

# Objection — SSD-92914712 (Sunshine Estate Battery Energy Storage System, 120 MW / 480 MWh)

**To:** Department of Planning, Housing and Infrastructure (via NSW Planning Portal) **Application:** SSD-92914712 — construction, operation and decommissioning of the Sunshine Estate Battery Energy Storage System, a 120 MW / 480 MWh grid-scale facility and associated infrastructure, Rothbury, Cessnock LGA **Submission type:** Objection **Submitter:** A resident of the Cessnock local government area (name withheld under the NSW Planning Portal privacy provisions) **Date:** July 2026

---

## 1. Position

---

I object to the grant of consent for SSD-92914712, and I ask the Department to **refuse** the application.

My objection is unconditional. I do not accept that a grid-scale Battery Energy Storage System is an appropriate land use at this location, in this landscape, or on the exhibited assessment. I hold the further position that grid-scale battery storage of this class should not be sited in rural, agricultural and tourism communities of this kind at all; that broader question of energy policy and public cost I have put separately to the elected representatives able to act on it. The grounds below are confined to matters the consent authority must, or may, take into account in evaluating this application under section 4.15 of the Environmental Planning and Assessment Act 1979 (NSW), so that each may be weighed as a planning matter.

The application does not discharge the burden of assessment that a facility of this scale and hazard class carries. The deficiencies identified below go to whether the consent authority can lawfully be satisfied, on the exhibited material, that the development is in the public interest (section 4.15(1)(e)). On the evidence, it cannot.

---

## 2. Definitions

---

For the purposes of this submission:

- **BESS** — Battery Energy Storage System: a grid-scale installation of lithium-ion battery cells, together with the power-conversion, transformer, connection, cooling, control and fire-safety infrastructure required to charge from and discharge to the electricity network.
- **Thermal runaway** — an uncontrolled, self-sustaining exothermic reaction within a lithium-ion cell in which heat generation exceeds the cell's capacity to dissipate it, driving further reaction until the cell vents, ignites or explodes, and which can propagate cell to cell and enclosure to enclosure.
- **Off-gassing** — the venting of flammable and toxic gases from lithium-ion cells during and before thermal runaway, including hydrogen fluoride, hydrogen cyanide, carbon monoxide and volatile organic compounds.
- **Deflagration** — a rapid combustion of accumulated flammable gas producing a pressure wave; the failure mode that injured nine responders at McMicken (Arizona, 2019).
- **Stranded energy** — residual electrical energy retained in cells after a fire appears out, capable of driving reignition hours to weeks later.
- **HF** — hydrogen fluoride: a corrosive acid gas and systemic metabolic poison produced in quantity in lithium-ion fires.
- **EIS** — Environmental Impact Statement.
- **SEARs** — Secretary's Environmental Assessment Requirements: the requirements issued by the Planning Secretary that the EIS for this development must address.
- **BDAR** — Biodiversity Development Assessment Report, prepared under the Biodiversity Conservation Act 2016 (NSW) (BC Act) in accordance with the Biodiversity Assessment Method.
- **PHA** — Preliminary Hazard Analysis: the quantified assessment of off-site risk expected of potentially hazardous development.
- **HIPAP** — Hazardous Industry Planning Advisory Paper (in particular No. 4, Risk Criteria for Land Use Safety Planning, and No. 6, Guidelines for Hazard Analysis).

- **SAII** — a serious and irreversible impact on biodiversity values, as provided for under the BC Act and the Biodiversity Assessment Method.
  - **CEEC** — Critically Endangered Ecological Community, listed under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act).
  - **MNES** — Matters of National Environmental Significance under the EPBC Act.
  - **Controlled action** — a development that, because of its likely significant impact on a Matter of National Environmental Significance, requires assessment and approval by the Commonwealth Minister under the EPBC Act, in addition to any State approval.
  - **PBP 2019** — Planning for Bush Fire Protection 2019, a relevant consideration for development on bushfire-prone land.
  - **FRL** — Fire Resistance Level, in minutes. **RFS** — NSW Rural Fire Service. **FRNSW** — Fire and Rescue NSW.
  - **AS 3959** — the Australian Standard Construction of buildings in bushfire-prone areas, which classifies bushfire exposure by radiant heat flux.
  - **BAL** — Bushfire Attack Level: the exposure categories under AS 3959, expressed as radiant heat flux (12.5, 19, 29 and 40 kW/m<sup>2</sup>), with **BAL-FZ** (Flame Zone) above 40 kW/m<sup>2</sup> and involving direct flame contact.
  - **Runaway onset temperature** — the cell temperature at which thermal runaway becomes self-sustaining: of the order of 150°C for NMC chemistry and approximately 190°C for the more thermally stable lithium iron phosphate (LFP), with exothermic self-heating beginning at lower temperatures again.
  - **SSD** — State Significant Development.
  - **Cumulative impact** — the combined effect of this development together with the separately-exhibited adjacent BESS at Rothbury (SSD-85939708) and other development in the locality.
-

### 3. Grounds of objection

---

#### **Ground 1 — The thermal-runaway hazard and its off-site toxic consequence are not assessed to the standard the hazardous-development framework requires**

A 480 MWh facility carries an inherent and well-documented thermal-runaway hazard. The fire and toxic-plume risk engages the hazardous-development framework: the associated Hazardous Industry Planning Advisory Papers (HIPAP No. 4 and No. 6) and the "Applying SEPP 33" guidance contemplate a **Preliminary Hazard Analysis** quantifying off-site risk for potentially hazardous development. The exhibited EIS does not provide a PHA-grade, site-specific, quantified assessment of off-site risk. The record establishes the following, none of which is adequately addressed:

- **Toxic gas is generated in mass quantity.** Peer-reviewed measurement establishes hydrogen fluoride generation in the range of 20 to 200 milligrams per watt-hour of nominal battery capacity (Larsson, Andersson, Blomqvist and Mellander, Toxic fluoride gas emissions from lithium-ion battery fires, Scientific Reports 7:10018, 2017). Applied to a 480 MWh installation as a bounding estimate, that range corresponds to tens of tonnes of hydrogen fluoride under full-burn conditions, together with hydrogen cyanide, carbon monoxide and volatile organic compounds. (This tonnage is a bounding calculation from the published emission factor, not a measured plant emission; it is offered to show the order of magnitude the assessment fails to model.) The exhibited EIS contains no site-specific dispersion model quantifying the behaviour of such a plume over the surrounding dwellings, vineyards and agricultural land.
- **Local meteorology and topography make the plume path a live safety question, not an abstraction.** The Lower Hunter Valley is subject to strong valley-channelled north-westerly to west-north-westerly winds, which on high fire-danger days are hot, dry and fast (peer-reviewed: Channelling flows in the Hunter Valley, Journal of Southern Hemisphere Earth Systems Science 73(2):194-211, 2023). Under such conditions a plume from the site travels south-east to south-south-east, toward Cessnock and the residential

corridor. Under the summer sea breeze, the plume is driven toward the Pokolbin vineyard district. The Brokenback Range is a documented smoke trap: in the 2019–2020 fires, smoke drained down its northern face and pooled over the valley, and as much as 90% of the 2020 Hunter vintage was lost to taint. Under calm or stable night conditions, a toxic plume would pool in the valley with minimal dispersal. None of this is modelled in the exhibited assessment.

- **The fire cannot be extinguished, only cooled and contained.**

The established firefighting posture for a BESS fire is not suppression but the cooling of surrounding exposures while the affected units burn out over hours. The Victorian Big Battery fire (Moorabool, 2021) burned for approximately three days and was allowed to burn out; the Moss Landing fire (California, January 2025) burned across multiple days and reignited 33 days later from stranded energy.

- **The commissioning and early-operation window is the period of highest risk.** Analysis of the EPRI BESS Failure Incident Database (EPRI, PNNL and TWAICE, 2024) found that 72% of documented incidents occurred during construction, commissioning, or within the first two years of operation, and that 26% of inspected operating systems (approximately one in four) had fire-suppression defects at the time of inspection. Both documented Australian grid-scale BESS fires (Moorabool 2021 and Bouldercombe 2023) occurred during commissioning. (No published per-facility annual fire probability exists; that is a gap in the evidence, not a basis for treating the risk as immaterial.)

The consent authority cannot weigh a risk that the proponent has not characterised. The absence of a PHA-grade consequence and dispersion assessment tied to local meteorology and receptor locations is a fundamental deficiency in the exhibited material.

## **Ground 2 — Emergency response depends on a volunteer service and an unidentified water supply**

A significant BESS fire is contained and cooled over an extended period and consumes very large volumes of water. The Victorian Big Battery fire required more than 30 fire appliances and approximately 150

firefighters for a two-container event. FRNSW has adopted a position requiring bounding construction to a Fire Resistance Level of 240 minutes (four hours) for lithium-ion battery storage rooms, reflecting the recognition that such fires burn for many hours and cannot be rapidly suppressed.

The Rothbury and broader Cessnock area is served by the volunteer RFS. The exhibited EIS does not contain a Fire and Emergency Response Plan prepared in concurrence with FRNSW and the RFS, and does not identify a sustainable, independent on-site water supply of the volume such an incident demands that would not draw down the local domestic network or rural water table. The McMicken incident (Arizona, 2019) demonstrated that professional, HAZMAT-equipped responders following then-current protocols were catastrophically injured when accumulated off-gas deflagrated on the opening of an enclosure: four career firefighters were seriously injured, two sustaining traumatic brain injury, one thrown more than 70 feet by the blast — and they were not fighting the fire, but opening the unit to assess it. Rural response times, which permit longer gas accumulation before responders arrive, amplify precisely this risk. The hazard to responders is chronic as well as acute: firefighting as an occupation is itself classified by the International Agency for Research on Cancer as a Group 1 (established) human carcinogen (IARC Monographs vol. 132, 2022), and a battery fire adds a concentrated respirable-metal load to that established burden. Consequence to human safety of this kind, to responders and residents alike, is a matter for consideration under section 4.15(1)(b) and (e).

### **Ground 3 — The toxicological consequence to human health has not been assessed, and the documented human record is grave**

The gases released by a lithium-ion battery fire are not a nuisance; they are acutely and chronically toxic, and their harm does not require the fire to reach the fence line. The following is established in the peer-reviewed and clinical literature:

- **Hydrogen fluoride** is both a corrosive acid and a systemic poison. Its defining planning hazard is delayed onset: a person may feel relatively well immediately after exposure and then develop life-threatening pulmonary oedema 12 to 48 hours later (ATSDR

Medical Management Guidelines for Hydrogen Fluoride). The fluoride ion also drives hypocalcaemia, hypomagnesaemia and cardiac arrhythmia within hours.

- **Hydrogen cyanide** is a cytotoxic asphyxiant that blocks cellular respiration; high concentrations can be lethal within minutes.
- **Carbon monoxide** is generated at levels far above occupational limits and produces delayed neuropsychiatric injury days to weeks after apparent recovery.
- **Metal-oxide particulates** from NMC-chemistry cells include nickel (classified by IARC as Group 1, carcinogenic to humans), manganese (a cause of the irreversible neurological disorder manganism), and cobalt. These particulates travel and deposit: after the Moss Landing fire, nickel, cobalt and manganese were measured in soils up to two miles from the facility at 100 to 1,000 times background.
- **Volatile organic compounds** released include formaldehyde, benzene and 1,3-butadiene, each a recognised carcinogen.

**Documented human cases** confirm that these are not theoretical harms:

- **McMicken, Arizona (2019):** a deflagration of accumulated off-gas caught nine first responders; four career firefighters were seriously injured, two suffering traumatic brain injury, with multiple fractures, a collapsed lung, internal injury and thermal and chemical burns; the captain was thrown more than 70 feet.
- **Moss Landing, California (2025):** approximately 1,200 to 1,500 residents were evacuated; more than 50 residents became plaintiffs alleging personal injury including respiratory harm, and confirmed heavy-metal contamination was deposited in adjacent wetlands.
- **Guildford, Sydney (February 2025):** Haider Ali, a 21-year-old student, died in a lithium-ion battery fire; FRNSW recorded 323 lithium-ion battery incidents in NSW in 2024.
- **London (2023-2025):** the London Fire Brigade recorded five deaths from lithium-ion battery fires, with smoke inhalation from the same toxic gas profile as the cause.

The peer-reviewed literature is explicit that there are as yet no published case reports directly linking hydrogen fluoride inhalation injury to a lithium-ion battery fire, and that this is a knowledge gap

rather than evidence of safety; the toxic mechanism and the mass production of the gas are both established. The exhibited EIS does not assess the acute or latent health consequence to the surrounding population of the plume it declines to model. Local hospital capacity in Cessnock has not been weighed against the potential scale of a mass-casualty inhalation event.

**Ground 4 — The site is on bushfire-prone land with a severe and recent fire history; summer fire weather coincides with peak agricultural and tourism exposure; and the exhibited assessment models neither direction of the hazard, including the initiation of thermal runaway by external radiant heat**

Planning for Bush Fire Protection 2019 is a relevant consideration for development on bushfire-prone land. The site is mapped bushfire-prone land, and a grid-scale BESS here creates a compounding, two-directional hazard that does not exist in an urban or low-fire-risk setting — in a landscape with a documented and recent history of serious fire.

**The local fire record is severe and current.** In the 2019–2020 Black Summer, a major blaze burned near Laguna and Cessnock and local brigades (Central Cessnock, Wollombi and Laguna among them) were engaged across the district; to the west, the approximately 154,000-hectare Little L Complex forced backburning around Broke-Fordwich that directly threatened the Hunter vintage, and as much as 90% of the 2020 Hunter crop was lost to smoke taint. On 14 December 2023, three fast-moving fires broke out in a single afternoon and placed Abermain, Kurri Kurri, South Weston and Pelaw Main — all within or adjoining the Cessnock LGA — under Emergency Warning "leave now" alerts, with flames reaching residential fence lines. Pokolbin itself, the vineyard district adjoining the site, has experienced a major bushfire on Halls Road that required residents to evacuate (NSW RFS). This is not a location where fire is a remote contingency; it is one where serious fire is a recurring event.

**Summer fire weather coincides with the period of maximum exposure.** The window of worst fire danger is also the grape-harvest window and the peak tourism season. A serious fire at or around this facility in that window strikes when the vineyards are carrying fruit and



the district is carrying visitors: the compounding of hazard and exposure is at its maximum precisely when the fire risk is at its maximum.

**Direction one — an external fire can initiate thermal runaway in the batteries by radiant heat alone, before any flame reaches the plant.** Thermal runaway is triggered when a cell reaches its onset temperature, not by flame contact as such. Measured trigger temperatures for the relevant chemistries are of the order of 150°C for NMC cells and approximately 190°C for the more thermally stable lithium iron phosphate, with exothermic self-heating beginning at lower temperatures again. A bushfire front radiates heat at the intensities AS 3959 uses to classify building exposure — 12.5, 19, 29 and 40 kW/m<sup>2</sup>, with the Flame Zone above 40 kW/m<sup>2</sup> — at separation distances of tens of metres, with flame temperatures of 800 to 1,100°C. A steel battery enclosure exposed to such a front, particularly where the site power (and with it the active thermal-management and cooling systems) has been lost — a common and foreseeable consequence of a bushfire — behaves as a closed oven: it absorbs and conducts external radiant heat onto the cells and can drive them to their runaway onset with no flame ever contacting the enclosure. Whether the cells remain below onset at the proposed setback, under a Flame Zone exposure, with cooling offline, for the full duration of the front and its residual radiant load, is a definite and modellable question for this site and this enclosure. The exhibited EIS does not answer it: it does not quantify the separation distance necessary to keep cell temperature below runaway onset during an external fire; it does not demonstrate a passive (unpowered) thermal barrier that remains effective once active cooling is lost; and it does not exhibit UL 9540A external-fire and propagation test data for the proposed units against this scenario.

**Direction two — a BESS fire can seed a bushfire.** A battery fire cannot be effectively suppressed and burns for a prolonged period with intense radiant heat. Under high fire-danger conditions, that radiant load and any ejected burning material can ignite surrounding dry vegetation, turning a contained industrial incident into a landscape fire in exactly the conditions in which a volunteer service is least able to hold it. Catastrophic bushfire risk arising from BESS thermal runaway has been raised as a primary ground of objection in other current NSW proposals.

The exhibited EIS does not adequately assess either direction of this hazard, and in particular does not model the radiant initiation of thermal runaway by an external fire with site power lost. On bushfire-prone land with this fire history, that omission is fundamental.

**Ground 5 — The site supports Matters of National Environmental Significance confirmed by the proponent's own surveys, the impact triggers Commonwealth assessment, and the report that assesses it has not been exhibited**

The proponent's own referral to the Commonwealth under the EPBC Act (referral 2025/10379) records that targeted field surveys confirm, within the project area, the presence of:

- the **Hunter Valley Delma** (*Delma vescolineata*, a legless lizard listed Endangered under the EPBC Act on 16 July 2024), identified in the referral as the controlled-action trigger for the project, with the proponent conceding a "potential for significant impact" upon it;
- the **North Rothbury Persoonia** (*Persoonia pauciflora*, Critically Endangered), endemic to an area of approximately 2.5 square kilometres in the North Rothbury locality — one of the most geographically restricted plants in New South Wales, its entire global range within this locality; and
- the **Central Hunter Valley eucalypt forest and woodland**, a Critically Endangered Ecological Community under the EPBC Act.

The locality also lies within the habitat of threatened fauna of national significance, including the Regent Honeyeater (Critically Endangered; the Lower Hunter is among the most important breeding areas nationally) and the Swift Parrot (Critically Endangered). Three consequences follow, each a matter the consent authority must weigh under section 4.15(1)(b) and (e).

First, **this is a controlled action**. The presence of the Hunter Valley Delma as a controlled-action trigger means the development requires assessment and approval under the EPBC Act (Cth) as well as under State law, and the impact on that listed species is, on the proponent's own characterisation, not trivial. A comparable BESS in the same corridor (the Muswellbrook proposal, EPBC referral 2025/10387)

recorded twenty-two Hunter Valley Delma individuals within a 4.87-hectare disturbance footprint, indicating that the species is present in this corridor in numbers, not as isolated records.

Second, **the report that assesses the impact has not been exhibited.** The Biodiversity Development Assessment Report — the instrument that quantifies residual impact, tests it for serious and irreversible impact under the Biodiversity Assessment Method, and calculates the offset obligation — had not been prepared at the time of the Commonwealth referral, which states only that it "will be" prepared. The exhibited disturbance footprint (11.71 hectares of a 49.94-hectare project area) is itself described as a worst-case to be reduced at detailed design. The consent authority is therefore asked to assess the biodiversity impact of the development without the definitive footprint and without the very report that assesses it. That is not a curable detail; it is the assessment.

Third, the proponent's own **38.22-hectare avoidance area** — land intentionally excluded from disturbance to protect these Matters of National Environmental Significance — is itself an admission that the site carries conservation values of the highest order. The adequacy of that avoidance cannot be taken on trust. An avoidance zone immediately adjacent to a thermal-runaway fire hazard, to construction edge-effects, and to the contaminated-firewater pathway addressed in Ground 6 must be shown — in the BDAR and against a bushfire assessment — to be effective rather than nominal; a critically endangered endemic whose entire global range is in this locality cannot survive an avoidance area that fails.

Given the presence of a single-population critically endangered endemic and a listed species the proponent concedes may be significantly impacted, the **precautionary principle** applies on the test in *Telstra Corporation Ltd v Hornsby Shire Council* [2006] NSWLEC 133: a threat of serious or irreversible damage together with scientific uncertainty means the absence of full certainty is not a reason to postpone preventive measures. Offsets do not answer the immediate and localised loss of habitat for species that exist nowhere else.

## **Ground 6 — The development threatens an existing and highly sensitive agricultural land use, and risks catchment contamination**

The immediate planning objection is the impact of this development on the established and highly smoke-sensitive viticulture surrounding the site. A BESS fire is qualitatively worse for viticulture than a bushfire, because its smoke carries hydrogen fluoride and metallic particulates whose effect on grapes and harvested fruit is not characterised to the standard a viticulturally sensitive setting demands, and a significant fire during the pre-harvest or harvest window could cause total loss across proximate vineyards. Separately, the very large volumes of water required to fight such a fire produce contaminated firewater runoff carrying nickel, cobalt, manganese and fluoride at concentrations exceeding freshwater ecosystem-protection guidelines; the Rothbury locality drains to the Hunter River catchment and its alluvial groundwater, and uncontained runoff could reach vineyard irrigation dams and bores. The exhibited EIS does not adequately assess either pathway. The scale of what is at risk gives these pathways their weight: the surrounding wine and tourism economy is a \$557 million per annum industry, and the 2019-2020 smoke-taint season alone caused approximately \$160 million in direct loss.

## **Ground 7 — Construction traffic burdens a tourism corridor not engineered for it**

The construction program relies on heavy-vehicle movements, including the transport of transformers and battery enclosures, over an extended period on Wine Country Drive and local feeder roads. Wine Country Drive is a primary tourism and commuter artery for the Hunter. The exhibited traffic assessment understates both the cumulative pavement damage to roads not built for these axle loads and the safety and congestion consequence for a corridor the regional visitor economy depends on, and does so without accounting for the concurrent construction traffic of the adjacent SSD-85939708 proposal.

## **Ground 8 — Industrial scale, amenity and noise are at odds with the locality and its planning controls**

The built form, comprising battery enclosures, inverters, a substation and high-voltage connection works, is incompatible with the rural and landscape-tourism character of Rothbury and with the objectives of the applicable land-use zone under the Cessnock Local Environmental Plan. Screening by immature landscaping will take years to be effective and leaves a prolonged industrial intrusion in a prominent rural setting. The continuous, around-the-clock low-frequency noise from power-conversion and cooling plant has been inadequately characterised against nearby receptors.

## **Ground 9 — The exhibited assessment is silent on secured end-of-life liability, on a mistaken residual-value assumption**

The consent authority cannot weigh the end-of-life liability of this facility because the exhibited EIS does not secure it. Most decommissioning models assume the retired batteries carry positive scrap value; for the lithium iron phosphate chemistry now dominant in grid storage, recycling currently costs money rather than yielding value, and asset-retirement reserves are documented to underestimate real cost by 30 to 50%. Absent a secured, quantified financial assurance in the exhibited material, the risk that the community is left with a stranded, hazardous, contaminated site on the proponent's insolvency is real and unassessed. (Whether that assurance is best delivered by condition or by a standing bond regime is a policy question I have raised elsewhere; the planning point here is that the EIS does not address the liability at all.)

## **Ground 10 — The cumulative impact of two adjacent BESS facilities is unassessed**

This application and SSD-85939708 propose two large battery facilities — together approximately 255 MW and 1,020 MWh of storage — in one small rural locality. Neither EIS assesses the combined hazard, traffic, water-demand, noise, visual and biodiversity load the two developments would impose on the same community at the same time. In fire-safety terms, two such facilities in close proximity present the possibility of concurrent or mutually-exacerbating incidents that would overwhelm a volunteer-based response. Assessing each in isolation understates the

true burden on Rothbury and is, in itself, a fundamental deficiency in the exhibited material.

### **Ground 11 — Aboriginal cultural heritage and SEARs compliance must be demonstrated, not assumed**

The locality is Wonnarua Country. I ask the Department to confirm that an adequate Aboriginal Cultural Heritage Assessment, prepared with the relevant Aboriginal parties, forms part of the exhibited material, and to test the EIS against the Secretary's Environmental Assessment Requirements for this application. To the extent the SEARs required a quantified hazard analysis, a human-health risk assessment, a bushfire assessment, or a definitive biodiversity assessment, and the EIS has not delivered those to the required standard, the assessment is inadequate and consent cannot properly be granted on it.

---

## **4. Relief sought**

---

I ask that the Department **refuse** consent for SSD-92914712.

The deficiencies set out above are not matters that can be cured by conditions after a consent is granted. They go to whether the consent authority can be satisfied, on the exhibited material, that this is an appropriate use of this land in the public interest under section 4.15(1) (e). On the evidence, it is not.

If, contrary to this submission, the Department is minded to consider the application further rather than refuse it, I ask in the alternative that determination be deferred and the application re-exhibited only after: a PHA-grade thermal-runaway consequence and toxic-plume dispersion assessment tied to local meteorology and receptors; a Fire and Emergency Response Plan agreed with Fire and Rescue NSW and the RFS with an identified independent water supply; a bushfire assessment modelling both the external radiant initiation of thermal runaway with site power lost and the separation distance and passive fire barrier required to prevent it; a human-health risk assessment; a genuine cumulative-impact assessment of both Rothbury facilities together; a definitive biodiversity disturbance footprint tested for serious and irreversible impact; an assessment of the smoke-taint and firewater-contamination pathways to the surrounding viticulture and catchment; a

secured, quantified decommissioning financial assurance; and confirmation of Aboriginal cultural heritage assessment and SEARs compliance.

A resident of the Cessnock area

---

Evidence base and full citations: accompanying research dossier (fire science; medical toxicology; Australian and international incidents and failure-rate data; wind and bushfire analysis; ecology, threatened species and agriculture; financial and policy analysis). All sources verified at URL; evidentiary tiers marked; knowledge gaps stated rather than filled.