



Present:



ENERGI VAULT

HERE COMES COOL NET ZERO

A COLD ENERGY STORAGE SYSTEM

The EnergiVault v.1 System consists of the Cold Battery on the left and charger on the right



Genesis of O-Hx and EnergiVault

Organic Heat Exchangers and EnergiVault are the result of 50 years of cooling experience from a Fellow of The Refrigeration Institute; Robert Long, Executive Chairman and Founder.

EnergiVault is a Cold Energy Storage System that can hold up to 1.5 MWh of cooling power. It can contribute to your Cool Net Zero and may make your business fully Cool Net Zero.

Benefits

Costs: EnergiVault can reduce your cooling costs by allowing you to charge the EnergiVault Battery when electricity prices are low or negative. On a variable tariff of 10p per kWh off peak and 40p per kWh peak, if users only use an EnergiVault they will reduce their cooling costs by 75%. Using our AI on fully variable pricing can save more. However, more realistic estimations of savings based on a combined system of EnergiVault/existing chillers are provided in our case study below.

Carbon Reduction: As cheap or off-peak power generally is less carbon intensive to produce than peak power (on a windy night for instance), charging the EnergiVault cold battery with this power can substantially reduce your carbon footprint. If you have your own renewables, wind or solar for instance, you can cool net zero you're cooling.

Redundancy and Cooling Power: In temperature squeezes, it can add additional power to your cooling system and provide further redundancy.

Other Benefits: There are other significant benefits. Here is what our first client thinks of EnergiVault:



What is The Process for Installation?

Any business that has a chiller would benefit from an EnergiVault and the system is an easy bolt on to existing chiller systems.

O-Hx is now releasing EnergiVaults 2 - 10. These can be secured with a deposit of £30,000 and will be installed in 2024.

We need to conduct a site survey first and find out about your cooling requirements. Please click the link below and complete the form and we will be in touch. There is no obligation to proceed even after the site survey has been completed.

There is no downside to engaging with us. For the first nine corporations to place a deposit we will also provide consultancy and optimising your existing cooling systems:

Here's that form again:



Case Study

This case study considers a manufacturing facility with the following characteristics:

365 day per year operation; 16 hour per day duty; Cooling as % of overall energy demand, 50%; Heating as % of total energy demand, 25%; Other electric demand as % of total energy demand, 25%; Chiller cooling demand of 1825kWht/ yr; Heating demand, 912.5 MWht/ yr; Other Electric demand, 912.5 MWhe/ yr; Chiller demand, net of EnergiVault, per year 1460MWht/ yr; Average chiller demand 310kWt ; EnergiVault delivers 1MWht cooling per day during peak DUOS charging period (red band); 365MWht/yr; CoP of Chiller – average 2.5; CoP of EnergiVault charger – 2.8; Daytime Electricity tariff, 20p/kWh (outside DUOS red zone); Weighted average electricity tariff 33p/kWh (accounting for variation in TOU cost); Electricity tariff – during peak DUOS red zone, 46p/kWh; Total annual electricity cost for cooling demand, £240,900; Total annual gas cost for heating demand, £125,469; Total CO2e related to grid electricity for cooling demand, 182.5 tonnes p.a.; Total CO2e related to gas heating demand, 172.5 tonnes p.a.;

Application Scenarios: The table below summarises the savings for increasing application of EnergiVault.

Operational and Value Scenarios	£ Saving (% Savings)	CO2e Saving (% Saving)	Payback (Years)
1. TOU Load Shifting + Chiller Optimisation	£47,500 (19.7%)	16.4 tonnes (9%)	4.5
2. TOU Load Shifting + Chiller Optimisation + Heat Recovery	£77,660 (22%)	68.2 tonnes (19%)	2.8
3. TOU Load Shifting + Chiller Optimisation + Heat Recovery + Onsite renewable *	£98,865 (27%)	84.2 tonnes (23.7%)	2.2

Notes:

% savings for (1) relate to electricity and CO2e for cooling electricity only

% savings for (2) & (3) relate to combined electricity and CO2e for gas and cooling, hence smaller savings as %

* if you have your own renewables, paybacks of under two years could be anticipated and you can Cool Net Zero your cooling

The Organic Heat Exchangers Team is [here](#), fully committed to reducing your cooling costs to Cool Net Zero.

EnergiVault’s skid mount delivered price is £300,000 for a 1 MWh capacity unit. Financing options may be available.

Please complete the registration form if you have not done so already:



Thank you – any questions to bobl@o-hx.com