



BUILDING ENERGY STORAGE INFRASTRUCTURE

COMPANY PRESENTATION

Status: Q3 2021

Information subject to change without notice.

An aerial photograph of a suburban neighborhood. In the foreground, there's a large residential area with many houses. To the right, a baseball field is visible. Further right, there are several large solar panel arrays. The background shows more houses and a hazy horizon under a cloudy sky.

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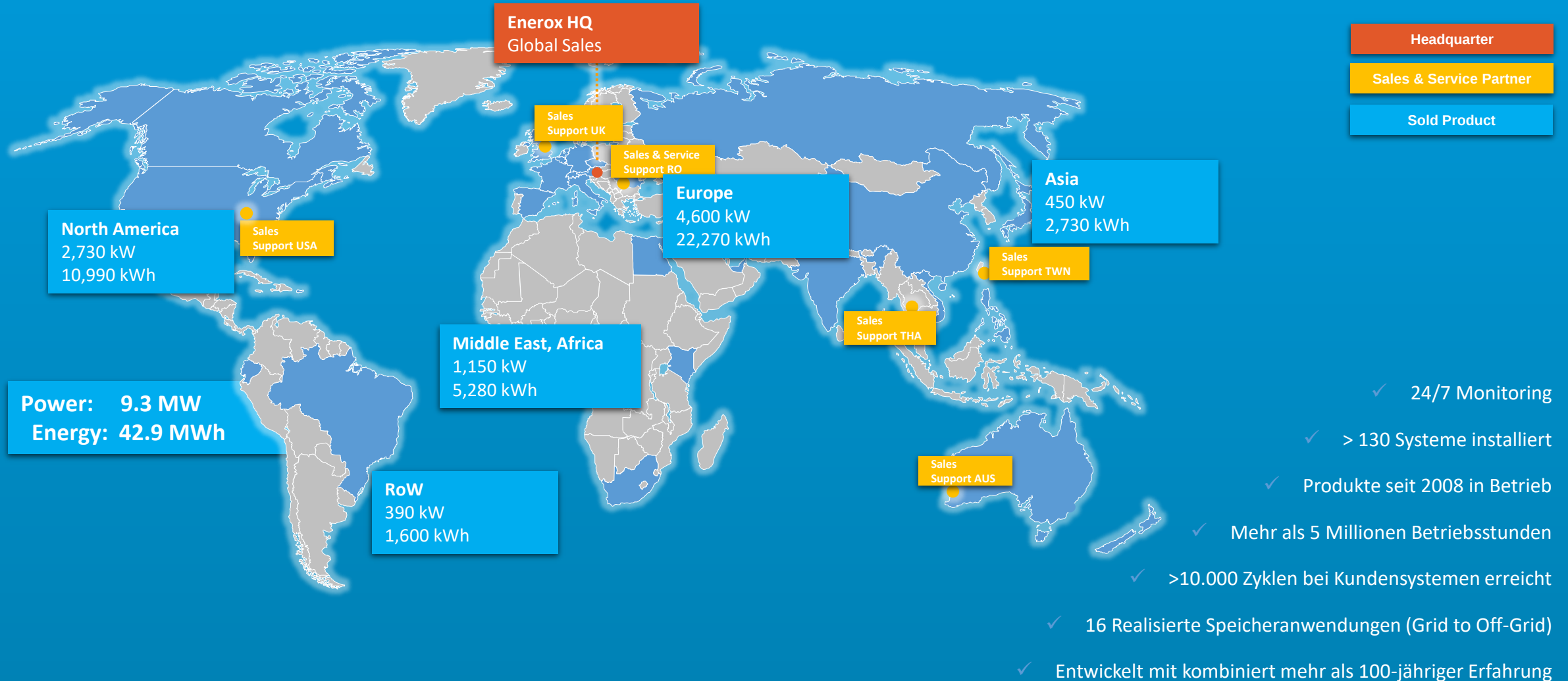


Global VRFB Leader with 100+ projects
Over 3Mio. operating hours
>50% of all globally installed



CellCube offers the market leading Vanadium-Redox-Flow System

International business track record of Enerox (incl. Gildemeister)



CellCube is your partner for energy storage infrastructure and services

Overview of Service Options & Project Partner Logos



SOLUTION DESIGN

Projekt-Simulation
Machbarkeitsanalyse
Kostenoptimierte Lösungen
Sonderlösungen und R&D Projektpartner



TURNKEY SOLUTION

Containerisiertes DC/AC-Speichersystem
Integriertes Batterie-Management-System
Standard Schnittstellen
EMS optional
Installation, Integration und Inbetriebnahme



OPERATION & MAINTENANCE SERVICES

Basis-Systemwartung
Erweiterte Systemgarantie
Überwachung & Lifetime-Services
Leistungsgarantien



CellCube's solutions focus and use case overview

Grüne Infrastruktur

- Large Scale / Green PPA's
- Integration Erneuerbarer Energie
- Grüne Grundlastversorgung



Kapazitätsmärkte & Energiebörse

- Grüne Spitzenlastkraftwerke
- Abhilfe bei Netzbeschränkungen
- Netzunterstützung

C&I / Microgrid

- **Ausfallsicherheit / USV**
- **Optimierung der Energierechnungen**
- **Community & Industrial Zones**
- **Remote Sites / Offgrid**

Experience the new generation of flow batteries



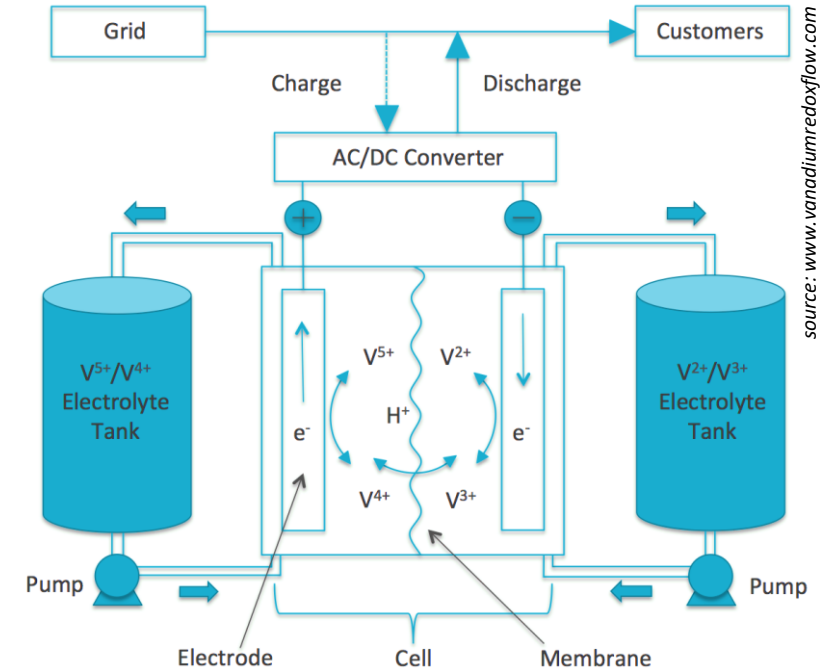
**safe.
flexible.
more power.
highest efficiency.**



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The key advantages of our VRFB solution are our value proposition

- ✓ Kommerziell tragfähige Lösungen mit Langzeitspeicher für 2 - 12 oder mehr Stunden Energiespeicherung
- ✓ Overrating bis zu 200 %, doppelte Leistung im selben System
- ✓ Keine Kapazitätsverschlechterung und Mehrfach-Zyklisierung täglich
- ✓ 100% Entladungstiefe (DoD)
- ✓ Verlängerte Lebensdauer von mehr als 20 Jahren
- ✓ Sicher, nicht brennbar, nicht explosionsgefährlich, und umweltfreundlich
- ✓ CellCube Komponenten mit mehr als 10.000 ununterbrochenen Zyklen und über 10 Jahre Lebensdauer getestet



Energy Storage System CellCube

CellCube Product Family

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FB 250-1000

Flow Battery

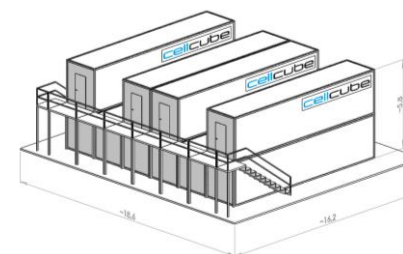
Nennleistung in kW

Min. nutzbare Kapazität in kWh

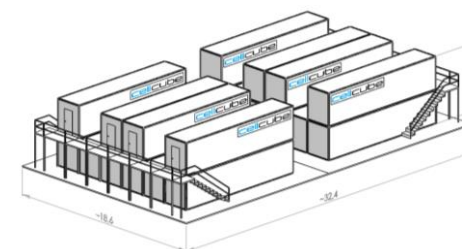


Product	Rated / max. Power	Useable Energy Capacity (kWh)
FB 250	250 kW / 500 kW	1000 (4 hrs)
		1500 (6 hrs)
		2000 (8 hrs)
FB 500	500 kW / 1000 kW	2000 (4 hrs)

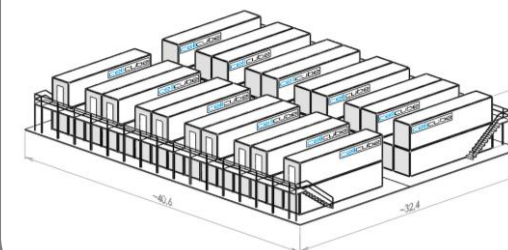
Beispiele für CellCube Skalierungen



1MW – 4 MWh



2MW – 8 MWh



10MW – 40 MWh

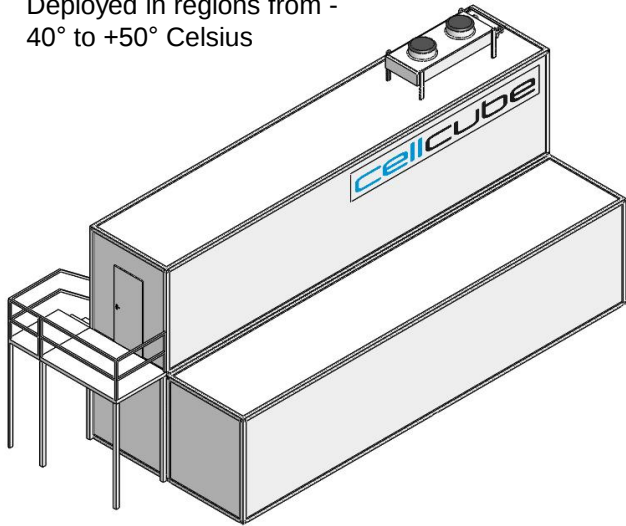
US: IEEE 1547, UL 1741 | UL 1973, UL 508, UL 9450, NFPA 70, CA Rule 21 (pending) **CA:** CAN/CSA-C22.2 **AU:** AS 4777
DE: BDEW, VDE-ARN-4105 **IT:** CEI 0-16 & 0-21 **GB:** G59, G83 **BE:** C10/C11 **RU:** GOST **EU:** CE | Other codes and standards pending

Meet the whole product family of the new generation

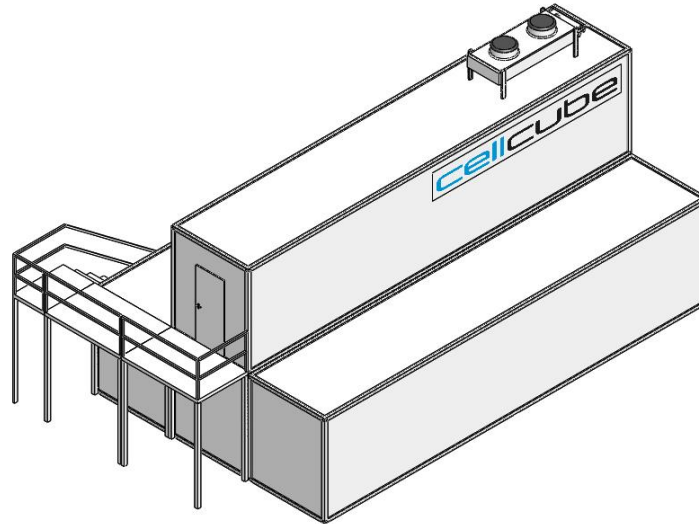
Certified by:



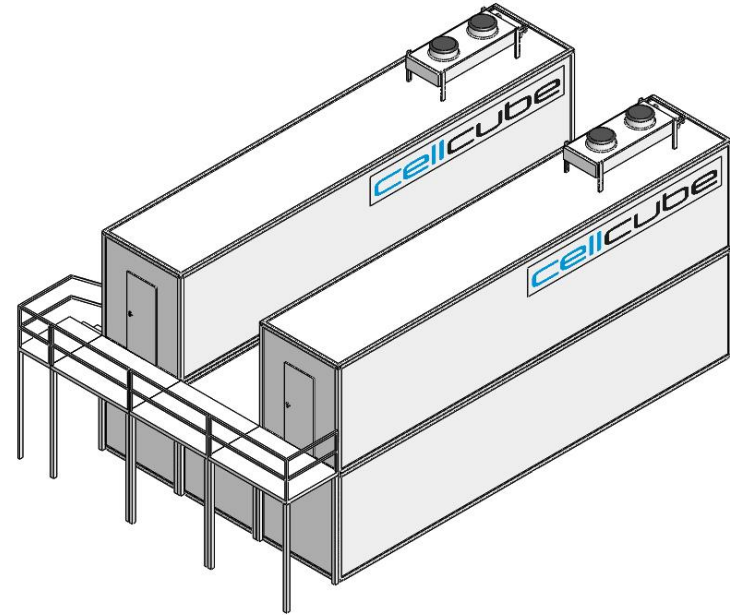
Deployed in regions from -40° to +50° Celsius



FB 250-1000
FB 250-1500



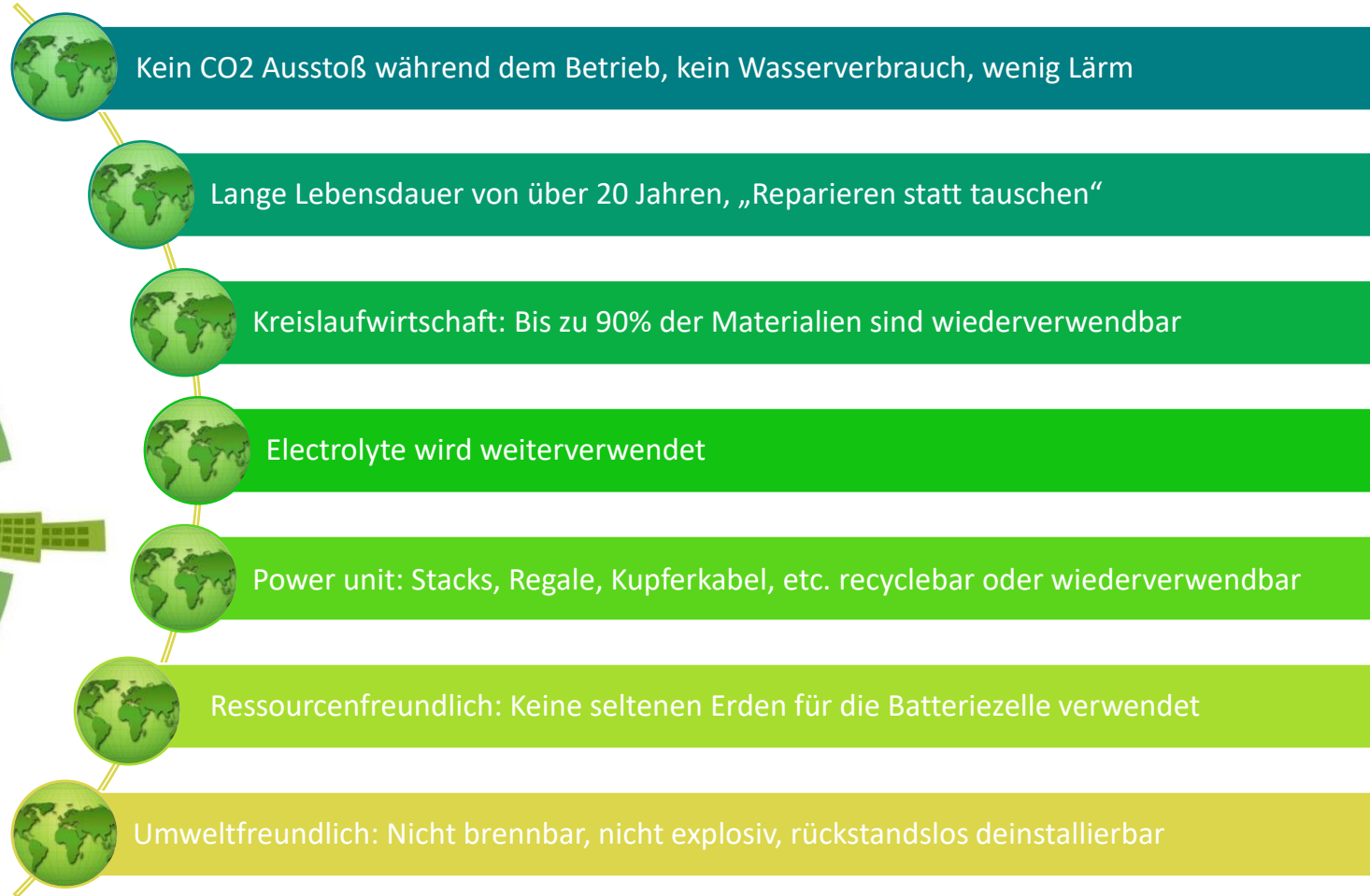
FB 250-2000



FB 500-2000



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SHOW CASES.

CellCube Reference Project

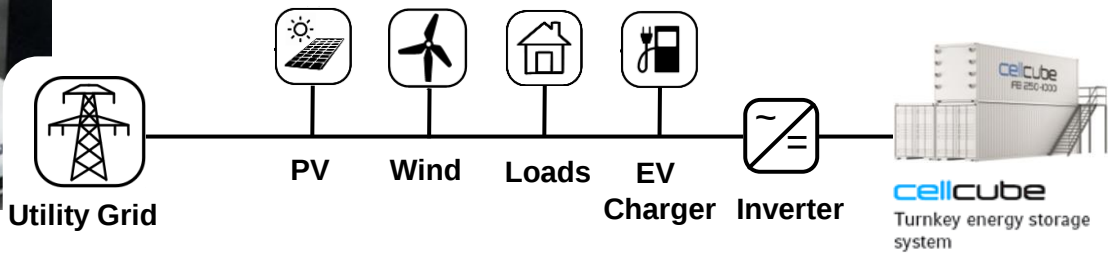
Office & Warehouse in Winterthur – Optimization Management of a C&I Microgrid

On-Grid
C&I Microgrid



- Max. renewable fraction for Office and Warehouse
- Intelligent regulation of a C&I Microgrid
- Behind-the-Meter 100% green EV-charging
- Live On-Site Monitoring

Location	Winterthur, Switzerland
Rated AC Power	200 kW
Rated Capacity	400 kWh
Product	CellCube FB 200-400
Date of Commissioning	3 rd Quarter 2014
Overall Uptime	97.5%



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CellCube Reference Project

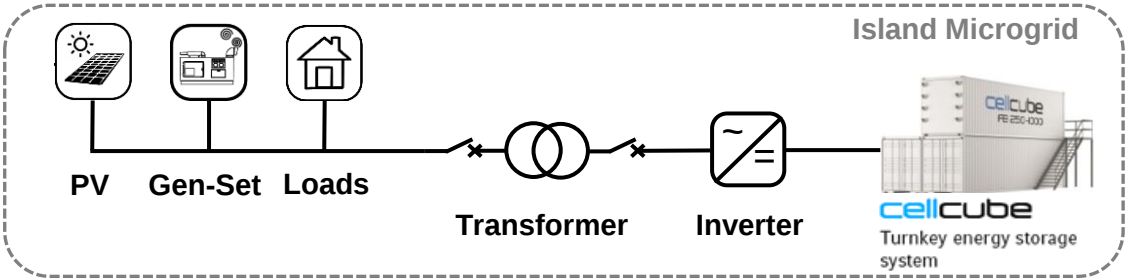
Bio-Indoor Fish & Aquafarm in Austria – Green Energy Infrastructure

Off-Grid
Remote Site



- Remote Site
- Green Energy Supply
- Green Backup Solution for critical Infrastructure

Location	Graz, Austria
Rated AC Power	750 kW
Rated Capacity	6 MWh
Product	3x CellCube FB 250-2000
Date of Commissioning	1 st Quarter 2022



CellCube Reference Project

Kitobo Island – Stabilization for Off-Grid power supply

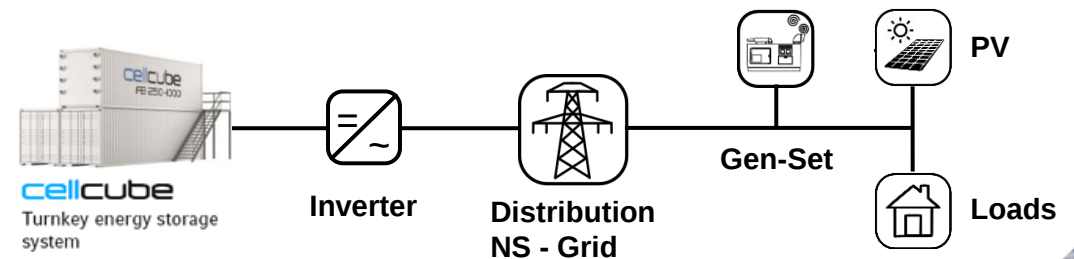
Off-Grid

Remote Site



- Intelligent off-grid power supply for 600 households
- Renewable energy sources as baseload
- Creates new business chances for local enterprises and shops

Location	Kitobo Island, Uganda
Rated AC Power	60 kW
Rated Capacity	520 kWh
Product	4x CellCube FB 15-130
Date of Commissioning	4 th Quarter 2016
Overall Uptime	99.5%



CellCube Reference Project

Island Microgrid on an Island in Germany – Island Smart Grid of the Future

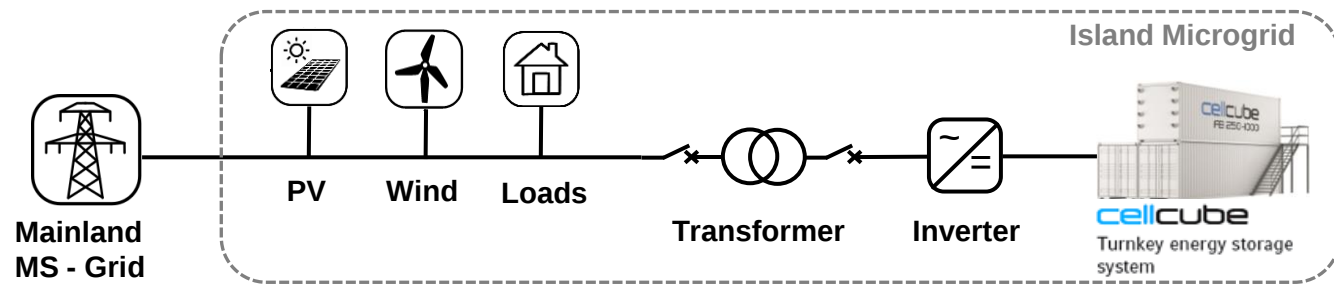
On-Grid

Co-Location Large Scale
Renewables



- Utility Scale Microgrid in an UNESCO world protected area
- Increase renewable fraction
- Intelligent hybrid regulation

Location	Pellworm, Germany
Rated AC Power	200 kW
Rated Capacity	1.6 MWh
Product	CellCube FB 200-1600
Date of Commissioning	2 nd Quarter 2013
Overall Uptime	96.8%



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CellCube Reference Project

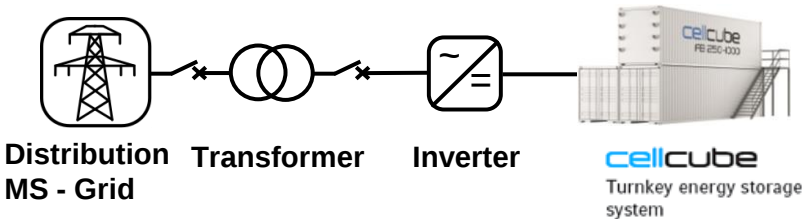
Grid Provider in Italy – Grid Services and Trading Markets

On-Grid
Capacity & Reserve Markets



- Frequency Regulation Market
- Intraday Energy Trading Markets
- Grid Stabilization - Voltage and Frequency Support

Location	Sardinia, Italy
Rated AC Power	400 kW
Rated Capacity	1.2 MWh
Product	CellCube FB 200-600
Date of Commissioning	3 rd Quarter 2016
Overall Uptime	96%



Enerox – The Home of the CellCube

Mr. Philipp Bocek
Senior Sales Manager

ENEROX GmbH

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