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CONTINUOUS EMISSIONS MONITORING

UK EfW Sector

A Medium Term Outlook of the UK EfW Sector

By Dominic Sheedy

After attending the Energy from Waste Conference in March 2023, I thought I would share my takeaway of what the future of the industry may be.

After seeing a significant expansion in operational UK EfW plants between 2017 and 2022 (an increase of nearly a third), the outlook is set to flatten as capacity and demand align.

Industry leaders predict only a handful of new plants are required beyond what is currently in the pipeline to meet demand. DEFRA has reiterated that it has no plans on imposing a moratorium on new EfW plants in England, unlike in Scotland and Wales. The view appears to be that the market will decide when capacity is reached. Opponents of the moratorium in Scotland and Wales view it as a barrier to innovation and an inflexible locking in of the current project pipeline.

The UK Government has announced a further £20 billion funding package for CCS (carbon capture and storage) and CCUS (carbon capture usage and storage). This technology is vital for the UK's Net Zero strategy and the UK Government has confirmed that EfW facilities are eligible for CCS support. The UK's first EfW sites with CCS are expected to be operational within the next two years.

Challenges to the industry

There are plans to incorporate EfW facilities into the ETS (Emissions Trading Scheme) starting between 2028 and 2030, with reporting potentially starting in 2026. The



specific details of the proposals are not yet known, but this will have a big impact, so it will be interesting to see what effects this has on the industry.

The reduction of biogenic waste and the changing composition of feedstocks may cause issues for some plants as well as impacting the content of post combustion ash wastes, which are currently processed and used in the construction industry.

Waste crime is a huge issue for the industry with up to 10% of waste being dumped or finding its way to illegal markets. It is thought that up to £250 million per year is lost in land fill tax, and waste crime overall is costing over £900 million per year. As regulations are tightened and costs for processing waste increase, this will become an even bigger challenge for the regulators.





Financing for new facilities will become increasingly difficult as the market moves towards reaching capacity. Having access to CCS/CCUS infrastructure and/or heat networks will be a big advantage.

Retrofitting CCS/CCUS to existing plants will be a big challenge and for some plants this may be too costly or impractical. There are some examples of sites in Europe that are carrying out this process, it will be interesting to see how this progresses and what lessons can be learned.

The role of continuous emissions monitoring

EfW plants have very strict requirements for emissions monitoring due to the harmful pollutants generated and the fact that the sites are often located in or near populated areas.

The emission limit values set-out in the Industrial Emissions Directive have been reduced over time as detailed in the 2019 WI BREF's. This places a high demand on CEMS manufacturers to develop equipment that can meet these very low levels while maintaining the very high standards of availability and reliability.

There will be increasing demand for monitoring the biogenic CO₂ content of the stack emissions as well as the continuous measurement of amines for carbon capture systems.



The longer-term future

The consensus seemed to be that EfW sites will need to become more of an Integrated Resource Recovery Facility. This may be comprised of high quality pre-sorting, chemical recycling, anaerobic digestion and pyrolysis, with residual waste combustion giving outputs to district heating networks, hydrogen generation and carbon emissions captured and stored or utilised.

Waste to electricity generation is expected to play a smaller role due to its low efficiency.

