

## Energy from Waste

**Snapshot:** The [Zero Waste Plan \(ZWP\)](#) states that planning proactively for waste management is an opportunity to join-up significant environmental, energy and economic benefits. Planning authorities are expected to deal with waste as a resource as opposed to a burden. The ZWP acknowledges that Energy from Waste (EfW) has an important role to play in meeting renewable energy targets and it has been calculated that EfW could contribute 31% of Scotland's 2020 renewable heat target and 4.3% of our 2020 renewable electricity target. For EfW to be truly sustainable, however, it should only be used for resource streams which cannot practicably offer greater environmental benefits through reuse or recycling. The role of planning authorities in delivering EfW is expected to be closely aligned with [Annex B](#) of the ZWP.

### **Suggested areas of focus for planning authorities:**

- Using the locational criteria set out in Scotland's ZWP, provide greater clarity on where EfW plants can be located
- Use heat maps to identify long term waste streams and buildings where there are long term high heat demand to identify logical locations for EfW plants;
- Detail policy criteria to be applied in assessing energy from waste applications;
- Ensure heat plans are submitted with EfW proposals;
- Establish protocol for involving key consultees in spatial planning, policy making, pre-application work and applications for EfW operations
- Ensure the Strategic Environmental Assessment (SEA) of the development plan explores the potential effects of EfW as appropriate
- Seek to secure 'sign up' from local communities, EfW operators and other stakeholders at pre-application consultation and other stages of the planning process
- Identify proportionate levels of information for pre-application discussions and applications on EfW
- Ensure planning conditions and agreements for EfW operations are reasonable and proportionate

### **Opportunities within Planning Processes for Planning Authorities:**

<b>Stage in Planning Process</b>	<b>Actions for Energy from Waste</b>
Monitoring and Evidence Base and Main Issues Report	<ul style="list-style-type: none"> <li>• Secure data on waste streams, numbers and location of operational and consented energy from waste schemes in area, from Scottish Environment Protection Agency (SEPA)</li> <li>• Identify where there might be new opportunities to respond to Scotland's identified need for EfW facilities.</li> <li>• For Strategic Development Planning Authorities (SDPAs), consider if there is merit in shared strategic waste infrastructure across neighbouring Local Development Plan (LDP) authorities. Involve key consultees for EfW (including SEPA Transport Scotland and Scottish Natural Heritage (SNH)) ideally at draft MIR stage</li> <li>• Consider if existing spatial frameworks and EfW policies are fit for purpose, if a significant shift in spatial planning and policy is required, if a number of sites are required, if there are a range of possible alternatives and if EfW merits consideration as a main issue in the MIR.</li> </ul>

Spatial Planning	<ul style="list-style-type: none"> <li>• Consider if additional data is required to inform spatial plans (above and beyond the SEPA data mentioned above), such as:- <ul style="list-style-type: none"> <li>○ Current heat demand and hotspots in the area (e.g. areas of high heat density, off gas grid, key heat loads such as hospitals, schools and industry);</li> <li>○ Infrastructure constraints (e.g. transport, grid)</li> </ul> </li> <li>• Ensure that the above spatial data is used to progressively build a GIS map which identifies where there is the greatest potential to use renewable heat</li> <li>• Assess whether spatial plans provide sufficient clarity to suggest locations where the technologies can operate the most efficiently with the greatest benefits within environmental constraints</li> <li>• For SDPAs, consult constituent LDP authorities on strategic choices and cross boundary opportunities</li> <li>• Ensure full consultations are carried out with key consultees and local stakeholders on spatial plans for EfW, ensuring that there are no misconceptions on the impact of EfW, in terms of environmental health</li> </ul>
Drafting Development Plan Policy	<ul style="list-style-type: none"> <li>• Ensure that EfW policies: <ul style="list-style-type: none"> <li>○ Cover potential different types and scales of EfW operations, control design to manage impacts and to promote efficiency</li> <li>○ Recognise climate change and environmental benefits of reducing landfill</li> <li>○ Recognise the potential economic benefits of decentralised electricity and heat supply in terms of jobs and countering fuel poverty</li> <li>○ Contribute to a response to all waste arising annually in Scotland</li> <li>○ Consider cumulative impacts and decommissioning issues.</li> </ul> </li> <li>• For Strategic Development Plan Authorities, ensure strategic guidance is provided on opportunities within the constituent areas</li> <li>• Consult key consultees for EfW at an early stage of drafting policies</li> </ul>
Development Plans Action Programmes	<ul style="list-style-type: none"> <li>• Consider selecting an action officer within the planning authority to take forward development plan objectives for waste, including EfW. Typically this might involve setting up a liaison group with key consultees and waste operators to prepare development briefs for sites, prepare local design guidance or to scope out ways to overcome local problems.</li> <li>•</li> </ul>
SEA of Spatial Guidance and Development Plan Policy	<ul style="list-style-type: none"> <li>• Ensure the SEA of the development plan explores the potential effects of EfW as appropriate.</li> </ul>
Securing Sufficient Information to Determine Planning Applications	<ul style="list-style-type: none"> <li>• Establish if supporting guidance adequately details typical information needs for pre-application discussion and planning applications.</li> <li>• EfW operators should be encouraged to provide information</li> </ul>

	<p>indicating the source of waste materials over the life of the project.</p> <ul style="list-style-type: none"> <li>• Ensure that information needs are proportionate</li> <li>• Ensure that design statements are submitted for national and major EfW proposals over 20MW and take into account information contained on the SG webpage</li> </ul>
Pre-Application Stage	<ul style="list-style-type: none"> <li>• Ensure that key consultees for EfW proposals are given the opportunity to be involved in pre-application meetings and site visits</li> <li>• Ensure that early advice is given on whether schemes require an EIA</li> </ul>
Determining Planning Applications	<ul style="list-style-type: none"> <li>• Ensure that key consultees are involved in meetings and site visits on the application to minimise impacts and to help ensure that constraints are overcome where possible.</li> <li>• Technical information and guidance on typical issues associated with EfW are provided below which planning authorities should draw upon in determining applications.</li> </ul>

## Technical information for EfW

*Key Driver for Encouraging EfW Facilities:* Article 16 of the European Directive, [The Revised Waste Framework Directive 2008/98/EC](#), establishes the principles of self-sufficiency and proximity and requires member states to establish an integrated and adequate network of waste recovery and disposal installations. The Scottish Government considers that these principles will be met when there is enough waste infrastructure to deal with all waste arising annually in Scotland. These drivers, along with the Scottish Government targets for reducing emissions, producing electricity and heat from renewable sources, directly place an obligation on planning authorities to consider suitable sites and to develop supportive planning policy for EfW facilities. EfW facilities allow the proximity principle to be satisfied and are capable of producing renewable heat and electricity.

*Scale of EfW Sector:* The ZWP introduced a 25% cap on EfW covering all waste streams. However, it is also likely that the 25% cap on municipal waste will be replaced with a package of measures, including landfill bans, mandatory segregation of certain waste types, a limit on the biodegradable content of waste that can be landfilled, and restrictions on the materials that may be input to incinerators. The 25% cap will be replaced once the legislation controlling the inputs to EfW combustion plants has come into force, anticipated in 2011 and this may prompt a higher level of developer interest in EfW developments.

*Process:* EfW plants are only suitable for certain waste streams. If there is a supply of sorted biodegradable waste, [anaerobic digestion](#) would be a more suitable technique than EfW. However, if there is unsorted municipal waste, a hybrid treatment known as mechanical/biological treatment may be used to produce Refuse Derived Fuel (RDF). EfW involves the controlled combustion (or incineration) of waste, including energy recovery, of a range of waste streams including RDF, Municipal Waste and Commercial & Industrial Waste. Incineration may be combined with a range of other waste treatment technologies. EfW processes have the benefit of using waste substances, which are otherwise difficult to dispose of in an environmentally acceptable manner, to produce heat which can be recovered to generate electricity, heat, steam or hot water. EfW can also be used to produce hydrogen for use in [energy storage](#), which has multiple benefits.

*Preferred Locations:* Preferred locations for EfW operators tend to relate to proximity to waste streams, major end users (eg. buildings with high heat demand such as hospitals), rail links or road infrastructure.

*Physical Infrastructure for EfW:* This varies relative to the scale and type of facility and the nature of waste handled. A typical small scale plant treating up to 90,000 tonnes per annum (tpa) might require a site area less than 2 hectares, with a max building height of 25m. At any scale and particularly above 300,000 tpa, plants must support sustainable waste management and not impede recycling and waste prevention. Generally, though, as the technology becomes more efficient, site requirements and buildings are becoming more compact.

## **Typical Planning Considerations in Determining Planning Applications for EfW**

*Design and Visual Impact Considerations:* Planning authorities will typically need to consider the visual impact of buildings, waste handling areas and particularly the chimney. Some EfW plants may be integral to other uses and may be small and easily incorporated whilst others such as EfW heat and power generation plants may have a significant presence within the locality, where careful attention to layout, building design, boundary treatment and lighting will be needed.

*Amenity Considerations:* Planning authorities, in consultation with SEPA, the Transport Authority and Environmental Health, will need to consider amenity factors such as provision for storage of waste, odour and air quality issues, noise from engines, boilers and handling equipment, and the traffic involved in transporting waste/by-products to and from the site.

*Defence Considerations:* Tall structures, such as the chimney associated with EfW plants, have the potential to be a physical safeguarding issue to the Ministry of Defence (MOD) as these structures could penetrate the safeguarded surfaces associated with defence radars / technical equipment and aerodromes. Planning authorities should refer to statutory safeguarded maps and consult MOD.

*Pollution Prevention:* SEPA will need to be consulted at an early stage regarding pollution prevention, in relation to thermal treatment and in order to prevent potential run-off which could impact on local ecology or water courses. SEPA's requirements will have to be proportionate but may have physical planning implications for the design of the EfW facility

## **Useful References:**

The [SEPA website](#) contains a range of data, information and guidance on waste flows, waste management, waste infrastructure and capacity, and waste treatment. This includes:-

- [Zero Waste Plan](#) (as amended)
- [Strategic Waste Management Review](#) Report
- [National Capacity Reports](#)
- [SEPA Waste Infrastructure Maps](#):
- [SEPA Thermal Treatment Guidelines](#) 2009

Paper on "Scotland's Zero Waste Plan 2010 Planning Implications" Pollock and Newlands, RPS Planning and Development (unavailable as a web resource)