Observation on EIS in relation to reliance on outdated incineration technology in the SID for the proposed development by Indaver NV trading as Indaver Ireland for a Resource Recovery Centre (including a waste - to -energy facility) at Ringaskiddy

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Observation on Environmental Impact Statement (EIS) – reliance on outdated incineration technology

This observation centres on the facility's reliance on outdated incineration technology, which produces toxic ash residues, and its misalignment with modern, non-combustive alternatives that better serve public health, environmental protection, and EU circular economy goals. In a sensitive location like Ringaskiddy—within the Cork Harbour Special Area of Conservation (SAC) and near homes and schools—these risks are amplified, creating unacceptable cumulative impacts. The 30+ year design life to 2050 ignores rapid advancements in waste technologies, risking "lock-in" to obsolete methods amid falling waste volumes and stricter EU zero-pollution targets.

Approving this would contravene the Industrial Emissions Directive (2010/75/EU) on Best Available Techniques (BAT), the Habitats Directive (92/43/EEC) for protected sites, the EU Sero Pollution Action Plan (2021) aiming for 50% air toxics reduction by 2030, and Ireland's emerging Circular Economy Bill (2025). Historical Oireachtas inquiries in the 2000s exposed flaws in waste exports, including untreated residues, while a 2021 High Court ruling quashed prior permission for procedural bias and inadequate alternatives analysis. Local concerns over elevated cancer rates near existing Indaver sites further underscore the human cost.

1. Outdated Incineration Technology: Persistent Toxic Ash and Inherent Limitations

Incineration, the core of this proposal (240,000 tonnes per annum, including 24,000 tonnes hazardous waste), remains a 20th-century method that burns waste at high temperatures, generating energy but also substantial toxic ash (up to 20-30% of input mass as bottom/fly ash laden with heavy metals, dioxins, and nano-plastics). Even with BAT filters, ash requires secure landfilling or export—practices flagged in 2000s Oireachtas debates for environmental risks and cost burdens (€50-100/tonne export fees). The EIS downplays ash management (e.g., 40,000 tonnes/year projected), but

historical exports of untreated residues from Irish facilities have contaminated soils abroad, violating the Basel Convention on hazardous waste transboundary movement.

Superior alternatives avoid combustion entirely:

- **Advanced Sorting and Recycling**: AI-optical sorters (e.g., AMP Robotics) now achieve 95% purity for plastics/organics (up from 70% in 2020), diverting 80%+ of waste pre-residual stage without ash or emissions.
- **Plasma Arc Vitrification**: Systems like Sierra Energy's FastOx convert waste to syngas and inert glass slag, recovering 99% energy with zero dioxins/heavy metals—scalable for hazardous streams at €80-100/tonne.

These render incineration obsolete for a circular economy, where waste is a resource, not fuel.

2. Health, Environmental, and Cumulative Impacts in a Sensitive Location

Ringaskiddy ‘s estuarine setting—within the Cork Harbour SAC (hosting Annex I habitats/species) and <1 km from 500+ residents, schools (e.g., Gaelscoil na Dara), and amenities—exacerbates risks from flue gases containing dioxins, heavy metals, and nano-plastics. Despite BAT compliance, episodic stack emissions (e.g., 0.1 ng TEQ/m^3 dioxins) could deposit via wet scavenging in the harbour, bioaccumulating in food chains and harming waders/mammals under the Habitats Directive (Article 6 appropriate assessment required).

Locals report elevated cancer rates near Indaver's existing hazardous incinerator (e.g., Cork County invasive cancers 5-10% above national average, 2006-2017), linked in studies to proximity (<5 km) with risks of lung/leukaemia increases (up to 1.5x). The hazardous component (10% throughput) intensifies toxicity, conflicting with the EU Zero Pollution Action Plan's 50% toxics cut by 2030.

Cumulative effects with adjacent facilities (e.g., Indaver's operational hazardous incinerator) risk exceeding BAT limits during peaks, unassessed in the EIS despite Industrial Emissions Directive requirements for integrated pollution prevention. This mirrors the 2021 High Court quashing for flawed alternatives screening, remitting the case to ABP. Procedural gaps here could invite judicial review, endangering SAC integrity.

3. Obsolescence in Light of 2025 Technological Advancements and the 2050 Horizon

A 30+ year lifespan to 2050 locks Ireland into combustion amid exponential non-thermal innovations, undermining EU net-zero goals (European Green Deal) and the Critical Raw Materials Act (2023) prioritising recovery over energy. Projected waste arisings drop 10-20% by 2030 via prevention (e.g., +400,000 tonnes recycling needed annually; food waste -50%), stranding €160-200 million in assets as alternatives undercut costs (gasification €100/tonne vs. incineration €120+).

Key 2025 advancements include:

- **Thermal Alternatives**: Gasification/pyrolysis shrink waste 95% with 90% less flue gas/syngas for clean fuels; EU pilots (e.g., Netherlands' HoSt) save 90% GHGs vs. incineration. A Springer review highlights scalability for RDF/hazardous waste.
- **Biological/Circular Tech**: Anaerobic digestion captures 95% biogas from organics; microwave/chemical sterilisation handles hazards ash-free.
- **AI/ML Optimisation**: Machine learning hybrids (e.g., IoT-deep learning for bin forecasting) enable 100% substitution in urban systems, per ScienceDirect studies. Digital Product Passports (EU 2024) will track materials, favouring sorting over burning.

Ireland's 2025 Circular Economy Bill mandates tech-neutral procurement—pilots like plasma or AI sorting align better than legacy incinerators, avoiding lock-in per NWMPCE 2024-2030.

Conclusion

Approving Ringaskiddy entrenches toxic, ash-producing tech in a vulnerable SAC-adjacent site, amplifying health/cumulative risks and clashing with EU hierarchy (prevention/recovery first). Redirect funds to 2025 innovations for a true circular future—waste as resource, not relic fuel.