Beyond the Models: Missing Checks on the Medworth Incinerator

a report by Saxongate Residents Group 24/09/25

1) Executive Context

The Medworth Energy from Waste Combined Heat and Power (EfW CHP) Facility is proceeding under a Development Consent Order (SI 2024 No.230) with Environment Agency permitting and local discharge of requirements. While the operator has committed to social community payments, there is a material gap in the monitoring framework that would both protect the public and address long-term contamination fears.

2) Current Monitoring Framework

>In-stack (EA permit): Continuous monitoring of particulates, NOx, SO_2, CO, TOC, HCl, NH_3; twice-yearly stack tests for metals and dioxins/furans; residue sampling (IBA, APCr).
>Away-from-stack (EA permit): Groundwater tested every 5 years; soil every 10 years.
These checks are designed to pick up leaching or site contamination, not deposition from the stack. There are no food-chain, dustfall, or biomonitoring checks.
>Planning/DCO (Requirement 27 LAQMS): Ambient NO_2, PM_{10}, $PM_{2.5}$ baseline 12 months before operation and early operation, with annual review. No chemical speciation.
>Health risk assessment: Reports conclude "low risk" for air, soil, water, food, but these are modelling outputs, not validated with field data.

3) Health Risk Modelling without Validation

The planning application Environmental Statement and its Human Health Risk Assessment recognised the risk that pollution from the facility could settle on soil, enter plants, move into milk and meat, and ultimately reach people. The technical wording describes this as "deposition of persistent organic pollutants (dioxins, furans, PCBs) and heavy metals onto soil, uptake by plants, transfer into meat and milk, and eventual ingestion by humans."

Although these pathways are acknowledged, the reports conclude that the overall risk is low. Critically, no monitoring will ever test whether that prediction is true. There is no requirement to sample local soil, crops, milk, meat, or people. The most important long-term route into human health is therefore addressed only by modelling, never by measurement. This means such contamination is officially said not to happen at significant levels, but in practice it is never checked.

4) Spatial Coverage and Siting

The approved LAQMS relies on one continuous station at Thomas Clarkson Academy, backed by diffusion tubes and an indicative particulate unit. For a tall stack affecting different wind sectors across Wisbech, a single flagship site is may be too coarse to validate modelled concentration contours or pick up neighbourhood-to-neighbourhood contrasts — especially without chemical composition data. Adding a second continuous station downwind in the dominant wind sector and /or rotating a mobile unit through other sectors on a fixed schedule should be considered.

5) Air Quality Monitoring - Beyond Dust Counts: Composition and Risk

The monitoring stations will count dust in the air, but they will not show what the dust is made of or where it comes from. A rise in PM levels tells us little about dioxins, metals or other persistent compounds that settle, build up, and move through soil and food.

The danger is that particle counts alone give a false sense of safety. The real test is chemical composition and long-term accumulation, not just short-term dust levels. For this kind of facility, measuring quantity without testing composition leaves a significant long-term exposure risk unchecked.

6) Critical Gaps / Missing Checks

No baseline or ongoing biomonitoring of soil, milk, meat, eggs, or dustfall is required.
The result is that long-term health protection rests entirely on models, not measurements. Without these checks, the community is asked to trust predictions that will never be tested.

This means:

>Future exceedances could be dismissed as "from other sources" (traffic, agriculture, heating systems etc).
>The operator benefits from uncertainty: community reassurance relies on models rather than data.
>Without baseline chemical sampling, long-term attribution of harm is almost impossible, leaving regulators reliant on modelling outputs from consultants and not on hard evidence.
>Critically - There is no planned biomonitoring of soil, crops, milk, or meat to show whether contaminants are moving through the food chain.
>Critically - There are no chemical tests planned for captured dust away from the stack to give early warning of dioxins or metals settling in the area.

7) Decision Process, Responsibility and potential for change.

The Secretary of State granted the DCO, but responsibility for the detail then passed to Cambridgeshire County Council (CCC). CCC now approves requirements such as the Local Air Quality Monitoring Strategy. Fenland District Council (FDC) acts as CCC's technical consultant on air quality and health, providing advice but not taking the final decision. The Environment Agency (EA) runs the permit in parallel, covering in-stack checks but not food-chain or long-term ambient tests.

CCC can ask for more detail before signing off, but once a requirement is discharged it is fixed. The EA can vary the permit if new evidence emerges, but this is rare. In practice, most schemes pass unless councils hold the line.

The danger is that remote monitoring does not include key elements (biomonitoring and chemical tests). The other risks are that no baseline is set before operation and any monitoring is treated as temporary. You do not take down smoke alarms just because you have not had a fire, and the same logic should apply here: health risks need checking for the life of the plant, not just the start. All possible risks noted in the model should also be tested and proven – especially the deposition of persistent pollutants which is currently not included in any plans.

Experience elsewhere shows why this matters. The Ivry-sur-Seine incinerator in Paris operates at an in-stack dust concentration of 3.9 mg/m³, still below the UK's 5 mg/m³ limit. Yet school ventilation filters nearby have shown dioxins, PFAS and heavy metals above EU safety guidance. This demonstrates how mass-based dust figures can mask risk when a small fraction of particles carries persistent toxic compounds. Medworth's own health assessment states that uptake into the food chain is a more significant pathway than direct inhalation, but no long-term baseline or validation is planned. Without chemical speciation or food-chain monitoring, contamination could be dismissed as "from other sources." The Paris case shows that stack levels may look compliant while real exposures still breach safety limits if composition and pathways are ignored.

FDC revoked Wisbech's two Air Quality Management Areas (AQMAs) in March 2025 under DEFRA rules. The only replacement is the developer-funded Local Air Quality Monitoring Strategy (LAQMS), which will run baseline plus four years of operation before being removed. After that, there is no guarantee of local ambient monitoring, no chemical testing, and no food-chain checks — only the EA's in-stack regime.

The company's consultants have produced reports that say the health risks are low, but these claims are based on models and are not checked against real data. There will be no tests of local food, soil, or dust to prove whether those predictions are correct over the planned 35 years of operation. Remote air monitors will count particles for as long as they are funded, but they will not show whether dangerous chemicals are present or building up over time. For real public protection and trust, monitoring must go further. It should run for the life of the plant and include baseline checks before operations commence.