

PVSyst 3.3

Un outil de planification photovoltaïque
pour architectes et ingénieurs

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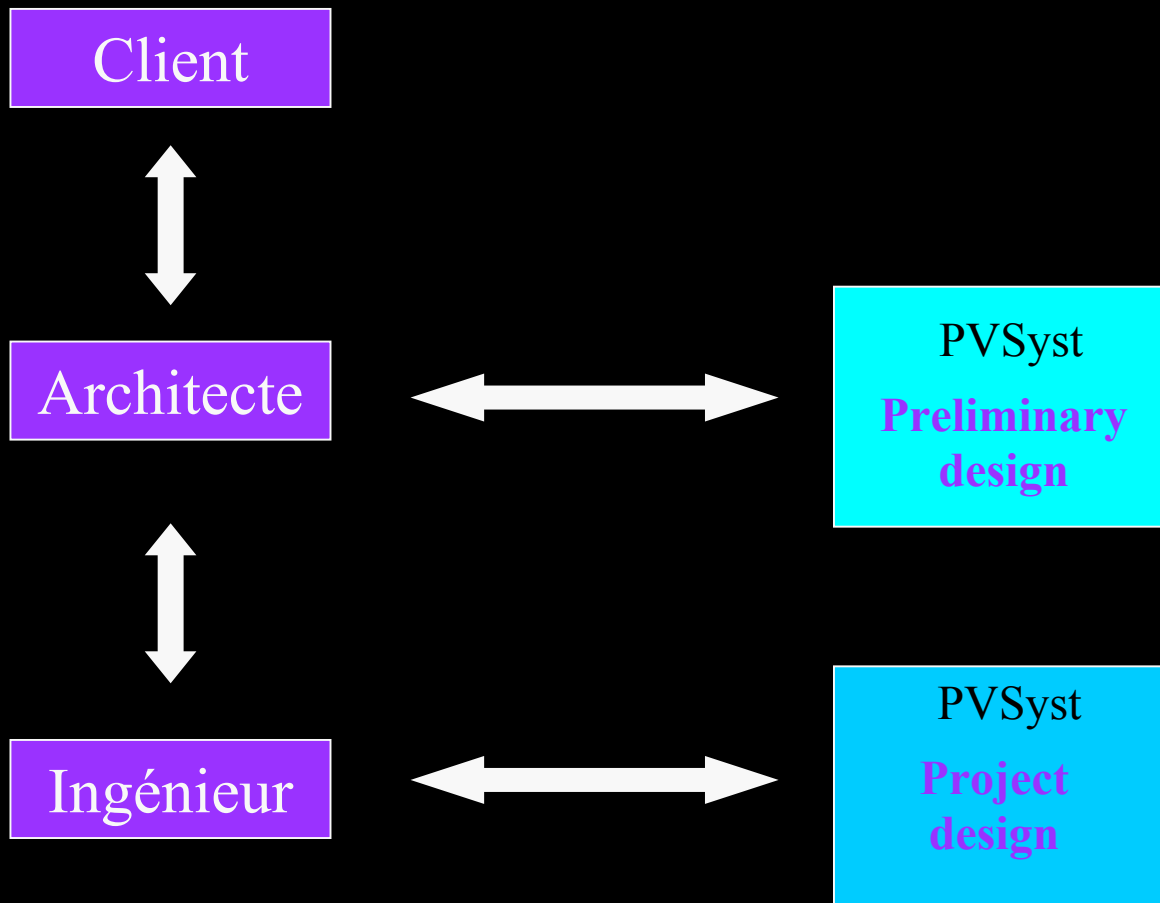
Sommaire

- Partenaires photovoltaïques
- PVSyst "Preliminary Design"
 - Données
 - Choix
 - Résultats
- PVSyst "Project Design"
 - spécificités
- PV Cool Build

Approches

- Le Photovoltaïque pour:
 - L'architecte: Enveloppe du bâtiment
 - L'ingénieur: Système électrique
 - Le client: Coûts (+ Motivation !)

Utilisations de PVSyst



Questions pour l'architecte

- Surfaces disponibles ? (Toits, façades...)
- Technologies PV disponibles ? (apparence)
- Prix de l'installation ?
 - Energie produite, coût de l'électricité ?
 - Systèmes de montage ?
 - Place pour l'onduleur, câblage etc...?

Etude de l'avant-projet avec PV Syst (Pre-Design)

- Données : Site, surfaces, orientation
- Choix: Apparence, montage...
- Résultats: Coûts, production...

Données : Site

Project's location

Project

Project name: Grid system Presizing at Zürich

Location

Country: Switzerland

Site: Zürich

- Zürich
- Basel
- Bern
- Chur
- Davos
- Fribourg
- Genève
- La Chaux-de-Fonds

Horizon

Free horizon

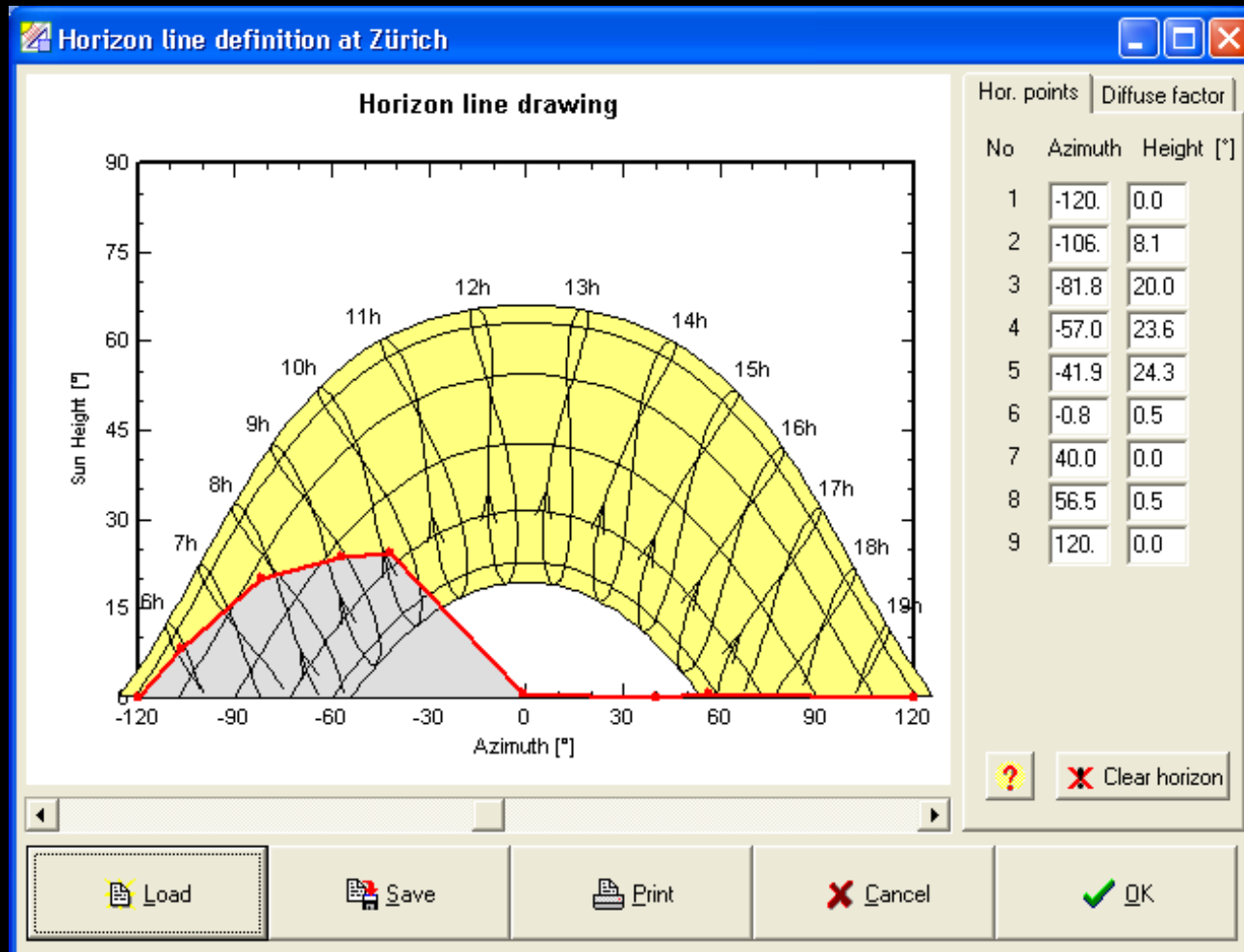
Open / New

Horizon

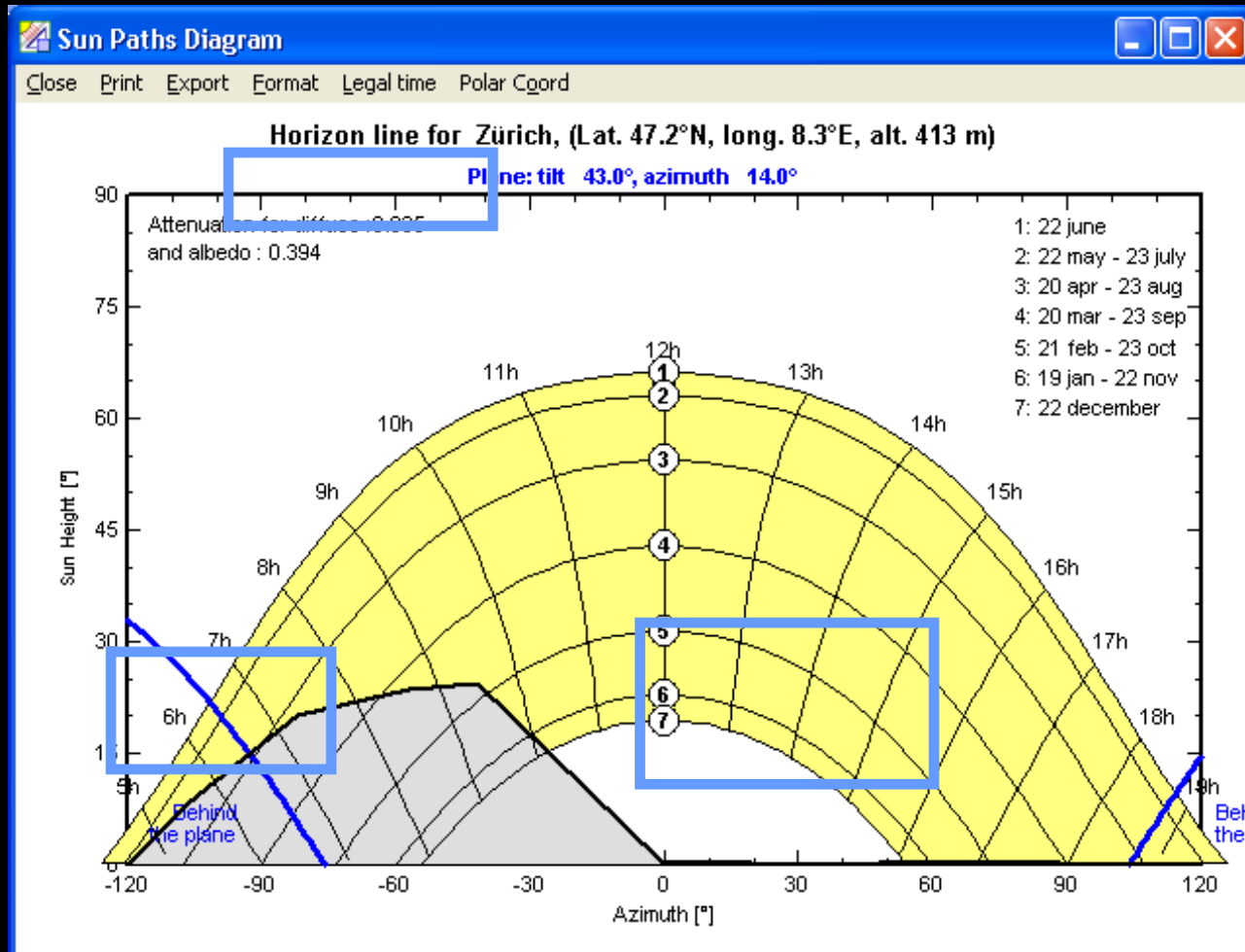
Cancel

OK

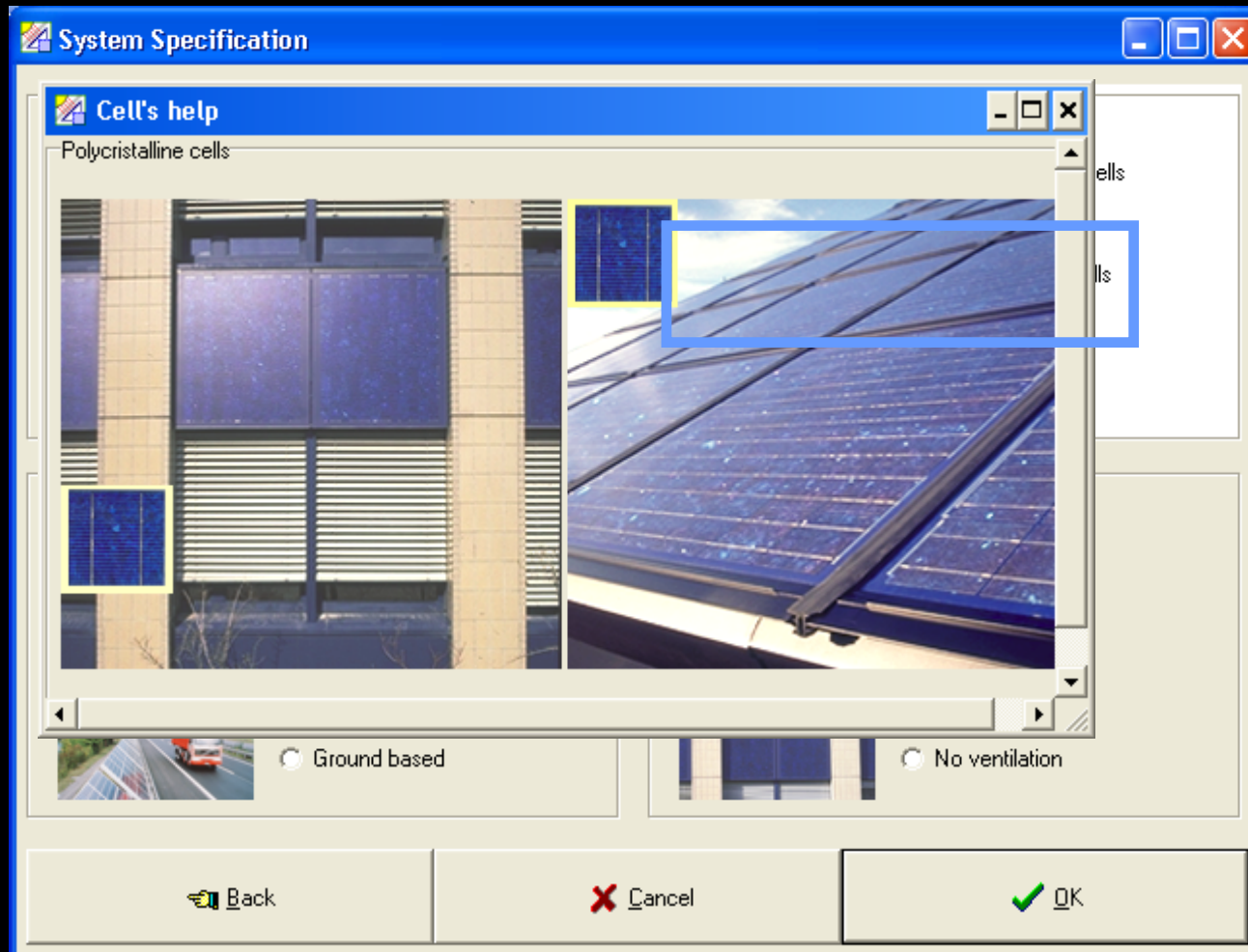
Données : Site - Horizon



Données : surface, azimuth et inclinaison



Choix – apparence, montage...



Résultats

Results

Input Data	Parameters	Results
Zürich Plane: tilt 43.0°, azimuth 14.0° Average horizon height = 7.7°	Area: 12.0 m ² Module Cost: 7.06 FS/Wp Technology: Polycrystalline	Nominal power: 1.3 kW Annual Yield: 1.1 MWh/yr Investment: 14899 FS Energy cost: 1.14 FS/kWh

Economic gross evaluation (excluding taxes and subsidies)

Module cost	8891 FS
Supports cost	3387 FS
Inverter and wiring	1581 FS
Transport/Mounting	1041 FS
Total investment	14899 FS
Annuities	1196 FS/yr
Maintenance costs	52 FS/yr
Total Yearly cost	1248 FS/yr
Energy cost	1.14 FS/kWh

These values should only be considered as an order of magnitude. More precise evaluations will be available with detailed simulation.

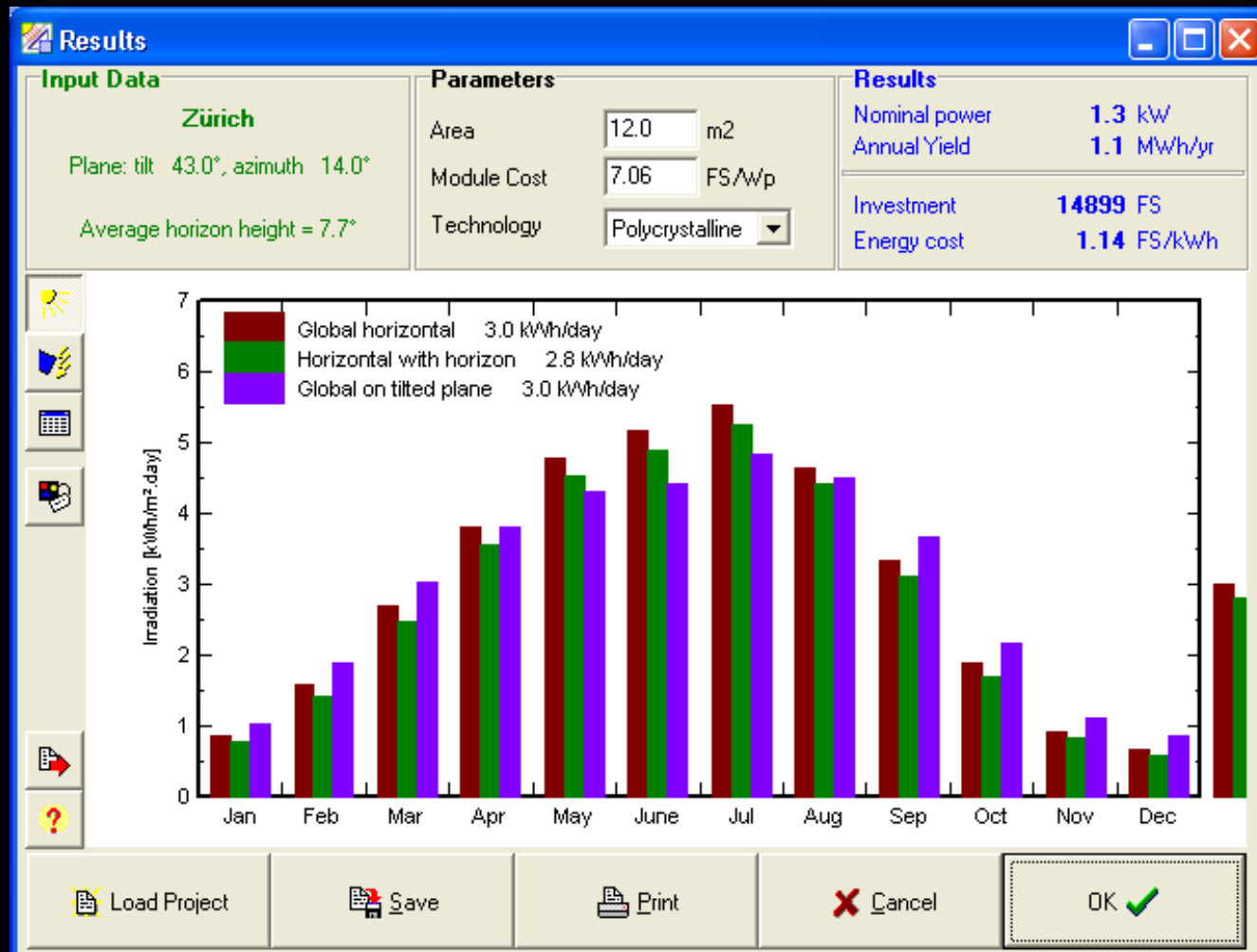
Currency
Switzerland FS

Loan
Duration: 20 years
Rate: 5.0 %
Ann. factor: 0.080

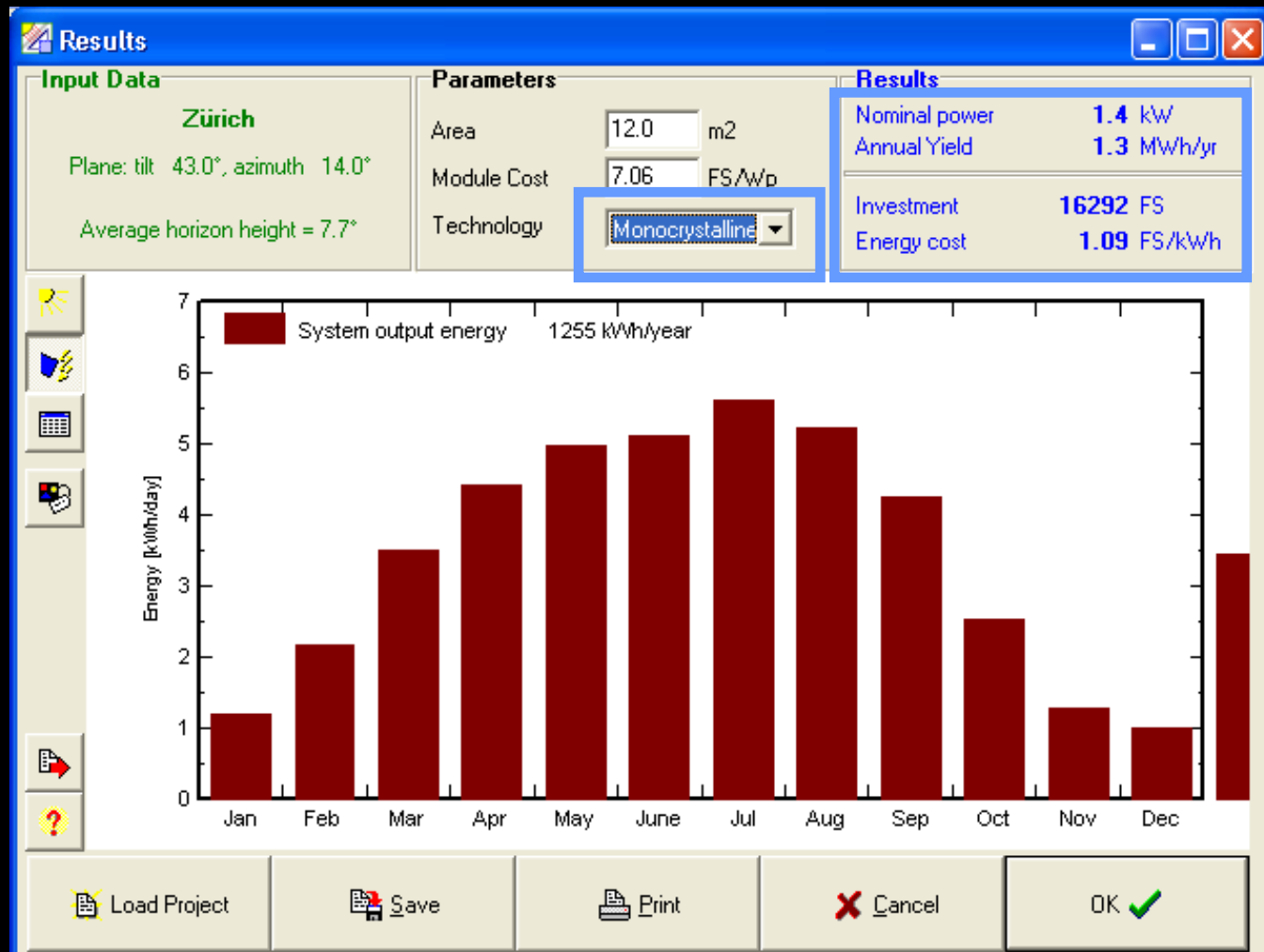
Edit cost

Load Project Save Print Cancel OK

Résultats



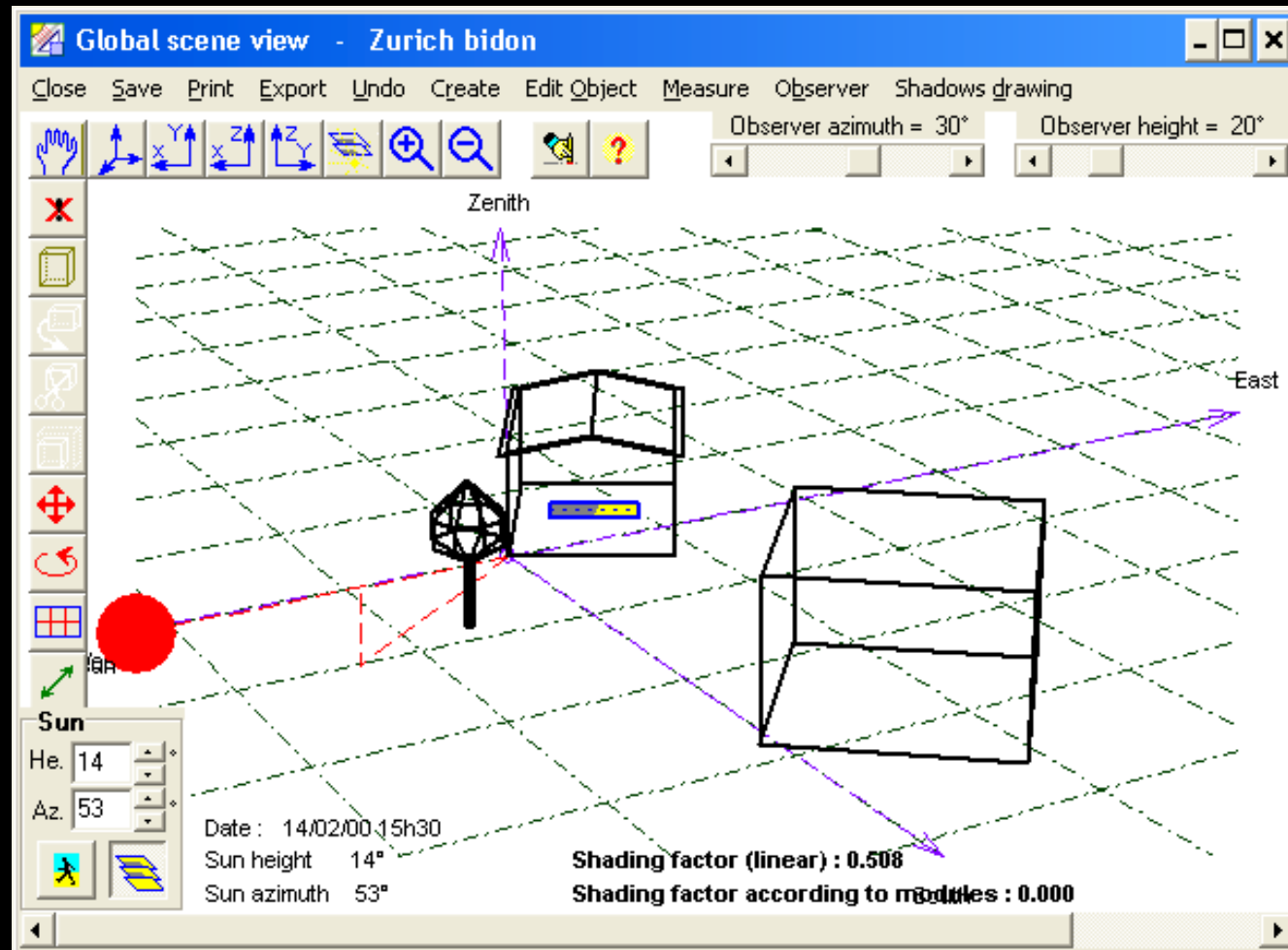
Résultats : variantes



Fonctions supplémentaires PVSyst (Project Design)

- Champs multiples
- Ombrage proche
- Systèmes expert:
 - champ collecteur et onduleur
 - dimensionnement et connexion du champ de batteries
- Analyse des pertes
- Boite à outils solaire

Ombrages proches



Systeme expert

Grid System definition, Variant "Simulation variant"

Presizing help
Enter planned power: kWp (optional)

Select inverter(s)

Sort inverters by: power voltage (max) manufacturer

2.2 kW	250 - 550 V	Sunny Boy SWR 2500	SMA	Manufacturer	Open
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Number of inverters: Operating voltage: **250-550 V**
Input maximum voltage: **600 V** Global Inverter's power: **6.6 kW**

Select modules

Sort modules by: power technology manufacturer

120 Wp	Si-poly	KC 120	KYOCERA	Manufacturer	Open
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Approx. needed modules: **67** Sizing voltages: Vmpp (60°C) **14.9 V**
Voc (-10°C) **24.1 V**

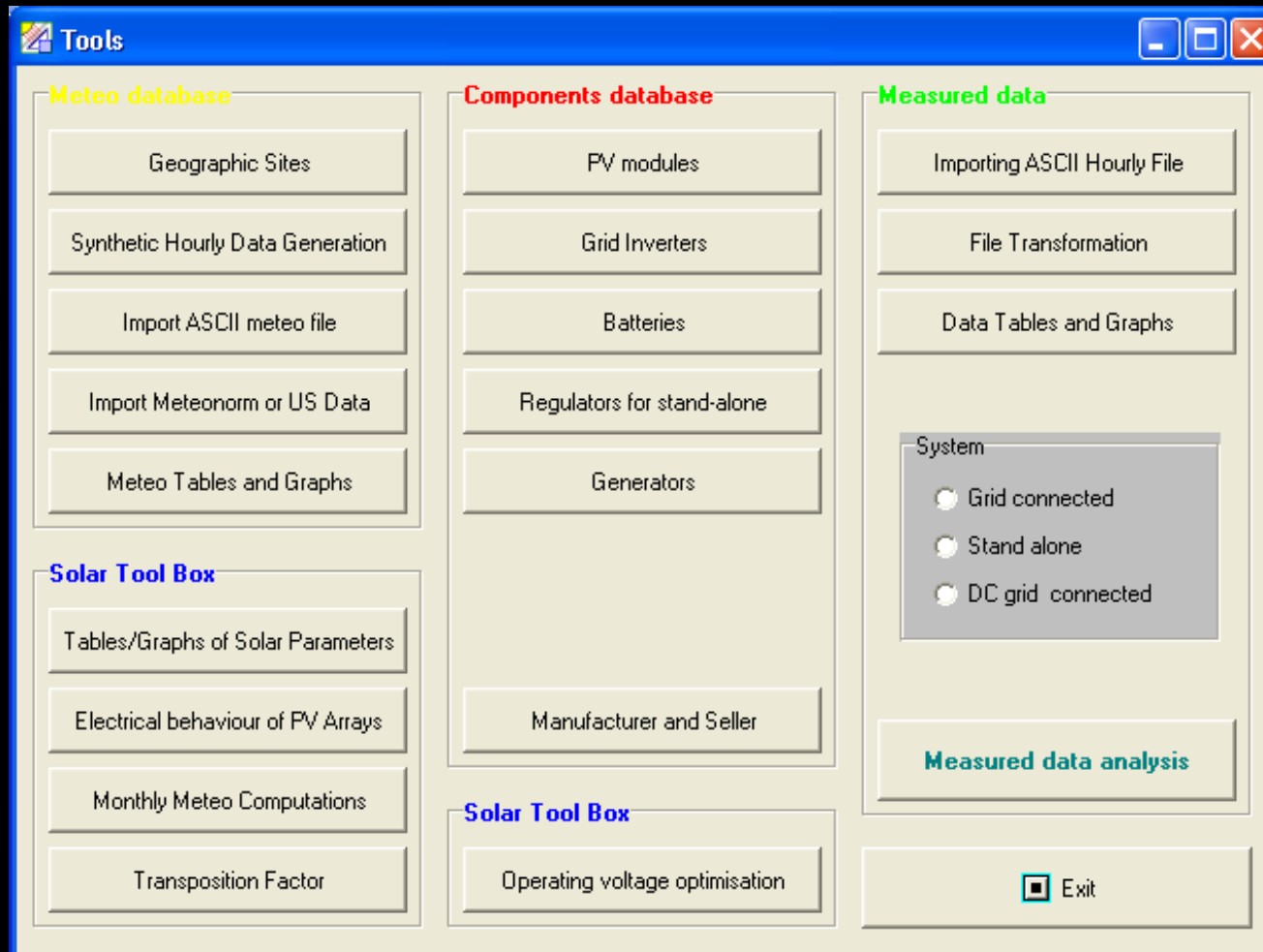
Design array

modules in series Autom. Operating conditions

<input type="text" value="3"/> modules in parallel	<input checked="" type="checkbox"/> Autom.	Vmpp (60°C) 357 V	Array's operating power 7.7 kW (50°C)
		Voc (-10°C) 578 V	Array's nominal power 8.6 kWp (STC)
		Impp (60°C) 20 A	Number of modules 72
		Isc (60°C) 23 A	

Autom.

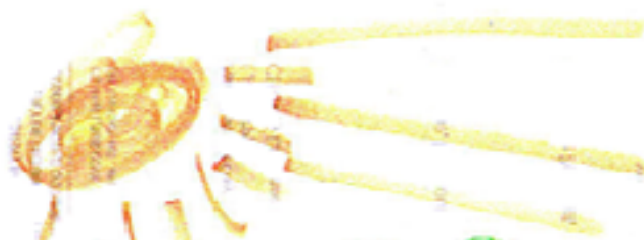
Boite à outils solaire



PVSYST, v3.3



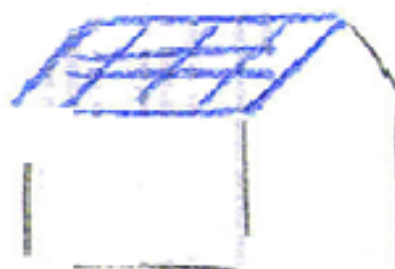
Preferences Help



Preliminary Design

Project design

Tools



Exit

OK

PVCoolBuilt

- Programme de calcul simplifié pour le refroidissement d'éléments PV intégrés au bâtiment
- Gratuit (Freeware)
- Simple d'emploi

Introduction des données

Building Information

Inclination angle of photovoltaic array in degrees. 90 is vertical, 0 is horizontal.

°

Length of photovoltaic array from bottom towards top of roof (1 to 20 metres)

metres

Width of PV array from left to right, in metres (1 to 20 metres)

metres

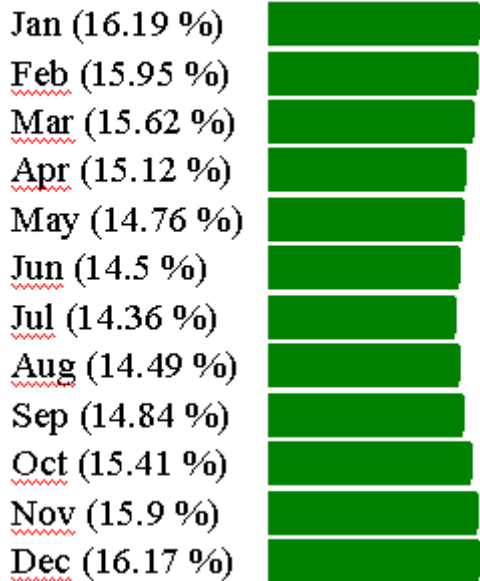
Depth of space under PV array, in metres (0.01 to 1 metre)

metres

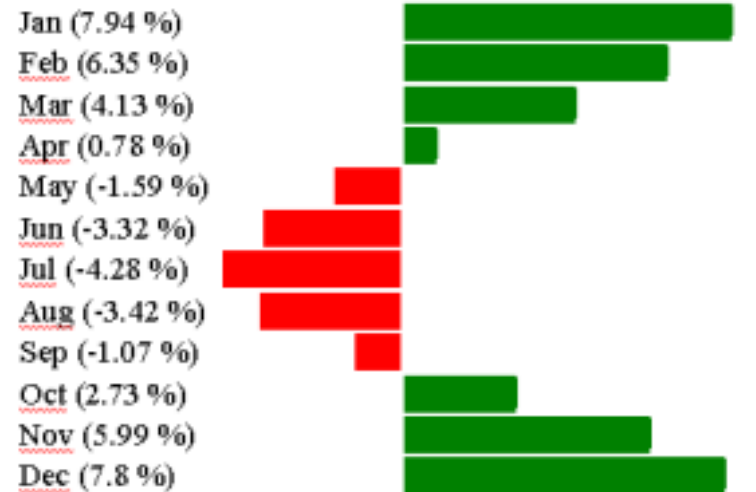
PV module efficiency at 25 °C (0.02 to 0.80)

Résultats graphiques

Actual Efficiency



Change In Efficiency



Références Internet

- PVSyst 3.3:

<http://www.pvsyst.com/>

PV Cool Build:

<http://www.pvcoolbuild.com/>