

Medworth Energy from Waste Combined Heat and Power Facility

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Outline Flood Emergency Management Plan

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1. Introduction

1.1 Background

1.1.1 Medworth CHP Limited (the Applicant) is applying to the Secretary of State (SoS) for a Development Consent Order (DCO) to construct operate and maintain an Energy from Waste (EfW) Combined Heat and Power (CHP) Facility on the industrial estate, Algores Way, Wisbech, Cambridgeshire. Together with associated Grid Connection, CHP Connection, Access Improvements, Water Connections, and Temporary Construction Compound (TCC), these works are the Proposed Development.

1.1.2 The Proposed Development would recover useful energy in the form of electricity and steam from over half a million tonnes of non-recyclable (residual), non-hazardous municipal, commercial and industrial waste each year. The Proposed Development has a generating capacity of over 50 megawatts and the electricity would be exported to the grid. The Proposed Development would also have the capability to export steam and electricity to users on the surrounding industrial estate. Further information is provided in **Chapter 3: Description of the Proposed Development (Volume 6.2)**.

1.1.3 The Proposed Development is a Nationally Significant Infrastructure Project (NSIP) under Part 3 Section 14 of the Planning Act 2008 (2008 Act) by virtue of the fact that the generating station is located in England and has a generating capacity of over 50 megawatts (section 15(2) of the 2008 Act). It, therefore, requires an application for a DCO to be submitted to the Planning Inspectorate (PINS) under the 2008 Act. PINS will examine the application for the Proposed Development and make a recommendation to the SoS for Business, Energy and Industrial Strategy (BEIS) to grant or refuse consent. On receipt of the report and recommendation from PINS, the SoS will then make the final decision on whether to grant the Medworth EfW CHP Facility DCO.

1.2 The Applicant and the project team

1.2.1 The Applicant is a wholly owned subsidiary of MVV Environment Limited (MVV). MVV is part of the MVV Energie AG group of companies. MVV Energie AG is one of Germany's leading energy companies, employing approx. 6,500 people with assets of around €5 billion and annual sales of around €4.1 billion. The Proposed Development represents an investment of approximately £450m.

1.2.2 The company has over 50-years' experience in constructing, operating, and maintaining EfW CHP facilities in Germany and the UK. MVV Energie's portfolio includes a 700,000 tonnes per annum residual EfW CHP facility in Mannheim, Germany.

1.2.3 MVV Energie has a growth strategy to be carbon neutral by 2040 and thereafter carbon negative, i.e., climate positive. Specifically, MVV Energie intends to:



- reduce its direct carbon dioxide (CO₂) emissions by over 80% by 2030 compared to 2018;
- reduce its indirect CO₂ emissions by 82% compared to 2018;
- be climate neutral by 2040; and
- be climate positive from 2040.

1.2.4 MVV's UK business retains the overall group ethos of 'belonging' to the communities it serves whilst benefitting from over 50 years' experience gained by its German sister companies.

1.2.5 MVV's largest project in the UK is the Devonport EfW CHP Facility in Plymouth. Since 2015, this modern and efficient facility has been using around 265,000 tonnes of municipal, commercial and industrial residual waste per year to generate electricity and heat, notably for Her Majesty's Naval Base Devonport in Plymouth, and exporting electricity to the grid.

1.2.6 In Dundee, MVV has taken over the existing Baldovie EfW Facility and has developed a new, modern facility alongside the existing facility. Operating from 2021, it uses up to 220,000 tonnes of municipal, commercial and industrial waste each year as fuel for the generation of usable energy.

1.2.7 Biomass is another key focus of MVV's activities in the UK market. The biomass power plant at Ridham Dock, Kent, uses up to 195,000 tonnes of waste and non-recyclable wood per year to generate green electricity and is capable of exporting heat.

1.2.8 To prepare the ES for the Proposed Development, the Applicant has engaged Wood Group UK Limited (Wood). Wood is registered with the Institute of Environmental Management and Assessment (IEMA)'s Environmental Impact Assessment (EIA) Quality Mark scheme. The scheme allows organisations that lead the co-ordination of EIAs in the UK to make a commitment to excellence in their EIA activities and have this commitment independently reviewed.

1.3 The Proposed Development

1.3.1 The Proposed Development comprises the following key elements:

- The EfW CHP Facility;
- CHP Connection;
- Temporary Construction Compound (TCC);
- Access Improvements;
- Water Connections; and
- Grid Connection.

1.3.2 A summary description of each Proposed Development element is provided below. A more detailed description is provided in **ES Chapter 3: Description of the Proposed Development (Volume 6.2)** of the ES. A list of terms and abbreviations



can be found in **Chapter 1 Introduction, Appendix 1F Terms and Abbreviations (Volume 6.4)**.

- **EfW CHP Facility Site:** A site of approximately 5.3ha located south-west of Wisbech, located within the administrative areas of Fenland District Council and Cambridgeshire County Council. The main buildings of the EfW CHP Facility would be located in the area to the north of the Hundred of Wisbech Internal Drainage Board (HWIDB) drain bisecting the site and would house many development elements including the tipping hall, waste bunkers, boiler house, turbine hall, air cooled condenser, air pollution control building, chimneys and administration building. The gatehouse, weighbridges, 132kV switching compound and laydown maintenance area would be located in the southern section of the EfW CHP Facility Site.
- **CHP Connection:** The EfW CHP Facility would be designed to allow the export of steam and electricity from the facility to surrounding business users via dedicated pipelines and private wire cables located along the disused March to Wisbech railway. The pipeline and cables would be located on a raised, steel structure.
- **TCC:** Located adjacent to the EfW CHP Facility Site, the compound would be used to support the construction of the Proposed Development. The compound would be in place for the duration of construction.
- **Access Improvements:** includes access improvements on New Bridge Lane (road widening and site access) and Algores Way (relocation of site access 20m to the south).
- **Water Connections:** A new water main connecting the EfW CHP Facility into the local network will run underground from the EfW CHP Facility Site along New Bridge Lane before crossing underneath the A47 (open cut trenching or horizontal directional drilling (HDD)) to join an existing Anglian Water main. An additional foul sewer connection is required to an existing pumping station operated by Anglian Water located to the northeast of the Algores Way site entrance and into the EfW CHP Facility Site.
- **Grid Connection:** This comprises a 132kV electrical connection using underground cables. The Grid Connection route begins at the 132kV switching compound in the EfW CHP Facility Site and runs underneath New Bridge Lane, before heading north within the verge of the A47 to the Walsoken Substation on Broadend Road. From this point the cable would be connected underground to the Walsoken DNO Substation.

1.4 Purpose of this document

- 1.4.1 In accordance with the National Planning Policy Framework (NPPF, 2019), Paragraph 164 and to accompany the Environmental Statement (ES) **Chapter 12: Hydrology (Volume 6.1)**, a site-specific **Flood Risk Assessment (FRA) Appendix 12A (Volume 6.4)** was prepared for the Proposed Development. The FRA identifies measures to manage flood risk and includes the preparation of a Flood Emergency Management Plan (FEMP).



1.4.2 This Outline FEMP is submitted with the Development Consent Order and will be finalised prior to the commencement of commissioning of the EfW CHP Facility.

1.4.3 The Outline FEMP has been produced to provide the Applicant with:

- An overview of flood risk at the EfW CHP Facility Site;
- Notifications of flood and severe weather warnings;
- A procedure to following in the event of flooding, including a reoccupation procedure;
- A training and awareness plan to keep staff informed of the plan; and
- Information on document control.



2. Overview of Flood Risk at the EfW CHP Facility Site

2.1 Summary

2.1.1 The FRA considered all potential sources of flood risk at the Proposed Development Site. Tidal flooding from the River Nene (which is located approximately 0.6km to the west of the EfW CHP Facility) represents the greatest potential flood risk posed to the Proposed Development. This is associated with large swathes of the Proposed Development, as it is located in Flood Zone 3a, including the entirety of the EfW CHP Facility Site.

2.1.2 Detailed tidal flooding information provided by the Environment Agency (EA) indicates that the Proposed Development would remain dry during the design flood event (0.5% Annual Exceedance Probability (AEP) plus climate change), as it benefits from the protection offered by the raised tidal defences along the banks of the River Nene. The Proposed Development is also predicted to remain dry during the 0.1% AEP tidal overtopping plus climate change event. As the entire Proposed Development is predicted to remain dry during the design tidal flood event, there is no potential for the development to increase tidal flood risk elsewhere.

2.1.3 Parts of the Proposed Development are however potentially at residual risk of tidal flooding during breach of the raised tidal defences protecting the area or a severe flood event that exceeds the flood management design standard. This includes part of the EfW CHP Facility Site, CHP Connection Corridor, TCC, Water Connections and Grid Connection and the entirety of the Access Improvements. The implementation of the flood risk management measures identified in the FRA will ensure the Proposed Development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere and, where possible, will reduce flood risk overall. As agreed in consultation with the EA and Cambridgeshire County Council (FRA **Appendix 12B (Volume 6.4)**), these measures include:

- Preparation and implementation of an Emergency Flood Response Plan for the operational phase to address the residual risk of tidal flooding to the wider access roads for the EfW CHP Facility and manage the safe access and egress from the EfW CHP Facility Site.
- Raising of ground levels taking into account the flood risk vulnerability of the different elements of the EfW CHP Facility Site to ensure it remains operational and safe in times of flood (both for the design and residual tidal flood events).



3. Notifications of flood and severe weather warnings



3.1 Introduction

- 3.1.1 As outlined in **Section 2**, parts of the Proposed Development are potentially at residual risk of tidal flooding. Whilst raising of ground levels will ensure the EfW CHP Facility remains operational and safe in times of flood (both for the design and residual tidal flood events), the wider access roads to the EfW CHP Facility remain at residual risk of tidal flooding. The residual risk of tidal flooding includes breach of the raised tidal defences protecting the area or a severe flood event that exceeds the flood management design standard (e.g., extreme peak tidal levels coinciding with extreme peak fluvial flows in the River Nene in excess of the flood management design standard).
- 3.1.2 Sole reliance on the EA Flood Warnings (based on tidal flood events) would be overly conservative in predicting potential flooding on site. Instead, the Applicant will use flood warnings in combination with severe weather warnings, to predict a flood event more accurately. Reference should also be made to the tidal levels to see if a weather warning coincides with a high tide when a flood warning is in place.
- 3.1.3 Receiving and understanding flood warnings and severe weather warnings, as well as a link to local tide timetable are dealt with separately below:


3.2 Receiving and Understanding Flood Warning

- 3.2.1 The flood warning codes are described in **Table 3.1 Environment Agency Flood Warning Codes**. below.

Table 3.1 Environment Agency Flood Warning Codes

Flood Warning	What it means
Three-day flood risk forecast	Be aware. Think ahead. Keep an eye on the weather situation.
	Flooding is possible. Be prepared.
	Flooding is expected. Immediate action required.



Flood Warning	What it means
	Severe flooding. Danger to life.
Warning no longer in force	No further flooding is currently expected for your area.

3.2.2 The flood warnings are disseminated through a variety of media, including:

- EA website www.environment-agency.gov.uk;
- EA Floodline 0345 988 1188 and/or @EnvAgency and #floodaware on Twitter which provide the latest flood updates;
- Subscription to flood alerts for specific locations;
- Local TV channels; and
- Local radio stations.

3.3 Environment Agency's Floodline

3.3.1 The EA operates a free 24-hour flood warning service for areas at risk from tidal flooding in the vicinity of the EfW CHP Facility.

3.3.2 The Applicant will register with the Environment Agency's Flood Warning service, which will provide flood alerts and warnings by phone, text or email to the Quality, Health, Safety and Environment (QHSE) Manager and Facility Manager.

- EA Flood Warning service: <https://www.gov.uk/sign-up-for-flood-warnings>.

3.4 Receiving and Understanding Severe Weather Warning

3.4.1 The severe weather warning codes are described in **Table 3.2 Met Office Severe Weather Warning Codes**. below.


Table 3.2 Met Office Severe Weather Warning Codes

Severe Weather Warnings	Severe Weather Warning Meaning
Yellow	<p>Yellow warnings can be issued for a range of weather situations. Many are issued when it is likely that the weather will cause some low-level impacts, including some disruption to travel in a few places. Many people may be able to continue with their daily routines, but there will be some that will be directly impacted and so it is important to assess if you could be affected. Other yellow warnings are issued when the weather could bring much more severe impacts to the majority of people but the certainty of those impacts occurring is much lower. It is important to read the content of yellow warnings to determine which weather situation is being covered by the yellow warning.</p>
Amber	<p>There is an increased likelihood of impacts from severe weather, which could potentially disrupt your plans. This means there is the possibility of travel delays, road and rail closures, power cuts and the potential risk to life and property. You should think about changing your plans and taking action to protect yourself and your property. You may want to consider the impact of the weather on your family and your community and whether there is anything you need to do ahead of the severe weather to minimise the impact.</p>
Red	<p>Dangerous weather is expected and, if you haven't already done so, you should take action now to keep yourself and others safe from the impact of the severe weather. It is very likely that there will be a risk to life, with substantial disruption to travel, energy supplies and possibly widespread damage to property and infrastructure. You should avoid travelling, where possible, and follow the advice of the emergency services and local authorities.</p>

3.4.2 The severe weather warnings are disseminated through a variety of media, including:

- Met Office's Website: <https://www.metoffice.gov.uk/weather/warnings-and-advice>;
- Met Office App;
- Social Media;
- Email alerts: <https://www.metoffice.gov.uk/about-us/guide-to-emails>;
- Local TV channels;
- Local Radio Stations; and
- RSS: <https://www.metoffice.gov.uk/weather/guides/rss>.



- 3.4.3 The Applicant will register with the Met Office email alert service, which will provide warnings to the EfW CHP Facility's Quality, Health, Safety and Environment (QHSE) Manager and Facility Manager.

3.5 Tides

- 3.5.1 A flood event affecting the EfW CHP Facility Site is most likely to occur where extreme tide levels coincide with extreme peak flows in River Nene.
- 3.5.2 The Applicant can access tidal information for Wisbech Cut at the following address: <https://www.bbc.co.uk/weather/coast-and-sea/tide-tables/1/164>.
- 3.5.3 Tide timetable information can be used to identify if a Met Office severe weather warning will coincide with a high tide.



4. Flooding procedures

4.1 Flood warning procedure

- 4.1.1 Due to the cyclic nature of the tide the maximum extent of risk of a 'breach' event would only be experienced for a limited period over the tidal peak. Tide levels within the River Nene would rise steadily and therefore adequate warning prior to a potential 'breach' event should be available. However, the recommended actions within this FEMP should ensure that site operatives and visitors remain safe.
- 4.1.2 The QHSE Manager is responsible for receiving and interpreting flood warning and weather warnings, as well as paying close attention to the tides. The QHSE Manager will use the **Flood Warning Procedure Matrix (Table 4.1 Flood Warning Procedure Matrix)** to judge the level of action that is required.
- 4.1.3 The QHSE Manager will be responsible for overseeing the implementation of the **Flood Warning Procedure (Table 4.2 Flood Warning Procedure)**, with other personnel responsible for specific actions.
- 4.1.4 In the absence of the QHSE Manager the Facility Manager will be responsible.
- 4.1.5 In all situations where a flood warning or weather warning may be raised, the Applicant should have awareness of actions required under warnings of increased severity, as well as remaining vigilant to possible unpredicted flooding.
- 4.1.6 The procedure outlined in **Table 4.2 Flood Warning Procedure** highlights the measures which will be undertaken and who will be primarily responsible for undertaking them; however, in the event of flooding, other organisations will have a role to play, including: EA, Police, Fire and Rescue services, as well as utility companies.
- 4.1.7 Business continuity plans held within the MVA UK Integrated Management System (IMS) provide contact details for waste contractors who supply waste to the EfW CHP Facility, and other interested parties.



Table 4.1 Flood Warning Procedure Matrix

		Weather Warning			
		No warning	Yellow	Amber	Red
Flood Warning	No warning	1	1	1	1
	Flood Alert	1	1	2	2
	Flood Warning	1	2	3	3
	Severe Flood Warning	1	2	3	4 Flooding

Table 4.2 Flood Warning Procedure

	Actions Required	Personnel Responsible
1	Flood Preparations: - Check for updated flood forecasts on the EA website - Check weather conditions	QHSE Manager
2	Flood Preparations: - Check for updated flood forecasts on the EA website - Check weather conditions - Check tides	QHSE Manager
3	Flood Preparations: - Check for updates flood forecasts on the EA website - Check weather conditions - Check tides	QHSE Manager
	Waste Deliveries: - Scheduled deliveries should be contacted and informed of the	Contracts Manager



	Actions Required	Personnel Responsible
4	situation; however normal access unaffected	
	Visitors: <ul style="list-style-type: none"> - All scheduled visits (i.e., school visits) should be cancelled 	Community Liaison Manager
4	Flood Preparations: <ul style="list-style-type: none"> - Check for updated flood forecast on the EA website and on the Floodline number to get maximum information on the flood warning - Check weather conditions - Check tides to see if weather warning and flood warning coincide with a high tide 	QHSE Manager
	Staff: <ul style="list-style-type: none"> - A message will be sent to all staff to inform them of the potential for flooding. Non-essential staff will be requested to work from home. - The Waste Operative located at the weighbridge should be informed of the potential risk. The Waste Operative will be told to keep vigil of access over tidal peak. 	HR Manager/Facility Manager Facility Manager/Shift Tam Leader Waste Operative (weighbridge)
	Contractors/Other Deliveries: <ul style="list-style-type: none"> - Scheduled non-essential contractors and deliveries due to visit site should be cancelled 	Contracts Manager
4	Waste Deliveries: <ul style="list-style-type: none"> - Scheduled deliveries should be contacted and informed of the situation; deliveries will continue 	Contracts Manager



	Actions Required	Personnel Responsible
	whilst normal access is unaffected and then cancelled.	

4.2 Flood procedure

4.2.1 In the event of flooding occurring in the local vicinity of the site the following actions listed in **Table 4.3 Flooding Procedure** will be taken.

4.2.2 When flooding is expected following EA notification, the Waste Operative located at the weighbridge is likely to be the first person to become aware of local flooding, notified by vehicles arriving at the site, and should inform the QHSE Manager.

Table 4.3 Flooding Procedure

Event	Actions required	Personnel Responsible
Flooding	Raising the alarm: <ul style="list-style-type: none"> - on local flooding being discovered the Facility Manager or Shift Team Leader as well as the QHSE Manager should be informed. 	All Staff
	Access Arrangements: <ul style="list-style-type: none"> - the site access road will be closed to stop vehicles and pedestrians egressing the site towards the south west on New Bridge Lane. All employees will be directed to evacuate the site via Algores Way, turning east onto Weasenham Lane. 	Facility Manager/Shift Team Leader
	Staff: <ul style="list-style-type: none"> - a message will be sent to all staff to inform them that site access is affected by local flooding. - Those staff able to work from home should do so. 	Facility Manager/Shift Team Leader



Event	Actions required	Personnel Responsible
	<ul style="list-style-type: none"> - Access to site via vehicle will be stopped. - The Facility Manager/Shift Team Leader will confirm to staff that the site has been closed and secured, and that all personnel are located in a safe place. 	
	Deliveries: <ul style="list-style-type: none"> - Scheduled deliveries will be cancelled as per the Business Continuity Plan. 	Contract Manager
	Flood Reporting: <ul style="list-style-type: none"> - The Environment Agency's incident hotline should be contacted on 0800 80 70 60. 	QHSE Manager

4.2.3 In the occurrence of a flooding event the site will continue to be operated by the on-shift personnel whilst waste feedstock and consumables already on site are available, and sufficient storage capacity for residues is present before being taken through a routine shutdown should the flood event be expected to persist.

4.2.4 All routine maintenance activities will be suspended during the flooding event to reduce risk to the remaining site operatives. Activities will be restricted to those required to monitor the safe operation of the combustion process.

4.2.5 Should the flooding event proceed for a period of time which will result in the operational consumables running out, or the residue bunkers reaching capacity, prior warning of the EfW CHP Facility being shutdown will be notified to customers.

4.3 Reoccupation procedure

4.3.1 When the flood water has receded the QHSE Manager will inform the EA's Incident Line.

4.3.2 When it is safe to do so, the QHSE Manager will arrange for the local site access roads to be checked to see if it is safe to re-open.

4.3.3 The EfW CHP Facility Site's access road will be checked to ensure no debris is obstructing or has damaged the road, associated infrastructure, or perimeter fencing. Once these checks have been undertaken and the local access roads reopened, all operational staff (including those off-shift) will be informed that normal



shift patterns are to be resumed. Essential contractors and waste deliveries will also be informed.

4.3.4

Only when a 'Warning No Longer in Force' message has been received will the EfW CHP Facility Site fully re-open to non-essential contractors and visitors. All staff will be informed.



5. Training and Awareness of the Plan

- 5.1.1 The QHSE Manager will produce a toolbox talk on the FEMP, which will be delivered to all staff during their induction. Staff will be asked to sign to say they have received this training. A record of this will be kept on the Applicant's training record software. Updated training will be provided if the FEMP changes.



6. Document Control

6.1.1 The QHSE Manager will ensure this document is updated as required, and it will be reviewed annually, as well as when:

- There is a change to the Applicant's Contingency Plan;
- There is a change to flood mitigation measures at the EfW CHP Facility Site; or
- There is a change in the flood warning procedure.

6.1.2 A document revisions log will be provided in the FEMP.

6.1.3 A copy of the FEMP will be retained on the MVV UK IMS, available to all MVV personnel.

