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TECO Solar Plant & BESS

UTILITY-SCALE ENERGY SHIFTING AND GRID STABILITY FOR DECARBONISATION

TECO Energy Solutions provides fully integrated Solar and Battery Energy Storage System (BESS) solutions that deliver reliable, engineered outcomes to reduce emissions and energy costs across remote mine sites and industrial operations. Designed for harsh environments and complex loads, our systems combine deep technical expertise with end-to-end project execution—Engineering, Procurement, Construction Management (EPCM)—to enable energy independence and grid support where it matters most.

What We Deliver

- **DC- or AC-coupled PV + BESS + Diesel** configurations.
- High-efficiency **PCS** (up to 99%) and advanced **EMS** logic.
- **Frequency control services**.
- Real-time **dispatch optimisation, demand response & peak shaving**.
- **Grid-forming or grid-following** flexibility.
- Modular, containerised systems for rapid deployment.

Key Benefits

- **Decarbonise with certainty:** Offset diesel reliance and achieve emission targets using off-grid solar + storage or hybrid configurations.
- **Stabilise site operations:** Mitigate renewable intermittency with frequency regulation, spinning reserve and load balancing.
- **Simplify integration:** Compatible with all major battery chemistries and compliant with Australian, NZ and IEC standards.
- **Futureproof scalability:** Our EMS architecture supports multi-site visibility, remote dispatch, and future capacity expansion.

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SYSTEM ARCHITECTURE OPTIONS

- **DC-Coupled PV + BESS** – highest round-trip efficiency, fewer conversion stages.
- **AC-Coupled PV + BESS** – maximum flexibility for staged brownfield upgrades.

Single-line diagrams and IEC / UL variants available

PROVEN RESULTS IN THE FIELD

Project	Location	Configuration & Capacity	Energy Storage Function
Pohnpei Island-Solar PV and ESS Installation	Pohnpei, Micronesia – 2019/2020	Ground type solar energy, energy storage system - 2MWp solar photovoltaic power generation system and 2MWh energy storage system construction project	Solar energy smoothing, Frequency modulation service
Shalun Science Park-Vanadium Redox Flow Battery Energy Storage System	Tainan, Shalundistrict- 2019/2020	BESS - Shalunscience Park-ESS (250kw-750kWhESS)	PV smoothing, Peak shaving
ITRI grid-connected energy storage battery system	Zhangbin Industrial Area - 2019	ESS - ITRI-Grid connected ESS(Including battery and grid equipment installation and connection) commissioning	PQ model FREQ PF control, etc (1.2MW capacity)
America Energy Storage System	America, New Mexico - 2019/2020	BESS - TECO Westinghouse Motor Company ESS(2MW/2MWh)	PV capacity firming/Power smoothing
AFC Energy Storage System	Yilan, Taiwan - 2021	BESS - 2.5MW/1MWh AFC Energy storage system	Automatic Frequency Control (AFC)
AFC Energy Storage System Taoyuan Guanyin	Taoyuan Guanyin, Taiwan- 2021/2022	BESS - 2+4MW/2+4MWh AFC Energy storage system	Automatic Frequency Control (AFC)
Pingtung Linbian	Pingtung Linbian, Taiwan - 2022/2023	BESS - 10MW/27MWh Energy storage system	Solarenergy (PV) + Energy storage
AFC Energy Storage System	Hsinchu, Taiwan - 2023/2024	BESS - 4MW/4MWh AFC Energy storage system	Automatic Frequency Control
TPC Longtan 60MW BESS	Longtan District, Taoyuan City, Taiwan 2022/2024	BESS - 60MW/80MWh	Electricity trading platform - Automatic Frequency Control (AFC)

Energy Management System (EMS)

- Frequency regulation & FCAS bidding.
- Capacity / time-shifting & peak-lopping.
- PV smoothing & curtailment avoidance.
- Spinning & supplemental reserve modes.
- Manual or automated dispatch via SCADA / Modbus / IEC-61850.

Delivery Model – EPC made easy

- **Engineering** – resource assessment, grid-connection studies, mine-load modelling.
- **Procurement** – bankable tier-1 PV, battery & balance-of-plant equipment.
- **Construction** – civil, electrical and commissioning by TECO's ISO-certified crews.
- **Lifecycle support** – remote monitoring, on-call field service, O&M contracts.

COMPLIANCE & SAFETY

AS/NZS 5139, AS 4777.2, IEC 62619, IEC 63056, NFPA 855, and ISO 45001 construction practises.

CHOOSE TECO FOR RELIABLE, SUSTAINABLE & COST-EFFECTIVE ENERGY

Our commitment to engineering excellence, deep sector experience and customer-focused approach ensures a tailored solution designed specifically for the demanding environments of mining and large industrial operations.

Scan the QR code to get in touch!

nbd@teco.com.au