

# Solar power now available day and night in Reuver.

Case Study with Vrijopnaam



## The case

**Project:**

Integration of a new storage system and implementation of an „in-front and behind the meter“ solution to optimize energy management and grid support.

**Customer/Project:**

Vrijopnaam, Netherlands

**Project partner:**

Exide Group, Enexis, Unica Industry Solutions, Spectral Energy

**Installed system:**

1 x Solition Mega Three, liquid cooled

**Connection:**

On-grid

**Installed battery capacity:**

3.440 kWh

**Location:**

Reuver, Netherlands

**Installation date:**

2024

## The background

A forward-thinking cooperation between two pioneers of renewable energy.

Vrijopnaam is a pioneering energy company in the Netherlands, actively involved in the renewable energy market since its inception in 2015. The company operates with a cooperative business model, emphasizing local involvement and benefits. Vrijopnaam's mission is to enable every Dutch citizen to generate their own solar power, contributing to a sustainable future while being financially save. To achieve this, Vrijopnaam develops and operates solar parks across the country, supplies 100 % Dutch solar energy and CO<sub>2</sub>-compensated gas, and offers a unique concept called „Paneelopnaam“.

This concept allows individuals to own a piece of a solar park and benefit from its energy production, even if they cannot install solar panels on their own property. Through these efforts, Vrijopnaam aims to provide accessible and sustainable energy options to the broader public. To support its growth and enhance its role in the energy transition, Vrijopnaam partnered with Exide Technologies.

With its Customized Energy Systems (CES), Exide Technologies brought its expertise in advanced energy solutions, particularly in energy storage and grid support, to help Vrijopnaam expand its market presence and improve operational efficiency. This partnership was a strategic move to address the increasing demand for renewable energy solutions and to strengthen Vrijopnaam's position in the competitive energy market.

# The challenges

1

**Market Expansion:** As a company dedicated to renewable energy, Vrijopnaam needed to scale its operations and influence more broadly in the market. This required innovative solutions that could handle increased energy production and distribution.

2

**Grid Support and Storage:** Integrating solar energy into the existing grid posed challenges, particularly in terms of grid stability and energy storage. Vrijopnaam needed a system that could efficiently manage the fluctuations in solar power generation.

## The objectives

### Implement Advanced Energy Solutions

Integrate a new storage system and implement an „in-front- and behind-the-meter“ solution to optimize energy management and grid support.

### Increase Impact on the Energy Transition

By expanding their operations and improving energy distribution efficiency, Vrijopnaam aimed to play a larger role in the overall energy transition in the Netherlands.

## User benefits

Vrijopnaam is now a supplier that can leverage both generation, and storage, as part of its assets to provide energy to small consumers.



Optimization of grid power usage



Self-consumption



Peak shaving



Sustainable energy ecosystem



Cost optimization



Peak-power supply



**Click here.  
Watch now.**

## The system and its implementation

Exide Technologies led the turnkey project management, overseeing the foundation and installation of advanced energy systems. The implemented solution included a new energy storage system designed to manage the variability inherent in solar power generation. This system played a crucial role in stabilizing the grid and ensuring a consistent energy supply to Vrijopnaam's customers.

Additionally, the project featured both in-front- and behind-the-meter solutions, which optimized energy use by allowing better integration with the grid while providing customers with more control over their energy consumption.

Throughout the project, Exide Technologies maintained a transparent development process, involving Vrijopnaam closely in each stage. This collaborative approach allowed for continuous feedback, ensuring that the final system met the specific needs of Vrijopnaam.

### System overview:

Size:	1 x Solition Mega Three, liquid cooled
Installed battery capacity:	3.440 kWh
Converter power:	1,72 MW
Communication:	LAN/Modbus
Grid connection:	On-grid
Site Energy Management:	Spectral
Aggregator (energy trader):	Spectral
Project duration:	7 months

### Key partners in this project included



**Exide Group (CES):** Provided the Solition Mega Three container and played a crucial role in the design and implementation of the energy storage system.



**Unica:** Handled the installation and maintenance of the solar panels and energy storage systems.



**Enexis:** The grid operator responsible for managing the connections and ensuring grid compatibility.



**Spectral:** Provided the energy management system and software to optimize the energy flows and ensure efficient operation.


# The results and achievements

The collaboration between Vrijopnaam and Exide Technologies led to significant achievements, both in terms of operational efficiency and market growth. The implementation of the energy storage system greatly improved grid stability, allowing Vrijopnaam to handle increased solar power production without compromising reliability. These results not only demonstrate the effectiveness of the Solition Mega series but also underscore Vrijopnaam's growing influence in the renewable energy market.

## When strategy works: the key facts

**750** tons  
CO<sub>2</sub>  
reduction, boosting Beesel's sustainability goals

**24/7**  
self-generated renewable energy (PV) in Reuver, with infrastructure for community use

 **2,4** hectare solar park  
generating ~2,3 million kWh of green energy annually

**7** months from first order to realization



## The advantages of Customized Energy Systems (CES)

Partnering with Exide Technologies provided Vrijopnaam with several key advantages that were crucial to the success of the project. CES brought innovative solutions to the table, particularly in energy storage and grid management, which enabled Vrijopnaam to overcome its operational challenges and expand its service offerings.

Exide Technologies' customer-centric approach ensured that the solutions were tailored to meet the specific needs of Vrijopnaam's business model, maintaining the company's values of local engagement and cooperative business practices.

Furthermore, the solutions implemented by CES were scalable, allowing Vrijopnaam to continue growing its market presence and contribute more significantly to the energy transition in the Netherlands.

The partnership between Exide Technologies and Vrijopnaam exemplifies how collaboration and innovation can drive substantial progress in the renewable energy sector.



# 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](http://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 12 V 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<sub>2</sub> 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**