V2G HUB IN BELGIUM

JOCHEN DE SMET

Sweco's Value proposition.

Transforming society together.

TRANSFORMING

Transforming reflects that change and advancement is part of everything we do. Sweco brings true change and makes a difference in everything we do, through our expertise in numerous fields and our commitment to the success of our clients.

SOCIETY

Society reflects where we work and live. We are deeply involved in the constant transformation of society and always ready to tackle the challenges.

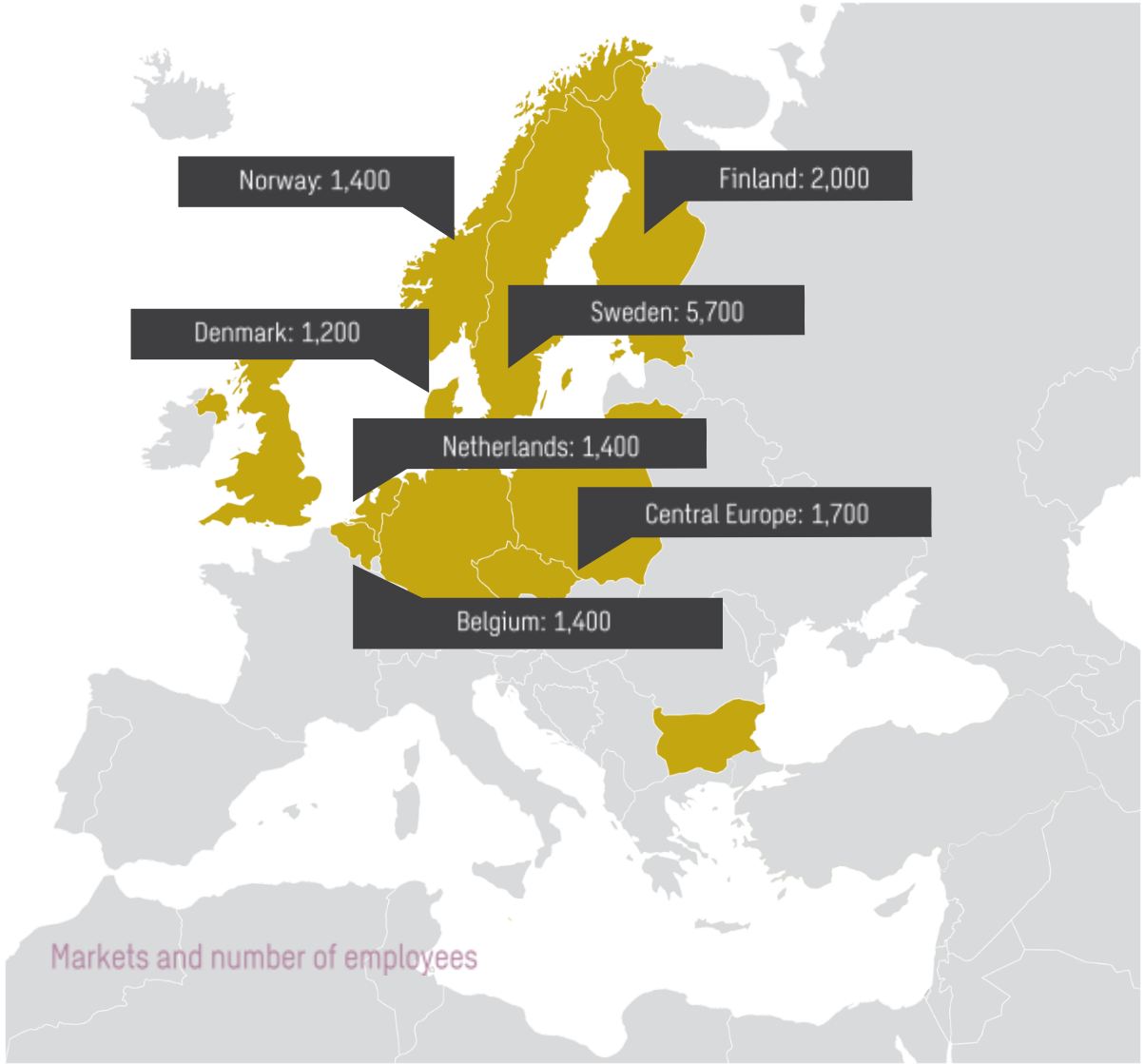
TOGETHER

Together reflects the way we empower our consultants and co-create with our clients to reach the best possible solutions – together as one team with the client in the center of everything we do.


✓ Widest service offering in Belgium
✓ The most approachable and committed partner with recognized expertise
✓ 1,700 employees
✓ 11 offices

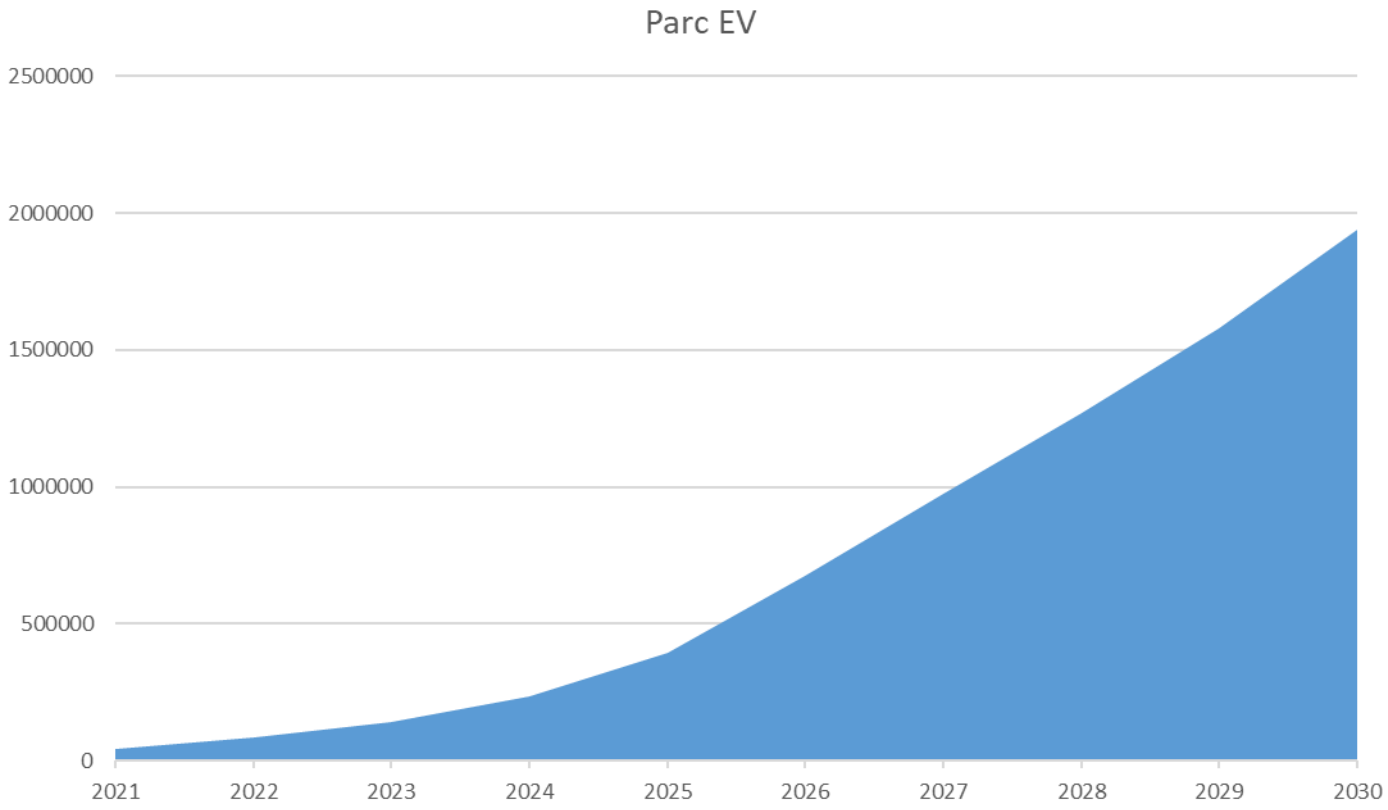
Strong local presence

- Market leading positions in Sweden, Finland, Netherlands, Denmark, Belgium and Norway
- Niche positions in Central Europe
- Capacity to provide full service offerings in international projects

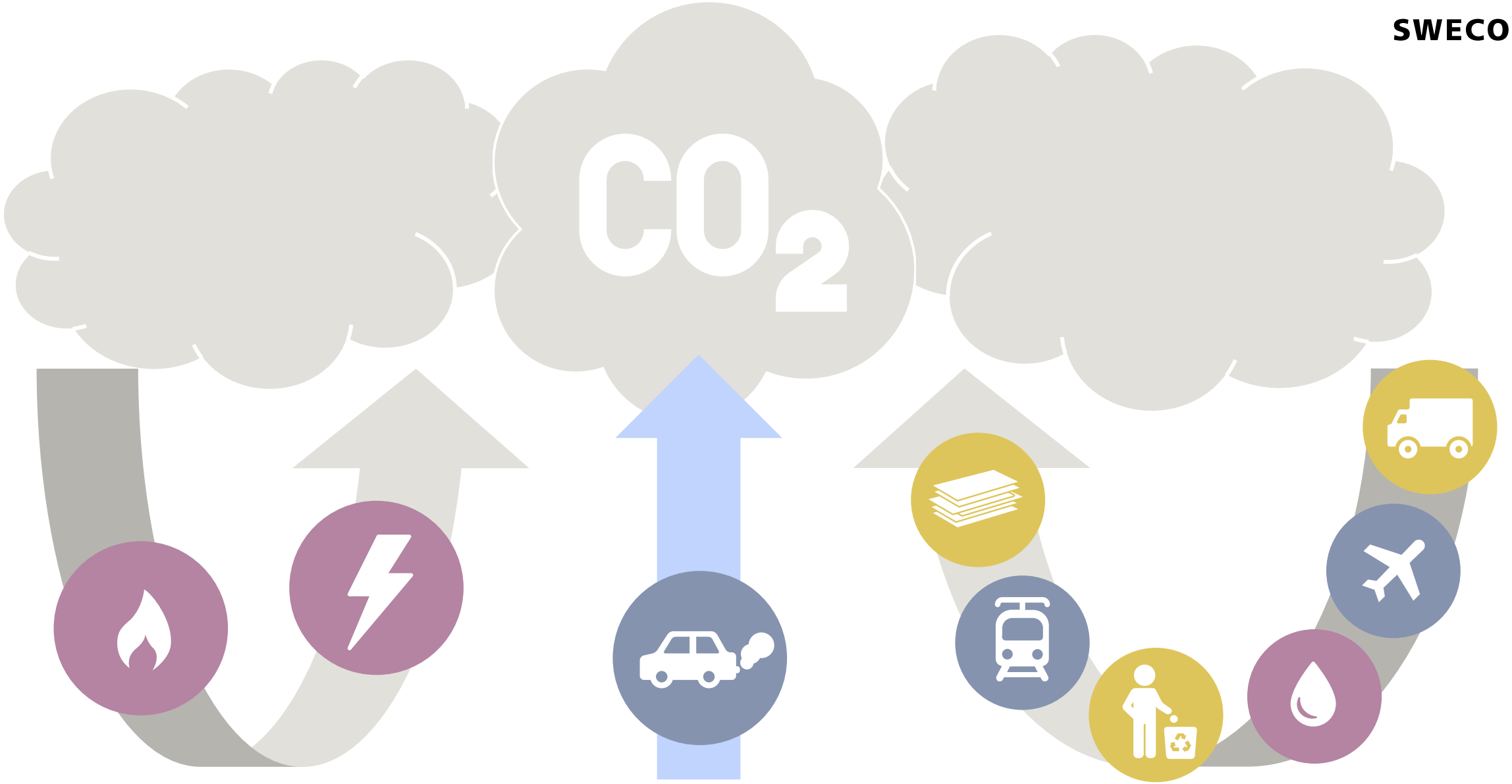


Outlook Belgium 2030

- 250.000 company cars 2026 / year
- Uptake privates => 50%



2020
LEADING THE WAY TO A SUSTAINABLE FUTURE



Scope 2:
Indirect emissions

Scope 1:
Direct emissions

Scope 3:
Other Indirect emissions

Journey to Climate Neutrality:
Inventory: top 5 CO_2 sources

Rank		CO_2 source	Total annual CO_2 in ton	% of total
1		Diesel & petrol fleet cars Direct tailgate emissions	**1.565**	**81,30**
2		Electricity usage (grey electricity)	**140**	**7,27**
3		Gas usage (heating)	**126**	**6,55**
4		Airplanes (inside Europe)	**50**	**2,60**
5		Paper usage	**44**	**2,29**

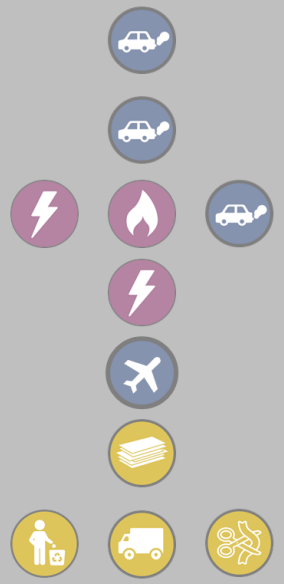
Present less then 1% of Sweco's total emissions or will evolve to zero due to increasing decarbonization of Belgian electricity production

Klimaatneutraliteit Roadmap

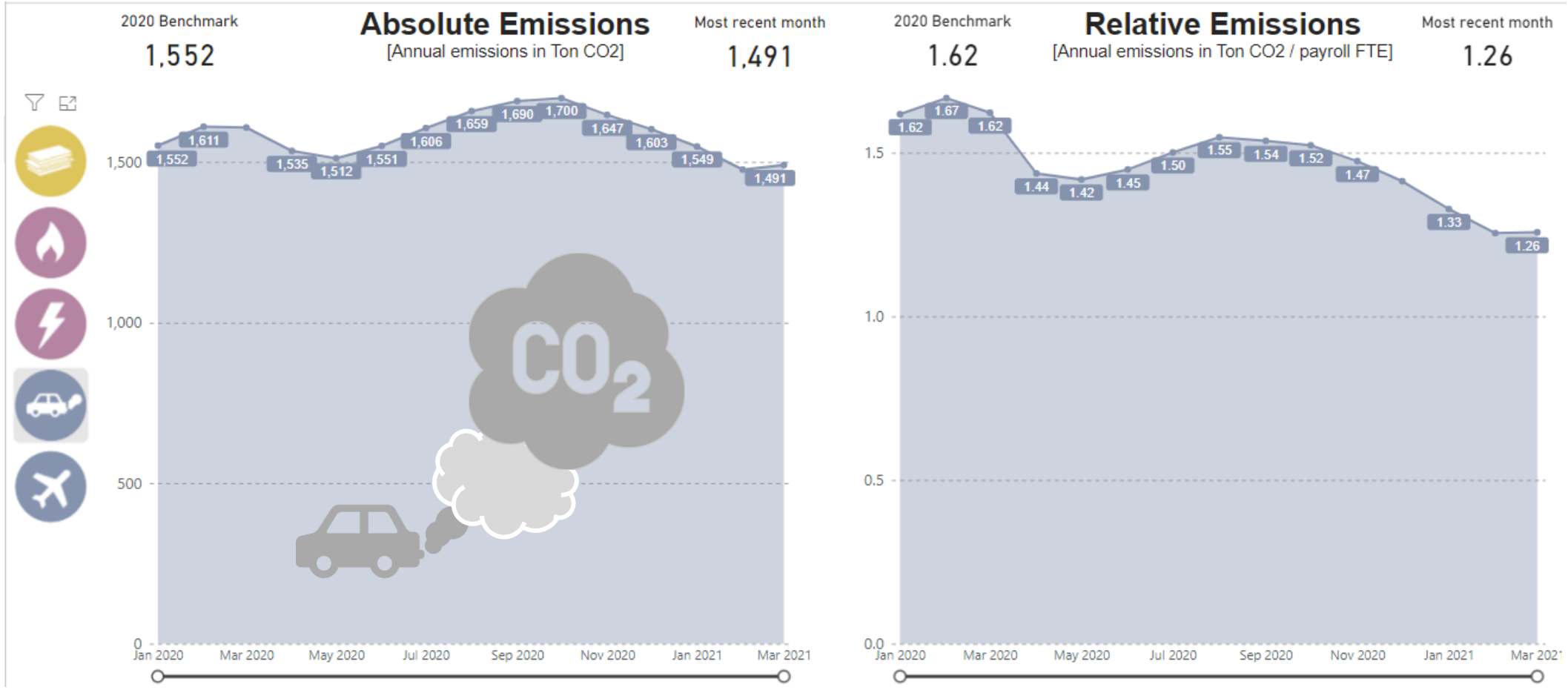
In 2020 hebben we de doelstelling uitgesproken om tegen 2030 volledig klimaatneutraal te zijn.

1) Accelerate the principles of our mobility guide to lower the total number of cars & kms driven by our company fleet
2) Electrify our entire fleet by 2028
3) Carbon neutrality as a main criteria for all future offices locations of refurbishments
4) Switch all our electricity contracts to green contracts
5) Compensate necessary flights by planting a Sweco forest
6) Eliminate paper usage in projects & internal process by 2025
7) Sustainability as a criteria in all our future procurement of services and goods

CO_2 sources effected



Emission fossil fueled cars



100% zero emission decision based on

- Broad offer alternative solutions in our Mobility Policy
- Attracting offer EV's
- Charging infra at home, office and public area
- Business opportunities for Sweco

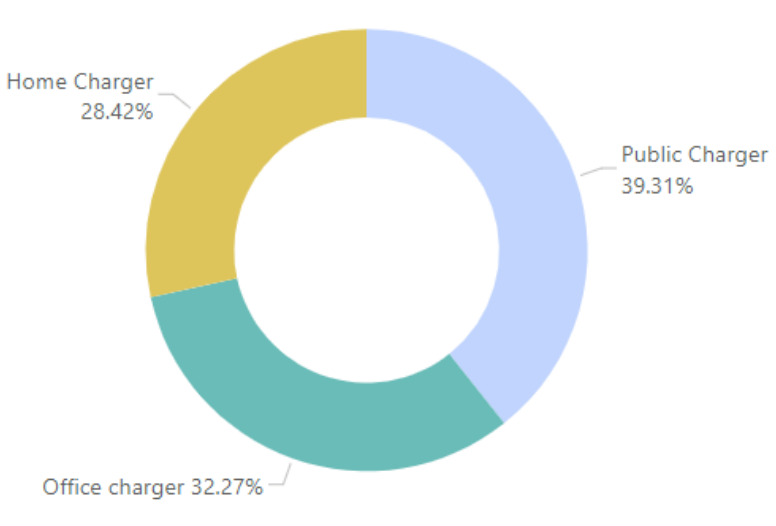
Our fleet in Belgium

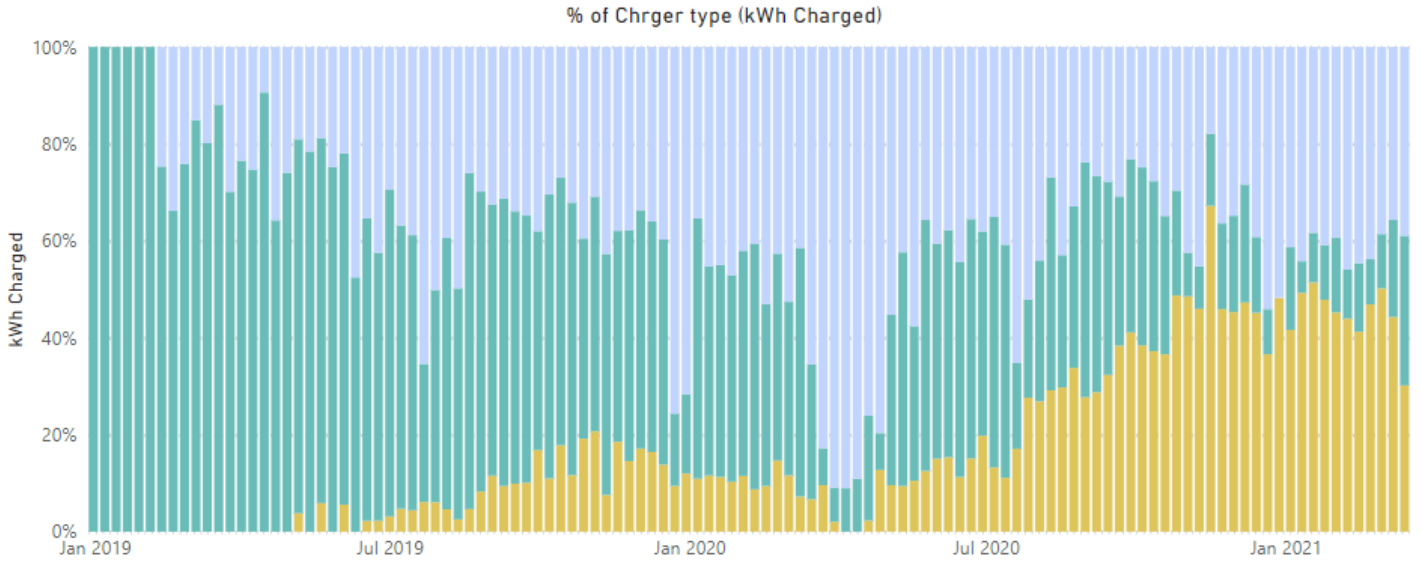
207 (of which 87 awaiting delivery) electric cars in our fleet which combined will save 3149.63 ton of carbon emissions

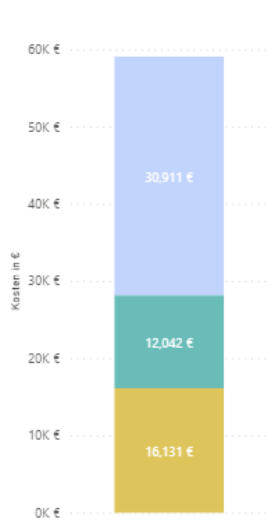

Transforming
society
together
ABB
yuso
SWECO
V2G: BI DIRECTIONAL
CHARGING

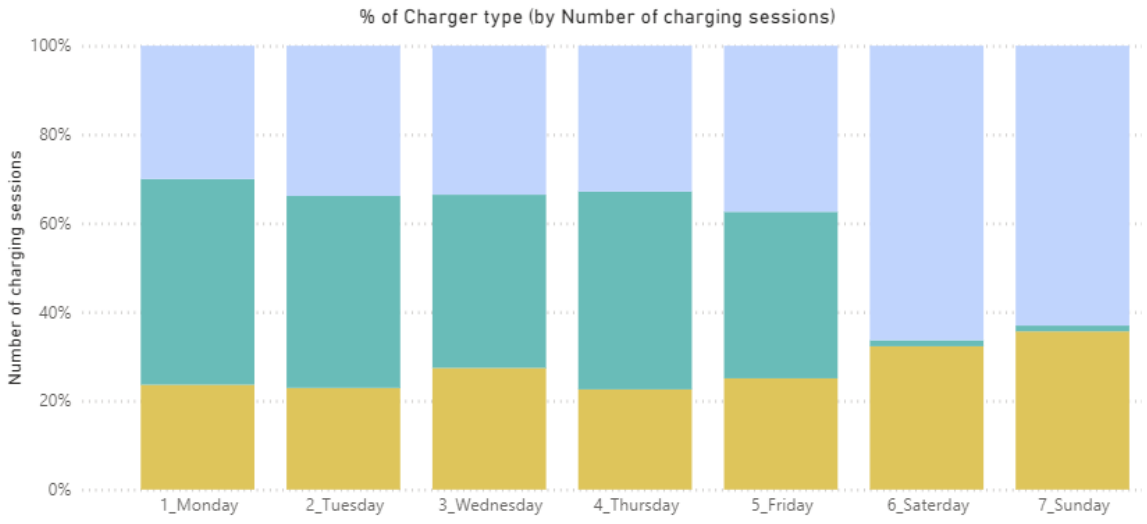
Laadinfrastructuur mogelijkheden op kantoor, thuis en op locatie

SWECO









Why V2G charging

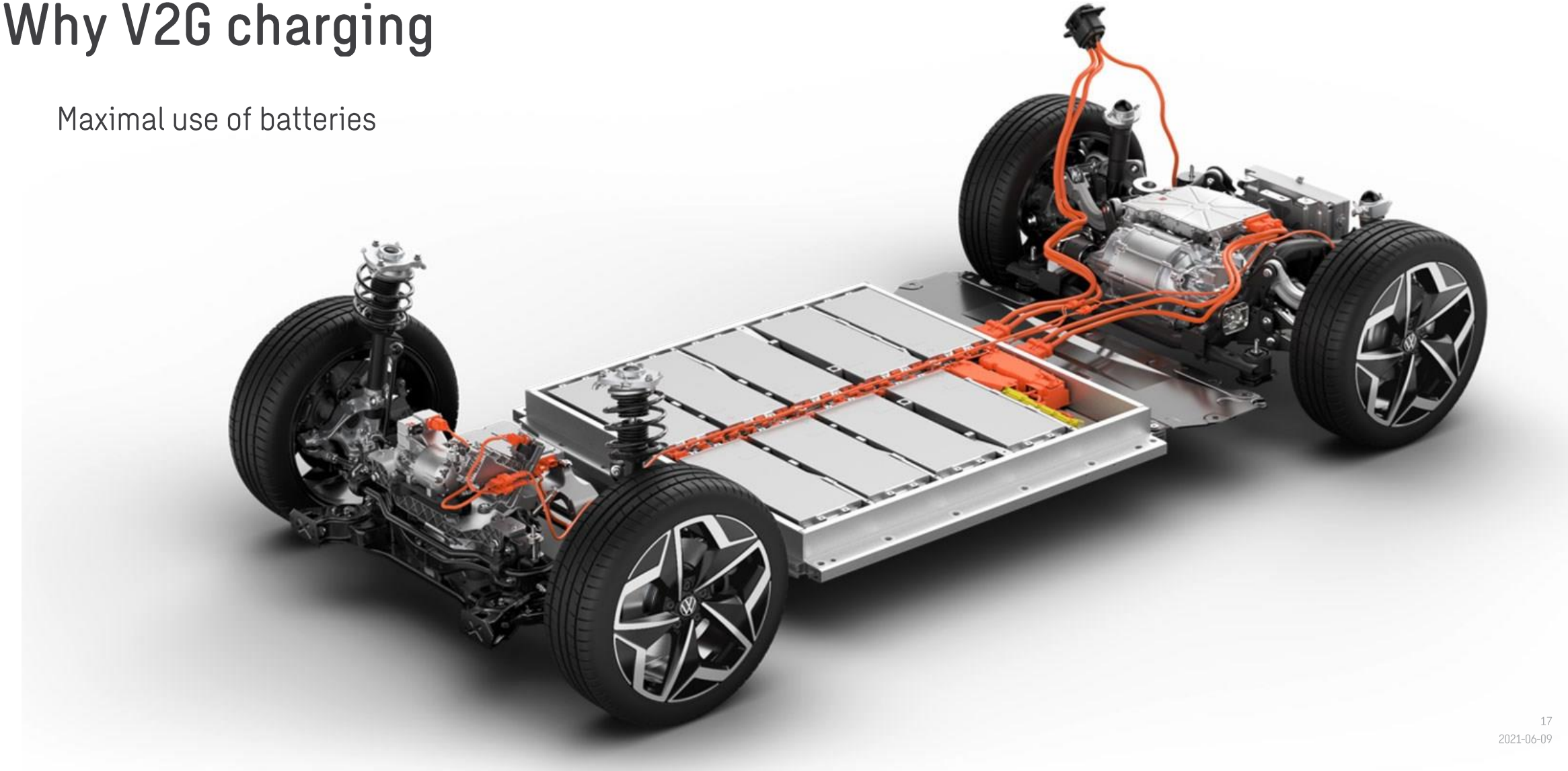
Optimal use of Renewable Energy

Why V2G charging

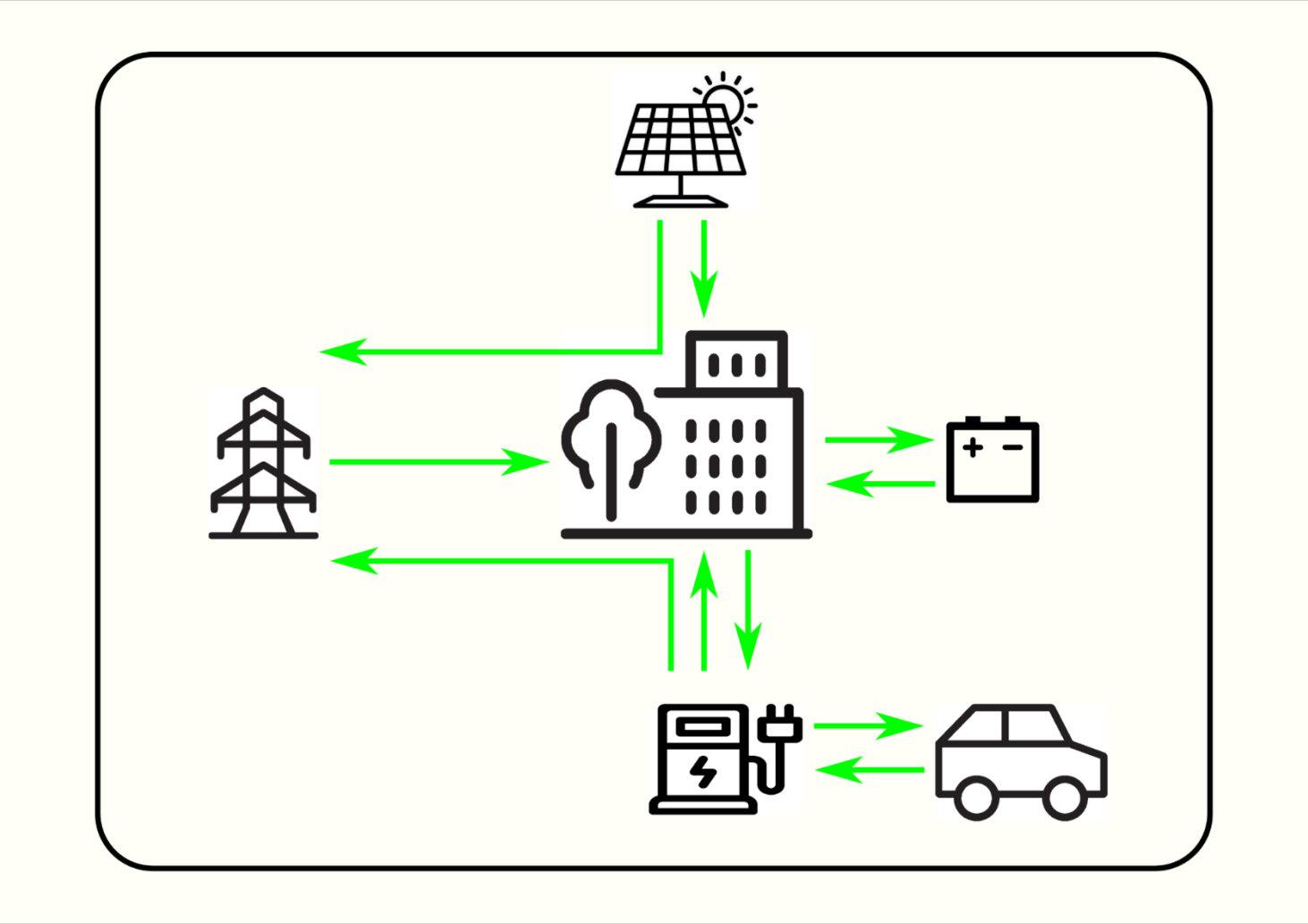
Net stability – avoiding congestion

Why V2G charging

Maximal use of batteries

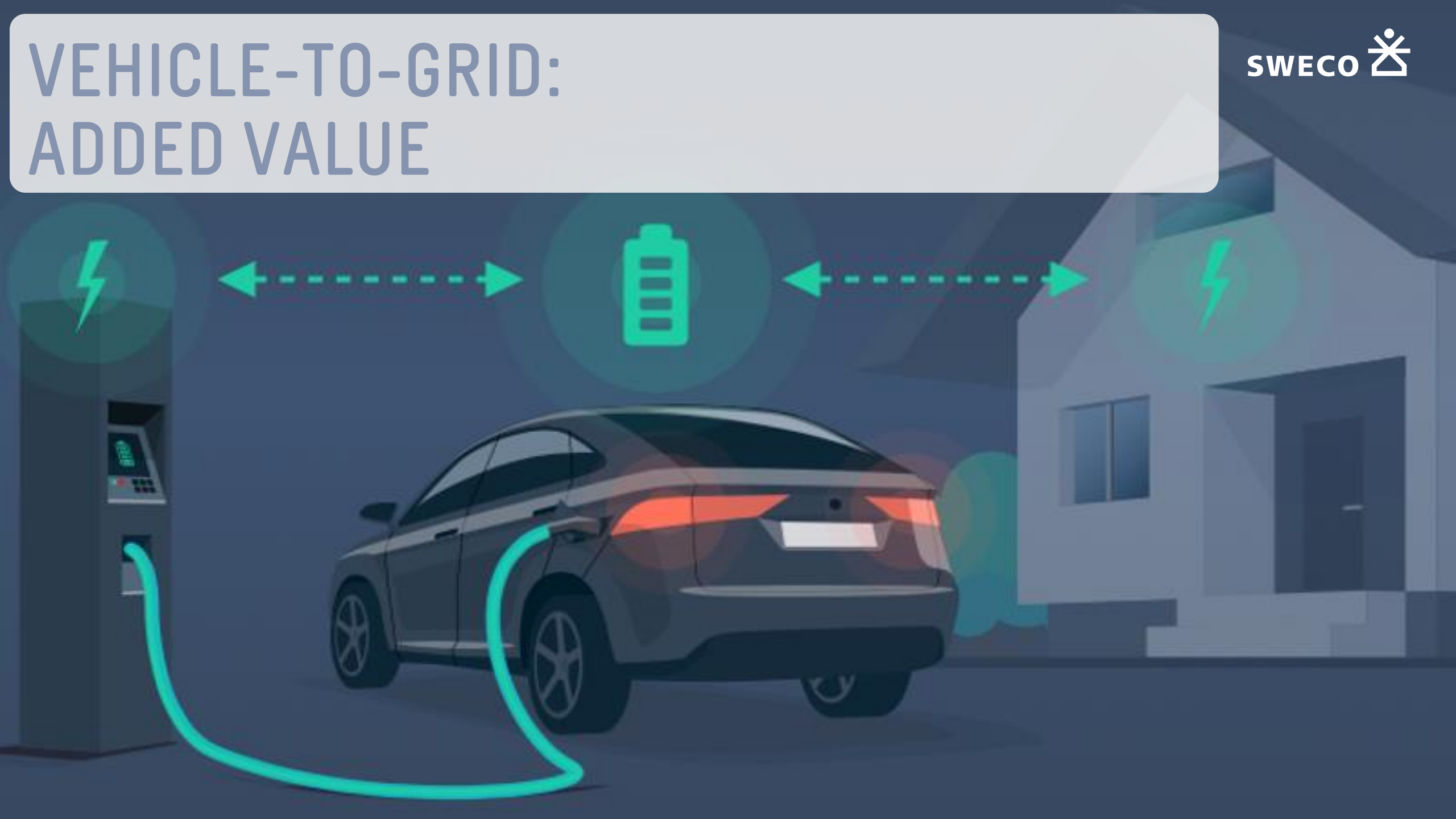


V2G in net zero building



VEHICLE-TO-GRID: ADDED VALUE

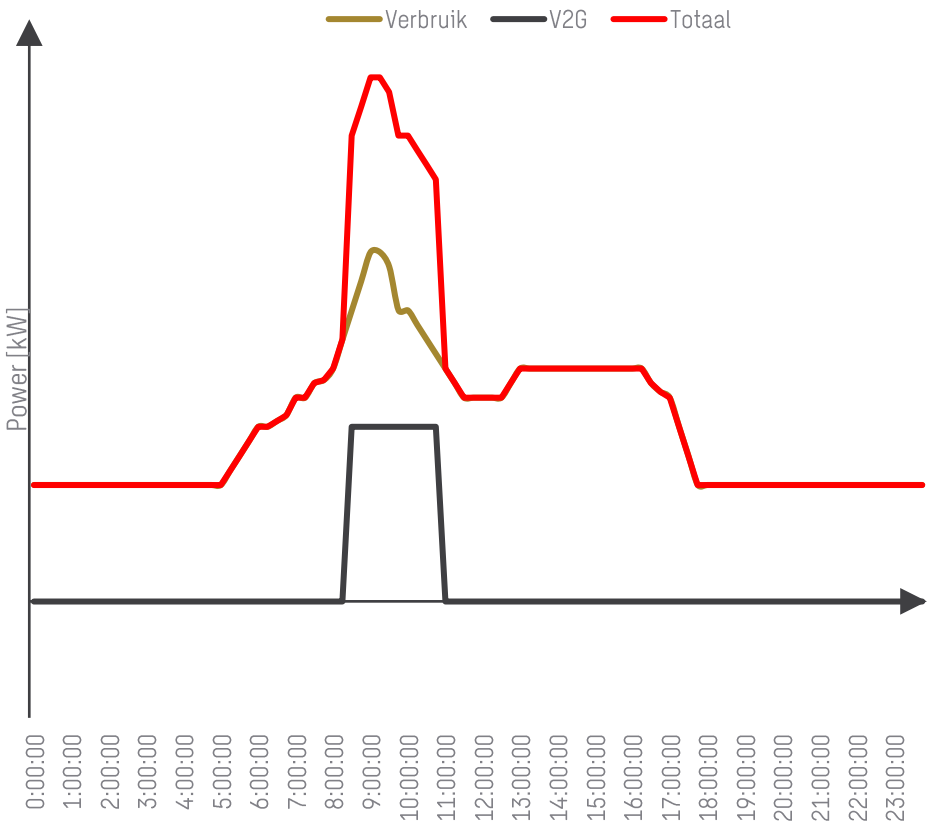
SWECO



V2G toegevoegde waarde

- Peak shaving
- Self consumption renewables
- Dynamic energy pricing
- Imbalance support - Flexibility

Base case


Verbruik
V2G
Totaal
Power [kW]
0:00:00
1:00:00
2:00:00
3:00:00
4:00:00
5:00:00
6:00:00
7:00:00
8:00:00
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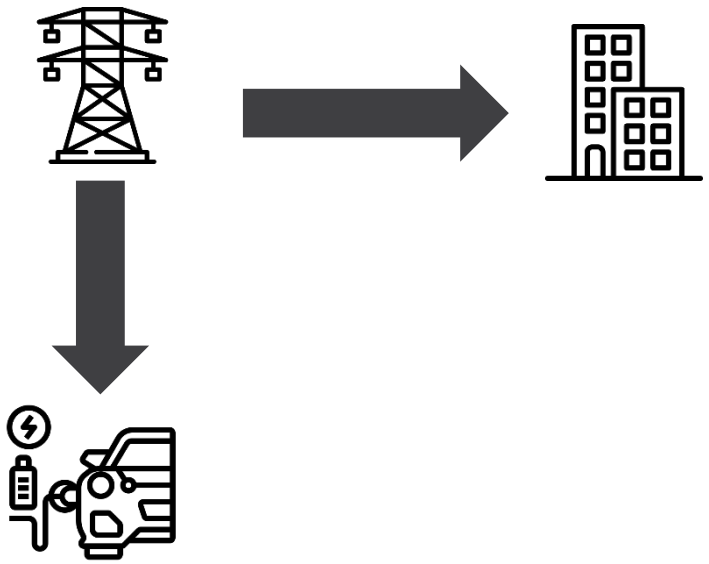
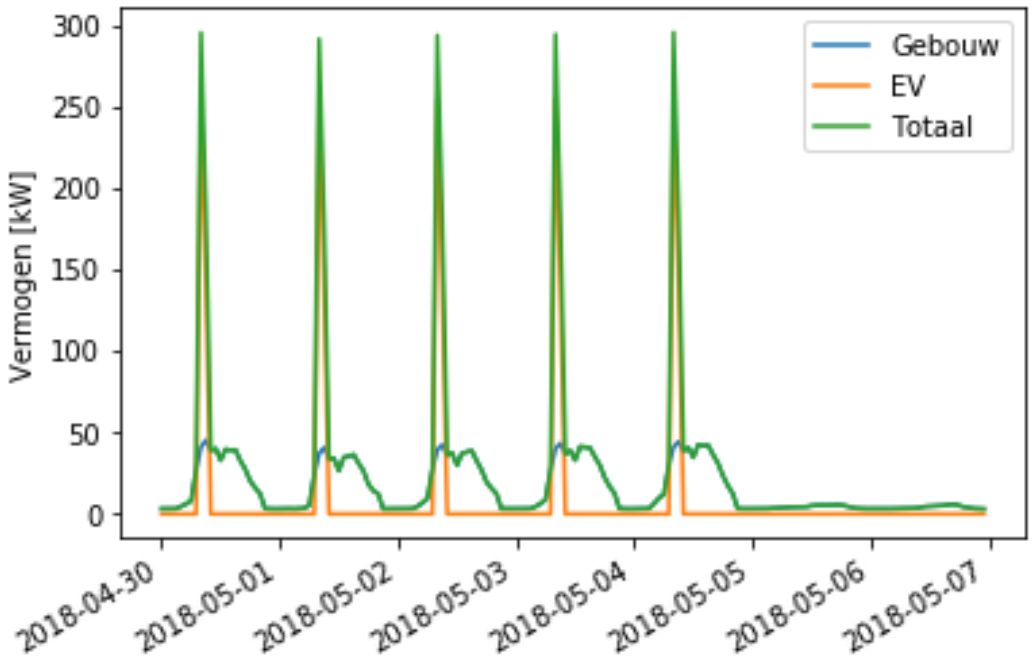
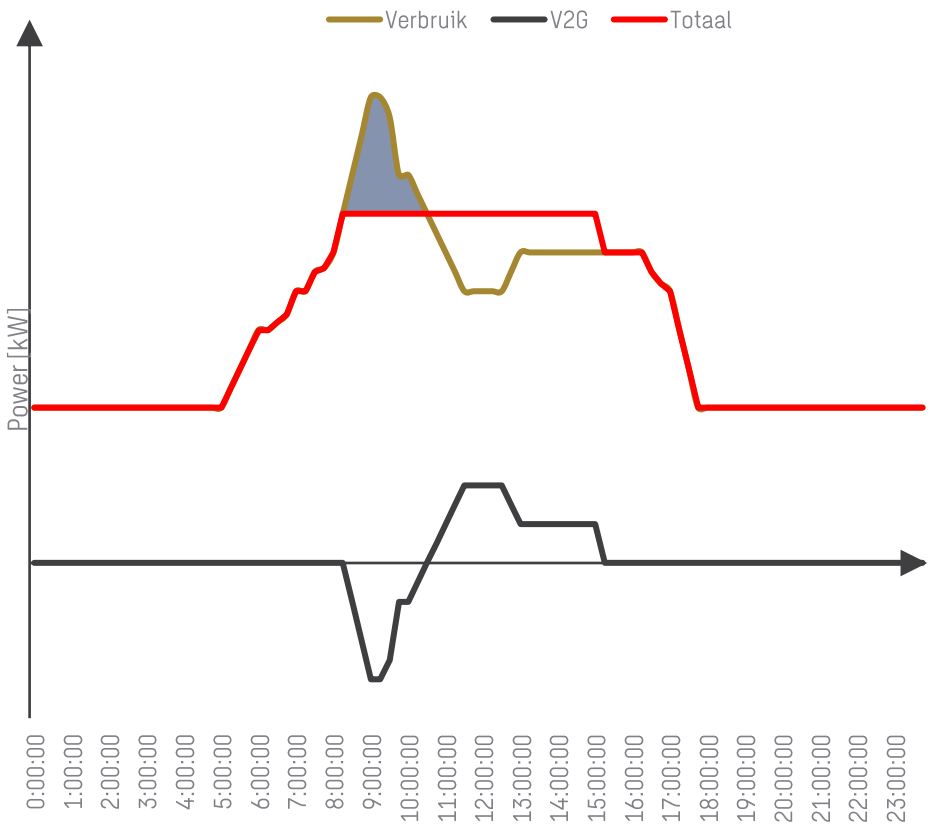


Base Case

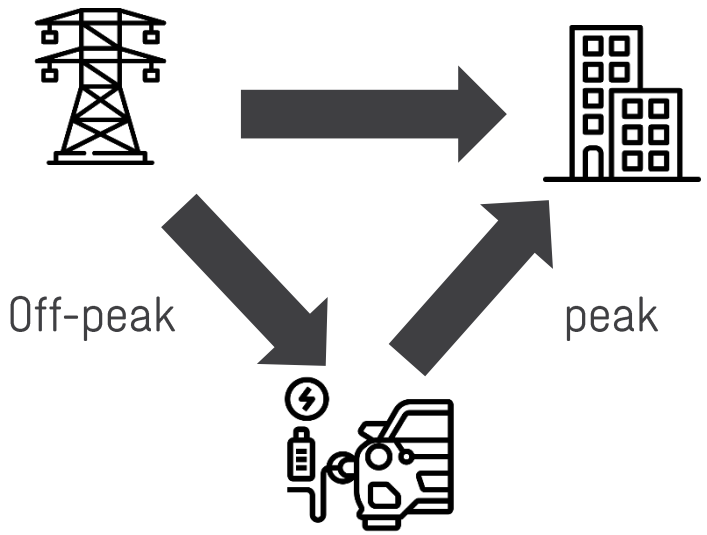


- Energy demand cars: 375 kWh
- Charing infra: 22 x 11kW DC
- Charging vehicles: energy use building x3
- No smart charging or solar

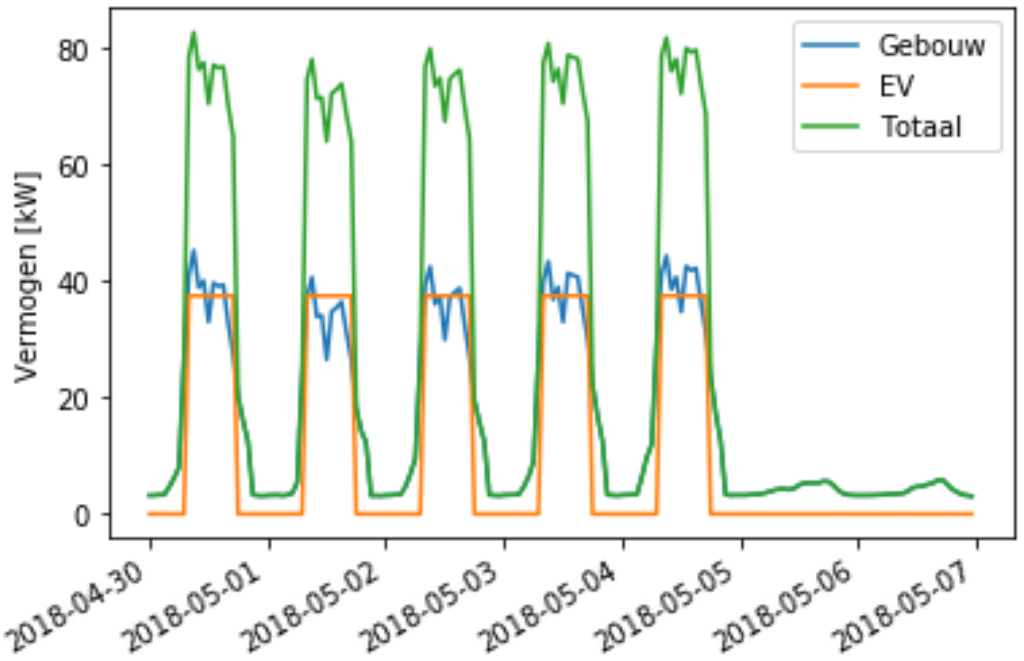
Peak shaving



- Vehicle-to-building

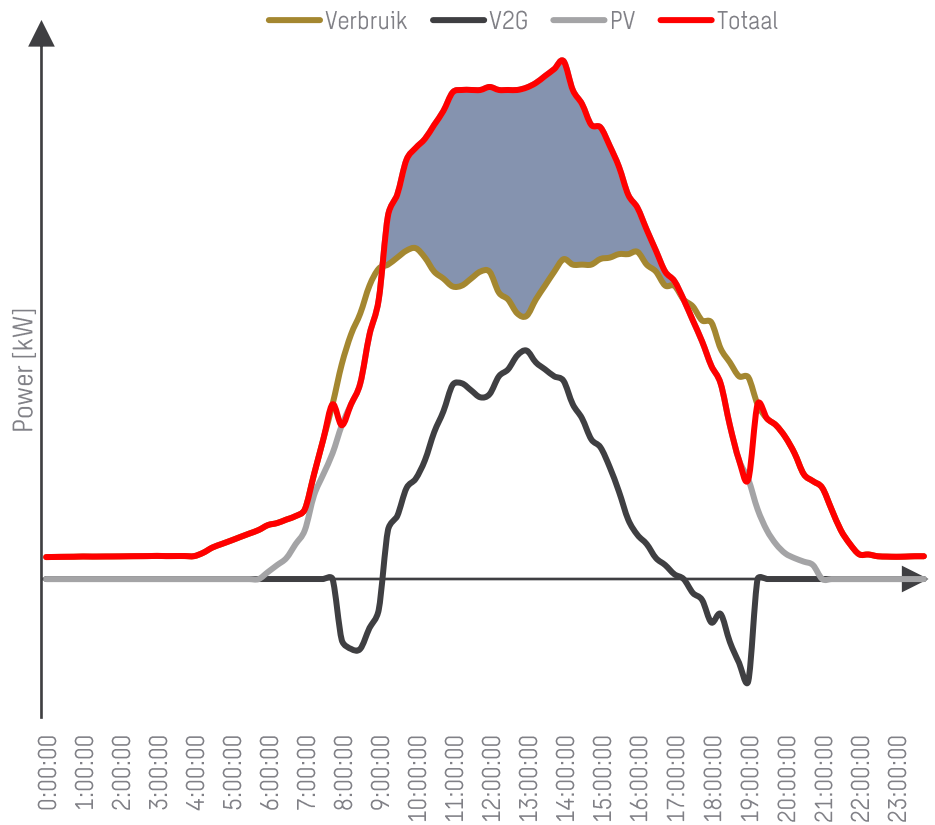


Peak shaving

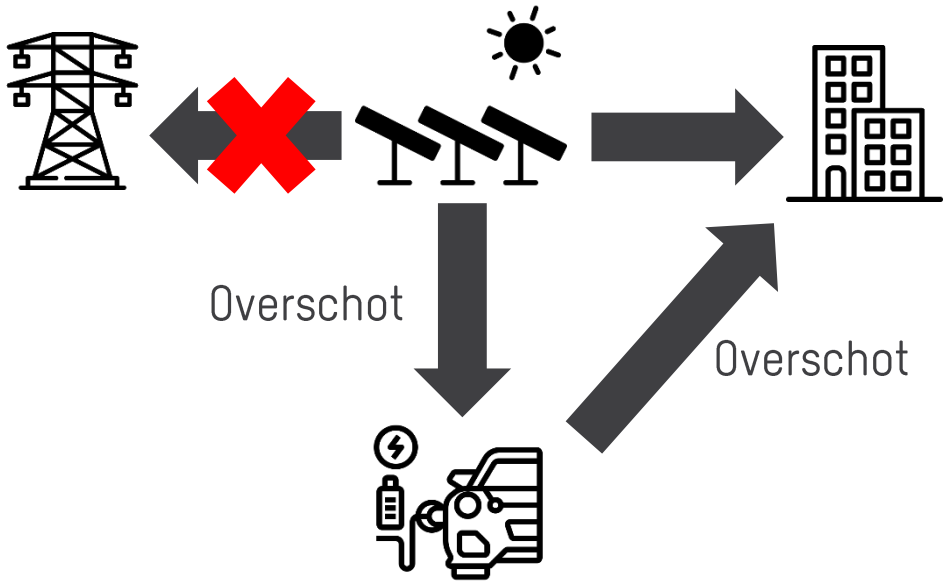


- Energy use very stable
- Limited peaks
- ‘Load balancing’ is very good answer

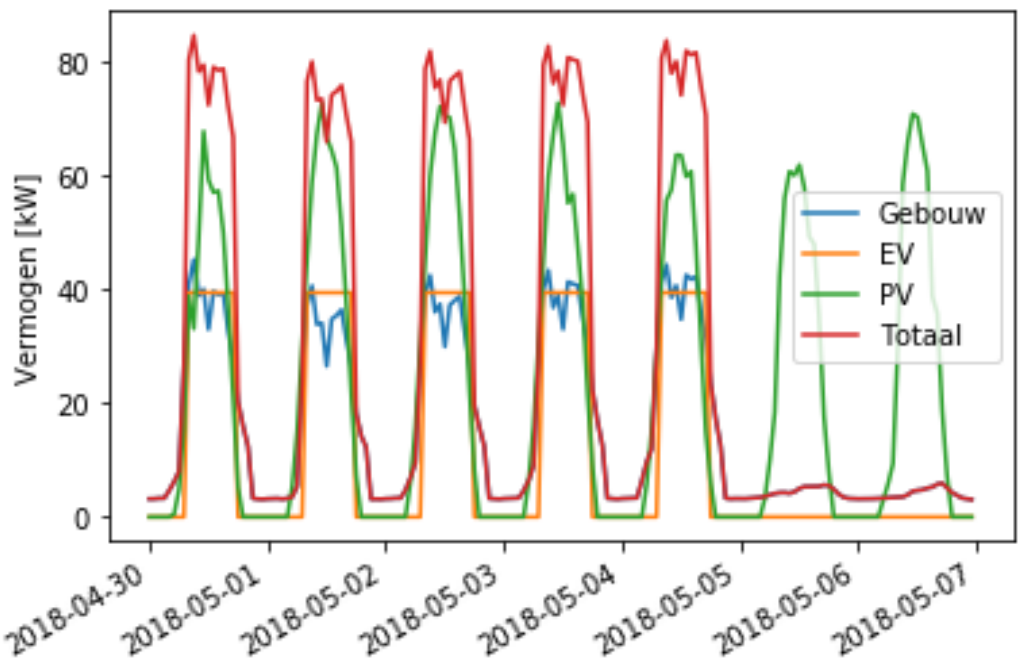
Maximaliseren zelfconsumptie



- Vehicle-to-building

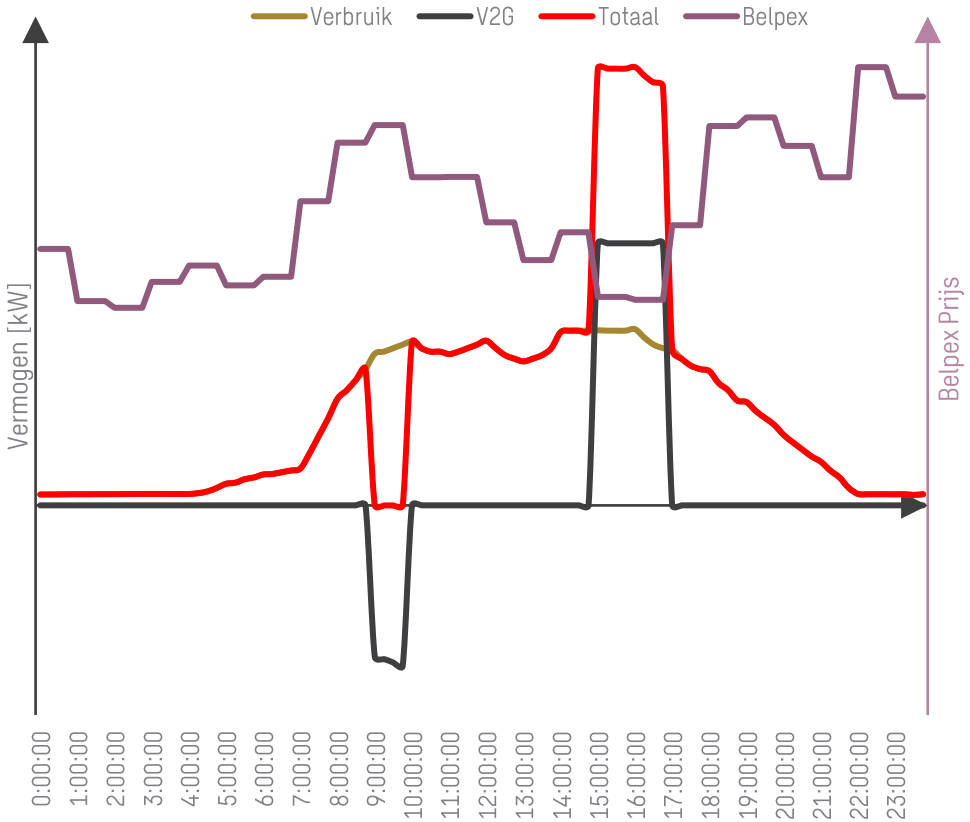


Auto consumption

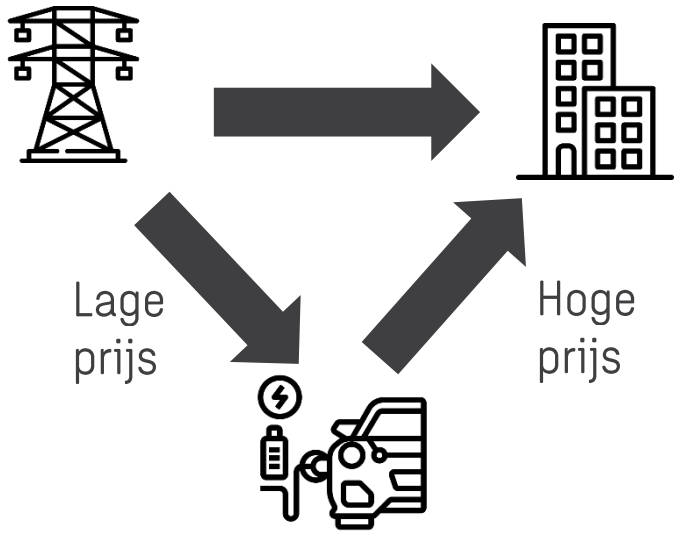


- Limited solar= +/- energy demand building
- V2B: avoiding net cost
- Activation V2B on moment morning and evening
- Building needs: +/- 100kWh
  - 3h
  - 10 cars
  - DC 3,7 kW
- Weekends => stationary battery

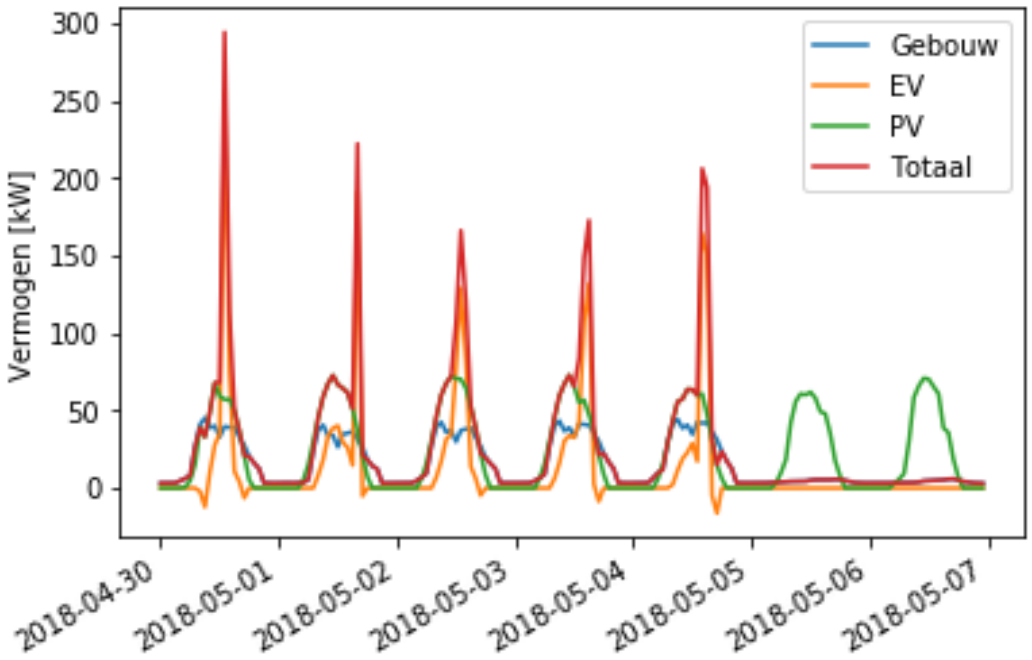
Dynamic energy pricing



- Vehicle-to-grid:
  - Extra net cost
- Vehicle-to-building:
  - No cost



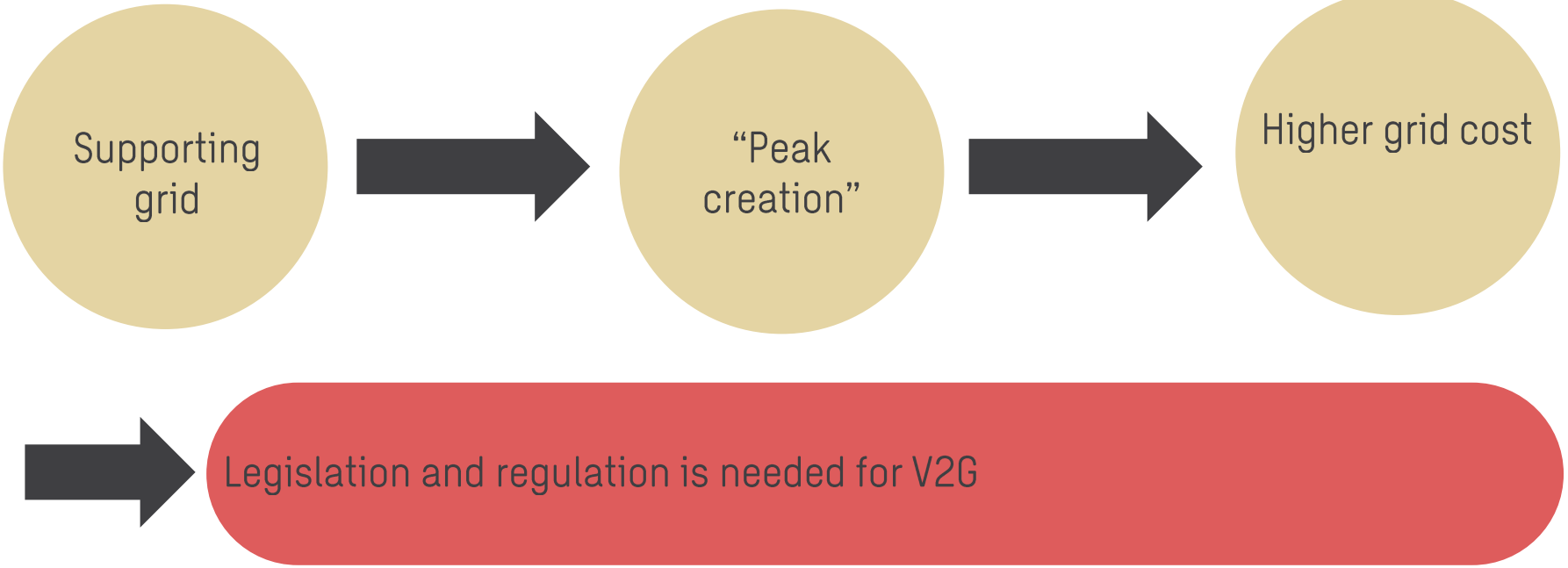
Dynamic energy pricing



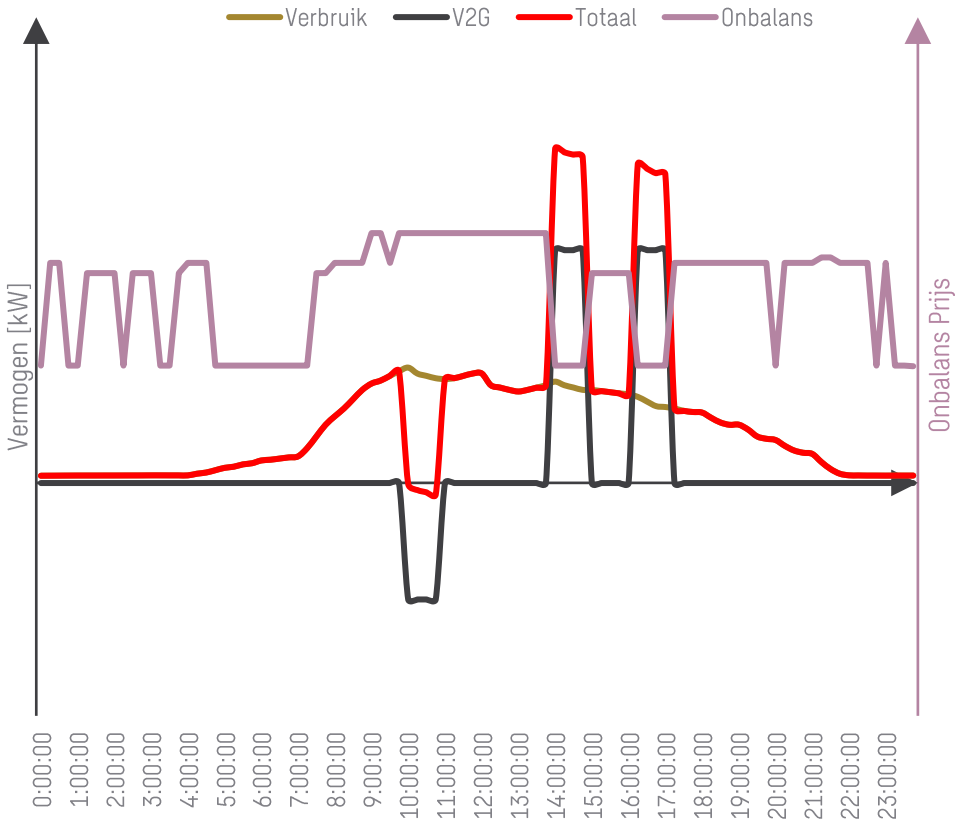
- First local renewable energy
- Dynamic or negative energy prices
- Faster charging when low or negative prices
- Fast(er) charging => new peaks

Tariff capacity

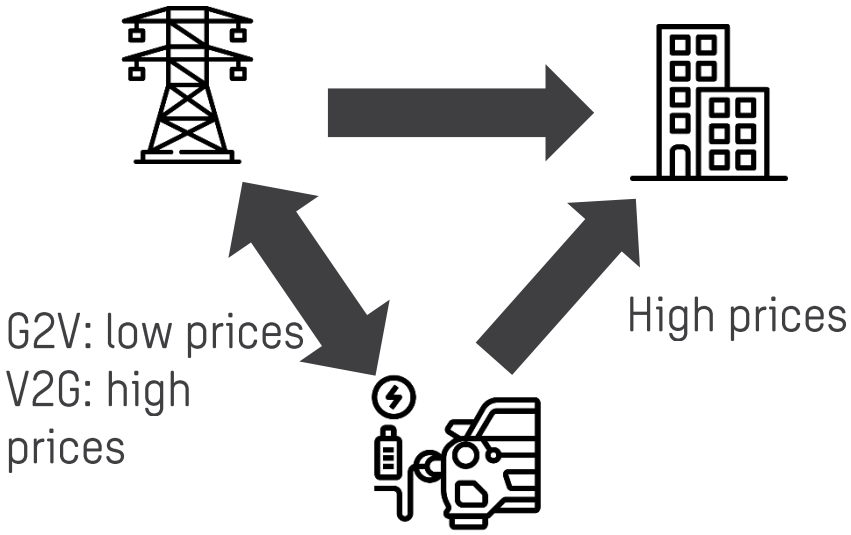
Net imbalance: capacity tariff



Net imbalances



- Limited use case



Demand Side management

Transmission level

Local level: avoiding net investments and local balances

Auto consumption

Dynamic energy pricing

Imbalance model

Peak shaving

Auto consumption

VRAGEN ?

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