

# O-Hx

ORGANIC HEAT EXCHANGERS



**For Investors  
and Decision Makers**

According to [The Economist](#)  
(7<sup>th</sup> Sept 2024), energy storage  
will be clean energy's next  
trillion-dollar business





Cold energy storage

Since 2016, Organic Heat Exchangers has been developing EnergiVault: a 1MWh cold battery and charger (1 MWh of cold is a very significant industrial unit of cooling).

EnergiVault will revolutionise cold energy storage and the refrigeration industry.

Cold Energy Storage Systems (CESS)  
is a subsector of energy storage.

It is estimated that CESS will make up  
circa 20% of the energy storage  
market globally.

It is generally accepted that within  
energy storage, the energy needed  
or lack of it in relation to cooling, is  
best kept / stored in the medium,  
that is required.





Cold energy storage

Worldwide, we estimate 20% of energy generated, is used for cooling.

In some hot countries, 70% of energy generated goes on cooling.

In datacentres, a huge and growing sector, cooling utilises 50% of their energy requirements.

Electrical batteries do not have the power to run existing chiller systems: the energy requirements are too high.

O-Hx uses an organic fluid to ensure that ice crystals no larger than 1/10 of a millimetre form and remain separated.

This provides the surface area, estimated to be 50,000 times larger than its solid ice counterpart, guaranteeing the rapid charge and discharge rates needed for efficient cold energy storage.



# Energivault AI

Energivault has an enhanced AI based control to optimise cooling assets, energy, and carbon savings and resilience.

We collect real-time ambient climate and operational data through sensors to build a comprehensive data pipeline. Utilising advanced AI and machine learning techniques like extreme gradient boosting and deep learning, we process and transform this data to train our models. These models enable us to predict near-term cooling load demand, improving control over charge/discharge scheduling for the Energivault in intervals as short as 30 minutes.

By forecasting the facility's half-hourly demand a day in advance—using time-forecasted ambient climate data from third-party APIs along with site operational and temporal data—we feed this information into an optimization tool. This tool generates a day-ahead charging/discharging schedule, identifying opportunities to supplement sustained peak demand, manage intermittent peak demand, and replace inefficient chiller operations at partial load. The result is enhanced chiller performance and cost savings through effective load shifting.



Cold energy storage

In existing commercial and industrial applications, chiller systems cool water. The water is then pumped round the system to provide cooling.

Any existing chiller system above 400kW / configuration (multiple chillers) could benefit from an EnergiVault cold battery and charger or multiple EnergiVaults.

There are more than 2 million chiller configurations globally in excess of 400kW in capacity.



# EnergiVault can:



Reduce the costs of cooling by charging when electricity prices are low



Reduce carbon emissions and assist in achieving Cool Net Zero through charging with low carbon electricity



Increase resilience of existing systems due to power failures and temperature squeezes



Through its artificial intelligence, lead to smart and more efficient operations



Assist in optimising grid operations and allow renewables to power the world

O-Hx is currently speaking to potential buyers with requirements to buy EnergiVaults worth £120M.

In September, Organic Heat Exchangers hired 350 PPM to begin worldwide marketing and venture building for O-Hx and their EnergiVault Systems.

O-Hx is now building interest and its order book in preparation for global roll out.



What our customers are saying  
about us:

**“Marks out of 100?  
95%, because I  
never give 100.”**

STUART MUNRO  
HEAD OF FACILITIES, QUOTIENT SCIENCES

Watch the video [here](#)

Organic Heat Exchangers Ltd is now raising £500,000 to accelerate its growth.

O-Hx is in discussions with Druces Solicitors to assist in listing O-Hx on Aquis exchange next year.

EnergiVault is revolutionising the refrigeration industry.

O-Hx has the potential to become a £500M company.

For further information please visit

**[www.o-hx.com](http://www.o-hx.com)**

and register here

**[www.o-hx.com/investors-relations](http://www.o-hx.com/investors-relations)**

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