

# Slim energiebeheer in een woning

Bart Vannoppen

# CEMS

COOCK projecten

# STEEV



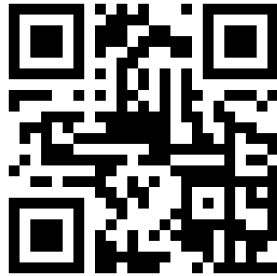
Buildwise



AGENTSCHAP  
INNOVEREN &  
ONDERNEMEN



Vlaanderen  
is ondernemen



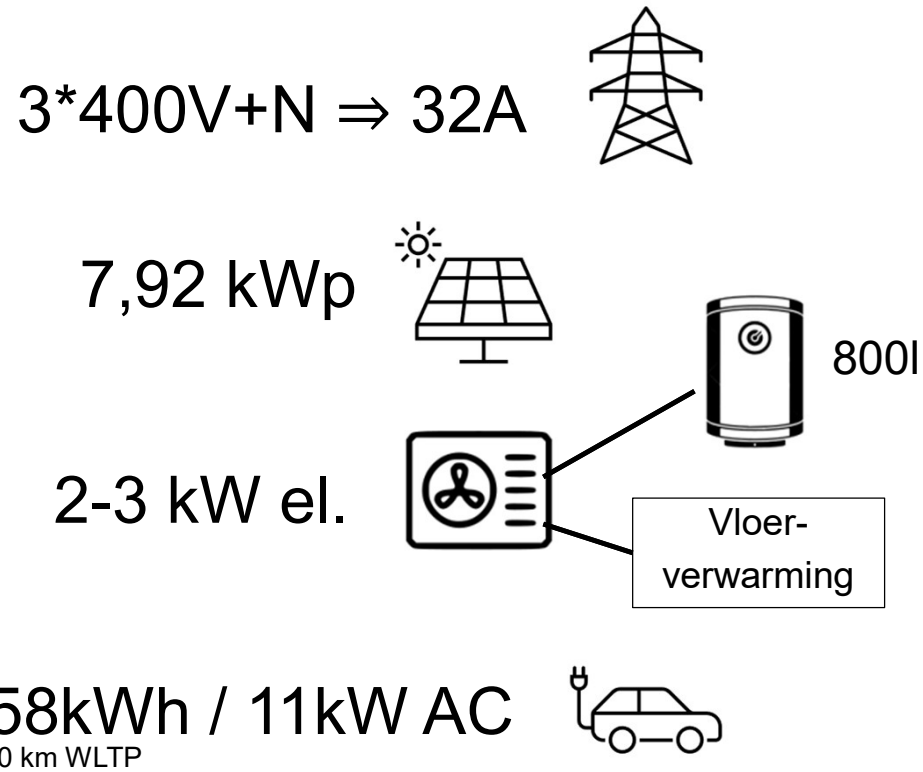
<https://maakjeterslim.be/>



[www.smartheating.be/inspiratie/](http://www.smartheating.be/inspiratie/)



## Praktijk case

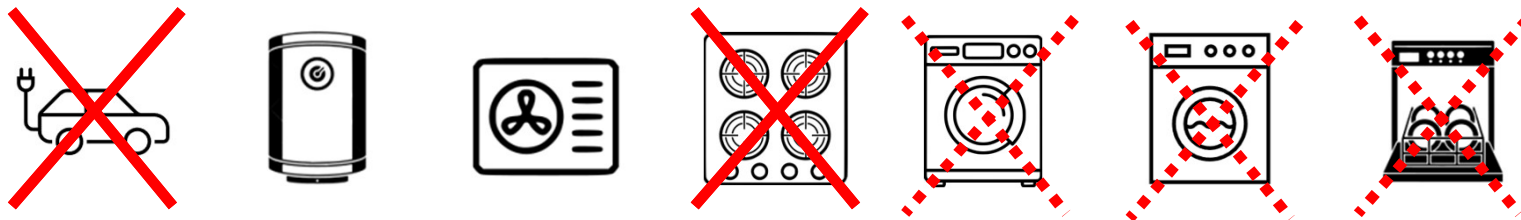


# Zelfconsumptie verhogen



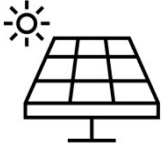
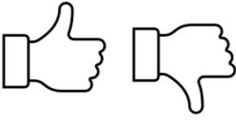




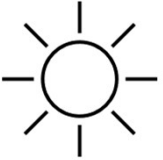



Thuiswerk

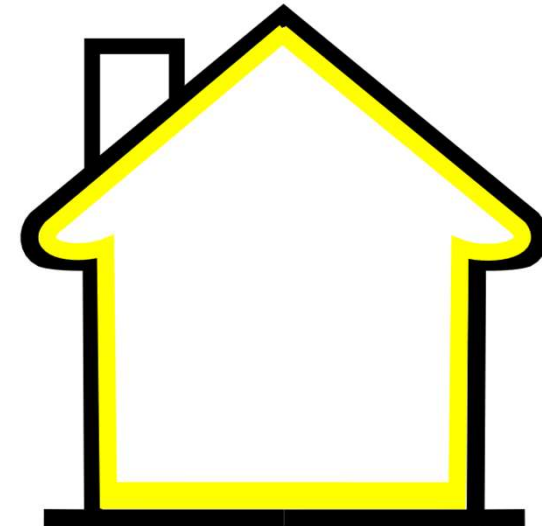


Niet thuis



# Lucht water warmtepomp

			$\eta$	
				
				



## Renovatie – warmtepomp mogelijk - 50°C test

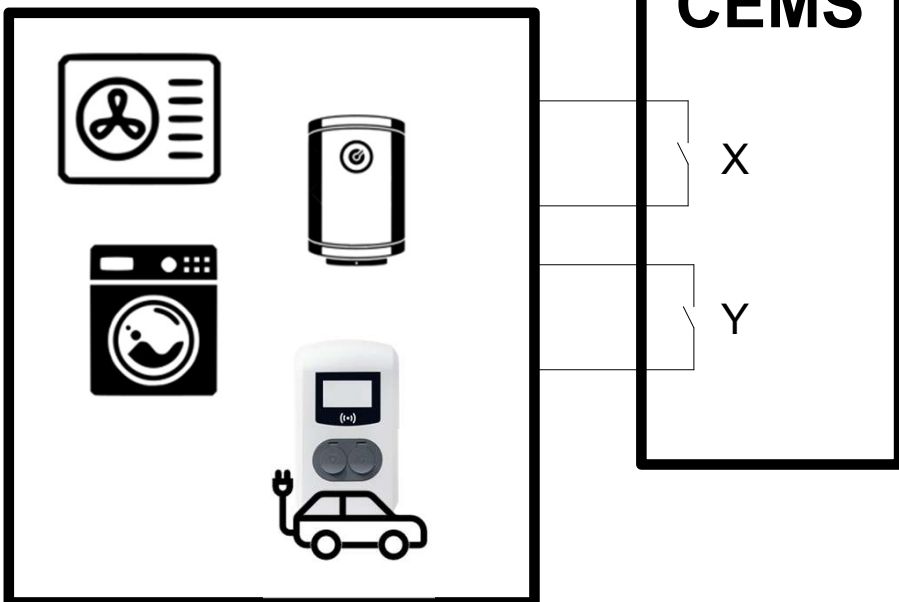


Water temperatuur radiatoren  
op **50°C** instellen

OK?



## Dankzij SG ready

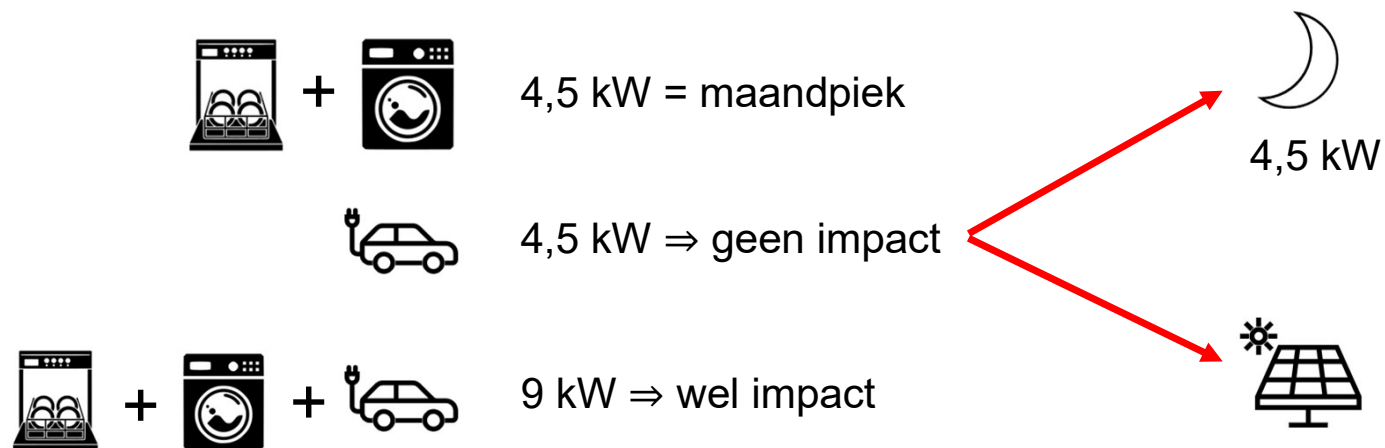


X	Y	Beschrijving	Wanneer activeren?
0	0	Normale werking	<ul style="list-style-type: none"> <li>• Standaard werking</li> </ul>
0	1	Uitschakelen voor bepaalde tijd	<ul style="list-style-type: none"> <li>• Dure energieprijis</li> <li>• Te hoog piekvermogen</li> </ul>
1	0	Boost mode Vb: boiler hoger setpunt	<ul style="list-style-type: none"> <li>• Overproductie zon</li> <li>• Goedkope energie</li> </ul>
1	1	Altijd actief	<ul style="list-style-type: none"> <li>• Altijd actief</li> </ul>

## Privé factuur hoger door EV?

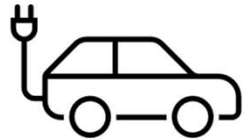
### Capaciteitstarief (vanaf 2023)

- Hoge pieken vermijden
- Hoogste kwartierpiek telt





## EV - Hoe lang duurt het laden? Vaste laadstroom



Monofasige aansluiting 40 A (9,2kW)

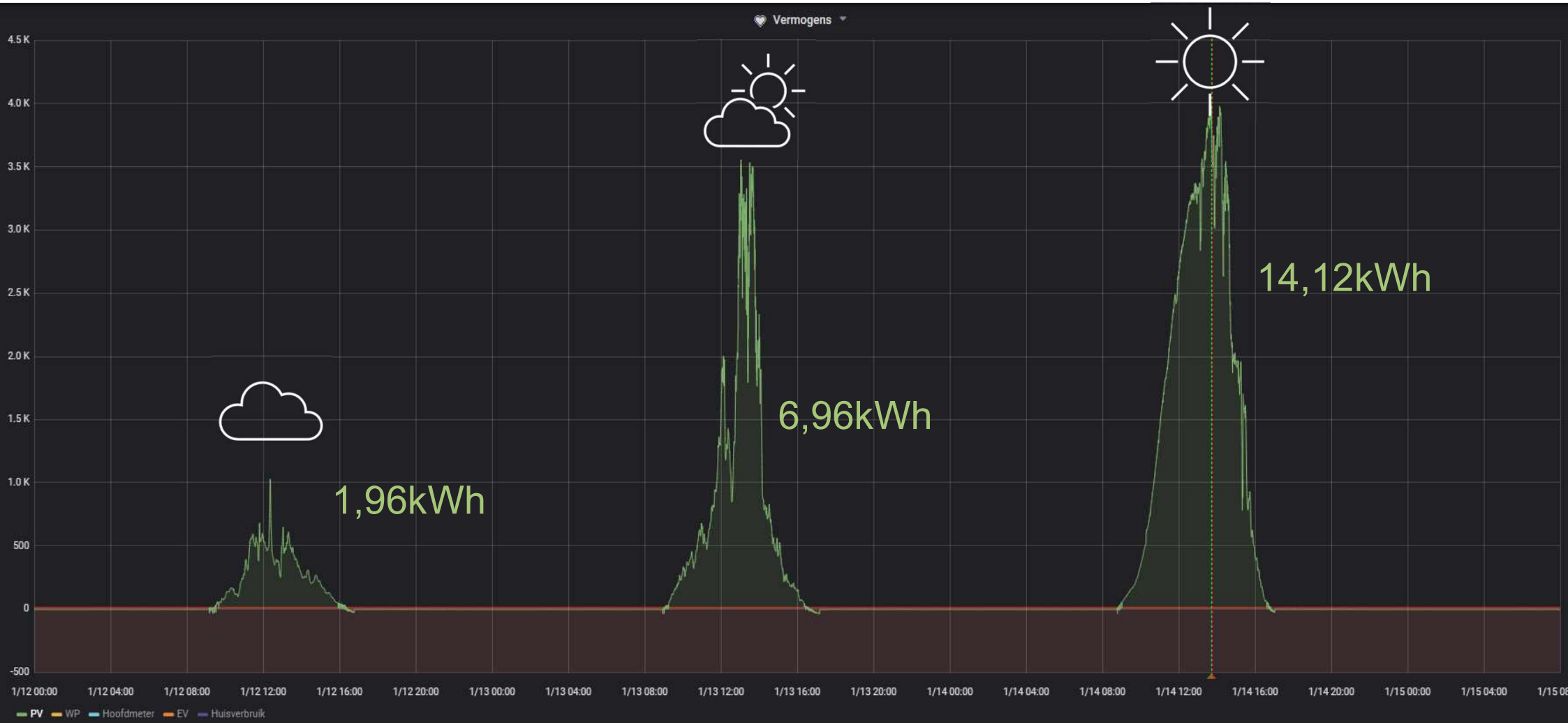
laadperiode	230V - 40 A	Rijbereik bij verbruik van 17kWh/100km en laadrendement 90% [km]					
[h]	[km]	32A	25A	20A	16A	10A	6A
6	292	234	183	146	117	73	44
7	341	273	213	170	136	85	51
8	390	312	244	195	156	97	58
9	438	351	274	219	175	110	66
10	487	390	304	244	195	122	73
11	536	429	335	268	214	134	80
12	584	468	365	292	234	146	88

22u-6u=8u

21u-7u=10u

	1F – 16A	1F – 32A
Stroom	16A	32A
Laadvermogen (1)	<b>3.7 kW</b>	<b>7,4kW</b>
Laadsnelheid (1)	19 km/h	39 km/h
In batterij na 8u	<b>152 km</b>	<b>312 km</b>

## Combinatie sturingen – winter (12-14 jan) – PV – 8kWp ZW

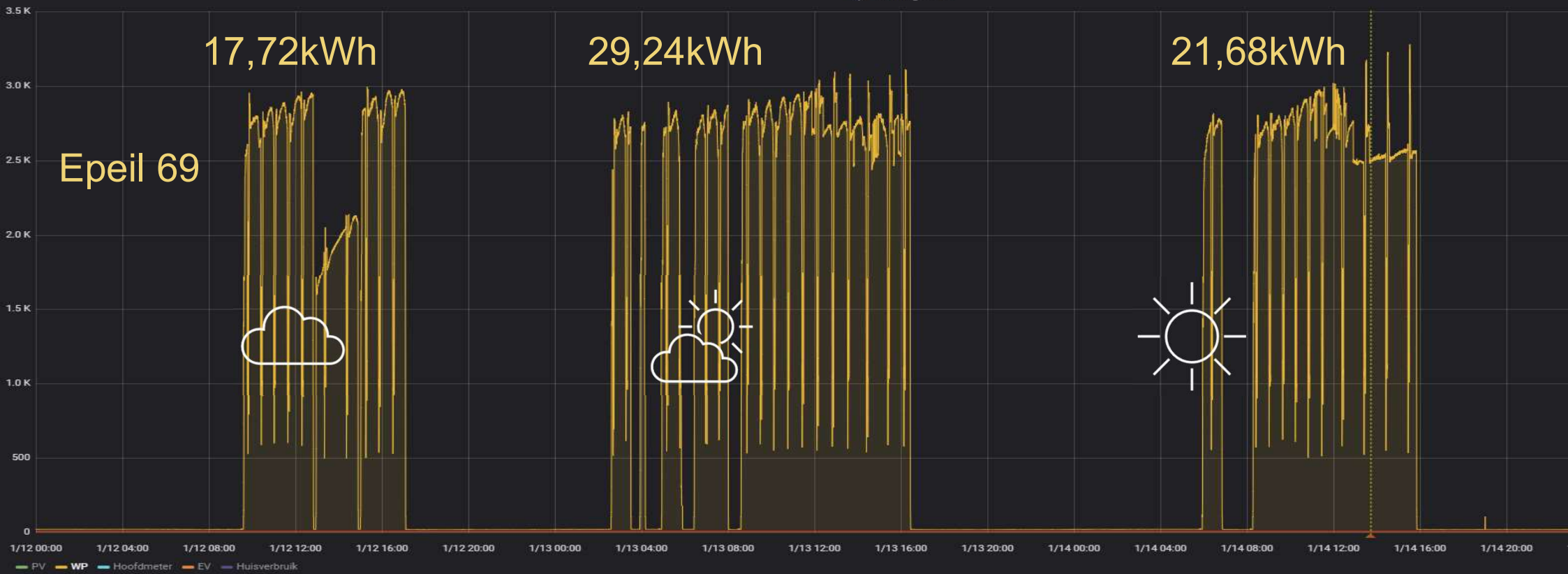


Temperaturen

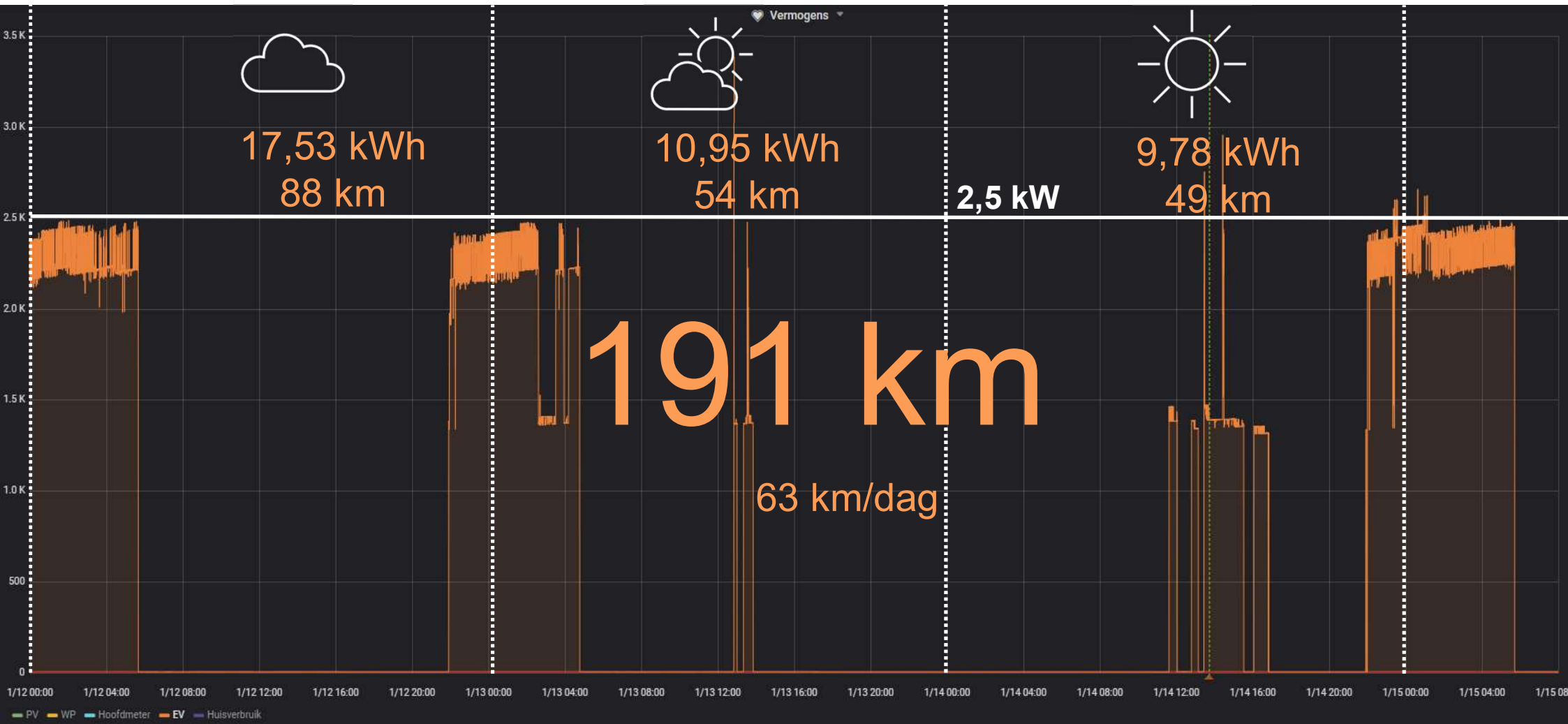


## Combinatie sturingen - winter (12-14 jan) - WP

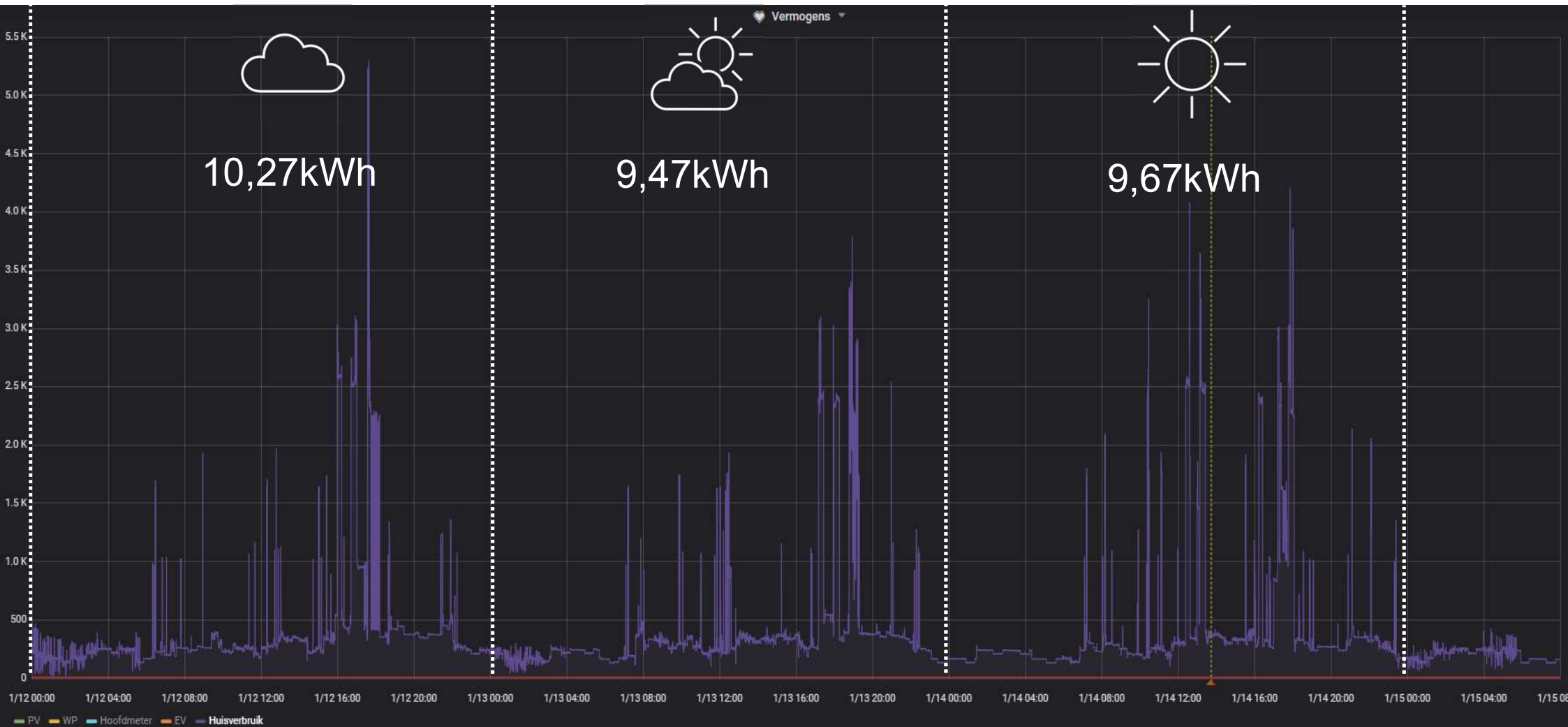
Vermogens



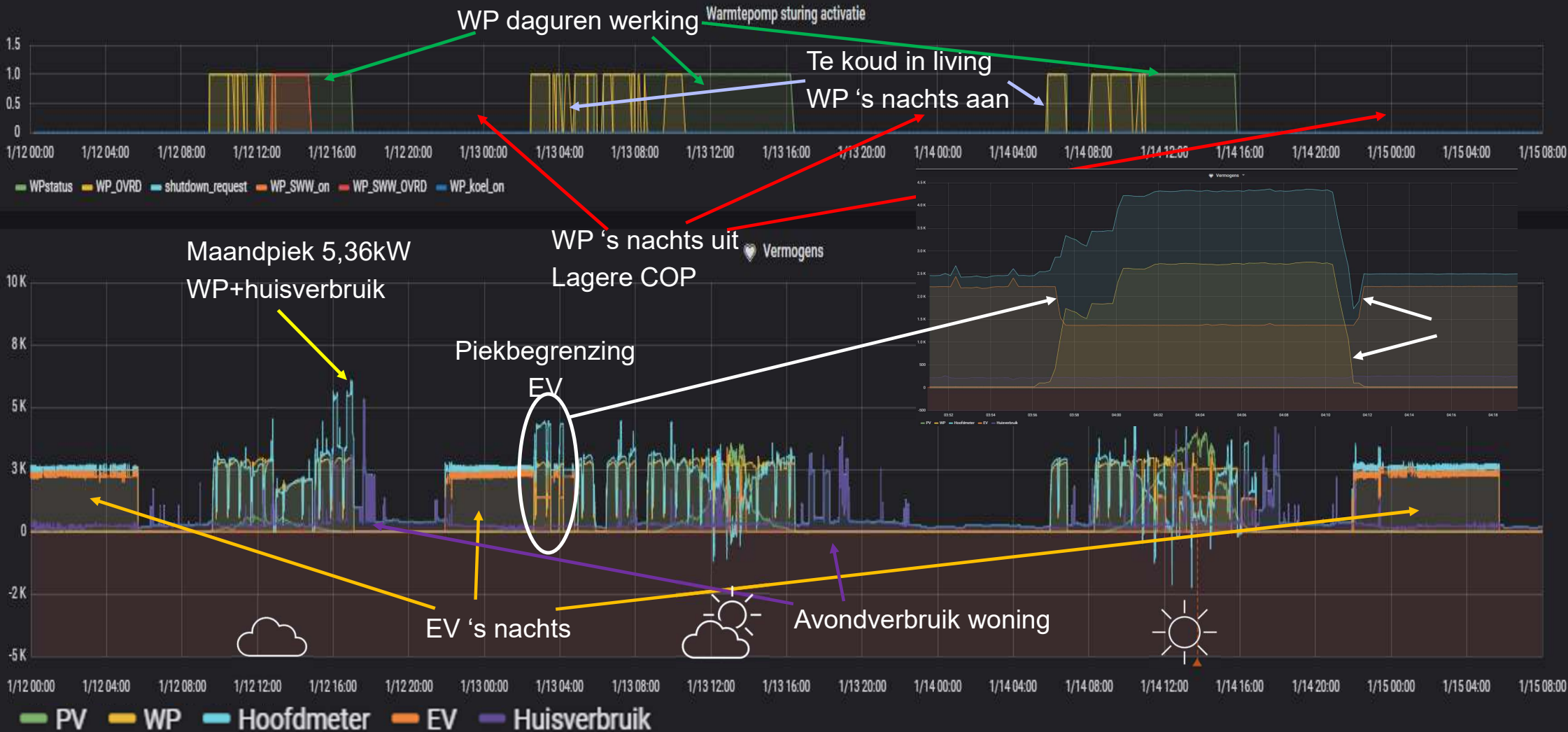
## Combinatie sturingen – winter (12-14 jan) – EV (20kWh/100km)



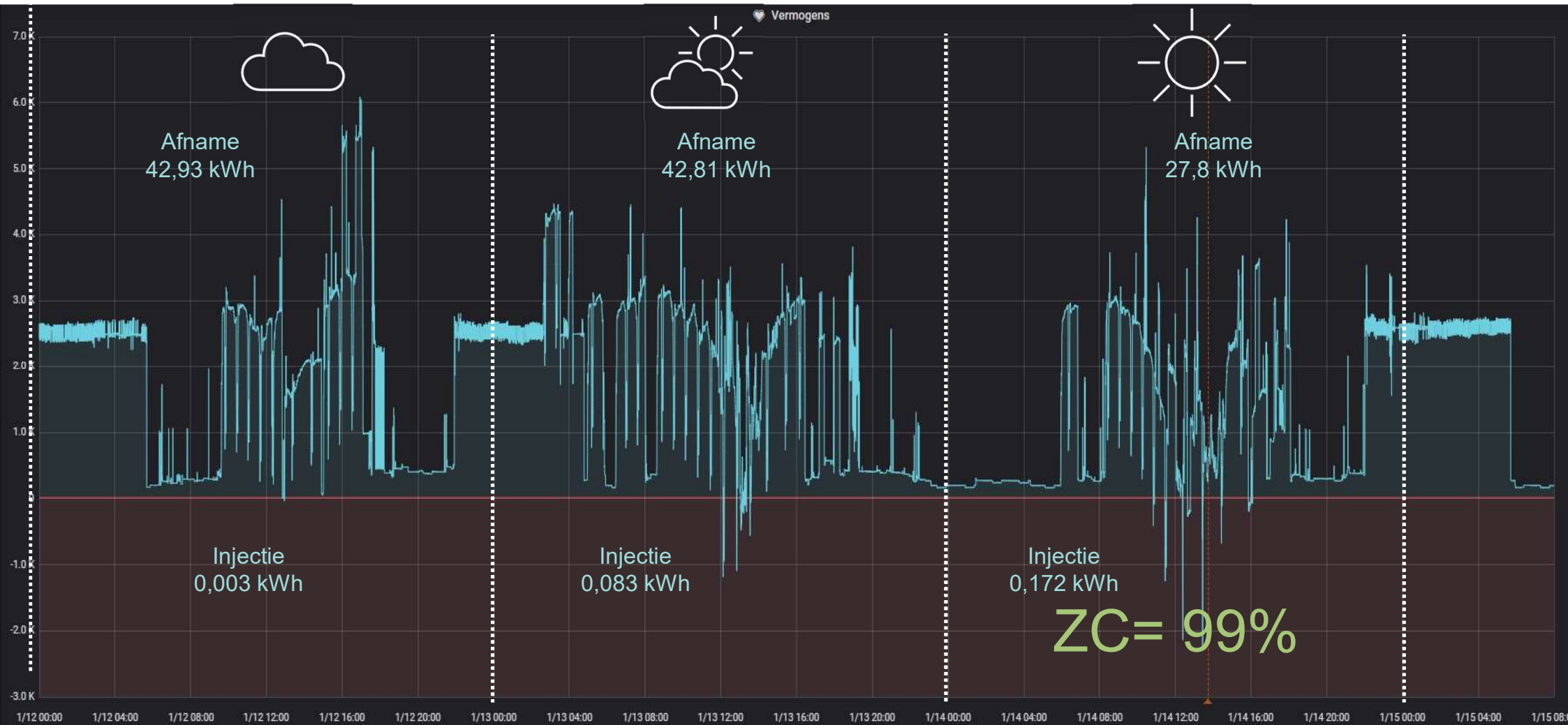
## Combinatie sturingen – winter (12-14 jan) - Huis






## Combinatie sturingen – winter (12-14 jan)



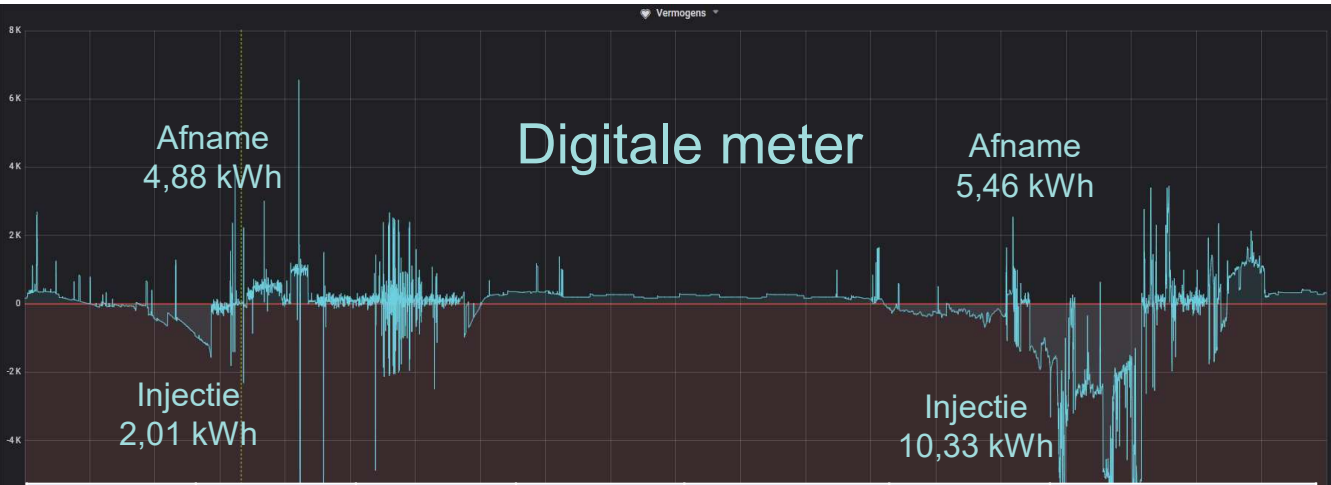
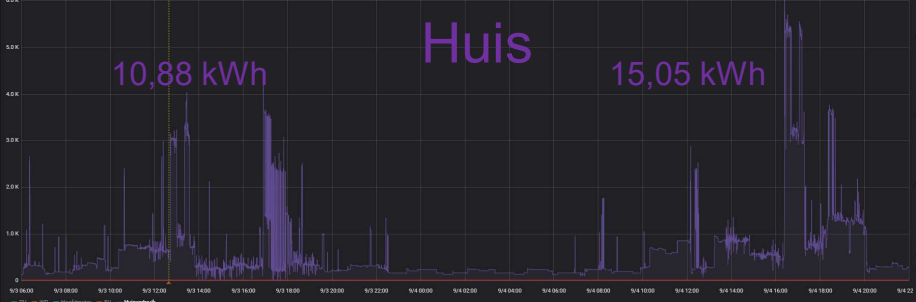
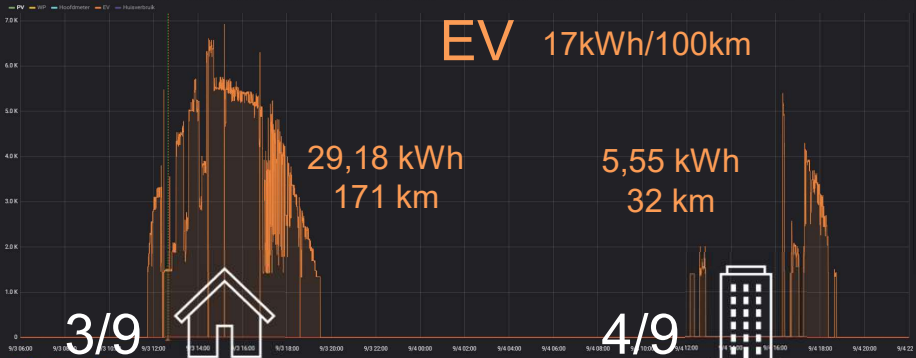
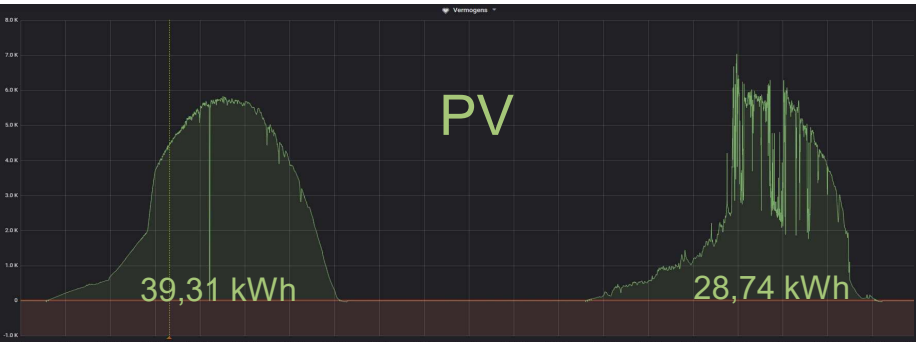
## Combinatie sturingen – winter (12-14 jan) – Digitale meter



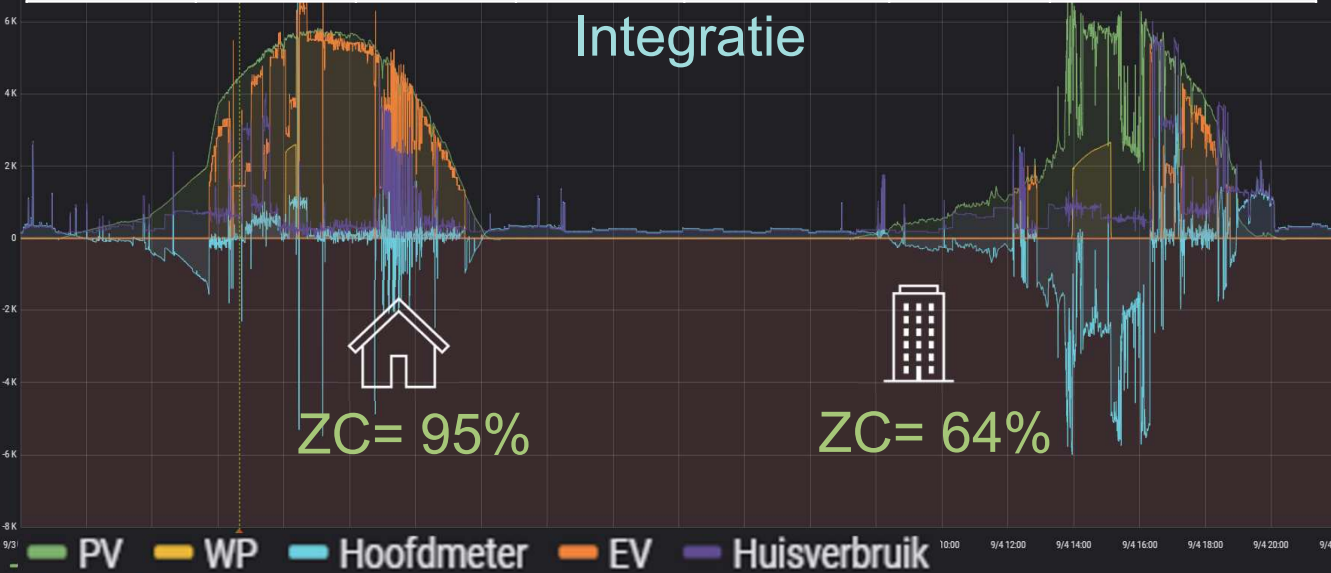
## 12-14 januari 2022

	Datum	PV	WP	EV	Injectie	afname	Zelf consumptie
	12/1/2022	1,96	17,722	17,535	0,003	42,936	100
	13/1/2022	6,96	29,246	10,947	0,083	42,815	99
	14/1/2022	14,12	21,684	9,778	0,172	27,801	99





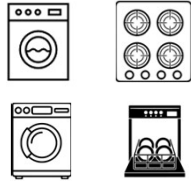
Datum	PV	WP	EV	Injectie	afname	Zelf consumptie
3/9/2021	39,31	2,115	29,183	2,009	4,883	95
4/9/2021	28,74	3,275	5,545	10,329	5,462	64



Legend: PV (green), WP (yellow), Hoofdmeter (cyan), EV (orange), Huisverbruik (purple)

# Jaarresultaat sturingen 2021

4483



ZC=58%

ZV=48%

1827

10750km



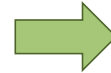
2958



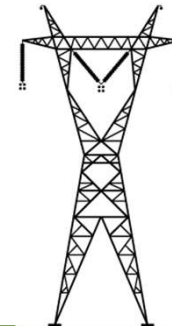
9268



7630



3146



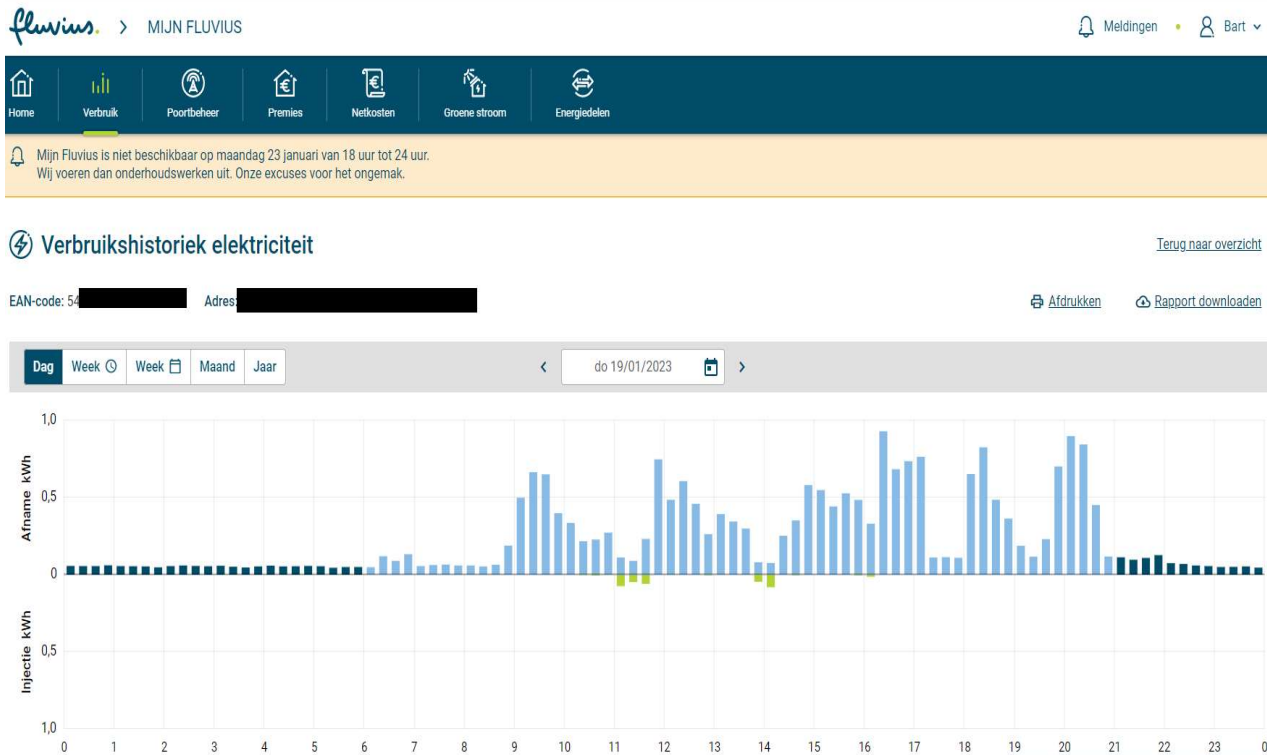
4785

2021	WP	EV	Tot. Verbruik	PV	Afname	Injectie	%ZC	%ZV
jan	445		830,382	184	693,427	47,045	74,4%	16,5%
feb	278	79,974	704,662	383	446,251	124,589	67,5%	36,7%
mrt	384	150,127	931,312	729	455,284	252,972	65,3%	51,1%
apr	308	83,527	777,979	946	309,774	477,795	49,5%	60,2%
mei	81,19	180,182	636,786	988,96	168,224	520,398	47,4%	73,6%
jun	98	182,73	655,692	1050	136,743	531,051	49,4%	79,1%
jul	83,19	100,113	676,967	990,96	150,912	464,905	53,1%	77,7%
aug	70,329	164,357	617,934	828,57	174,876	385,512	53,5%	71,7%
sep	84,387	312,428	721,005	763,55	187,259	229,804	69,9%	74,0%
okt	205,19	236,871	778,525	434,01	439,466	94,951	78,1%	43,6%
nov	395,62	102,545	842,768	217,24	640,368	14,84	93,2%	24,0%
dec	525	234,597	1094,387	115	981,939	2,552	97,8%	10,3%
Tot 2021	2958	1827	9268	7630	4785	3146	58,8%	48,4%

## Praktisch hoe/wat?

- Zon gebruiken wanneer ze er is.
- WP laten draaien overdag
  - Smart grid ready contacten
  - 50°C test ⇒ ok ⇒ bestaande radiatoren met ventilator = ok
- EV gebruiken om teveel aan zon op te vangen
- Mensen hun gewoontes niet te veel laten veranderen (weerstand)
- Piekbegrenzing
  - EV: laadstroom verminderen/uitschakelen ⇒ zeer flexibel
  - warmtepomp uitschakelen kan ook maar minder flexibel

# Analyse profiel digitale meter



<https://mijn.fluvius.be/>

