

### Photovoltaic design software

BlueSol is a software for the design of photovoltaic systems in every country in the world. It allows you to perform the entire process of designing a PV system, from the preliminary assessment of producibility to the realization of the project documentation. BlueSol is a product made with a standard Microsoft interface, very easy to use but at the same time manages every detail of the PV system. Top features:

### Model the PV system scheme

- Model the system scheme in every detail
- Use of wizards or direct editing
- Edit scheme tree via copying and pasting
- Easily achieve any system configuration
- Create templates of the system

### Panels, cables and electrical components

- Calculate the voltage drops on the cables
- Checks on electrical components
- Automatic size of the electrical components
- Archives to store the most used components
- Bill of electrical components

### **Integrated CAD System**

- Import planimetry background as a DXF, DWG or image
- Arrange modules and strings, cables, panels, inverters and connection to the grid
- Insert near obstacles
- Check the result in the 3D integrated
- Export to DWG

#### Layout 3D **Electrical scheme** • 3D visualization of layout Automatically created • Simulations of shading of near obstacles Edit using CAD tools Assessments of irradiations on surfaces Export to DWG Export to DWG or to image World wide Location Wizards Dimensioning of the photovoltaic system NASA-SSE world wide irradiations Definition of the cables Insertion of new data of irradiation by the user ٠ Dimensioning of electrical components Importing of the irradiations from PVGIS • Insertion of the modules Internet maps support • Insertion of cables **Economic evaluation Production of project documentation** Detailed economic analysis Default and user templates of documents • ٠ Options to suit needs of different countries Integrated word processor

### Different versions for all needs

- BlueSol Express: the base version for easily design
- BlueSol Design: advanced features for a complete project management

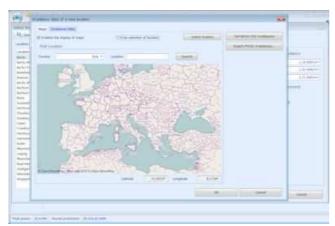
## Screeshots



Wizard: arrangement of the strings in the photovoltaic field



Location: average monthly irradiance



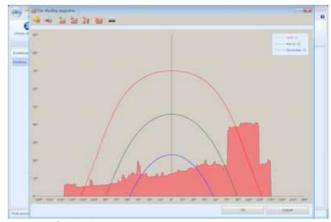
Location: choosing a new location by map



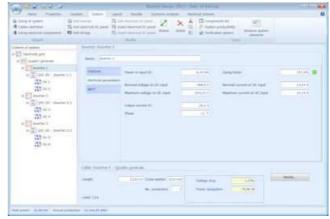
System: automatic sizing of electrical components

	Manufact Agence Mand	
	Tokard medida- china of the balan and comparison of the goal senses is with indexing sensities of the spinor.	
	And and a second se	
	Paul of Sector 16 Sections 17 Sectors.	
-	They are a second	
	Compatibue of the gold for each standage	
-	Allerge (Samp) Allerge	
-	Same Same	
	Advances advances advances	
	And	
	A CONTRACT OF A	
	Transfer of the second se	
	Street and	
	T programming D make Strengtherd D radius (W Table addresses (M) R.S.	
	there a prove of the second seco	
	La hat (Speed 2) Career	

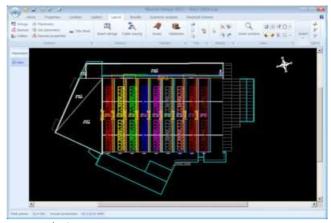
Wizard: choosing grid of the photovoltaic field



Location: far shading



System: inverter properties



Layout: planimetry



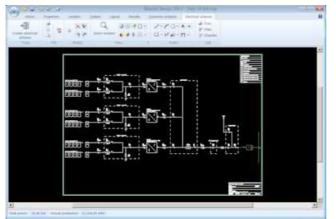
Latyout: 3D view



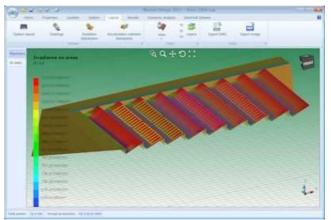
Results: monthly production



Economic Analysis: profitability



Electrical scheme generated by the program



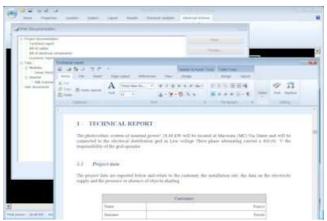
# Layout: irradiance

-	- Section and and	
Contraction of Contra	ev berry	4.
-	Contraction of the second se	 41
	of Antifer 1, Station willing of match surger data of 1, 417 (117, 911) Manual 1977 unlight (111.1)	 8
	A house a manual stage is not a manual and a lot of the stage of the stage of the stage	
10110 parts	of Sector 1, New Joint Alexand Access Stream and Alexandre 1, Alexandre Stream Stream Stream (Sector)	 4
And in case of the local division of the loc	a set and an and a set of the set	4
	a w hear hat	
Realized DC Lawrence	and latter	4
International States	2 9 France 102	4
10°	of Mad pred, Oaller Tolkge dag 5,076 (13%)	4
Renaul and MTT	of Sector 1 date where the differ of the	4
	of the state of the lines and the top	4
industry processing	of Social Camp School Star Lifes 1 (5)	4
	of Arrist many care to an arrival and All hard to	4
mod postably .	of 2012 Color White that China + Pla	4
	af the 17 device rates the or , makes much 175 - PS	4
listing has	a serie and reduce and the CPA	4
and a state in the	of the statement of the second	4
	of Text Science Indiana Rep 127% - 176	4
Tabé Inte	of deals large units on its holders may be the P.	4
	of the of class makes and 178 + 28	4
Stream dates the	<ul> <li>An extension for (c) independent A(0) = Ph.</li> </ul>	4
States and Street		4
States and a state	of the statement of the latter statements in the	4
	of Art 11- (phot-induce they \$10% + 7%)	4
turine it it top	2 Start D. Hong optic 20 11. Antique Digent U.S 3%.	4
families of mail-fam		
	Structures Disk Clause Clauses	4
Reduke met		1
	langer published	

### Results: system verification

turbanda i	104										
-	trongs postsetter [344.]	1.34.04.40	19-11-19			and the second second	Sector.	38,919,21	COMPLET.	COLUMN 1	
	trough had to the god (new)							11.229-04	61.121.00	12.284.78	104.00
-	Down representation (1994)	(Accession)	10.000		100,000,00	30,000,00	10.04.14	10.000.00	10,000,00	100000	10,000
Name of Street, or other	(ad a single strate (state)	17108.00			11.144.00						
	trongs salar from the get (best)	\$1+75,29	20393.08	共和用	11.415.44	10,000,000		00100.47	81.011.01	111408.01	21.244
	( (ap instant (#))	1333064	L R R P D M	10.000	1.199.20	1204.00	1		1100137	0.004634	1.3.09
and the state	Restored Party and (1)	1118-03	1.17534	1,0404	1.34,11	1004.04	1,000,000	1.004.01	1.011.01	1+04,70	6.000
-	(testing, ph. charlogs 148 (41)	1.100-20	6.01.24	0.000.01	1.1474,84	141.0	. 4114,81	4,01221	4.114,01	4,7(4,10	0.004
	Mandrasaria (2011)83	1	1.00	1.46	1.00	4.44	4,19	1.0	1.4	1.4	
	Sec yea(R (R))	4.00.00	0.4 m. h	-	0.000.00	1.000.00	- Add	1010		4.46.08	
Harts .	Call (box (4))	4.00.0	4.46.78	-		1.201.00	C LINKS	1304.04	\$105.52	4.441,58	4.100
-	increases and free [0]	10.00.0	10.000	-	10.00.00	10.00.00	0.03.9	-	423667	1000	-
1000 I	the property sales (1071) [21]	100000-00	10000	4140.00	-		-	10.0111	00.04.0	10 204 20	110000

Economic analysis: detailed table by year



Print documentation: detail of the Technical report

Product comparison	EXPRESS	DESIGN
Operating system		
Windows <sup>®</sup> 2000 Service Pack 3, XP, Vista, Windows 7 (32/64 bit), Windows 8	<b>V</b>	<b>V</b>
Projects Creating a new project using the wizard for the dimensioning of the photovoltaic system		
Creating a new project using the wizard for the dimensioning of the photovoltaic system Creating a new project from a template	<i> </i>	<i>- 2</i>
Archives	Ť	Ť
Archives of photovoltaic modules and inverters, data obtained from Photon, with more than	<b>V</b>	<b>V</b>
20,000 modules and more than 1600 inverters		
Archive of photovoltaic modules, modifiable and expandable Archive of the inverters, editable and expandable	×	<i>-</i>
Archive of cables and other electrical components managed by the user	<b>~</b>	- V
Archive for consumption of electrical devices	<b>~</b>	- Č
Archive consumption profiles	<b>~</b>	<b>V</b>
Project properties		
No limit to the power of the system Data input: system, designer, customer, additional user data	×	<b>*</b>
Project Settings: system temperatures, sizing on power of the inverters, dispersions	<i></i>	<b>\$</b>
Location	· · · ·	
Data tables for the average irradiation of locations most important	<b>~</b>	<b>V</b>
Insertion of new data of irradiation by the user	<b>~</b>	$\checkmark$
Importing of the irradiations from PVGIS	<b>~</b>	<b>~</b>
NASA-SSE world wide irradiations Choice of locations and geographical coordinates with the aid of maps (requires internet	<b>V</b>	1
connection)	<b>~</b>	1
Analysis of azimuth and tilt optimal. Possibility of differentiating the period of the year	<b>~</b>	1
Automatic insertion of far shading from digital images	<b>~</b>	1
Editing far shading	<b>V</b>	1
Possibility of multiple far shading on the same system System	<b>~</b>	~
Representation of the schema of the system in all its parts	<i>~</i>	~
Calculation of the irradiation on the plane of the panels	ě	- ě
Calculation of the producibility of the photovoltaic system	<b>~</b>	<b>V</b>
Checks on the coupling between strings and inverters	<b>V</b>	<b>*</b>
Calculation of cables according to CEI-UNEL tables Determination of the voltage drops and the flow rates of the cables		×
List of the electrical components of the system		<b>2</b>
Management of MPPT		
Commands to cut, copy and paste the elements of the schema within the system schema	<b>~</b>	<b>e</b>
Selection commands by type of the elements of the system	<b>~</b>	1
Management of AC Panels connected to the main panel	<b>~</b>	×
Ability to explicitly specify the cable lengths Verifications of the electrical components		<i></i>
Management of the electrical protection groups in the panels		
Dimensioning wizard of the photovoltaic system	<b>~</b>	<i>i</i>
Scheme of producibility of the sections of the system	<b>~</b>	$\checkmark$
Automatic rename of the system components	<u> </u>	<b>*</b>
Wizard for the dimensioning of the photovoltaic system Wizard for the definition of cables	<b>*</b>	<b>*</b>
Wizard for the dimensioning of electrical components		
Layout		Ť
Importing planimetry from DWG or image		<b>V</b>
Inserting strings easy and automated		<b>*</b>
Inserting Inverters, panels and counters Cables arrangement with measurement of the lengths, that will be used in the verification		<b>\$</b>
Editing and printing of the layout with advanced CAD capabilities		
Exporting to DWG and DXF		- Č
Wizard for the guided insertion of strings		<b>V</b>
Wizard for guided arrangement of cables Inserting the Title Block		~
		<b>V</b>

3D visualization of the layout Shadowing due to obstacles next to the system Distribution of irradiations over the areas Animation of shadings on the PV system		***
Results Verifications on the inverter: limits on the voltage, limits on the current, limits on the power	<i>~</i>	
Verifications on the inverter: calculation of the input voltage to the inverter calculated by	~	<i>~</i>
reference to MPPT trackers Verifications on the cables: voltage drop, capacity, calculation of the maximum voltage drop		
in the system		1
Verifications of electrical components		<b>V</b>
Economic analysis		
Analysis of profitability of the plant with assessment of financing	<b>*</b>	×
Diagram of cash flow over the life of the system Management of taxation	×	
Management of incentive rates		<i>~</i>
Tools of analysis of the consumption and self-consumption of the system		
Export in xls format of the summary tables	ě	- Č
Electrical scheme		
Automatic generation of single-line electrical scheme		<b>~</b>
Schema creation options: choice of layout. paper size. height of the character of the texts.		
display full or partial of modules and strings. The options for creating the schema are saved		<b>~</b>
in the project		
In the regeneration of the electrical scheme the user can keep the primitives he had created		<b>~</b>
Editing and printing of the electrical scheme with advanced CAD capabilities		×.
Exporting to DWG and DXF Print Documentation		~
The technical documentation of the project is produced as editable Word documents		
obtained from customizable templates	1	<b>~</b>
Technical report	<b>v</b>	<i>w</i>
Economic report	ě,	ě
Bill of cables		÷,
Bill of electrical components		<b>~</b>
User-created documents	<b>V</b>	<b>~</b>
Integrated RTF editor	<b>*</b>	1

