END OF LIFE DECOMMISSINOING PLAN

Narrabri Community Battery

ABSTRACT

Outlining the process for decommissioning BESS at end of life

Sally Hunter

Narrabri Community Battery

🔋 **End-of-Life Decommissioning Plan**

Narrabri Community Battery – NEO 100kW / 500kWh System
Prepared by: Geni.Energy
Location: Town Hall Carpark, Narrabri, NSW

1. Purpose

This plan outlines the expected lifespan of the Narrabri Community Battery, steps to maximise its operational life, and the safe and responsible decommissioning and recycling process at end-of-life (EOL).

2. Expected Lifespan

- **Battery Racks** (CATL):
    - Covered under **10-year product warranty** and **performance warranty** on energy throughput.
    - Lifecycle influenced by depth of discharge, temperature management, and preventative maintenance.
    - Anticipated usable life: **10–15 years**, subject to condition monitoring.
- **PCS and Inverter** (Delta PCS100HV):
    - Covered under **10-year product warranty**.
    - Subject to annual preventative maintenance and component replacements as outlined in the O&M manual.
- **Control/Isolation Enclosure**:
    - **3-year product warranty**.
    - Must be maintained and periodically inspected per EVO's schedule.

---

3. Life Extension Strategy

To maximise operational lifespan and ensure warranty compliance:

- **Annual Preventative Maintenance**:
    - Battery racks serviced free-of-charge by OEM-authorised technicians arranged by EVO Power for 10 years.

  - Geni.Energy to coordinate and fund annual inspections and maintenance on the PCS and control panel.

- **Monitoring & Data Analysis**:
  - Regular review of battery State of Charge (SOC), State of Health (SOH), voltage, temperature, and cycling data via EVO's monitoring platform.
- **Site Management**:
  - Keep ventilation systems, cooling systems, and fire safety systems in optimal condition.
  - Ensure clean, dry, and secure internal battery environment.

---

4. Trigger for End-of-Life

The system may be deemed at EOL if:

- SOH drops below acceptable operational threshold (typically ~60%–70%).
- Repairs become economically unviable or key components become obsolete.
- The warranty period ends and functional degradation is identified.

EOL will be confirmed by technical inspection and capacity testing in collaboration with EVO Power or a qualified independent assessor.

---

5. Decommissioning Process

5.1 Pre-Decommissioning

- Notify EVO Power and finalise site inspection.
- Isolate the system using Lock Out/Tag Out (LOTO) procedures as per O&M Manual.
- Discharge battery to safe state (SOC < 5%) under supervision.

5.2 Removal

- Dismantle PCS, control panel, battery racks, and fire suppression units following all safety protocols.
- Remove all signage, cabling, conduits, and foundations, as required.
- Return critical components for inspection if requested by EVO under extended service terms.

6. Recycling & Disposal

- **Recycling Partner**: Envirostream Australia, Melbourne.
- **Scope**:
    - Lithium iron phosphate (LFP) batteries sent to Envirostream for material recovery.
    - Steel racks, enclosures, and cabling sent to local metal recyclers.
    - Electronic waste (e.g., inverters, control units) handled per NSW EPA e-waste guidelines.

7. Budget

Site Disconnection works: By accredited electrician $1,500

Site Decommissioning works: By civil works contractor $1,000

Freight and Insurance: $7,000

TOTAL: $9,500 ex gst

Amortised over 10 year life span: $950 p.a.

8. Documentation & Compliance

- Maintain a complete decommissioning report, including:
    - Service history
    - Battery state-of-health report
    - Hazardous goods transport documentation
    - Recycling certificates from Envirostream or relevant facilities
- Notify NSW EPA and Council if required under waste management legislation.

9. Community Engagement

- Communicate battery retirement to local stakeholders and advisory group.
- Acknowledge the project's outcomes and environmental performance.

- If feasible, initiate planning for battery replacement or upgrade to continue community resilience efforts.

Appendix

- EVO O&M Manual (Ref: MAN-14 Rev 1.0)
- Supply Agreement & Warranty Documents
- Envirostream Acceptance Policy
- Battery System Monitoring Logs

envirostream

Australia's only effective solution for onshore battery recycling

The Envirostream story

Envirostream Australia Pty Ltd ('Envirostream') was established in 2017 to develop safe and innovative solutions for what is emerging as one of the greatest challenges, within Australia and globally, facing the waste management industry: that is, what to do with end-of-life batteries.

It's a pressing issue. Recent reports indicate that by 2036 the number of spent lithium-ion ('Li-ion') batteries entering the waste stream will grow by at least 300% annually.

With more than two decades of experience in the resource recovery industry, we have already seen at first hand the risks associated with shipping batteries offshore for recycling, not just in terms of the environment but also human safety. That's why we've developed safe, efficient management solutions for all types of spent batteries (and Li-ion batteries in particular) within Australia — and that's how Envirostream was born.

The Envirostream solution

At Envirostream, we're using innovation to create new processing methods for all types of spent batteries, including those that power the numerous portable devices so ubiquitous today. Our Australian-owned battery recycling facility in Victoria – which is fully enclosed and based on international best practice – was designed and built by the team at Envirostream.

The first of its kind in Australia, Envirostream's facility is equipped to recover the maximum amount of resources (~95%) from all types of spent batteries. Those resources are then returned to the manufacturing sector, with the active components of end-of-life Li-ion batteries – cobalt, nickel, lithium and graphite – subsequently used as raw materials in the production of new Li-ion batteries.

We aim for a truly circular, and therefore sustainable, battery economy.

As a proud member of the Australian Battery Recycling Initiative, Envirostream offers cost-effective, customised methods of battery collection, transport, sorting and processing ... meaning there's no longer any excuse for spent batteries to leave Australia or be consigned to landfill.

Envirostream Australia Pty Ltd 1800 72 72 74 info@envirostream.com.au envirostream.com.au

The Envirostream system

Envirostream's revolutionary ISO 9001, 14001, AS/NZS 4801:2001 and AS/NZS 5377:2013 accredited modular processing technology, involving more than three years of intense research and development, is still evolving. We constructed it with efficiency in mind. Not only does the modular design allow line maintenance to be carried out without compromising processing ability but the system can also be duplicated anywhere in Australia. And for consignments of mixed battery types, we've developed an effective battery-sorting solution. At Envirostream, we're always one step ahead.