PIER71
Port Innovation Ecosystem Reimagined at BLOCK71

MODULAR, OFF GRID ENERGY SOLUTIONS ENABLING FLEXIBLE ELECTRIFICATION ACROSS LAND AND MARITIME ENVIRONMENTS

Beecharge develops mobile and modular battery energy storage systems that overcome grid constraints, enabling scalable EV charging and port electrification.

BEECHARGE

The Journey So Far

Beecharge develops modular energy solutions that enable electrification in environments where traditional infrastructure is limited or impractical. The company started with mobile EV charging (BC1.0), participating in Singapore's TR25 mobile charging sandbox, where it supports real-world deployment of on-demand EV charging without fixed infrastructure. Building on this foundation, Beecharge is now advancing BC2.0, a modular, off-grid battery energy storage system designed for scalable deployment across both land and maritime applications.

In parallel, Beecharge is aligning its solutions with emerging TR136 maritime electrification frameworks, exploring applications such as harbour craft charging and port-side energy systems.

These systems address key challenges such as grid limitations, deployment speed, and operational flexibility. By combining mobility, modularity and intelligent energy management, Beecharge enables a new approach to electrification that is practical, scalable and adaptable to real-world constraints.

Innovation Opportunity

Many electrification efforts are constrained by grid availability, high infrastructure costs, and long deployment timelines.

In ports, remote facilities and fleet operations, there is a growing need for flexible energy solutions that can be deployed quickly without heavy reliance on fixed infrastructure. This creates an opportunity for modular, off grid energy systems that can support both current operations and future expansion, while aligning with evolving regulatory frameworks such as TR25 and TR136.

Solution

Beecharge provides a range of modular energy solutions, including:

Mobile EV charging systems (BC1.0) deployed under TR25 sandbox environments

Modular battery energy storage and dispensing systems (BC2.0) for scalable, off-grid applications
Energy management capabilities to optimise usage and improve operational efficiency

These solutions are designed as adaptable energy platforms that can support different use cases, from fleet charging to port electrification, enabling a more flexible and resilient approach to energy deployment.

Pilot Project Key Results

Participating in Singapore's TR25 mobile EV charging sandbox with real-world fleet deployments

Advancing modular BESS (BC2.0) solutions aligned with emerging TR136 maritime electrification needs

Beecharge's off-grid, solar-powered charging can reduce lifecycle emissions by up to 90–95% (from ~550–900 to 30–110 gCO_2/kWh) compared to grid-based charging

Founded 2023, Singapore

> Electrification is not just about replacing fuel with electricity — it is about rethinking how energy is delivered, stored, and managed in fragmented environments. At Beecharge, we focus on solving real-world challenges such as limited grid capacity, operational downtime, and the need for flexible deployment.

Felix Teo,
Founder

Looking Forward

Beecharge aims to expand its modular energy platform across Southeast Asia and key maritime hubs, supporting the transition towards electrified transport and port operations.

The company is actively working with industry stakeholders to develop solutions aligned with emerging standards such as TR136, while continuing to refine deployable systems that meet real world operational requirements.

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