

/ 24 JULY 10:00 – 10:30

Breaking barriers to electrification in food and drink with battery energy storage



fdf
food & drink
federation

powerstar
A D2Zero Company

James Hampshire

/ PRINCIPAL ENGINEER

D2Zero



Together, we're
accelerating the
transition to **cleaner**
energy.

D2Zero unites six existing UK portfolio companies with the expertise, advanced technologies and critical infrastructure capabilities needed to decarbonise energy and accelerate progress towards net zero.

powerstar 

score

 hydrasun

 Fuel Cell
SYSTEMS

KELTON 

nexos



Challenges

Rising **energy costs**

Known for its energy-intensive processes, many factories unknowingly waste **up to 10% of their energy** due to inefficiencies.



Drive for **decarbonisation**

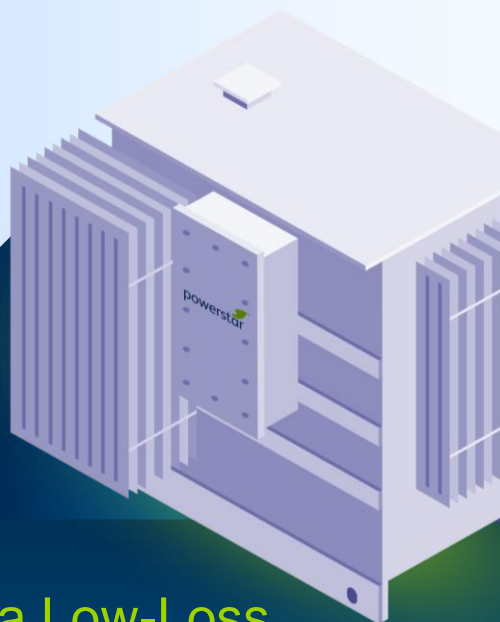
Consumer and legislative demands for sustainability are driving manufacturers to find new ways to **cut their carbon emissions**.



Barriers to **electrification**

Grid constraints are making it increasingly difficult to adopt electrification and transition to cleaner fuels.





Ultra Low-Loss Transformers

With up to 70% lower core losses than standard CRGO models, Powerstar's transformers deliver significant cost and carbon savings.



Voltage Optimisation

A powerful voltage optimisation system that improves energy efficiency by 6–9%, lowers your energy costs and carbon emissions, and safeguards your equipment.



Battery Energy Storage Systems

Overcome the challenges of grid constraints and support the integration of renewable technologies while enhancing energy resilience.



Battery Energy Storage Systems (BESS)

Store energy for use during peak times, taking advantage of **lower grid prices**



Resolve **grid constraints** to enable the installation of high-demand technologies



Renewable firming smooths out fluctuations from renewable sources like solar and wind



Uninterruptible Power Supply (UPS) to protect critical operations and ensure energy resilience

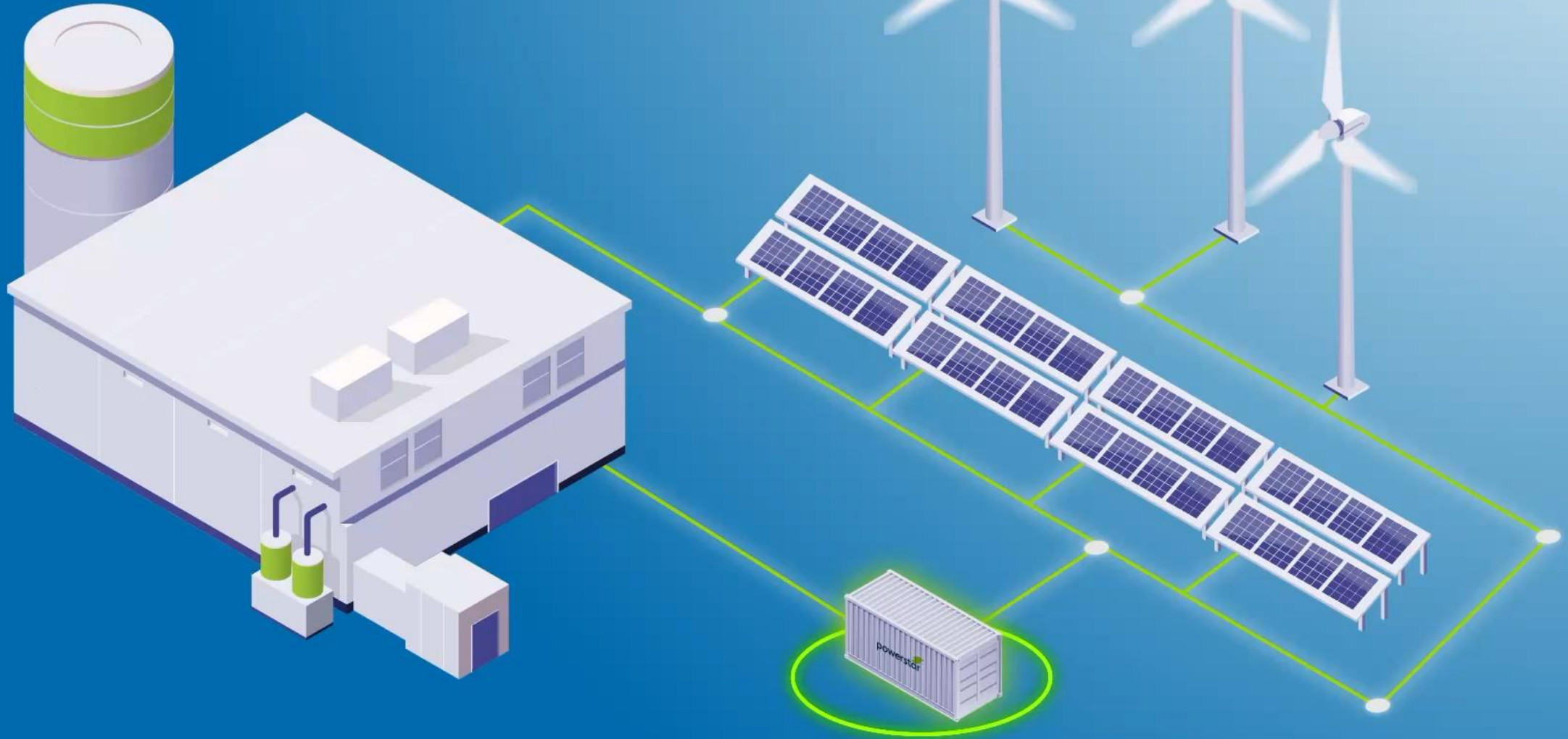


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Powering

Renewable firming



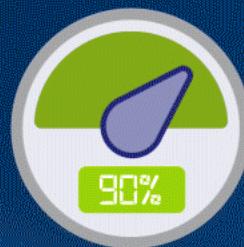
THE GRID
2000kVA



SITE DEMAND
1800kVA

Grid constraints

THE GRID
2000kVA



SITE DEMAND
1800kVA

Grid constraints

THE GRID
2000kVA



SITE DEMAND
2500kVA



Grid constraints

THE GRID
2000kVA



SITE DEMAND
2500kVA



Grid constraints

THE GRID
2000kVA

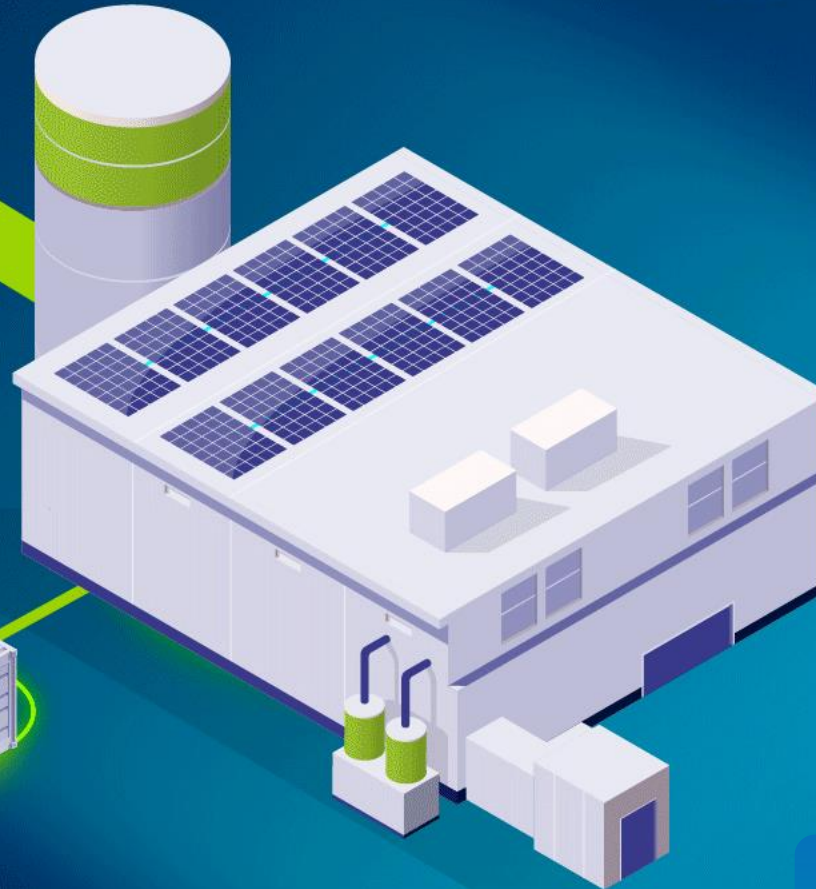


SITE DEMAND
2500kVA

BATTERY
DEMAND

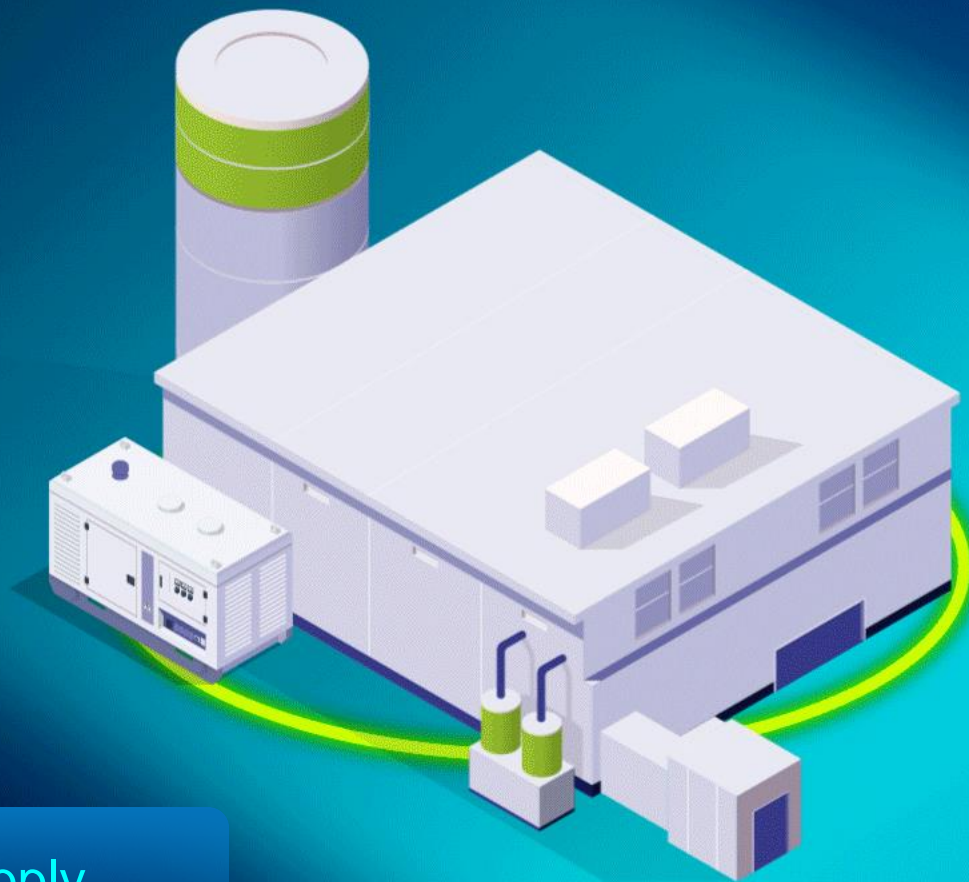


+1000kVA



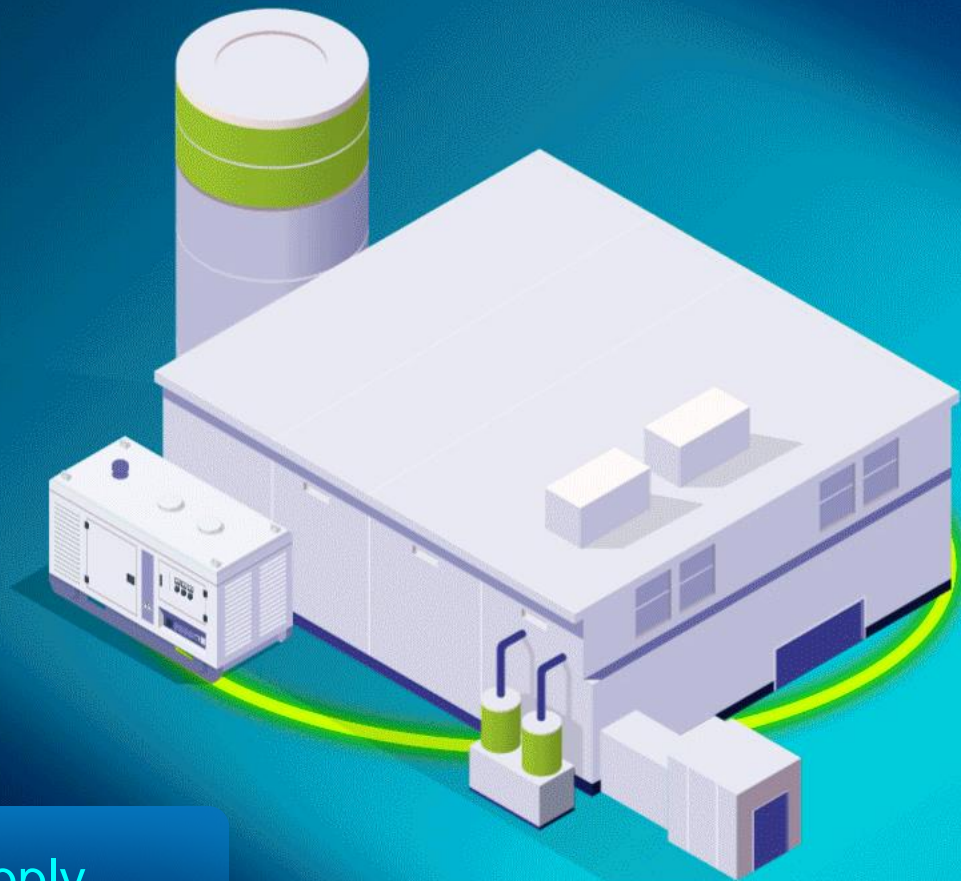
Grid constraints

THE GRID



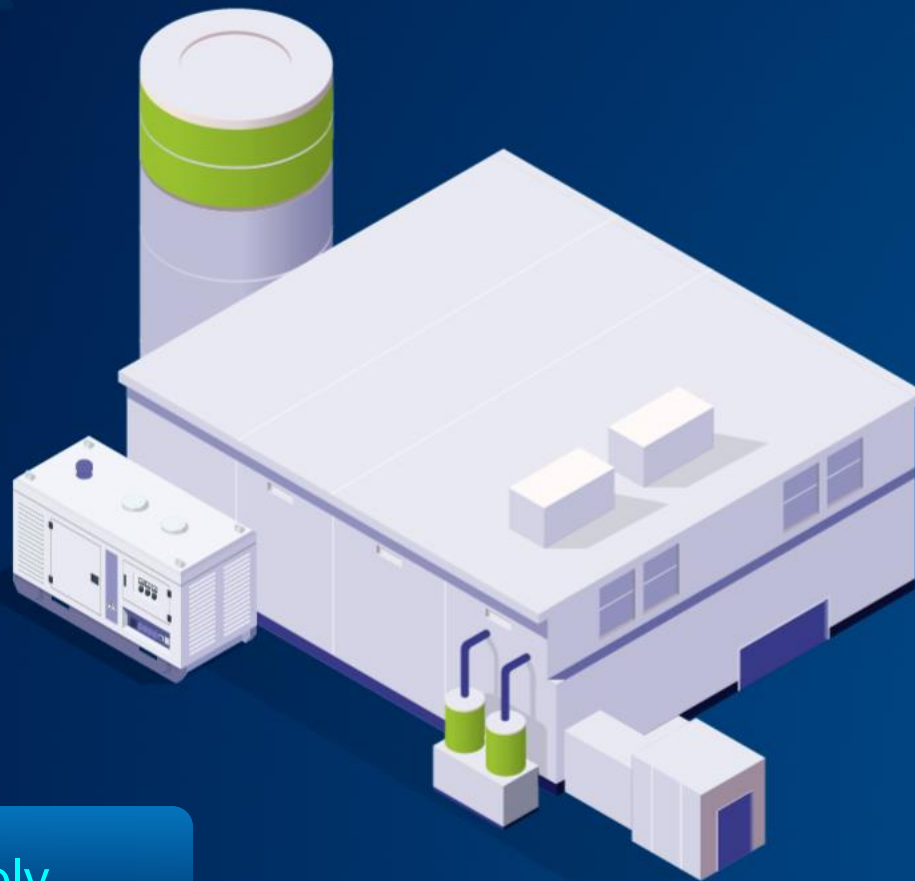
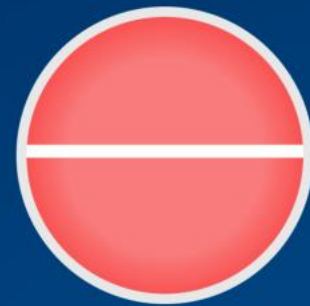
Uninterruptible Power Supply

THE GRID



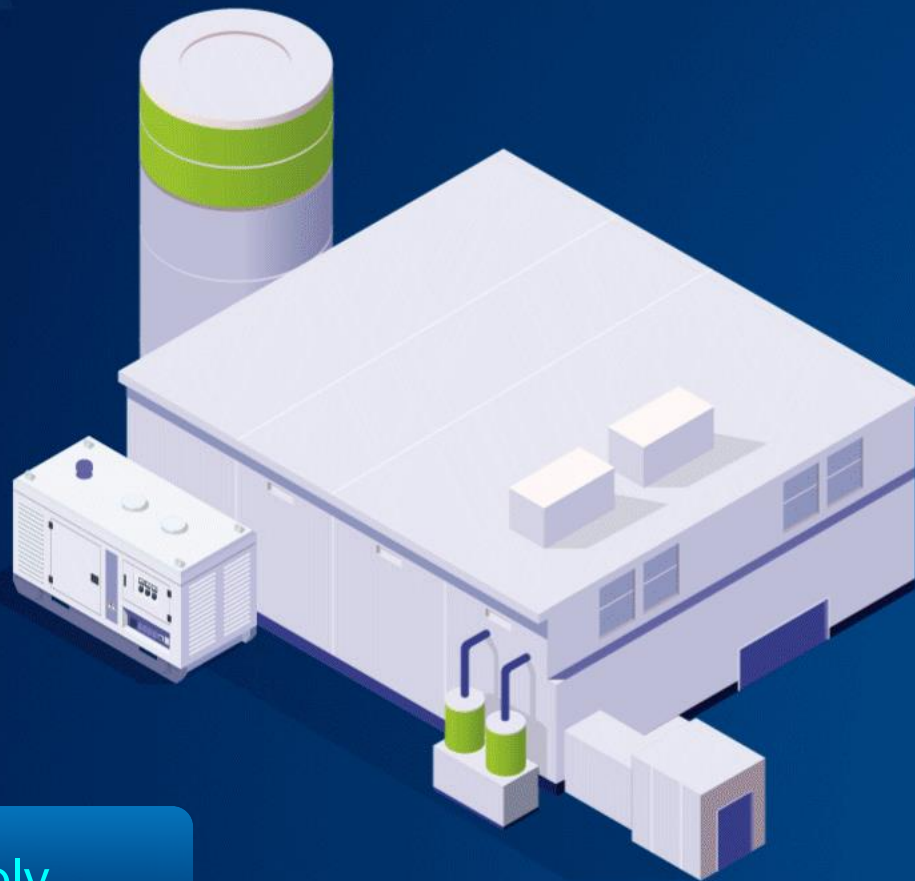
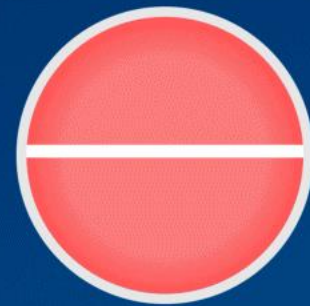
Uninterruptible Power Supply

THE GRID



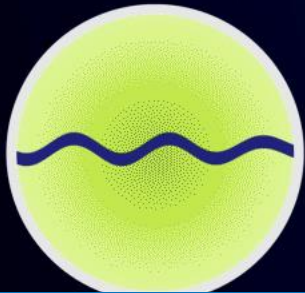
Uninterruptible Power Supply

THE GRID



Uninterruptible Power Supply

30s



Uninterruptible Power Supply



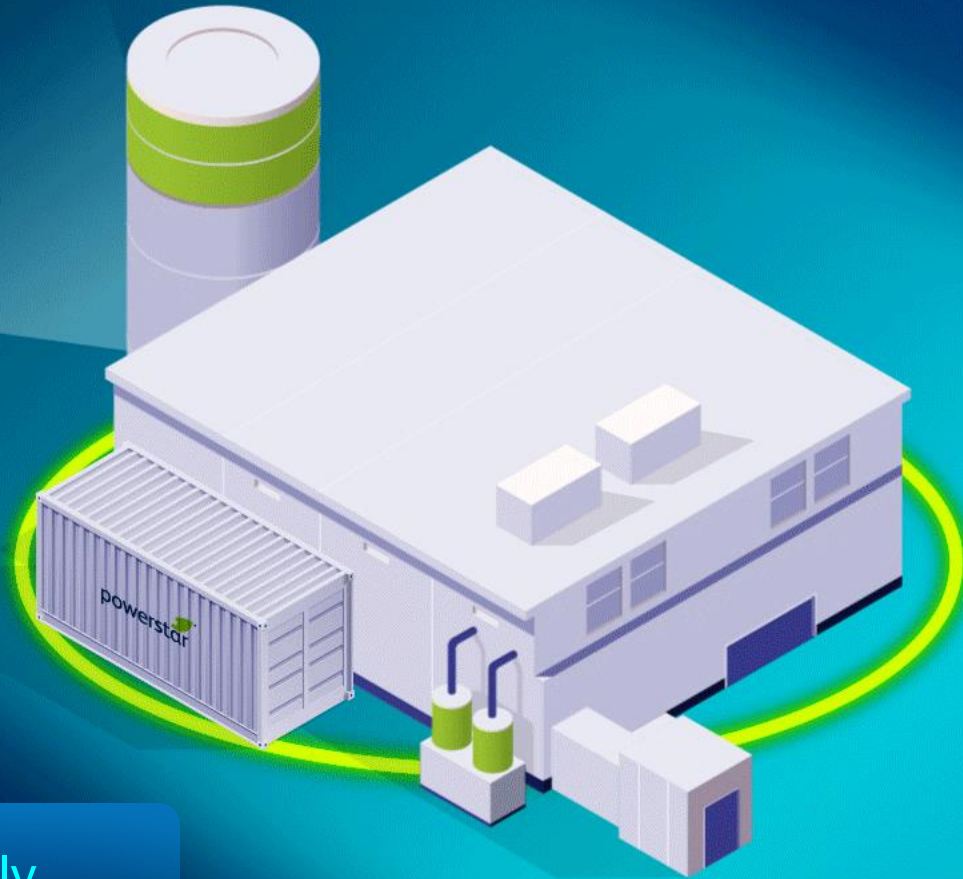
30s



Uninterruptible Power Supply

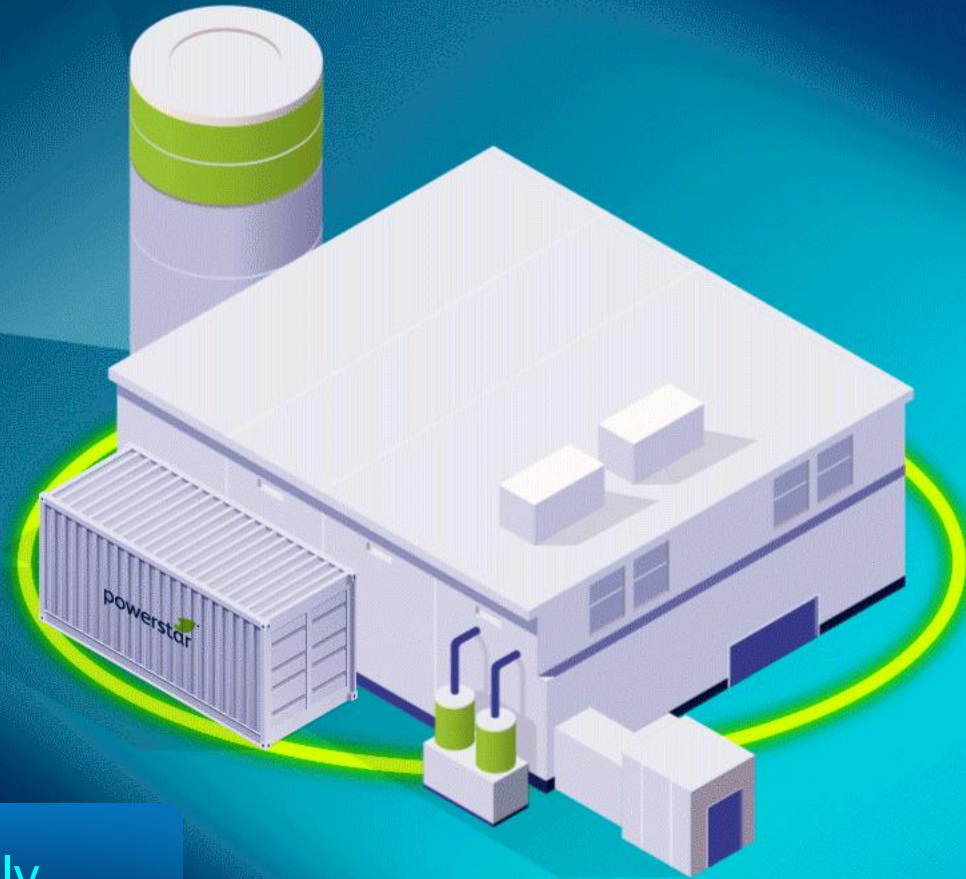


THE GRID



Uninterruptible Power Supply

THE GRID

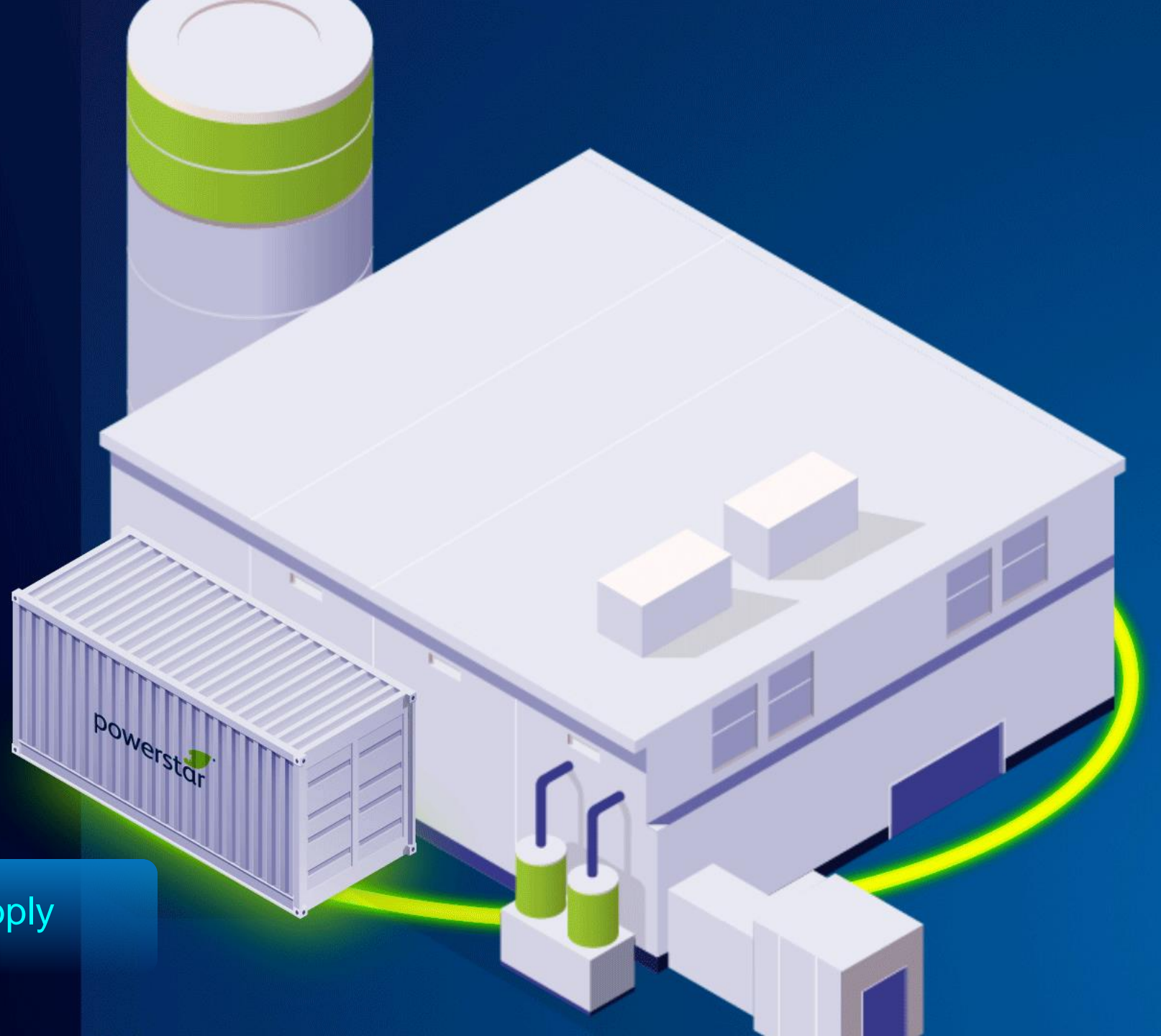


Uninterruptible Power Supply

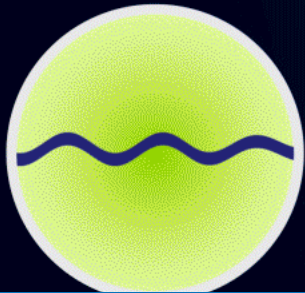
20_{ms}



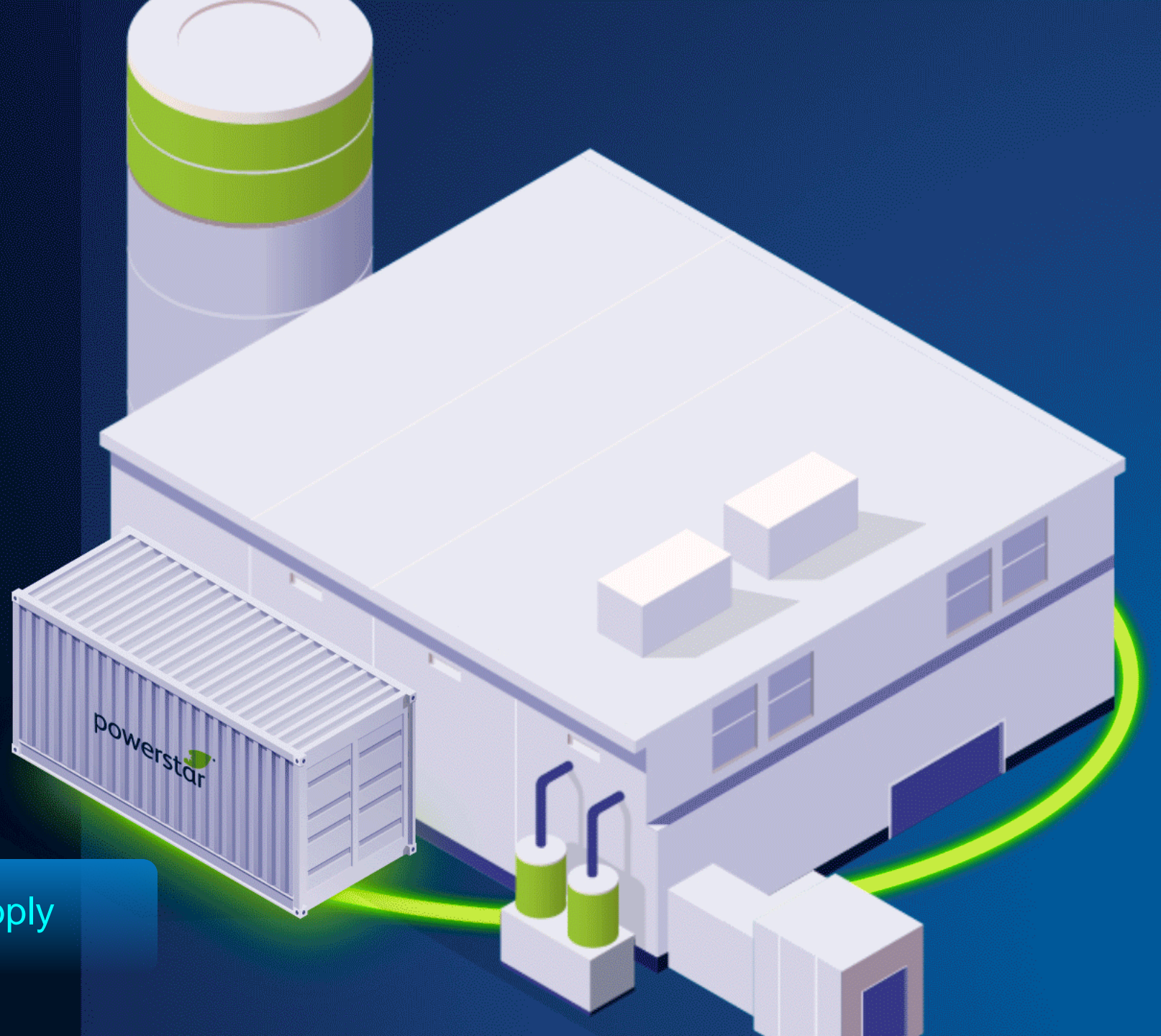
Uninterruptible Power Supply



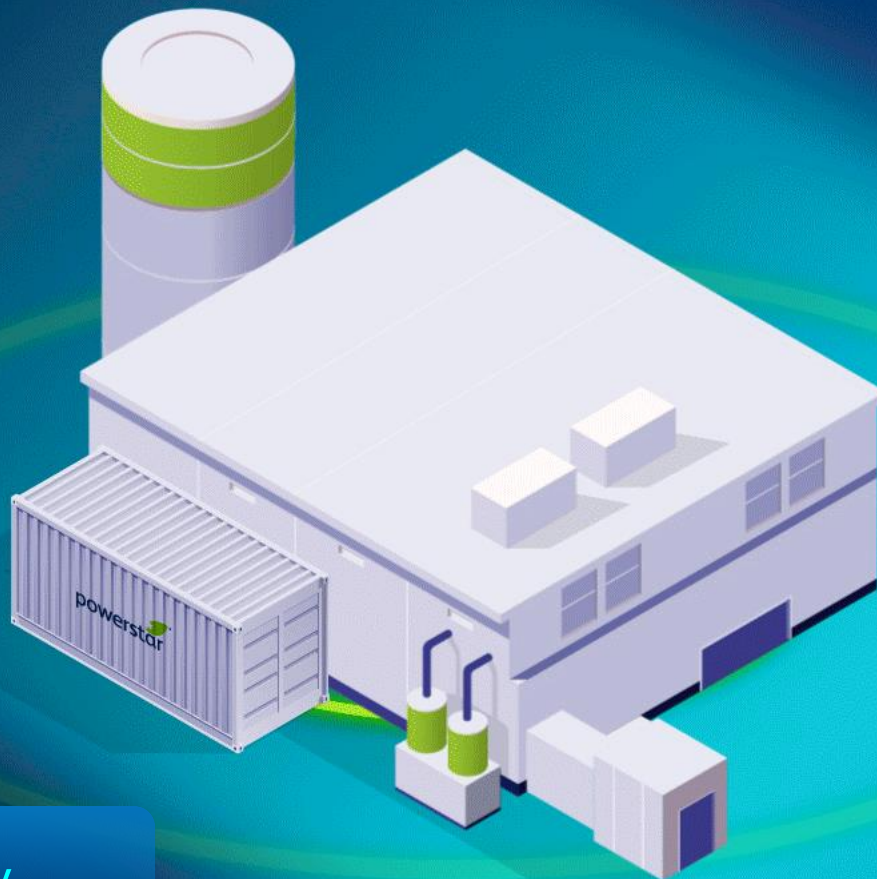
20_{ms}



Uninterruptible Power Supply



THE GRID



Uninterruptible Power Supply



Case Studies



Quorn™

Our integrated VO and transformer solution saved a leading food manufacturer £71k annually, while helping to meet sustainability goals.

 **365t**

ANNUAL CO₂

SAVED



AESSEAL®

Since 2019, our 500kWh BESS solution has helped AESSEAL® maximise their on-site renewable energy and support its net zero targets.

 **8%**

SINCE 2019



Wernick GROUP

By cutting energy waste, Wernick reduced their energy costs by 9.2% and cut 19 tonnes of CO₂, making strong strides toward their net zero goals.

 **9.2%**

ANNUAL ENERGY

SAVED

Let's talk about your energy goals

 www.powerstar.com

 info@powerstar.com

 0114 257 6200



powerstar
RESILIENCE⁺
A D2Zero Company