Crafting a sustainable future.

Case Study with Koninklijke Dekker wood processing.

CUSTOMIZED ENERGY SYSTEMS™

The case

Project:
Koninklijke Dekker's transition to renewable energy with 40,000 solar panels and a 13.2 MWh battery capacity.
This initiative aims to enhance operational efficiency and reduce environmental impact.

Customer/Project:
Koninklijke Dekker Groep B.V., Den Haag, Netherlands

Project partner:
Exide Group, Stedln, Edmij, Unica Industry Solutions, Spectral Energy

Installed system:
12 x Solition Mega One (20 ft container system)

Connection:
On-grid

Installed battery capacity:
12 x 1,104 kWh

Location:
Vianen, Netherlands

Installation date:
Mai 2023 - November 2023

The background

Reducing the environmental impact of wood processing – and increasing efficiency

Koninklijke Dekker, one of the most progressive timber companies in the Netherlands and Europe, is driven by more than just profitability; they also want to have a positive impact on people and the environment. They achieve this with 40,000 solar panels, heat generation based on residual wood (fibre), and an FSC® managed forest area of almost 470,000 hectares.

With the desire to provide for their own energy needs and to take responsibility in the energy transition, this project invested in 12 Solition Mega systems. These containers are positioned at three locations in Vianen for energy storage, trading on the energy markets, and relieving the burden on the grid. In this way, they actively contribute to a greener future.

The challenges

1 **Ensuring safety and fire prevention:** As a wood production company, safety and fire prevention are crucial. We successfully addressed the insurance company's initial reluctance by showcasing our advanced internal fire prevention systems and robust extinguishing measures, ensuring the highest level of safety for our energy storage systems.

2 **Integrating renewable energy systems:** The complexity of incorporating photovoltaics (PV), energy storage, and energy management systems required meticulous planning to ensure optimal performance and grid compatibility.

3 **Effective collaboration:** The success of the project depended on bringing together and coordinating various departments and external partners.

The objectives

Energy self-sufficiency	Koninklijke Dekker aimed to cover a significant portion of its energy needs with its own renewable energy sources. This objective was driven by the desire to reduce dependency on external energy suppliers and enhance energy security.
CO_2 emission reduction	By utilizing solar energy, the company sought to significantly reduce its CO_2 emissions. This aligns with Koninklijke Dekker's commitment to sustainability and environmental stewardship.
Operational efficiency	Optimization of energy flows and reduction of energy waste were key goals. Achieving these objectives would lead to cost savings and improved productivity, contributing to the company's overall competitiveness.

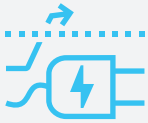
User benefits

Reliable power supply: By combining solar energy and Solition Mega containers, with a successfully integrated energy management system, Koninklijke Dekker can ensure a constant and reliable power supply. This reliability is crucial for maintaining uninterrupted operations and meeting production targets.

Cost savings: Utilizing renewable energy and participating in energy trading leads to significant cost savings. These savings can be reinvested in other areas of the business, driving further growth and innovation.

Environmental impact: The reduction in CO_2 emissions significantly contributes to environmental conservation. Koninklijke Dekker's commitment to sustainability helps protect natural resources and promotes a healthier planet.

Flexibility: The ability to store excess energy and use it when needed offers high flexibility. This flexibility allows Koninklijke Dekker to adapt to changing energy demands and market conditions, ensuring optimal energy management.



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

From a wood processing company to an energy supplier, the energy transition at Koninklijke Dekker marks a significant step forward in sustainability!

Solar panels: Over 40,000 solar panels, which generate close to 10 GWh of renewable energy every year.

Battery storage: These 40,000 solar panels generate enough energy to cover the annual needs of the Koninklijke Dekker facility. However, due to timing mismatches, only 21 % of the PV power is consumed by Koninklijke Dekker itself. By incorporating battery storage, the facility can significantly increase its self-consumption of the generated solar power.

The systems were produced, delivered, and connected within a few months. Production started in May 2023, and the final assembly and connection were completed by November 2023. The connections vary by location, and they are still working on some with the grid operator Stedln.

All large connections currently have restrictions, affecting the ability to transport back into the grid or withdraw from the grid, depending on the location. Currently, seven systems are operational, totaling 3.5 MW. This rapid implementation was made possible through efficient project management and close collaboration with all stakeholders.

System overview:

Size:	12 x Solition Mega One (20 ft container system)
Installed battery capacity:	12 x 1,104 kWh
Converter power:	6 MW
Communication:	Direct Modbus / TCP-IP-control & 4G monitoring
Grid connection:	On-grid
Site Energy Management:	Spectral
Aggregator (energy trader):	Edmij
Project duration:	7 months

Key partners in this project included

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

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

Edmij: Responsible for the energy trading and ensuring that the surplus energy is efficiently traded in the market.

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

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

The results and achievements

Koninklijke Dekker has achieved significant milestones in its journey towards sustainability.

Certified wood: Self-sufficiency achieved through certified wood sourced from 400,000 hectares of own forest concessions, complete with own sawmills and communities supporting 300 families nestled in the Bolivian Amazon, alongside a planing mill in La Paz. This initiative not only supports sustainable forestry practices but also contributes to the local economy.

Solar power: Harnessing the power of 40,000 (10MWp) solar panels to meet their energy needs sustainably. This has significantly reduced the company's reliance on fossil fuels and lowered its carbon footprint.

Electric vehicles: A fleet of 35 electric vehicles, exemplifying their commitment to eco-friendly transportation. This transition to electric vehicles is part of a broader strategy to reduce greenhouse gas emissions and promote sustainable mobility.

Energy storage: Embarking on a new chapter with the deployment of 12 Solition Mega One containers, enabling them to buffer the surplus capacity from their solar panels while actively participating in the energy transition by engaging in the balancing and frequency markets. This energy storage solution enhances the stability and reliability of the company's energy supply.

When strategy works: the key facts

≈40 %
of its energy needs are covered with its own renewable energy sources

40,000
Installed solar panels

7 months
from first order to realization

920 tons
Reduced CO_2 emissions

The advantages of Customized Energy Systems (CES)

Koninklijke Dekker has achieved several advantages through the implementation of customized energy systems (CES). These advantages have not only enhanced their operational efficiency but also provided significant benefits to their overall business model and sustainability goals.

One of the primary advantages of CES is **system scalability.** The ability of the CES to adapt to changing energy demands is crucial for a dynamic business environment. Koninklijke Dekker‘s energy system, featuring Solition Mega One containers, is designed to be easily scalable, allowing the company to increase or decrease its energy capacity based on current needs. This scalability ensures that Koninklijke Dekker can respond swiftly to market changes and energy requirements.

Operational efficiency is another significant advantage. The optimization level of energy flows within the CES has led to a substantial reduction in energy waste and an enhancement in overall productivity. By efficiently managing the energy produced by their solar panels and stored in their Solition Mega One containers, Koninklijke Dekker can ensure that energy is used where and when it is needed most. This efficient energy management has resulted in lower operational costs and higher productivity, contributing to the company‘s bottom line.

User satisfaction is a critical metric for Koninklijke Dekker. The satisfaction level of end-users with the reliable power supply, cost savings, environmental impact, and flexibility provided by the CES is a testament to the system‘s success. The reliable power supply ensures that Koninklijke Dekker‘s operations run smoothly without interruptions, while the cost savings from using renewable energy and participating in energy trading have positively impacted the company‘s financial performance. Additionally, the environmental benefits of reduced CO_2 emissions align with Koninklijke Dekker’s commitment to sustainability, further enhancing user satisfaction.

The flexibility offered by the CES is another notable advantage. The ability to store excess energy in Solition Mega One containers and use it when needed provides Koninklijke Dekker with a high degree of flexibility in managing their energy resources. This flexibility is particularly beneficial in times of fluctuating energy demand or supply, allowing the company to maintain a stable energy supply and avoid potential disruptions.

In conclusion, the implementation of customized energy systems, including Solition Mega One containers, has provided Koninklijke Dekker with numerous advantages, including system scalability, operational efficiency, user satisfaction, flexibility, and participation in energy trading markets. These benefits have not only enhanced Koninklijke Dekker‘s operational performance but also aligned with their sustainability goals, positioning the company as a leader in the transition to renewable energy.

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**

CUSTOMIZED ENERGY SYSTEMS™