

dealing with
waste today
for a **better**
tomorrow



who are MVV Environment?

dealing with waste today for a better tomorrow

MVV Environment is part of the MVV Energie group of companies. We provide a sustainable alternative to landfill through energy recovery for publicly and privately-owned waste disposal companies.

The UK requires more renewable energy power stations as old, fossil fuel facilities are being decommissioned. Too much waste is still being sent to landfill or exported overseas, when it could better be used as a fuel to generate electricity and heat here in the UK.

The UK business retains the overall group ethos of 'belonging' to the communities we serve, whilst benefiting from over 50 years' experience gained by our German sister companies. We provide solutions for waste reduction, energy generation and recycling.

Currently, some of the residual waste from the east of England region is exported to continental Europe where it is used as fuel in Energy from Waste (EfW) facilities.

MVV look to bring their expertise to the area and create a new business for Wisbech to avoid transporting the waste overseas and to generate renewable energy for local businesses.



In the UK, MVV currently consists of 5 separate companies:




1 MVV Environment Baldovie
Diverting 110,000 tonnes per annum of residual waste from landfill for Dundee City and Angus councils



2 MVV Environment Services
The UK electricity trading subsidiary of MVV

3 MVV Environment
The UK development company and core business support functions



4 MVV Environment Ridham
Generating energy from 175,000 tonnes per annum of waste wood that would otherwise be landfilled or exported for energy generation abroad



5 MVV Environment Devonport
Diverting 200,000 tonnes per annum of residual waste from landfill for the South West Devon Waste Partnership as well as 50,000 tonnes per annum of residual waste for private waste disposal companies



Find out more about MVV by visiting our website

what is energy from waste?

Energy from Waste (or EfW) is the generation of partly renewable electricity and/or usable heat from residual waste that would otherwise go to landfill in the UK, or be exported to other countries as 'Refuse Derived Fuel.'

Like any power plant, the heat from the burning waste is used to boil water and generate steam which turns a turbine to drive a generator. Efficiencies can be increased if some of the steam can be used for heating, for example for industrial processes such as cooking food.

how does it work



EfW facilities safely and effectively convert residual waste into clean, renewable baseload energy and useful by-products, while sustainably powering communities and protecting the environment.

Combustion

Waste burns safely at very high temperatures.

High pressure steam

Heat from the waste fire heats water in the boiler and creates high pressure steam.

Electricity and heat production

Superheated steam turns a turbine to generate electricity and some steam can be extracted for heating.

Metals and ash recover

Ash and metal are recovered from the process to be recycled.

Air quality control

Hot gases from the boiler are treated and filtered to meet strict air quality standards.

why EfW over landfill?

In the UK now, there is over 15 million* tonnes of residual waste per year that is still going to landfill or being shipped abroad for disposal. This is not sustainable and we should be treating this waste as a resource.

As an alternative to landfill, thermal treatment and efficient recovery of energy offers a number of advantages including environmental and financial benefits.

Landfill sites produce methane, which is 25 times worse than CO₂ as a greenhouse gas and exporting waste requires it to be shredded, baled and transported far greater distances than treating it locally. Shredding, baling and transport all carry an additional carbon footprint, which can be avoided with a local solution.

*Tolvik Consulting, February 2019

EfW does not compete with recycling

It is worth noting that MVV do not target municipal recyclable waste and as such our facilities have no direct impact on municipal recycling rates in the country. EfW competes with landfill, not recycling.

MVV supports the transition towards a circular economy. We acknowledge that within a circular economy there will still be materials that have reached the 'end of life' point and are only suitable for energy recovery.

OVER 15 MILLION* TONNES OF RESIDUAL WASTE PER YEAR IS STILL GOING TO LANDFILL OR BEING TRANSPORTED OVERSEAS



EfW REDUCES WASTE GOING INTO LANDFILL

COMPARED TO LANDFILL EfW REDUCES THE CARBON FOOTPRINT WHILST CREATING RENEWABLE ENERGY



*Tolvik Consulting, February 2019

EfW reduces landfill and contributes to renewable energy generation, reducing the UK's reliance on fossil fuels and cutting methane (CH₄) emissions

DECOMPOSITION of organic materials in LANDFILLS ACCOUNTS for around **30%** of the UK's emissions of METHANE

*University of Southampton, Dr Tristan Rees-White

NON-RENEWABLE SOURCES ACCOUNT FOR MORE THAN **60%** of the UK's electricity

*UK Government - UK electricity generation trade and consumption, July to September 2019

EfW reduces landfill and the UK's reliance on fossil fuels

energy from waste process

EfW is a way to recover valuable resources and a vital part of a sustainable waste management chain. This diagram takes you step-by-step through the EfW process.

1 Tipping hall

Waste is delivered to the facility in lorries. They enter the enclosed tipping hall and reverse up to the bunker edge. Air is sucked through the tipping hall and bunker and into the furnace so that odours do not escape.

2 Waste bunker

The waste is stored in the bunker waiting to be loaded into the furnace by crane. Around 10 days worth of waste can be stored here. Air is sucked through the tipping hall and bunker and used in the furnace so that odours do not escape.

3 Furnace

The waste is burnt under very carefully controlled conditions to ensure safe and complete combustion, and maximise the amount of heat recovered as useful energy. The walls of the furnace are made up of pipes within which water is heated and turned into steam in the boiler drum.

4 Bottom ash

Those bits of the waste that don't burn, e.g. metals and bricks, are part of the ash that falls off the furnace grate. This falls into water to cool it and is then put into a separate bunker before being taken away for recycling.

5 Boiler

The very hot gases from the furnace are passed through the boiler. The steam from the boiler drum goes through tubes in the boiler to superheat it, ready to be sent to the turbine.

6 Air pollution control system

Having given up most of their energy to create useful heat in the form of steam, the flue gases have to be cleaned before they enter the chimney. The flue gases are injected with activated carbon and lime which react with pollutants such as acidic gases. The filters at the end of the system ensure that the residues, together with dust from the furnace, are captured so that the flue gas entering the chimney is well within the limits set by law. The system is controlled "real time".

7 Chimney

The chimney height will be calculated to ensure that the limited emissions allowed under law are dispersed safely.

8 Turbine hall

Superheated steam from the boiler is sent to the turbine where it is used to drive an alternator, generating useful electrical energy. Steam can also be taken from the turbine at pressures and temperatures suitable for use by local industry. This reduces their dependency on fossil fuels and improves the overall efficiency of the facility.

9 Air cooled condenser

The condenser takes the exhaust steam from the turbine. Very quiet fans send cool air up through the condenser tubes. Warm water goes back to the boiler, where it is used to make steam again.

10 Energy distribution

The energy in the waste has finally been turned into useful electricity and steam for use by local industry. Any excess electricity is sent to the grid locally, displacing fossil fuels. Steam will be sent to local industry through an over ground pipeline.

We aim to produce **30** Megawatts of **usable steam** (heat) energy

We aim to produce **53** Megawatts of **of electricity** enough to power **74,000** homes

EfW only accounts for **0.05%** of total particulate emissions in the UK ANNUALLY*

*Environment Agency and National Atmospheric Emissions Inventory

Bottom ash may be used as an aggregate, replacing the need to quarry for virgin aggregate, for example in road construction

features of the Medworth EfW CHP facility proposal

UK-based company MVV Environment plans to develop a new Energy from Waste (EfW) Combined Heat and Power (CHP) facility generating electricity and steam on land at Alorges Way, Wisbech.

If successful, a new company, to be called 'MVV Environment Medworth', will be looking to employ local people to help build, operate and maintain the facility.

The proposed EfW CHP facility will divert over half a million tonnes of residual waste from landfill every year, generating over 50 megawatts of electricity and offering the opportunity to supply steam to local factories.

The development includes not just the EfW facility but also the connections to the electricity grid and industrial heat users, and some modifications to the road network.

The total investment will be over £300 million and it is anticipated that construction will take around three years, during this time employing up to 700 people.

We are committed to playing an active role in supporting and engaging our local communities and being a good neighbour. Please let us know any suggestions on how we can do this in and around Wisbech and about any local projects and/or groups that we could work with to support.



Find out more about the project by visiting our website

key elements of our proposal

A high efficiency EfW facility with the capability of handling residual waste, that is **waste left over after recycling** - turning it in to useful energy

INVESTMENT OF OVER £300 million is likely to attract further quality development in the area around the site via supply of sustainable electricity and heat

Supply electricity and heat to local industrial customers

The CHP Connection will generate up to...

53 MW of electricity enough to power 74,000 homes

30 MW of usable steam (heat) energy

Employment opportunities

700 JOBS DURING CONSTRUCTION

40 FULL TIME JOBS IN A RANGE OF SKILLED ROLES

The project will divert around **0.5 million** tonnes of residual waste per annum from landfill, depending on waste composition

Access Improvements including some modifications to the road network

where will it be and what will it look like?

View from Halfpenny Lane, Wisbech



Indicative photomontage of the proposed Medworth EfW CHP facility

ALLOCATION OF AN AREA FOR TEMPORARY CONSTRUCTION COMPOUND potentially including additional land for substation

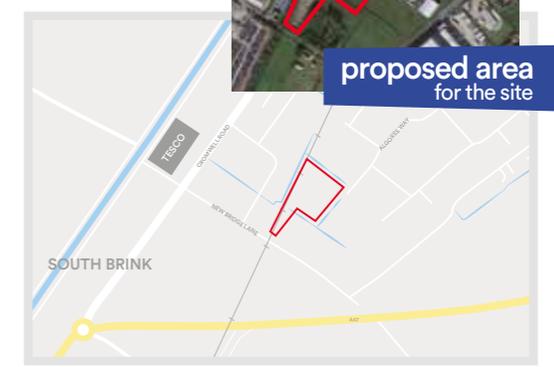
Export surplus electricity to the National Grid MVV will be seeking consent for a grid connection

The proposed site is in the Medworth ward of Fenland District Council. The facility fits into the industrial setting, on a site that is currently used as a waste transfer station. This industrial area in Wisbech offers opportunities to achieve high efficiencies with Combined Heat and Power (CHP).

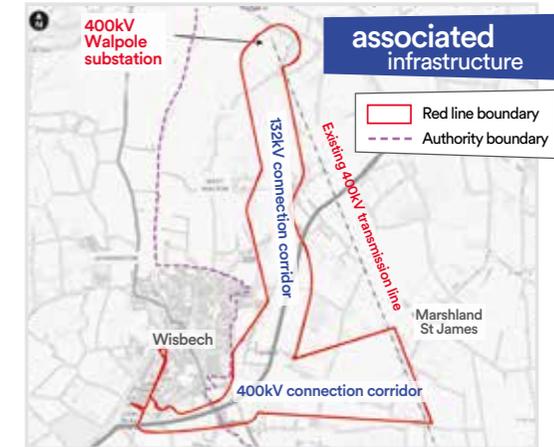
This means that some of the steam produced by burning residual waste could be used for heating or industrial processes, avoiding the use of fossil fuels.

Such steam supplies would also increase the efficiency of the proposed facility by increasing the amount of energy put to good use. We have already started talking to local companies about the opportunities to do this.

In these early stages of the proposal, some elements of the scheme's design may be influenced by the feedback provided via the consultation process. We do have some simple rendered drawings to share. These provide a basic indication of form and scale.



proposed area for the site



associated infrastructure

Red line boundary
Dashed line Authority boundary

where will the waste come from?

Waste companies will want to deal with waste as close to its source as possible, to control transport costs. If approved, waste for the Medworth EfW CHP facility will come from the east of England region. This will enable MVV to ensure that the facility provides a regional solution to a regional problem.

Only waste that complies with the environmental permit will be accepted. In the event that non-compliant waste is identified, it will be removed from site for safe disposal/treatment.

The project will divert around **0.5 million**

tonnes of residual waste per annum from landfill, depending on waste composition

what kinds of waste will you accept?

We would source non-hazardous household and business waste from the region which currently goes to landfill or for export. The exact wastes that can be accepted will be specified in an Environmental Permit issued by the Environment Agency based on European Waste Catalogue (EWC) codes.

will there be plastic in the waste?

There will be an element of plastic in the waste stream. This represents those types of plastic that cannot yet be easily recycled, as well as plastic that remains after businesses or householders have separated out their recyclable waste.

Plastics that have been collected for, and are suitable for recycling cannot be accepted by MVV under the standard conditions of an environmental permit.

Medworth EfW CHP facility aims to:

Recover useful, sustainable, energy from residual municipal waste



Divert around half a million tonnes of residual waste per annum from landfill, depending on waste composition



Generate over 50 MW of electricity



Generate up to 30 MW of usable steam heat



Supply electricity and heat to local industrial customers



Export surplus electricity to the National Grid



15M*
TONNES OF RESIDUAL WASTE GOES TO LANDFILL OR IS SHIPPED ABROAD EVERY YEAR



*Tolvik Consulting, February 2019

ON AVERAGE **OVER 3 MILLION** TONNES OF WASTE IS EXPORTED TO EUROPE EVERY YEAR

WE WON'T BE IMPORTING FROM OVERSEAS

NON-HAZARDOUS HOUSEHOLD AND BUSINESS WASTE



Waste capacity zones*

- Capacity gap
- Capacity balanced

*Suez, Mind the Gap 2017-2035, 2017

impact on the environment

Like all significant development proposals, an **Environmental Impact Assessment**, for both construction and operation of the facility **will be undertaken and reported by MVV** in a document called an **Environmental Statement**.

The Environmental Statement reports on a range of potential environmental impacts and if necessary outlines measures to mitigate these.

In preparing its 'Scoping Opinion' the Planning Inspectorate consulted prescribed organisations, including the Environment Agency, Highways Authorities and Public Health England to determine how and what environmental impacts MVV need to assess.

The scope of the Environmental Impact Assessment has been formally confirmed by the **Planning Inspectorate**.



Further information about the Scoping process is available online at: infrastructure.planninginspectorate.gov.uk/



and also on our dedicated web page: infrastructure.planninginspectorate.gov.uk/projects/eastern/medworth-energy-from-waste-combined-heat-and-power-facility/

We are discussing the content of the **Scoping Opinion** with various stakeholders to further inform the Environmental Impact Assessment.

Topics agreed by the Secretary of State will include:

- | | |
|-------------------------------|----------------------------|
| air quality & health | surface water & flood risk |
| traffic & transportation | ground conditions |
| landscape & visual | heritage |
| noise & vibration | socio-economics & land use |
| ecology & nature conservation | |



EfW and health

The most recent independent review of evidence shows no link between EfW emissions and adverse health impacts. This is upheld by Public Health England's position, that well run and regulated municipal waste incinerators do not pose a significant risk to public health, and this should reassure anyone living near an EfW facility

what is the impact on local air quality?

Thanks to state-of-the-art flue gas cleaning, our power facilities comply with the very strict UK regulations for clean air.

According to Public Health England, by comparison, industry and traffic account for about 40% of particulate emissions.

INDUSTRY AND TRAFFIC ACCOUNT FOR 40%* OF EMISSIONS IN THE UK ANNUALLY



*Health Protection Agency (now Public Health England)

is EfW a major source of dioxins?

No, this is not the case due to highly sophisticated flue gas cleaning systems.

In the past, EfW facilities were a significant source of dioxins, but following reductions in emission limits in 1995 and 2000 (that came in to effect more than 20 years ago), EfW now accounts for less than 1% of the overall dioxin emissions to the air in the UK. In fact, dioxin emissions from EfW in the UK have changed dramatically, with a 99.8% reduction in dioxin emissions per tonne of waste since 1990.

UK EfW facilities generate LESS THAN 0.05%* UK PARTICULATE EMISSIONS

*Environment Agency and National Atmospheric Emissions Inventory

Safety is of the utmost importance and the system is designed to ensure that emissions to air are controlled even in the event of equipment failure.

Sophisticated monitoring techniques throughout the process, from combustion through to filtration of the flue gases, ensure that the facility operates within the strict limits of the Environmental Permit.

what safety measures are in place to ensure air quality protection, even when there's an equipment failure?

who monitors waste-to-energy facilities in the UK?

The Environment Agency (EA) regulate all waste sites and act as an independent body which monitors a facility's outputs.

If limits are breached, the EA has the power to shut down the plant and impose fines accordingly.

MVV monitors the majority of emissions from the facility continuously. Other trace emissions must be monitored by extractive sampling as they are present in such tiny amounts; this is carried out at regular intervals as required by the Environmental Permit. The emissions data is logged and stored and reported to the Environment Agency weekly.

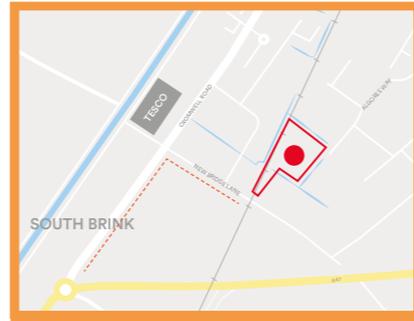


managing the impact of transport and traffic

MVV will carefully look at local road networks and available waste in the area in order to develop a transport plan that will minimise impact on the existing infrastructure.

A transport assessment will establish the existing levels of traffic, and the level of traffic when the facility is at peak construction and peak operation, to develop an operational traffic and transport plan to mitigate traffic impact.

The site is currently accessed from Algores Way, however we are investigating the creation of an access route off New Bridge Lane to reduce the need for vehicles to travel through Wisbech town centre.



We are also investigating the impact of the facility on other transport projects in the local area, including those within the Wisbech Access Strategy. We want to ensure the construction and operation of the facility does not impact the delivery of these.

We shall be discussing the highways impacts of the project with the local highway authorities, Highways England, and Peterborough and Cambridgeshire Combined Authority to agree the approach to the transport assessment and obtain local knowledge of the highways network such as existing traffic flows.

The transport and traffic assessment will consider a range of impacts including delays, amenity and safety on a number of groups, including:



People at home
People at work



Sensitive groups including children, elderly and disabled



Sensitive locations such as hospitals, churches, schools and historic buildings



Pedestrians
Cyclists



Open spaces, recreational areas and shopping areas



Sites of ecological and nature conservation value



Sites of tourist/visitor attractions

where we are in the consultation process

MVV invite you to take part in this first consultation opportunity. Whilst this is not required by law, we encourage comments and questions from the community and local businesses. We want to understand the issues that are important to you, and we hope that as many people as possible will come along to find out more about the project, as well as discuss any concerns they may have.

what happens next?

This is the first of two public consultation opportunities starting on 16th March 2020 and runs until 4th May 2020. This is a non-statutory consultation, with exhibition events scheduled to start on 30th March. MVV staff will be available to answer your questions and explain what the project will entail, as well as how new employment opportunities will be created.

SPRING 2020 CONSULTATION Non statutory consultation:

- Consult on the strategic issues and options for the project

Objective: to obtain feedback on the core scheme design options and the proposed approach to issues

- Review and consideration of feedback
- Review proposal

SUMMER 2020 CONSULTATION Statutory consultation:

- Consult on the proposed application in accordance with the Planning Act 2008

Objective: Obtain feedback on the proposed application

- Review and consideration of feedback
- Development Consent Order Submission

PROJECT DESIGN PROCESS

ON-GOING TECHNICAL ENGAGEMENT



get in touch

MVV recognises the importance of local people and knowledge to any new project and aims to develop a two-way dialogue with as wide a range of stakeholders as possible; we want to understand the issues that are important to you.

consultation feedback



If you have any further thoughts on the project which we should consider as we develop our proposal, please let us know. Our preferred method for collecting your comments is via our dedicated project website.

www.mvv-medworthchp.co.uk/



Other ways you can tell us what you think:



Feedback can also be provided by completing the consultation feedback form by hand and using the freepost address, "Freepost MVV".

Alternatively you can submit your consultation feedback form at one of our events. Assistance with completing feedback forms will be provided at events for those who request it.



Other forms of correspondence can also be sent using the freepost address.