EIC INSIGHT REPORT ENERGY FROM WASTE

EC 75

Executive summary

Energy generation and waste management are two of the most critical issues faced by modern societies. Traditional, linear economic models put waste at the end of the chain, designating it to have no worth. However, the concept of the circular economy argues that waste does have value and recovering energy from waste (EfW) can assist in meeting the growing energy demand while limiting the amount destined for the landfill.

EfW is a concept and form of power generation that continues to gain momentum both within the UK and increasingly, globally. For 2017, estimates place the capital expenditure (CAPEX) of the global EfW sector at US\$12.9bn.

As well as maximising resource value, EfW has the potential to displace fuel energy generation and limit uncontrolled methane release from landfills. It is therefore seen as a renewable, or at least low carbon, energy source which can count towards renewable energy targets. It also offers an alternative, domestic energy source which can contribute to energy security by reducing dependency on imported fossil fuels.

Since the market is relatively new and heterogenous, this insight report

provides a detailed overview of the EfW sector as well as exploring what supply chain opportunities there are within the UK and in select overseas markets.

The process of extracting EfW can vary substantially depending on factors such as the type and quality of waste and chosen method of conversion, and these aspects are intertwined with broader social, economic and environmental constraints. The most common EfW process is combustion, however, recent developments have led to an array of new thermochemical and biochemical technologies which are assessed within the report.

The report also offers a detailed analysis of the industry within the UK including the key political and financial incentives behind the market's growth. The sector capacity looks set to double within the next decade and will favour innovative technologies such as combined heat and power gasification. This report will dissect the range of supply chain opportunities generated by the substantial increase in facility development.

These opportunities are not distinct to the UK, with China and India both set to become major global EfW markets. These two countries have undergone periods of rapid industrialisation, urbanisation and population growth and are increasingly turning to EfW as a solution to significant waste issues alongside growing energy demands. Other markets, including the Middle East, are also beginning to emerge.

Globally, the EfW sector will grow in both the short and mediumterm and the World Energy Council predicts that the global market is set to be worth US\$40bn by 2023. The progression of the industry is dependent on the implementation of government initiatives and incentives to reduce the cost of establishing a facility and attract private sector involvement. Advancements in technological efficiency will also drive down costs making EfW facilities more affordable across the globe, offering a plethora of opportunities for companies throughout the supply chain.



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