



U M B R E L L A
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Climate Change Risk Assessment

Umbrella Environmental
9 Goldington Road
Bedford
MK40 3JY
Company Number:
13446157

Website: www.umbrella-environmental.co.uk
Email: andrew@umbrellaenvironmental.co.uk
Mob: 07498 671713



CIWM

Affiliated Organisation 2022

Together, we stand for a world beyond waste

Site Address:

Vision Recycling U.K Ltd
Park House Farm,
Lower Hordley,
Ellesmere,
Shropshire,
SY12 9BL



Registered Office:

Offices At Park House Farm,
Lower Hordley,
Ellesmere,
Shropshire,
England,
SY12 9BL

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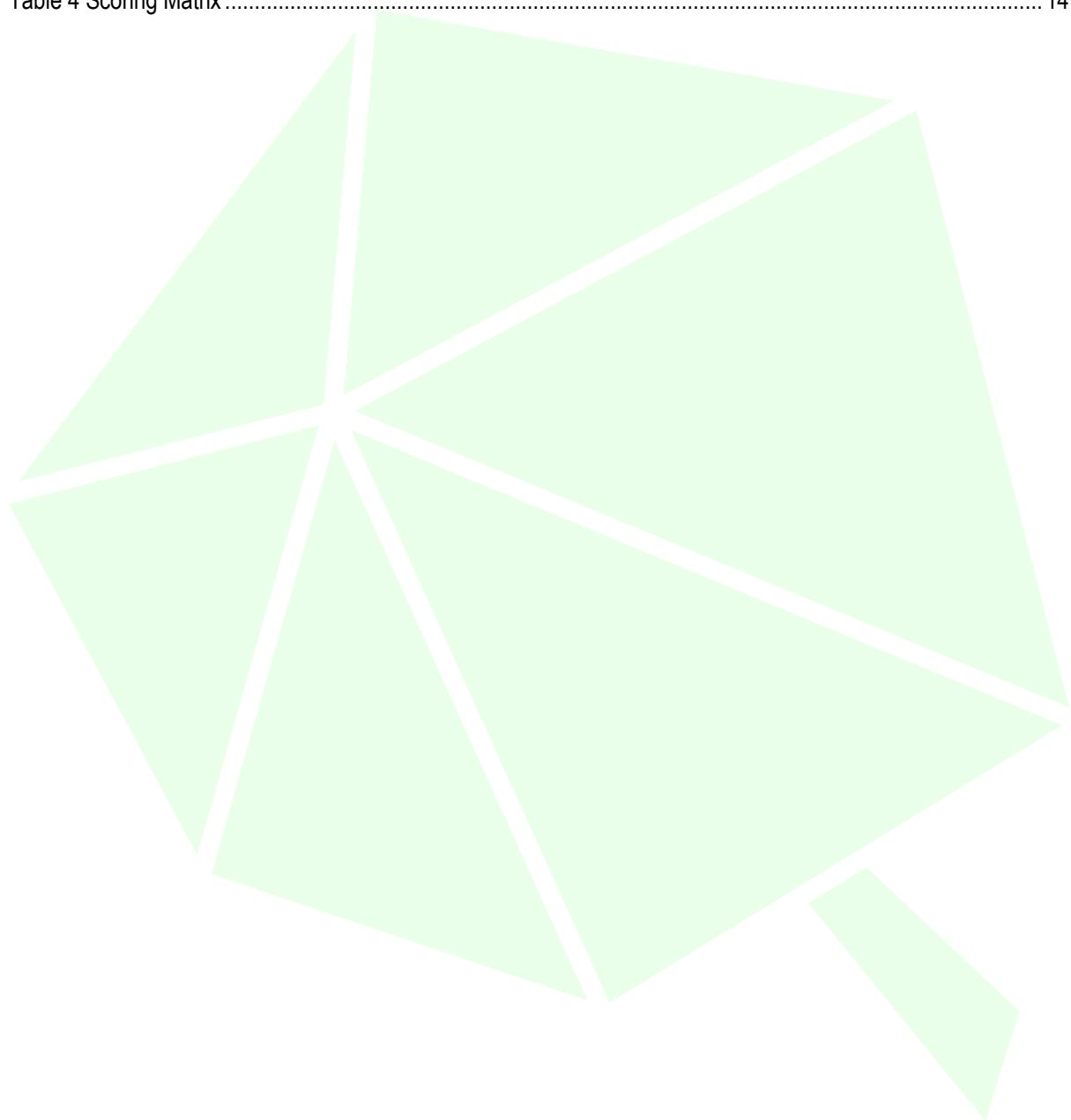
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1 INTRODUCTION

This Climate Change Risk Assessment (CCRA) accompanies the application for a bespoke waste installation EPR/CP3046QE at Park House Farm, Lower Hordley, Ellsmere, Shropshire, SY12 9BL. The site location is shown on plan 010.1_09_001.

The site was historically a farm with the previous residence utilising the industrial units and associated buildings as a livery. The site is now to be used as a waste treatment facility to recover, recycle and reduce the disposal of WEEE waste to landfill through a process of reverse manufacturing.

The only waste to be accepted on site is Waste Electrical and Electronic Equipment (WEEE) (televisions, batteries, etc.). The site receives waste via the main entrance located on the south eastern boundary. Waste will be brought in by approved local contractors (registered waste carriers), generally on articulated lorries. A 3.5 tonne box van is stored off-site and used on occasion.

The waste activities on site are based on Standard rules SR2015 No15 Waste electrical and electronic equipment authorised treatment facility (ATF) excluding ozone-depleting substances. Certain activities on site are above the limits of this permit and raises the regulatory level of the site. The site will operate to 30 tonnes of hazardous waste to be shredded in a 24 hour period, 100 tonne of hazardous waste stored at any one time of which only up to 10 tonnes will go for disposal.

The site is approximately 2238 m² and is located at Park House Farm, Lower Hordley, Ellsmere, Shropshire, SY12 9BL.

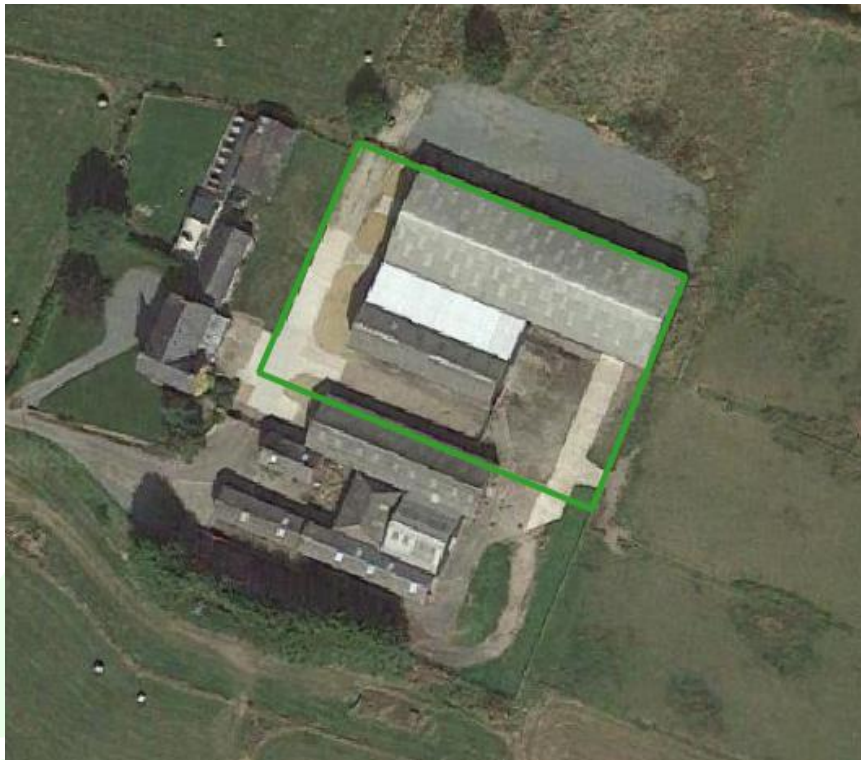
1.1 Location

The site is approximately 2238 m² and is located at Park House Farm, Lower Hordley, Ellsmere, Shropshire, SY12 9BL.

The National Grid Reference (NGR) is SJ 40170 28568, Eastings and Northings 340170 , 328568 and What Three Words these.tuxedos.loaning.

The site is accessed via a farm road which joins Chapel Lane which joins Shrewsbury Rd/A528.

Figure 1 Aerial view



1.2 Aims

This assessment aims to consider potential climate change hazards associated with the activity, to identify impact, and determine the influence management practice has on reducing risk.

1.3 Activity

Table 1 Permitted Activities

Activity Reference	Disposal and Recovery Codes
Section 5.4 A(1) (a)(v) and/or (b)(iv) - non-hazardous waste installation – treatment in shredders of metal waste, including WEEE and end of life vehicles and their components.	R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)
Section 5.3 A(1)(a)(ii) -Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.	R3: Recycling/reclamation of organic substances which are not used as solvents R4: Recycling/reclamation of metals and metal compounds
Section 5.6 (A)(1) - temporary or underground storage of hazardous waste.	R5: Recycling/reclamation of other inorganic materials D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)

2 METHODOLOGY

Climate change means that extreme weather incidents are becoming more common and more severe. Climate projections show that over the coming decades we will face an increased risk of:

- Extreme rainfall, leading to more frequent and severe floods
- Heat waves
- Drought
- Rise in sea levels and tidal surges
- Storms
- Wildfires

All of these will have an impact on business directly, in supply chains and for consumers and markets. Planning for will help to:

- Remain in compliance with the environmental permit and other obligations and regulations
- Minimise the impact on the environment during an extreme weather event
- Improve resilience and business continuity by avoiding unplanned start-ups, shutdowns and other business interruptions

A Climate Change Risk Assessment (CCRA)¹ must be carried out if any new bespoke waste and installation environmental permit application if the activity is to operate for more than 5 years.

2.1 Calculate Climate Change Risk Assessment Screening Score

2.1.1 New Applications

CCRA screening tool is located in section 6b of forms (part B2 Waste² and part B3.5³ Intensive Farming).

A screening score will indicate whether or not an CCRA is required. The screening tool provides basic indicators of climate risk.

Indicators of climate risk are duration of operations, flood risk and the way water is sourced and used. Considerations are:

- Impacts on your business
- How vulnerable your site or process is to climate change

A screening score of 5 or more and CCRA should be carried out if 5 or less than no CCRA is required.

¹ <https://www.gov.uk/guidance/adapting-to-climate-change-risk-assessment-for-your-environmental-permit>

² <https://www.gov.uk/government/publications/application-for-an-environmental-permit-part-b2-new-bespoke>

³ <https://www.gov.uk/government/publications/application-for-an-environmental-permit-part-b35>

2.1.2 Existing Permitted Activities

If the permit was issued prior to December 2019 the guidance can still be followed:

- check climate change risks
- produce a suitable plan to help mitigate and manage those risks

2.2 Stages of Assessment

2.2.1 Stage 1 Find potential impacts

Site-based impacts

Consider how vulnerable the site is to current and future climates. Find any site-specific issues.

Search for location in the Catchment Data Explorer⁴. Identify river basin district for location. If site is in more than one river basin district, identify which river basin district site best falls into.

Use risk assessment worksheet for river basin district⁵. This gives predicted climate impacts for 2050. There's a different worksheet for each district. The cross-border worksheets only apply if you operate in England.

Find out if there are significant receptors nearby, such as:

- Sites of Special Scientific Interest
- watercourses
- local nature reserves
- endangered species

A conservation risk assessment maybe required and should be referred to.

Consider if the vulnerability of nearby receptors to emissions or incidents increases with changing weather patterns.

Consider relevant impacts on any other sites your company built, owns or operates.

Find out if lessons learned from international operations, which may face different or more extreme weather, can be transferred to site.

Consider how long the site is to be operational. The severity of climate change impacts could increase with time.

Find climate hazards relevant to sector and or business activity. Consider how these climate hazards could affect activities (known as a risk 'pathway') during normal and abnormal operations. Identify any environmental impacts that could result.

The sector-specific risk assessment guides give common issues as a starting point.

⁴ <https://environment.data.gov.uk/catchment-planning/>

⁵ <https://www.gov.uk/government/publications/adapting-to-climate-change-risk-assessment-worksheets>

2.2.2 Stage 2 Complete your risk assessment

Complete risk assessment prior to producing an adaptation plan.

Complete a standard risk assessment

- where your site is located – use the risk assessment worksheet for your river basin district
- your industry sector – consider the sector-specific risk assessment guides

If operation is at high risk: complete an in-depth risk assessment

After you complete the screening questions and standard risk assessment, it may be clear that operations are at high risk from climate change. If so, complete an in-depth risk assessment based on UK climate projections (UKCP).

The Met Office have published guidance on how to use the UKCP18⁶ land projections to help choose the set of projections that meets needs.

Timing of risks should be considered. It's important to consider thresholds for action. Some risks may be immediate, needing urgent action. Others may be more gradual where you could act later.

Some future risks may need action now to make sure they are managed in the future. For example, if your risk assessment shows that you will need a different process in 5 years to cope with higher ambient temperatures, and it will take you 4 years to commission the new plant, then you should start work on this now. This is known as creating 'adaptive pathways' that allow you to implement measures in a phased manner dependent on the timing of the risks.

Summarise evaluation of each risk in a table.

Review risk assessments periodically to make sure they reflect current scientific knowledge on climate impacts and activities. Risk assessment, review requirements in your management system. Find control or management measures for the significant risks identified.

2.2.3 Stage 3 Find control measures

Measures could:

- Manage the risk by introducing control measures to address the climate hazard, its effect on operations or environmental impact
- Transfer the risk, such as by taking out insurance
- Terminate the risk, such as by changing the process to remove the hazard

Gather information on options available to address the risks. Assess if they are reasonably practicable and affordable to ensure compliance with your environmental permit.

⁶ <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/guidance-science-reports>

Evaluate potential options, considering factors such as:

- The cost to implement compared to the protection or benefit gained
- Their effectiveness for continued compliance with the environmental permit, including the extent of risk reduction and any residual risk to the environment
- Practical considerations including the timing of implementation, opportunities for change and any need to gradually adapt operations as the climate changes
- Uncertainty in the timing, likelihood and severity of risks
- Their ability to deliver multiple benefits for both adaptation and resilience

Consider an adaptive pathways approach where measures are introduced in a phased manner over several years (or longer) as the climate changes and the impacts are better understood

Document the assessed options to mitigate and manage the effects of climate change operations. Keep records of the risk assessment and consideration of control measures.

2.2.4 Stage 4 Write your adaptation plan

Aim to write climate change adaptation plan in line with the ISO 14090 standard⁷.

- State the objectives and include a justification for the actions selected and timespan covered.
- Document any assumptions made and any uncertainties.
- Document the decision-making approach and data on which decisions are made.
- Describe its relationship with existing site plans.
- Describe any prioritisation process used and its outcomes.
- Document how the adaptation actions address the most critical climate impacts and opportunities.

For any problem, there are likely to be different options that will meet the decision maker's criteria. Initially, it is important that to consider a wide range of potential options, to avoid prematurely rejecting workable options.

For options that are robust to future climate change and will help manage the consequences of it, the decision maker should try to find 'no regret' and 'low regret' options at the start. That is, options with minimal or no secondary implications.

The outcomes of the assessment and adaptation plan should form part of your site management systems (where appropriate).

2.2.5 Stage 5 Monitor, record and review your plan

Monitor climate action plan to make sure it is effective and to check if it needs changing. Monitoring will tell you if:

- your plan is achieving its original objectives

⁷ <https://www.iso.org/standard/68507.html>

- you're managing the priority risks

Record severe weather events and the effect they have on business/site.

Record lessons learned from near misses or events to inform the future planning process. Log these in a table, recording the:

- Date
- Weather event
- Extent of incident
- Damage or effect to the business or environment
- Immediate action taken
- Proposed prevention or mitigation measures

Schedule frequency of reviews.

The Environment Agency recommends you review your plan every year, or sooner if a factor that has influenced your strategy changes significantly. For example, this could be when:

- you are affected by an extreme weather event or near miss
- important new climate change information becomes available

If the permit has a climate change condition, you must review and, if appropriate, update your climate change risk assessment at least every 4 years.

During a review, consider:

- The objectives of the adaptation intervention and if these were achieved
- If more, less or a different intervention is needed
- If the forecasting for the site plan is still relevant and appropriate
- If there is anything you can learn, such as from your neighbours or sector trade association

3 SCREENING TOOL

Table 2 Screening Tool

Category	Screening Questions	Score	Your Score	Comments
1 Time Scales	<p>How long will a permit be required for this site/activity?</p> <p>5 years or less of operation. No need to fill in the rest of the screening. You do not need to fill in a risk assessment. Please go straight to question 7.</p> <p>Less than 20 years of operation</p> <p>Until between 2040 and 2060 (between 20 and 40 years from now)</p> <p>Until 2060 or beyond (more than 40 years from now)</p>	<p>0</p> <p>1</p> <p>3</p> <p>5</p>	3	
2 Flooding	<p>What is your site's risk of flooding from rivers or the sea?</p> <p>Not in a flood-risk zone</p> <p>Very low or Low</p> <p>Medium</p> <p>High</p>	<p>0</p> <p>1</p> <p>2</p> <p>5</p>	0	
3 Water Use	<p>If you use water for your site operations or fire prevention, what is the source of your water?</p> <p>Water not required</p> <p>Mains water</p> <p>Surface water or groundwater abstraction</p>	<p>0</p> <p>1</p> <p>5</p>	0	
Total Screening Score			3	

4 CLIMATE CHANGE RISK ASSESSMENT

Table 3 Risk Assessment

Potential changing climate variable	A Impact	B Likelihood	C Severity	D Risk (B x C)	E Mitigation (what will you do to mitigate this risk)	F Likelihood (after mitigation)	G Severity (after mitigation)	H Residual risk (F x G)
1. Summer daily maximum temperature may be around 7°C higher compared to average summer temperatures now.	No negative impact expected. All waste storage and processing of WEEE occurs inside a building. Apart from 1 single 40 yard Ro Ro container which is replaced every 5 working days or more frequently. Roof water is a external system, internal site has no internal drainage system. There is no water used in on site process. Site not at risk of surface water flooding.	1	1	1	No mitigation required as very low risk. Score under 5	-	-	-
2. Winter daily maximum temperature could be 4°C more than the current average, with the potential for more extreme temperatures, both warmer and colder than present.		1	1	1		-	-	-
3. The biggest rainfall events are up to 20% more intense than current extremes (peak rainfall intensity)*.		1	1	1		-	-	-
4. Average winter rainfall may increase by 29% on today's averages.		1	1	1		-	-	-
5. Sea level could be as much as 0.6m higher compared to today's level*.		1	1	1	Not in area at risk of flooding zone 1			
6. Drier summers, potentially up to 41% less rain than now.		1	1	1	-	-	-	-

Potential changing climate variable	A Impact	B Likelihood	C Severity	D Risk (B x C)	E Mitigation (what will you do to mitigate this risk)	F Likelihood (after mitigation)	G Severity (after mitigation)	H Residual risk (F x G)
7. At its peak, the flow in watercourses could be 40% more than now, and at its lowest it could be 65% less than now.		1	1	1	-	-	-	-

5 SCORING MATRIX

Table 4 Scoring Matrix

	Severe Impact (score 4)	Medium Impact (score 3)	Mild Impact (Score 2)	Minor Impact (score 1)
Highly likely (score 4)	16	12	8	4
Likely (score 3)	12	9	6	3
Low likelihood (score 2)	8	6	4	2
Unlikely (score 1)	4	3	2	1

5.1 Key

5.1.1 Risk categories:

- 12 to 16: high
- 8 to 9: moderate to high

- 4 to 6: moderate to low
- 1 to 3: low

5.1.2 Severity of impact:

- severe impact: short-term, acute impact to operations resulting in permanent compliance breaches
- medium impact: short-term, acute impact to operations resulting in multiple temporary compliance breaches
- mild impact: short-term, acute impact to operations resulting in single temporary compliance breach
- minor impact: short or long-term impact to operations resulting in additional measures for compliance

5.1.3 Likelihood:

- highly likely: event appears very likely in the short term and almost inevitable over the long term, or there is evidence of the event already happening
- likely: it is probable that an event will occur, or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term
- low likelihood: circumstances are such that an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term
- unlikely: circumstances are such that it is improbable the event would occur even in the long term



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