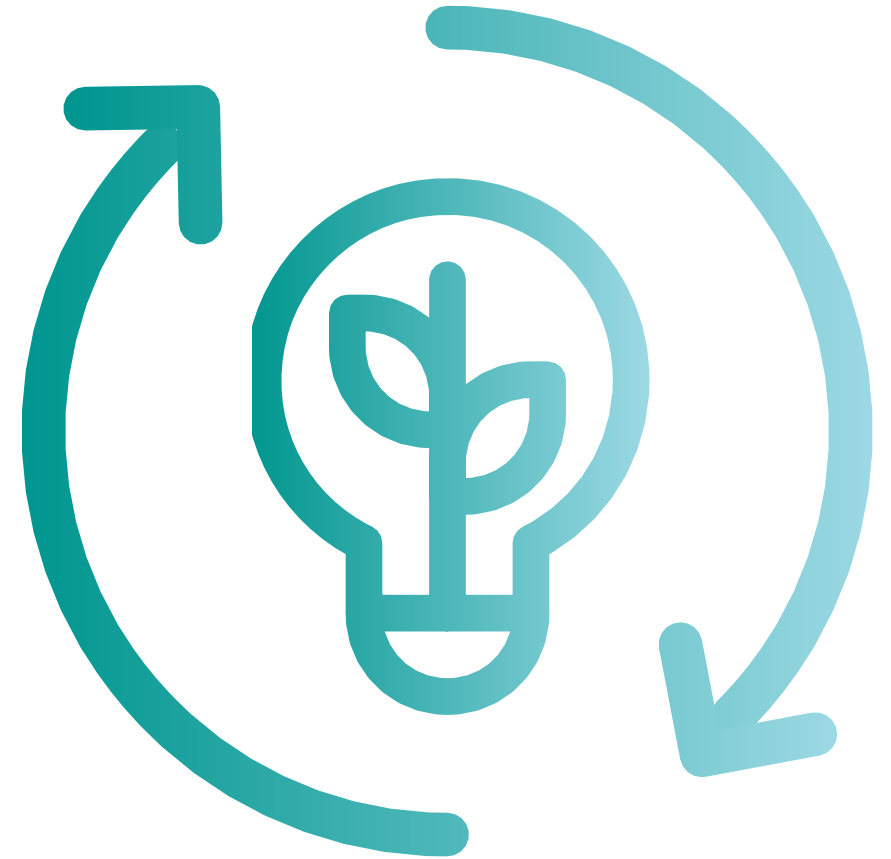


Marsh Specialty

Waste to energy

The changing construction insurance market and how to get the best out of it





Introduction

A TOUGHENING MARKET

The waste to energy (WtE) sector has seen a number of large losses in recent years. Many projects suffered lengthy construction delays:

This has occurred against a backdrop of tightening market conditions that has stabilised in recent years but is still constrained. These factors combined to reduce insurer appetite and capacity for WtE projects significantly. Insurer selection in the construction phase is key in securing a long-term relationship and transitioning smoothly to the operational phase.

INSURERS' TOP THREE QUESTIONS

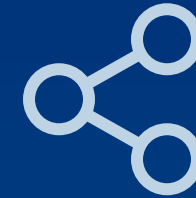
Each project presented to insurers is subject to increased underwriter scrutiny and it is important that key projects risks are identified and addressed. The three fundamental issues for insurers are:

- 1 Has the EPC contractor delivered this type of plant successfully before?
- 2 Is the process/technology proven, and is the key equipment from reputable suppliers?
- 3 Is there a robust proposed fire strategy and fire suppression and detection system?

Key project risks

In order to receive the most favourable terms, specific risk issues need to be understood, assessed, and, where necessary, articulated to insurers. These risk issues include, but are not limited to, the following:

Risk issue	Comments
Technology and design	Moving grate incineration is the most commonly used WtE technology worldwide for municipal solid waste. However, if parts of the treatment technology or process are unproven or prototypical within the UK, the insurance market will restrict the cover available or even decline to participate in the risk during construction and/or operation. Full details of the technological solution will be required. Project lenders expect defective design cover and the highest level of cover during the defects liability period.
Process guarantee	Several large claims in this area means that project insurers no longer provide insurance cover to contractors for any process guarantee risk. To ensure the risks and liabilities are understood fully, start discussions with your contractor early in the process.
Proven contractors	Many WtE contractors have suffered lengthy delays during construction, principally due to the technology deployed or the lack of experience of the contractors used. It is critical to demonstrate that all key subcontractors have successful experience in delivering similar projects.
Defects liability period	Lengthy defects liability periods are a feature of WtE projects. Typically, the construction insurance market limits the cover provided during defects liability periods to 24 months. Careful consideration is required for allocating responsibilities during the time beyond the insured maintenance period
Fire strategy	High profile fires involving large stockpiles of stored waste material awaiting processing or recycling will need to be considered, as this risk will be a consideration for the insurance market. Project insurers will seek clarification that the agreed fire strategy complies with guidance published by the NFPA, FM and WISH.



Insurer selection in the construction phase is key in transitioning smoothly to the operational phase.



Risk issue

Comments

Fire suppression and detection systems

Fire and explosion claims for commercial property insurers cost an estimated £945 million in 2017, so protections have to be best in class. A bespoke fire detection and suppression system is a fundamental part of any risk management strategy, especially in the tipping hall and bunker. It is important for fixed fire protection systems to be based upon a system (or equipment) which is:

- Listed, approved, or certified for its intended purpose by a recognised independent testing laboratory (for example LPCB, NFPA, FM Approvals, DFL).
- Designed, installed, and maintained in accordance with acceptable published codes or standards addressing the intended purpose.
- Designed, installed, and maintained in accordance with manufacturers' literature.

Any variation is likely to lead to difficulties obtaining insurer acceptance of the system.

Testing and commissioning

WtE technologies undergo longer and more extensive periods for testing and commissioning prior to handover. Such periods often include start-up or hot commissioning and it is important to ensure the insurances cover this exposure. Careful consideration must be given to the interface of insurances in between handover and full acceptance.

Loss of revenue

In the event of the facility being unavailable, specific consideration must be given to the basis of insurance cover (as often revenue via gate fees continues to be received), and include reference to contingency planning arrangements that might be put in place. In a tightening market, insurers prefer a fixed-costs/profit basis. Certain insurers cannot underwrite projects where the delay in start-up sum insured exceeds 50% of the contract value.

Commercial and industrial waste streams

Operational insurers will be keen to understand the acceptance criteria, nature, and screening operations for commercial and industrial waste streams. Full details regarding the pre-processing/sorting at any other premises operated by the fuel supplier will provide additional comfort to insurers.

Environmental impairment or pollution

Depending on the site conditions, a bespoke environmental insurance and risk solution might be required, covering the activities of the on-site contractors and the exacerbation of any historic site pollution. Also requiring consideration and management is the risk of nuisance claims arising from fumes or odours (noxious, toxic, or otherwise), injunctions during remediation, and costs of remediation.



Ensure your broker can demonstrate experience in closing multiple WtE projects in tough markets.



Risk issue**Comments****Warranties**

Both construction and operational insurers expect to maintain subrogation rights against original equipment manufacturers (OEMs), in respect of the warranties and guarantees provided for critical plant and equipment used in the facility.

Offtake agreements

Sponsors need to carefully consider the commitments made under the offtake agreement, and the indemnities provided in the event of failure to supply.

Grid connection

Grid sub-stations represent a critical export dependency for this type of project. Insurance should be tailored to protect the project against any delay exposure arising from loss/damage to this location.



Sponsors need to carefully consider the commitments made under the offtake agreement.





The future of waste to energy

The transition towards waste to fuel.

The waste to energy (WtE) sector is going through accelerated stages of innovation and diversification. Increasing numbers of projects are looking further than the more established methods of incineration, and towards advanced gasification processes, thus converting waste into high value fuels and gases. This sub-sector is in its infancy but Marsh has received numerous enquiries about such facilities.

In a traditional WtE plant, heat is produced by burning waste which ultimately drives a turbine to generate electricity.

In a waste to fuel plant, the waste undergoes chemical conversion at high temperatures, and is combined with oxygen and/or steam to produce synthesised gas. The syngas produced is then cleaned of contaminants which can then be used or further refined to make numerous useful products/fuels.

RISKS RELATED TO WASTE TO FUEL PLANTS

Risks are similar to those in traditional WtE plants in that they present themselves around the use of prototypical or unproven technology. Although most of the individual technology components may be proven at commercial scale, the particular configuration required for waste to fuel has often not been done before. This is where a number of engineering issues arise particularly with corrosion, erosion and potential for tar build up.

The risks are insurable, depending on the type of cover required and how much the plant owner is willing to pay. Insurers will look to independently verified engineer reports in order to determine the cover they are willing to offer, but for any equipment that is new or novel, restricted cover should be expected.

Battery energy storage systems (BESS)

Marsh is also seeing a move towards the installation of BESS, alongside WtE plants, in order to store the electricity generated by plants and supply to the grid when required and at peak times.

Risks related to BESS

The sharp rise in demand in recent years has brought more attention to issues, some of which have led to costly insurance claims, particularly battery fires and thermal runaway, contractor errors, and machinery breakdown events.

High profile fire incidents in the BESS sector have started to affect insurers' appetite to provide cover. The insurance market for BESS has seen a reduced capacity as a consequence of some key insurers exiting the insurance market or having a very narrow underwriting footprint. This has ultimately led to increased premiums, higher policy excesses and sometimes difficulties with obtaining 100% cover for larger projects. The key underwriting factor is separation – the spacing of the units.

As always, early engagement with a construction insurance broker along with the submission of detailed risk mitigation plans is the key to obtaining optimum coverage for such projects.

How to obtain the optimum insurance terms

It is crucial to differentiate your WtE plant. Consider taking the following actions:

- Provide detailed credentials outlining where the EPC contractor has successfully delivered this type of plant before.
- Provide technical information demonstrating that the process/technology is proven, and that key equipment has been sourced from reputable suppliers.
- Demonstrate a robust fire strategy, with high quality fire suppression and detection systems.
- Outline your approach to quality assurance – through a competent Owner’s Engineer – flagging the client’s other plants in operation.

In addition, you should ensure your broker can demonstrate experience in closing multiple WtE projects in tough markets, and understands how to generate optimum appetite from insurers.

To increase the chances of the best outcome for your project, an experienced specialist broker will tailor and agree with you the correct strategy for your project. Additionally, they will articulate your approach on the key risk issues and prepare high-quality market submissions addressing the key insurers’ concerns.

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