



Hydrogen Battery for energy Transition in local grids

Key Energy – Rimini Mar 7th

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Hybitat is a joint venture with experienced leadership team backed by industrial shareholders with strong expertise in innovation and industrialization

Key People:



Giovanni Pulice
CEO & Co-Founder

30+ years of experience in leading consulting firms and international companies, covering **different roles as executive** in companies of different market sectors, managing **staff of hundreds of people** and with **relevant budgets**



Loris Barduca
CTO & Co-Founder

20+ years of experience covering relevant roles in heating sector, **managing R&D teams. Expertise** in combustion controls for **domestic heating appliances**, especially electronic combustion system based on sensors

Joint-venture shareholders:

e-novia

Active in Milan since 2015, e-Novia is a **modern Industrial Group that operates in Deep-Tech with the development of innovative and scalable technologies** in the field of vehicular and interactive robotics.

e-Novia operates with a **strong connection with universities, research centres, Italian and international companies**. The pipeline of sustainable products, in the broadest sense of the term, and the human capital of ~200 talents are the distinctive features of the Group.



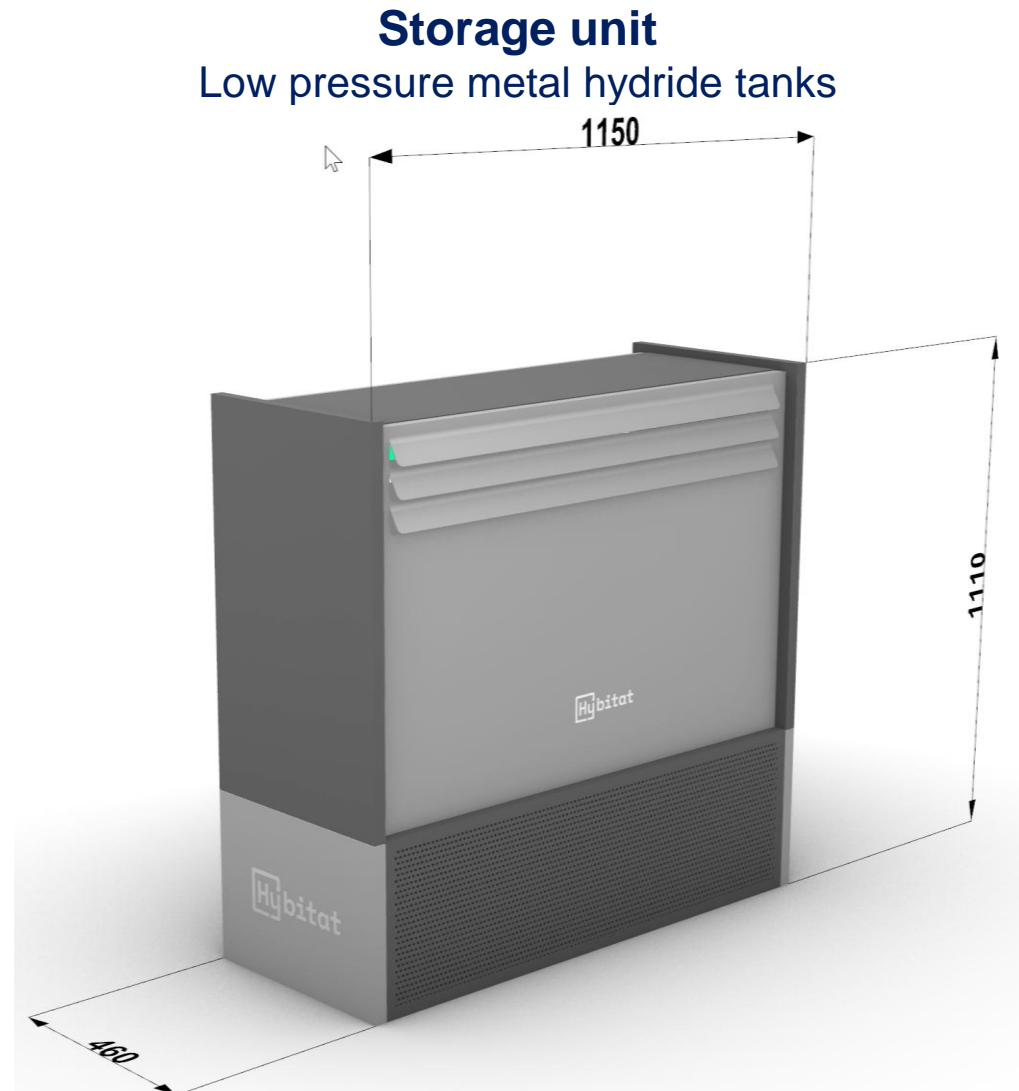
SIT has been **operating in the energy transition** for years, with the aim of providing the sector with **solutions and technologies capable of supporting the progressive decarbonisation of heating** in line with the provisions of the REpowerEU legislation.

Multinational leader in the reference markets and listed in the Euronext Milan segment, SIT aims to be the main sustainable partner of solutions for energy and climate control at the service of client companies, paying great attention to the experimentation and use of alternative gases with low environmental impact.

**Hydrogen-based
energy storage** for
buildings to achieve
**sustainable
independence** from
grid and **cost savings**



Hybitat: a modular H2 storage system for buildings



New energy paradigm: electric, renewable, unpredictable



~28%

expected **increase in electricity demand by 2030** driven by the adoption of EVs and heat pumps



~88%

of Europeans **desiring more energy from renewable sources** such as solar PVs



Misbalance




inherent **discrepancy between renewable energy availability and consumption peaks**

Sources: McKinsey, European Commission

Single household case study: energy storages allow to use surplus for energy shifts

Consumption increase simulation




EXPLANATORY

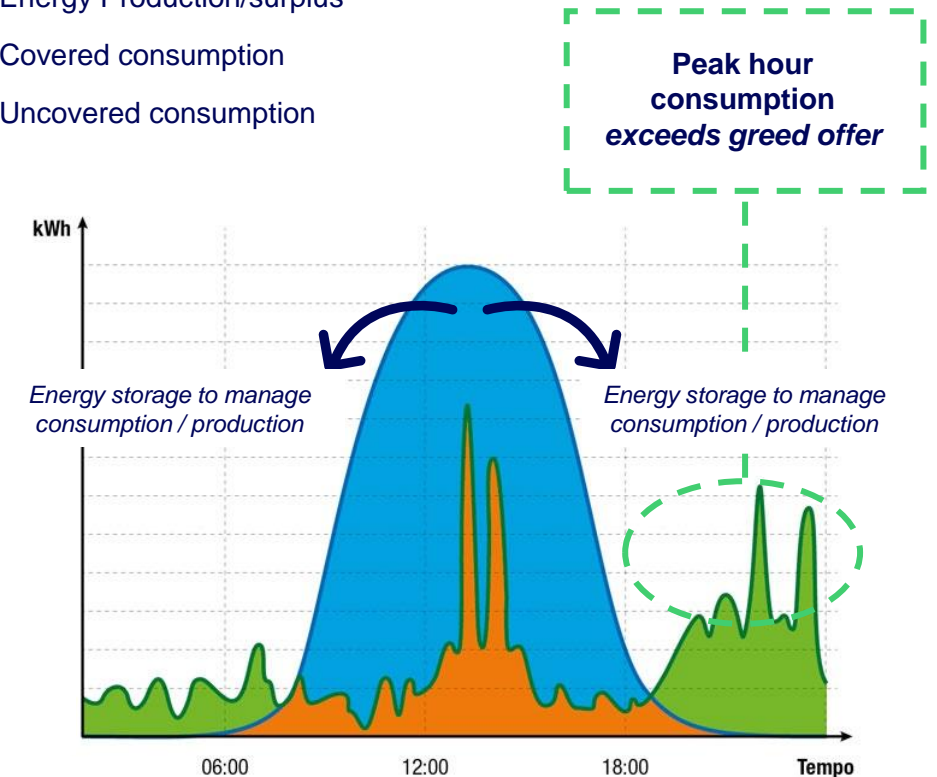
	Household consumption	~10-15 KWh / day
	Heat Pump & gas (methane) switch-off	~10-15 KWh / day
	EVs Recharge	~6 KWh / day*
	TOTAL	~26-36 KWh / day

*Assumption: one vehicle with a daily travel mileage of ~50 km

Production and consumption in residential

EXPLANATORY

-  Energy Production/surplus
-  Covered consumption
-  Uncovered consumption



Disclaimer: consumption and actual production may vary by plant sizing, location, and season

Making mature (MW/GW) large-scale plants as affordable mass market standard systems (kW)

Hybitat plug-and-play standard product



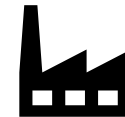
Competitive pricing

optimized system integration design and custom components that minimizes costs



High safety by design

European **standard certification** that ensures safety



Industrial quality

industrial approach that guarantees quality and reliability

Targeting residential, commercial and public buildings with daily energy consumption in the 40 - 400 kWh range

Single households



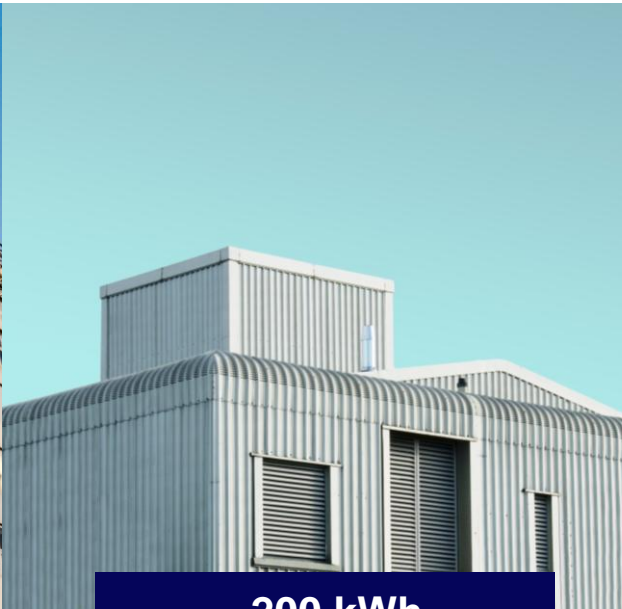
storage ~40 kWh

Condominiums & Energy communities (CER)



~120 kWh

Small & Medium enterprises (SMEs)



~200 kWh

Public sector & Infrastructure



~360 kWh

Hybitat is **up to 18% more cost-competitive than lithium** over a 15-year lifespan period based on simulations using real consumption curves

Main system benefits



Less grid reliance

Reduce **grid reliance** and get protection from **energy price** fluctuations by **balancing** the energy **production** periods **with** the **consumption**.



Peak Management

Have **renewable energy** always **available** during **high consumption peaks** (e.g. at night, to charge an EV, in cloudy day). The **system manages peak hours** consumption exceeding grid offer.



Lower energy bills

Lower energy bills by using more of **own solar PV generation** in combination with **heating the house with the by-product recovery** of the fuel cell process.



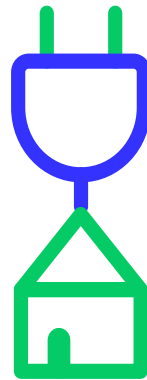
Sustainability

The system **supports renewable energy proliferation making it a reliable choice**. Moreover, **Hydrogen production uses water** that is recovered into the cycle: it is a potential endless source.

Hydrogen and lithium-based technologies will lead different market segments

Lithium

- > **Mature** residential technology
- > Competitive for **small-medium storage (residential daily)**
- > Up to **tens of kWh**
- > **Security:** in case of fire, the **flame persists** and is **hard to extinguish**
- > Significant **impact on environment** (mining and disposal)

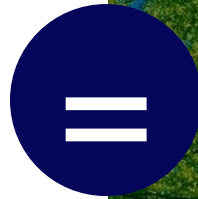


Hydrogen

low-pressure metal hydride-based storage

- > **Early-stage** residential technology
- > Competitive for **medium-large storage (residential weekly / light commercial)**
- > Up to **hundreds of kWh**
- > **Security:** in case of fire, the **flame self-extinguishes**
- > **Highly sustainable** (generated from water)

1 Hybitat
standard system
yearly saves
~1 tonne CO₂



a forest of
~50 trees

Our vision is to transform the energy sector through sustainability, making renewable energy a reliable choice

Can be adapted to suit all types of buildings

For private houses

1 core unit
1 storage unit



Standard

For apartment buildings

1+ core unit
2+ storage units



Scalable Storage

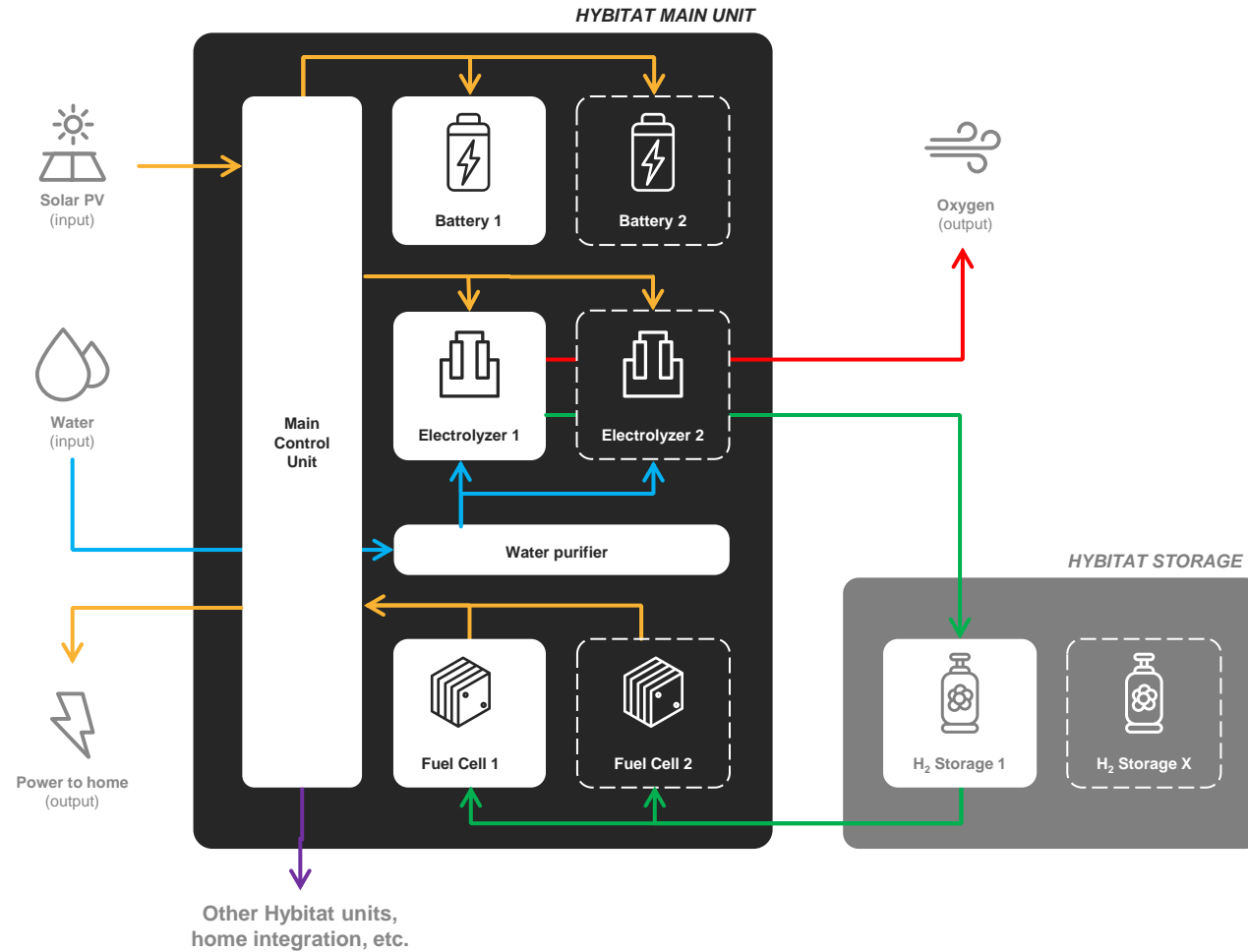
For SMEs/P.A. buildings

2+ core units
2+ storage units

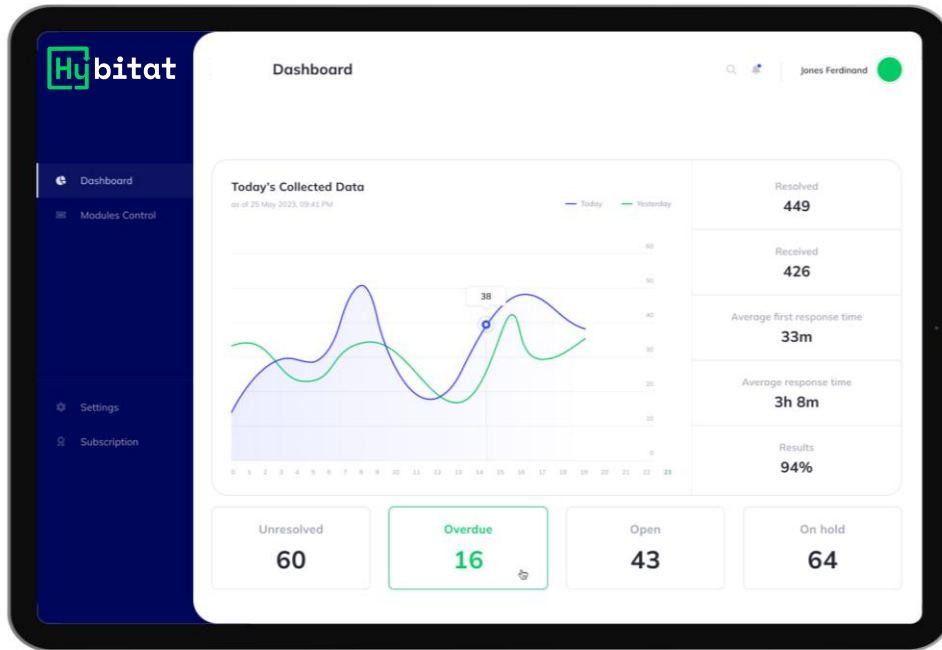


Scalable Power

High level hardware architecture



AI-based energy management system integrated with the environment at the core of the product



Data from external sources:

- Meteo
- Energy prices
- ...

Data from building sources:

Power Sources

Building energy producing systems

- Solar Panels / Wind Turbine
- H2 Power Station
- Energy Harvesting devices

Power Storage

Building energy storage/hybrid systems

- Batteries / H2 storage
- Electric vehicles (hybrid storage/sink)

Power Sinks

Energy consumed by building appliances

- Electric devices
- Building utilities

COMMANDS FOR MODULES ACTIVATION

A clear roadmap to reach market scale-up by 2028

