Permitting Decisions - Variation

We have decided to grant the variation for Grimsby Lyocell Fibers Factory operated by Lenzing Fibers Grimsby Limited.

The variation number is EPR/SP3936HE/V004.

The permit was issued on 16/12/2025.

The variation is for the addition of the following listed activity under Schedule 1 Part 1 of The Environmental Permitting (England and Wales) Regulations 2016:

Section 5.4 Part A(1)(a)(i) – Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving biological treatment.

This permit variation authorises Lenzing Fibers Grimsby Limited to operate an effluent treatment plant (ETP) with biological treatment. This ETP will reduce the concentrations of pollutants in effluent before it discharged to the Humber Estuary. This phase 1 of the project is aimed at reducing the biological and phosphate load in the effluent.

The biological treatment system includes balance tanks, anoxic tanks, bioreactor and membrane bioreactor. The biomass generated is partly recirculated and the remaining is de-watered by screw presses and fed into skips to be disposed of to a licensed waste operator for land spreading. The cross-linker effluent is pre-treated before combining with the main effluent in the balance tank. This pre-treatment involves alkali, acid and coagulant feed, followed by dissolved air floatation (DAF) (for pre-treating the cross linker effluent stream). The sludge from the DAF is removed and sent to landfill.

Phase 2 of the project will be designed to further improve the quality of the effluent. The second phase will be initiated after the operator has gathered the necessary performance data from Phase 1 operation which will enable them to choose the technology for further treatment. The construction of the ETP is considered complete at the end of Phase 2 of the ETP project. On completion of the ETP construction, the effluent composition must meet the CWW BAT-AELs.

The operator has proposed the two phased approach for construction of the ETP because of the variability of the substances in the effluent. This is triggered by the highly variable production patterns dependent on product demand.

The composition of the effluent requiring treatment has not changed, and the existing effluent pits and physico-chemical treatment continue to be in use. The treated effluent will continue to be discharged into the Humber Estuary via a discharge pipe that Lenzing Fibers Grimsby Limited shares with Technical

Absorbents Limited (EPR/RP3632NX), Bring Energy (EPR/DP3338DC) and Blue Star Fibres Company Limited (EPR/VP3335LK).

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision-making process. It

- highlights key issues in the determination
- summarises the decision making process in the decision considerations section to show how the main relevant factors have been taken into account
- shows how we have considered the consultation responses

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

Abbreviations

BAT	Best Available Techniques
BAT-AELs	BAT-associated emission levels
CWW BATC	Best available techniques conclusions for Common waste water and waste gas treatment/management systems in the chemical sector
ETP	Effluent treatment plant
COD	Chemical Oxygen Demand
Cr	Chromium
Cu	Copper
Ni	Nickel
Zn	Zinc
EQS	Environmental Quality Standards

Key issues of the decision

H1 risk assessment for emissions to water

Lenzing has a specialised process which contributes to high COD and phosphorous in their effluent, and due to the challenges in removing all the pollutants with biological treatment plant alone, additional treatment technology is needed. This variation to the ETP is a two staged project. Phase 1 is the addition of the biological treatment plant which will achieve 65% reduction of the current COD load. Phase 2 is aimed to achieve >90% reduction of COD load and further optimise the processes in line with production variability by reviewing Phase 1 ETP design for potential upgrades. The applicant had discussed their approach with the Environment Agency in the year 2020 in a pre-application.

As per our permitting process and regulations, this substantial change to their ETP triggers the applicability of the CWW BAT-AELs. Therefore, additional substances which were not in their previous permit are added to their emissions and monitoring requirements. However, the CWW BAT-AELs only apply at the end of Phase 2 when the ETP is fully constructed and the effluent treatment project complete.

1. Metals

As this is a direct discharge to protected TrAC waters (Humber Estuary), guidance requires that, if the emissions do not screen out at Test1 of the H1 risk assessment, then the operator would need to carry out detailed modelling. Test 1 assesses whether the concentrations of the substances in the effluent are less than their EQS in the receiving waters.

The operator submitted their H1 risk assessment at CWW BAT-AEL limits for the metals (Cr, Cu, Ni, Zn). However, as the BAT-AELs are much higher than the EQS of these metals, they did not screen out as insignificant at Test 1. Therefore the operator carried out actual monitoring of the two different sources of intake water and the treated effluent (90 samples total). They provided the monitoring reports with 3 sets of data, having 12 reports for each type of water. We have reviewed the test reports and found that the limits of detection of these metals are less than their respective EQS. Therefore, the metals now screen out as insignificant.

2. Substances other than metals

As stated above, this is a two phased project with compliance against BAT-AELs (mg/l) being delivered at Phase 2. However, we have chosen to set interim limits (mass-based limits) in the permit for some of the substances using CWW BAT-AELs as reference for Phase 1, while the ETP is being optimised and its performance data used to decide the technology for Phase 2. This allows for a stricter compliance compared to the existing limits from their previous permit. On completion of Phase 2 project, the concentration-based BAT-AELs (mg/l) become applicable. The interim limit calculation is explained below.

The interim limit is the mass-based limit of the substance which is expressed in kg/day. The mass-based limit is derived as follows:

kg/day = $\frac{(m^3/\text{day x mg/l})}{1000}$

where; m^3/day is the permitted discharge volume

mg/l is the BAT-AEL for the pollutant.

Substance	**Concentration in mg/l (BAT-AEL)/EQS[1] (yearly average)**	**Mass based emission limit (kg/day) based on flow limit of 35,000m^3/week.**
Chemical Oxygen Demand	300	1500
Total Suspended Solids	35	175
Total Nitrogen	25	125
Adsorbable organically bound	1	5
Chromium	0.025	0.125
Copper	0.05	0.25
Nickel	0.05	0.25
Zinc	0.3	1.5
Iron	1[1]	5

We have also considered release to the environment of substances resulting from the chemical additives which will be introduced in the new effluent treatment plant and have found that their impact will be insignificant. We have included their EQS as limits in the permit.

Chemical tanks and containment

The main bulk chemicals are stored in double skinned tanks, each within integrated bund that has a 110% capacity of that specific tank. The small chemical containers are stored with individual bunding that has at least 125% capacity of the system. The bunds and chemical dosing cabinets are level alarmed. There are adequate provisions to contain any spills during chemical delivery, and to prevent any substances from entering surface water drainage or to groundwater. Furthermore, all pipework systems are dual contained hose, the chemicals pipework feedback to dosing cabinets and the interceptor tank at chemical delivery area feedback to the process drainage system. All bunds, pumps and sumps are resistant to the contained materials and waterproof.

In the event of a liquid overflow (chemical/non-chemical), the overflow drain is looped back into the process units. The tanker connection point and hose connection points are within a tertiary containment area. All process pipework is connected within the bund and dosing cabinets are self-bunded. The bunds do not have any outlets or tap.

The transformer is filled with MIDEL (an ester-based dielectric fluid which is a biodegradable alternative to mineral oil) and is provided with 110% bunding to contain any spills.

The applicant has taken measures to prevent mechanical, chemical or thermal stress/damage to the ETP tanks and has also provided a summary of their spill response and containment strategy addressing ETP tank failure scenarios. In the event of a catastrophic tank failure, the applicant has confirmed that all the effluent will remain within the ETP boundary and ensure that there is no release to the environment.

We are satisfied with the chemical storage and containment measures provided by the applicant.

Best Available Techniques (BAT)

The applicant has provided an assessment against CWW BATC 1 to 12. In addition, the applicant has provided a detailed site specific risk assessment in accordance with Control and monitor emissions for your environmental permit - GOV.UK.

We are satisfied with the applicant’s risk assessment and agree that the proposed techniques are BAT.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has not been made.

The decision was taken in accordance with our guidance on confidentiality.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- Director of PH/UKHSA
- Health and Safety Executive
- Inshore Fisheries and Conservation
- Marine Management Organisation
- Harbour and Port Authorities

The comments and our responses are summarised in the consultation responses section.

The regulated facility

We considered the extent and nature of the facility at the site in accordance with RGN2 ‘Understanding the meaning of regulated facility’, Appendix 2 of RGN2 ‘Defining the scope of the installation’, Appendix 1 of RGN 2 ‘Interpretation of Schedule 1’.

The extent of the facility is defined in the site plan and in the permit. The activities are defined in table S1.1 of the permit.

The site

The operator has provided a plan which we consider to be satisfactory.

These show the extent of the site of the facility.

The plan is included in the permit.

Site condition report

The operator has provided a description of the condition of the site, which we consider is satisfactory.

The decision was taken in accordance with our guidance on site condition reports.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We have not consulted Natural England, but HRAS and Appendix 4 have been sent for information only.

The decision was taken in accordance with our guidance.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator’s risk assessment is satisfactory.

General operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

Odour management

We have reviewed the odour management plan in accordance with our guidance on odour management.

We consider that the odour management plan is satisfactory, and we approve this plan.

We have approved the odour management plan as we consider it to be appropriate measures based on information available to us at the current time. The applicant should not take our approval of this plan to mean that the measures in the plan are considered to cover every circumstance throughout the life of the permit.

The applicant should keep the plans under constant review and revise them annually or if necessary, sooner if there have been complaints arising from operations on site or if circumstances change. This is in accordance with our guidance ‘Control and monitor emissions for your environmental permit’.

The plan has been incorporated into the operating techniques table S1.2.

Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme.

We have included an improvement programme requiring the operator to demonstrate that the operator can comply with the interim limits at the end of Phase 1 project and Phase 2 is initiated so the operator will be fully compliant with the BAT-AELs.

IC13: This requires the operator to submit a written report on assessment of their emissions to surface water to the Environment Agency for technical assessment and written approval. The report will enable the operator to confirm the monitoring results provided in the application as well as test the ETP efficiency to meet the limits in table S3.2B.

IC14: This improvement condition is to ensure that the operator progresses to Phase 2 of the project on successful optimization of the ETP after Phase 1 with sufficient performance data generated to confirm the treatment technology for Phase 2. This requires the operator to submit a written report to the Environment Agency, detailing the substances which will require additional treatment to meet BAT-AELs, along with the confirmation that on completion of Phase 2, the ETP will be fully compliant with the ELVs provided in Table S3.2B of the permit.

IC15: This improvement condition supersedes IC8 and requires the operator to carry out a combined direct toxicity assessment to the updated standards and submit a written report to the Environment Agency for technical assessment and written approval.

Emission limits

Emission Limit Values (ELVs) and equivalent parameters or technical measures based on Best Available Techniques (BAT) have been amended for the following substances:

Substance	**Amended limits applicable on completion of Phase 1**	**Limits applicable on completion of Phase 2**
Chemical Oxygen Demand	1500 kg/day	300 mg/l[1]
Total Suspended Solids	175 kg/day	35 mg/l

[1]The ETP meets the following criteria for COD:

For COD, the upper end of the BAT-AEL may be 300mg/l, if both of the following conditions are fulfilled:

- *Condition A: Abatement efficiency ≥ 90% as yearly average (including both pretreatment and final treatment)*
- *Condition B: If a biological treatment is used, at least one of the following criteria is met:*
    - *A low-loaded biological treatment step is used. This implies that the BOD_5 level in the effluent is ≤20mg/l*
    - *Nitrification is used.*

Emission Limit Values (ELVs) and equivalent parameters or technical measures based on Best Available Techniques (BAT) have been added for the following substances:

Substance	**Amended limits applicable on completion of Phase 1**	**Limits applicable on completion of Phase 2**
Total Nitrogen	125 kg/day	25 mg/l
Adsorbable organically bound halogens (AOX)	5 kg/day	1 mg/l
Chromium	0.125 kg/day	0.025 mg/l
Copper	0.25 kg/day	0.05 mg/l
Nickel	0.25 kg/day	0.05 mg/l
Zinc	1.5 kg/day	0.3 mg/l

Iron	5 kg/day	1 mg/l
Oil and Grease	No visible oil or grease	No visible oil or grease
Total Phosphorous	-	3 mg/l

Monitoring

We have decided that monitoring should be **amended** for the following parameters, using the methods detailed and to the frequencies specified in table S3.2A and S3.2B of the permit.

- Chemical Oxygen Demand
- Total Suspended Solids

We have decided that monitoring should be **added** for the following parameters, using the methods detailed and to the frequencies specified in table S3.2A and S3.2B of the permit.

- Total Nitrogen
- Adsorbable organically bound halogens (AOX)
- Chromium
- Copper
- Nickel
- Zinc
- Iron
- Total Phosphorous (S3.2B limit only)

These monitoring requirements have been included in order to ensure that there is no deterioration in the status of the receiving surface waters.

We made these decisions in accordance with CWW BAT Conclusions.

Based on the information in the application we are satisfied that the operator's techniques, personnel and equipment have either MCERTS certification or MCERTS accreditation as appropriate.

Reporting

We have amended reporting in the permit for point source emissions to water, to include first reporting within 3 months from the date of permit issue and thereafter every 3 months.

Management system

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations, our notice on GOV.UK for the public and the way in which we have considered these in the determination process.

Responses from organisations listed in the consultation section

Response received from Director of PH/UKHSA

Brief summary of issues raised: The consultee has stated that they are reassured by the information provided in the application and they do not have significant concerns regarding the risk to the health of the local population from the installation.

Summary of actions taken: No actions required.

Response received from Marine Management Organisation

Brief summary of issues raised: The consultee informed the Environment Agency that any works within the Marine area require a license from the Marine Management Organisation.

Summary of actions taken: We have informed the applicant regarding this.

Health and Safety Executive – No response received

Inshore Fisheries and Conservation – No response received

Harbour and Port Authorities – No response received