



Slimme oplossingen voor een overbelast stroomnet

***Zo werkt het in Utrecht !
18 september 2025***



Super Smart
Charging Hubs

iwell

V4R

ratio
ELECTRIC

Interreg
North Sea

DE TONG
EKW b.v.

Programma

13.30

Welkom

- ***De inspiratie:*** Jan Willem de Jong – Iwell
- ***De kennis:*** Jaap Burger - RAP
- ***De praktijk:*** Utrecht
- ***De uitdaging:*** Igor Quik, Living Lab Vlissingen

14.30

Korte pauze

14.45

Deelsessies ronde 1

- kosten en terugverdientijd (A)
- mogelijkheden en uitdagingen (B)
- rondleiding batterij en laadplein (C)

15.20

Deelsessies ronde 2

15.55

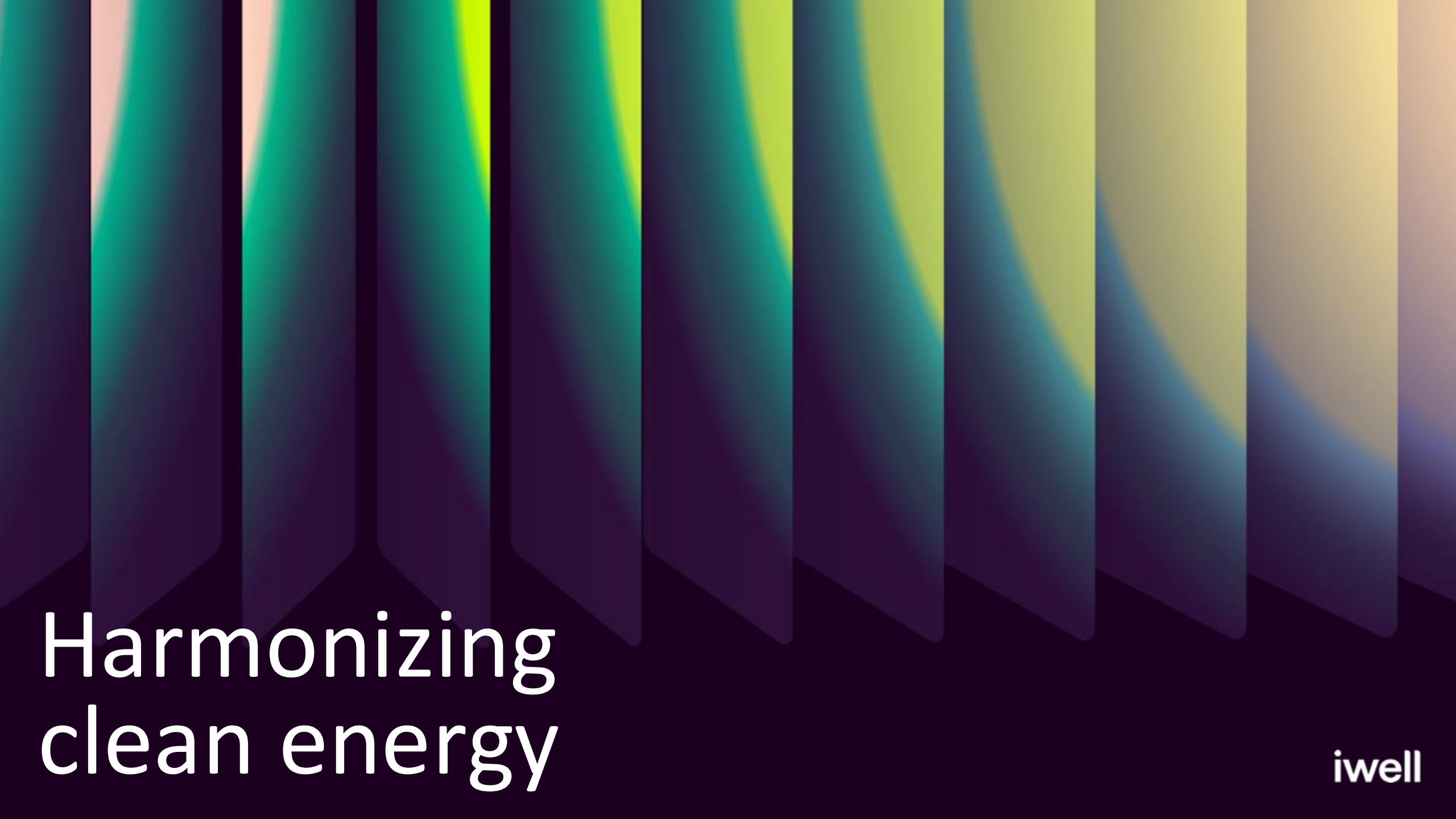
Deelsessie ronde 3

16.30

Borrel en afsluiting



Super Smart Charging Hubs



Harmonizing clean energy

iwell

INTRODUCTION

Welkom

iwell



Jan Willem

+3185 130 35 72
janwillem.dejong@iwell.eu

About us



OUR OFFICES

Nederland,
Belgie, Duitsland
& Groot Brittannië

FOUNDED IN

2016

PROJECTEN GEREALISEERD

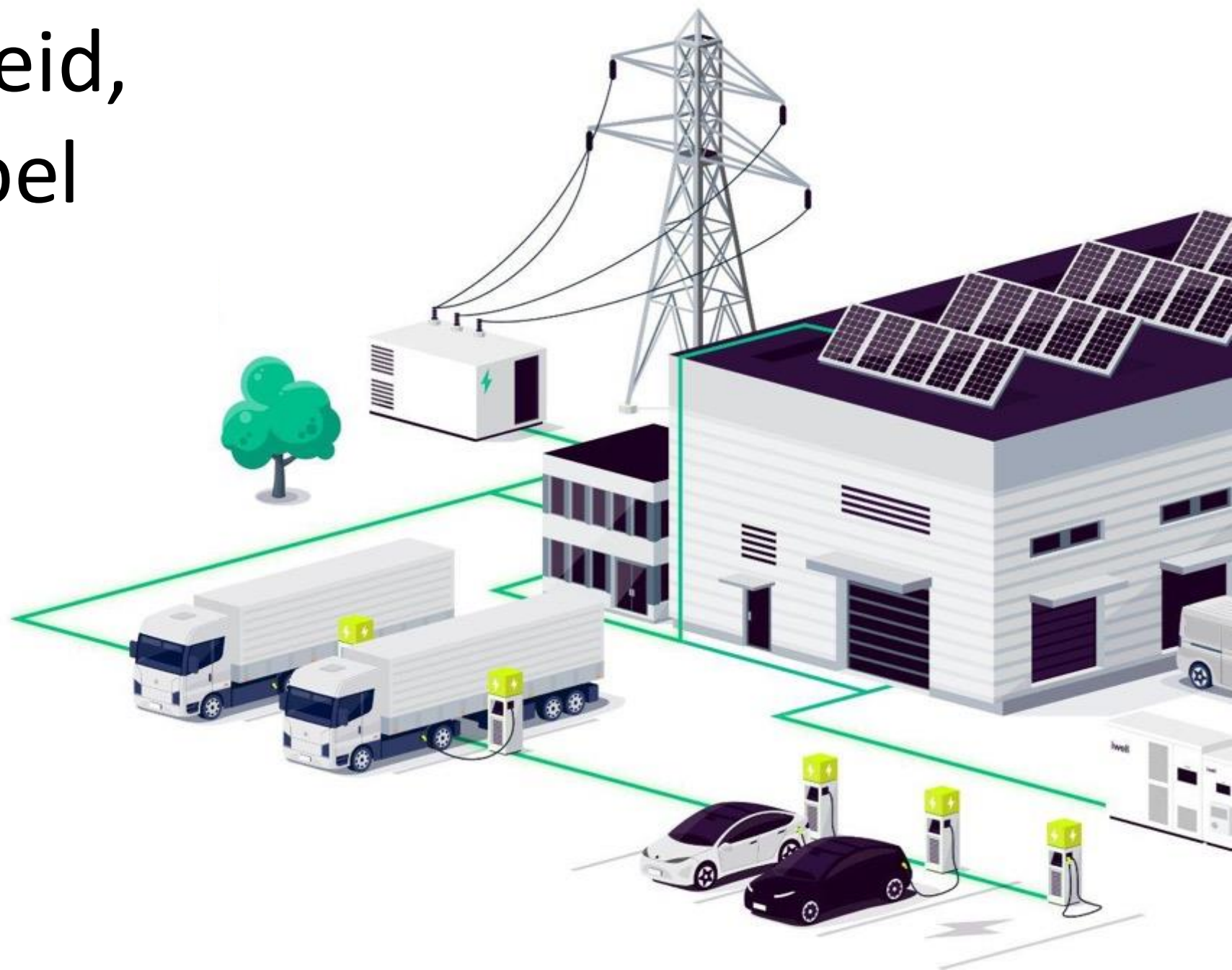
300+

COLLEGA'S

90+

In-house
software &
hardware
teams

Energiezekerheid, maar dan simpel



WHAT WE DO BEST

Een full service aanbieder van energie management oplossingen

iwell



In-house ontwikkelde EMS

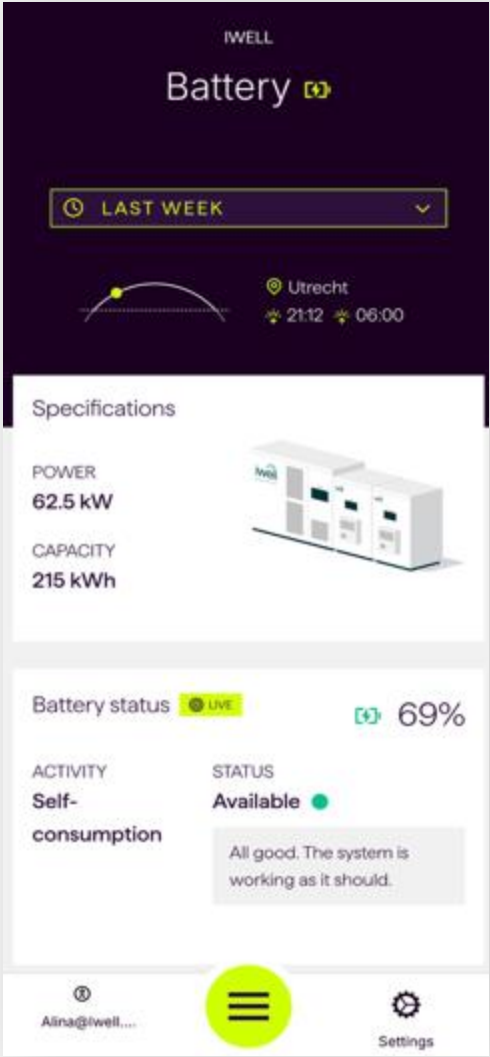


24/7 monitoring en support



Modular batterijen systemen

Inzichten altijd bij de hand



ER IS GEEN VASTGOED ZONDER STROOM

Van vastgoed - beheerder naar energiebeheerder

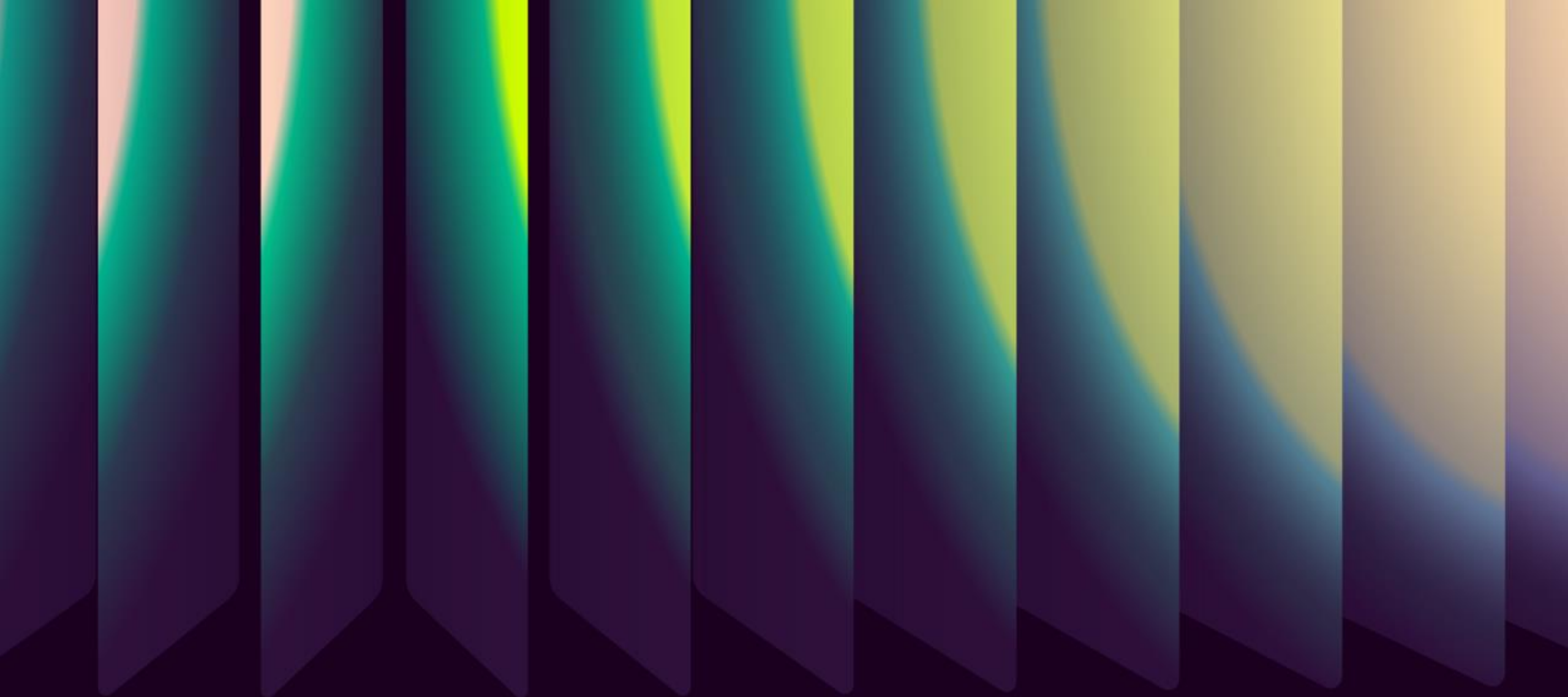


iwell
EMS



iwell





Customer cases



Oegema Transport

[🔌] Storage

3,2 MWh

[🏠] Solar

3 MWp

[⚡] Grid connection

1.4 MW

[🚚] Electric trucks

6 → 34 trucks

CASE

8.000m² sorting and distribution site on 50 kW grid connection

EMS MODULES

- Peakshave controller
- PV optimizer
- PV curtailment controller
- Generator controller

iwell



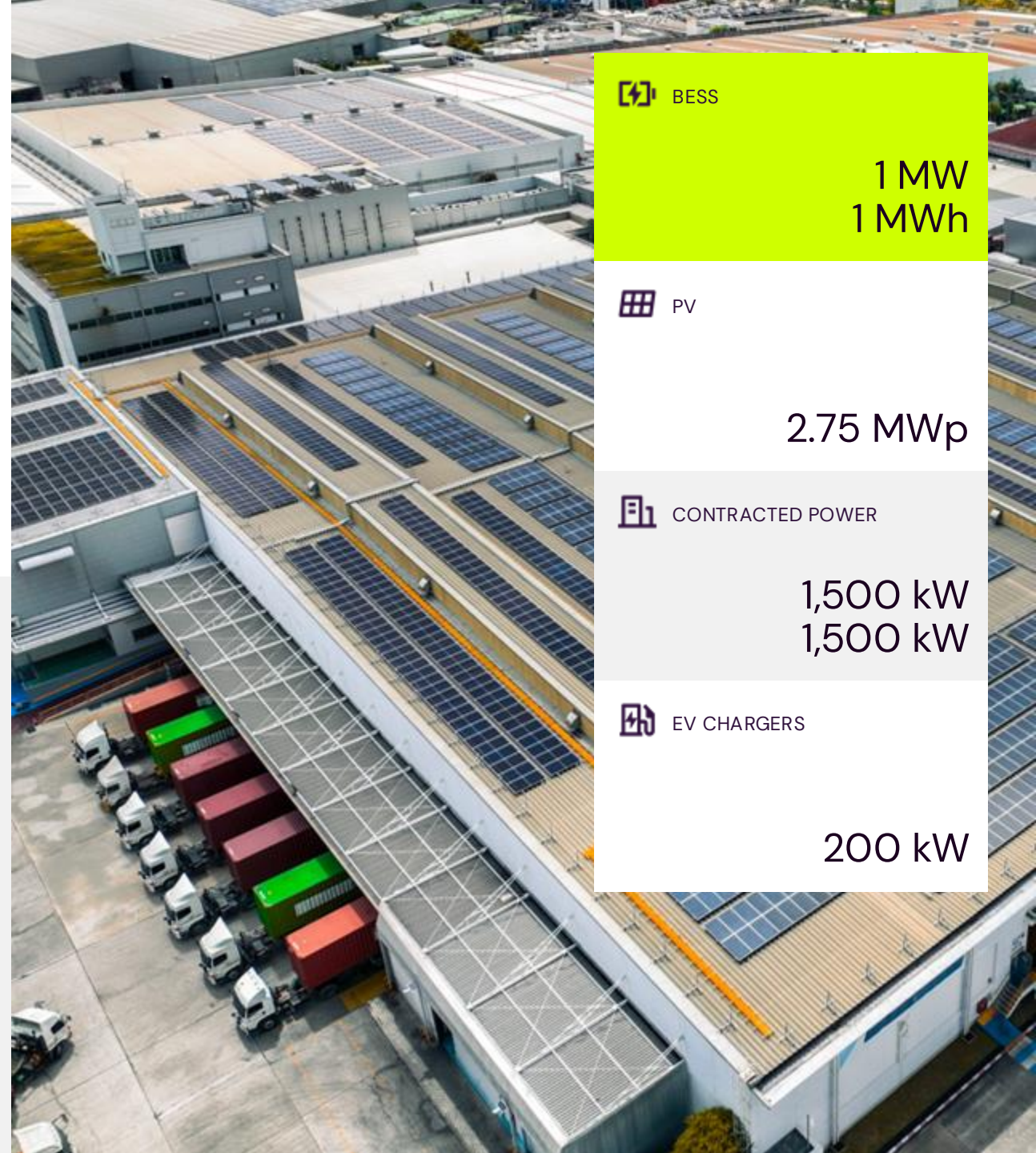
CASE

30,000 m² distribution centre running on local solar and optimized trading algorithm

EMS MODULES

- Peakshave controller (2 levels)
- PV optimizer
- PV curtailment controller (2 systems)
- API Access

iwell



 BESS

1 MW
1 MWh

 PV

2.75 MWp



CONTRACTED POWER

1,500 kW
1,500 kW



EV CHARGERS

200 kW

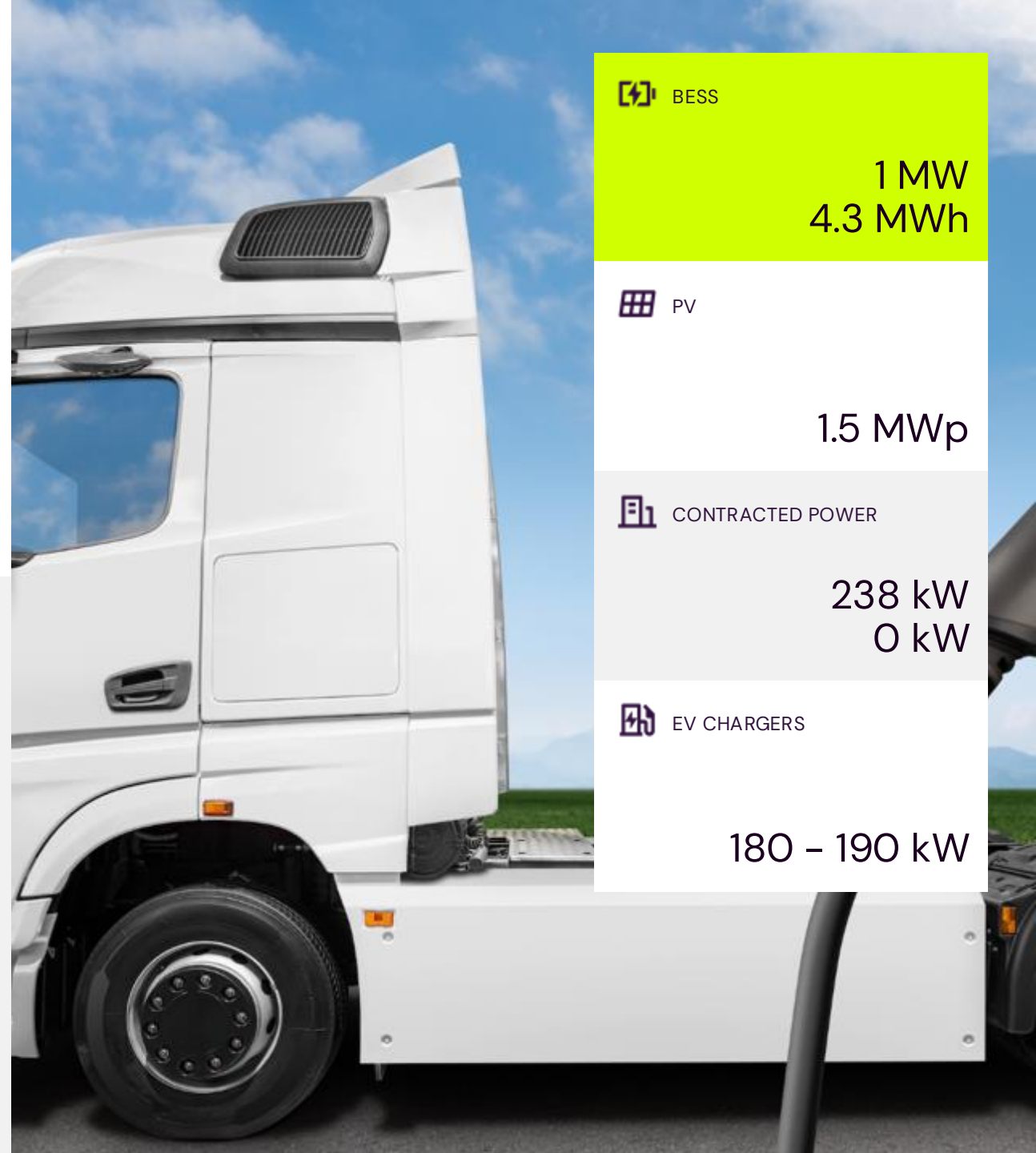
CASE

Running electrified transport company on limited grid connection with 0 feed-in capacity.

EMS MODULES

- Peakshave controller (Quarter Hour)
- PV curtailment controller
- EV controller
- EV optimizer
- HBE Administrator

iwell



 BESS

1 MW
4.3 MWh

 PV

1.5 MWp

 CONTRACTED POWER

238 kW
0 kW

 EV CHARGERS

180 - 190 kW

iwell harmonizing
clean energy



iwell.eu

Living Lab Vlissingen

De Machinefabriek

Interreg
North Sea



Co-funded by
the European Union

Super Smart Charging Hubs





Current situation

Super smart charging hub - Business case

Werksessies

- Rode sticker (A). Begint hier in de arena, mogen blijven zitten
- Blauwe sticker (B) Begint in de boardroom, 4e verdieping – meelopen met Ellen en Sjors
- Groene sticker (C) Begint met de rondleiding. – verzamelen voor de bar

Ronde 2: 15.20 uur

A → B

B → C

C → A

Ronde 3: 15.55 uur

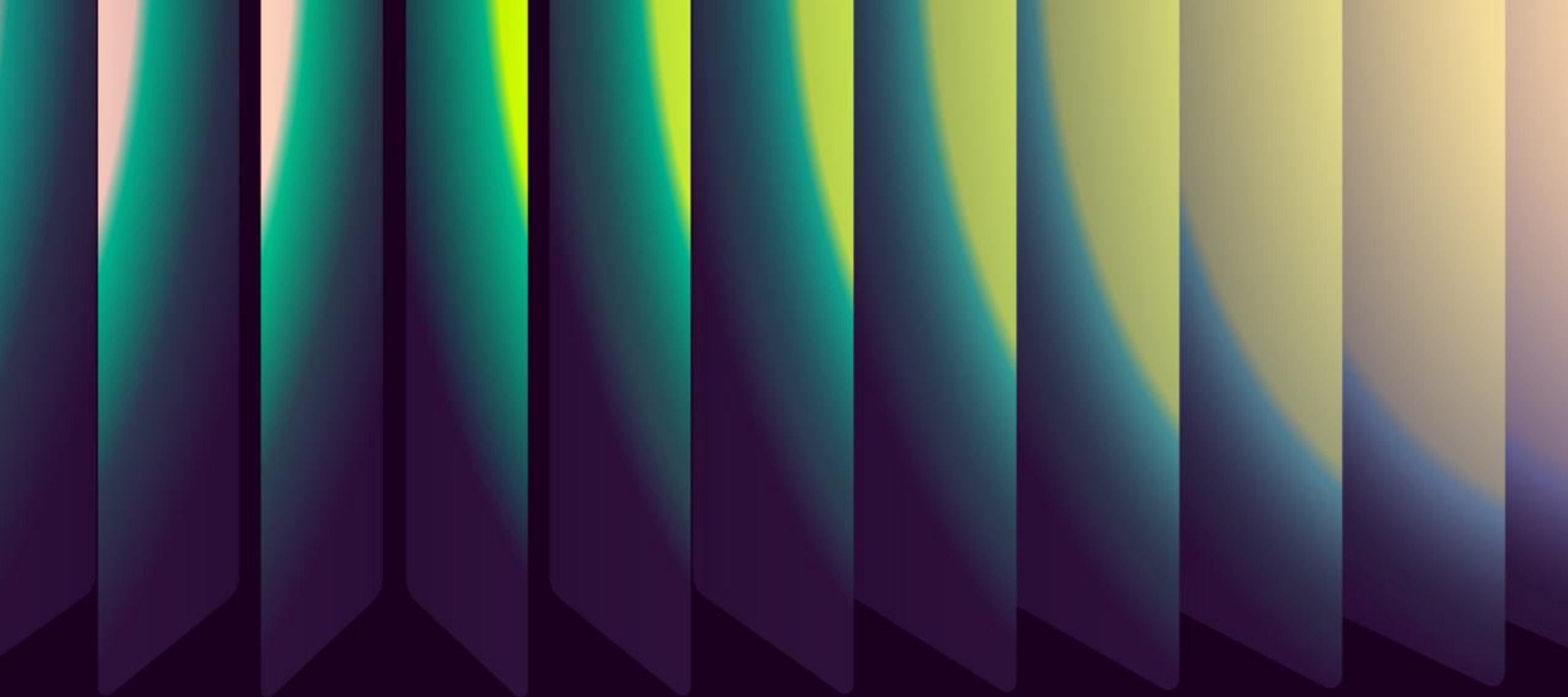
A → C

B → A

C → B

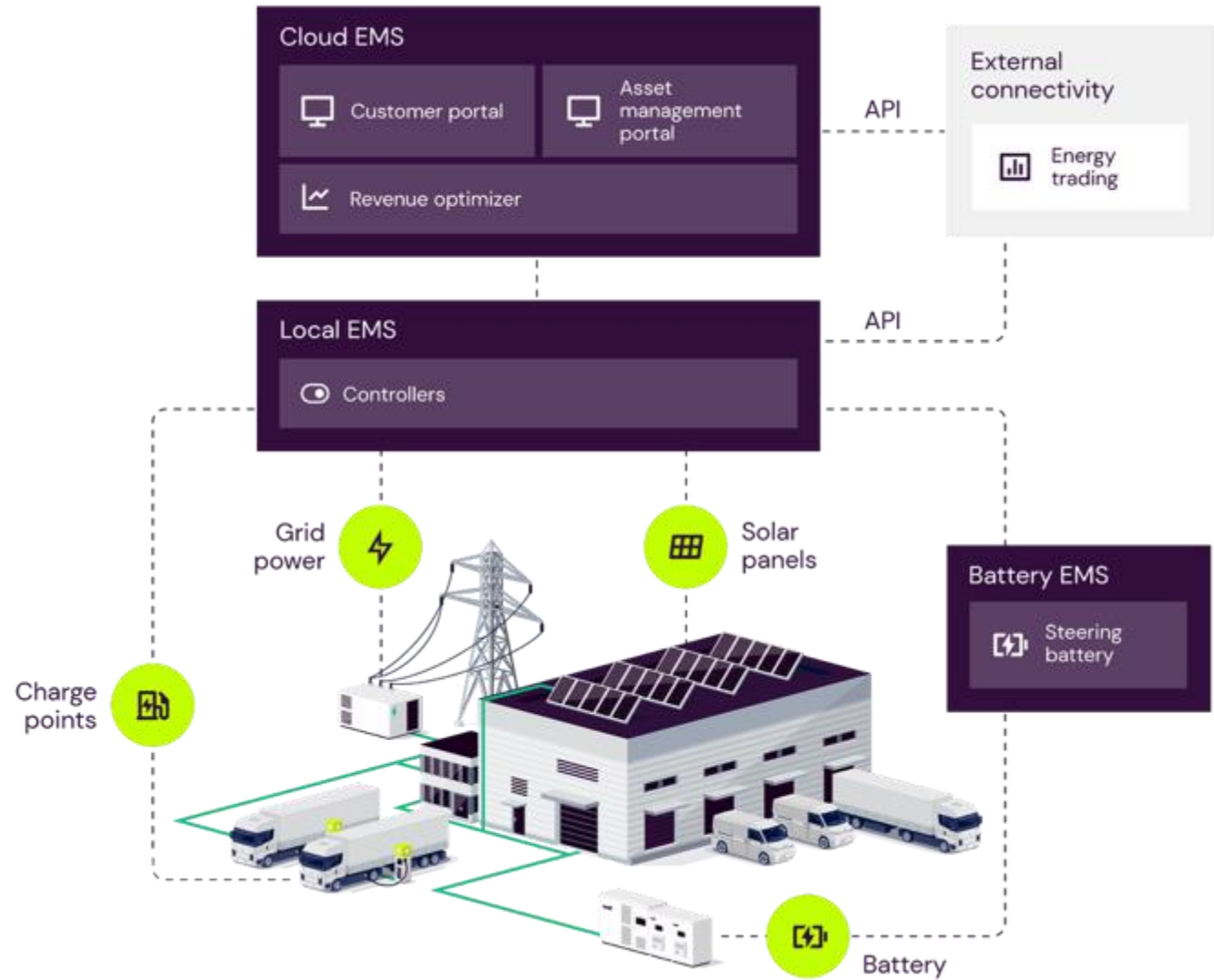
Outline

- Intro EMS
- Project details
- Telemetry
- Business case



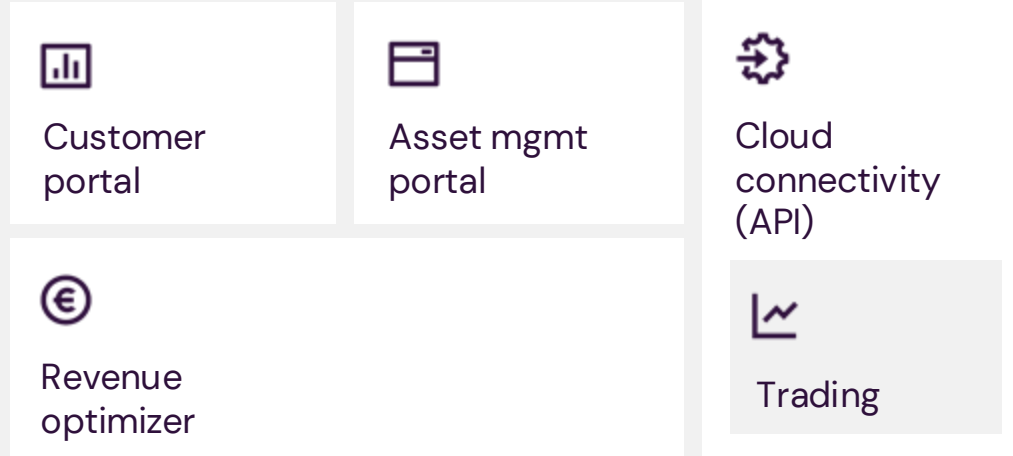
Intro EMS

We put you in control of your energy



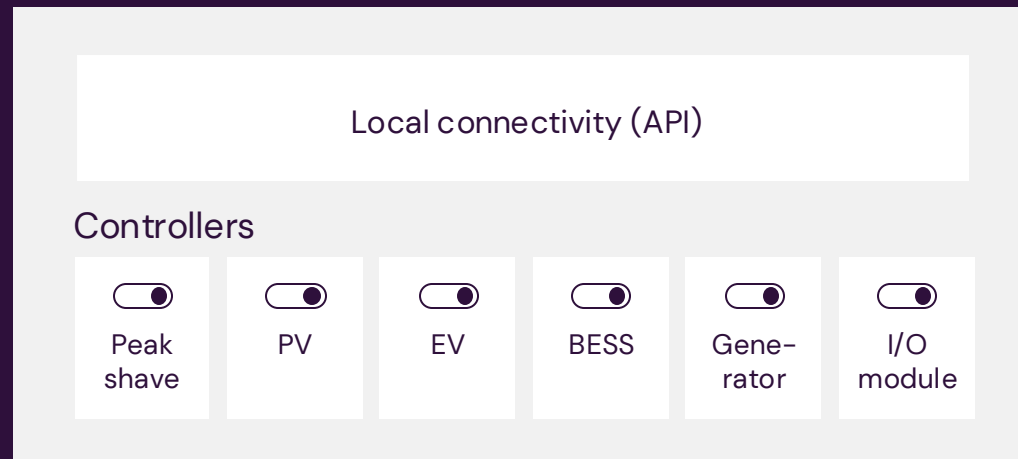
Overview of EMS modules

Cloud EMS



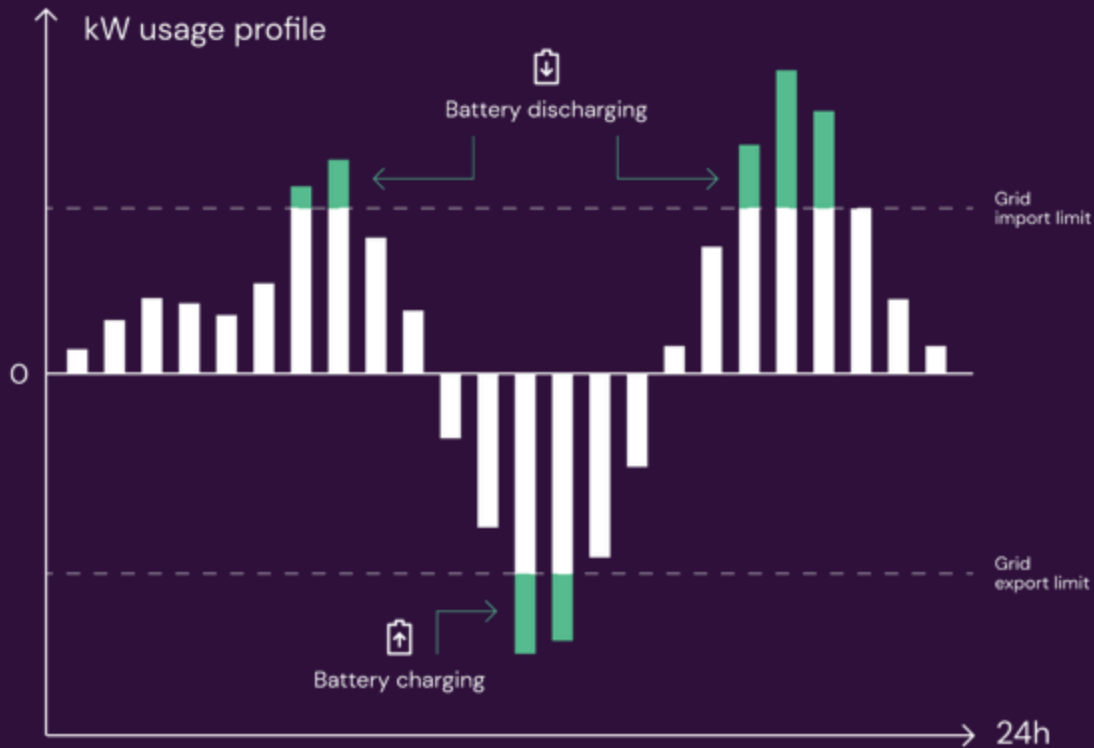
- Real-time revenues and costs
- Insights and control with myiwell
- ML based forecast for energy consumption
- Orchestrate all assets
- Data stored safely in the EU

Local EMS



- Extensive asset library
- API to connect your company BI tool

Peakshave controller



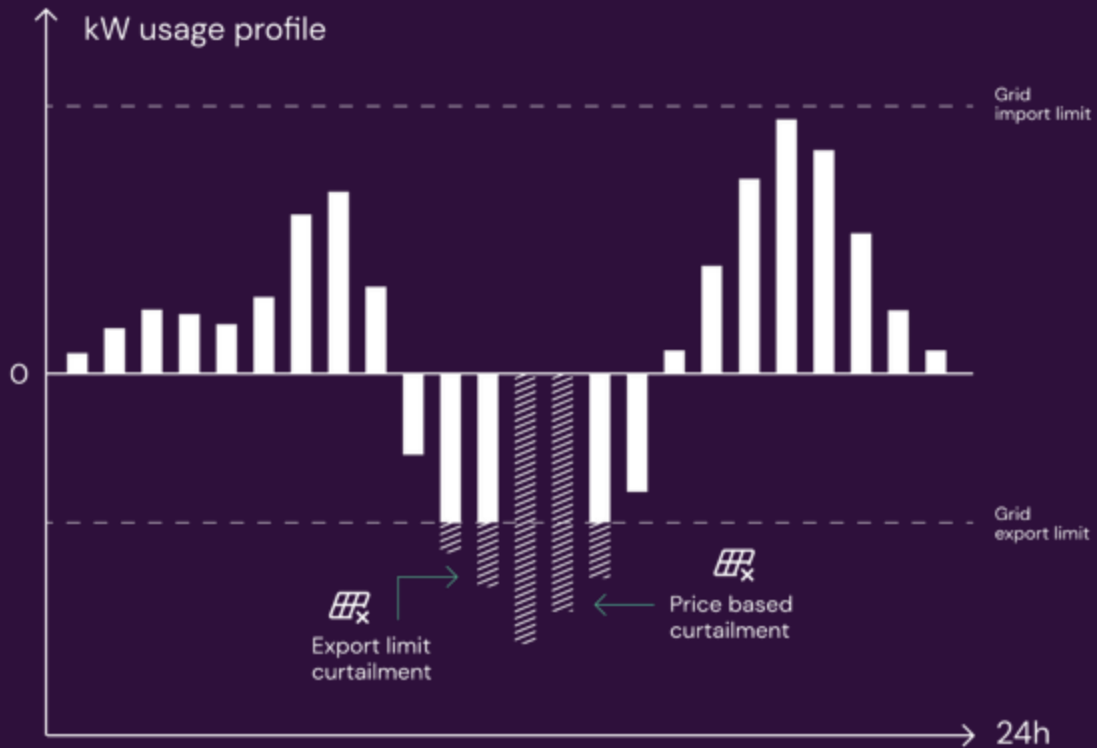
WHAT IT DOES

Protects the boundaries of your site, providing peak power when needed and ensure you will stay within the limits of your grid connection.

YOUR BENEFIT

- ✓ Safeguard local limits, deliver power when needed
- ✓ Enable dynamic DSO contracts

PV Curtailment controller



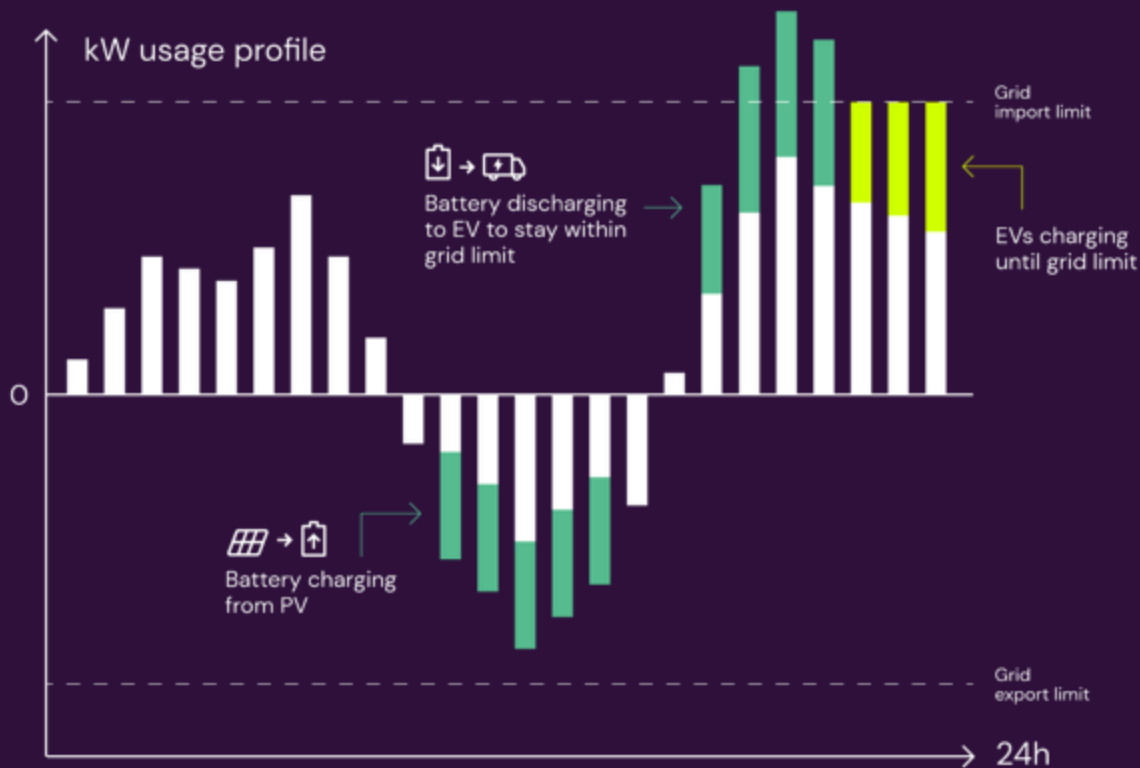
WHAT IT DOES

Turns your PV system into a flexible asset. This allows for optimal control of PV production and ensures you stay within the site and grid limits

YOUR BENEFIT

- ✓ Match your PV production with your grid limits, consumption and battery.
- ✓ Unlock price based curtailment.

EV controller

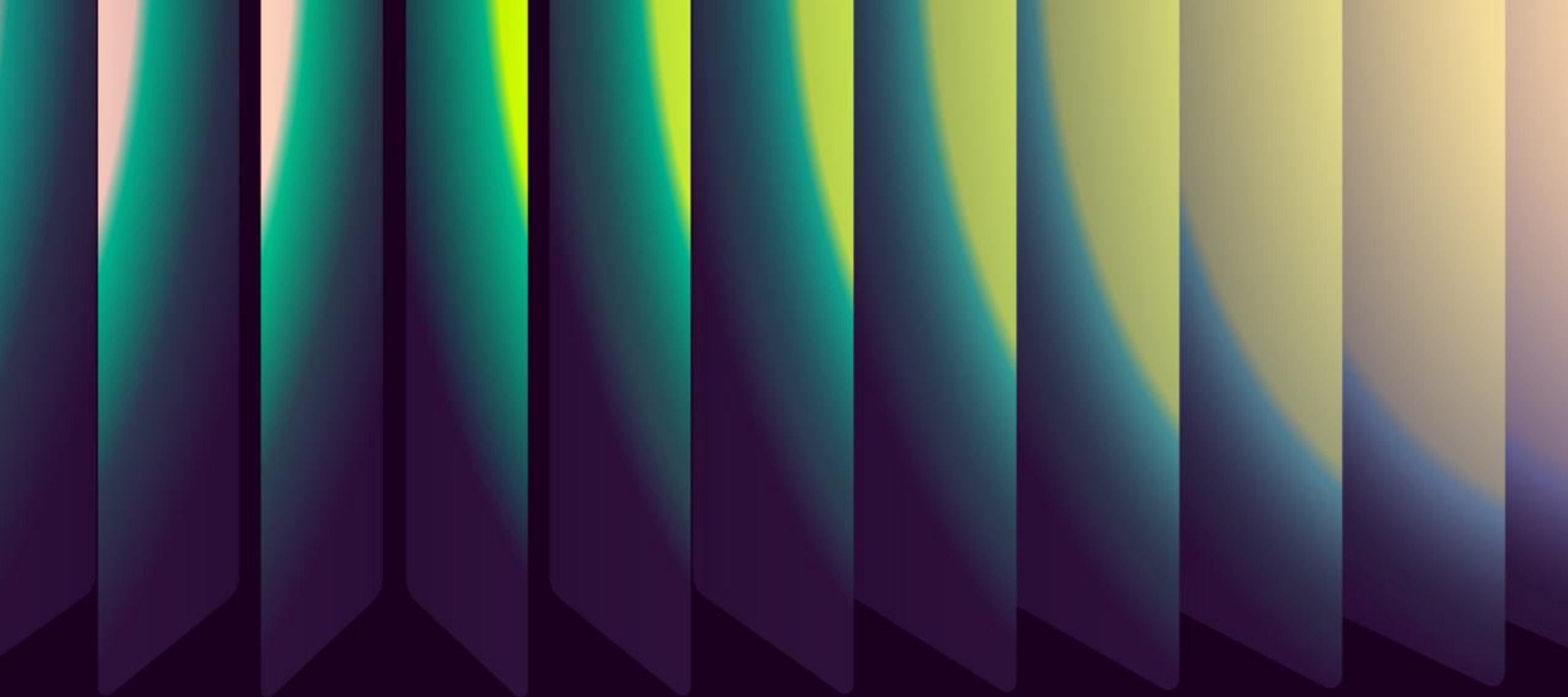


WHAT IT DOES

Enables EV charging at maximum available power, coming from PV, BESS and grid combined. Limit your EV charging power based on price signals, energy trading or grid limitations.

YOUR BENEFIT

- ✓ Always charge your EV's with the highest available power.
- ✓ Limit EV chargers during expensive moments, lowering your energy bill.

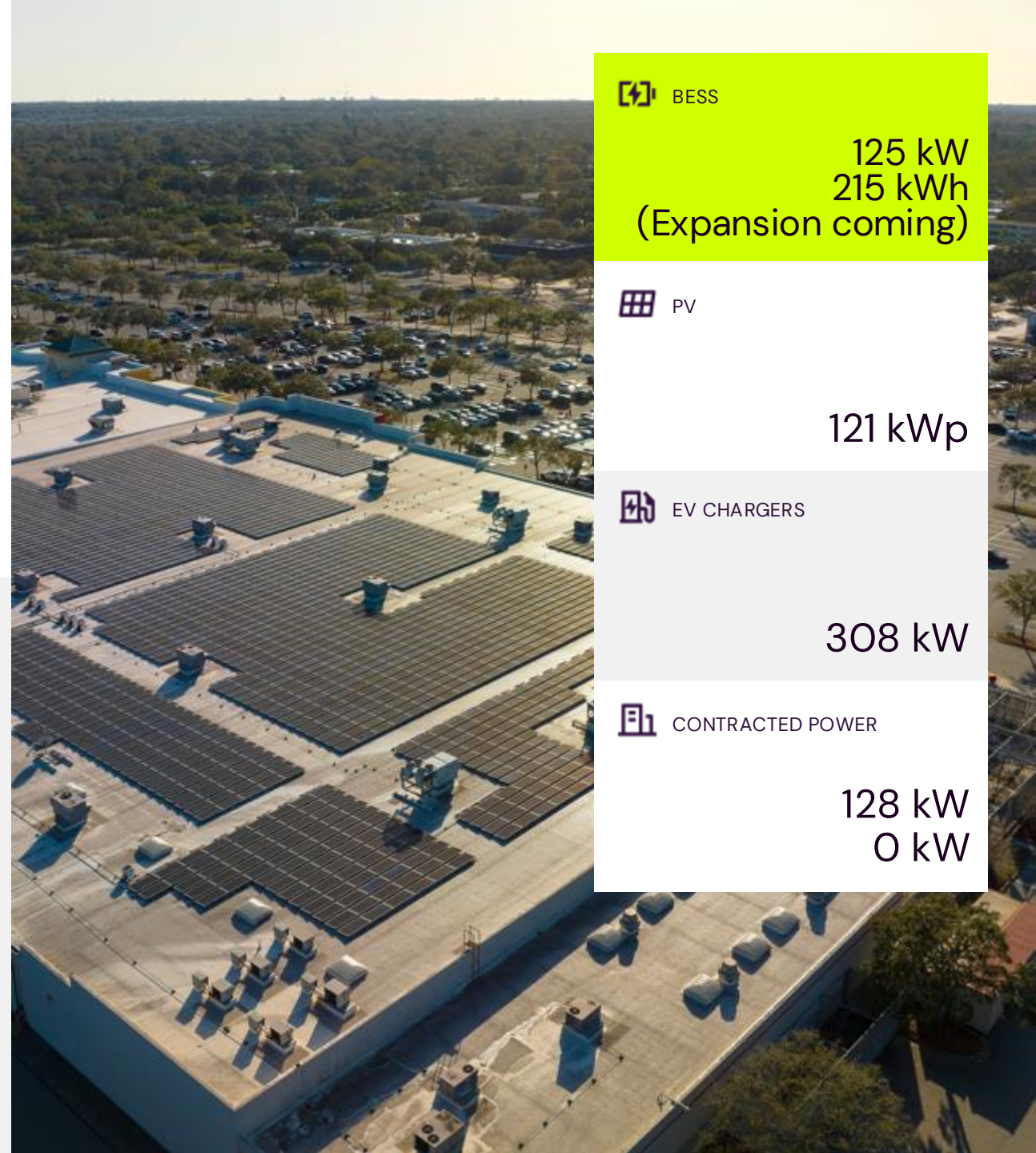


Project details

Office with solar carport, EV chargers and BESS

EMS MODULES

- Peakshave controller
- PV curtailment controller
- EV controller



 BESS

125 kW
215 kWh
(Expansion coming)

 PV

121 kWp

 EV CHARGERS

308 kW

 CONTRACTED POWER

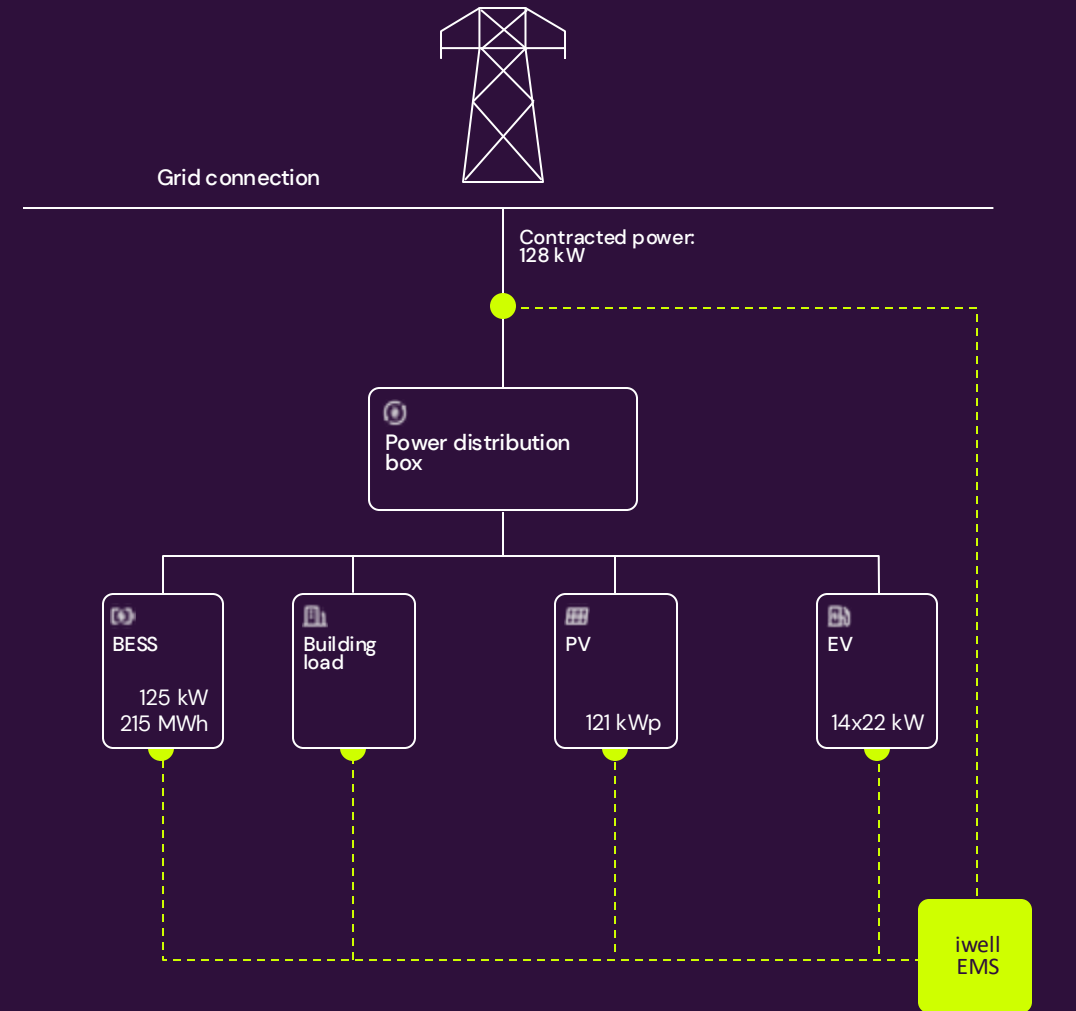
128 kW
0 kW

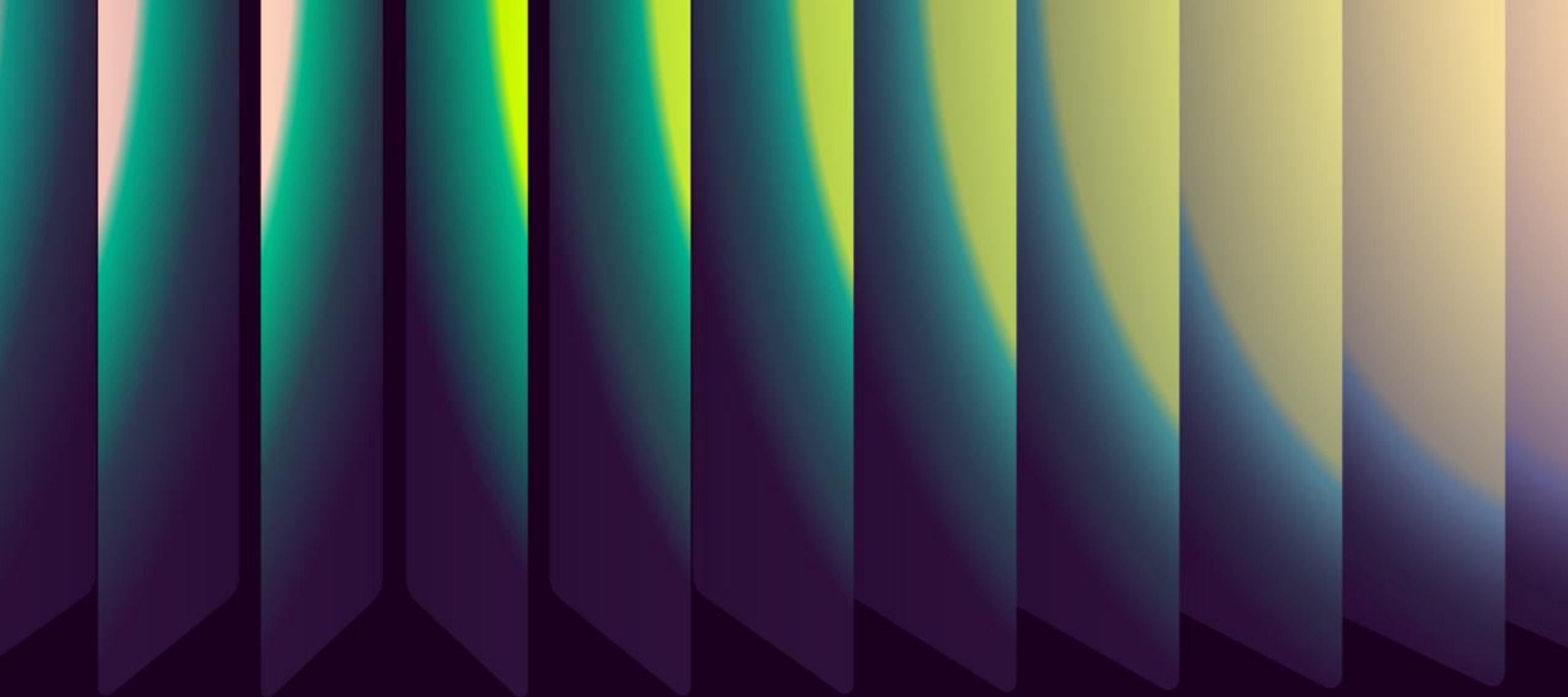
Office with solar carport, EV chargers and BESS

CHALLENGE

Enabling charging of EV's on a limited grid connection, by adding PV and BESS

- 125 kW / 215 kWh BESS
- Quarter-hour Peakshaving at 128 kW
- Curtailing excess PV power to prevent feed-in
- Controlling EV power limits





Telemetry

iwell

Baseline (building load only)

Energy meter [kW]



Grid import QH [kW]



2. BESS activated

SoC



Battery power [kW]



Energy meter [kW]



Grid import QH [kW]



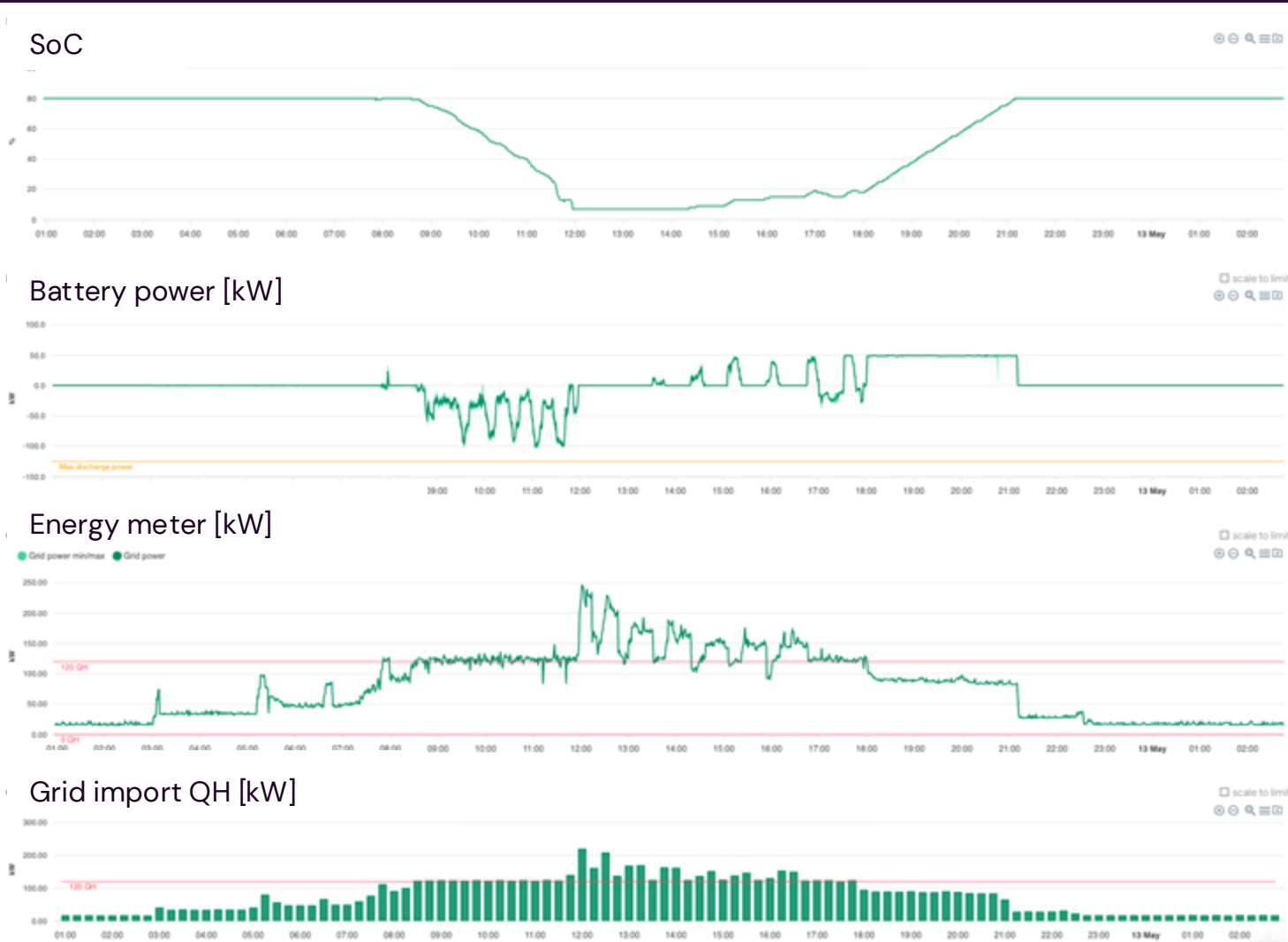
SYSTEM STATUS

BESS	-> Active
PV	-> Not active
EV	-> Not active

WHAT IS HAPPENING

- Peakshaving by BESS
- Import kept within contracted limits
- BESS recharges when grid space is available

2. BESS active, no PV, no EV



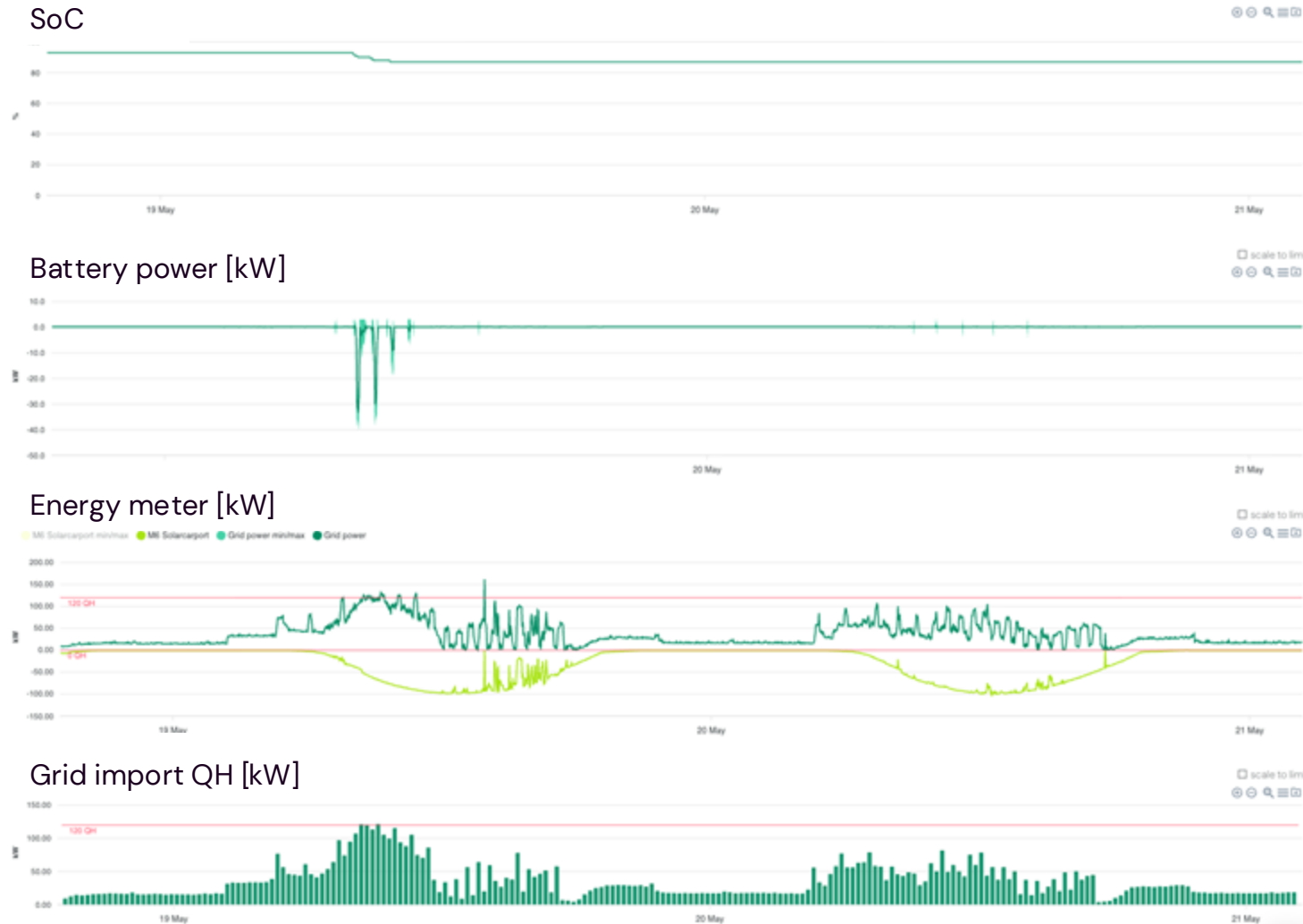
SYSTEM STATUS

BESS	-> Active
PV	-> Not active
EV	-> Not active

WHAT IS HAPPENING

- Peakshaving by BESS
- When BESS is empty, contracted grid limits are exceeded

3. PV activated



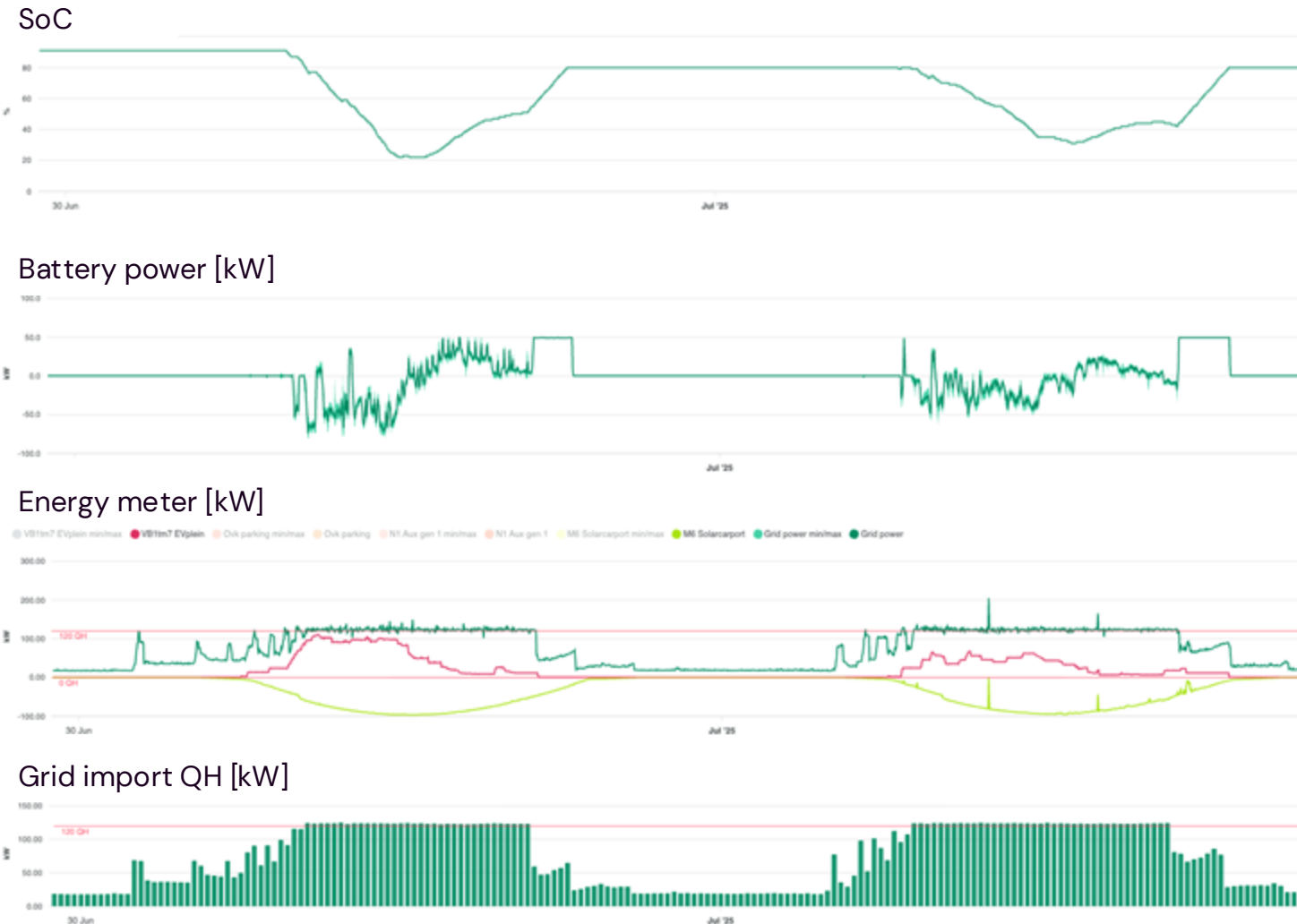
SYSTEM STATUS

BESS	-> Active
PV	-> Active
EV	-> Not active

WHAT IS HAPPENING

- PV supplying additional power
- Peak building load and PV power at the same time
- Peakshaving by BESS only needed incidentally

4. EV activated



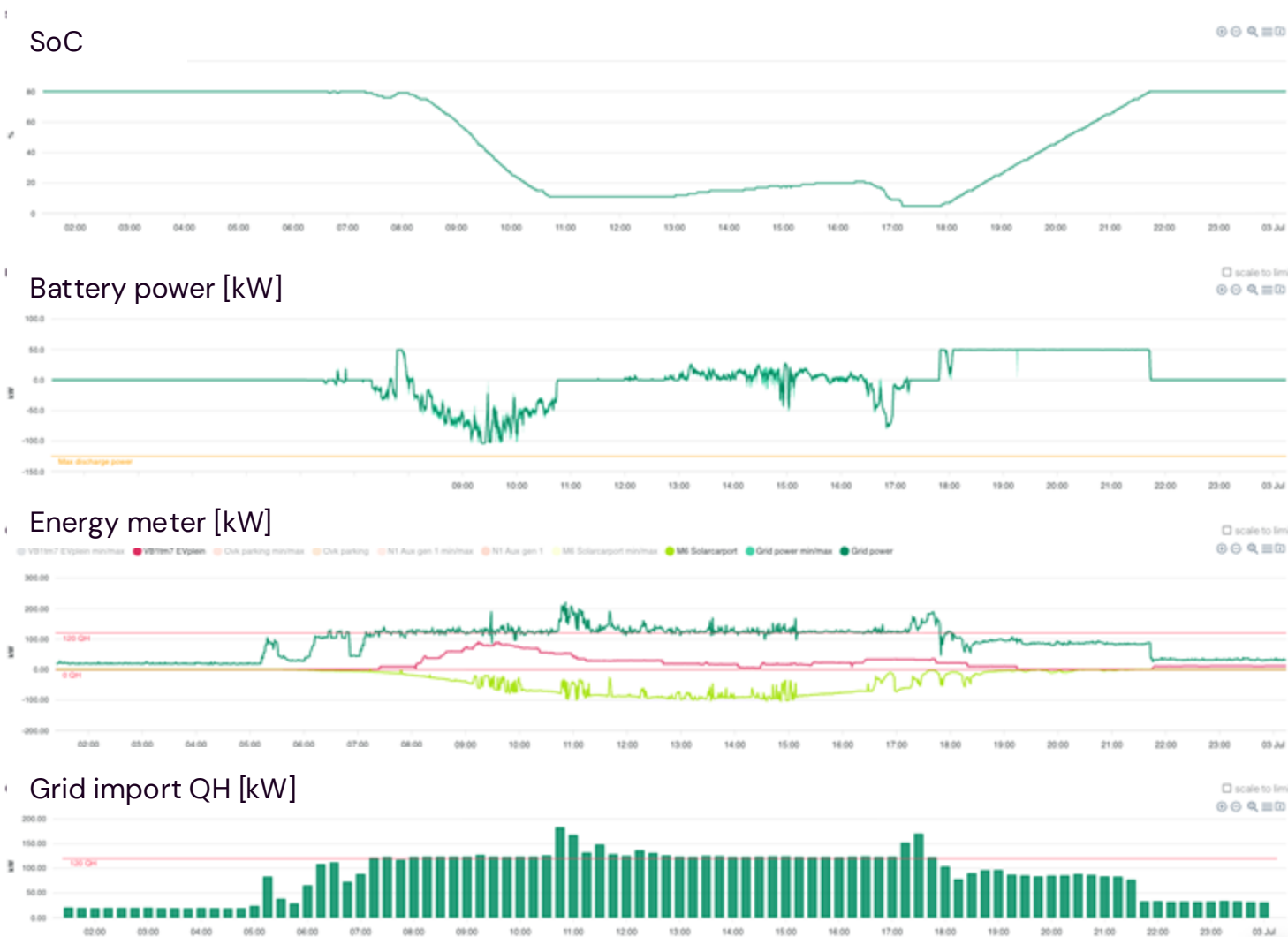
SYSTEM STATUS

BESS	-> Active
PV	-> Active
EV	-> Active

WHAT IS HAPPENING

- EV charging peak in the morning
- A lot of overlap with PV production and building load
- BESS needed for peakshaving, capacity is sufficient during sunny days

4. EV activated



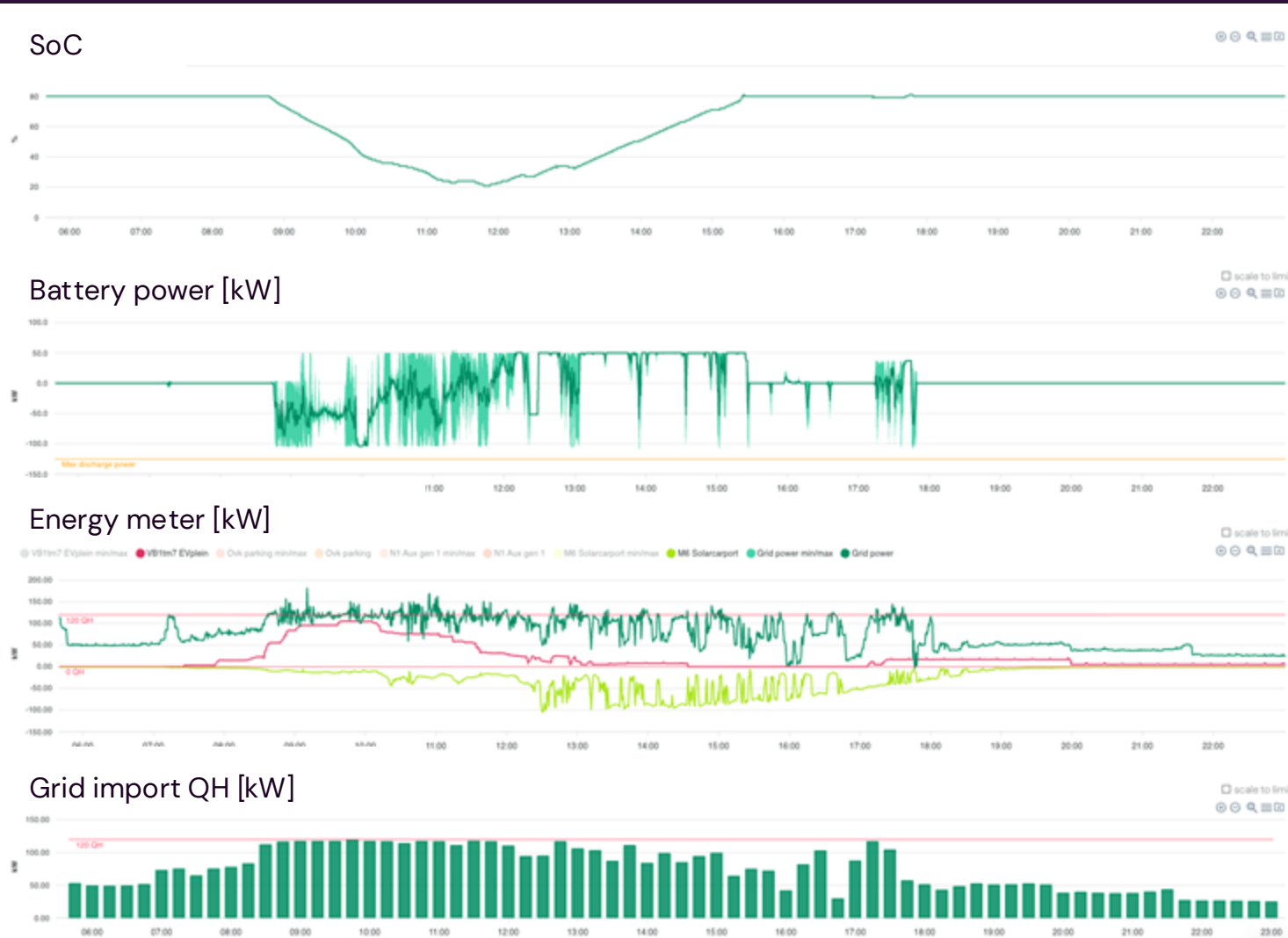
SYSTEM STATUS

BESS → Active
PV → Active
EV → Active

WHAT IS HAPPENING

- Morning peak can't be covered by grid + PV
- BESS needed for peakshaving
- BESS Capacity is insufficient
- With fluctuating PV power and empty BESS, grid limits are exceeded

4. EV activated



SYSTEM STATUS

BESS → Active

PV → Active

EV → Active

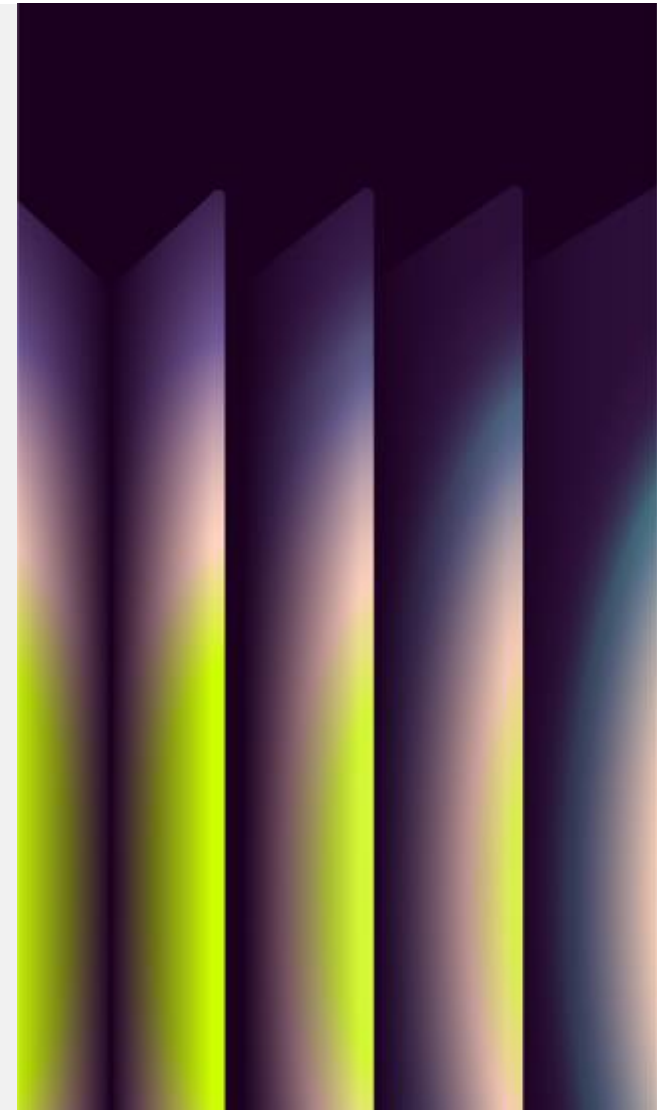
WHAT IS HAPPENING

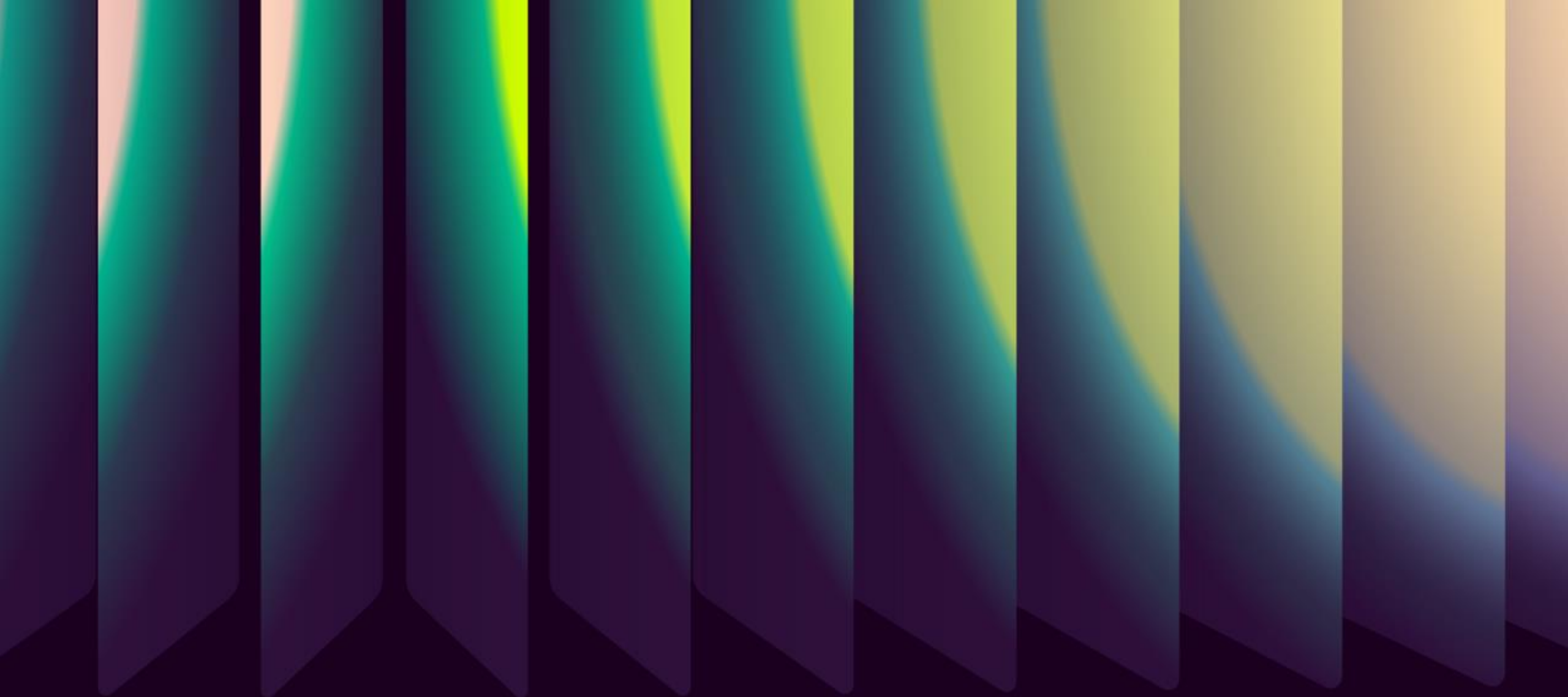
- Very little PV power in the morning during EV charging peak
- BESS needed for peakshaving
- BESS capacity sufficient because PV power increases in afternoon

Take-aways

To enable EV charging at this location, both PV and BESS are essential to add to the energy system:

- PV shows great overlap with building load, with most PV energy directly consumed on site.
- EV peak coincides with peak load from building.
- During sunny days, the current BESS capacity is enough stay within contracted limits.
- BESS capacity should be expanded for winter period.
- There is still plenty of spare grid capacity during the night to charge larger BESS (Approximately 1 MWh).



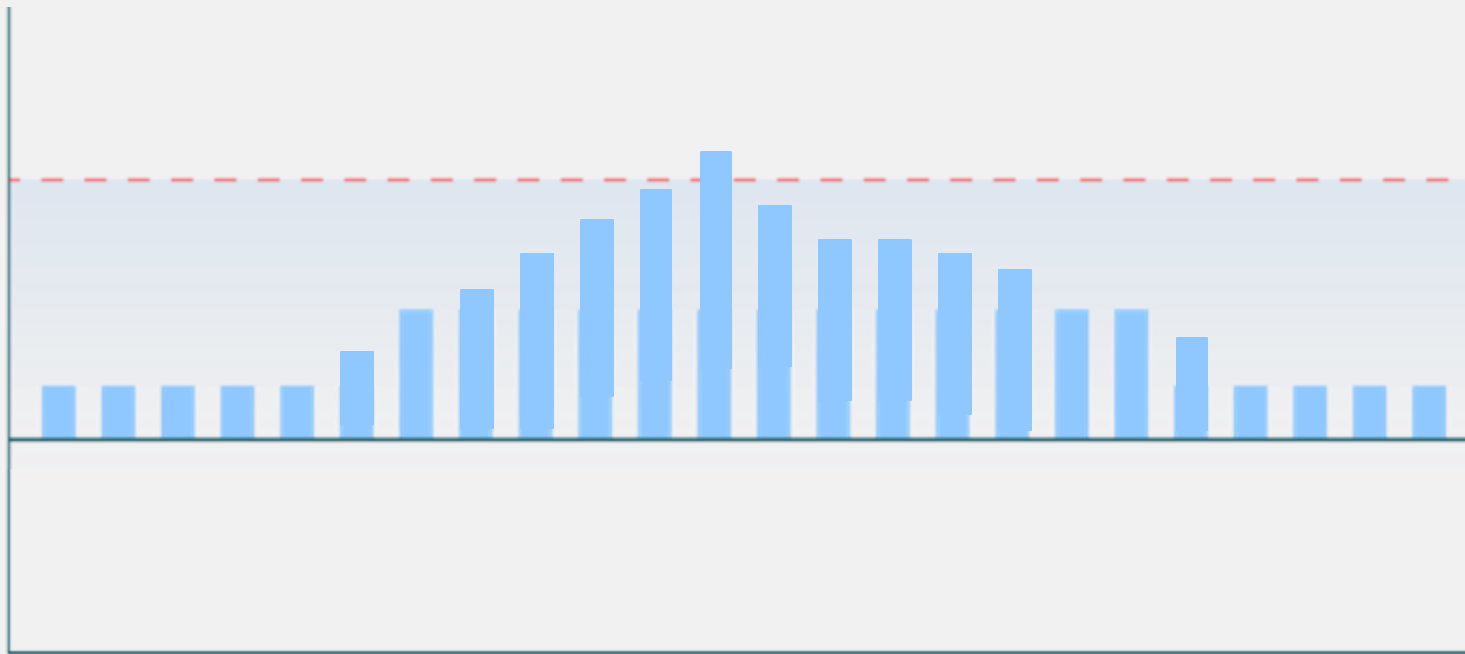


Business case

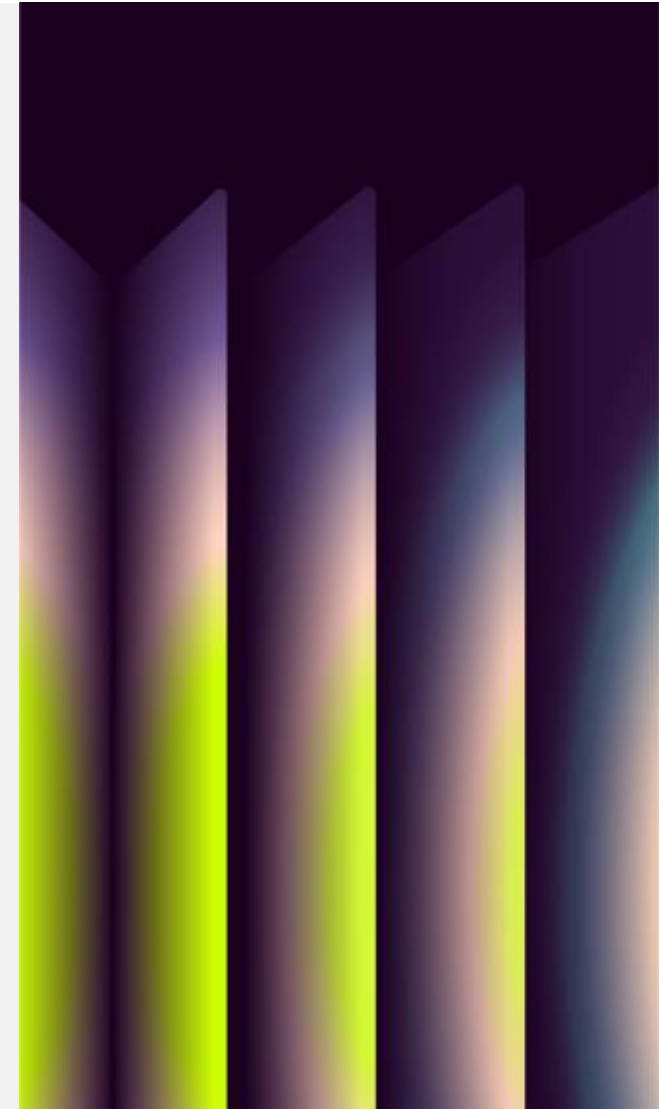
Business case inputs

Energy flows	Peak power [kW]	Annual total [kWh]
Building consumption	175	320.000
PV system	110	93.000
EV system	154	95.000
Other		
Type of energy contract	Dynamic	
Contracted power	128 kW	
Charging tariff	€0,55	
HBE value	€15	

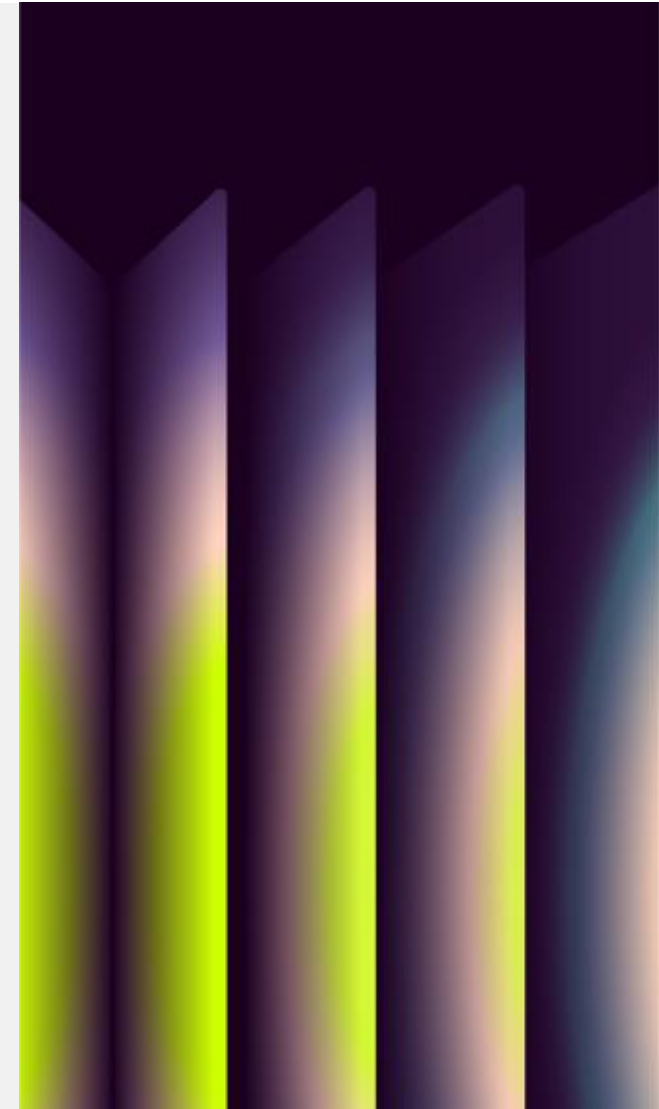
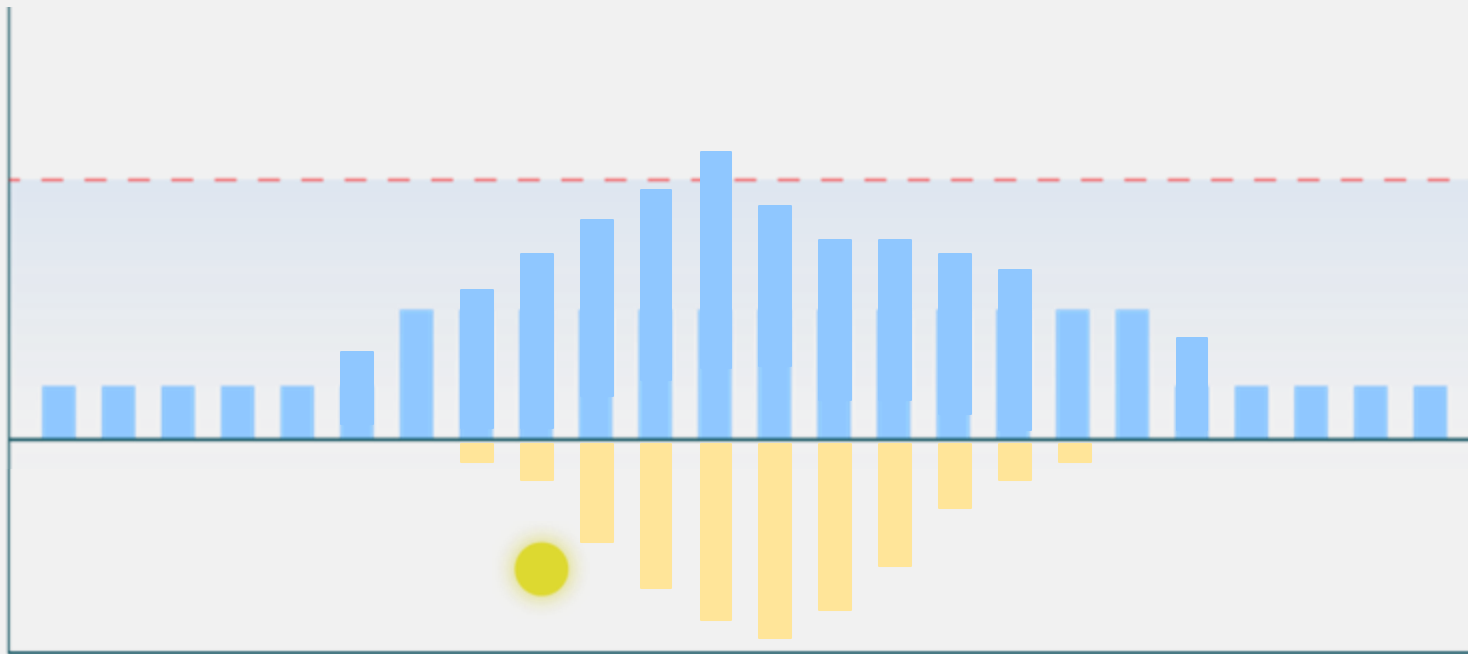
Energy profile: Building load



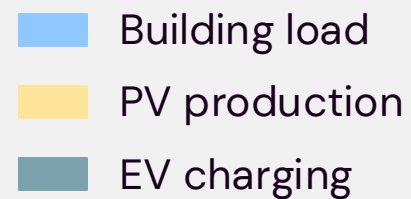
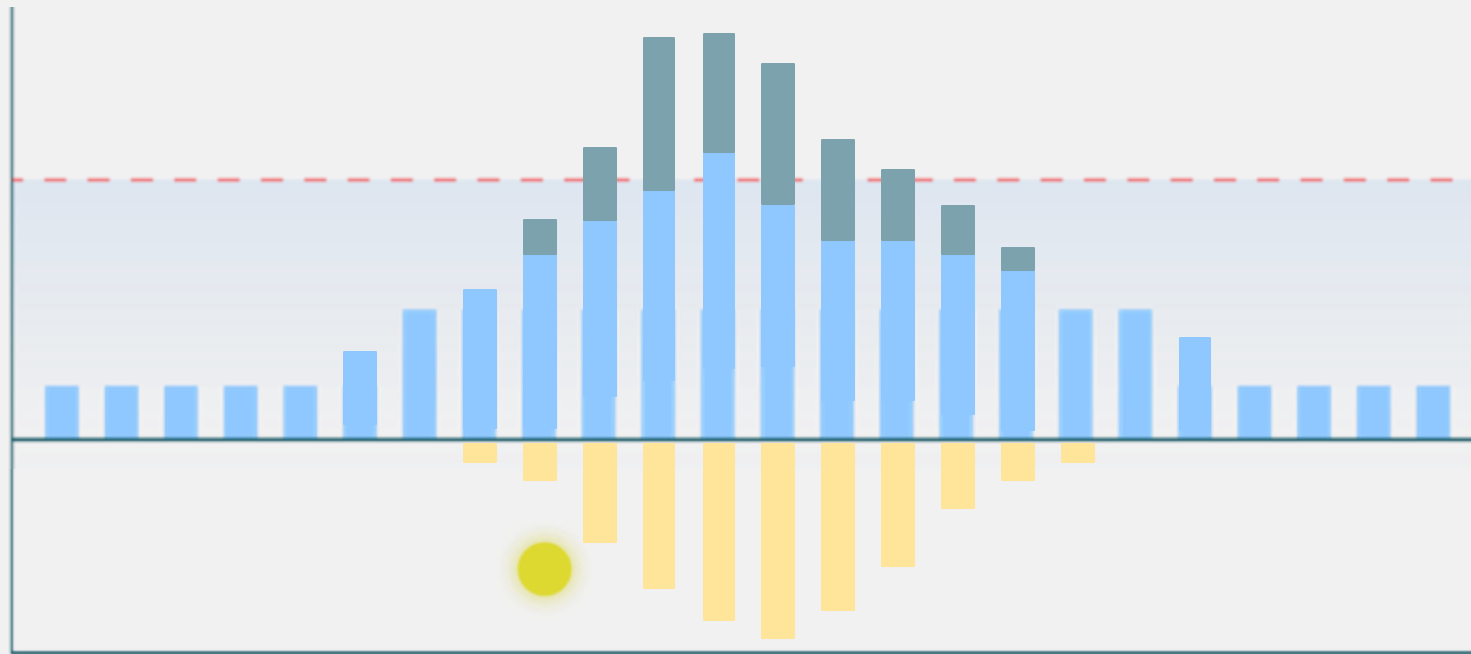
- Building load
- PV production
- EV charging



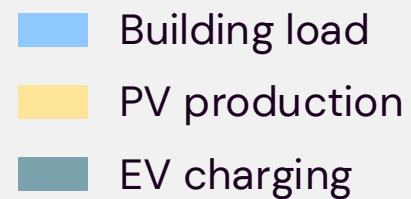
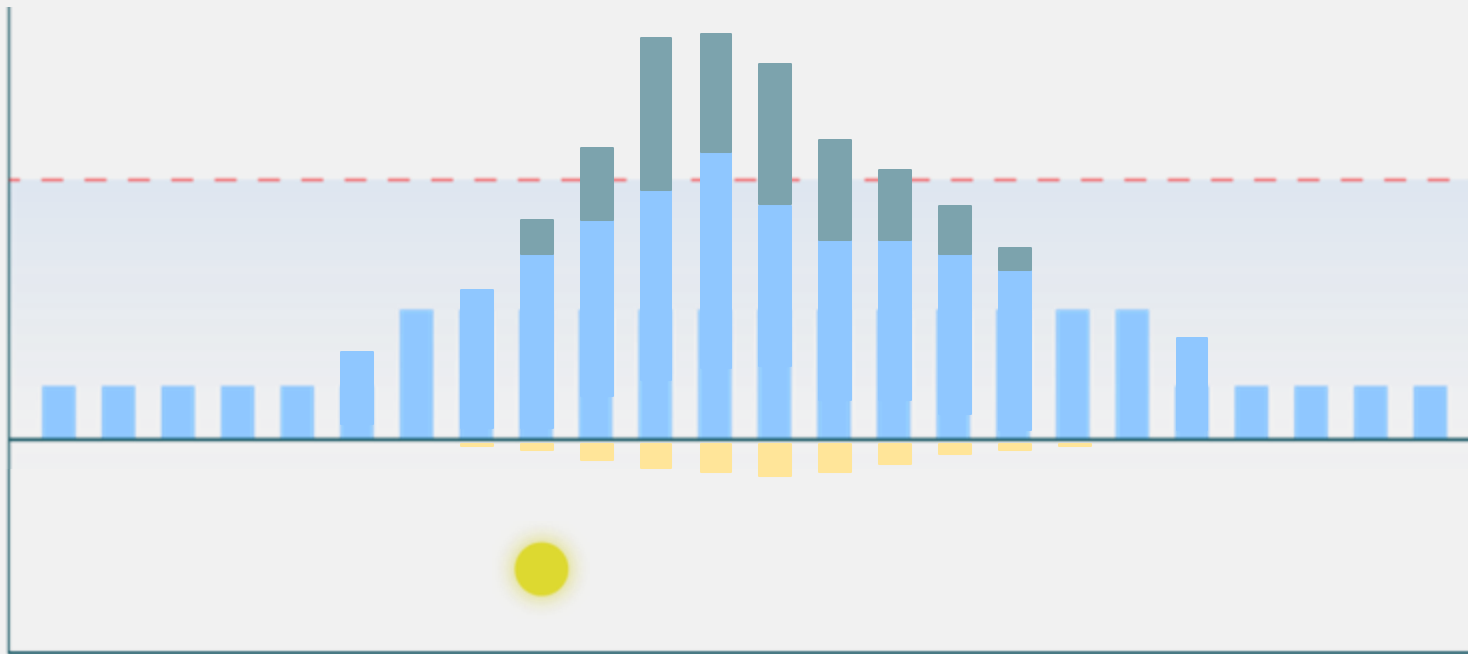
Energy profile: Building load + PV



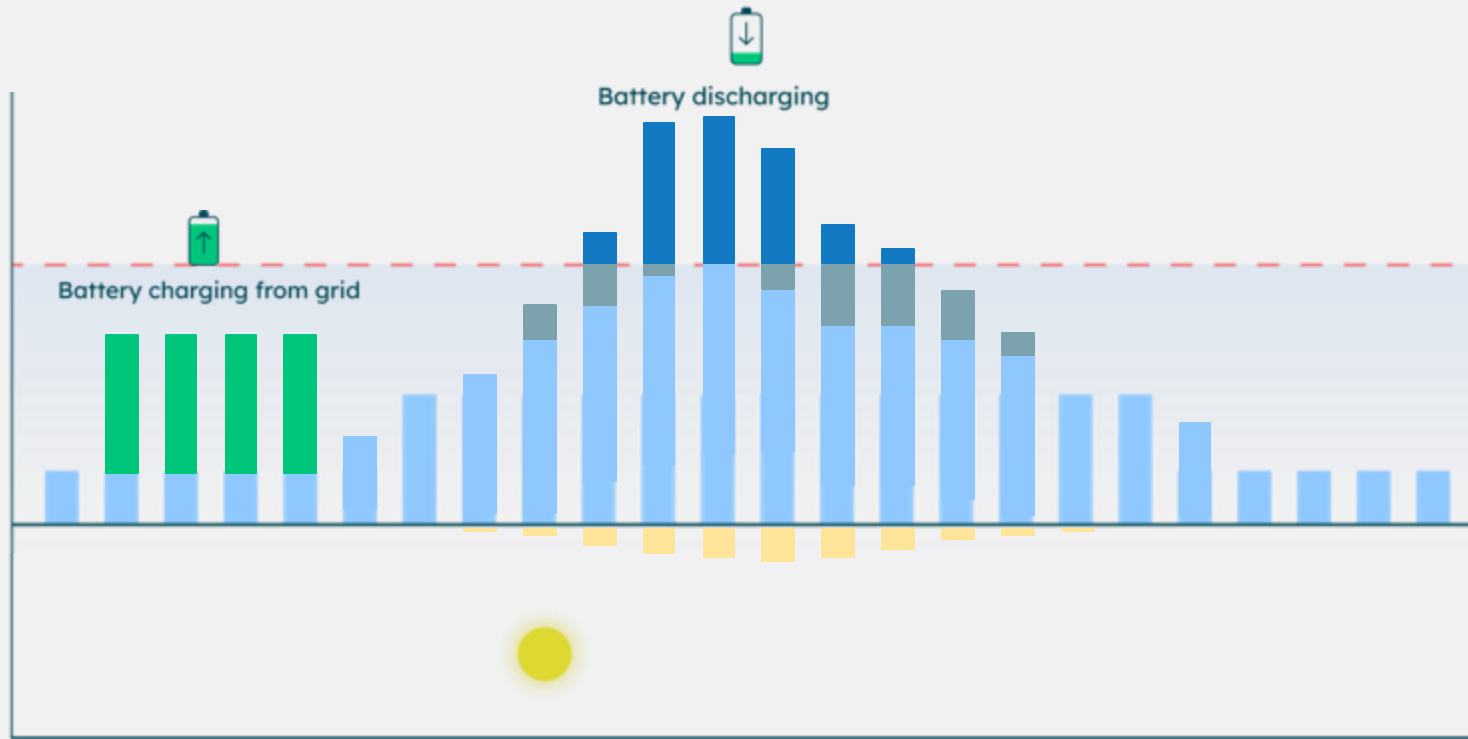
Energy profile: Building + PV + EV



Energy profile: Building + low PV + EV



Energy profile: Building + Low PV + EV + BESS



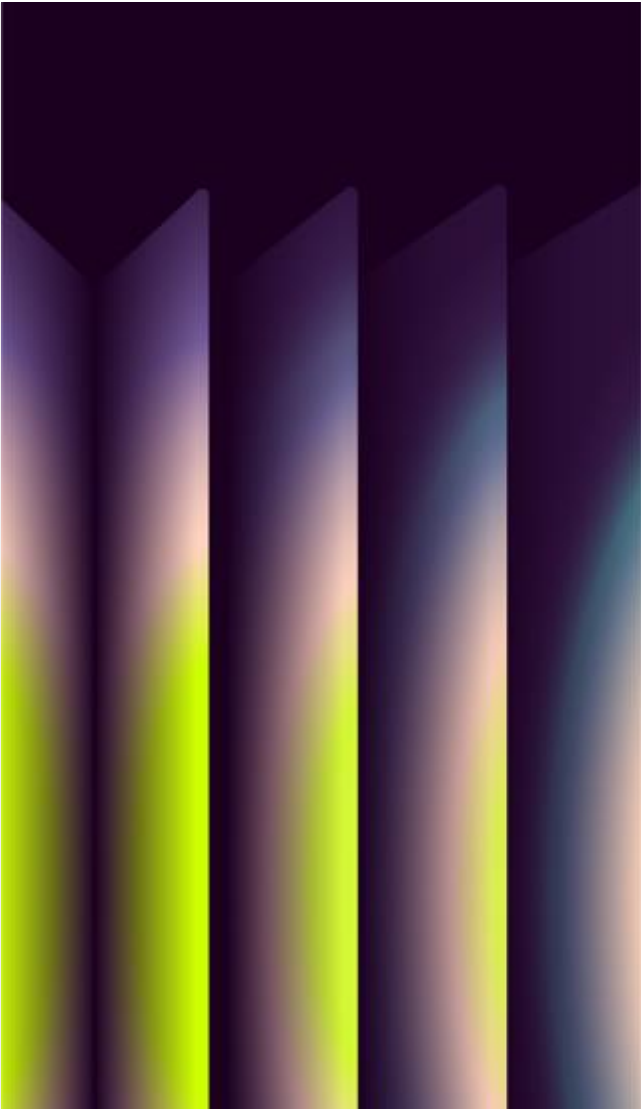
Business case

CAPEX	
PV system	€125.000
EV chargers	€65.000
BESS	€75.000
AC works	€45.000
EIA (year 1)	€-27.000
Total	€283.000

OPEX	
Additional energy cost	€3.000
EMS	€1.000
Monitoring + O&M	€1.700
Total	€5.700
Benefits	
Avoided grid fees	€5.000
Charging income	€52.250
HBE	€15.000
Total	€72.250

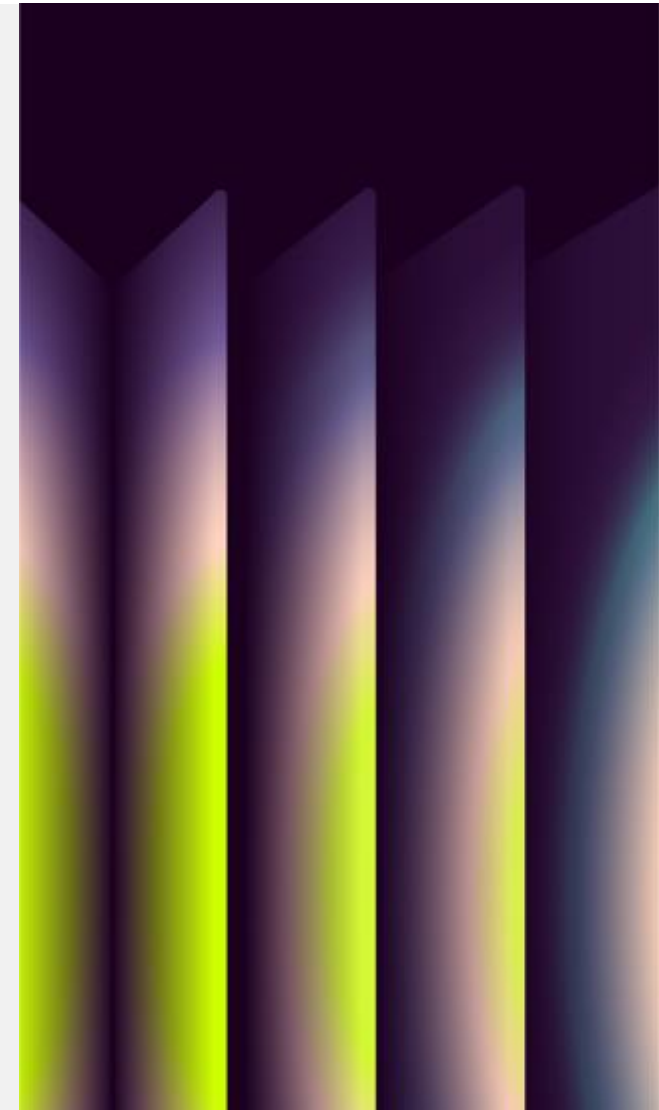


Payback
period of
4,2 years



Business case conclusions

- The combination of PV + BESS enables additional income from EV charging, whilst staying within grid limits (most days)
- Additional BESS capacity can unlock even more EV charging
- Important parameters for future cases:
 - BESS CAPEX
 - Grid capacity and related fees
 - Investment costs will differ per location for AC and PV system



iwell harmonizing
clean energy



iwell.eu

