



# Smart grids and smart energy solutions for more resilience in European industries

## Your Hosts:

Robert Lenk and James Snelgrove

Friday, 20 March 2026 | 13:00 - 14:00





Presenting...



REPS

apollo\*

*GUARDEXY*



ostermeier  
H<sub>2</sub>YDR<sup>o</sup>GEN SOLUTIONS



## CleanCAES and its applications

Enabling renewables to power the world affordably,  
reliably and resiliently

**Cleanergi Ltd**

**Mark Howitt**

**Founder and CEO**



## Enabling the Energy Transition at Grid and Infrastructure Scale

- *Most electricity storage is at the wrong scale, duration & cost to replace hydrocarbons: far too small*
- *Most storage does not provide the ancillary services that make grids operable, reliable and resilient*
- *No other electricity storage offers Black Start at grid scale without foregoing revenues*
- *No other businesses offer integrations with renewables and grids that save more in grid reinforcement than it costs, in addition to project savings and other services*
- *No other business enables industry to be powered renewably with reduced or no (depending on configuration) grid connections, reducing regulatory and commercial risks and costs.*

**Cleanergi does, with CleanCAES, CleanStart, CleanGrid, CleanPark**

## • CleanCAES™

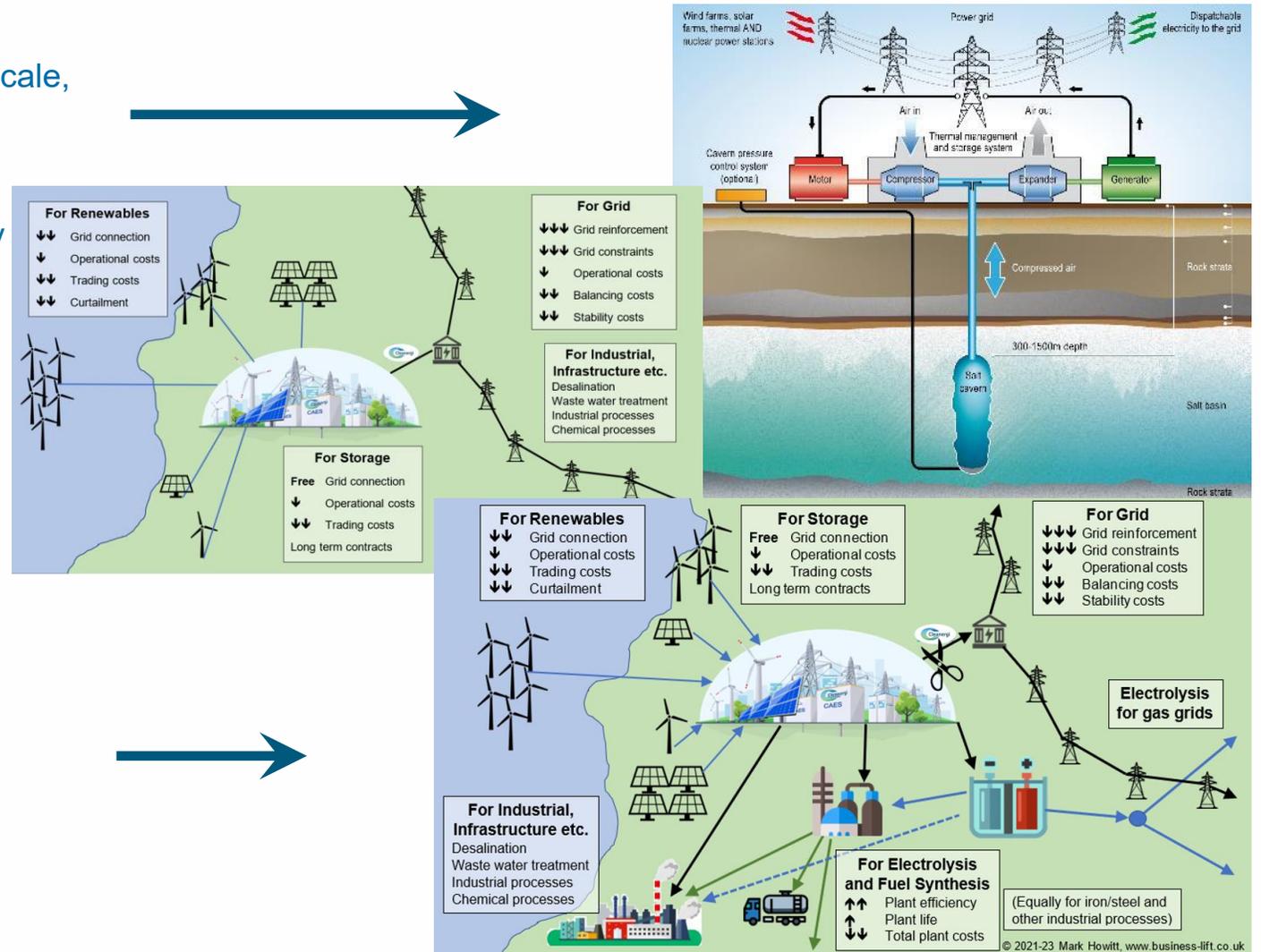
- The world's most efficient and cost-effective large-scale, long-duration electricity storage
- Uses existing technology, simple
- Patented, validated by multinationals
- CleanStart™: Black Start without reserving capacity

## • CleanGrid™

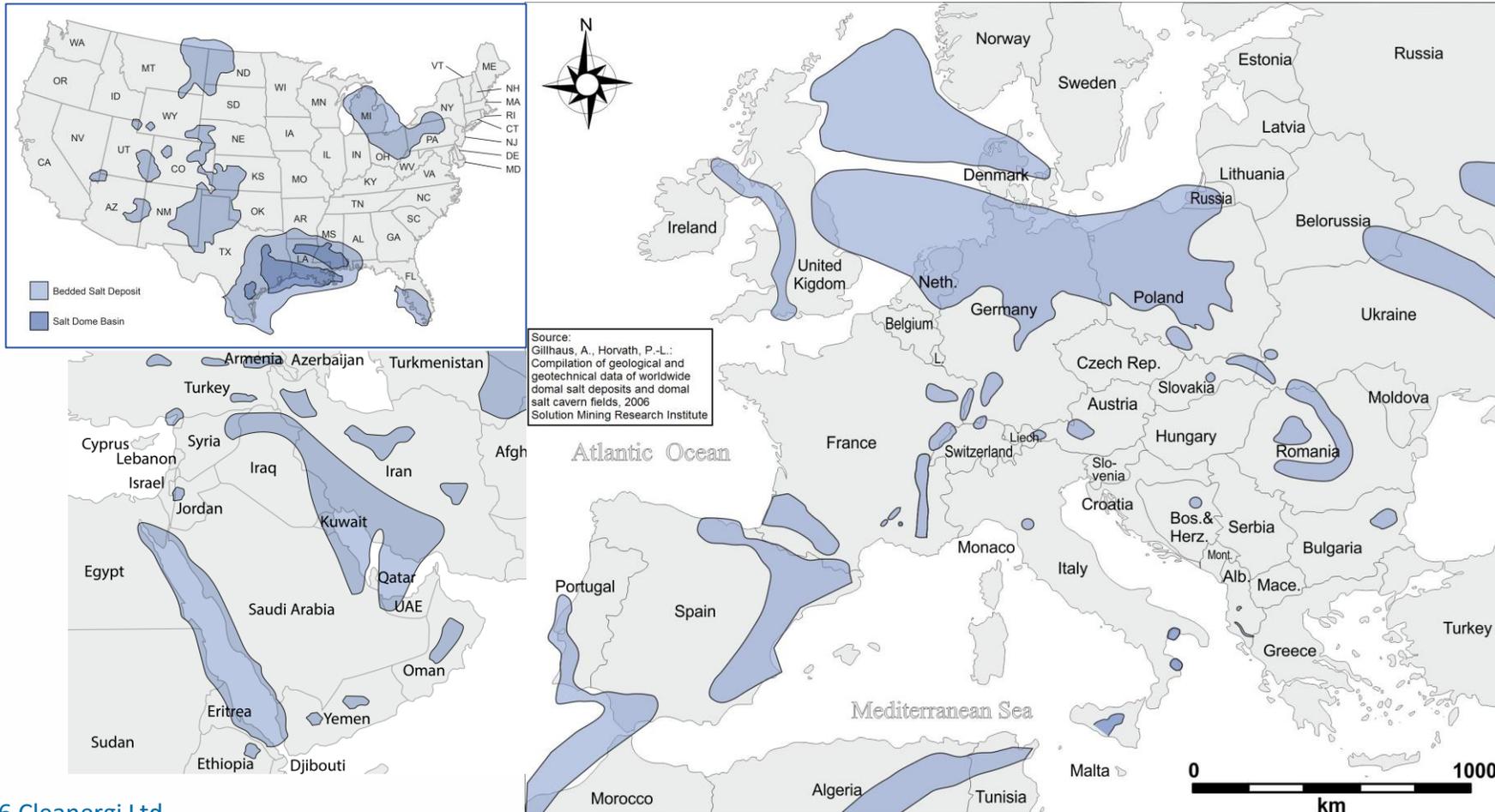
- Integrating renewable generation with grids
- Reduces grid connection size, delay and cost
  - Offshore wind by 1/2; onshore 2/3; solar UK >5/6
- Saving billions on grid reinforcement, operation and maintenance

## • CleanPark™ integration w. cleantech

- Making electrolysis, the hydrogen economy, clean industries, data and AI cheaper and more efficient
- Eliminates or reduces the biggest commercial and regulatory risks
- With massive bulk hydrogen storage
- Unique, patent pending methodology



## Where it can be done – 1<sup>st</sup> stage: salt basins



Other geologies available in future:

- Aquifers (fresh or saline: no pollution, we'd only inject air)
- Depleted hydrocarbon fields (oil and gas)
- Hermetic hard rock mines

There are known issues to overcome, for future development

## Market/Target audience – Who can apply your solution?

- *Grid operators (both Network Operators and System Operators)*
- *Renewable generators*
- *Energy industry suppliers*
- *Large off-takers, e.g.*
  - Hydrogen and derivative industries such as synthetic fuels and chemicals
  - Decarbonising industries such as metal processing (iron, steel, aluminium), cement
  - Cleantech, Deeptech
  - Data centres, AI
- *Investors in infrastructure assets, pension funds*



## Partners Sought

### Investors

In either Cleanergi or projects – or both

### Locations

Owners of locations where it can be done

### Developers

In each country, who can:

- ◆ Undertake or oversee planning, environmental, construction etc. work;
- ◆ Understand / liaise with ministries, interest groups, regulators, grid operators etc.

### Manufacturers

- ◆ Steam turbines 40MW+, compressors
- ◆ Hydrogen and other gas equipment
- ◆ Heat exchangers, pressure vessels

### Engineering

Plant / site / project design; geotechnical

### Renewable Generators

Large scale, seeking reduced or eliminated grid connections, interested in integrated projects

### Large Off-takers

Ditto; e.g.

- ◆ Hydrogen and its derivatives, such as synthetic fuels and chemicals, fertilisers
- ◆ Cleantech, Deeptech
- ◆ Major industry wanting to decarbonise, such as metal processing, cement, chemical
- ◆ Data/AI

### Modellers

To model interactions / benefits with grids; trading; plant operation etc.

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# Book a meeting with: Cleanergi Ltd



**Mark Howitt**

Co-Founder and CEO  
Cleanergi Ltd

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**Grid-scale energy storage and integration**  
enabling renewables to power the world  
affordably, reliably and resiliently





**The World's First Energy Converter  
based on a Permanent Magnetic Bearing**

**REPS**

**REPS GmbH**

**Maximilian Abbate  
Head of Strategy**



[SustainableSolutionsMatch](#)

## HOW IT WORKS



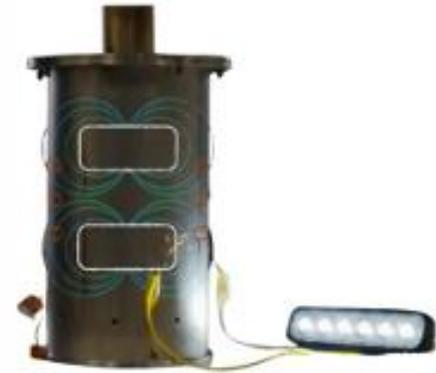
PLATE SYSTEM

Harvests **lost energy** from vehicles right from the road.



HYDRAULIC SYSTEM

Guides **impulses away from the road** to the converter.



ENERGY CONVERTER

Converts impulses from the road into **clean electricity**.

## KEY STATS & FIGURES

**250x**

more **efficient** than existing  
energy converters

**25**

years of product **lifetime**  
(much higher rigidity compared to other solutions)

**1-60**

**tons** of vehicle weight are  
possible for our system  
(even larger weight-range is in R&D pipeline)

**24/7**

**availability**, without restrictions  
regarding daylight or weather

**0**

additional **infrastructure**  
or space needed  
(only 10 cm ground integration in existing roads)

**10**

**GWh** annually of clean energy  
for the Port of Hamburg yearly  
(as soon as 229 systems are installed on existing roads)



## WHO BENEFITS MOST FROM REPS?

Literally any road owner who faces high traffic volume, with preferably high average vehicle weights.



PORTS



AIRPORTS



LOGISTIC HUBS



CITIES



**ANY ROAD OWNER**

## PARTNERS COMPLEMENTING THE REPS-TECHNOLOGY



Network Operators &  
Energy Service Providers



Hydraulic  
Companies



Manufacturing  
Companies

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# Book a meeting with: REPS GmbH

**Maximilian Abbate**

Head of Strategy

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**REPS**





**Smart Energy Management**

**Apollo Solutions**

**Rafail Kasapis**  
**CEO**

**apollo\***

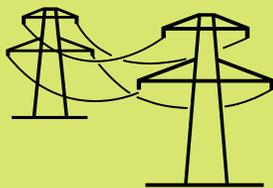


**SustainableSolutionsMatch**

# Apollo Energy Hub – the smart Operating System for New Energy

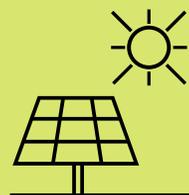
## Grid connection

Monitoring to ensure availability and grid support



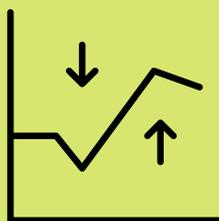
## Photovoltaic systems

Monitoring of PV systems and self-consumption optimization of electricity



## Markets

Optimized energy marketing and procurement in relevant markets

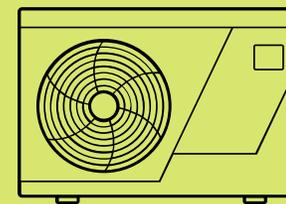


Apollo Energy Hub



## Cold/Heat

Efficient Control of Refrigeration and Heating Systems



## Charging Stations & Fleet

Demand-based control of charging infrastructure and electromobility



## Battery storage

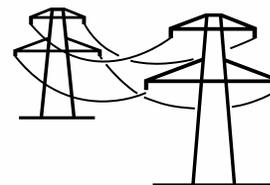
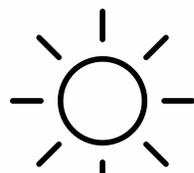
Flexible energy storage for load optimization, as well as market- and grid-serving optimization



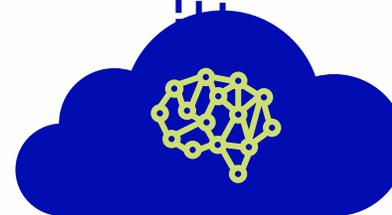
## Layer

## Architecture

Smart Optimization  
Across Portfolio



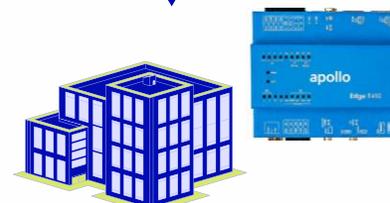
Cloud Digital Twin &  
Service Platform



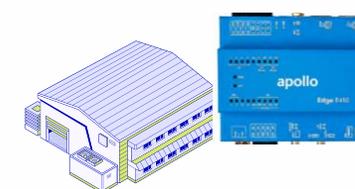
Connected Devices  
& Edge Compute



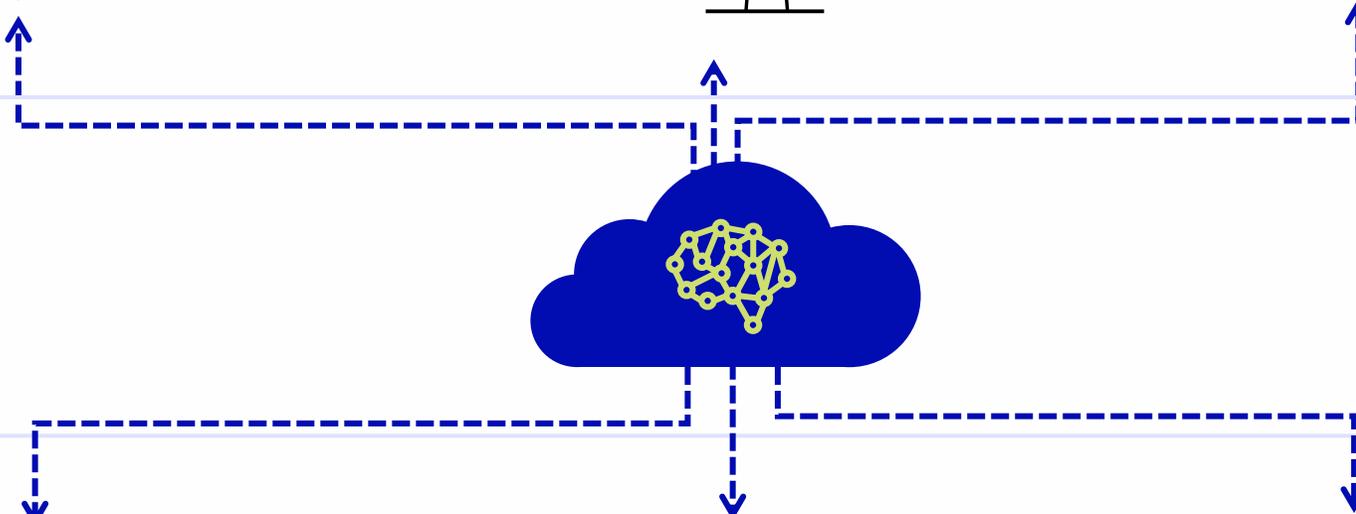
Site A



Site B

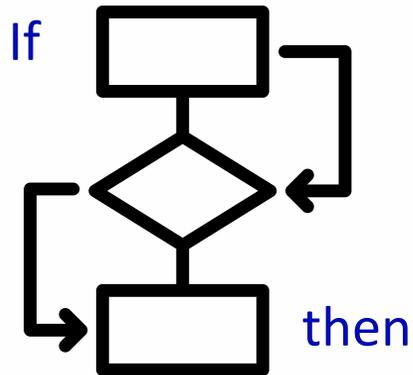


Site C



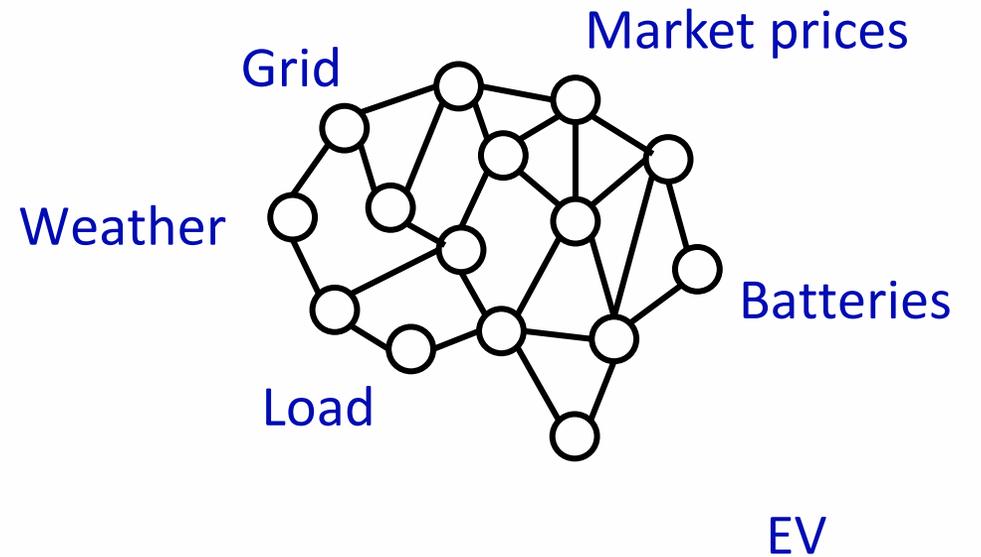
# New Energy needs New Solutions

Traditional Provider



One-dimensional Optimization

Apollo



Multidimensional Optimization

## Market/Target audience – Who can apply your solution?



- **Manufacturing industry:** factories and production facilities with high energy consumption seeking to reduce operating costs



- **Boarding houses:** accommodation providers looking to lower heating/cooling bills and improve sustainability ratings



- **Hotels, clinics & senior care residences:** large building operators with 24/7 energy demand and strong regulatory pressure to decarbonize



- **Real estate portfolio:** asset managers and property owners seeking to increase building value and ESG compliance across multiple sites



- **Public buildings & municipalities:** schools, administrative buildings, and local authorities with renovation mandates

## Value Chain Partners



- **Installation companies:** HVAC, electrical, and building automation contractors who implement the solution on-site



- **Project developers:** real estate developers integrating energy efficiency from the design phase



- **Energy auditors:** certified auditors who identify potential and recommend your solution



- **Facility managers:** day-to-day operators who monitor and maintain building performance



- **Financing partners & ESG funds:** green finance providers enabling the investment case for building retrofits

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# Book a meeting with: Apollo Green Solutions

**Rafail Kasapis**

Founder

Apollo Green Solutions

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**apollo\***





**Guardexy**

**Guardexy s.r.o.**

**Matus Nosko**  
**Co-Founder**

***GUARDEXY***



**Sustainable Solutions Match**  
**h**

## Guardexy – cybersecurity for renewable energy systems

- Problem: Photovoltaic inverters (PV) are now fully connected, remotely managed infrastructure.
- Inverter-level cybersecurity remains unprotected. **Guardexy closes this gap.**
- **Guardexy is a Cybersecurity gateway protecting PV inverters from cyber-attacks.**
- Detects and blocks malicious or unauthorized commands
- Protects critical renewable infrastructure
- Prevents grid instability caused by cyberattacks



## Impact

- Reduces risk of coordinated PV shutdowns or grid destabilization
- Protects renewable assets with long lifecycle
- Prevents downtime and energy production losses
- Increases operational resilience of decentralized energy systems
- Strengthens national energy security as renewable penetration grows

## Market/Target audience

- Residential (End Customers) - Households with photovoltaic systems
- Municipalities & Public Sector
  - Schools, hospitals, public buildings
  - City-owned PV installations
  - Smart city infrastructure
  - Critical local energy assets
- Commercial & Industrial (C&I)
- Energy Operators
  - Energy communities, Microgrids, etc.



## Value chain.

- Made in Czechia / EU
- Technology Partners
  - Smart grid technology vendors
- Cybersecurity & Research
  - Universities & research institutes
  - National cybersecurity agencies
- Impact & Investment Partners
  - Infrastructure funds
  - Public innovation & sustainability programs



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# Book a meeting with: Guardexy

**Matus Nosko**

Co-Founder

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**Simplify value creation through information**

**NAECO Blue GmbH**

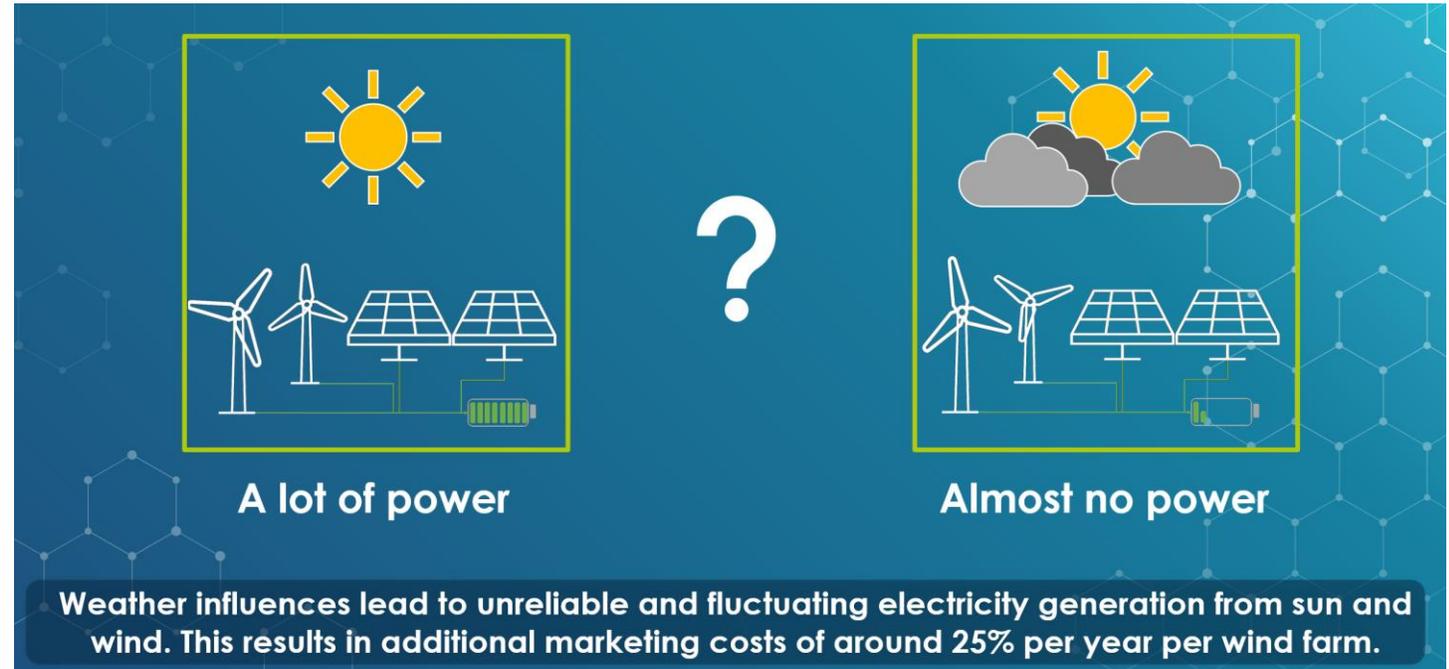
**Felix Mertens, Ahmed Abdullah**  
**CEO & Founder, Data Scientist**



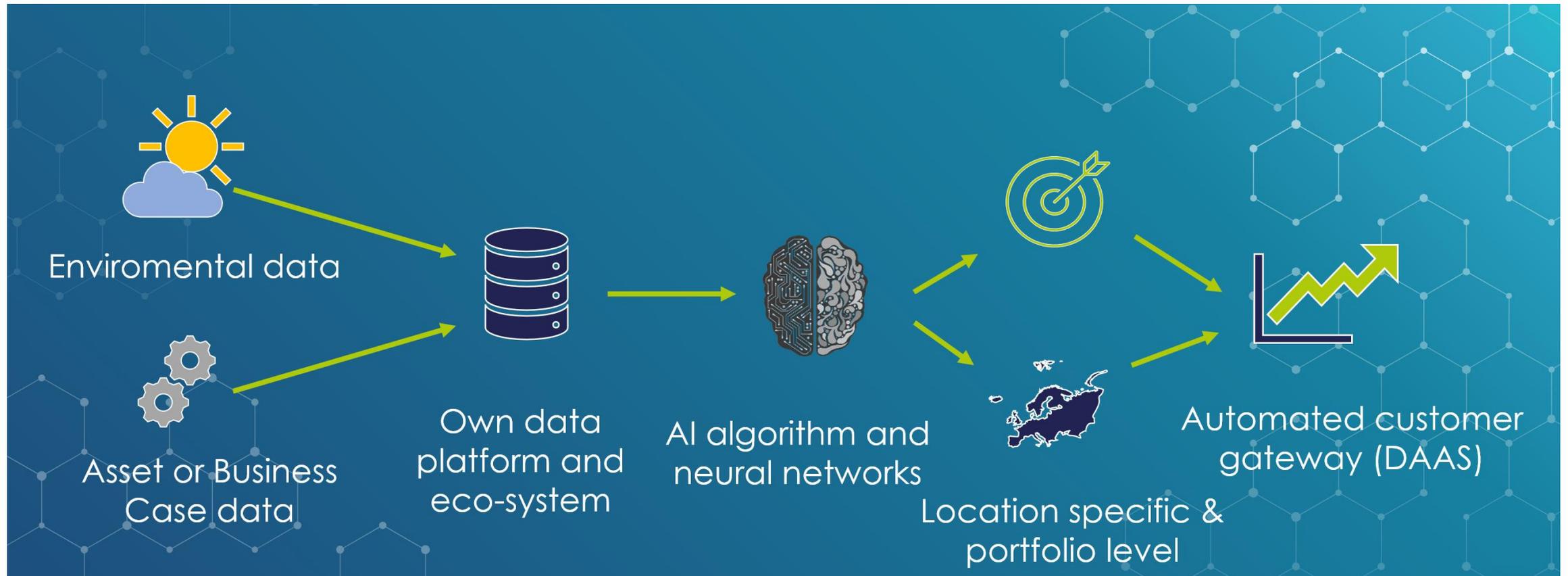
Sustainable Solutions Match

## Introduce your sustainable solution

- *Intelligent Forecasts*
- -> *Turning superior forecasts into measurable value!*



## If relevant, give further details on the technology/process



## Describe your solutions differential value and sustainable impact

- *Use Case: +5% Better Forecasts*
- *1 GW Portfolio*
- *0,3€/MWh upsite*
- *-> +600.000€/Year additinal pure forecast driven upside*
- *Better price forecasts → improved timing decisions*
- *Better generation forecasts → reduced balancing energy costs*
- *5% improvement in forecast quality → 7–10× ROI on forecast costs*



## Market/Target audience – Who can apply your solution?

- *AI-supported full-service provider with location-specific and comprehensive weather data for precise, location-specific forecasts – ideal for:*
  - ✓ *Energy traders*
  - ✓ *Balancing group managers*
  - ✓ *Plant operators*
  - ✓ *Project developers*
  - ✓ *Energy storage operators*

## Sustainable and circular innovation needs good networks along the whole value chain.

- *Seeking for partners, investors and happy customers*
- **Limited Offer – Only some Slots**  
*1-month trial of a NAECO Blue data-driven solution*
- **Experience best-in-class accuracy and a full-service forecasting experience.**







## SMARTEMS

## SIREA

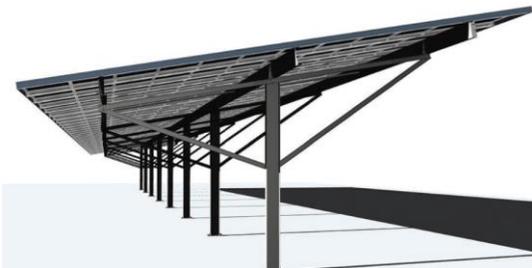
CABROL Stéphane  
General Secretary



SustainableSolutionsMatc  
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## Smart EMS

Photovoltaic panels



*Controls the energy production*

Buildings and equipments



*Manages priority equipment*

SmartEMS



*Retrieves data in real time*

*Regulates additional equipment*



Monitoring app

*Manages battery charge/discharge*



Second life batteries



Controllable device

## Features



Outdoor format



Cabinet format

Format	Cabinet: 220 x 170 x 43 mm / Outdoor : 240 x 230 x 50 mm
Communications ports	4 24VDC logic inputs + 2 configurable analog inputs 0..20mA / 0..10V /+1 push button input + 1 CTN input
Inputs	4 entrées logiques 24VDC + 2 entrées analogiques configurables 0..20mA / 0..10V /+1 entrée bouton poussoir + 1 entrée CTN
Outputs	2 relay outputs 250V / 2A + 2 relay outputs 160V / 4A + 2 PWM outputs 24VDC + 1 buzzer output + 10 LED outputs
Power supply	12 – 24 VDC
Saved date and time (RTC)	Yes
RAM saved	2 Mo
EEPROM	16 ko
Internal memory	512 ko Flash 96 ko SRAM
Removable memory	MicroSD card slot

## Differential value and sustainable impact



- Clearing and clipping power calls
- Control at the request of the energy manager
- Offgrid application
- Backup power
- Management of price ranges
- Management collective self-consumption

## Market/Target audience – Who Benefits Most from SmartEMS?

- *Municipalities & public authorities (street lighting, public buildings, EV charging, water systems).*
- *Industrial sites seeking energy efficiency and demand-side management.*
- *Commercial buildings with PV installations or EV charging needs.*
- *Energy communities & microgrids aiming for optimized self-consumption.*
- *Renewable energy developers integrating storage or multi-source systems.*

## Strategic Partnerships Along the Value Chain

- *To strengthen sustainable and circular innovation, SmartEMS seeks cooperation with:*
  - **Renewable energy integrators** (PV, wind, hybrid systems). France
  - **Battery manufacturers and storage solution providers**. Spain/France
  - **EV charging infrastructure operators**. France/Belgium/Spain
  - **Smart-city technology providers**. France
  - **Research institutions** working on energy optimization and digital twins. France
  - **Municipal and regional authorities** engaged in energy transition programs. France

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# Book a meeting with: SIREA

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**Renewable Autonomy**

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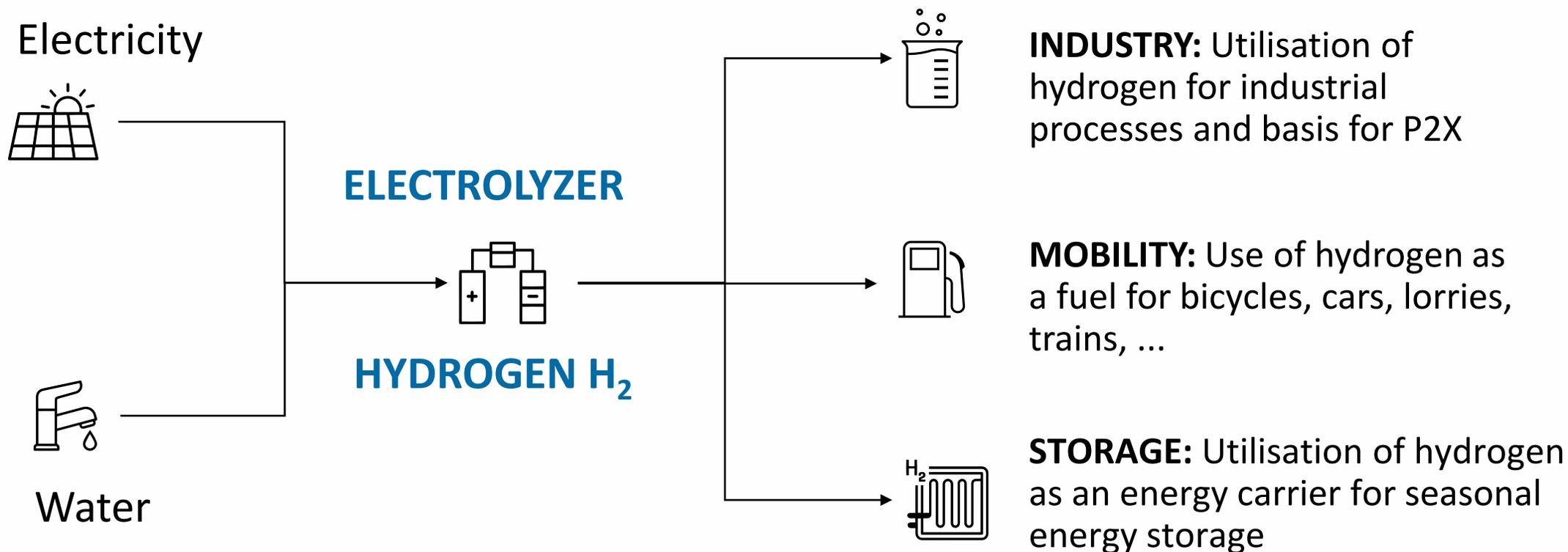
**ostermeier H<sub>2</sub>ydrogen Solutions GmbH**

**Dr. Markus Ostermeier**  
**Managing Director**

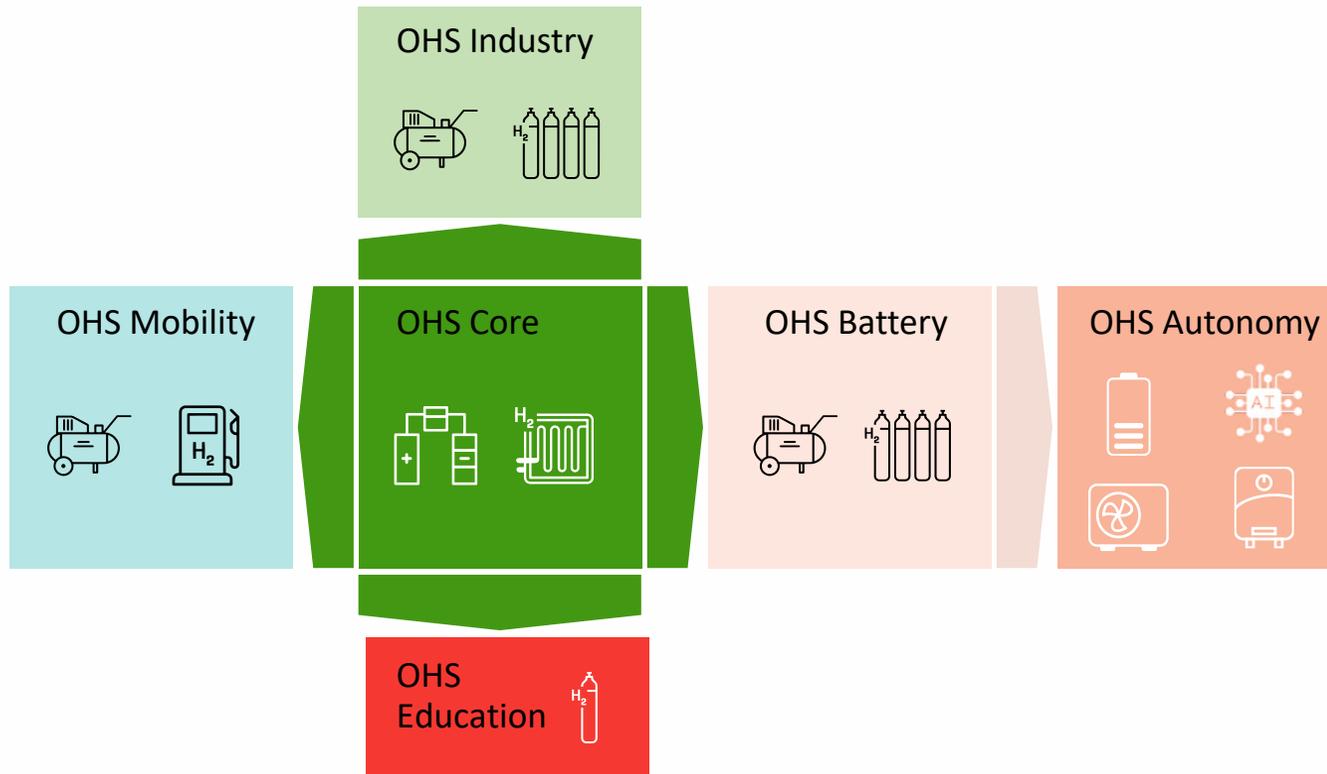


**SustainableSolutionsMatch**

## Electrification and local hydrogen production replace fossil fuels



## OHS modular kit for decentralised hydrogen solutions



- Off-the-shelf products
- Intelligent control
- Integrated functionality
- Robust Design
- Easy to use

## Our all-in-one solution for energy self sufficiency: ECORE ONE



Short Term Storage



Long Term Storage



Heat Storage



Energy Management

# We meet local hydrogen needs

OHS Industry

OHS Mobility

OHS Autonomy

OHS Education



## We need capital and partners for scaling up

### 1 Development

**Investors for the further development and optimisation of our technology and products**

### 2 Products

**Partner(s) to produce our series-ready products**

### 3 Projects

**Partner(s) for pre-financing and/or executing our projects and for servicing our products**

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# Book a meeting with: ostermeier H2ydrogen Solutions

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