

NUSLUME™ Integrated Energy Solution

Partner & Customer Edition

Off-grid & Hybrid Microgrid Solutions by Nusfun Pty Ltd

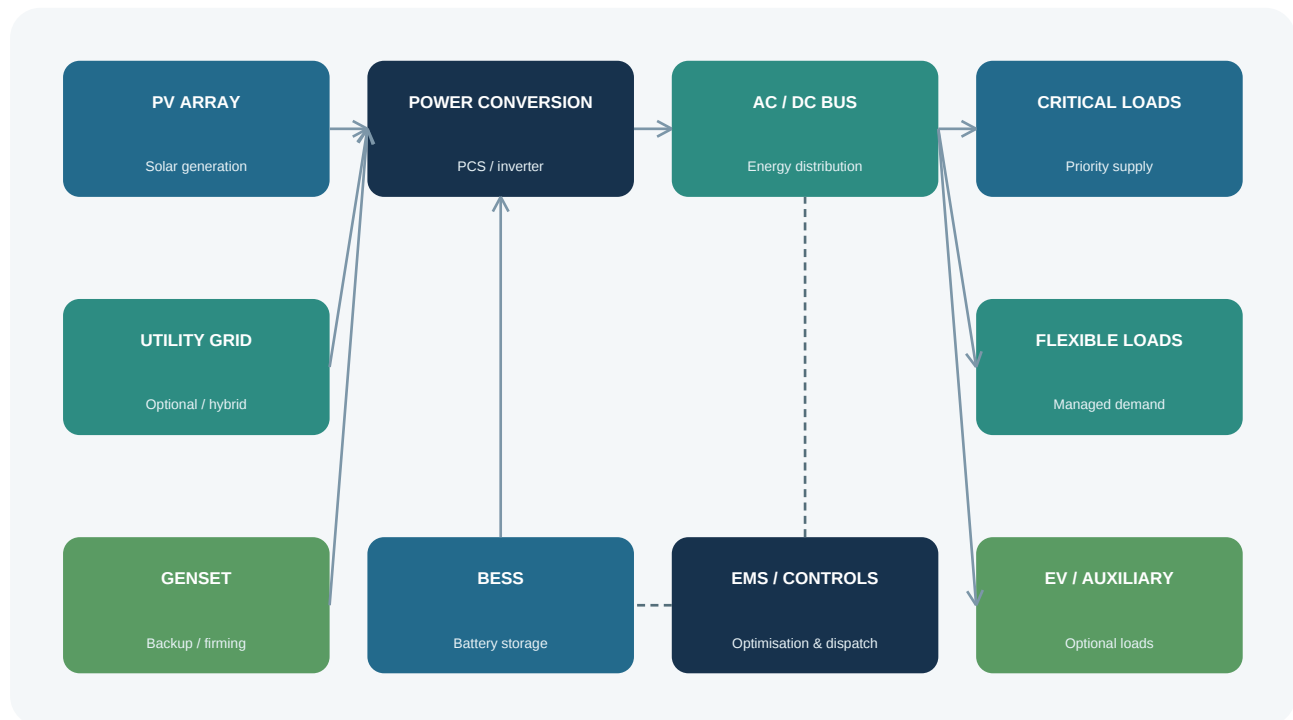
Purpose. This document provides a practical overview for customers, engineering partners, EPCs, distributors and project collaborators assessing NUSLUME™ for distributed energy, off-grid power and hybrid microgrid applications.

1. Solution Positioning

NUSLUME™ is positioned as an integrated solution rather than a stand-alone equipment product. The objective is to match generation, storage, backup sources, controls and site loads to the project’s operating needs and commercial priorities.

Australia - Nusfun Pty Ltd	China - Shanghai Jinjiang Electronic Technology Engineering Co., Ltd.
Brand and market development Customer engagement Commercial coordination Project integration Local delivery and partner management	Technical support Engineering coordination China-side supply-chain integration Supplier communication Technical documentation support

2. System Architecture



The architecture is modular. A project may use all or only part of these elements depending on grid availability, renewable-resource profile, load criticality, fuel logistics, operating hours, resilience targets and project economics.

Key functional blocks

- **PV generation:** primary renewable-energy source where solar resource and site conditions are suitable.
- **BESS:** energy shifting, renewable smoothing, reserve capacity, peak control and short-term backup.
- **Genset:** firming, emergency backup, extended low-generation support or black-start strategy where applicable.
- **Grid:** optional source/sink for hybrid sites subject to network rules and connection approvals.
- **EMS and controls:** coordinated dispatch, state-of-charge management, source prioritisation, alarms and operating modes.
- **Loads:** segmented into critical, flexible and optional loads to support resilience and demand management.

3. Operating Modes

Mode	Typical operation	Project value
Renewable Priority	PV serves loads first; surplus charges the battery.	Higher renewable utilisation and reduced fuel/grid use.
Battery Support	BESS supports evening loads, short peaks or low-generation periods.	Load shifting and smoother power supply.
Generator Assist	Genset starts according to SOC, load, reserve or operating logic.	Resilience during prolonged low renewable output.
Hybrid Grid	Grid works alongside PV/BESS and may support charging or load supply.	Peak management, resilience and flexible energy sourcing.
Critical Load	Priority loads remain supplied while non-critical loads may be curtailed.	Maintains essential operations under constrained conditions.

4. Engineering Approach

- Load assessment: interval data where available, daily energy use, maximum demand, start-up loads and critical-load profile.
- Resource assessment: solar potential, grid availability, fuel access, site constraints and future-load growth.
- Preliminary sizing: PV, BESS power/energy, generator capacity and reserve margin.
- Controls design: source priority, battery SOC windows, generator start/stop thresholds and load-management logic.
- Interface review: electrical architecture, communications, protection, metering and monitoring requirements.
- Compliance review: applicable Australian standards, grid-connection obligations, equipment certification and site-specific approvals to be confirmed for each project.

5. Application Scenarios

Remote C&I; Remote workshops, processing sites, warehouses, industrial facilities and infrastructure compounds.	Mining & Resources Temporary or permanent sites requiring hybridisation of diesel generation with PV and BESS.
Agriculture Pumps, sheds, cold rooms, processing loads, accommodation and remote farm infrastructure.	Hospitality & Communities Resorts, lodges, community facilities and accommodation sites with mixed load profiles.
Construction & Temporary Power Project compounds and staged developments where grid access is limited or delayed.	Grid-connected Resilience Commercial sites seeking backup capability, peak control and greater renewable utilisation.

6. Customer Value

- **Single solution layer:** one project framework across multiple energy assets and suppliers.
- **Vendor flexibility:** equipment selection can be adapted to technical, commercial and compliance requirements.
- **Resilience by design:** critical-load prioritisation and backup-source coordination are considered from the start.
- **Commercial transparency:** system design can be evaluated against fuel, grid, demand, operational and lifecycle objectives.
- **Local interface:** Nusfun provides an Australian point of coordination for customers and partners.

7. Partner Model

NUSLUME™ is intended to work with engineering consultants, EPCs, electrical contractors, renewable-energy installers, equipment suppliers, developers and asset owners. Partner responsibilities can be structured around the capabilities required for each project.

Partner role	Potential collaboration
EPC / Electrical Contractor	Detailed design, installation, protection, cabling, testing and commissioning within licensed scope.
Solar / BESS Installer	PV and battery installation, field integration and commissioning support.
Engineering Consultant	Load studies, network studies, compliance, detailed engineering and independent review.
Equipment Supplier	Project-specific equipment, certifications, warranties, technical data and integration support.
Customer / Asset Owner	Operational objectives, site data, access, acceptance criteria and lifecycle priorities.

8. Project Information Required

- Site location and project application.
- Existing electrical arrangement and available grid/genset information.
- 12 months of electricity data or representative load profile where available.
- Critical loads, operating hours, peak loads and known motor/start-up loads.
- Available roof/ground area and site constraints for PV and equipment placement.
- Backup duration, autonomy or resilience target.
- Future expansion expectations.
- Applicable project deadlines, procurement constraints and compliance requirements.

9. Delivery Process

Stage 1 - Discovery Project objectives, load data, site constraints and commercial priorities.	Stage 2 - Concept Design Initial architecture, equipment categories, preliminary sizing and operating modes.
Stage 3 - Technical Review Interfaces, supplier documentation, compliance requirements, risks and responsibilities.	Stage 4 - Proposal Defined scope, selected equipment, commercial terms, exclusions and delivery plan.
Stage 5 - Implementation Procurement, local delivery, installation coordination, commissioning and acceptance.	Stage 6 - Operations Monitoring, performance review, maintenance planning and optimisation where included.

10. Scope & Compliance Notes

All capacities, supplier brands, performance guarantees, warranties, certifications and compliance statements must be confirmed for each specific project. Grid-connected projects may require network approval and appropriately licensed engineering/installation. Site-specific detailed design, protection coordination, structural assessment, fire safety, battery siting and other regulatory requirements are outside a generic capability document and must be addressed during project development.

NUSLUME™
Integrated Energy Solutions for Australia

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