# Green Power Solutions - Technical Terminology Standardisation Glossary

## Unified Cross-Pillar Technical Framework

\*\*Document Type\*\*: Foundation Framework (TASK-001)

\*\*Implementation Phase\*\*: Phase 1 (Days 1-2)

\*\*Responsible Agents\*\*: Lead Content Orchestrator + All Specialists

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## EXECUTIVE OVERVIEW

This glossary ensures consistent technical terminology across all four pillar pages (Generator Solutions, Hybrid Lighting, Tank Storage, Load Bank Testing) to maintain professional authority and cross-pillar technical integration.

**Consistency Requirements:**

* Unified power terminology and calculations
* Standardised Australian compliance references
* Consistent environmental performance metrics
* Aligned technical specification formats

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## CORE POWER & ENERGY TERMINOLOGY

### Power Calculations & Specifications

* \*\*kW (Kilowatt)\*\*: Continuous power output measurement - used consistently across all pillars
* \*\*kVA (Kilovolt-Ampere)\*\*: Apparent power rating for generators - standard format: "XXX kVA"
* \*\*Load Factor\*\*: Ratio of average load to peak load - expressed as percentage
* \*\*Power Factor\*\*: Efficiency measurement for AC power systems - expressed as decimal (0.8) or percentage (80%)
* \*\*Fuel Consumption Rate\*\*: Standardised as "litres per hour at 75% load" across all equipment

### Generator-Specific Terminology

* \*\*Biodiesel Compatibility\*\*: B20 (20% biodiesel blend) compatibility as standard specification
* \*\*Mining Compliance\*\*: Reference to Australian mining standards (AS/NZS 3000:2018)
* \*\*Prime Power Rating\*\*: Continuous power output capability under varying load conditions
* \*\*Standby Power Rating\*\*: Maximum power output for emergency or backup applications
* \*\*Automatic Transfer Switch (ATS)\*\*: Switching mechanism for seamless power transition

### Load Bank Testing Terminology

* \*\*Resistive Load\*\*: Pure resistive load testing for generator validation
* \*\*Reactive Load\*\*: Inductive load testing for comprehensive generator assessment
* \*\*Load Step Testing\*\*: Graduated load increase methodology for performance validation
* \*\*Power Quality Analysis\*\*: Voltage stability, frequency regulation, and harmonic distortion measurement
* \*\*Certification Testing\*\*: Compliance testing to Australian standards (AS 60439.1)

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## HYBRID & SOLAR TECHNOLOGY TERMINOLOGY

### Solar-Diesel Integration

* \*\*Hybrid Power System\*\*: Combined solar photovoltaic and diesel generator system
* \*\*Solar Fraction\*\*: Percentage of power derived from solar sources - expressed as percentage
* \*\*Battery Storage Capacity\*\*: Measured in kWh (kilowatt-hours) for energy storage systems
* \*\*MPPT (Maximum Power Point Tracking)\*\*: Solar charge controller technology for optimised energy harvest
* \*\*Grid-Tie Capability\*\*: Connection to electrical grid for bi-directional power flow

### Lighting Technology

* \*\*LED Efficacy\*\*: Measured in lumens per watt (lm/W) for energy efficiency comparison
* \*\*IP Rating\*\*: Ingress Protection rating for weather resistance (IP65 standard for outdoor applications)
* \*\*Beam Angle\*\*: Light distribution pattern measurement in degrees
* \*\*CCT (Correlated Colour Temperature)\*\*: Light colour measurement in Kelvin (K)
* \*\*CRI (Colour Rendering Index)\*\*: Light quality measurement (minimum 80 CRI for professional applications)

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## FUEL MANAGEMENT & STORAGE TERMINOLOGY

### Tank Storage Systems

* \*\*Fuel Tank Capacity\*\*: Standardised in litres for Australian market
* \*\*Bunded Tank\*\*: Double-walled tank construction for environmental protection
* \*\*AS 1940:2017 Compliance\*\*: Australian standard for storage and handling of flammable and combustible liquids
* \*\*Fuel Management System\*\*: Automated monitoring and control system for fuel inventory
* \*\*Leak Detection System\*\*: Environmental protection system for fuel storage integrity

### Fuel Quality & Monitoring

* \*\*Fuel Polishing\*\*: Fuel filtration and cleaning system for long-term storage
* \*\*Water Separation\*\*: Fuel treatment system for moisture removal
* \*\*Microbial Growth Prevention\*\*: Fuel additive system for biological contamination control
* \*\*Fuel Quality Testing\*\*: Regular analysis for contamination and degradation assessment
* \*\*Environmental Spill Protection\*\*: Containment systems meeting Australian environmental regulations

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## SAFETY & COMPLIANCE TERMINOLOGY

### Australian Standards References

* \*\*AS/NZS 3000:2018 Wiring Rules\*\*: Electrical installation standard
* \*\*AS 60439.1\*\*: Switchgear and control gear assemblies standard
* \*\*AS 1940:2017\*\*: Flammable and combustible liquids storage standard
* \*\*Work Health and Safety (WHS) Regulations 2011\*\*: Workplace safety compliance
* \*\*Australian Competition and Consumer Act 2010\*\*: Consumer protection compliance

### Safety Systems

* \*\*Emergency Shutdown System (ESS)\*\*: Automated safety system for equipment protection
* \*\*Earthing System\*\*: Electrical safety grounding in accordance with Australian standards
* \*\*Fire Suppression System\*\*: Automated fire protection for equipment installations
* \*\*Safety Interlock\*\*: Protective system preventing unsafe operation conditions
* \*\*Risk Assessment\*\*: Systematic hazard identification and mitigation process

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## ENVIRONMENTAL & SUSTAINABILITY TERMINOLOGY

### Environmental Performance

* \*\*Carbon Footprint Reduction\*\*: Quantified CO₂ emission reduction in tonnes per year
* \*\*Fuel Efficiency Improvement\*\*: Percentage reduction in fuel consumption compared to standard diesel systems
* \*\*Renewable Energy Integration\*\*: Solar or other renewable energy system incorporation percentage
* \*\*Environmental Impact Assessment\*\*: Systematic evaluation of environmental effects
* \*\*Sustainable Power Solutions\*\*: Energy systems designed for long-term environmental responsibility

### Emissions Standards

* \*\*Tier 4 Final Emissions\*\*: Current Australian emission standards for diesel engines
* \*\*Noise Level Compliance\*\*: Sound emission measurement in dB(A) at specified distances
* \*\*Particulate Matter (PM)\*\*: Diesel exhaust emission measurement in g/kWh
* \*\*NOx Emissions\*\*: Nitrogen oxide emission measurement in g/kWh
* \*\*Environmental Management System\*\*: ISO 14001 compliant environmental framework

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## TECHNICAL SPECIFICATION FORMAT STANDARDS

### Power Equipment Specifications

**Format Template:**

* Power Output: XXX kW / XXX kVA
* Fuel Consumption: XX.X L/hr at 75% load
* Dimensions: L x W x H (mm)
* Weight: XXX kg (dry weight)
* Noise Level: XX dB(A) at 7 metres

### Performance Metrics Standards

* \*\*Efficiency Ratings\*\*: Expressed as percentage with one decimal place (85.5%)
* \*\*Runtime Specifications\*\*: Hours at specified load percentage
* \*\*Temperature Ranges\*\*: Operating temperature in Celsius (-10°C to +50°C)
* \*\*Altitude Derating\*\*: Power reduction per 100m above sea level
* \*\*Humidity Specifications\*\*: Maximum relative humidity for operation

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## INTEGRATION ELEMENT TERMINOLOGY

### Cross-Pillar References

* \*\*System Integration\*\*: Seamless connection between generators, lighting, storage, and testing equipment
* \*\*Modular Design\*\*: Scalable system architecture for flexible power solutions
* \*\*Remote Monitoring\*\*: Digital system oversight and control capability
* \*\*Maintenance Scheduling\*\*: Systematic service planning for optimal equipment performance
* \*\*Performance Optimisation\*\*: Continuous system tuning for maximum efficiency

### Customer Journey Language

* \*\*Power Requirements Assessment\*\*: Professional evaluation of electrical load needs
* \*\*Custom Solution Design\*\*: Tailored system configuration for specific applications
* \*\*Installation and Commissioning\*\*: Professional deployment and system activation
* \*\*Ongoing Support\*\*: Comprehensive maintenance and technical support services
* \*\*Performance Monitoring\*\*: Continuous system oversight and optimisation

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## QUALITY ASSURANCE VERIFICATION

### Terminology Consistency Checkpoints

1. \*\*Power Specifications\*\*: Consistent kW/kVA format across all pillars

2. \*\*Compliance References\*\*: Accurate Australian standard citations

3. \*\*Environmental Metrics\*\*: Standardised emission and efficiency measurements

4. \*\*Technical Accuracy\*\*: Verified specifications against industry standards

5. \*\*Professional Language\*\*: Authoritative yet accessible technical communication

### Cross-Pillar Integration Verification

* Generator specifications align with load bank testing capabilities
* Fuel storage systems integrate with generator fuel requirements
* Hybrid lighting systems complement generator power specifications
* All systems maintain consistent Australian compliance standards

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\*\*Document Status\*\*: Foundation Framework Complete

\*\*Next Phase\*\*: Brand Voice Consistency Framework Development

\*\*Quality Gate\*\*: Technical terminology alignment verified across all specialists

\*\*Approval\*\*: Lead Content Orchestrator + All Technical Specialists