GreenGrid Energy — Project Overview

Product: GreenGrid Microgrid Optimizer Summary: A cloud-based energy management platform that integrates solar, battery storage, and demand response systems to enable local communities and campuses to operate resilient microgrids with lower costs and emissions.

Problem Statement Communities with high renewable penetration face instability and blackouts due to lack of real-time coordination between distributed energy resources. Traditional grid tools are centralized, slow, and costly to extend to smaller networks.

Objective Deploy a microgrid optimizer that ensures stable, low-cost operations for three pilot community energy hubs, reducing reliance on diesel backup while meeting renewable integration targets.

Key Outcomes - Maintain grid stability with ≥ 99.9% uptime during the pilot period - Achieve at least 40% reduction in diesel generator usage - Deliver cost savings of ≥ 15% on energy bills for pilot communities - Meet state renewable integration compliance requirements

Timeline Start Date: 2025-04-01 | End Date: 2026-12-31

Milestones - Algorithm validation complete (2025-09-30, Owner: R&D; Team) - First pilot site live (2026-03-15, Owner: Deployment Lead) - Three-site rollout completed (2026-09-30, Owner: Program Office) - Post-implementation review (2026-12-15, Owner: PMO)

Budget Currency: AUD - Total: 750,000 - Capex: 500,000 - Opex: 250,000 - Contingency: 15% - Funding Sources: Renewable Energy Agency grant; Internal innovation fund

Governance - Sponsor: Dr. Olivia Martinez (Chief Sustainability Officer) - Project Lead: Daniel Wong (Energy Systems Manager) - Team: Priya Sharma (Optimization Engineer); Tom Reynolds (Grid Specialist); Mei Chen (Community Engagement Officer); Liam Scott (Data Analyst)

Stakeholders - Pilot community energy hubs (3) - Local councils - Utility regulators - Technology vendors

Partners - SolarFlow Pty Ltd - State Renewable Energy Agency

KPIs - Renewable penetration — Target: ≥ 70% — Measure: Share of load met by solar/battery - Diesel backup use — Target: −40% — Measure: Generator runtime logs - Energy cost savings — Target: ≥ 15% — Measure: Billing analysis - Grid uptime — Target: ≥ 99.9% — Measure: SCADA/monitoring reports

Risks - R1: Community resistance to demand-response participation (Likelihood: Medium, Impact: Medium, Owner: Engagement Officer) — Mitigation: Education campaigns; opt-in incentives - R2: Battery supply chain delays (Likelihood: High, Impact: High, Owner: Procurement) — Mitigation: Multiple suppliers; phased deployment - R3: Algorithm underperformance in extreme weather (Likelihood: Low, Impact: High, Owner: R&D;) — Mitigation: Stress-testing; fallback manual override

Reporting - Pilot performance report — due 2026-03-31 - Final evaluation report — due 2026-12-31

TRL Start: 5 | End: 7