



Energex LV / HV Waiver 2025

Report on comparison of battery uses

(to comply with clause 3.1 of Ring-Fencing Guidelines)

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1 INTRODUCTION

This report has been prepared to meet the annual reporting requirements associated with the Australian Energy Regulator (AER) Ring-fencing Guideline waivers granted to Energex for the operation and trading of Stage 1 Low-Voltage (LV) Batteries and Stage 2 High-Voltage (HV) Batteries.

The report:

- outlines the key obligations arising from the waiver conditions
- describes the LV and HV batteries that were actively trading during the 2025 calendar year
- provides a summary of how usage data was compiled, validated, and assessed for compliance
- presents annual usage information that differentiates between Energex network usage and spare capacity leased to Retailers, as required

The findings and supporting analysis are summarised within this document, with detailed usage information provided in [Appendix A](#) for the 2025 reporting period.

2 STAGE 1 – LV BATTERIES

2.1 Waiver Overview

On 2 June 2022, the AER granted Energex a waiver from clause 3.1 of the Ring-fencing Guideline, allowing Energex to lease excess capacity from up to 35 low-voltage (LV) batteries to Origin Energy

A requirement of this waiver is that Energex provide on an annual basis a comparison of the uses (volume and frequency) of the battery that confirms and differentiates between Energex network usage and spare capacity leased to the Retailer, and an explanation of any differences between forecast and actual usage. The independent assessor, as part of the annual ring-fencing compliance assessment, is to confirm the comparison is accurate.

2.2 Annual Reporting Requirements

Under the terms of the waiver, Energex must provide annually:

- A comparison of battery usage (volume and frequency), clearly differentiating between:
 - Energex network usage, and
 - Spare capacity leased to the Retailer (Origin Energy)
- An explanation of any differences between forecast and actual usage
- Verification by the independent assessor that the comparison is accurate and compliant with the Ring-fencing Guideline

3 STAGE 2 HV BATTERIES

3.1 Waiver Overview

On 4 December 2023, the AER granted Energex a waiver from clause 3.1 of the Ring-fencing Guideline, allowing Energex to lease excess capacity from three high-voltage (HV) battery energy storage systems to Ergon Energy Retail (EEQ) and Origin Energy.

3.2 Annual Reporting Requirements

Under this waiver, Energex must provide annually:

- A year-to-year comparison of battery usage (volume and frequency).
- An explanation of any significant differences observed between reporting periods.
- Independent assessor confirmation of the accuracy of annual usage volumes

4 2025 HV AND LV BATTERY TRADING SUMMARY

During the 2025 calendar year, the following units were actively trading:

4.1 Stage 1 – LV Batteries

Thirty-four (34) of the thirty-five (35) Raceview LV Batteries were deployed for trading.

One LV battery, the pole-top unit located at EQL Raceview Depot Training Yard, 21 Thornton St, Raceview, was not deployed for trading purposes

4.2 Stage 2 – HV Batteries

One (1) of the three (3) Energex HV Batteries was actively trading:

- Raby Bay HV Battery

The remaining two HV units were not deployed for trading during the reporting year.

5 SUPPORTING INFORMATION

Detailed usage information required under the waiver conditions has been provided in Appendix A, covering the 2025 calendar year for both LV and HV batteries.

6 DATA SOURCES

6.1 Stage 1 – LV Batteries

Energex obtained the primary LV battery usage data from the outage notification system, which is used to notify Retailers of outage events in accordance with contractual obligations.

Key characteristics of this data include:

- Information is stored on a per site bases
- Data is uploaded to the Network Operations Data Warehouse, where it forms the foundation of the annual usage reporting

- To ensure accuracy, outage data is cross-checked against the Network Operations Control Centre (NOCC) systems, which maintain records of both planned and unplanned outages.

This validation step ensures that the reported usage accurately reflects battery activation events attributable to network operations.

6.2 Stage 2 – HV Batteries

For the HV battery sites, Energex collected primary usage data from the outage notification system, which is likewise used to inform Retailers of outage events under contractual requirements.

Core elements of this data source include:

- Usage information captured per site and uploaded to the Network Operations Data Warehouse.
- Outage records were cross-validated with NOCC systems to confirm completeness and accuracy for both planned and unplanned outage events.

7 METHODOLOGY

A comparison of the uses of each battery—both in terms of volume (MWh) and frequency (hours)—is required to confirm and differentiate between Energex’s network usage and the spare capacity leased to Origin.

7.1 Stage 1 – LV Batteries

Usage information for Stage 1 LV batteries is compiled from a daily log of the total energy throughput (charge and discharge) for each battery, covering the reporting commencing January 2025.

The Energex Distribution Management (DMS) system records voltage and current in regular intervals, enabling the calculation of total energy usage of each site. Operational modes are identified through:

- the outage notification system, and
- operational data returned to DMS

Operational Mode Determination

- The default operational mode of the battery is assumed to be Retailer-controlled.
- Exceptions occur when the battery is used for maintenance or grid support, during which retail trading may be limited

Retailer Usage

- Periods where the Retailer controls the battery are summed as “Retailer Hours”
- Energy throughput during these periods is attributed to the Retailer and reported as “Retailer MWh”.

Energex (Network) Usage

- When records show Energex has taken operational control—or has directed the Retailer to operate the battery in a specific way—these periods are recorded as “Sum of duration of time used for Network Support (hours)”
- Associated energy throughput is attributed to the Network and reported as “Sum of Capacity used for Network Support (MWh)”.

Daily log information is aggregated to an annual usage basis in accordance with the waiver requirements.

7.2 Stage 2 – HV Batteries

Usage information for Stage 2 HV Batteries is similarly compiled from daily logs of total energy throughput (charge and discharge) from January 2025 onwards.

The Energex DMS records voltage and current at regular intervals, supporting accurate calculation of energy usage.

Control Mode Determination

Due to the control system design and commercial arrangements with the Retailer:

Auto (EMS) Mode

- Indicates that the Retailer has operational control.
- Usage periods in this mode are recorded as “Retailer Hours”.
- Energy throughput is attributed to the Retailer and reported as “Retailer MWh”.

All other control modes

- Indicate that Energex has assumed operational control of the battery.
- These periods are reported as “Sum of Duration of time used on Network Support (hours)”.
- Associated energy usage is attributed to the Network and reported as “Sum of Capacity used for Network Support (MWh)”.

As with LV batteries, daily usage information is aggregated to an annual basis consistent with the reporting requirements.

8 ASSUMPTIONS

8.1 General Notes

Reactive Power (VAR) Support

While batteries are under Retailer control, they may still be sourcing or sinking reactive power (VARs) to support network voltage stability.

This VAR-related activity is not included in the usage measurements or reporting contained within this document, as the report focuses solely on energy throughput (MWh) and operational control hours.

8.2 Battery Exclusions

The following exclusions apply to both Stage 1 and Stage 2 batteries:

1. Batteries Not Released to Retail Control

If a battery is not released to Retailer control, it is assumed that it cannot provide either retail trading services or network services, and therefore it is excluded from reporting.

2. Full Network Control or Direction

Where Energex holds full operational control—or has issued direction to the Retailer for a specific operational outcome—the battery is providing network services.

These periods are categorised as Network-controlled usage

8.3 Stage 2 HV Battery Usage Assumptions

To support accurate delineation of usage under Energex control, the following assumptions are applied for Stage 2 HV Batteries:

Low Throughput During Energex Control

- When Energex is in control and the battery throughput is less than 0.5 MWh per day, it is assumed the site is undergoing maintenance.
- These periods are not counted as providing network services.

Higher Throughput During Energex Control

- When Energex is in control and throughput is greater than 0.5 MWh per day, it is assumed that the battery has provided network value.
- These periods are included as Network usage in the reporting.

9 ESTIMATED INFORMATION

Not applicable. Energex has provided actual information for total numbers.

10 APPENDIX A: COMPLIANCE WITH RING FENCING WAIVER

10.1 Annual Usage Comparison (volume and frequency)

The following section provides an annual comparison of battery usage (volume and frequency), distinguishing between:

- Energex network usage, and
- Spare capacity leased to Origin Energy

in accordance with the ring-fencing waiver requirements.

More detailed information or underlying dataset extracts can be supplied upon request.

10.2 Context – Stage 1 LV Battery Trial

These batteries form part of the initial Stage 1 Neighbourhood Battery trial, which represents Energex's first deployment of low-voltage battery technology within the distribution network. As this technology is relatively new within the operational environment:

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- Energex does not yet have established forecasts for the expected usage split between Network and Retailer activities, as referenced in the AER waiver conditions.
 - The potential future allocation of battery use between network distribution services and contestable services remains uncertain at this stage of the trial.

Given the absence of historical operational patterns or benchmark data, Energex is unable to provide an explanation of differences between forecast and actual usage for this initial Stage 1 reporting year.

Actual usage tables for the reporting period are provided below.

10.3 Note on Reactive Power (VAR) Support

When batteries are under Retailer control, they may intermittently source or sink reactive power (VARs) to contribute to voltage support on the network.

- This VAR-related activity is not included in the usage calculations or reporting metrics.
- The report focuses exclusively on energy throughput (MWh) and operational control hours, consistent with the requirements of the waiver.

Table 1: Energex LV and HV Battery Usage

Site	Site Name	Address	Type	Trading	Retail MWh	Retail Hours	Sum of Capacity used for Network Support (MWh)	Sum of Duration of time used on Network Support (Hours)	Sum of Capacity used for Maintenance (MWh)	Sum of Duration of time used on Maintenance (Hours)
P12656376	Redbank Plains	10-12 Arline St, Redbank Plains	LV	Jun-23	74.53734566	8735.5	0.296561426	24.5	0	0
P889458	Redbank Plains	100 Willow Rd, Redbank Plains	LV	Jul-23	92.05870025	8734.5	0.313602147	24.5	0.004877293	1
P890525	Redbank Plains	15 Bruce Street, Redbank Plains	LV	Aug-23	79.14941119	8735.5	0.310713201	24.5	0	0
P284588	Raceview	South Station Rd, Raceview (outside Excel Concrete)	LV	Sep-23	75.19629698	8722.7	0.567813238	37.5	0	0
P888983	Bellbird Park	Opp 327 Jones Rd, Bellbird Park	LV	Sep-23	76.48915269	8721.4	0.584561706	37.5	0.013616934	1.3
P284987	Flinders View	221 Edwards Street, Flinders View	LV	Oct-23	76.27331681	8381.3	0.493546653	30.75	1.143574309	348
P886456	Goodna	28 Redbank Plains Rd, Goodna	LV	Oct-23	55.16884364	8722.7	0.536524626	37.5	0	0
P889339	Raceview	47 Wildey Street, Raceview (opp Petaine St)	LV	Oct-23	47.76888068	7999.4	0.546305235	37.5	1.873310429	723.25
P12656362	Redbank Plains	1 Oliver Drive, Redbank Plains (cnr of Greenwood Village R	LV	Nov-23	69.61417465	7743	0.275746193	20.5	7.283176284	996.5
P51403	Eastern Heights	Madden St, Eastern Heights (Jim Donald Park)	LV	Nov-23	69.69190105	8722.3	0.486771646	37.75	0	0
P889061	Raceview	14 Toft Drive, Raceview	LV	Nov-23	49.84266899	8630.7	0.574077085	37.5	0	92
P853115	Bellbird Park	Opposite 22 Jones Rd, Bellbird Park (Cnr Plumer St)	LV	Mar-24	67.93777424	8729.3	0.40715407	30.75	0	0
U887823	Bellbird Park	7001 Happy Jack Drive, Bellbird Park	LV	Mar-24	96.68573089	8737.5	0.65406839	22.5	0	0
P887926	Bellbird Park	210 Jones Rd, Bellbird Park	LV	Apr-24	88.40749992	8722.7	0.592353527	37.5	0	0
P887878	Bellbird Park	274 Jones Rd, Bellbird Park	LV	May-24	83.34687988	8722.7	0.497565319	37.5	0	0
P868518	Silkstone	138 Robertson Rd, Silkstone	LV	Jul-24	78.82573076	7858.7	0.590662551	37.5	8.176573531	864
P885278	Redbank Plains	38 Keidges Rd, Redbank Plains	LV	Jul-24	87.74755885	8735.5	0.324867024	24.5	0	0
U889219	Bellbird Park	Meadows Court, Bellbird Park (cnr Alessana Drive)	LV	Jul-24	204.1903983	8686.7	1.076245373	24.5	0.138548669	48.75
U891442	Flinders View	12 Kevin Mulroneys Drive, Flinders View	LV	Jul-24	96.64245228	8012.5	1.014324174	24.5	5.17608415	723
P881606	Bellbird Park	262 Marlborough St, Bellbird Park	LV	Aug-24	87.14523071	8722.7	0.614929281	37.5	0	0
P890094	Flinders View	Wildey St, Flinders View - opposite 2 McQueen Court	LV	Aug-24	71.47783956	7172.2	0.599306308	37.5	2.816413353	1550.5
P891278	Redbank Plains	Wensley Park, 47 Rice Rd, Redbank Plains	LV	Aug-24	85.03542688	8731.5	0.339813501	24.5	0.029600731	4
P878256	Bellbird Park	15 Johnston St, Bellbird Park	LV	Sep-24	85.51757214	8735.5	0.316300434	24.5	0	0
P881584	Raceview	David Coultas Park - 224 South Station Rd, Raceview	LV	Sep-24	84.23412724	8720.7	0.606717158	37.5	0.041312252	2
P882386	Bellbird Park	Opposite 59 Harris Street, Bellbird Park	LV	Sep-24	85.17537119	8722.7	0.565284599	37.5	0	0
P889188	Bellbird Park	Refuge Island, near 104 Redbank Plains Rd, Bellbird Park	LV	Sep-24	92.66754293	8722.7	0.542875553	37.5	0	0
P284981	Flinders View	16 Saunders St, Flinders View	LV	Oct-24	79.14215546	8733.5	0.354534772	26.5	0	0
P868773	Augustine Heights	108 Keidges Rd, Augustine Heights	LV	Nov-24	75.79624539	7547.5	0.050072148	2.5	19.46296048	1210
P874358	Bellbird Park	6 Jones Rd, Bellbird Park (Cnr Marlborough St)	LV	Nov-24	78.22887086	8735.5	0.318358577	24.5	0	0
P891353	Bellbird Park	Cnr Trevor & Centre Sts, Bellbird Park	LV	Nov-24	87.89099996	8707.5	0.316326603	24.5	0.539324697	28
U877808	Bellbird Park	79 Columbia Drive, Bellbird Park	LV	Dec-24	253.434439	8359.5	1.18971392	24.5	8.258176652	376
U887268	Redbank Plains	Cedar Rd, Redbank Plains (opp Philip Street)	LV	Jul-25	360.0894776	4703.5	2.13862047	24.5	0	0
P69777	Booval	Ivory St, Booval (was Glebe Rd)	LV	Jul-25	36.09926796	8735.5	0.311363409	24.5	0	0
P810078	Raceview	Owen St, Raceview (was Vista View Park)	LV	Aug-25	29.91672435	8735.5	0.329843146	24.5	0	0
SSPBES	Raby Bay	44 Freeth Street West, Ormiston.	HV	Oct-25	635.4025263	6588.2	3.307944881	73.4	2.126627743	922.4
Total					3796.830637	292428.8	22.04546834	1075.15	57.08417751	7890.7

Applied filters: Year is 2025

11 EXPLANATION OF DIFFERENCES IN BATTERY USAGE

(Applicable to all LV & HV Batteries)

The following explains the basis for differences observed between the Retailer Usage and Energex Network usage across both LV and HV battery systems.

11.1 Retailer Usage

When the Retailer is in control of the battery—reported as “Retailer Hours”—and energy throughput occurs—reported as “Retailer MWh”—it is assumed that usage reflects the Retailer’s trading activities in the National Energy Market in accordance with contractual arrangements.

Analysis of DMS log data indicates:

- Daily throughput values remain within contractual boundaries.
- There are day-to-day fluctuations in throughput when the Retailer is in control.
- Full battery capacity is not always utilised each day.

These variations are considered normal and are attributed to Retailer operational decisions, which may be influenced by:

- prevailing market pool prices
- tariff limitations and cost-benefit considerations
- trading strategy
- expected market volatility
- energy price forecasts

These factors are external to Energex operations and are not expected to follow a consistent, predictable pattern.

11.2 Energex Network Usage – Network Support

When Energex assumes operational control of a battery for the purpose of supporting the distribution network, these periods are recorded as:

Sum of Duration of time used on Network Support (Hours)

Sum of Capacity used for Network Support (MWh)

Network support usage typically arises from:

- voltage management requirements
- load balancing
- peak demand mitigation
- system stability support
- responses to unplanned events or operational constraints

Differences between Retailer usage and network support usage reflect the operational needs of the network, which may vary materially from day to day or season to season.

11.3 Energex Network Usage – Maintenance

When Energex controls the battery for maintenance—whether planned or unplanned—these periods are recorded as:

Sum of Duration of time used on Maintenance (Hours)

Sum of Capacity used for (MWh)

Maintenance-related usage is generally characterised by:

- minimal energy throughput,
- functional testing, commissioning, or diagnostics, and
- brief or infrequent control periods.

This type of usage differs from both Retailer trading behaviour and network-support-driven operation, and is clearly identifiable through:

- reduced throughput values, and
- control-system-based operational mode changes.

12 DATA VALIDATION

12.1 Stage 1 LV Batteries

For Stage 1 LV Batteries, Energex undertook a structured internal validation process to ensure accuracy and reliability of usage data:

Monthly Verification of DMS Data

The Distribution Management System (DMS) data was reviewed each month through an operational report that examined:

- operating states
- defects or alarms
- power levels
- energy throughput trends

A peer led monthly assessment was conducted to confirm the integrity and accuracy of the reported values.

Cross-Check Against NOCC Work Records

Observed trends in DMS data were spot-checked against records in the Network Operations Control Centre (NOCC) systems.

Particular attention was given to dates when batteries were taken out of service for planned work.

These checks confirmed that periods of limited charge or discharge corresponded as expected with planned maintenance or operational work schedules.

12.2 Stage 2 HV Batteries

For Stage 2 HV Batteries, Energex employed a multi-layered verification approach due to the higher capacity and operational complexity of HV BESS assets:

- Independent Review of DMS Raw Log Data

A second subject matter expert (SME) performed spot checks of DMS raw logs, validating:

- daily energy import/export totals
- consistency of throughput values
- alignment of energy movements with expected operational boundaries

Cross-Check Against NOCC Work Records

As with Stage 1, DMS usage trends were reviewed against NOCC work records.

Periods where the batteries were out of service for planned works showed expected reductions in charge/discharge, confirming data consistency.