



CASE STUDY

IKEA



IKEA Case Study

Marsden Park, Australia

Enabling Renewable Logistics with a Solar-Plus-Storage Solution

At IKEA Australia's Marsden Park Distribution Centre in western Sydney, our battery energy storage system helps turn large-scale rooftop solar into a more flexible and business-ready energy asset. Designed for a 24/7 logistics environment, the project supports onsite renewable consumption, peak demand management, and EV charging for home delivery operations.

01 Customer Engagement & Requirement Discovery

Project Background

To achieve its ambitious goal of halving greenhouse gas emissions by 2030 and mitigating rising electricity costs, IKEA Australia aimed to reach over 70% energy self-sufficiency at its Marsden Park Distribution Center in Western Sydney. This integrated clean energy system powers the warehouse's 24/7 operations and supply charging power for electric vehicles dedicated to IKEA's home delivery services.

Decision Chain & Initial Concerns

Decision Chain: The project was directed by IKEA Headquarters, partnering with North Sydney-based clean energy solution provider Smart Commercial Solar (SCS), with RCT Power selected as the energy storage equipment provider.

Initial Concerns: The primary concerns were the long-term return on investment (ROI) and the reliability of the storage system under continuous operation.

Competitive Edge: While other major players were considered, communication gaps hindered those partnerships. RCT Power's established brand reputation and successful track record in the Australian residential market ultimately secured the customer's trust.

02 Pre-sales Technical Support

Load Analysis & Proposal

The site featured a new 2MWp solar panels, with the goal of increasing renewable energy consumption from 26% to 70%. To address solar intermittency and the mismatch between peak generation and consumption, RCT Power's technical team recommended the C&I energy storage product RCTerra Class 1.0 233. The solution utilizes five units in parallel, delivering a total output of 500kW. This allows the system to absorb excess solar power during the day and discharge it during evening peak hours.

Grid Connection & Compliance

RCT Power proactively provided comprehensive IEC certification data. Given the unique requirements of the Australian market, both parties collaborated to ensure compliance with local standards:

- Grid Connection: AS4777
- Construction Compliance: CDC (Complying Development Certificate)
- Site Optimization: Using satellite imagery and site drawings, the team identified the optimal installation location near the parking lot, ensuring sufficient space while minimizing cable distance to the connection point to reduce line loss.

Safety Design

The system utilizes an advanced Liquid Cooling design. Compared to traditional air cooling, liquid cooling significantly reduces internal energy consumption and provides superior heat dissipation. This maintains a minimal temperature differential between cells, substantially extending the battery cycle life.

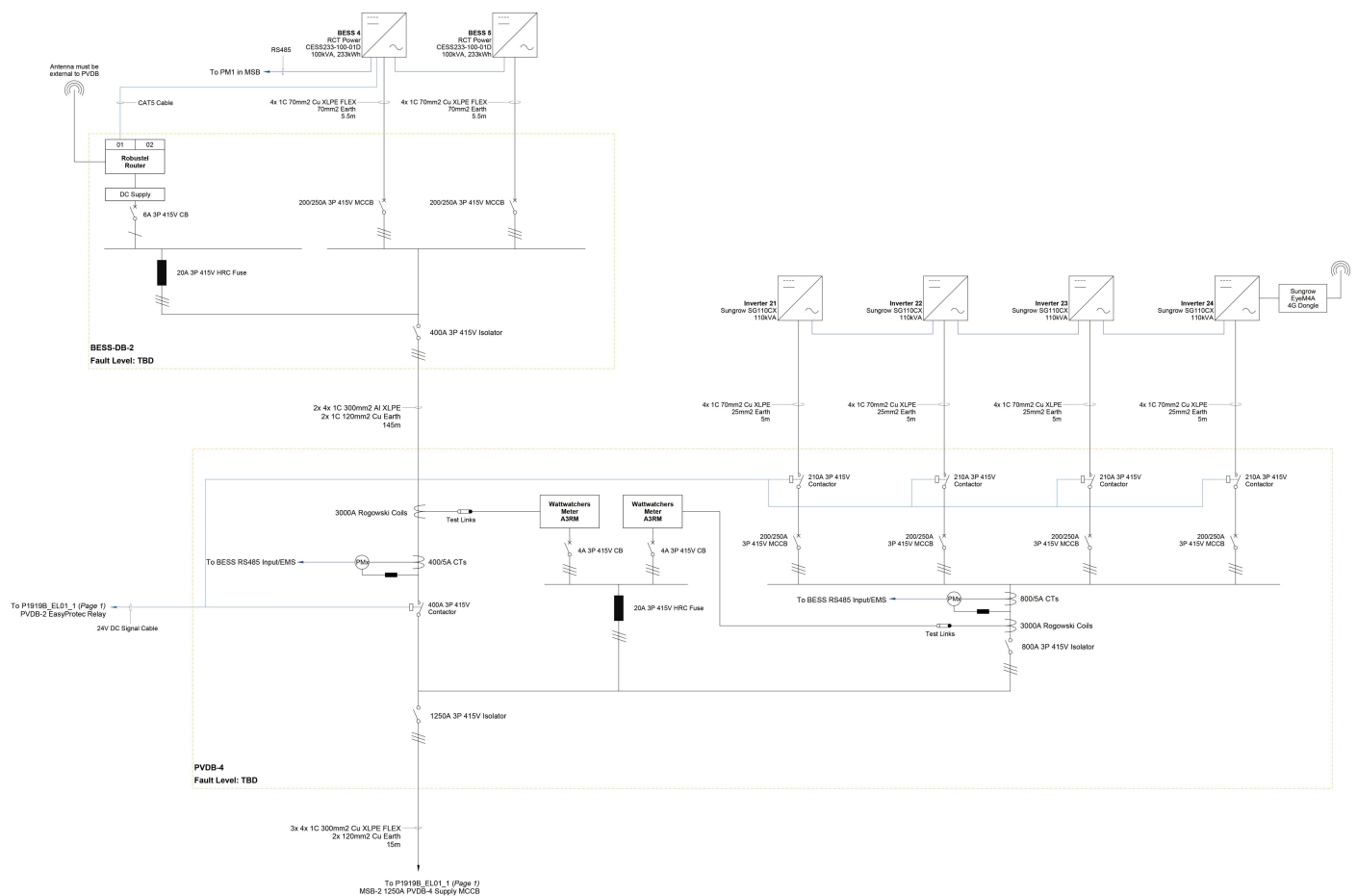
03 Commercial & Contractual Framework

- Service Model: RCT Power acted as the equipment supplier, providing the hardware along with complimentary installation guidance and commissioning services.
- Risk Management: RCT's responsibility: Any certification delays shall be borne by RCT. Customer's responsibility: Any construction changes shall be borne by the customer. Grid connection failure: Responsibility shall be determined on a case-by-case basis, depending on whether the failure is caused by equipment issues or by the customer's grid connection application procedures."



- Solar Panel: 2,034 kWp rooftop solar (4,126 panels covering 8,992 m²).
- Energy Storage: 0.5 MW / 1.17 MWh C&I BESS.
- Battery Configuration: 5x RCTerra Class 1.0 233 units (233kWh each).
- Energy Profile: Annual Solar Self-consumption: 2,217 MWh; Annual Grid Export: 491 MWh; Total Site Annual Consumption: 2,970 MWh

The project employs a distributed grid-connection mode with two access points (2 units at Point 1; 3 units at Point 2). The control logic follows a "Self-Consumption First" strategy:



Safety & Communication

- Communication: Modbus TCP for EMS integration, enabling independent local intelligent control.
- Fire Safety: Aerosol fire suppression system.
- Structural Safety: Compartmentalized design separating electrical and battery sections (Level 5 protection).
- Engineering Innovation: To overcome the distance between the BESS and the connection point, the team utilized a creative cable tray route across the building's skylights, installing permanent safety guards to protect the maintenance crew.

05 Sales Value & Customer Impact

Financial & Environmental Value

- Annual Savings: AUD 265,000 in electricity costs.
- LGC Cost Reduction: Increased self-consumption reduces the need to purchase Large-scale Generation Certificates (LGC), hedging against price volatility.
- ESG Enhancement: Quantifiable carbon reduction data strengthens ESG disclosure and investment attractiveness.
- Carbon Offset: Estimated reduction of 285 tonnes of CO₂e per year (based on Australia's grid emission factor of 0.785 tCO₂e/MWh).

Customer Testimonial

IKEA Australia Country Sustainability Manager Renea Robson says: *"Showing we have significantly reduced our emissions from operations while growing the IKEA Australia business proves that investing in climate action and delivering commercial success is absolutely achievable — together."*

"This new project we are proud to launch at our Marsden Park distribution centre is a standout example of the kind of investments we are making — not only because they are good for the planet and taking our renewable energy ambitions to the next level, but because they benefit our business, too."



Media & Third-party Validation

[IKEA official website](#)

[PV Magazine Australia](#)

[Sustainability Magazine](#)

[MHD Supply Chain](#)

06 After-sales & Operational Assurance

Warranty: 10-year system warranty.

Capacity Guarantee: $\geq 80\%$ SOH at Year 5; $\geq 70\%$ SOH at Year 10 (or 6,000 cycles).

Response Mechanism: 24/7 remote monitoring with an 8-hour response time for fault notifications.

Training: Comprehensive technical training provided to local partners both in China and Europe.

Scalability: Supports future parallel expansion to meet growing business demands.

07 Conclusion

The RCT Power project at the IKEA Australia Distribution Center represents a definitive benchmark for "C&I Storage + Logistics" synergy. Through meticulous requirement analysis, compliant technical engineering, flexible commercial structures, and dependable after-sales support, RCT Power empowered the client to realize 70% renewable energy self-sufficiency, AUD 265,000 in annual operational savings, and a substantial carbon reduction of 285 tonnes of CO₂e per year, while securing stable green power for 24/7 logistics and EV fleet charging. This initiative validates the evolution of rooftop solar from a passive generation asset into a dynamic, intelligent energy solution optimized for modern logistics, serving as a powerful global reference for RCT Power's leadership in the C&I energy storage sector.

