



Medium Home Sample Dimensioning

Bornay

2016-08-09
16:46:10

Reference: 002299

camino del riu, castalla

What is an isolated installation composed of?

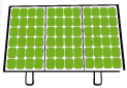
An isolated installation is one that is capable of supplying the electric energy necessary to power previously determined consumptions, independently of the existence of a power network or any other source of power generation.

The combination of wind and solar technologies guarantees a more stable and balanced generation throughout the day (day / night) and seasons (summer / winter) during the 365 days of the year.



WIND TURBINE

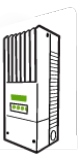
Generates electricity from wind power, either during the day or at night. Its power varies relative to the needs of the installation. Bornay produces wind turbines with a power output of 600, 800, 1500, 3000 and 6000 W that covers all kind of needs.



SOLAR MODULES

Generates electricity using solar radiation: therefore, its use is limited to daylight hours.

The number of the solar modules and its power depends on the total energy required for the installation.



CONTROLLER

Controls the electricity generated by the wind turbine or the solar panels. It also controls the state of the battery bank. Prevents the overcharge and discharge of the battery bank



BATTERY

Store the energy produced by the wind turbine and solar panels, making it available for later use. It is recommended to have battery banks that last a minimum of three days of autonomy.



INVERTER

The inverter transforms the energy stored in the form of continuous current in the batteries into alternating current for domestic use. It can incorporate a charger to recharge the batteries if there is available an AC external source such as a generator set. Furthermore, there are inverters that allow for a wide range of possibilities such as interaction with generator sets or with the electrical grid, permitting much broader applications, for example, three-phase or parallel installations, Smart Grids, self-consumption or network support.

Site of the installation.

At the site indicated the following resources are available:

Medium Home
Sample
Dimensioning
INSTALLATION

38,5995
LATITUDE

-0,6627
LONGITUDE

6298m2
PLOT

1223m2
BUILDING



Month	Windspeed	Solar Radiation
January	3,81 m/s	3,97 kWh/m ²
February	3,99 m/s	5,10 kWh/m ²
March	4,01 m/s	6,32 kWh/m ²
April	4,07 m/s	6,73 kWh/m ²
May	3,58 m/s	6,87 kWh/m ²
June	3,49 m/s	7,11 kWh/m ²
July	3,63 m/s	7,56 kWh/m ²
August	3,52 m/s	7,32 kWh/m ²
September	3,29 m/s	6,33 kWh/m ²
October	3,41 m/s	5,63 kWh/m ²
November	3,56 m/s	4,19 kWh/m ²
December	3,74 m/s	3,61 kWh/m ²

These data were obtained from public databases available on different web pages.

The data constitute an estimate of production based on this information and cannot be used as a guarantee of production.

The only way to guarantee production is to obtain local registrations at the place of installation.

Your installations consumption

Consumer	Power	Units	Hours	Consumption
Computer	180 W	1	4,0 h	720 Wh/day
DVD	150 W	1	1,0 h	150 Wh/day
Lighting	13 W	8	2,0 h	208 Wh/day
Outdoor lighting	10 W	5	5,0 h	250 Wh/day
Refrigerator	180 W	1	12,0 h	2160 Wh/day
Small appliances	500 W	1	2,0 h	1000 Wh/day
Television	250 W	1	4,0 h	1000 Wh/day
Washing machine	750 W	1	1,0 h	750 Wh/day
Total Consumptions				6238 Wh/day

The consumption data for the installation were furnished by the client and are used to determine the energy requirements of the installation, what elements are needed to produce the power required, and what battery is necessary to guarantee the supply, as well as the other accessories such as the inverter, charger and regulators.

If the data are not correct, the installation will not work as it is expected to.

Please review the data carefully to see that they correspond to the requirements of the installation, and if this is not the case, request the pertinent modifications.

This is what you need in renewable energy.

With the consumption provided, we dimension the installation of renewable energies to supply the power required.

Wind Energy



Wind Turbine

Bornay 1500
MODEL

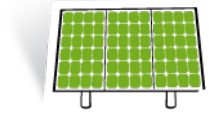
1500
NOMINAL POWER

1 Wind Turbine
UNITS

Month	Windspeed	Wind production
January	3,81 m/s	3,13 Wh/day
February	3,99 m/s	3,13 Wh/day
March	4,01 m/s	3,50 Wh/day
April	4,07 m/s	3,50 Wh/day
May	3,58 m/s	2,47 Wh/day
June	3,49 m/s	2,47 Wh/day
July	3,63 m/s	2,79 Wh/day
August	3,52 m/s	2,47 Wh/day
September	3,29 m/s	2,17 Wh/day
October	3,41 m/s	2,47 Wh/day
November	3,56 m/s	2,47 Wh/day
December	3,74 m/s	2,79 Wh/day

Solar Energy

Solar modules



AS-6P30-255W
MODEL

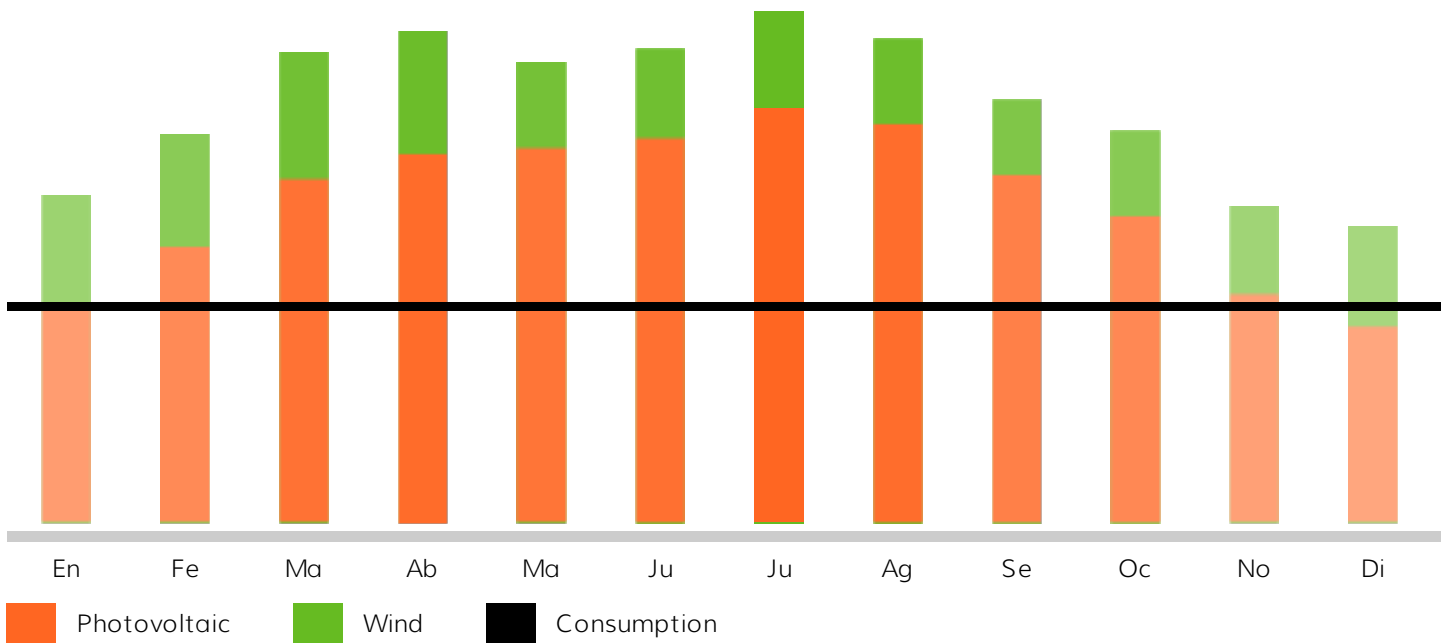
255 W
NOMINAL POWER

6 Panels
UNITS

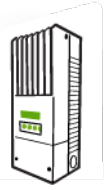
Month	Solar Radiation	Solar Production
January	3,97 kWh/m ²	6,08 Wh/day
February	5,10 kWh/m ²	7,81 Wh/day
March	6,32 kWh/m ²	9,67 Wh/day
April	6,73 kWh/m ²	10,29 Wh/day
May	6,87 kWh/m ²	10,51 Wh/day
June	7,11 kWh/m ²	10,88 Wh/day
July	7,56 kWh/m ²	11,57 Wh/day
August	7,32 kWh/m ²	11,19 Wh/day
September	6,33 kWh/m ²	9,69 Wh/day
October	5,63 kWh/m ²	8,61 Wh/day
November	4,19 kWh/m ²	6,41 Wh/day
December	3,61 kWh/m ²	5,52 Wh/day

Consumption Vs Production

Month	Daily needs	Wind production	Solar Production	Total Production
January	6,24 Wh/day	3,13 Wh/day	6,08 Wh/day	9,21 Wh/day
February	6,24 Wh/day	3,13 Wh/day	7,81 Wh/day	10,94 Wh/day
March	6,24 Wh/day	3,50 Wh/day	9,67 Wh/day	13,17 Wh/day
April	6,24 Wh/day	3,50 Wh/day	10,29 Wh/day	13,79 Wh/day
May	6,24 Wh/day	2,47 Wh/day	10,51 Wh/day	12,98 Wh/day
June	6,24 Wh/day	2,47 Wh/day	10,88 Wh/day	13,35 Wh/day
July	6,24 Wh/day	2,79 Wh/day	11,57 Wh/day	14,37 Wh/day
August	6,24 Wh/day	2,47 Wh/day	11,19 Wh/day	13,66 Wh/day
September	6,24 Wh/day	2,17 Wh/day	9,69 Wh/day	11,86 Wh/day
October	6,24 Wh/day	2,47 Wh/day	8,61 Wh/day	11,08 Wh/day
November	6,24 Wh/day	2,47 Wh/day	6,41 Wh/day	8,88 Wh/day
December	6,24 Wh/day	2,79 Wh/day	5,52 Wh/day	8,31 Wh/day



Rest of the components



Solar Controller

MODEL	MPPT150/60
UNITS	1 Control
TYPE	MPPT



Batteries

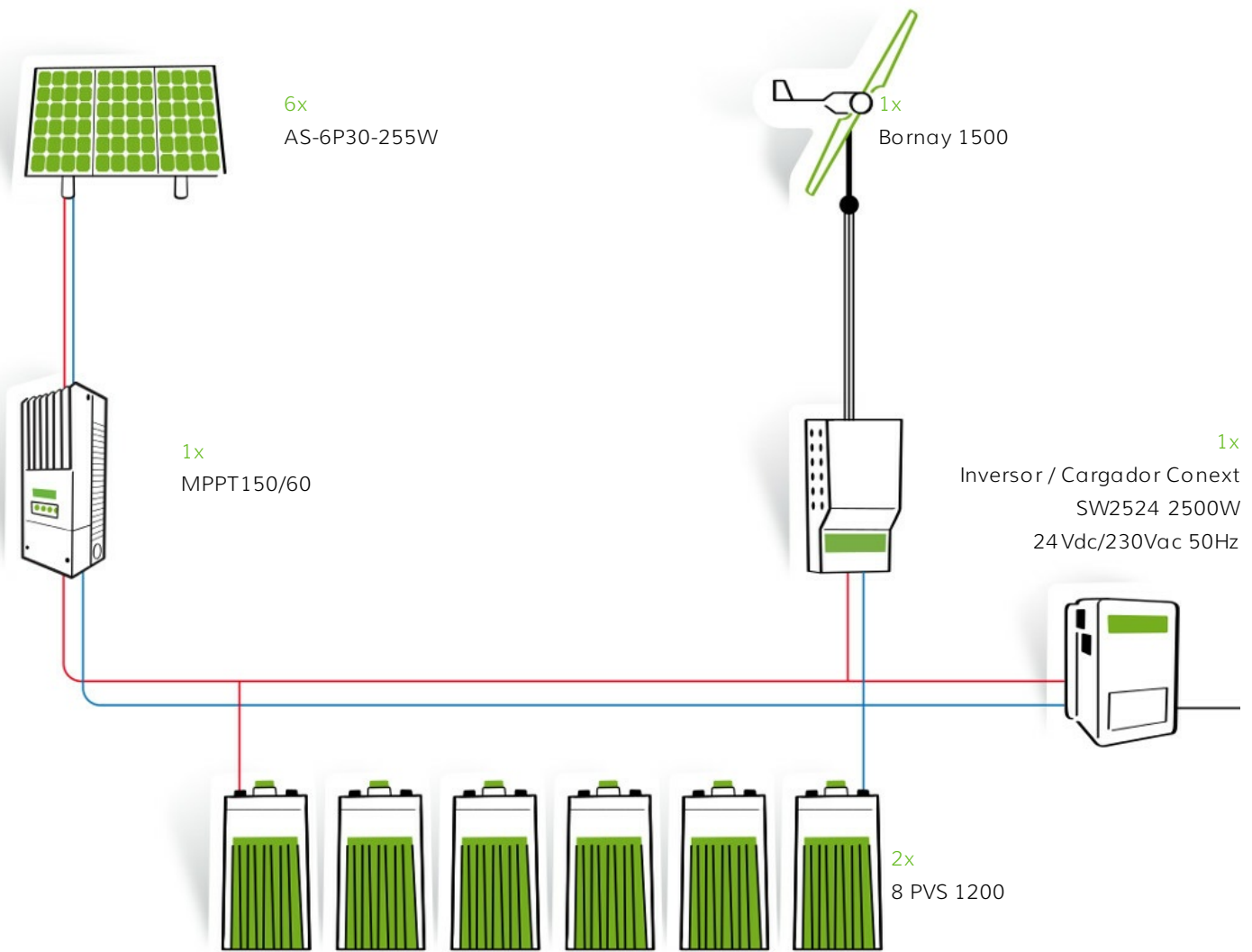
VOLTAGE	24 V
AUTONOMY	3 Days
BATTERY CAPACITY	886 C10
BATTERY CAPACITY	1160 C100
UNITS	2
MODEL	8 PVS 1200



Inverter

INPUT VOLTAGE	24 V
OUTPUT VOLTAGE	230 V
FREQUENCY	50 Hz
MAXIMUM SIMULTANEOUS POWER	2164 W
INVERTERS POWER	2500 W
CHARGER	Yes
THREE PHASES	No
UNITS	1
MODEL	Inversor / Cargador Conext SW2524 2500W 24Vdc/230Vac 50Hz




Installation diagram



Company example

P.I. Riu, Cno. del Riu, s/n
03420 Castalla (Alicante) Spain
Tel. +34 965 560 025
bornay@bornay.com
www.bornay.com

Needed materials

Units	Description	Model	Link	Unit price
6	Solar module	AS-6P30-255W		100
6	Modules support	Module supports		200
1	Wind Turbine	Bornay 1500		300
1	Sels supported squared tower	Wind Turbine Support		400
1	Inverter	Inversor / Cargador Conext SW2524 2500W 24Vdc/230Vac 50Hz		500
1	Controller	MPPT150/60		600
2	Battery	8 PVS 1200		700
1	MOE	Installation and transport		800
Total for goods:				5.800,00
Tax 21,00 %:				1.218,00
Total:				7.018,00

Sales terms

Delivery time:

2 weeks

Payment terms:

Prepayment 30%, rest at the materials delivery

Expire time:

30 days

Other information:

Example without any commercial validity.

Legal Advise

The information contained in this document is not binding nor does it guarantee that the results are going to be those indicated.

The data used to determine consumption were provided by the user of the application. They should be as real as possible, and it should be taken into account that any alteration to lesser or greater means an excess or lack of power.

The data used to determine the production of energy were taken from public databases available online and verified by qualified technical personnel, though this does not imply a guarantee of production.

In order for data of this kind to be taken as a guarantee, they have to have been registered locally in the place of installation by specific equipment and for a particular period of time.

B-planner is an online application of Bornay Aerogeneradores, SLU, designed to facilitate the installers' task of dimensioning installations, reserving the right to modify it without notice.