(Insert Your Name and Address)
(Insert Date)

The Chief Executive
Department of the Environment, Tourism, Science and Innovation (DETSI)
Email: RRS.Consultation@detsi.qld.gov.au

Re: Objection to the Adoption of the Draft End of Waste (EOW) Code – Incinerator Bottom Ash Aggregate (IBAA) (EOWC010004246)

This submission is formally lodged in response to the public consultation window closing on 31 August 2026. It opposes the ratification and passage into law of the Draft End of Waste (EOW) Code for Incinerator Bottom Ash Aggregate (IBAA) in its current form.

An examination of the draft code reveals critical regulatory omissions, unmitigated environmental liabilities, and structural contradictions with Queensland's primary statutory instruments. Crucially, this code was formulated without the department convening an independent Technical Advisory Panel (TAP) - a step its End of Waste Guideline expressly provides for when preparing a draft code. In our view, choosing not to convene a panel for a stream of this risk weakens the independent scientific scrutiny it would bring, and raises a concern that the draft code's chemical threshold limits may rest on proprietary, non-peer-reviewed corporate data and overseas studies that do not reflect local conditions.

Furthermore, the draft code fails to account for Queensland's subtropical weather conditions, carries unresolvable testing and verification gaps, and creates a profound long-term financial liability for the Queensland Government due to environmental contamination. This submission requests that DETSI refuse to ratify the draft EOW code and instead convene a formal, independent TAP to completely re-evaluate the chemical and structural safety of incinerator by-products.

Legislative Context and Strategic Contradictions

- **Incompatibility with the Waste Reduction and Recycling Act 2011**

  Under Section 159 of the Waste Reduction and Recycling Act 2011, an End of Waste code can only be approved if the resource can be used safely and without causing environmental harm. The draft EOW code fails this statutory test. By reclassifying a highly variable, heavy-metal-laden industrial byproduct as a "resource" for unrestricted civil construction, the code actively compromises the environmental protections mandated by the Act.

- **Undermining the Less Landfill, More Recycling 2035 Strategy**

  The primary goal of Queensland's waste strategy is to establish a high-performing circular economy focused on absolute waste avoidance and resource detoxification. Reclassifying mass-burn incineration residues as benign aggregates mask the true volume of waste generated by the thermal sector. It creates an artificial commercial outlet for toxic by-products, thereby subsidising high-emissions thermal facilities. This directly undermines the 2035 target of achieving a 65% comprehensive recycling rate, as it incentivises mass incineration over upstream material separation and detoxified recycling loops.

- **Violation of the Queensland Energy from Waste (EfW) Policy**

  The Queensland EfW Policy establishes a strict regulatory framework emphasizing the Precautionary Principle and the protection of local ecosystems. The EfW Policy clearly mandates that solid by-products from energy recovery must not introduce unmanaged

ecological hazards. However, by establishing lenient leaching limits and omitting rigorous testing protocols, the draft EOW code directly violates the EfW Policy's gatekeeping principles, introducing toxic heavy metals into public infrastructure and residential catchment zones.

Critical Procedural Defect: Formulation Without a Technical Advisory Panel (Tap)

The formulation of this EOW code represents a profound departure from established robust regulatory processes. Under standard Queensland administrative guidelines for commenting on draft EOW codes, highly technical, high-risk waste streams may be evaluated by an independent Technical Advisory Panel that the department may establish under its End of Waste Guideline consisting of independent scientists, toxicologists, hydrogeologists, and multi-sector industry representatives.

The Department's decision to bypass a TAP for the IBAA code has severely compromised its technical integrity:

- In the absence of a TAP, in the absence of a panel, there is a risk the draft was shaped through direct engagement with industry proponents such as Cleanaway and the Cement Concrete & Aggregates Australia (CCAA), without independent scrutiny.
- Cleanaway's internal divisions may have been relied on as a primary source of technical input. Instead of debating threshold limits on a transparent panel with peer scientists, the primary proponents submitted proprietary commercial data and industry-funded overseas studies to justify relaxed safety standards.
- Because no independent body was present to rigorously audit these corporate submissions, the draft code's chemical threshold limits (Tables 1 and 2, pages 6–7) may reflect industry-preferred targets rather than a precautionary public-health standard. The public consultation window closing on 31 August 2026 remains the only external mechanism to challenge this industry-driven process.

Subtropical Climatic Vulnerabilities and Hydrological Risks

The draft EOW code is fundamentally flawed because it relies on environmental modeling from temperate European climates (e.g., the United Kingdom and the Netherlands) where rainfall is evenly distributed and temperatures are moderate. It completely ignores Queensland's unique subtropical conditions.

- Subtropical Queensland experiences high-intensity rainfall events and severe seasonal flooding. When IBAA is utilized as bulk fill, road base, or aggregate across civil projects, these large-scale rainfall events saturate the material. This drastically accelerates the leaching rates of soluble heavy metals, moving contaminants far more rapidly than predicted by European models.
- Subtropical soils in Queensland are naturally acidic, and heavy rainfall events induce rapid shifting in local groundwater tables. Acidic water exposure breaks down the fragile cementitious encapsulation of IBAA, releasing highly mobile ions of Lead, Cadmium, Chromium, and Hexavalent Chromium directly into surrounding soils and aquifers.
- Civil infrastructure utilizing IBAA under the draft code's current geographic allowances will inevitably interface with major aquatic systems, including the Brisbane River catchment and regional coastal waterways, threatening delicate subtropical biodiversity.

Verification Failures and the Impossibility of Quality Assurance

The testing and verification protocols detailed on pages 7–8 of the draft code are scientifically inadequate and present an unmanageable operational risk. It is technically impossible to guarantee a contaminant-free product under the draft code's current compliance framework.

- Incinerator bottom ash is highly heterogeneous. Its chemical composition shifts hour by hour based on what is burning in the facility—ranging from consumer electronics and industrial plastics to treated timbers. A single batch of ash can contain highly concentrated, localized toxic "hotspots."
- Inadequate Batch Testing: The draft code allows for infrequent, time-based testing (as little as once every three to six months, reducing to annually after three years). This statistical sampling method completely misses localized concentrations of heavy metals and highly toxic persistent organic pollutants, including dioxins and furans.
- Analytical Limitations of Leaching Tests: Standard laboratory leaching procedures (such as the Toxicity Characteristic Leaching Procedure - TCLP) simulate static landfill environments. They fail to replicate the dynamic, long-term chemical wear, mechanical shearing, and fluctuating pH environments that IBAA will experience over decades of exposure in road infrastructure. Consequently, a batch that "passes" laboratory testing can still easily leach toxic quantities of heavy metals once deployed in the field.

Overseas Contamination Evidence and Interstate Precedents

The draft code's assumption that IBAA can be safely managed as an unrestricted aggregate is thoroughly debunked by real-world international failures and domestic legal prohibitions.

International Evidence of IBA Contamination

- *The United Kingdom*: Widespread civil utilization of IBA as an aggregate led to catastrophic contamination events, where ash containing unburnt plastics, heavy metals, and dioxins was inadvertently used near agricultural land and residential pathways, requiring multi-million-pound state-funded remediation efforts.
- *European Union Investigations*: Even in highly regulated jurisdictions, independent monitoring has repeatedly shown that commercialized bottom ash aggregate exceeds environmental safety thresholds for Copper, Zinc, and Dioxins within 5 to 10 years of placement due to environmental weathering.

The Australian Capital Territory (ACT) Total Prohibition

In stark contrast to the draft Queensland code, the Australian Capital Territory (ACT) has established a total legislative ban on the utilization and commercialization of incinerator ash products. The ACT Government enacted this prohibition based on explicit scientific evidence proving that current testing regimes cannot guarantee a contaminant-free product. The ACT determined that the public health and ecological risks of dispersing heavy metals and persistent organic pollutants into the built environment far outweighed any short-term commercial disposal benefits.

Profound Government Liability and Financial Risk Forecasts

By ratifying this code and legally declaring IBAA to be a non-waste 'resource', the Queensland Government assumes the ultimate long-term legal and financial liability for any subsequent environmental or public health degradation.

- *Shifting of Legal Liability*: If a commercial proponent complies with the lenient testing protocols in this code, they are legally insulated from environmental prosecution under

the Waste Reduction and Recycling Act 2011. If toxic leaching later contaminates local drinking water, agricultural soils, or public ecosystems, the legal liability shifts directly back to the State of Queensland for passing an inadequate regulatory framework.

- Scale of exposure: Based on historical international and domestic environmental remediation precedents, the financial exposure to the Queensland Government is profound. Comparable precedents indicate public-health class actions for aquifer or catchment contamination of $50–150 million or more; infrastructure remediation of $20–30 million per major civil project where structures fail or roads must be dug up; and environmental sanctions of up to $967,500 per willful breach, plus multi-million-dollar clean-up costs.

Conclusion

The Draft End of Waste Code for Incinerator Bottom Ash Aggregate is an unsafe, industry-driven document that exposes Queensland's environment, infrastructure, and taxpayers to unacceptable risks. It represents regulatory capture at the expense of scientific rigor.

I respectfully and formally request that DETSI execute the following actions:

1. **Refuse Ratification**: Deny the passage and ratification of the Draft End of Waste Code for Incinerator Bottom Ash Aggregate.
2. **Convene a Technical Advisory Panel (TAP)**: Immediately invoke statutory powers to assemble an independent TAP, entirely free from the direct influence of major waste proponents or commercial aggregate lobbies.
3. **Enforce the Precautionary Principle**: Require any future evaluations to incorporate mandatory testing under simulated subtropical conditions (high rainfall, high heat, acidic soils) and introduce a zero-threshold limit for persistent organic pollutants.
4. **Align with Interstate Standards**: Adopt a precautionary stance mirroring the Australian Capital Territory’s total ban until independent, long-term peer-reviewed science proves otherwise.

Yours faithfully,

(INSERT YOUR NAME HERE)