Hasopor

From Waste to Watts:

Hasopor Turning Glass Recycling Into Flexibility

PARTICIPATION
2.3MW

MARKET
FCR-D Up

HASOPOR

Founded in 2009, **Hasopor** is a leading foam glass manufacturing company specialising in foam glass aggregate, an innovative and sustainable lightweight material used in infrastructure, building and construction projects. Strategically located in Hammar, Sweden's demographic and glass recycling hub, Hasopor contributes to Northern Europe's largest foam glass manufacturing network. Hasopor's business model contributes to a sustainable future and the transition to a circular economy.

In its commitment to sustainability, Hasopor has taken a significant step by integrating demand response solutions with Sympower, helping to stabilise Sweden's electricity grid while unlocking new revenue opportunities.

Optimising flexibility in furnaces

Hasopor, a leading foam glass manufacturing company, operates energy-intensive kilns (furnaces) with a combined installed capacity of approximately 2.5 MW. As Sweden shifts from fossil fuels to renewable energy, regional imbalances - where power is generated in the north but consumed in the south - pose significant challenges for the national grid. Recognizing the potential to support grid stability, Hasopor's CEO, Daniel Ellison, began investigating demand response solutions despite initial uncertainties about the company's eligibility.

This exploration led to an introduction to Sympower's services through Bixia, Hasopor's electricity provider. In the fall of 2022, Sympower together with Bixia conducted a detailed site visit and performed a comprehensive Flex Scan at Hasopor.

During this assessment, thorough testing of demand response activations confirmed that these demand response measures would have minimal to no impact on production. With this robust evidence, internal buy-in was secured, and by spring 2023, Hasopor committed to participating in demand response programs as a key component of its broader sustainability and grid-support strategy.

Optimising Energy Use with Sympower

Hasopor's 7 kilns, which typically operate at a steady energy load, became the key asset in its demand response strategy. With a qualified capacity of 2.3MW, the furnaces were integrated into Sweden's balancing markets (FCR-D Up), enabling Hasopor to reduce power consumption during peak demand periods. On average, the furnaces are activated for demand response four times per month, with each activation lasting approximately four to five minutes.

Hasopor is approved to participate on the FCR-D Up market in Sweden. This Frequency Containment Reserve (FCR) market acts as backup power sources that can be deployed quickly in response to sudden imbalances between electricity production and consumption. This activation occurs within seconds, and can last up to 20 minutes. The specific requirements involve 50% of the contracted capacity to be activated within 5 seconds of a frequency deviation, with 100% being ready for activation within 30 seconds.

By participating in demand response, Hasopor contributes to stabilising the national grid without affecting its core production output. In 2024 alone, this generated over EUR 100,000 in additional revenue, demonstrating that sustainability efforts can go hand in hand with strong financial performance.

Empowering Grid Stability: How Hasopor's Demand Response Delivers Real Impact

Hasopor's decision to participate in demand response has yielded significant financial and environmental benefits. The company has gained a new revenue stream from participating in Sweden's balancing markets, improving overall financial resilience in an otherwise challenging energy market.

Beyond financial gains, Hasopor's participation in demand response aligns with their broader sustainability commitments. The company is deeply invested in environmental responsibility and views demand response as an opportunity to enhance its sustainability goals. By optimising energy consumption and reducing stress on the power grid, Hasopor is actively contributing to Sweden's transition to a more resilient and renewable-driven energy system.

What's Next for Hasopor and Sympower?

Encouraged by its initial success, Hasopor is preparing to enter the manual Frequency Restoration Reserve (mFRR) market. This next step involves qualifying its existing kilns for participation in mFRR services, where assets must respond to grid imbalances within a fifteen-minute window. Currently, one of Hasopor's furnaces is undergoing testing for mFRR qualification, and the company anticipates being fully operational in this market by the end of summer 2025.

Hasopor's collaboration with Sympower has proven to be a milestone in its journey toward greater sustainability and energy efficiency. As an industrial company with high energy demands, Hasopor recognises the importance of taking responsibility for its environmental impact. By becoming an active participant in demand response, Hasopor is positioning itself as a participant of a bigger industrial symbiosis, one where economic success and environmental responsibility go hand in hand.

CEO Daniel Ellison encapsulated the company's initial scepticism and later on, enthusiasm for demand response, with a simple yet powerful statement:

"What's the catch? There's no way this is legit!"

Daniel Ellison | CEO of Hasopor

As Hasopor's experience has demonstrated, demand response offers a tangible opportunity for industrial players to contribute to grid stability while reaping financial benefits.

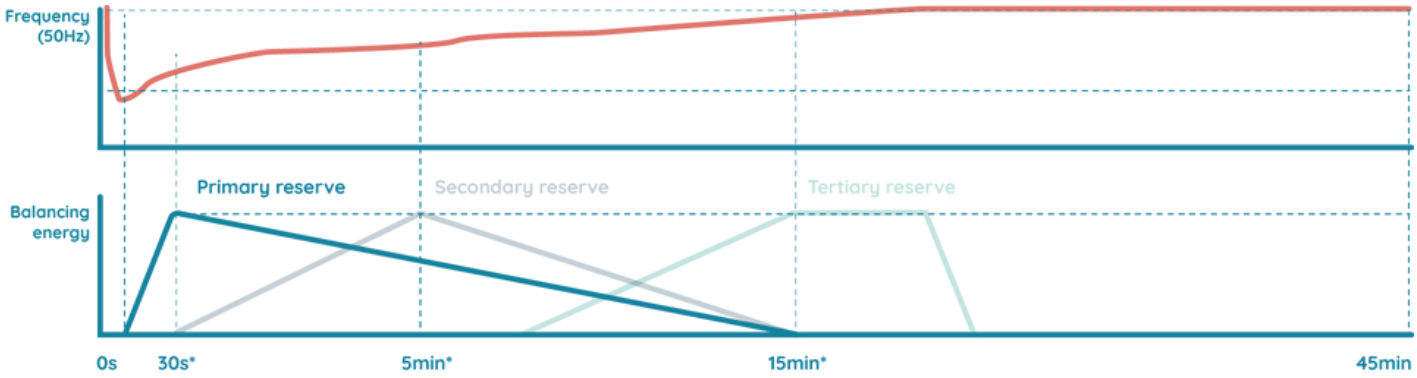
Through continued partnership with **Sympower**, Hasopor is well on its way to solidifying its role as a sustainability-driven industrial leader in Sweden's evolving energy landscape.

Do you want to capitalise on the flexibility of your energy assets? Contact us today to discover how!

FCR-D Up market

One of the core challenges for European grid operators is keeping electricity grids at a maintained frequency of 50Hz to avoid power outages and grid supply interruptions. Balancing markets play a key role in regulating grid frequency.

The Frequency Containment Reserves for Disturbances (FCR-D) are the Nordics' primary control reserves and the first to be activated to fix disturbances in the grid's frequency. **Companies participating in the FCR-D Up market must reduce their electricity consumption for a few minutes** to support grid frequency regulation until it is back in balance at 50 Hz. The energy assets connected to it **must be able to be reduced significantly within 2.5 seconds after receiving the activation signal**.



Future-thinking operations: the benefits of balancing markets for metallurgy companies

By leveraging flexibility, Uddeholm turned their energy-intensive equipment into a strategic advantage to unlock new revenue and help reduce their energy costs.

Encouraged by their successful first participation in demand response, Uddeholm is now **seeking ways to expand their position in the demand response market**. Uddeholm's and Sympower's teams are working together to identify where existing flexibility lies in other processes, which equipment could also be used to balance the grid, and which other balancing market they could participate in.

Flexible assets in the metallurgy industry

BESS
Can be **charged and discharged to meet grid demands**, while other equipment stays operational. It can also handle the site's peaks of energy usage.

HVAC SYSTEMS
While HVAC systems optimise temperature, they **can also be adjusted to decrease or increase energy usage** when needed to.

E-BOILERS
The speed in which **e-boilers can respond to control signals** and the ability to adjust their power usage, makes them highly flexible.

GALVANISED POTS
Air compressor operation can be optimised to align with fluctuations in grid demand, without disrupting plant processes. If needed the system's compressed-air storage is utilised.

CHP UNITS
During high demand, **CHP units can increase electricity generation while reducing heat output**, or vice versa.

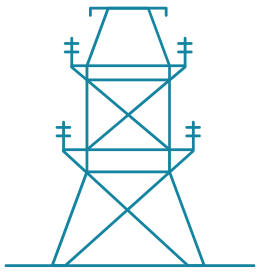
FURNACES
Furnaces can see their **operations temporarily adjusted** up or down for short periods of time without impacting final output.

Other flexible assets: ***pumps, mills, heat pumps, lights****, and more*

Benefits of demand response

New Revenue Streams

Businesses can **unlock new revenue streams** by offering their energy flexibility to the grid during periods of peak hours.



Reliable Grid

The flexibility of businesses, ensures that grid frequency stays balanced. Everyone connected to the grid **benefits from this reliable energy supply.**

Sustainable solution

The energy transition needs demand response to help phase out fossil fuels, making it **essential to a sustainable energy system.**

Unlock your flexibility and Maximise Revenue!

Book a meeting with one of our Energy Experts

Powering Change Together

sympower.net