Northumbria river basin district: climate change risk assessment worksheet

Name (as on your part A application form): Tees Valley Energy Recovery Facility

Our permit reference number (if you have one): EPR/ZP3309LW/A001

Your document reference number: NS_0118_08_V1

Risk assessment worksheet for the 2050s

Northumbria river basin district

You must carry out a climate change risk assessment for any new bespoke waste and installations permit applications if you expect to operate for more than 5 years. Use the user guide to complete the table. You can add in extra pages if necessary.

Consider how your operations will be affected by the changes in weather and climate described in the table. Consider any changes to average climate conditions that may impact on your operations, for example extreme rainfall.

Also consider:

- critical thresholds - where a 'tipping point' is reached, for example a specific temperature where site processes cannot operate safely
- changes to averages - for example an entire summer of higher than expected rainfall causing waterlogging
- where hazards may combine to cause more impacts

You can add in other climate variables if you wish.

If you have stated on your application form that you do not expect to be operational in 2050, you must still consider climate change risks for the time you do intend to operate. Whilst the variables are for the 2050s, this is an estimated date and you may experience these conditions before then.

This worksheet will sit in your management system. It must appear on the management system summary you submit with your application, even if you do not need to submit the whole risk assessment with your application.

If your pre-mitigation risk score (column D) is 5 or higher, you must complete columns E to H.

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 6°C higher compared to average summer temperatures now. This is an assumed daily maximum temperature of 41°C	Potential increased odour from incoming wastes	4	2	8	The odour control spray systems for the Waste Transfer Station will be operated as required and potentially more frequently. There is no odour risk from wastes deposited within the bunker, as all wastes are sealed internally with the air sucked through for the combustion process.	2	2	4
	If the plant operates in island mode (no connection to external electrical supply) the plant load would need to be reduced. At 35°C both lines to be reduced to part load. At 41°C one line to be shut down. Reduced waste throughput could have potential wider (temporary) waste management implications	3	2	6	If the plant operates with connection to an external power network (LPN Operation), auto climate control will ensure normal plant operation.	1	2	2
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.	No negative impact expected. Components are specified down to -15°C	1	1	1	No mitigation required as very low risk. Score under 5.	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)
3. The biggest rainfall events are up to 20% more intense than current extremes (peak rainfall intensity)*.	Potential exceedance of the surface water drainage system and localised ponding/flooding.	3	2	6	The Flood Risk Assessment (FRA) prepared to support the outline planning application (JBA Consulting, December 2019), included a detailed JFLOW model of surface water runoff/flooding, during the 1% annual probability flood event with 40% allowance for climate change. The model confirmed there are no off-site impacts (flows) that need to be managed. In addition, a surface water drainage strategy has been prepared for the proposed development (Doran Consulting, July 2021). This has been designed to ensure no internal flooding on site during the 1% annual probability flood event with 20% allowance for climate change.	1	2	2
4. Average winter rainfall may increase by 25% on today's averages.	Potential exceedance of the surface water drainage system and localised ponding/flooding.	3	2	6	As above.	1	2	2
5. Sea level could be as much as 0.6m higher compared to today's level *.	The site location is relatively low-lying and in proximity to the tidal River Tees; potential risk of tidal flooding during extreme events. However, the FRA (JBA Consulting, December 2019), confirms that local predicted sea level rise of 0.99m (cumulative rise from 1990-2115) would not inundate the application site.	1	1	1	No mitigation required as very low risk. Score under 5.	1	1	1
6. Drier summers, potentially up to 31% less rain than now.	No negative impact expected. Water usage within the plant is limited and would be supported by a mains water supply	1	1	1	No mitigation required as very low risk. Score under 5.	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 30% more than now, and at its lowest it could be 65% less than now.	The closest watercourse (River Tees) is tidal and the risk of sea level rise is assessed above. No negative impact expected due to low river flows.	1	1	1	No mitigation required as very low risk. Score under 5.	1	1	1

*Indicates data has come from climate change allowances as part of the spatial planning process. Evidence from your planning submission is acceptable evidence for this worksheet.