CLOSED GREENHOUSE ON HORTINERGY

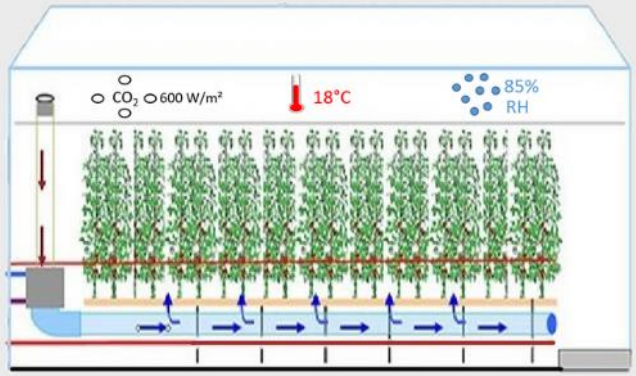
HORTINERGY – CLIMATE MODELLING AND ANALYSIS

A tool to model climate and design sustainable greenhouse

Nominee GreenTech innovation award 2018

Hortinergy

"Climate and energy modelling in closed greenhouse "



Available now on HORTINERGY.COM

Input

2. Crop production

Type of crop	Cannabis
Cultivation starting date	2019-12-05
End of cultivation	2020-11-15
Seedling age	4 weeks at transplantation

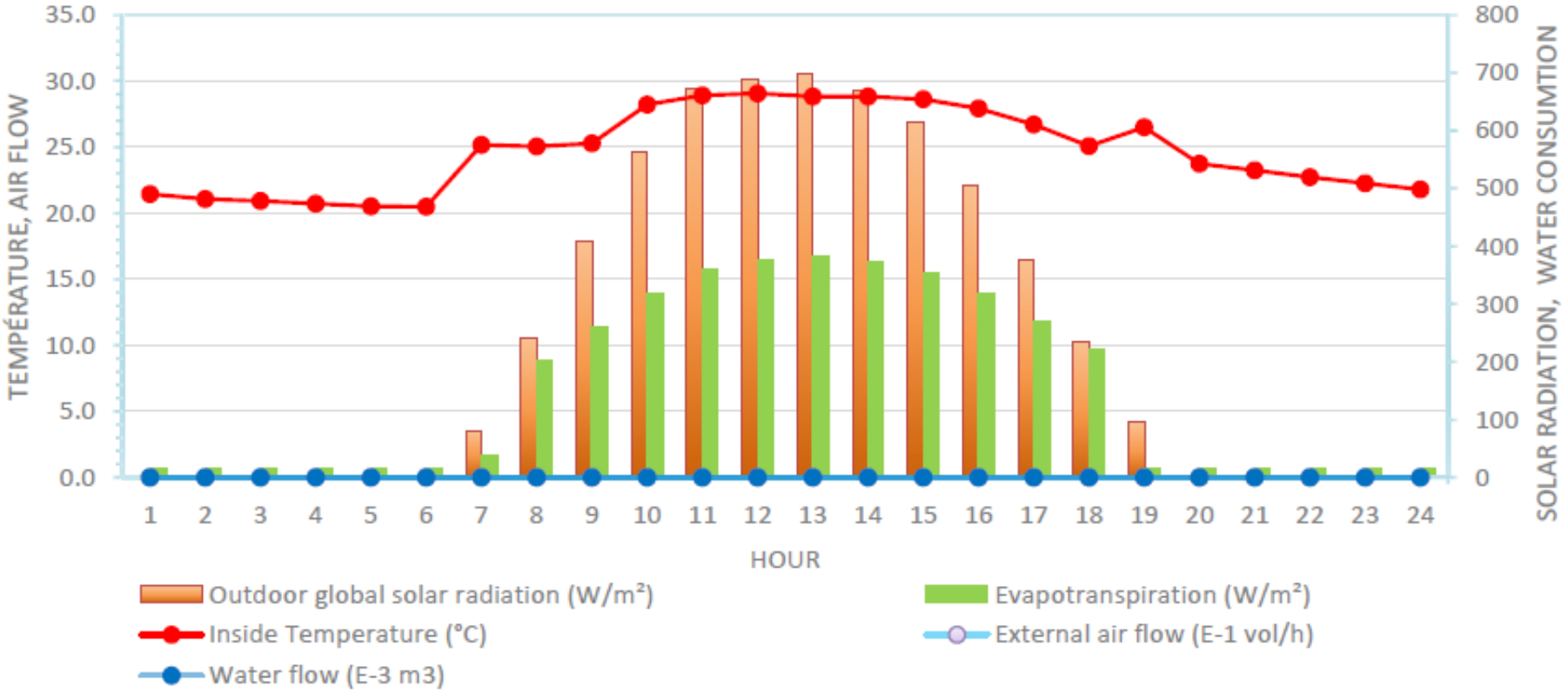
Period	Unit	Min	Max
Day	%	30	60
Night	%	30	60

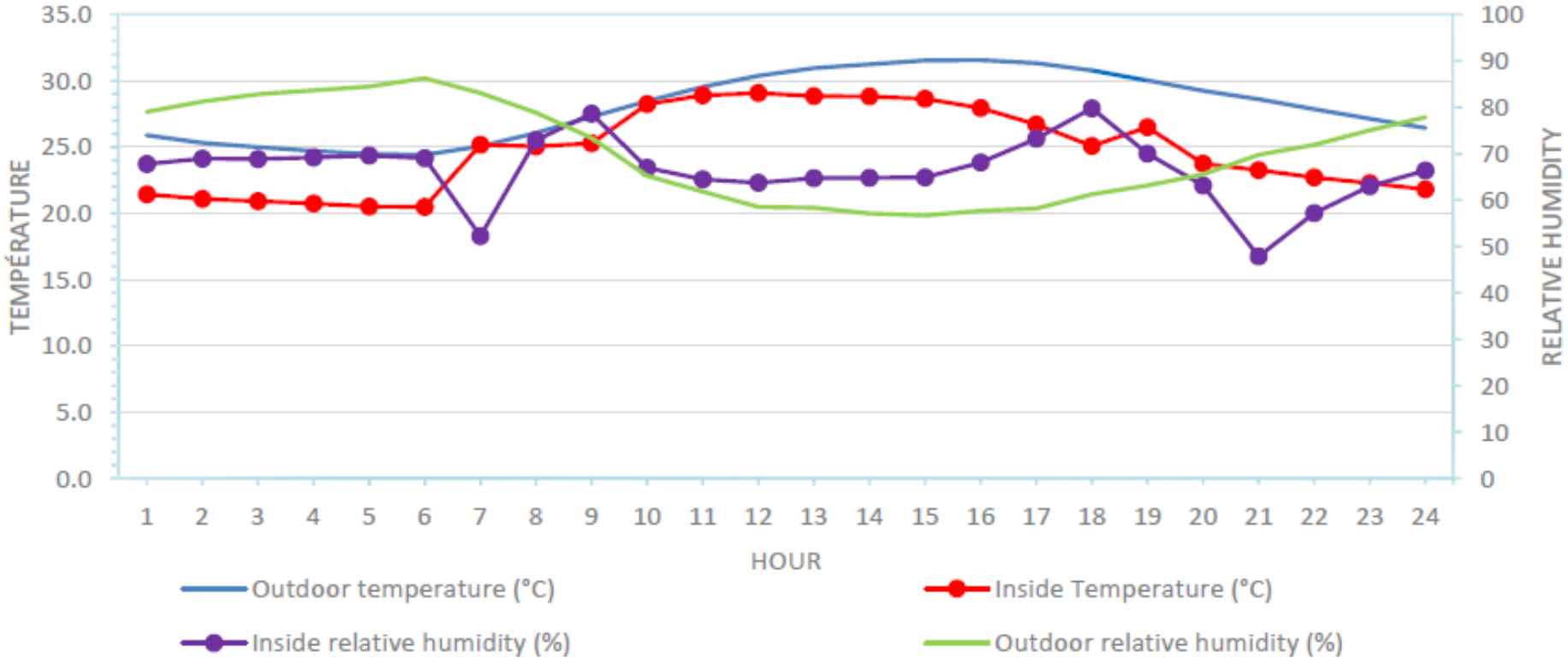
6. Closed greenhouse (beta version)

Closed greenhouse	yes

	day	night
Cooling temperature (°C)	28	27

D. Inner climate for an average day in July




35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
TEMPÉRATURE
100
90
80
70
60
50
40
30
20
10
0
RELATIVE HUMIDITY
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HOUR
Outdoor temperature (°C)
Inside Temperature (°C)
Inside relative humidity (%)
Outdoor relative humidity (%)

6.2 **Closed greenhouse:** estimation for sensible and latent needs (beta version)

	Cooling needs (sensible)	Cooling needs (Latent)	Cooling needs (Total)
	MWh	MWh	kWh/m²
Jan	16.3	81.5	26.6
Feb	19.3	80.0	27.0
Mar	35.5	109.2	39.3
Apr	48.9	126.8	47.8
May	48.8	133.1	49.5
Jun	37.4	111.3	40.4
Jul	31.7	105.4	37.3
Aug	36.2	114.0	40.8
Sept	31.0	102.0	36.2
Oct	31.2	102.5	36.3
Nov	15.0	77.8	25.2
Dec	8.2	70.1	21.3
Total	**359.5**	**1 213.5**	97.7