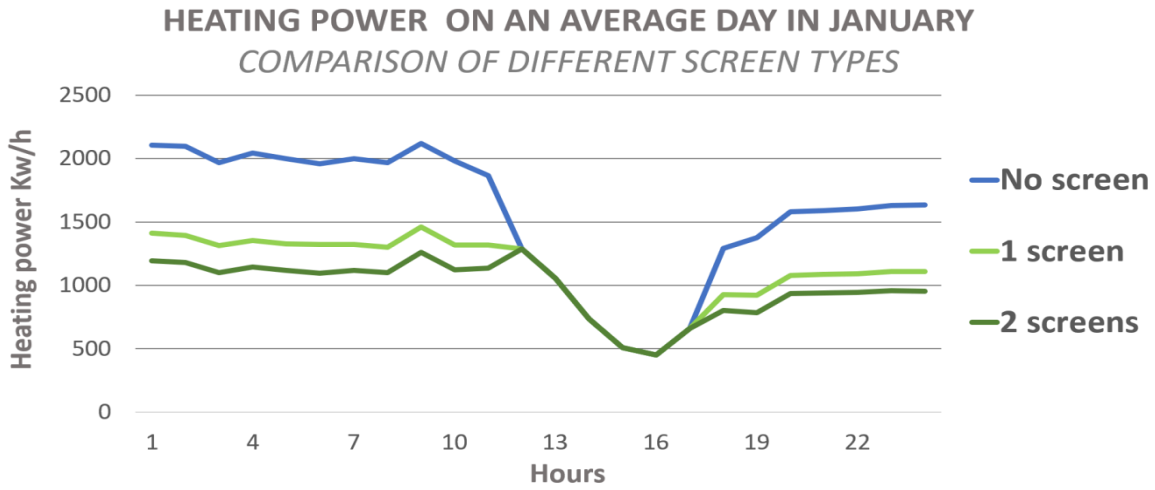
HORTINERGY

ONLINE SOFTWARE TO DESIGN ENERGY EFFICIENT GREENHOUSE



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CEO, Hortinergy

Hortinergy: a friendly online software to design greenhouse

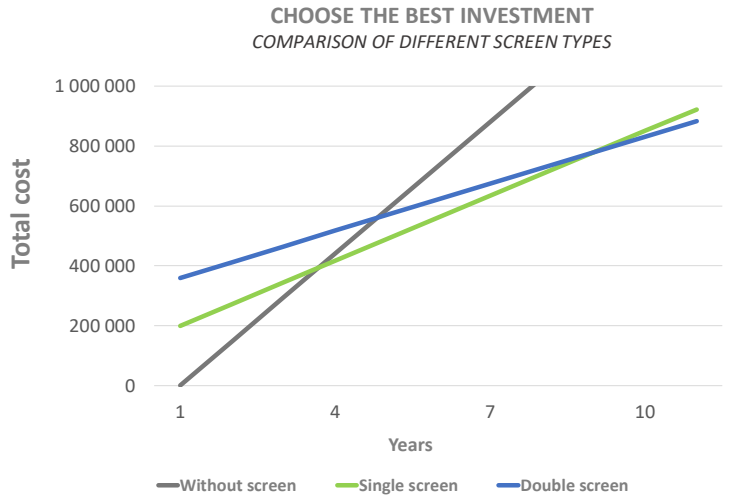
You can simulate all over the world:

- Greenhouse type
  - Glass, plastic
  - Classic, semi closed, closed…
- Equipment (screen, pad & fan)
- Climate setpoints same as a climate computer
- Assimilation light (LED, HPS)…
- For several crop: tomato, cannabis…

Outputs: hourly simulation for a typical year

- Inner climate
- Energy consumption : heating, cooling, deshu…
- Scenarios comparison

-> define the best investment



Input form

Location of your greenhouse

Latitude * ?

In decimal degrees (4 decimals)

48.3903

Please enter a value between **-90** and **90**.

Longitude * ?

In decimal degrees (4 decimals) (Becareful: west to the Greenwich Meridian, values are negative - click on the red star for help)

-4.4860

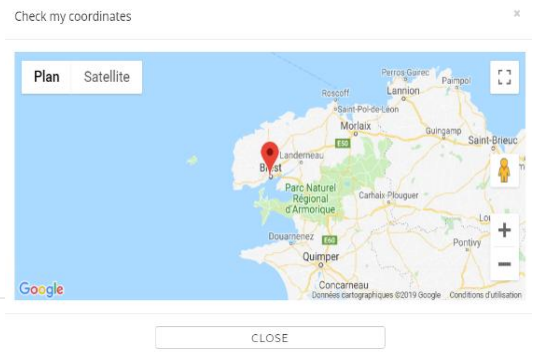
Please enter a value between **-180** and **180**.

CHECK MY COORDINATES

Altitude * ?

m (integer)

51



-> Generate a weather file

Characteristics of your greenhouse

Type of greenhouse shape * Type of greenhouse shape *

Venlo

Venlo
Large span saw tooth
Flat arch or dome shape
Gothic

Orientation *

(integer) Direction in degrees of the "north wall"

0

Please enter a value between **-180** and **180**.

Length *

In m (2 decimals)

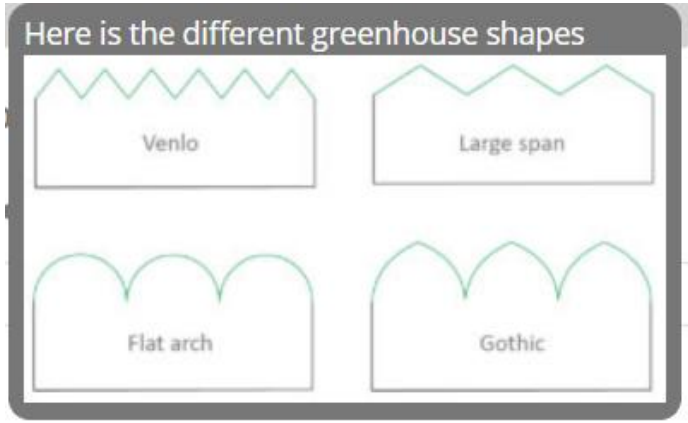
100

Please enter a value between **0.1** and **1000**.

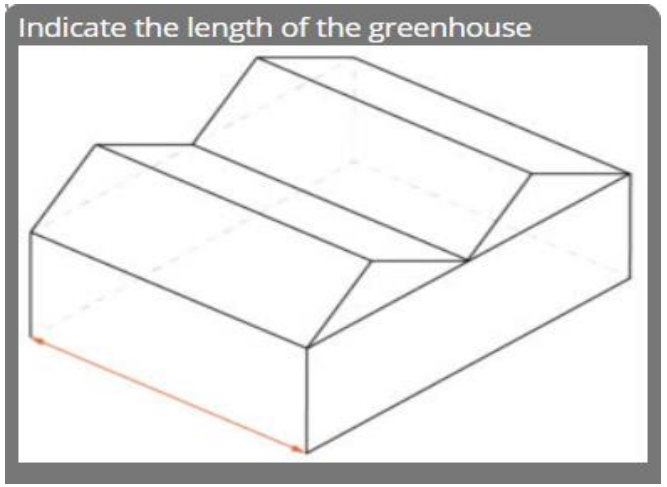
Span - chapel width *

In m (2 decimals) (gutter to gutter)

9.60



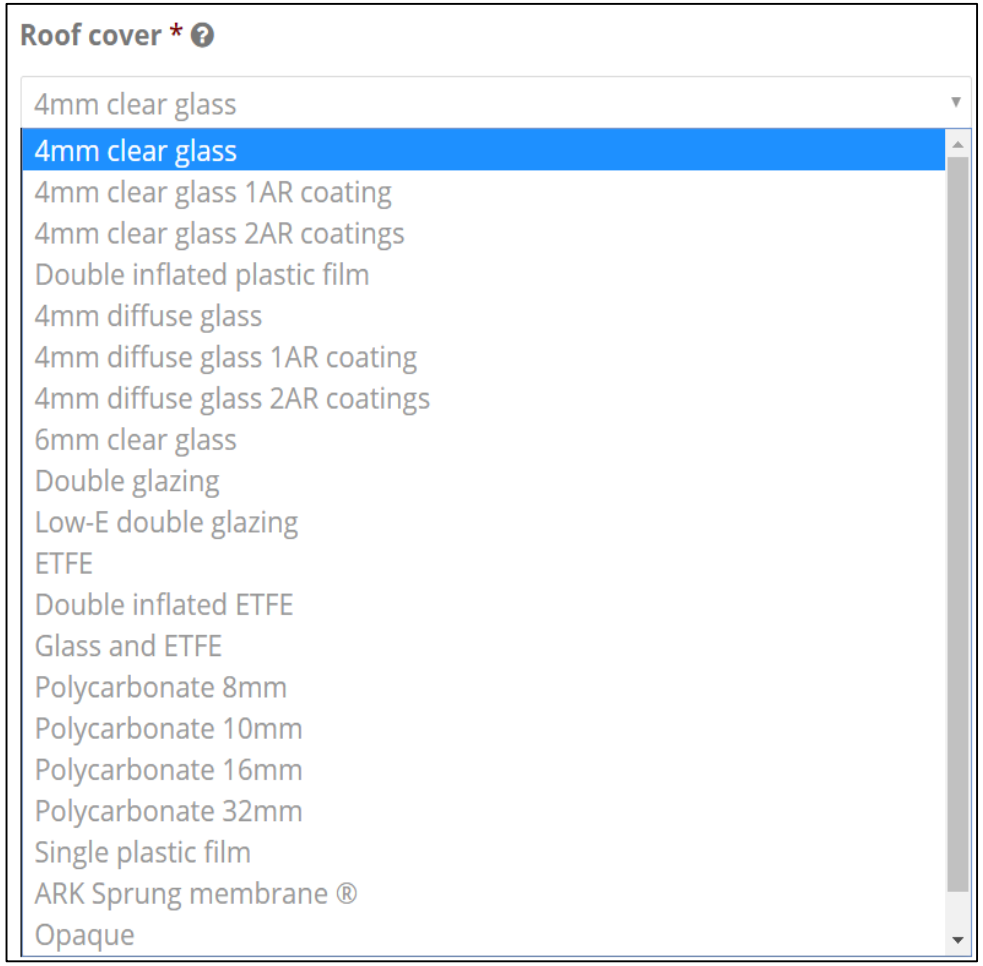
Type



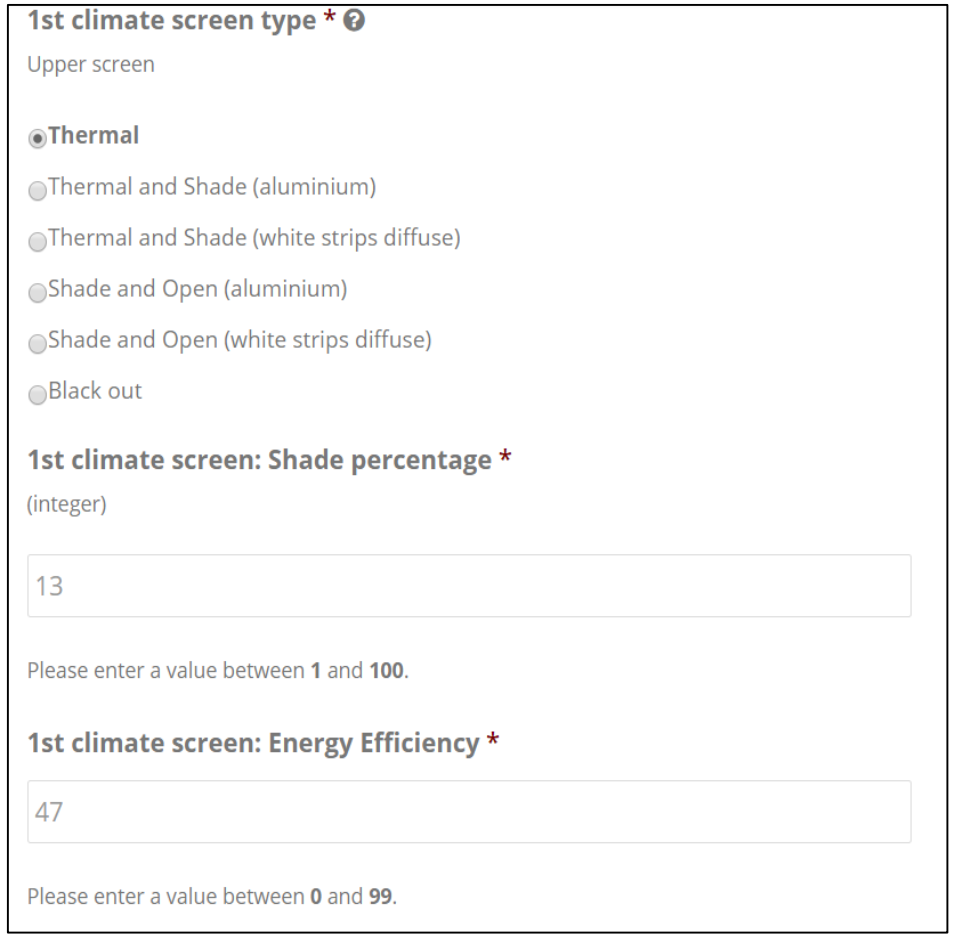
Dimensions

Cover and screen

Cover selection in a library



Screen selection and specification



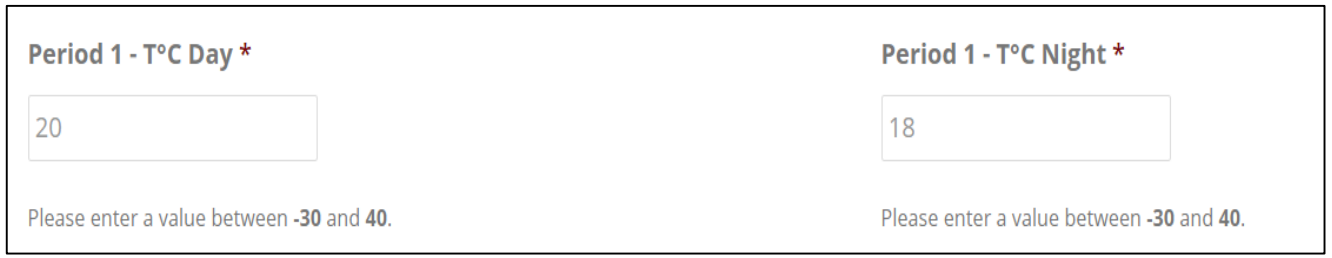
Crop selection

-> Crop transpiraton calculation

Climate settings

Same settings as a climate computer:

- Temperature set points: heating, cooling
- Humidity: relative humidity or humidity deficit
- Screen regulation
- Assimilation lighting (DLI, PAR..)



Other features

- Semi closed greenhouse
- Closed greenhouse
- Pad & fan
- Fog
- Assimilation lighting
- Heating and buffer tank
- Greenhouse gas emission

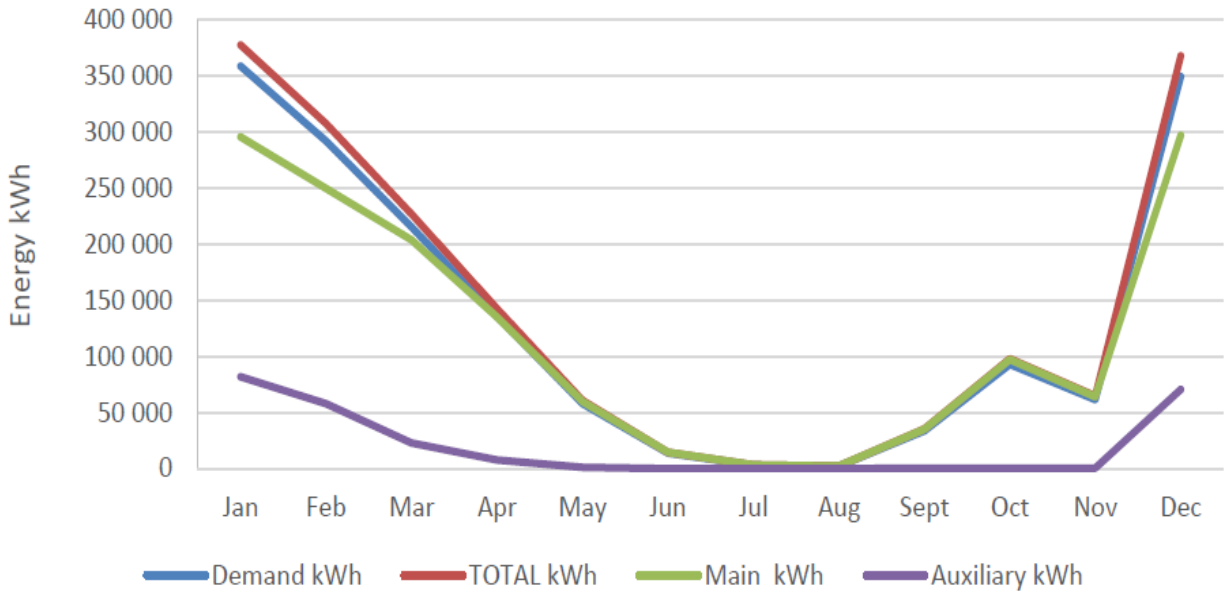
Report

Energy consumption

Annual overview: energy consumption and expenditures

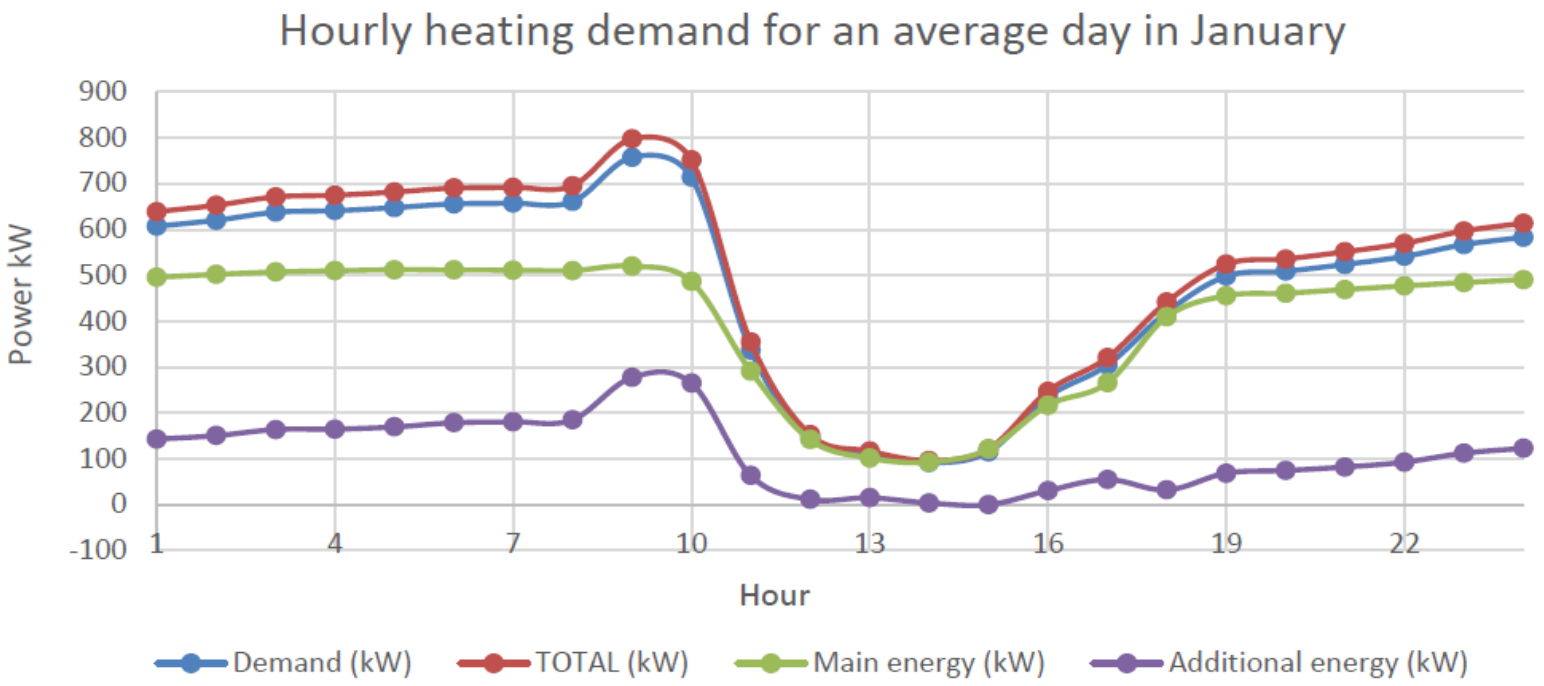
	Total	Main	Auxiliary
Energy source		CHP - recovery heat	Gas
Unit price (€/MWh)		10	40
Expenditure (€)	24 196	14 588	9 607
€ /m²	2.5	1.5	1.0
Main vs Auxiliary (cost %)		60%	40%
Consumption MWh	1 702	1 459	240
Consumpt. / unit (kWh/m²)	177	152	25
Main vs Auxiliary (energy %)		86%	14%

Monthly detail



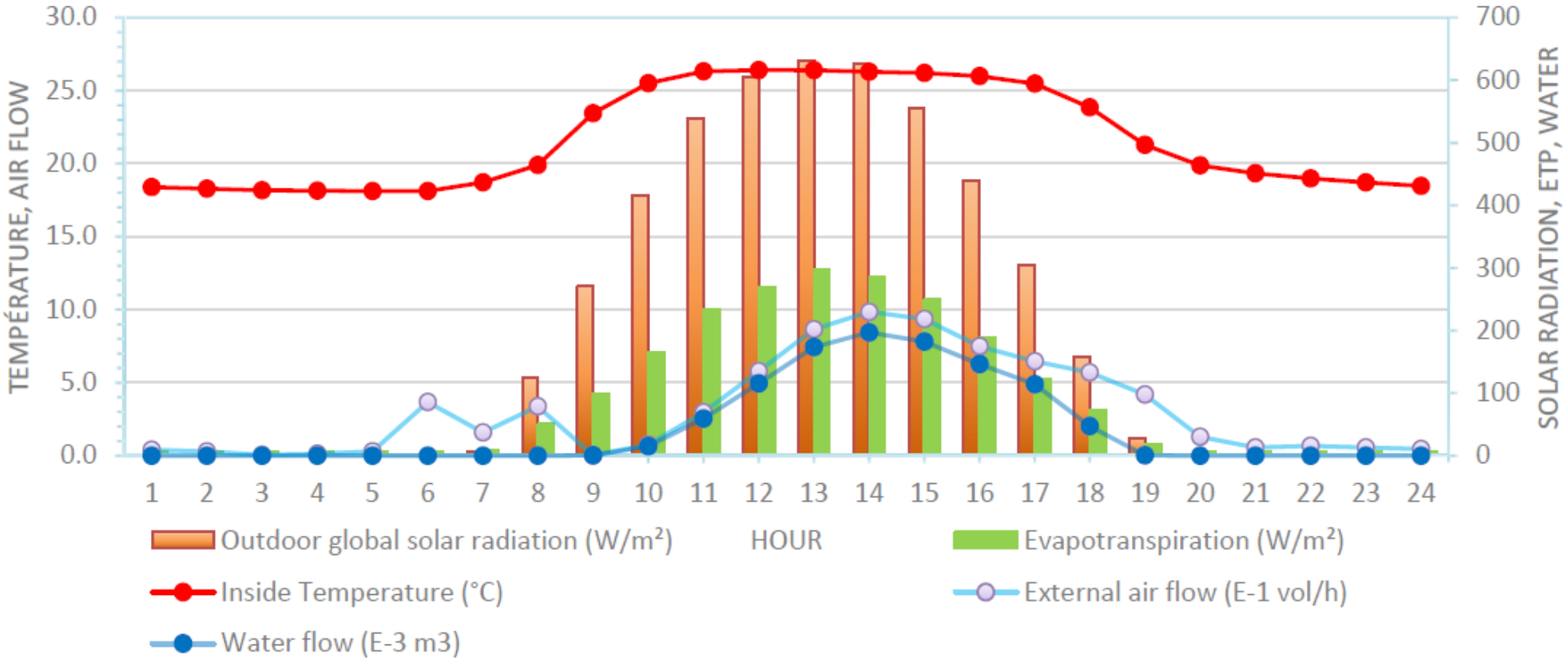
Hourly heating demand

You can see the heating demand of your greenhouse for a typical day each month



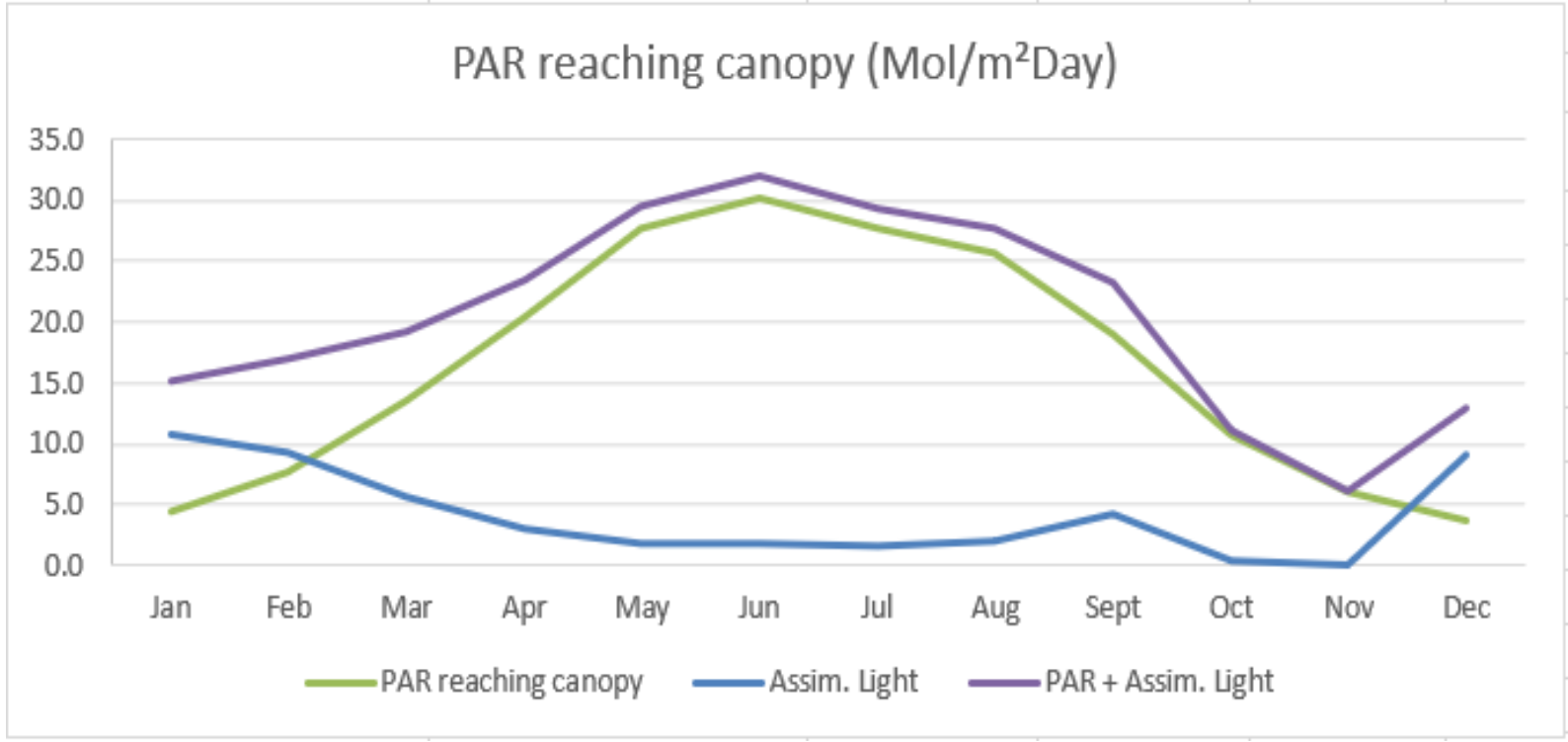
Indoor climate simulation

Indoor climate for typical days for different months



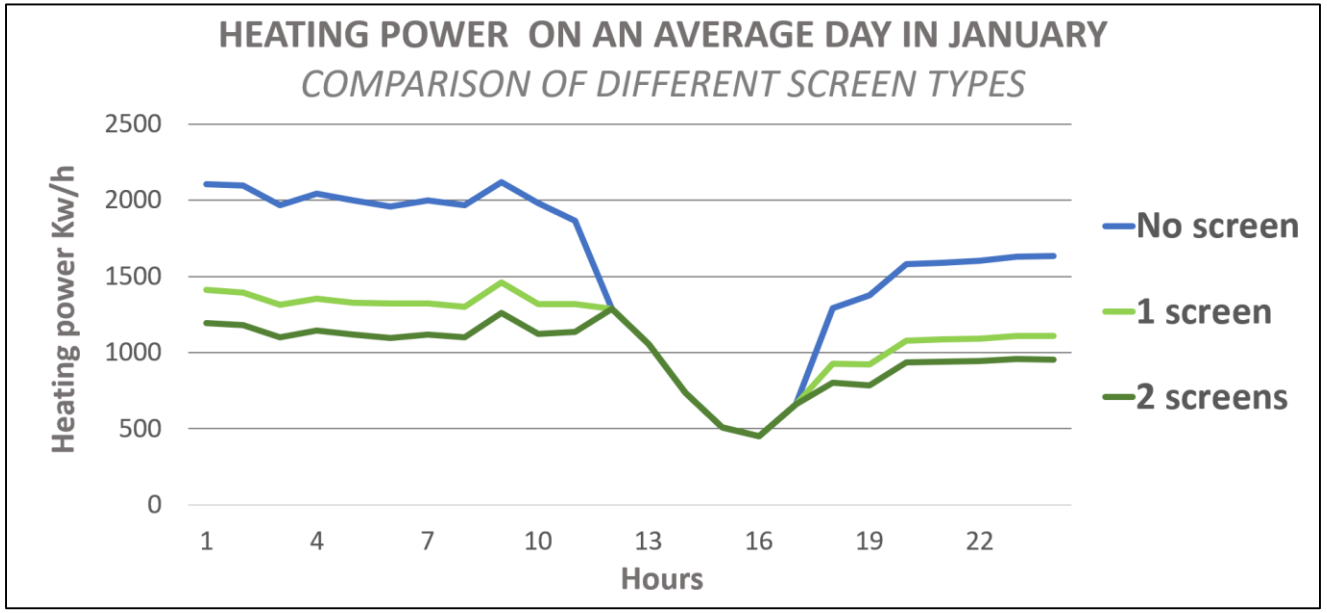
Light

Solar radiation and assimilation light reaching the canopy

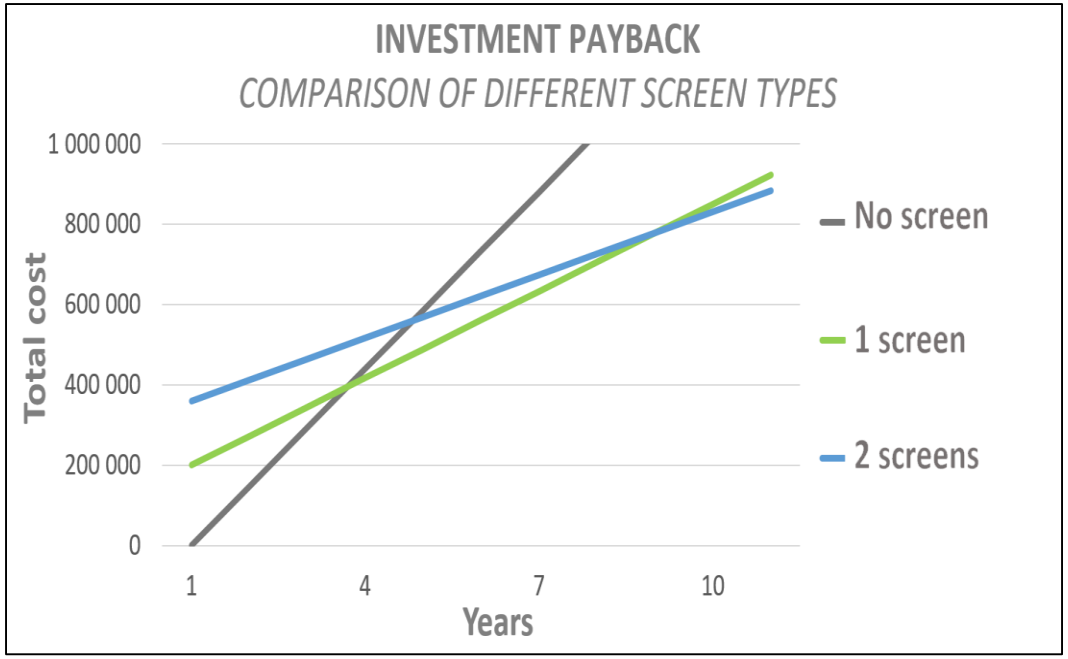


	Electricity consumption		Expenditure	
	MWh	kWh/m²	€	€/m²
Jan	208.1	21.7	24 969.6	2.6
Feb	143.3	14.9	17 193.6	1.8
Mar	121.7	12.7	14 601.6	1.5
Apr	77.0	8.0	9 244.8	1.0
May	27.4	2.9	3 283.2	0.3
Jun	41.0	4.3	4 924.8	0.5
Jul	36.7	3.8	4 406.4	0.5
Aug	61.2	6.4	7 344.0	0.8
Sept	77.8	8.1	9 331.2	1.0
Oct	38.2	4.0	4 579.2	0.5
Nov	0.0	0.0	0.0	0.0
Dec	126.7	13.2	15 206.4	1.6
Total	**959.0**	**99.9**	**115 084.8**	**12.0**

SCENARIOS COMPARISON



-> choose best configuration



Hortinergy

Climate analysis for
greenhouse project

THANK YOU

Check our website HORTINERGY.COM

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