Environment Agency permitting decisions

Bespoke permit

We have decided to grant the permit for Argent Biodiesel Stanlow Plant operated by Argent Energy (UK) Limited.

The permit number is EPR/LP3233DK

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:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

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

Structure of this document

- Description of main features of the installation
- Kev issues
- Annex 1 the decision checklist
- Annex 2 the consultation, web publicising and responses

Description of the main features of the Installation

The Argent Biodiesel Stanlow Plant will produce up to 75,000 tonnes/year of methyl ester from waste fats, oils and greases (FOGs) (including tallow), which will be sent off-site for further recovery as biodiesel. The site is located in an industrial area of Ellesmere Port associated with Stanlow Oil Refinery. The nearest village is Ince, located 1.5 km to the east. The site is approximately 3 ha in area and located in a relatively flat and low-lying area in the floodplain of the River Gowy and Manchester Ship Canal, which lie 132 m west and 340 m north, respectively. The Mersey Estuary lies 450 m north of the site, which is designated as a Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site.

Up to 116,000 tonnes/year of FOGs will be screened, separated and filtered to remove solids and water. Tallow will be sterilised before processing to satisfy the requirements of Animal By-Products legislation. FOGs are then esterified with methanol, which is a Section 4.1 Part A(1)(a)(ii) activity. The resulting methyl esters are separated from residual water, methanol and glycerine by distillation, coalescence and settlement. Waste glycerine will be sent off-site for further recovery.

Process water will be treated in a dissolved air flotation plant with a maximum capacity of 300 m³/day, which is a Section 5.4 Part A(1)(a)(ii) activity, prior to discharge into the surrounding Essar Oil (UK) Limited Stanlow Manufacturing Complex wastewater system and subject to further treatment prior to discharge to public sewer. Waste solids will be disposed off-site to landfill and incineration, or recovered where possible. The process requires steam and heat, which are provided by a steam boiler (9.4 megawatts thermal input (MWth)) and a thermal oil unit (3.8 MWth), which emit combustion gases to air through a common stack. Odour control is provided by undertaking most activities on the installation inside a building with a ventilation system connected to a water scrubber and bio-filter, emitting through a stack.

Argent Energy (UK) Limited has an existing environmental management system for this activity at another site, which will be extended to cover this site.

Key issues of the decision Site Area

Argent Biodiesel Stanlow Plant is completely surrounded by the Essar Oil (UK) Limited Stanlow Manufacturing Complex (EPR/FP3139FN). The Essar permit was partially surrendered (EPR/FP3139FN/S007, dated 13/09/16) such that there is no overlap of permitted areas.

Site Condition Report (SCR)

Additional detail was requested from the operator to describe the materials to be stored on site, confirm their storage and drainage arrangements, provide details of underground tanks and provide procedures to cover actions in the event of a spill. The drawing of the drainage system was reported by the applicant to be incorrect towards the end of the determination period (penstock valves had been installed at the outlets from Swales A, B & C rather than the inlets as shown on the drawing supplied), so the operator confirmed they would install them on the inlets and a pre-operational condition was written to require it. A pre-operational condition was also included to develop a procedure for testing potentially contaminated water captured in the drainage system in the event of a spill.

An improvement condition was included to require the update of the SCR with the information provided through the determination and the remediation validation report, such that a standalone document is produced to facilitate the surrender process for the operator. Another improvement condition was included to undertake permeability testing on the ground in which the swales are constructed to demonstrate that they are situated in sufficiently low permeability material to promote surface water flow in preference to acting as soakaways.

Habitats

The northern boundary of the proposed activity is located 450 m south of the Mersey Estuary, which is designated as a SSSI, SPA and Ramsar site. Note that the operator also identified the River Dee and Bala Lake Special Area of Conservation (SAC) as a potentially affected habitat but the distance to this from the installation was measured and found to be greater than the 10 km screening distance.

Appendix 4 and Appendix 11 assessments were completed; the Appendix 11 form was sent to Natural England for information only and the Appendix 4 form kept on file. The only potential mechanisms for effect were as follows: acidification, noise disturbance, nutrient enrichment and toxic contamination. The noise assessment, air quality assessment and H1 assessment for sanitary pollutants discharged to foul sewer and then to the River Gowy, which flows into the Mersey Estuary, demonstrated operations at the site would not adversely impact the Mersey Estuary.

Air Quality

The air quality assessment demonstrated that maximum Process Contributions (PCs) for nitrogen dioxide (NO₂) (short-term) sulphur dioxide (SO₂) (short- & long-term), particulate matter of diameter less than or equal to 10 micrometers (PM₁₀) (short- & long-term), particulate matter of diameter less than or equal to 2.5 micrometers (PM_{2.5}) & carbon monoxide (CO) all screen out as insignificant because the PCs were less than 1% and 10% of their corresponding long-term and short-term air quality standards (AQS). See results table reproduced below:

Table 19: Predicted Maximum Process Contributions (µg/m³)

Pollutant	Averaging	AQS	Maximur	n Predicted Process Cor	ntribution
	Period	Aug	PC	PC as % AQS	Screen Out?
NO	1 hr 99.79 %'ile	200	8.6	4.3	Yes
NO ₂	Annual Mean	40	0.8	2.1	No
	15 min 99.9 %'ile	266	5.9	2.2	Yes
SO ₂	1 hr 99.73 %'ile	350	3.9	1.1	Yes
	24 hr 99.18 %'ile	125	1.2	0.9	Yes
DM.	24 hr 90.41 %'ile	50	0.1	0.1	Yes
PM ₁₀	Annual Mean	40	0.0	0.0	Yes
PM ₂₅	Annual Mean	25	0.0	0.1	Yes
co	Running 8 hr	10,000	8.2	0.1	Yes

The annual (long-term) NO₂ emission was not <1% of the AQS and therefore not screened out, so additional assessment was undertaken, taking into account existing background/ambient (AC) pollutant concentrations. The assessment was completed using air dispersion modelling that was checked by the Air Quality Modelling and Assessment Unit (AQMAU).

Table 20: Predicted Environmental Concentrations (µg/m³)

Pollutant	Averaging Period	AQS	PC	AC	PEC	PEC as % of AQS	Screen Out?
NO ₂	Annual	40	8.0	16	16.8	42.1	Yes

As shown above, the maximum Predicted Environmental Concentration (PEC) for NO₂ will not adversely impact the environment, because the PEC (PC + AC) is <70% of the AQS (42%). Given that this is the case, it was considered unnecessary to set emission limits or monitoring requirements for combustion emissions from the boiler and thermal oil unit (A1 & A2). A single round of air monitoring for emission points A1 and A2 will be required as an improvement condition, to validate the emissions concentrations used in the air quality assessment.

Sewer Discharge

Process water will be treated on-site in a dissolved air flotation (DAF) plant and then discharged to the surrounding Essar Oil (UK) Limited Stanlow Manufacturing Complex (EPR/FP3139FN) wastewater system, under a private discharge agreement. This wastewater will then be treated at Essar's effluent treatment plant before being discharged to public foul sewer in accordance with a discharge consent from United Utilities. The foul sewer

connects to United Utilities' Ellesmere Port Wastewater Treatment Plant, which in turn discharges to the River Gowy.

In response to a schedule 5 notice, an H1 Annex D2 assessment of the discharge from Argent Biodiesel Stanlow Plant was undertaken on ammonia and BOD to understand the potential impact on the River Gowy, which is a Type 5 river (below 80 m with an alkalinity of 100-200 mg/l) currently classed as 'Good'. The River Quality Planning (RQP) assessment conservatively assumed that all chemical oxygen demand (COD) in the discharge will be entirely biodegradable so that biological oxygen demand (BOD) could be modelled. The RQP assessment demonstrates that the water quality within the River Gowy would continue to be classified as 'Good', with downstream concentrations of ammonia modelled at 0.47 mg/l at the 90th percentile (upper limit for Type 5 rivers to be classed as 'Good' is 0.6 mg/l) and BOD modelled at 4.77 mg/l at the 90th percentile (upper limit for Type 5 rivers to be classed as 'Good' is 5 mg/l).

Odour

The application included an air quality assessment which contained detailed dispersion modelling for odour; this was checked and verified by AQMAU.

The H4 Odour Management guidance indicates that 1 oue/m³ (European Odour Units/m³) is the point of detection of an odour and the benchmark level for odours classed as 'most offensive' is 1.5 oue/m³. 'Most offensive' odours arise from processes involving decaying animal or fish remains, septic effluent or sludge or biological landfill odours. The benchmark for 'moderately offensive' odours is 3 oue/m³. 'Moderately offensive odours include intensive livestock rearing, sugar beet processing, fat frying and well aerated green waste composting. The proposed waste inputs are considered most likely to fall within the 'moderately offensive' category, so therefore we acknowledge a conservative benchmark 'most offensive' was selected for the odour assessment.

The odour assessment demonstrated that the highest modelled concentration in the domain was 0.59 oue/m³ (98th percentile of 1-hour averages), i.e. not detectable, and the maximum number of hourly exceedences of 1.5 oue/m³ (the odour assessment benchmark for 'most offensive' odours) at this point was 7 in a year. This maximum value was located on the site boundary.

The nearest receptor identified was the Shell Plant located immediately west of the installation; the results of odour modelling on this receptor are presented below:

Odour Concentration at Shell Plant Receptor					
Receptor	1-hour Max (ou⊧/m₃)	98th Percentile of 1- hour averages (ou₌/m₃)	Number of Hourly Exceedences of 1.5 ou₌/m₃		
Shell Plant (x343127,y376318)	0.85	0.24	0		

All other receptors modelled (located both downwind and upwind of the site) also showed less than 0.02 oue/m^3 (98th percentile of 1-hour averages) and 0 hourly exceedences of 1.5 oue/m^3 . Given that all modelled 98th percentile values for odour lie well below the conservative benchmark of 1.5 oue/m^3 , there should therefore be no adverse impact off-site in terms of odour from the installation. It was therefore considered unnecessary to set emission limits or monitoring requirements for emission point A3. However, given the nature of the waste materials to be imported as feedstock for the installation, and it involves the manufacture of compounds containing esters, an odour management plan was submitted and approved following redrafting in response to a schedule 5 notice.

Noise

At the scoping stage for the noise assessment carried out to support the planning process, the local authority Environmental Health Officer (EHO) agreed that since the site would be operational 24 hours a day, it would be appropriate to assess the impact during the quietest period, which is night-time. It was agreed that if the night-time noise limits could be met, then the potential impacts would be less during the daytime period.

The noise assessment was submitted and redrafted in response to a schedule 5 notice. The assessment demonstrated that the predicted BS 4142 night-time noise rating level is -19 dB, which achieves the -10 dB criteria (i.e. noise levels are at least 10 dB below existing ambient levels) set by the EHO during the planning stage of this project. The day-time rating level is -9 dB, but the assessment noted the nearby M56 motorway will increase day-time background noise levels and therefore the -10 dB criteria would be met.

Noise is therefore considered unlikely to present an adverse impact on the environment.

The operator proposed to complete a one-off night-time noise survey within 6 months of operation of the installation reaching full load, to confirm compliance with the noise limits specified by the local authority EHO. This is included as an improvement condition.

Use of VOCs

The site will store up to 14.8 m³ methanol in bulk in a dedicated storage tank, and annual usage will be 7,184 tonnes/year. This activity was assessed to see if it was covered by Chapter V of the Industrial Emissions Directive relating to use of organic solvents; the activities covered by Chapter V are listed in Part I of Annex VII. The use of methanol at the installation for esterification is not listed as a relevant activity in Annex VII and therefore the installation is not covered by the requirements of Chapter V.

Annex 1: decision checklist

This document should be read in conjunction with the application, supporting information and permit/notice.

Aspect considered	Justification / Detail	
		Yes
Receipt of sub	mission	
Confidential information	A claim for commercial or industrial confidentiality was made.	✓
	We requested further justification for the claim for confidentiality and the applicant subsequently withdrew the request.	
Identifying confidential information	We have identified no information provided as part of the application that we consider to be confidential. The decision was taken in accordance with our guidance on commercial confidentiality.	√
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with our Public Participation Statement and our Working Together Agreements.	√
	 For this application we consulted the following bodies: Natural England Cheshire West and Chester Council (Public Health) Cheshire West and Chester Council (Environmental Protection) Cheshire West and Chester Council (Planning) Health & Safety Executive Public Health England Local fire and rescue service Animal and Plant Health Agency 	
Responses to consultation and web publicising	The web publicising and consultation responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
Operator		

Aspect considered	Justification / Detail	Criteria met
Considered		
		Yes
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with our guidance on what a legal operator is.	✓
European Direc	ctives	
Applicable directives	All applicable European directives have been considered in the determination of the application.	√
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility including discharge points.	√
	A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	
Site condition report	The operator has provided a description of the condition of the site. We consider this description is satisfactory. The decision was taken in accordance with our guidance on site condition reports and baseline reporting under IED – guidance and templates (H5). Additional detail was received from the operator to describe the materials to be stored on site, confirm their	√
	storage and drainage arrangements, provide details of underground tanks and provide procedures to cover actions in the event of a spill. The drawing of the drainage system was reported by the applicant to be incorrect towards the end of the determination period (penstock valves had been installed at the outlets from Swales A, B & C rather than the inlets as shown on the drawing supplied), so the operator confirmed they would install them on the inlets and a pre-operational conditional was written to require it.	

Aspect	Justification / Detail	Criteria
considered		met
		Yes
	An improvement condition was also written to require the update of the SCR with the remediation validation report and the information provided through the determination.	
Biodiversity, Heritage, Landscape and Nature Conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. The northern boundary of the proposed activity is located 450 m south of the Mersey Estuary, which is designated	✓
	as a SSSI, SPA and Ramsar site.	
	A full assessment of the application and its potential to affect the site, relevant bird species and habitats has been carried out as part of the permitting process. Appendix 4 and Appendix 11 forms have been completed. The Appendix 11 form was submitted to Natural England for information only on 03/10/16. We consider that the application will not affect the features of the Mersey Estuary SSSI, SPA and Ramsar site.	
	Formal consultation has been carried out with Natural England. The consultation response (Annex 2) was taken into account in the permitting decision.	
Environmental	Risk Assessment and operating techniques	
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility.	√
	The operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, all emissions may be categorised as environmentally insignificant with the exception of the following:	
	 Point source emissions to air: A quantitative air quality assessment was submitted as part of the application. Point source emissions to water/accident prevention and control: A pre-operational condition was required to install a penstock at each of the inlets to the swales to protect surface water from 	

Aspect	Justification / Detail	Criteria
considered		met
		Yes
	 potential leaks and spills of substances not captured by an interceptor into the drainage system. Sewer discharge: Modelling of the discharge to the River Gowy via a wastewater treatment plant was required to demonstrate the proposed emissions were BAT. Fugitive emissions: The activities will be operated largely inside a building with active air extraction and emissions abatement. Odour emissions: Odour was included in the quantitative air quality assessment. An odour management plan was submitted as part of the application. Noise: A quantitative noise assessment was submitted as part of the application. 	
Operating techniques	We have reviewed the techniques used by the operator and compared these with the relevant guidance notes: • IPPC Sector Guidance Note EPR 4.01 – The Production of Large Volume Organic Chemicals. • IPPC Sector Guidance Note EPR S5.06 – Guidance for the Recovery and Disposal of Hazardous and Non Hazardous Waste (for waste pre-acceptance and acceptance) • gov.uk guidance: Develop a management system: environmental permits • gov.uk guidance: Control and monitor emissions for your environmental permit Odour Management Plans We, the Environment Agency, have reviewed and approved the Odour Management Plan and consider it complies with the requirements of our H4 Odour management guidance note. We agree with the scope and suitability of key measures but this should not be taken as confirmation that the details of equipment specification design, operation and maintenance are suitable and sufficient. That remains the responsibility of the operator.	✓

Aspect considered	Justification / Detail	Criteria met
50113143134		Yes
	Operating Techniques for insignificant emissions	
	Emissions of NO ₂ (short-term), SO ₂ , PM ₁₀ , PM _{2.5} & CO have screened out as insignificant from the directly associated combustion activities (DAAs) (emission points A1 & A2).	
	Operating Techniques for NON-insignificant emissions	
	Emissions of NO ₂ (long-term) from the DAA combustion activities (emission points A1 & A2) or odour from the DAA odour control unit emission point A3 cannot be screened out as insignificant. The Environment Agency has therefore assessed whether the proposed techniques are BAT. The review of these emissions is summarised in the Key Issues above.	
	Emissions from the DAA combustion activities (emission points A1 & A2) and odour control unit (emission point A3) have been demonstrated to be not significant. Process vents (A4) do not normally require an ELV to be set.	
	The operating techniques are considered BAT for the protection of surface water (once the pre-operational conditions have been implemented), so no emission limits are required for W1 and W2.	
	Emissions of ammonia and BOD in effluent to sewer via S1 have been assessed (see Key Issues above) and when controlled by the agreed emission limit values between the operator and Essar are considered BAT.	
	Other Operating Techniques	
	The proposed techniques/emission levels for priorities for control are in line with the benchmark levels contained in the TGN and we consider them to represent appropriate techniques for the facility.	
	We consider that the emission limits included in the installation permit reflect the BAT for the sector.	
The permit con	ditions	

Aspect considered	Justification / Detail		Criteria met
			Yes
Use of conditions other than those from the template	that we do n those in our	e information in the application, we consider not need to impose conditions other than permit template, which was developed in with industry having regard to the relevant	✓
Waste types	We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility.		
	and 90,000	re as follows: Up to 26,000 tonnes/year tallow tonnes/year vegetable oil and edible oil and este accepted shall not exceed 116,000.	
	Waste code	s are as follows:	
	02 02 99	Rendered animal fat (tallow)	
	02 03 04	Vegetable oil	
	20 01 25	Edible oil and fat	
	accordance Standard ru	ese decisions with respect to waste types in with the permitted waste list specified in les SR2009No3 – Low Impact Part A or the production of Biodiesel.	
Pre- operational conditions		e information in the application, we consider d to impose pre-operational conditions:	✓
		ion of penstocks at the inlets to Swales A, B & Key Issues).	
	contami	ment of a procedure for testing potentially nated liquids captured in the drainage system vent of a spill.	
Improvement conditions		e information on the application, we consider d to impose improvement conditions.	√
	We have im	posed improvement conditions to ensure that:	
		iate stand-alone records showing the baseline n of the site are in place.	

Aspect considered		
		Yes
	 appropriate measures are in place to prevent pollution. appropriate management systems and management structures are in place and that sufficient financial, technical and manpower resources are available to the operator to ensure compliance with all the permit conditions. appropriate measures are in place to prevent pollution from odour. appropriate measures are in place to prevent pollution from noise and vibration. air emissions from the combustion DAAs (emission points A1 & A2) are in line with those modelled in the air quality assessment. 	
Incorporating the application	We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process. These descriptions are specified in the Operating Techniques table in the permit.	✓
Emission limits	We have decided that emission limits should be set for the parameters listed in the permit. ELVs have been set for emission point S1, which reflect the agreed discharge consent between Argent Energy (UK) Limited and Essar Oil (UK) Limited. The discharge limits do not meet all of the benchmarks set by EPR 4.01 but have been demonstrated to have no adverse impact on the receiving water (River Gowy). The sewer discharge has the potential to be variable in nature, therefore it is considered appropriate to set ELVs that reflect the concentrations modelled.	~
	It is considered that the ELVs/equivalent parameters or technical measures described above will ensure that significant pollution of the environment is prevented and a high level of protection for the environment secured.	
Monitoring	We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.	√

Aspect considered	Justification / Detail	Criteria met
		Yes
	These monitoring requirements have been imposed in order to confirm that sewer emissions will not adversely impact the River Gowy given that they exceed benchmark criteria for the sector.	
	We made these decisions in accordance with EPR 4.01.	
	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 specified reporting in the permit.	✓
	As the monitoring of point source emissions to air is only required annually, reporting of these is required annually. Monitoring	
	Reporting forms have been prepared to facilitate reporting of data in a consistent format. These reporting requirements are deemed sufficient and proportional for the installation. We have made these decisions in accordance with our guidance note TGN M2 Monitoring of stack emissions to air and M18 Monitoring of discharges to water and sewer.	
Operator Comp	petence	
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with our guidance on what a competent operator is.	√
Relevant convictions	The Case Management System has been checked to ensure that all relevant convictions have been declared.	√
	No relevant convictions were found.	

Annex 2: External Consultation and web publicising responses

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process. (Newspaper advertising is only carried out for certain application types, in line with our guidance.)

Response received from

Local fire and rescue service, 23/06/16 (telephone conversation)

Brief summary of issues raised

Advised not COMAH site so formal response not necessary. However, site is located within curtilage of Stanlow Oil Refinery and will be storing a large tank of methanol. Mr Watt confirmed there were no issues from the fire and rescue service.

Summary of actions taken or show how this has been covered

No additional action required.

Response received from

Natural England, 13/07/16 (letter)

Brief summary of issues raised

Natural England had no comments regarding the application.

Summary of actions taken or show how this has been covered

No additional action required.

Response received from

Public Health England, 27/07/16 (email)

Brief summary of issues raised

Based solely on the information contained in the application provided, PHE has no significant concerns regarding risk to health of the local population from this proposed activity, providing that the applicant takes all appropriate measures to prevent or control pollution, in accordance with the relevant sector technical guidance or industry best practice.

Summary of actions taken or show how this has been covered

No additional action required.

The Local Authority (Cheshire West and Chester Council) Environmental Protection, Planning and Public Health Departments and the Animal and Plant Health Agency were consulted, however, consultation responses from these parties were not received (comments were due by 12/07/16 for all but one consultees and 15/07/16 for the Animal and Plant Health Agency).

This proposal was also publicised on our website between 10/06/16 and 27/07/16 and no representations were received. No relevant comments/representations were received during the web consultation period.