

# Battery Power Supply (BPS) and Energy Storage System (EOS) For sprinkler pumps

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*Fire Sprinkler International 2023*




# Introduction




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# About Boele Fire Protection

Specializes in maintaining, replacing and supplying sprinkler pumps, sprinkler tanks and complete prefab (temporary) water facilities for fire safety installations.

BFP is the only player in the Netherlands that can build a complete water supply in-house.

As BFP we already brought various sustainability solutions to the market.

Since 2019 Boele Fire Protection is part of the Unica Group



# Subjects

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- 01 The Netherlands and the current situation on the electric grid
- 02 BPS: How does it work?
- 03 EOS: A way to support the energy transition
- 04 Summary

# Climate objectives The Netherlands

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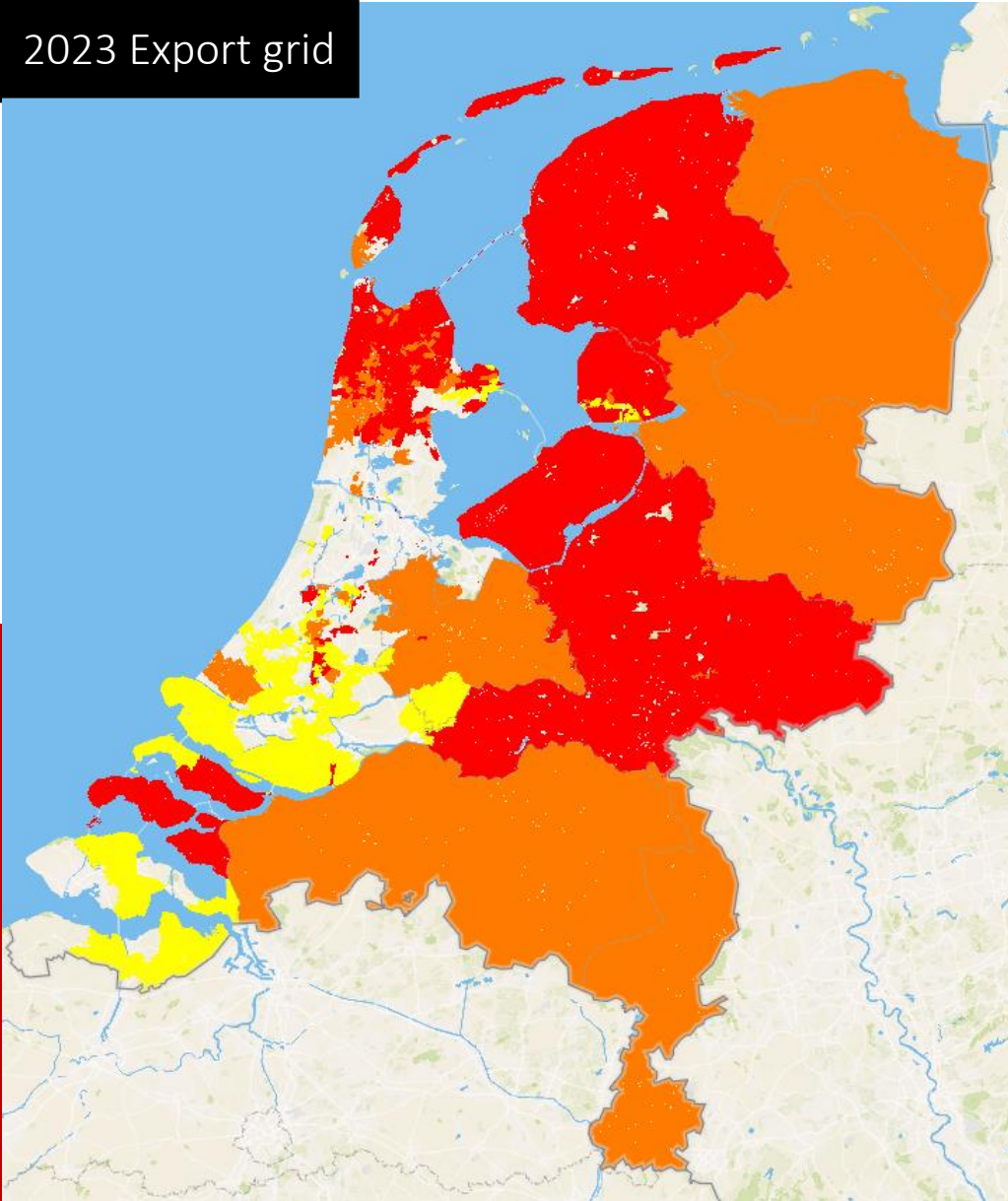


- 55% CO2 reduction by 2030
- Climate neutral in 2050

## **Impact Fire Safety**

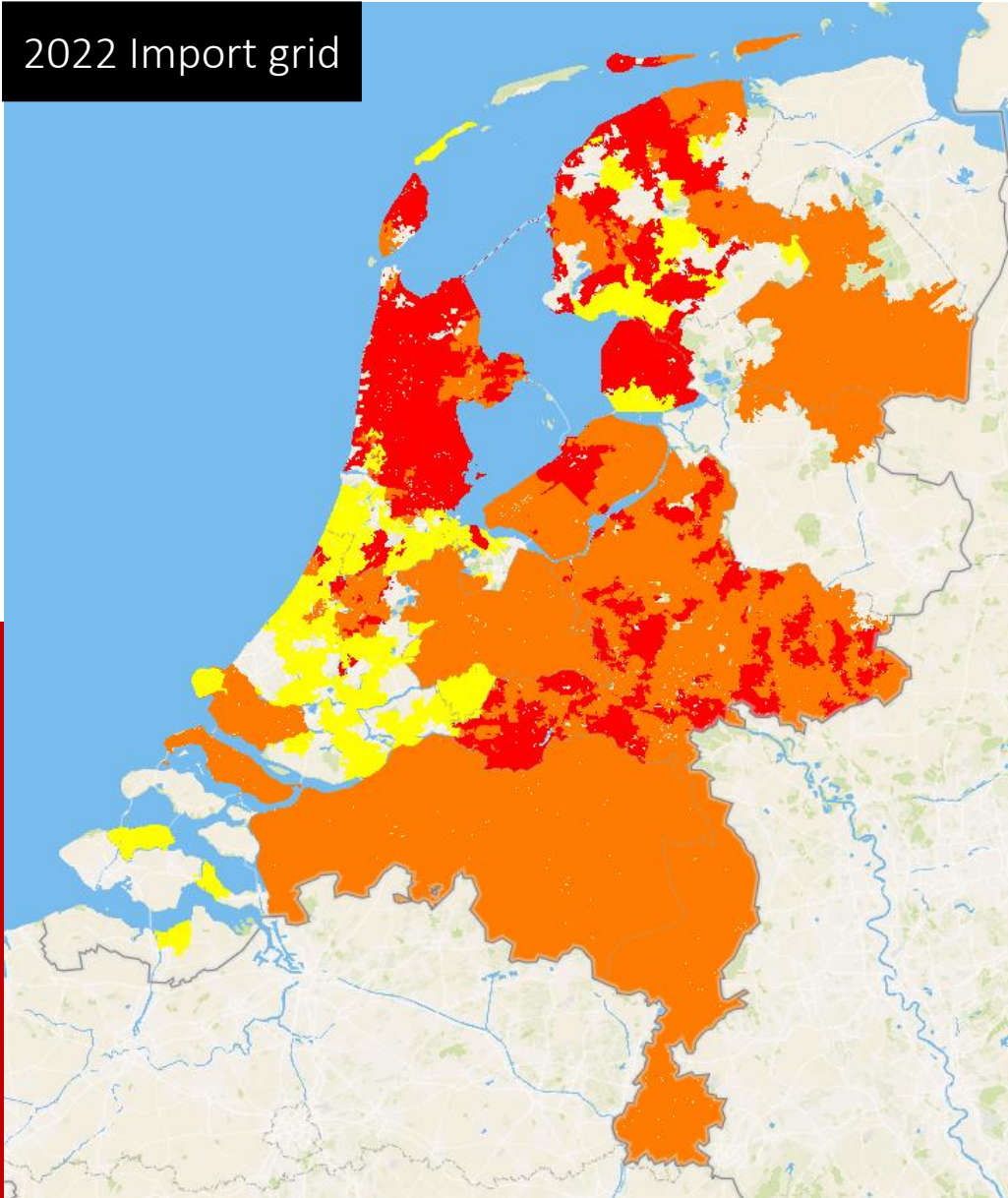
- Electrification of installations

2023 Export grid



## Current situation on the grid

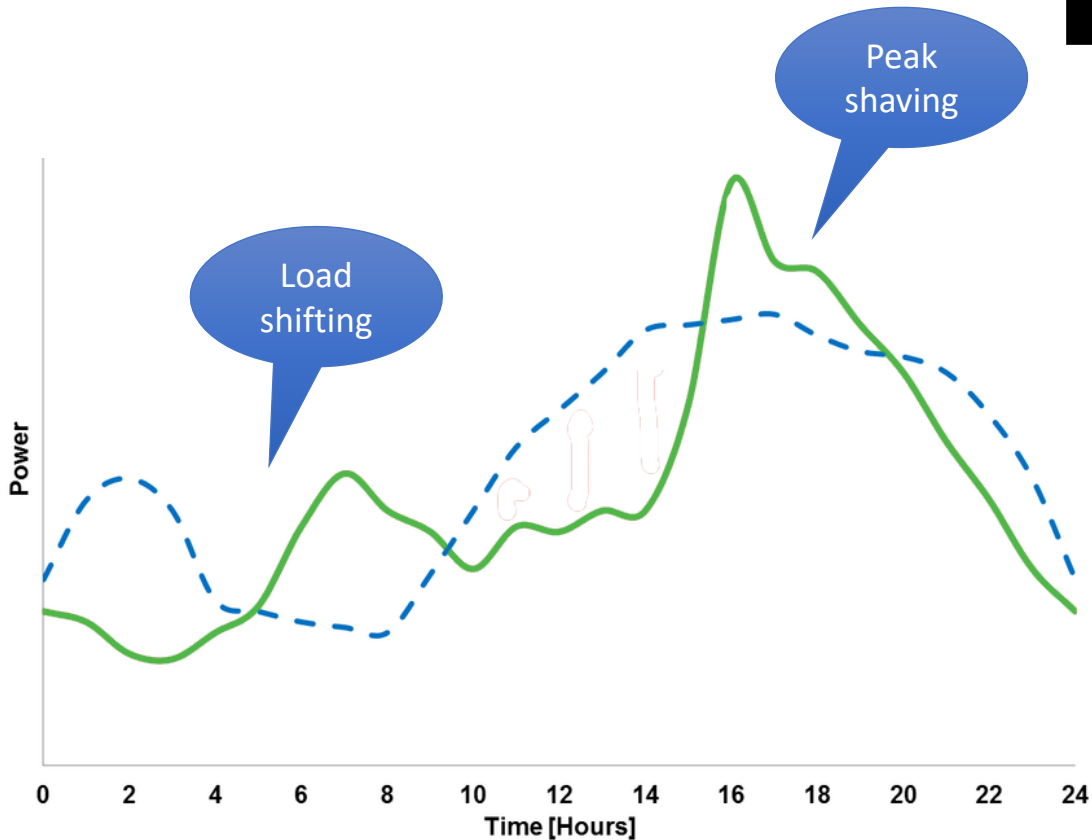
2022 Import grid



## Current situation on the grid

- Getting a Grid connection for a (new) building is sometimes not possible or takes a long time
- Delivering electricity back not possible either

# Current situation on the grid



- Getting a Grid connection for a (new) building is sometimes not possible or takes a long time
- Delivering electricity back not possible either
- The peaks of the grid are changing

## PROBLEM:

Electrification of the sprinkler pump is challenging.  
The BPS can be a solutions for this



# **BPS: What is it and how does it work?**

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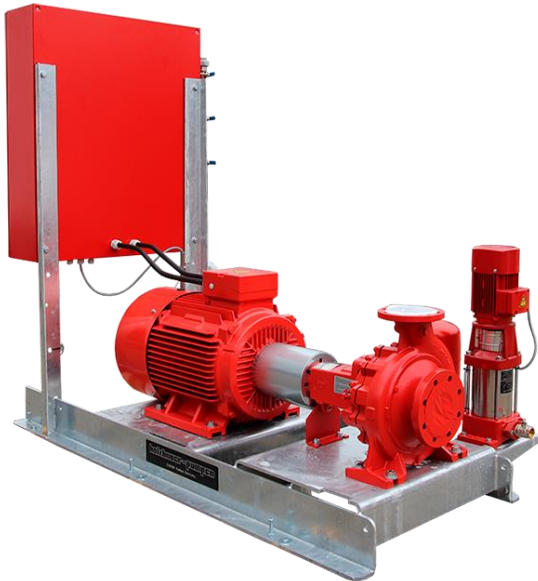
# Battery Power Supply (BPS)

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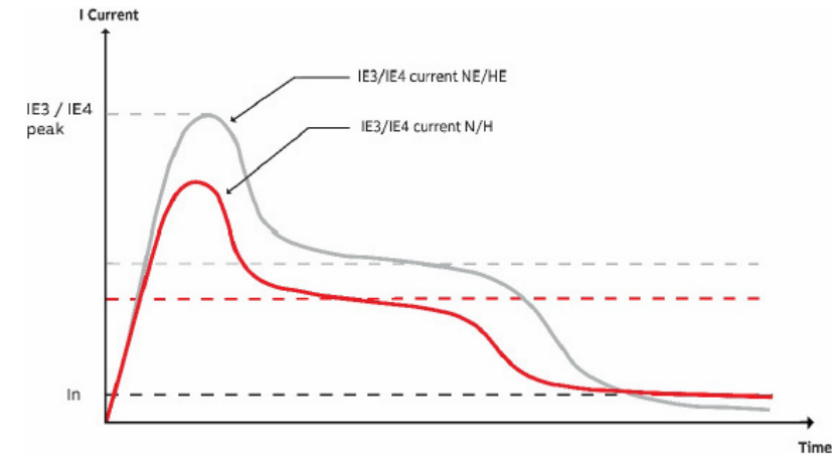
- A battery pack and inverter that provide primary power to the electric sprinkler or water mist pump.
- As a result, sufficient battery capacity is buffered for periodic tests or during calamities, such as fire.



# Why a Battery Power Supply (BPS)?



- **Normal situation:** 7x  $I_nA$  (with IE4 even 8/9x  $I_nA$ )
  - Expensive cable and large grid load
- **Star-delta switch:** 3.5x  $I_nA$
- **Softstarter:** 2.5x  $I_nA$
- **Frequency converter:** 1.5x  $I_nA$ 
  - Very expensive
- **BPS:** 0.5x  $I_nA$



# Why a BPS?



## Sustainability

- Trend : Electrification / moving away from fossil energy carriers.
- Reliability of the electricity grid is declining due to the increase in solar and wind energy.

## Nuisance

- Fine dust and noise from diesel pump set or NSA not desirable (environmental zone)

## Cost alternatives

- Infrastructure for an E-pump is often expensive or not always possible.
- Starting currents will become higher due to the shift from IE3 to IE4 motors.

# EOS: A way to support the energy transition

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# Sustainably driven sprinkler pump powered by an EOS

## Energy Storage Device (EOS)

The battery pack is expanded to buffer the generated energy.

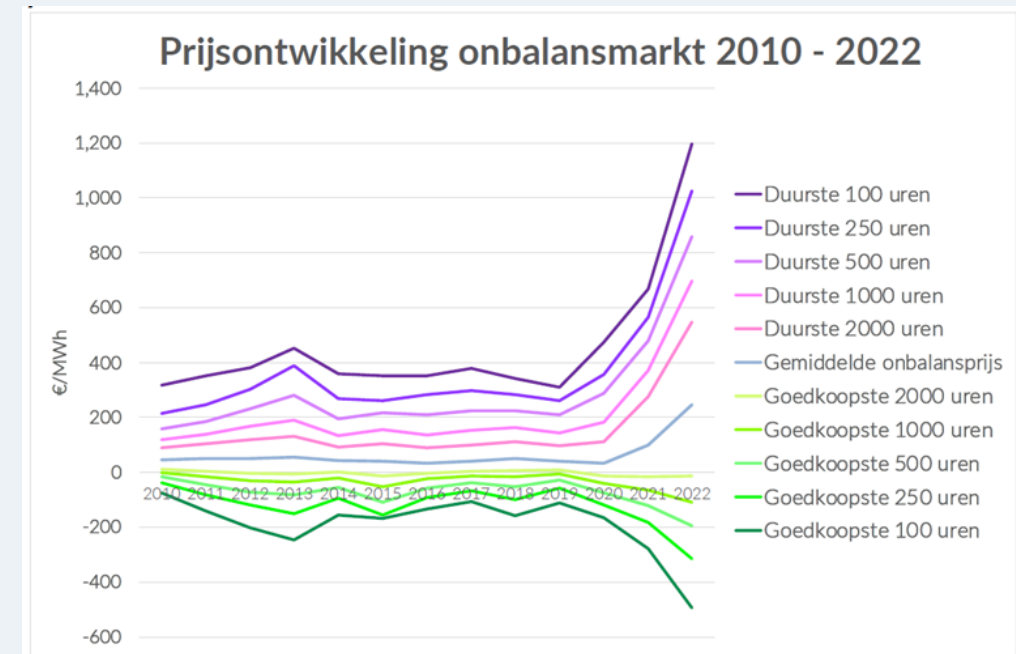
The surplus energy can be traded or guaranteed for the electricity grid.



# Business Case Energie Storage Device (EOS):

**Grid imbalance:** Imbalance market: compensation is available for making power available to support the electricity grid.

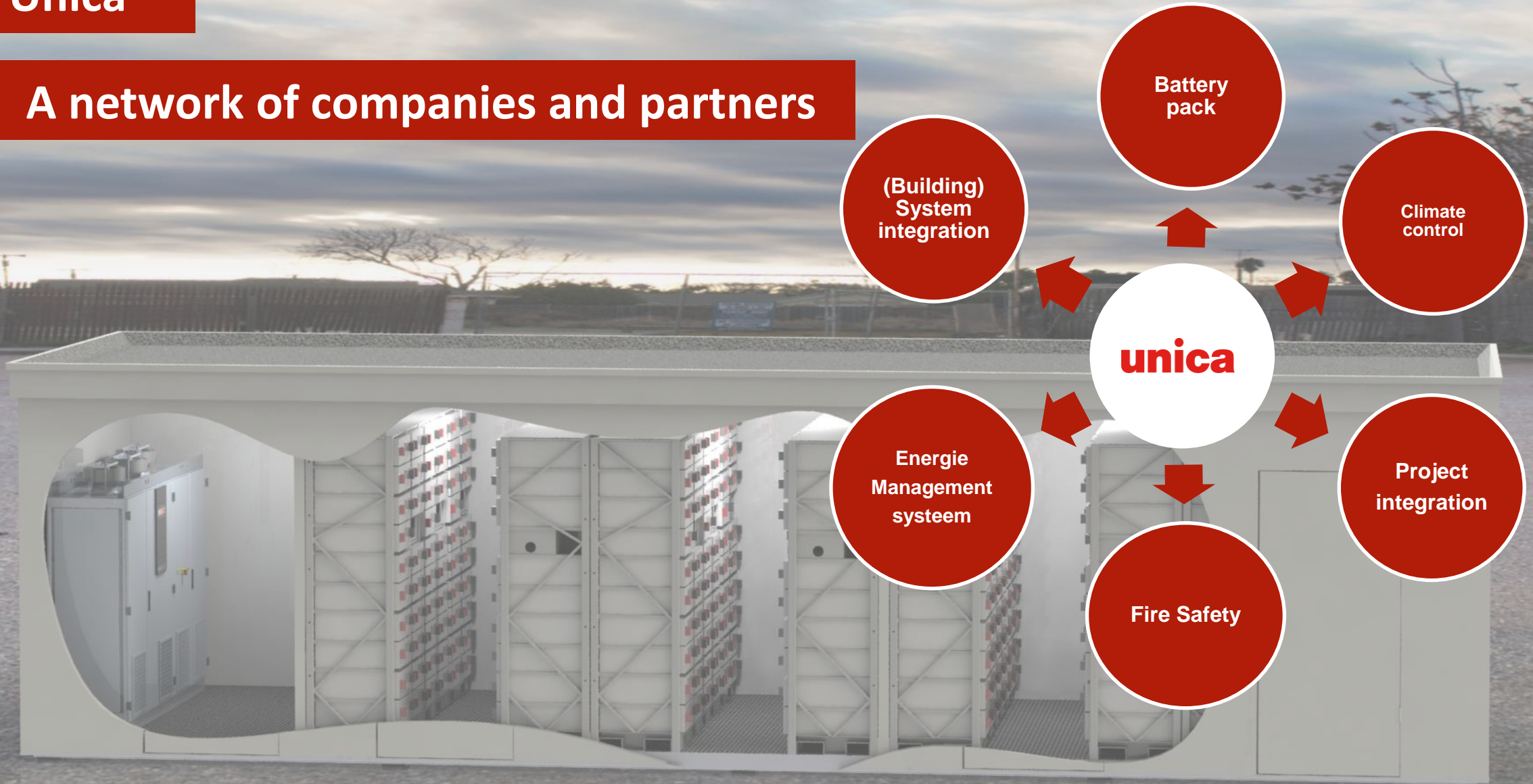
- 1 hour of drawing power from the electricity grid or
- supplying power to the grid for 1 hour,
- 6 hours recovery time
  
- Fee 2020: € 35.000 / Megawatt / year
- Fee 2021: € 60.000 / Megawatt / year
- Fee 2022: € 145.000 / Megawatt / year
  
- ROI of 4-6 years





**Unica**

**A network of companies and partners**



# Summary

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- With a BPS you can use an electrical sprinkler pump without a large grid extension, in environmental environments or as a cost alternative.
- EOS helps the energy transition and on-off grid solutions.
- *Lets will bring Fire Safety Installations into the 21st century.*



Questions?