administrators or viewers.

Data set

The data set pushed to ECcloud is the full MySQL data set described in the MySQL documentation on ENcombi website:

<http://www.encombi.com/products/ecpv/>

<http://www.encombi.com/products/ecpvh/>

<http://www.encombi.com/products/ecpvx/>

The controller will push data for the configured devices. This means, for example, that if 10 inverters are present for instance, it will only push data for 10 inverters and not the full 32 (16) inverters.

Prior to new site registration

Before a controller can be registered in ECcloud it must have commenced the logging of data. Prior to initiating the actual data logging some identifiers need to set

Identifiers

To be able to register a controller some identifiers need to be known. This ensures that only the right full owner can register the controller.

project settings

Some of the project settings are used for registration of the controller in ECcloud. These are:

- Site
- Latitude
- Longitude

Project details:

Site: Holstebrovej 75

Customer: Sterregaards

Installer: Claes

Install date: 2018-03-04

Location details:

Country: Denmark

Region: Midtjylland

City: Viborg

Latitude: 56.4483

Longitude: 9.3786



Site details setup page.
The site name will be used by the device as the
"from-alias" when sending out Emails.

MAC address

Besides the project settings also the MAC address if the ECpv needs to be known when registering a controller in ECcloud.

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Company:

Name:	Website:	Contact:	Support:	Cloud service:
ENcombi	www.encombi.com	sales@encombi.com	support@encombi.com	www.encombi.online



Product:

Type:	Extras:	Project version:	Serial number:
ECpv	-C-L-	1.24.0	201801270001

Platform:

Device type:	Device variant:	Chip type:	Rtos:	Version:
WP240	COM	SC24L	V2.05 FULL	V23.9.60.1

Identifiers:

Serial number 1:	Serial number 2:	MAC address:
CE0DE819B35E1A45	AB4A50345690C56D	00305690C4D9

2020-07-09-14:39:32

Tariffs

Various Tariffs can be set up in the controller upon which various financial counters are based. The financial analysis in ECcloud is based on these counters. The tariffs will have to be set up correctly in order to get a valid analysis in ECcloud. Note that the analysis is still to be treated as indicative only.

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Tarif

Export:	0.02 Euro/kWh
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PV tariff setup page.
The tariff for PV power produced.
Used by device for calculating PV export save.



2020-07-09-14:40:42

Tarif

Efficiency: 0.25 liter/kWh
 Price: 1.25 Euro/liter
 Emission: 2.64 kg/liter



Genset tarif setup page.
 Efficiency is used for calculating fuel volume consumed by the gensets as well as fuel volume saved by the PV plant.
 Price is used for calculating fuel expense of the fuel volume consumed by the gensets as well as for the fuel expense spared by the PV plant.
 Emission is used for calculating the CO2 emission generated fuel volume consumed by the gensets as well as for the CO2 emission spared by the PV plant.

2020-07-09-14:41:18

Tarif

Import: 0.08 Euro/kWh
 Export: 0.02 Euro/kWh



Mains tarif setup page.
 Import is used for calculating expense for the energy imported by the utility as well as for the import savings generated by the PV plant.
 Export is used for calculating earnings for the energy exported to the utility.

2020-07-09-14:41:57

Tariff metrics

The tariff currency and units are configured and will be displayed in the financial analysis in ECcloud accordingly.

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Settings

Currency: Euro

Volume: liter

Mass: kg



Metrics setup page.
Selected units will be used for
various associated counters and derivatives.

2020-07-09-14:42:19

Enabling of the data logging

Once the project and tariff settings are made the logging can be enabled.

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Log config

Host:	my_host.com
Database:	my_data_base
Username:	my_username
Password:	*****
Table name:	mysql_tablename
Log rate:	5 min
Log:	ENABLED
Cloud service:	ENABLED

MySQL setup page.

When enabled, the device creates a table in the selected MySQL database should it not already be present. Afterwards the device pushes data to the table at the interval selected. Tailor the data elements the device pushes and use your own MySQL database and preferred visualization tool. Alternatively use the Cloud service provided with the C-extra. In this case the table name and above settings are disregarded. Also the data elements pushed are fixed and can't be tailored. In case connection to the MySQL database is lost, the device buffers data to local file and will be transferred once connection is re-established. local buffer file as well as the table in the database itself can be deleted from designated buttons. Your device can come with free cloud service in a trial period. Below you can see if you have any free trial days available. Find the cloud service provider on the Identifiers page.

Buffer size:	0.0 kB	
Table size:	201002	
Free trial:	0 days	

2020-07-09-14:43:00

To enable data logging to ECcloud only the two settings, mentioned below, need to be enabled.

- Log
- Cloud Service

When "Cloud service" is enabled all settings from "Table name" and upwards are ignored. These are relevant when logging data to a 3rd party system only.

Log rate

The time interval with which the data is pushed is per default 5 min with the fastest rate being 1 min. Note that with big data sets (which is equivalent with a setup of many devices), the fast update rates may not be achievable. Lower update rate than 5 min is only intended for testing purposes. For continued logging the rate should be kept at 5 min. Data stored that is older than one year will be trimmed to one hour resolution.

Buffer size

In case ECpv loses connection to the internet it will buffer up the data locally on the SD-card. Once connection is re-established it will empty the buffer to ECcloud. The buffer size is displayed. Under normal operation there is no data buffered and the buffer size will display 0kB. In case a buffer exists, the controller will reduce the log rate to 5 min temporarily until the buffer has been emptied. The buffer is emptied at a rate of approximately 1:8. This means that 24 hours of data logged will take approximately 3 hours to transfer to ECcloud.

Table size

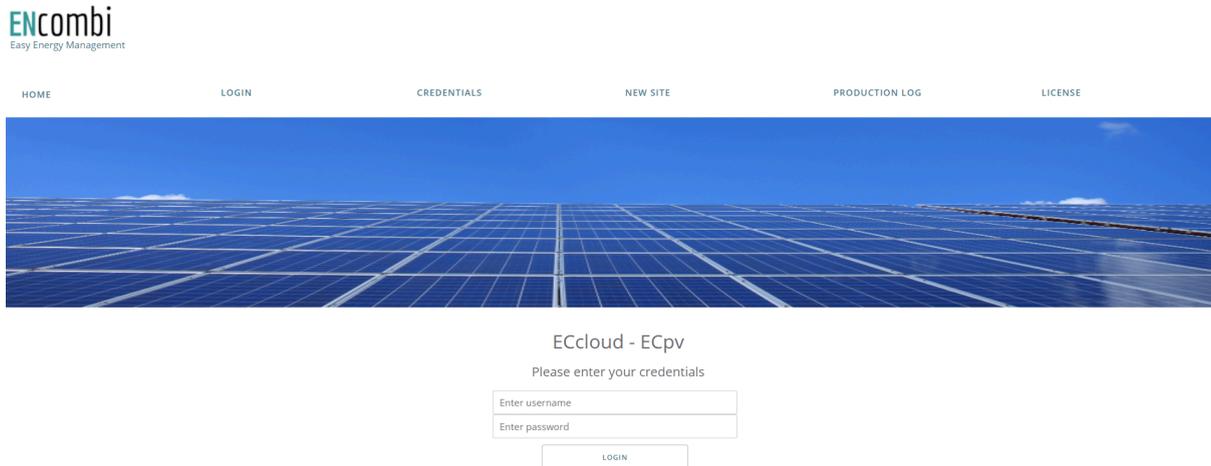
The table size informs about the amount of data stored in ECcloud. If the log rate is 5 min and Table size is 100 there is a data history of 500 minutes stored. Note that this example only applies for the first year of operation as data older than one year will be trimmed to one hour resolution.

Free trial

The days left of the free trial period are displayed. The free trial period is counted down only in case that data logging and data service is enabled and the C-extra is not present in the controller.

New site registration

Go to <https://www.encombi.online/> and pick your product type (in this case an ECpv) and you are taken to the below page. Note that the registration below is only possible once the Encombi controller has logged the two or more table entries to the cloud storage. The number of o logged table entries can be seen on the controller in the log page.



ENcombi
Easy Energy Management

HOME LOGIN CREDENTIALS NEW SITE PRODUCTION LOG LICENSE

ECcloud - ECpv
Please enter your credentials

Enter username
Enter password

LOGIN

Select "New Site" on the front page. This will lead to the registration page with the below options.

Add a new site

Site identification

Enter device MAC address
Enter site name
Enter latitude
Enter longitude

Add new site to existing user

Username
Password

ADD

Add new site to new user

Enter username
Enter password
Enter company
Enter mail

ADD

Site identification

Under site identification you type in the four identifiers described previously.

Existing user

Are you already a user of ECcloud then register the ECpv to your existing account by typing in your credentials and press "ADD".

Note that if you do not already have access to a ECpv site and if this is the first time you register an ECpv, then you are considered a new user by ECcloud - even though you might have other product types registered already.

New user

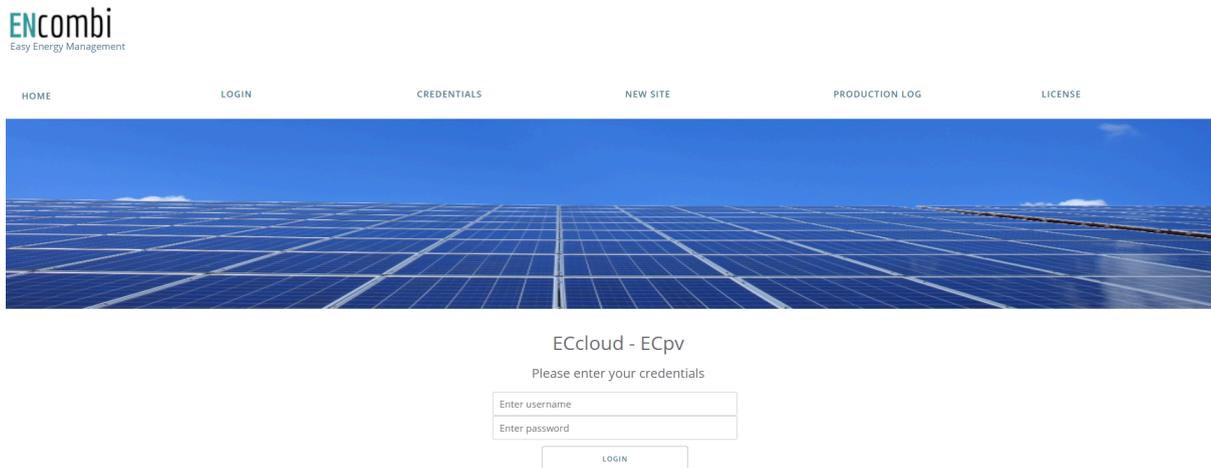
Are you a new user of ECcloud then type in your preferred credentials, company and email and press "ADD"

Successful registration

Upon successful registration a notification will be sent to the registered email address stating that the ECpv has been registered. After receiving the email you can login to ECcloud and view the data from the site.

Login

To login to ECcloud go to <https://www.encombi.online/> and pick your product type (in this case an ECpv) and you are taken to the below page.



ENcombi
Easy Energy Management

HOME LOGIN CREDENTIALS NEW SITE PRODUCTION LOG LICENSE

ECcloud - ECpv
Please enter your credentials

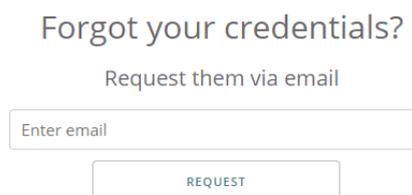
Enter username
Enter password

LOGIN

Enter your credentials and press “LOGIN”.

Request your credentials

In case you have forgotten your credentials you can request to have them sent to the email address you used when registering. To do so select “Credentials” on the front page. This will lead to the page with the below options.



Forgot your credentials?
Request them via email

Enter email

REQUEST

Type in the email used when registering and press “REQUEST”. You will then receive an email with your credential details.

Sites

Upon successful login you are automatically taken to the Sites page which provides a map and a list of available sites accessible to you.

Accessible sites
Site currently selected: None

MAC	Site	Country	City	ESS (kW)	ESS SOC	PV (kW)	kWp	Status	Time
t003056910216	Livovej 29B	Denmark	Viborg	10	50	97.5	100	●	04/23/2023, 10:36:35

Select which site you want to monitor either by clicking the map or selecting in the table below. Once a site is selected, you can use the top navigation bar to browse around and analyze the site.

All the pages automatically adapt to the selected site in terms of number and vendor of genset controllers, power meters, inverters and sensors.

Multiple sites can be selected at the same time forming a virtual power plant. In a virtual power plant the data from the sites included are aggregated and displayed as was it in one single site. When viewing a virtual power plant the pages Inverter, Sensor and Meter will not display any data.

The site table contains the current production from PV and, if relevant, ESS. Furthermore, a status of the site is displayed by means of a traffic light icon; green means that everything is ok, yellow means that there is an alarm or warning on the controller and red indicates that the flow of data from the site has stopped.

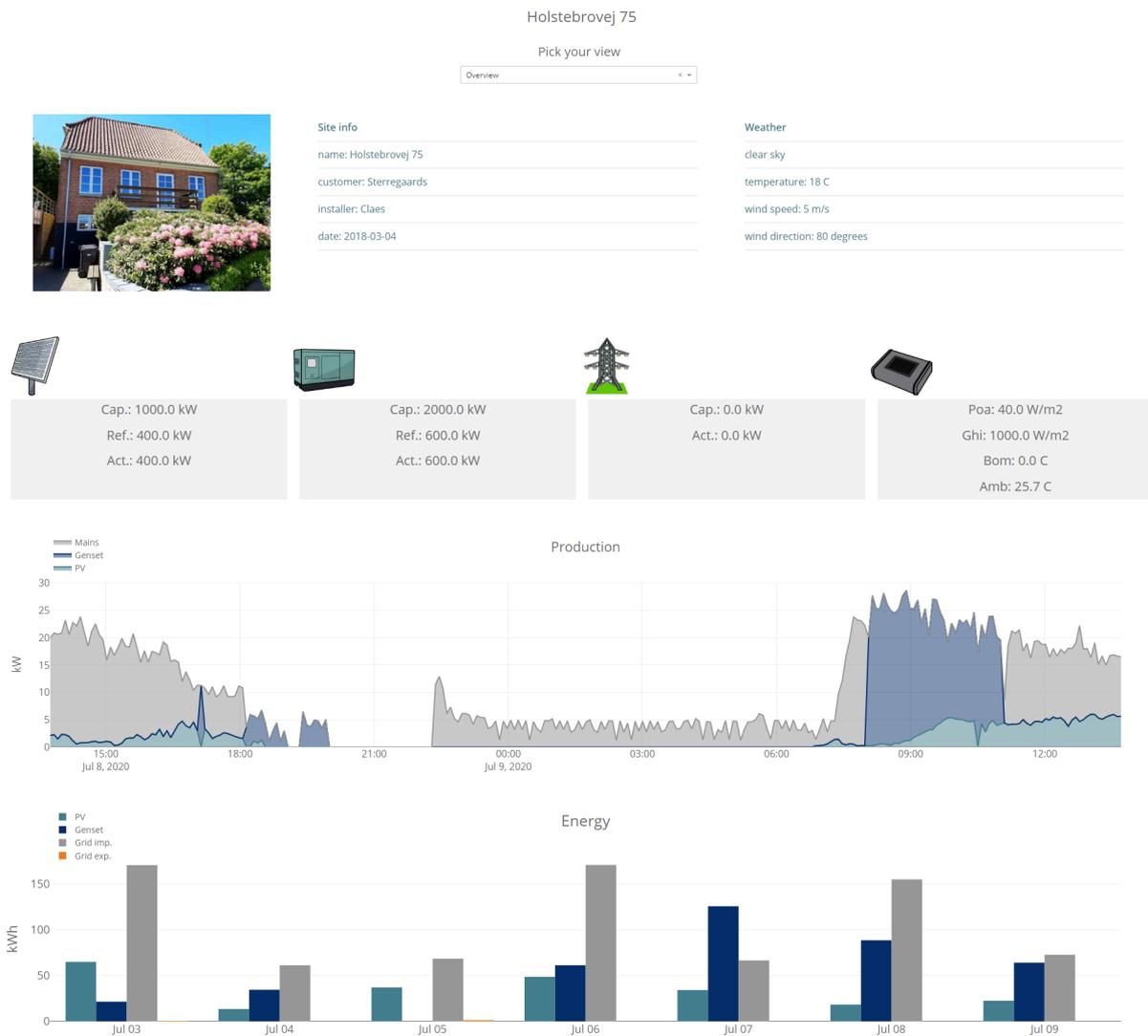
Live page

The live page provides two views:

- Overview.
- Concept SLD.

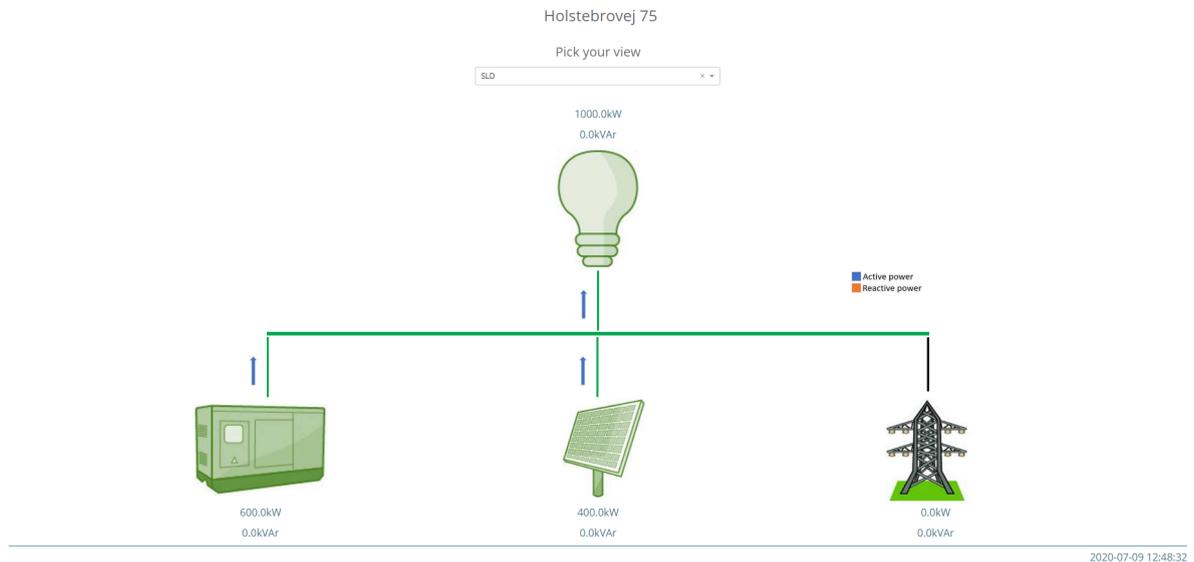
The default view is the “Overview” providing.

- Site photo.
- Weather info from site location.
- Live and past 24 hours power production split between the sources.
- 7 days energy production split between the sources.



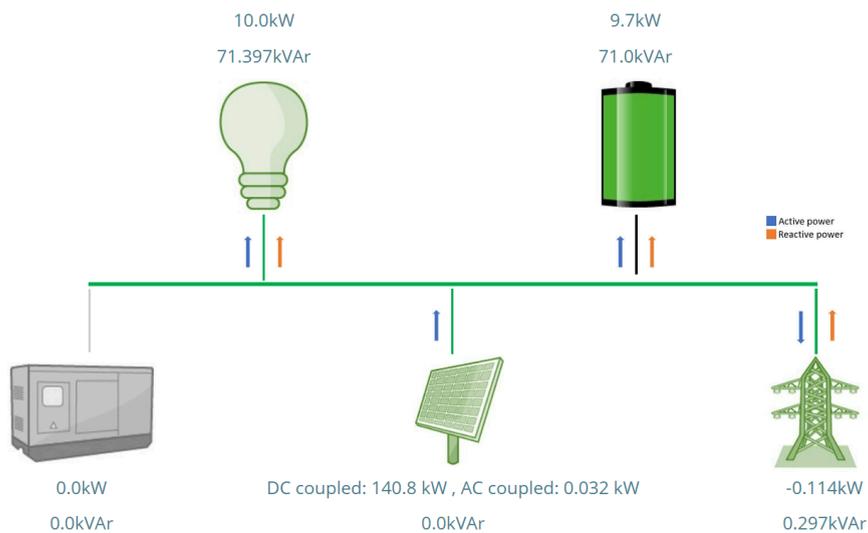
The “Concept SLD” view below is providing the following.

- Live power and reactive production split between the sources.
- status text notifications.



For the ECpvX also a battery icon is shown in the SLD page as shown below.

In some cases the battery is controlling a PV setup independently. In such a situation the PV is said to be DC coupled. Typically sites have AC coupled PV where the ECpvX is controlling the PV directly, but in some cases there is also DC coupled PV which is only partially controlled by the ECpvX as it is the ESS setup that handles such PV power sources.



Executive page

The executive page gives information about site key numbers on a daily, monthly, yearly and total basis.

Holstebrovej 75

Pick a period

Day x

PV production	440 kWh	Fuel save	111 liter	Grid import save	0 Euro
PV curtailed	646 kWh	Fuel save	139 Euro	Grid export	0 Euro
PV revenue	9 Euro	Emission save	293 kg		

Genset production	673 kWh	Fuel consumed	170 liter		
Emission generated	449 kg	Fuel consumed	213 Euro		

Grid import	0 kWh	Grid import	0 Euro	Grid export	0 kWh
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Key numbers and formulas

The key numbers are calculated on the basis of the various Tariffs that are set up in the ECpv controller itself.

PV production Tariff:

ENcombi

ADMIN

Tarif

Export: 0.02 Euro/kWh



PV tariff setup page.
The tariff for PV power produced.
Used by device for calculating PV export save.



Fuel Tariffs:

ENcombi

ADMIN

Tarif

Efficiency: 0.25 liter/kWh

Price: 1.25 Euro/liter

Emission: 2.84 kg/liter



Genset tariff setup page.
Efficiency is used for calculating
fuel volume consumed by the gensets
as well as fuel volume saved by the PV plant.

Price is used for calculating
fuel expense of the fuel volume consumed
by the gensets as well as
for the fuel expense spared by the PV plant.

Emission is used for calculating
the CO2 volume emitted by the gensets.



Grid import/export Tariffs:

ENcombi

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Tarif

Import: 0.08 Euro/kWh

Export: 0.02 Euro/kWh



Mains tariff setup page.
 Import is used for calculating expense for the energy imported by the utility as well as for the import savings generated by the PV plant.
 Export is used for calculating earnings for the energy exported to the utility.

Below is an explanation of how the individual numbers are calculated - in the example below it is for the total production ever generated.



PV production	14598 kWh	Fuel save	0 liter	Grid import save	1168 Euro
PV curtailed	0 kWh	Fuel save	0 Euro	Grid export	0 Euro
PV revenue	292 Euro	Emission save	0 kg	PEN	20.4 %
				PERF	0.0 %

The values in the screenshot above are explained in the following table. The variables in the Calculation column that are given captions, are from the MySQLTable. The values only the ENcombi controller are given in low letters; for example are all tariff values only in the controller.

Value	Calculation	Description
PV production	PV_KWH_TOTAL	Energy produced by the PV devices
PV curtailed	PV_KWH_CUR_TOTAL	Energy lost as a consequence of setting the PV setpoint lower than possible
PV revenue	$PV_KWH_TOTAL * pv_export_tariff$	Value of the energy produced by the PV devices. Note the tariff is set only in the controller directly.
Fuel save (volume)	$PV_FUEL_SAVE_TOTAL = kWh_PV_genset * fuel_efficiency_tariff$	Volume of the generator fuel saved by energy production by means of PV devices
Fuel save (value)	$PV_FUEL_EXPEN_SAVE_TOTAL = Fuel\ save\ [volume] * fuel_price_tariff$	Value of the generator fuel saved by energy production by means of PV devices
Emission save	$PV_FUEL_EMISS_SAVE_TOTAL = Fuel\ save\ [volume] * emission_tariff$	Kilo of Co2 saved by energy production by means of PV devices instead of a diesel generator

Grid import save (currency)	$\text{MAINS_IMP_SAVE_TOTAL} = \text{kWh_PV_grid} * \text{grid_import_tariff}$	Value of the energy produced by the PV devices if that energy instead had to be imported from the main grid
Grid export (currency)	$\text{PV_EXP_SAVE_TOTAL} = \text{kWh_PV_grid_export} * \text{grid_export_tariff}$	Value of the PV generated power exported to the main grid. Note this is based on the assumption that the diesel generator is not exporting to the main grid.
PEN [%]	$\text{PV_KWH_TOTAL}/\text{LOAD_KWH_TOTAL} * 100$	The percent of the load consumption that was delivered by the PV devices.
PERF [%]	$\text{PV_kWh_total}/(\text{PV_kWh_available} - \text{PV_kWh_curtailed}) * 100$	The percent of the energy that actually was produced by the PV devices divided by what could have been produced by these devices. If this value is less than 100 it reflects that the PV production for some reason (e.g dust on panels) was lowered.



Genset production	0 kWh	Fuel consumed	0 liter
Emission generated	0 kg	Fuel consumed	0 Euro

Value	Calculation	Description
Genset production [kWh]	DG_KWH_TOTAL	The energy production by the diesel generator (genset).
Emission generated [mass]	$\text{DG_FUEL_EMISS_CON_TOTAL} = \text{Fuel consumed [volume]} * \text{emission_tariff}$	The number of kilo of Co2 produced by the genset.
Fuel consumed [volume]	$\text{DG_FUEL_CON_TOTAL} = \text{kWh_genset_total} * \text{fuel_efficiency_tariff}$	The volume of fuel consumed by the genset

Fuel consumed [currency]	DG_FUEL_EXPEN_CON_TOTA L = Fuel consumed [volume] * fuel_price_tariff	The value of the fuel consumed by the genset
--------------------------	---	--



Grid import	56935 kWh	Grid import	4557 Euro	Grid export	0 kWh
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Value	Calculation	Description
Grid import (kWh)	MAINS_KWH_TOTAL	The energy imported from the main grid
Grid Import (currency)	MAINS_IMP_CON_TOTAL	The value of the energy imported from the main grid
Grid export	MAINS_KWH_EXP_TOTAL	The energy exported to the main grid.



Load consumption	24 kWh
------------------	--------

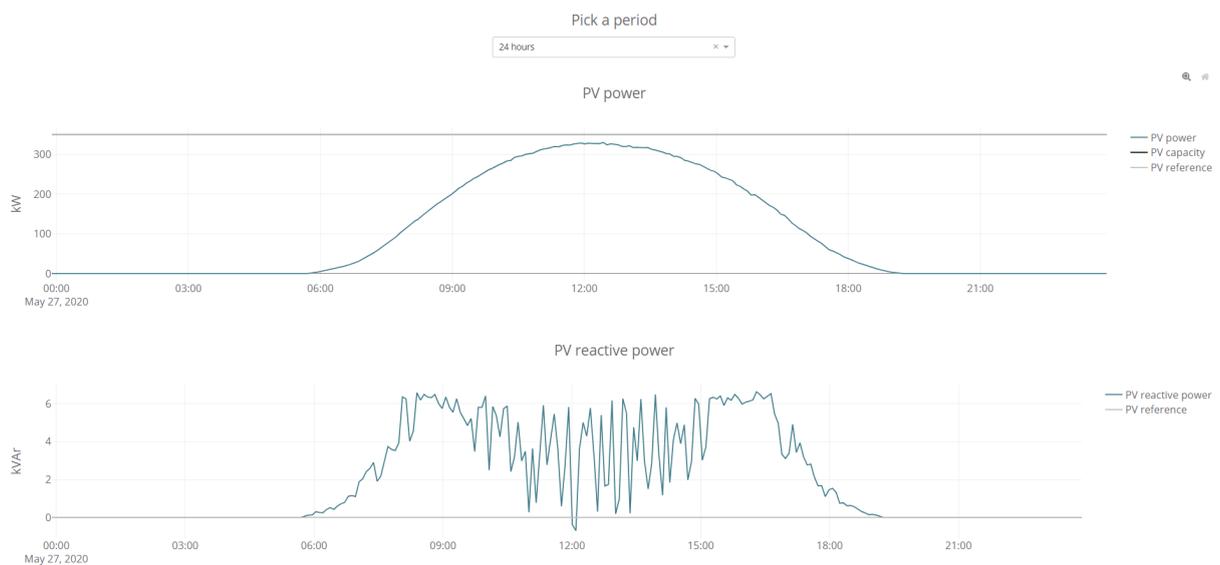
Value	Calculation	Description
Load consumption	LOAD_KWH_TOTAL	<p>The accumulated load consumption is calculated by the controller and uploaded to the cloud as LOAD_KWH_TOTAL.</p> <p>Note that, for example, the active power consumed by the load as function of time in 24 hours is instead calculated as POWER_P_PV_TOTAL+ POWER_P_DG_TOTAL+ POWER_P_MAINS_TOTAL</p> <p>This calculation is used for the graph of P displayed on the Load page. Similar calculation is used for Q.</p>

PV page

The PV page provides the views below:

- 24 hour history of kW, kVar, PV generating capacity, target reference etc.
- 30 day history of revenue, savings, energy produced etc.
- 12 month history of revenue, savings, energy produced etc.
- 10 years history of revenue, savings, energy produced etc.
- This day's history of kW, kVar, PV generating capacity, target reference etc.
- This month's history of revenue, savings, energy produced etc.
- This year's history of revenue, savings, energy produced etc.

Below are a few examples.





For the ECpvX controller there might be DC coupled PV. In such a situation a battery is directly controlling a PV power source. Additionally there might be AC coupled PV which is PV the ECpvX is controlling directly. The values on the PV page are either a sum of AC and DC coupled PV or given separately - see the following table.

Value in PV page	DC coupled PV is included	AC coupled PV is included
PV generation (energy)	yes	yes
PV curtailed (energy)	no	yes
DC coupled PV (power)	yes	no
PV reference (power)	no	yes
PV power	no	yes
PV capacity (power)	yes	yes
Curtailement active	no	yes
Performance index	no	yes
PV reference (reactive power)	no	yes
PV reactive power	no	yes
PV apparent power	no	yes
PV PF	no	yes

Inverter page

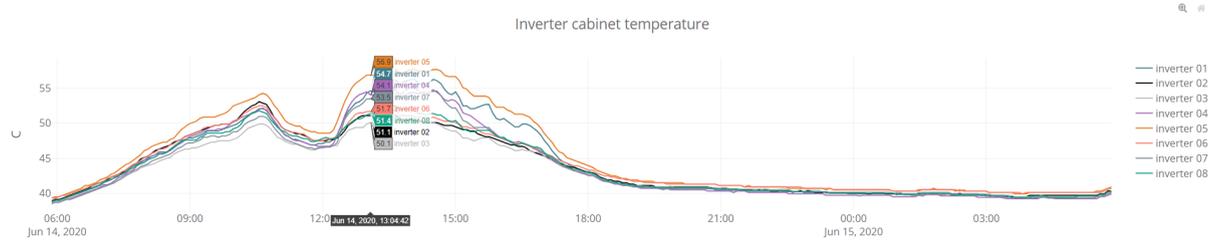
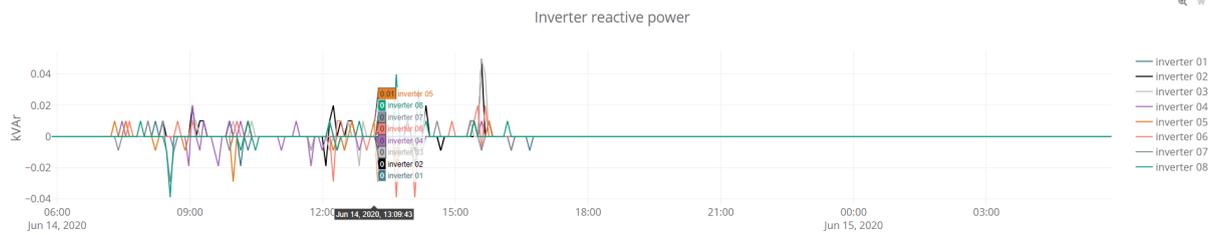
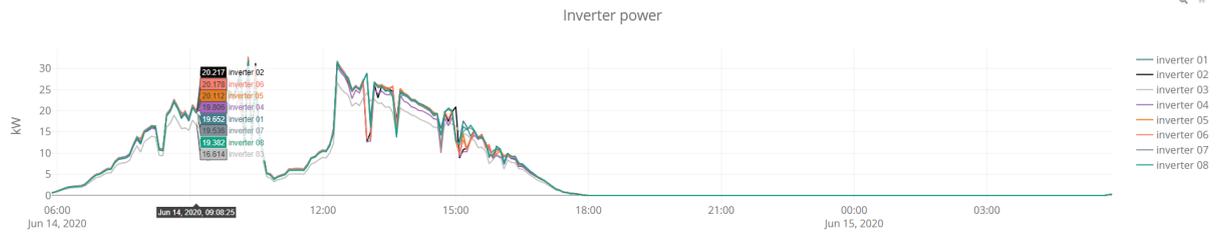
The inverter page provides information about the 24 hour history of inverter key data. Which data is available depends on the inverter vendor and model.

Consult the Modbus master documentation on ENcombi website for details:

<http://www.encombi.com/products/ecpv/>

<http://www.encombi.com/products/ecpvh/>

Below are a few examples.

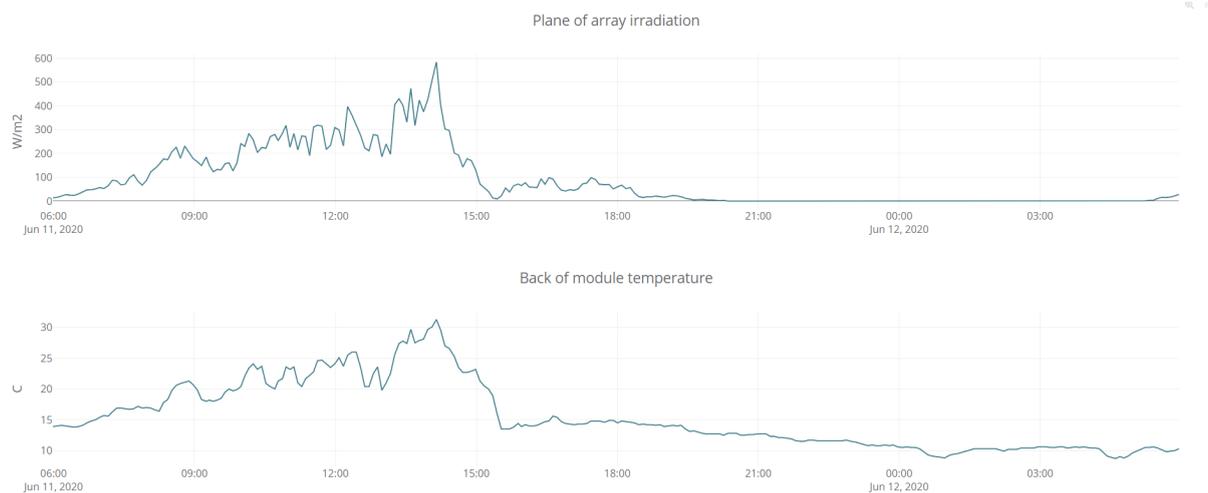


Sensor page

The sensor page provides information about the 24 hour history of the sensor. Which data is available depends on the sensors installed. Sensors supported are:

- Plane of Array irradiance.
- Back of Module temperature.
- Global horizontal irradiance.
- Ambient temperature.
- Wind speed.
- Relative humidity.
- Barometric pressure.
- Wind direction.
- Rainfall.

Below a few examples.

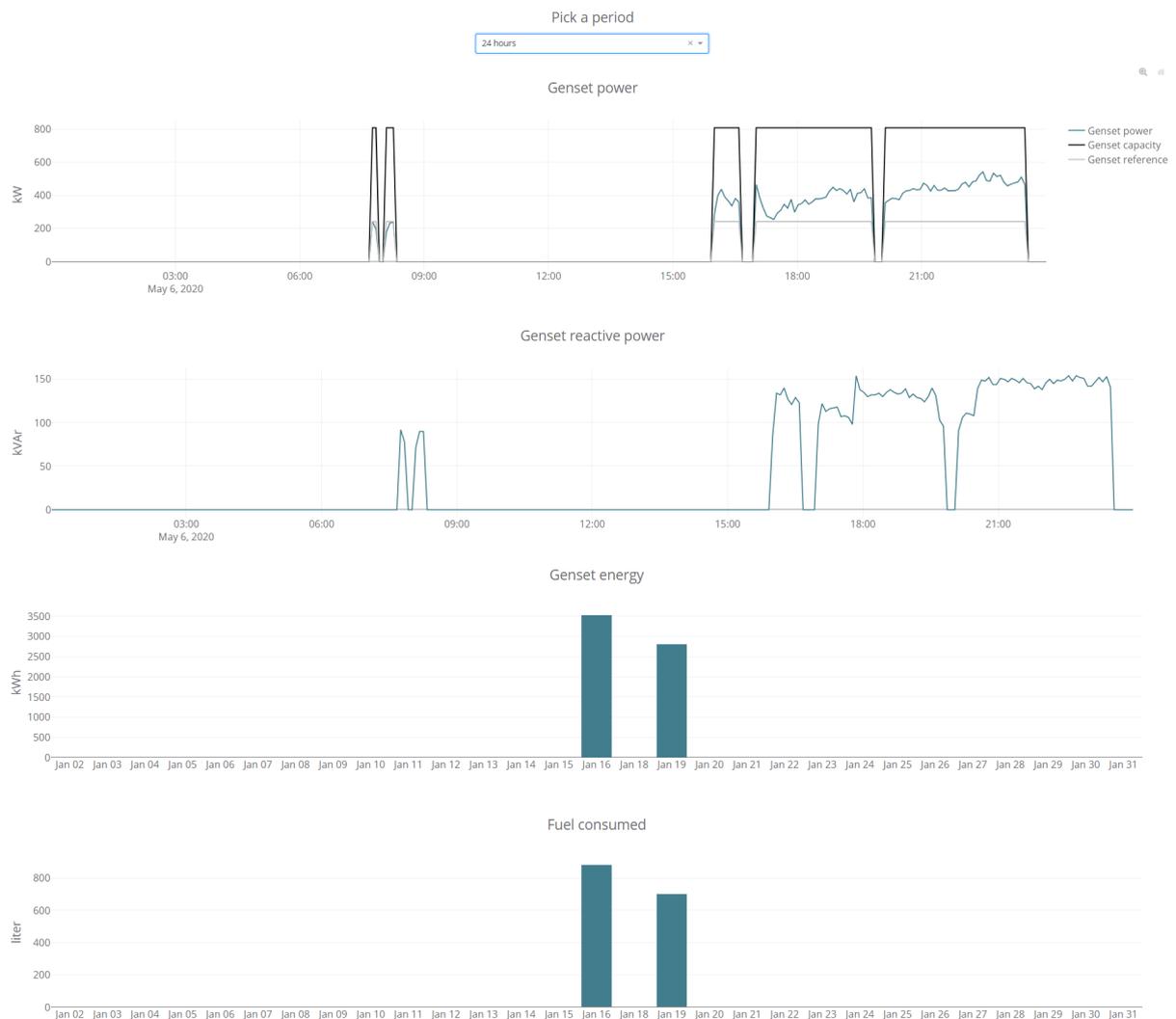


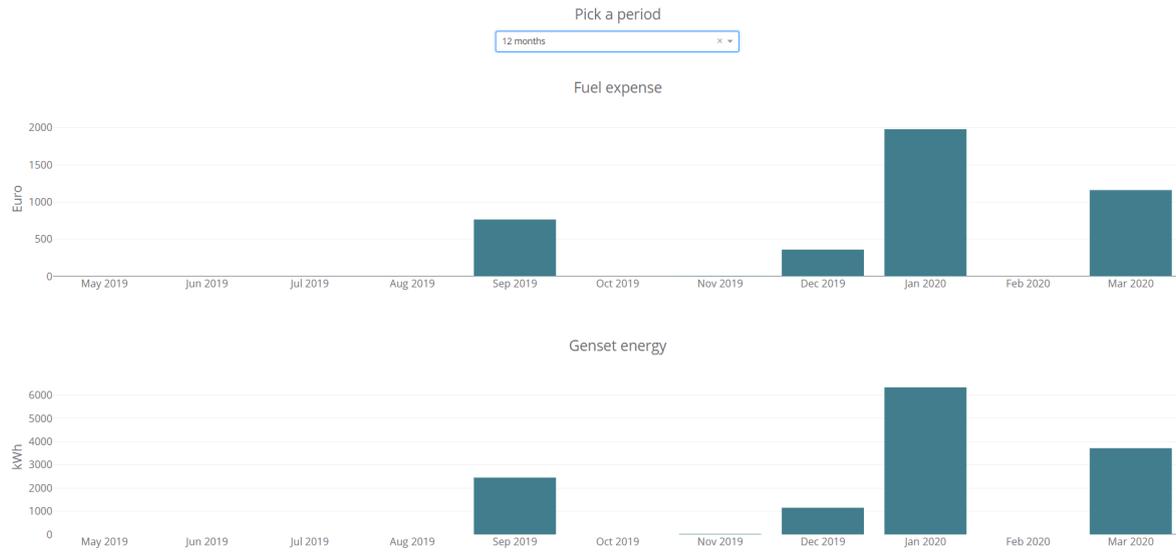
Genset page

The Genset page provides the views below:

- 24 hour history of kW,kVar, genset generating capacity, target reference etc.
- 30 day history of fuel expense, CO2 emissions, energy produced etc.
- 12 month history of fuel expense, CO2 emissions, energy produced etc.
- 10 years history of fuel expense, CO2 emissions, energy produced etc.
- This day's history of kW,kVar, genset generating capacity, target reference etc.
- This month's history of fuel expense, CO2 emissions, energy produced etc.
- This year's history of fuel expense, CO2 emissions, energy produced etc.

Below are a few examples.





Grid page

The Genset page provides the views below:

- 24 hour history of kW and kVar.
- 30 day history of imported energy, exported energy and import expenses.
- 12 month history of imported energy, exported energy and import expenses.
- 10 years history of imported energy, exported energy and import expenses.
- This day's history of kW and kVar.
- This month's history of imported energy, exported energy and import expenses.
- This year's history of imported energy, exported energy and import expenses.

Below are a few examples.

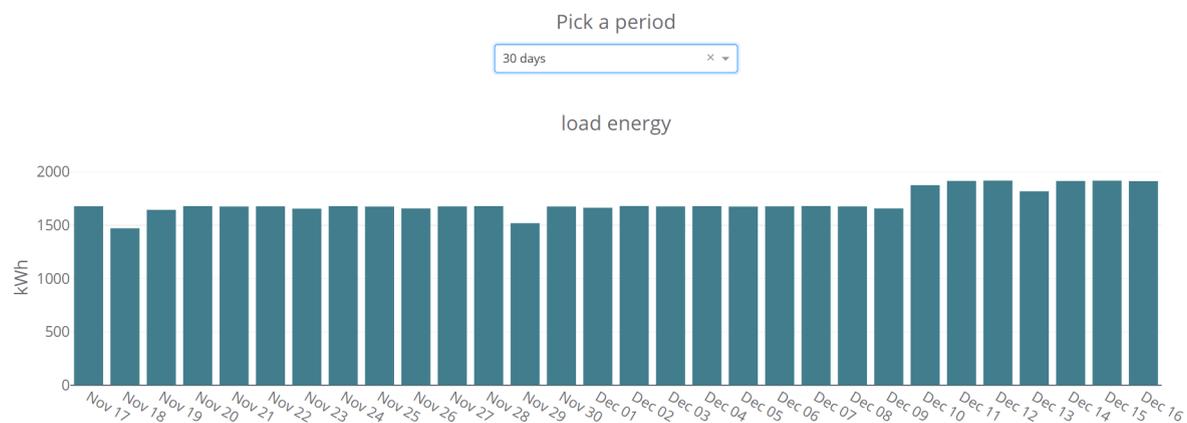


Load page

The Load page provides the views below:

- 24 hour history of energy consumption, active power, reactive power, apparent power, power factor
- 30 day history of energy consumption
- 12 month history of energy consumption
- 10 years history of energy consumption
- This day's history of energy consumption
- This month's history of energy consumption
- This year's history of energy consumption

Below is an example.



Meters page

The meters page holds 24h history graphs of the power meters present.

This being for both genset, grid and PV sensing.

Data available is:

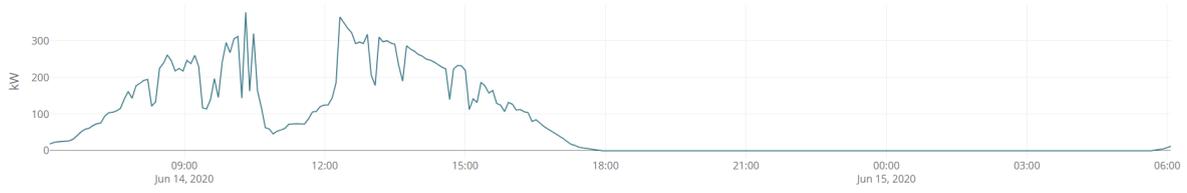
- Active power.
- Reactive power.
- Meter missing status (communication supervision).

Below examples of PV meter.

Pick the meter usage

PV

PV meter power



PV meter reactive power



PV meter missing



Log page

The log page displays the event logs generated in the controller.

Holstebrovej 75

Event & alarms

2020-06-14

00:00:00 Log file created

00:00:46 Summ. log mail: Ok

00:02:35 Prod. log mail: Ok

01:00:04 NTP sync. success

09:06:00 Settings backup load

09:07:00 Power Up

09:07:00 Sensor 1 no alarm

09:07:00 Sensor 2 no alarm

09:07:00 Sensor 3 no alarm

09:07:00 Sensor 4 no alarm

09:07:00 Gen. socket no alarm

09:07:00 Gen. meter no alarm

09:07:00 PV socket no alarm

09:07:00 PV meter no alarm

09:07:00 Mains sock. no alarm

09:07:00 Mains meter no alarm

09:07:00 Inv. socket no alarm

Weather page

The weather page gives a 5 day ahead weather forecast on site location. The weather forecast is provided with a 3 hour resolution interval.

Below is a partial example of a forecast.

Holstebrovej 75					
Forecast for Viborg Kommune					
2020-06-15					
Time	Symbol	Description	Temperature [C]	Wind speed [m/s]	Wind direction [Deg]
09:00:00		clear sky	18	2	255
12:00:00		clear sky	20	2	288
15:00:00		clear sky	21	2	315
18:00:00		clear sky	19	1	341
21:00:00		clear sky	13	2	337
2020-06-16					
Time	Symbol	Description	Temperature [C]	Wind speed [m/s]	Wind direction [Deg]
00:00:00		clear sky	10	1	341
03:00:00		clear sky	10	2	282
06:00:00		few clouds	15	2	290
09:00:00		broken clouds	19	3	291
12:00:00		broken clouds	22	2	318
15:00:00		scattered clouds	22	2	331
18:00:00		few clouds	20	2	345
21:00:00		few clouds	14	1	19
2020-06-17					
Time	Symbol	Description	Temperature [C]	Wind speed [m/s]	Wind direction [Deg]
00:00:00		clear sky	13	0	11
03:00:00		scattered clouds	12	1	33
06:00:00		few clouds	17	1	50
09:00:00		broken clouds	21	2	17
12:00:00		light rain	22	4	358
15:00:00		light rain	21	3	8
18:00:00		light rain	20	3	19
21:00:00		broken clouds	14	2	52

Refresh

When navigating around on the top bar pages doing analysis of a site, the page in focus can be refreshed by clicking the refresh button in the sub navigation bar.

The screenshot displays the ENcombi web interface for a site named 'Holstebrovej 75'. The interface includes a top navigation bar with options like LIVE, EXEC, PV, INV, SENSOR, GENSET, GRID, METER, LOG, and WEATHER. Below this is a sub-navigation bar with LOGOUT, PROFILE, SITES, ADMIN, SETTINGS, REPORT, and REFRESH. The main content area shows the site name and a 'Pick your view' dropdown menu set to 'Overview'. There are two columns of data: 'Site info' and 'Weather'. Below these are four summary cards for different components: Solar Panel, Inverter, Transformer, and Meter.

Category	Field	Value
Site info	name:	Holstebrovej 75
	customer:	Sterregaards
	installer:	Claes
	date:	2018-03-04
Weather	clear sky	
	temperature:	17 C
	wind speed:	1 m/s
	wind direction:	300 degrees
Solar Panel	Cap.:	1000.0 kW
	Ref.:	400.0 kW
	Act.:	400.0 kW
Inverter	Cap.:	2000.0 kW
	Ref.:	600.0 kW
	Act.:	600.0 kW
Transformer	Cap.:	0.0 kW
	Act.:	0.0 kW
Meter	Poa:	40.0 W/m2
	Ghi:	1000.0 W/m2
	Bom:	0.0 C
	Amb:	25.7 C

Settings

Various settings are added that will impact on the data displayed on the site pages.

Date of origin

With the date of origin the user can select the point in time from which he/she will conduct the analysis. If selection is disabled the analysis will be from the date and time of the most recent data logged.

Settings

Date of origin for data to be analyzed

- Disable
 Date selection

06/14/2020

Live page automatic refresh

The Live page can be set up to update the data automatically at a selectable time interval. If disabled the data can be refreshed manually using the Refresh button as described previously.

Live page automatic refresh

- Disable
 Refresh selection

60

Time zone

The weather forecast is provided in GMT.

Select the GMT zone for the site to get the weather forecast displayed with local time.

Time zone

GMTx ▼

Map zoom

The initial map zoom used when landing on a page in ECcloud that features a map can be set. The zoom can always be adjusted manually on the pages afterwards.

Map zoom



A horizontal slider control for map zoom. It consists of a horizontal line with three circular markers. The leftmost marker is labeled 'Out', the middle marker is labeled 'Default', and the rightmost marker is labeled 'In'. The segment of the line between 'Out' and 'Default' is highlighted in blue, while the segment between 'Default' and 'In' is grey.

Admin

On the Admin page a map and a list of the sites for which the user has administrator rights are presented.

The screenshot shows the ENcombi Admin interface. At the top, there is a navigation menu with tabs: LIVE, EXEC, PV, INV, SENSOR, GENSET, GRID, METER, LOG, WEATHER. Below this is a secondary menu with options: LOGOUT, PROFILE, SITES, ADMIN, SETTINGS, REPORT, ELINK, REFRESH. The main content area is titled "Sites with admin rights" and shows "Site currently selected: None". Below this is a map of Europe with several sites marked. A table below the map lists the sites with admin rights:

MAC	Site	Country	Region	City	kWp
10030569108A2	RUT950	Denmark	Midtjylland	Viborg	100

Below the table is a "Site selector" dropdown menu with the text "Select..." and a downward arrow.

When a site is selected a list of users with access to that specific site is automatically populated along with various options.

User list

Below an example of a user list.

The screenshot shows the "Users with access to site" section. It contains a table with the following data:

Users	Company	Mail	Access
ENcombi	ENcombi ApS	support@encombi.com	ADMIN
claes	ENcombi	claes.sterregaard@live.com	ADMIN

Revoke user access

Here a user can be revoked access to the site. The user being revoked access will be notified by email.

The screenshot shows the "Revoke user access to site" form. It consists of a dropdown menu with the text "Select..." and a downward arrow, and a button labeled "REVOKE" below it.

Grant existing user access to site

Here an existing user can be granted access to the site. The user being granted access will be notified by email.

Grant existing user access to site

 × ▾

Create and grant new user access to site

Here a new user can be granted access to the site. The administrator will create the user's profile and credentials for initial login. The user can after login change their profile so that the password is no longer known to the administrator. The user being granted access will be notified by email.

Create and grant new user access to site

 × ▾

Clone the site

This is used in case of replacing an ECpv on site. Once the new ECpv is in place and registered in ECcloud it can inherit the data logged by the ECpv being replaced. This is done by initially selecting the old ECpv as the site to work on when entering the Admin page and then afterwards selecting the new ECpv in the drop down below. Then, when the “Clone” button is clicked, all the data logged by the old ECpv will be copied to the history of the new ECpv.

Clone the site

Stacking master

Here an ECpv slave can be linked to its ECpv master. This is used in case of the ECpv being a slave to a master ECpv in a stacking site. In the Stacking master dropdown the sites to which the user has access, are listed. By selecting one of the identifiers in the dropdown and pressing submit, the selected site is now slave to the site currently logged into.

Stacking master

In case an ECpv is linked as slave to a master it will no longer be displayed on the Sites page as an individual site. Only the associated ECpv master will be shown on the Sites page and the data from the ECpv slave will be inherited as part of the ECpv master data visualization. This means, for example, that on the PV page the user can choose to see data from the master or any slaves simply by choosing the site identifier in the “Enable slave site view” dropdown as illustrated below. If “None” is chosen, the data for the master is shown.

Slave sites available

MAC	Site	kWp
t00305691	Moffy1	100

Enable slave site view

NONE x ▾

The stacking concept also applies to batteries if the setup is based on ECpvx. This takes that the ECpvX cluster controller is used to link the communication between the master ECpvX and any slave ECpvX controllers. Note that the ECpvX Cluster controller is not listed among the controllers in the ECcloud portal as it is only facilitating the communication between ECpvX controllers.

If the master - slave relationship between controllers needs to be broken/canceled, the Stacking master dropdown must be set to None while being on the admin page for the slave. Once doing that, the former slave is again listed in the Sites page.

Clear the site history

This will delete the data logged from the site. The site will remain - only the data logged from it so far will be deleted.

Clear the site history

Delete all the data logged from the site until now

REJECT CLEAR x ▾

CLEAR

Discard the site

This will delete the entire site. You must be the only user of the site to execute this command. First the drop down must be set to "Accept Discard" and then the "Discard" button must be clicked to issue the command.

Discard the site

You must be the only user with site access to succeed

Please logout and do new login to ECcloud afterwards

x ▼

Schedule automatic data export via ftp

Here data export from ECcloud to up to two different ftp servers can be set up. The various methods to use regarding file format and content is accounted for in the separate document "ENcombi_API.pdf". The port to use is per default 21 but can be changed as per the requirement of the specific ftp server.

Schedule automatic data export via ftp

Ftp server A

Off	x ▾
Enter server	
21	
Enter username	
Enter password	
Enter path	

Ftp server B

Off	x ▾
Enter server	
21	
Enter username	
Enter password	
Enter path	

SAVE

Manual data export

Here the data can be downloaded manually. The period to download data for is selected by the date picker. Maximum one month of data can be downloaded at a time. Each day of data will have its own csv file. The files are packed together in a zip file for download.

Manual data export

Download the raw data in csv file format for the period selected

It may take a few minutes to prepare the files

Period

Jan 10th, 2022 → Jan 11th, 2022

csv

The structure of the csv files and its content are accounted for in the separate document “ENcombi_API.pdf” as Method1.

Site photo

Here a site photo for the Live page can be uploaded. The photo must be a jpg file and will be fitted to 4x3 format.

Upload a jpg site photo in 4x3 format

Drag and Drop or [Select File](#)

Report

On the Report page reports and site notifications can be set up.

Manual report

The content of the report can be tailored, created and downloaded manually.

Holstebrovej 75

Report

Select the elements to be included in the report

- Executive day analysis
- Executive month analysis
- Executive year analysis
- Executive total analysis
- PV 24 hour analysis
- PV 30 day analysis
- PV 12 month analysis
- PV 10 year analysis
- PV this day analysis
- PV this month analysis
- PV this year analysis
- Genset 24 hour analysis
- Genset 30 day analysis
- Genset 12 month analysis
- Genset 10 year analysis
- Genset this day analysis
- Genset this month analysis
- Genset this year analysis
- Grid 24 hour analysis
- Grid 30 day analysis
- Grid 12 month analysis
- Grid 10 year analysis
- Grid this day analysis
- Grid this month analysis
- Grid this year analysis

The date of the report's origin is set up on the Settings page.

Scheduled report

Use the scheduler to receive a report from the site automatically via email. The automatically generated reports are fixed in their content and hold the Executive analysis only.

Schedule automatic executive report via email

Frequency

Daily × ▼

GMT time

15:00 × ▼

Save schedule setup

SAVE

Event & alarm notifications

Besides reports also mail notification via email can be set up in case of any event or alarm occurs on site.

Events & Alarms

Notification via email

Trigger

Alarms × ▼

Save notification setup

SAVE

ELink

ELink enables you to make a remote connection to your ECpv(s) from outside of the local network. This way you can access the ECpv(s) from anywhere in the world and adjust settings etc. ELink is an optional feature for which you will have to have a 4G router from ENcombi installed. When this is in place you can, when being the Admin user of a site, go to the ELink page and create links for remote connections both to the webserver of the router itself as well as to the ECpv(s) connected to the local network behind the router.

The routers compatible with ELink are various models from Teltonika. See which models are available on our website on the link below.

www.encombi.com/products/accessories-3/4gmodem/.

Register a router

You register the router in ELink by first selecting the site on the Admin page to which you want to link the router. Thereafter you go to the ELink page. If there is no router already linked to this site, you will get the entry fields for router serial number and router MAC address below. On the router label you will find information of serial number and MAC address. Just type in the numbers and click on the Register button.

There is no ELink compatible router registered to this site

Register a new router to this site

Enter serial
Enter mac
REGISTER

Note that, in order to be able to register and use a router with ELink it needs to be purchased from ENcombi.

Furthermore the "RMS Connect" setting in the router must be enabled. This is done via the router's web interface (WebUI). The default login details are:

- IP address: 192.168.1.1
- Username: admin
- Password: admin01

When on the Overview page, click the “Configuration” button as shown below. That takes you to the RMS Settings where the “Connection type” must be set to “Enable”. Keep the default values for the Hostname and the Port settings.

Click the Configuration button

Remote Management System		ON
Status	Enabled	
Connection State	Connected to server	

RMS Settings

Connection type: Enabled

Hostname: rms.teltonika.it

Port: 15009

Note that this setting can't be enabled from an ELink connection but must be enabled from a LAN connection or otherwise.

Device information

After initially selecting an Admin site, on the Admin page, and there is a router registered to the particular site, then when going to the ELink page you will find information about the router status at the top. In the information table you can see the Site ID of the Admin site to which the router is currently linked to. Below the table you have the option of unregistering the router. Furthermore there is the option of releasing the router from its current Site ID and linking it to the new Site ID using the site selector below the table.

ELink

Router information

Label	Value
Site ID	0030569108A2
Model	RUT950
ID	384904
Serial number	1106447523
MAC	001E423528E6
Status	Online
Connection state	connected
Connection type	LTE
SIM state	inserted
PIN state	READY
Operator	TDC Mobil
Credit expire data	2022-03-02 07:24:08
Auto credit renewal expires	2026-10-07 07:15:34
Auto credit renewal expired	FALSE

Unregister the router

Link the router to another site

WebUI links

WebUI links are links for connecting to the webserver of the 4G router itself. A new WebUI link is created as shown below. The period for how long the link should be active is set in hours. A table with the currently active WebUI links and their remaining validity period is shown. Each WebUI link can be selected in the table and be either sent to the user's email address by clicking the respective buttons below the table.

WebUI Links

These are links for connecting to the routers web-server.

Create a new WebUI link valid for the selected duration

Duration (hours)

0,5

CREATE

Mark a link to send it to your mail

ID	url	valid for (hours)
<input type="radio"/> 84964	ca0d614868fb08b1029953bee4b58029.proxy1-connect.rms.teltonika-networks.com	0.38
<input type="radio"/> 84978	6770cac02b2722d00db953e4d1c4cb20.proxy1-connect.rms.teltonika-networks.com	0.5

MAIL

DELETE

LAN WebUI links

WebUI links are links for connecting to the ECpv(s) connected to the local network behind the 4G router. As multiple ECpv(s) can be present, each ECpv is to be created as a remote access device. The LAN WebUI links can then be created to the respective ECpv. A table with the currently available remote access devices is shown. Each remote access device can be selected in the table and its currently active LAN WebUI links can be shown or the remote access device can be deleted.

Remote access devices and their LAN WebUI links

These are WebUI devices registered on the routers LAN for remote access

Create a new remote access device

x ▾

Port:

These are the remote access devices currently available

Mark a remote access to show its LAN WebUI links or delete it

ID	Name	IP	Protocol	Port
<input type="radio"/> 268964	ECpv_102	192.168.1.102	http	80
<input type="radio"/> 267275	ECpv_101	192.168.1.101	http	80

SHOW

DELETE

When clicking show then a LAN WebUI link creation option appears together with a table of the selected remote access devices LAN WebUI links and their remaining validity period is shown. Each LAN WebUI link can be selected in the table and be either sent to the user's email address or be deleted by clicking the respective buttons below the table.

Create a new LAN WebUI Link for the marked remote access device

Duration (hours)

0,5

CREATE

These are links for connecting to the selected remote access device

Mark a link to either send it to your mail or delete it

ID	url	valid for (hours)
<input type="radio"/> 85023	11e8be14ea9257b10e8fd36455056c79.proxy1-connect.rms.teltonika-networks.com	0.5
<input type="radio"/> 85021	42536f3be28a25f6463fca28753020b2.proxy1-connect.rms.teltonika-networks.com	0.49

MAIL

DELETE

List all registered routers

You can get a list of all your routers registered, presented in a table. The way to do this is by not having any site selected on the Admin page. Thereafter, go to the ELink page.

You have not picked and Admin site yet

Below is a table showing all your Admin sites with an ELink compatible router registered

Site ID	Model	Serial number	MAC
0030569108A2	RUT950	1106447523	001E423528E6

Profile

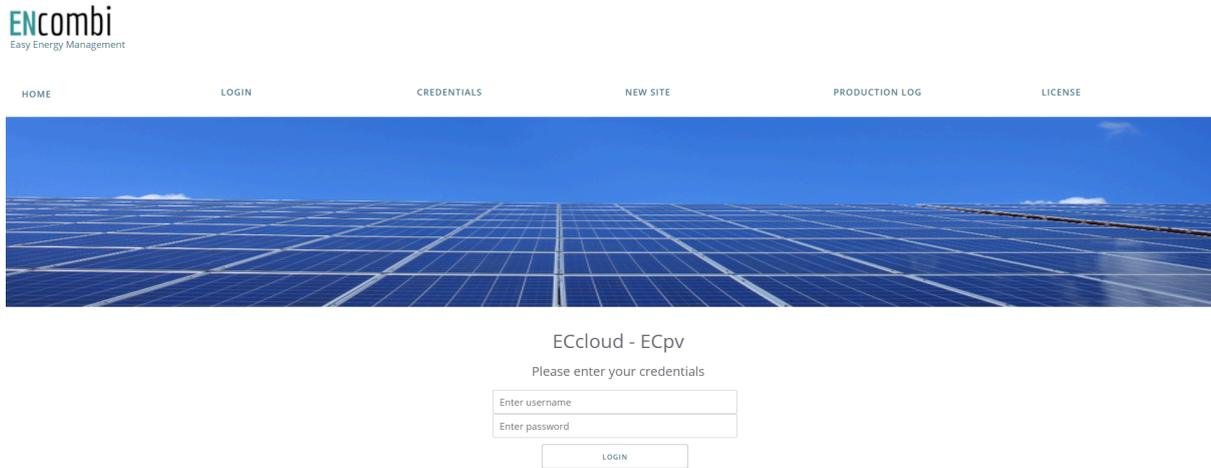
On the Profile page a user can update his/her profile.

Profile

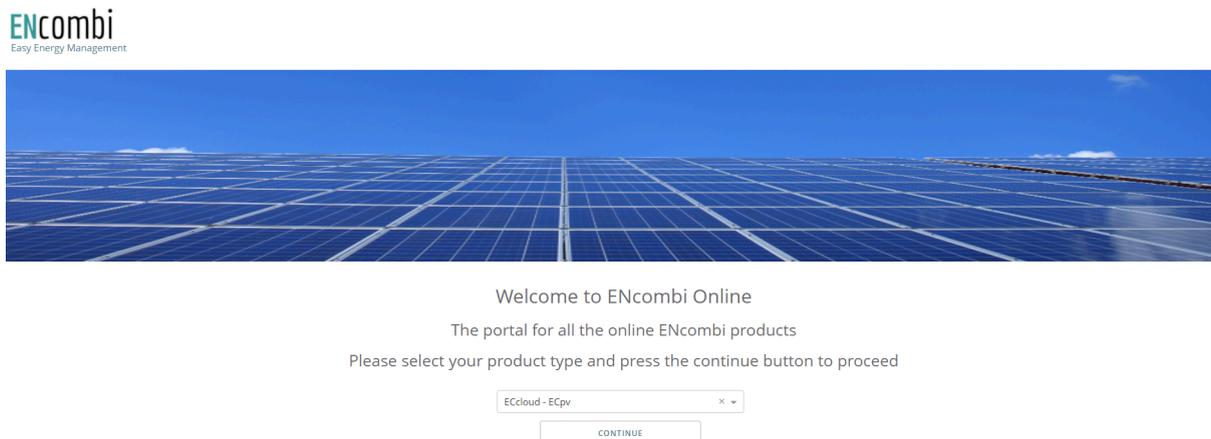
Edit your profile

Logout

On the Logout button the user can logout. ECcloud will then revert to the Login page.



To return to the ENcombi Online start page from where you can pick the product type, you must click "Home" in the navigation bar.



Production log

On the Production log page the production logs generated by an ECpv can be displayed in graphical manner. The Production log page is accessible without being logged into ECcloud and is hence available to all ECpv customers. On the Production log page the user can select the production log he/she wants to have displayed.



When a file is selected ECpv will display the content as below examples.



License

On the License page the SW licenses and the associated Extras for a controller can be downloaded. The License page is accessible without being logged into ECcloud and is hence available to all customers.

Get license

Product

ECpv
x ▼

MAC address

Enter MAC

Branding code

ENcombi

Search license

SEARCH

Type in the MAC address of the ECpv for which you want to download the SW license. Type in the branding code. The default branding code is "ENcombi". Leave it at that if you do not have a branding code issued. Press the search button to find the license.

Download the SW license on the populated link. Unzip the content of the downloaded file to the root of a USB stick. Insert the USB stick in the USB port of the controller and initiate the SW license search via ECweb by pressing the "Search on USB" binoculars button.

Extras:

- A:  Acquisition only
- C:  Cloud service
- C TRIAL:  Cloud service free trial
- H:  Hybrid as a Service
- L:  PV/genset plants, unlimitation PV capacity
- M:  PV/genset plants, 500kW PV capacity limitation
- S:  PV/genset plants, 100kW PV capacity limitation

License and extras page.
 Contact dealer for purchase of license and extras.
 When purchased, the license or extras can be fetched
 by the device either online or from a USB stick.
 If online, the device must have access to the internet.
 If from USB stick, goto www.encombi.online to download license.

- Search online: 
- Search on USB: 

