The toughest opponent in ice skating is the energy bill.

Case Study with
Thialf Ice Stadium

Source: Photographer Olaf Janssen 2019

Source: thialf.nl

CUSTOMIZED ENERGY SYSTEMS™

The case

Project:
Implementing a battery storage system to reduce energy costs.

Customer/Project:
Thialf Ice Stadium, Heerenveen Netherlands

Project partner:
ENDUSO

Installed system:
2 x Solition Mega One

Connection:
On-grid

Installed battery capacity:
1 MW/ 1,1 MWh

Location:
Heerenveen, Netherlands

Installation date:
March 2024

The background

In the challenge with increasing energy demands.

Thialf Ice Stadium, founded in 1892, has grown into a renowned venue for global ice-skating competitions. Hosting its first international event in 1890, Thialf established itself as a global sporting destination.

The introduction of artificial ice in 1967 expanded its capabilities, attracting athletes worldwide. Transitioning to a covered track in 1986 further elevated Thialf's status.

However, with increasing energy demands, Thialf faced challenges in maintaining operational efficiency while containing costs. Maintaining optimal ice quality and conditions for athletes proved to be challenging due to the high energy intensity involved. To address these challenges, Thialf sought sustainable solutions.

In 2023, Thialf partnered with Exide Technologies to integrate an energy storage system, marking a shift towards sustainability and cost-effectiveness. This strategic initiative reflected Thialf's commitment to balancing sporting excellence with environmental responsibility.

The challenges

1 **Increasing energy demands:** Maintaining optimal ice quality and optimal conditions for athletes means high energy intensity is involved.

2 **Rising energy costs:** The need for efficient energy utilization, sustainable practices and cost-effectiveness prompted to seek innovative solutions.

3 **Implementing environmental responsibility:** Reduce the carbon footprint and operational expenses presented an opportunity for Thialf to pioneer change.

The objectives

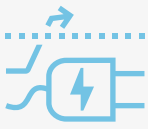
Energy Cost Savings	Achieve a significant reduction in annual energy expenses compared to previous years.
Sustainability role model	Inspiring energy efficiency in sports venues and fostering community commitment.
Carbon Emissions Reduction	Avoid a significant amount of carbon dioxide emissions due to renewable energy utilization.

User benefits

The adoption of the Solition Mega containerized energy storage systems translated into tangible benefits for Thialf and its stakeholders. Athletes and spectators alike benefited from improved facility sustainability, ensuring a greener and more enjoyable experience.

Reduced energy costs enabled Thialf to allocate resources towards enhancing its facilities and supporting community initiatives. Furthermore, the availability of surplus energy bolstered the resilience of Thialf's operations, ensuring uninterrupted access to essential services during peak demand periods.

With a better regulated and controlled energy flow for Thialf, other businesses in the community, also benefit because the local energy storage at the stadium reduces the grid-congestion, thus, freeing available energy for others.



Optimization of grid power usage

Self-consumption

Peak shaving

Sustainable energy ecosystem

Cost optimization

Peak-power supply

Scan for more info

The system and its implementation

Thialf's commitment to sustainability and cost-effectiveness led to the implementation of a cutting-edge energy storage solution from Exide Technologies, in collaboration with their integration partner, ENDUSO. Specifically, Thialf opted for the installation of two Solition Mega (containerized) systems, each boasting a capacity of 1 MW and 1,1 MWh. These state-of-the-art energy storage systems enable Thialf to capture and store surplus energy generated by their solar panels, effectively optimizing energy utilization and reducing dependency on grid-supplied electricity. The seamless integration of the Soliton Mega One systems into Thialf's existing infrastructure ensures minimal disruption to ongoing operations while maximizing energy-saving potential.

System overview:

Size:	2 x Solition Mega One
Installed battery capacity:	1 MW/ 1,1 MWh
Converter power:	2 x 1 MW / system
Communication:	Remote monitoring to Exide Technologies platform
Grid connection:	On-grid
Site Energy Management:	Control of freezers and other loads depending on available grid- and PV-power
Aggregator (energy trader):	ENDUSO BV
Project duration:	6 months

The results and achievements

The implementation of the Solition Mega containerized energy storage systems yielded remarkable results. By harnessing self-generated energy and optimizing consumption patterns, Thialf successfully reduced its energy bills. Furthermore, the initiative also unlocked additional cable capacity, enabling neighboring businesses to expand their operations. Beyond substantial cost reductions, Thialf's commitment to sustainability garnered widespread recognition, illustrating the stadium as a symbol of environmental responsibility within the community.

When strategy works: the key facts

40%
monetary savings

ROI wihin
4,5
years

45%
increase of energy efficiency due to the combined use of PV and PV-energy storage

20 companies
on the nearby industrial estate benefit from the reduced congestion

The advantages of Customized Energy Systems (CES)

Thialf's success story emphasizes the advantages of Customized Energy Systems (CES) in optimizing energy utilization and reducing operational costs. CES solutions, such as the Solition Mega series, offer tailored approaches to energy management, enabling businesses to adapt to dynamic energy demands efficiently.

By harnessing renewable energy sources and implementing advanced storage technologies, CES allows organizations to achieve sustainability goals while enhancing operational resilience and cost-effectiveness. Thialf's experience is testament to the transformative potential of CES in driving sustainable growth and innovation across industries.

ENDUSO – the project partner

About Enduso (www.enduso.nl)

ENDUSO – located in Wieringerwerf, The Netherlands – together with its partners, develops complete energy platforms at agricultural and industrial locations that produce electricity by means of solar panels. The unique ENDUSO concept guarantees the highest price for energy generated and sold to the public grid and the lowest cost for energy purchased by optimizing the usage of the Energy Storage System. ENDUSO means 'Energy – Duurzaam (Sustainable) – Social', and it focuses on projects whereby technical issues are solved, but also a social component is tackled, such as supporting local communities with a part of its profits, by reducing energy cost for the local sport club's canteen and similar projects.

A perfect match

About Customized Energy Systems

In 2021, global player Exide Technologies acquired ATEPS Nederland BV, an innovative and dynamic provider of lithium-ion based energy storage and its management in future key applications, such as time shift, frequency control, peak shaving, energy trading and more.

Combining innovation and global energy storage expertise, they become Customized Energy Systems, thereby making the use of sustainable energy through smart energy storage accessible to more regions and projects.

Customized Energy Systems develops, builds and delivers energy storage systems (ESS) to transition from fossil energy over to renewables. Its focus, for a successful and sustainable future, is on storage systems and solutions for greenhouse gas reduction and an optimization of TCO in energy-intensive industries.

We offer all the fields of operation that ensure that renewable energy is available at any time in any place and meet all the requirements that businesses demand.

Boosting **Balancing** **Operating** **Generating** **Trading**

About Exide Technologies

Exide Technologies (www.exidegroup.com) is a leading provider of innovative and sustainable battery storage solutions for automotive and industrial applications. With 135 years of experience, Exide has developed and globally marketed innovative batteries and systems, contributing to the energy transition, and driving a cleaner future. Exide's comprehensive range of lead-acid and lithium-ion solutions serves various applications, including 12V batteries for combustion and electric vehicles, traction batteries for material handling and robotics, stationary batteries for uninterruptible power supply, telecommunication, utility in-front-of and behind-the-meter energy storage and propulsion batteries for submarines and more. Exide Technologies' culture and strategy are centered around recycling, sustainability, and environmental responsibility, reflecting the commitment to being a responsible corporate citizen.

The company has 10 manufacturing and 3 recycling facilities across Europe, ensuring resilience and a low CO_2 footprint with a local supply chain. Exide Technologies is committed to superior engineering and manufacturing. With a team of 5,000 employees, the company provides 1.6bn Euro of energy storage solutions and services to customers worldwide, every year.

Creating the future – the Exide Technologies way:

Innovation **Reliability** **Sustainability** **High Performance**

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