

CONTENTS

20.0 CONCLUSIONS.....20-1

20.1 Introduction20-1

20.2 Summary of Significant Environmental Effects20-1

20.3 Schedule of Environmental Commitments20-31

TABLES

Table 20.1 Description of Nature of Effects

Table 20.2 Summary of Significant Environmental Effects

Table 20.3 Schedule of Environmental Commitments

[THIS PAGE INTENTIONALLY LEFT BLANK].

20.0 CONCLUSIONS

20.1 Introduction

20.1.1 This Chapter of the Environmental Impact Assessment Report (EIAR) outlines the conclusions of the technical assessments on the Proposed Development and the likely significant cumulative effects. This chapter includes a summary of those adverse and beneficial environmental effects described throughout each of the previous chapters that are considered to be significant (i.e., moderate and major effects) – refer to Table 20.2.

20.1.2 This chapter also presents a Schedule of Environmental Commitments presented in Table 20.3 which summarises all the impact avoidance, mitigation and enhancement measures that the Applicant is committed to delivering as part of the Proposed Development.

20.2 Summary of Significant Environmental Effects

20.2.1 The Planning and Development Act 2000 requires an EIAR to contain: “*A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment*”. For the purposes of this EIAR design mitigation and embedded mitigation are defined as:

- Design Mitigation: this identifies mitigation that has been incorporated into the design of the Proposed Development (e.g., a key part of the design concept was to mitigate the visual impact of the proposal. It obtained inspiration from the adjoining industrial and power generating infrastructure and the design was developed in a way that would allow the proposed plant and structures to sit easily against this backdrop).
- Embedded Mitigation: measures will be identified in order to avoid, reduce and, if possible, offset significant adverse effects identified during the EIA process. Where possible, these mitigation measures will be incorporated into the form or design of the Proposed Development. Once these measures are incorporated into the design, they are termed ‘embedded mitigation’. Embedded mitigation relevant to the construction phase will be described within the Outline Construction Environmental Management Plan (oCEMP). For the operational phase, such embedded mitigation will be represented primarily in the design. Embedded mitigation measures are therefore either incorporated into the design from the outset or identified through the assessment process.

20.2.2 Table 20.2 provides a summary of the significant environmental effects of the Proposed Development that have been identified, following implementation of the embedded mitigation or impact avoidance measures included in the design of the Proposed Development (as detailed in Chapters 7 to 18, where relevant).

20.2.3 Table 20.3 provides a summary of the schedule of environmental commitments that have been identified in the EIAR technical assessments to mitigate significant environmental effects.

20.2.4 Effects have been assessed for the construction phase, operational phase (including maintenance) and decommissioning phase scenarios.

20.2.5 For the purposes of this EIAR (as outlined in EIAR Chapter 1: Introduction), an effect is considered to be ‘significant’ if it is assessed to be moderate (adverse or beneficial) or

major (adverse or beneficial). Minor and negligible effects are only referenced in this chapter where a 'significant' (moderate or major) effect has been reduced to a 'not significant' effect following mitigation.

20.2.6 To provide further clarification on the nature of the effects, each has been identified for the purposes of this EIAR Chapter 20: Conclusion summary as:

Table 20.1: Description of Nature of Effects

EFFECT	DESCRIPTION
Long term (Lt)	Effects occurring throughout the operation of the Proposed Development (and potentially beyond), e.g., due to a change in land use as a result of the development;
Medium term (Mt)	Effects occurring for a period of approximately five to fifteen years, e.g., a visual effect from a development that is removed when mitigation planting has matured;
Short term (St)	Effects occurring only over a relatively short period of time (less than five years), e.g., an effect that only lasts for the duration of the construction period;
Temporary (T)	Effects that are not permanent because the effect would no longer occur if the impact was removed, e.g., a disturbance effect that ceases when the source of the disturbance is no longer present;
Permanent (P)	Effects that are permanent and cannot be readily reversed, e.g., the loss of an ecological habitat that cannot be replaced;
Direct (D)	Effects that occur as a direct result of an impact caused by a development, e.g., a change in noise level as a result of development-related activity; or
Indirect (In)	Also known as secondary effects, effects that occur as a result of a pathway of impacts, e.g., socio-economic benefits due to construction workers spending money at local businesses.

Table 20.2: Summary of Significant Environmental Effects

DEVELOPMENT PHASE	ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND EMBEDDED MITIGATION MEASURES)	CLASSIFICATION OF EFFECT PRIOR TO MITIGATION	MITIGATION/ ENHANCEMENT (IF IDENTIFIED)	CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION	NATURE OF EFFECT(S) (LT/ MT/ ST AND T/ P AND D/ IN)	MITIGATION ITEM NUMBER (REFER TO TABLE 20.3)
AIR QUALITY (EIAR CHAPTER 7)						
Construction	No significant effects identified.					N/A
Operation	No significant effects identified.					N/A
Decommissioning	No significant effects identified.					N/A
CLIMATE (EIAR CHAPTER 7)						
Construction	GHG, emissions emitted during construction	Minor Adverse	N/A	Minor Adverse	LT, P, IN	N/A
Operation	GHG emissions emitted during operation	Moderate Adverse	N/A	Moderate Adverse	LT, P, D	N/A
Decommissioning	No significant effects identified.					N/A
CULTURAL HERITAGE & ARCHAEOLOGY (EIAR CHAPTER 8)						
Construction	No significant effects identified.					N/A
Operation	No significant effects identified.					N/A
Decommissioning	No significant effects identified.					N/A
BIODIVERSITY (EIAR CHAPTER 9)						
Construction	Loss of semi-natural grassland.	Significant at Local (higher) scale	Habitat compensation within or adjacent	Not significant	ST, T, D	B1

DEVELOPMENT PHASE	ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND EMBEDDED MITIGATION MEASURES)	CLASSIFICATION OF EFFECT PRIOR TO MITIGATION	MITIGATION/ ENHANCEMENT (IF IDENTIFIED)	CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION	NATURE OF EFFECT(S) (LT/ MT/ ST AND T/ P AND D/ IN)	MITIGATION ITEM NUMBER (REFER TO TABLE 20.3)
			to Site. Management of grassland.			
	Other protected mammals- loss of habitat; mortality or injury; disturbance or displacement.	Significant at Local (higher) scale	Checks for protected mammals prior to habitat removal.	Not significant	MT-LT, P, D	B2
	Amphibians – loss of habitat; mortality or injury; disturbance or displacement	Significant at County (medium) scale	Retain breeding pond. Pollution prevention measures. Checks prior to habitat removal.	Not significant	MT-LT, P, D	B3
	Breeding birds – loss of habitat; mortality or injury to birds and eggs; disturbance or displacement	Significant at Local (higher) scale	Habitat removal outside breeding season. Checks before habitat removal.	Not significant	MT-LT, P, D	B4
	Marsh fritillary	Significant at County (medium) scale	Checks prior to habitat removal. Timing of vegetation removal. Bare ground left to naturally recolonise.	Not significant	MT-LT, P, D	B6

DEVELOPMENT PHASE	ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND EMBEDDED MITIGATION MEASURES)	CLASSIFICATION OF EFFECT PRIOR TO MITIGATION	MITIGATION/ ENHANCEMENT (IF IDENTIFIED)	CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION	NATURE OF EFFECT(S) (LT/ MT/ ST AND T/ P AND D/ IN)	MITIGATION ITEM NUMBER (REFER TO TABLE 20.3)
			Foodplant planted if necessary.			
	Lizard – loss of habitat; mortality or injury; disturbance or displacement	Significant at Local (higher) scale	Checks prior to habitat removal.	Not significant	MT-LT, P, D	B5
	Butterflies – loss of habitat; mortality or injury; disturbance or displacement	Significant at Local (higher) scale	Checks prior to habitat removal.	Not significant	MT-LT, P, D	B6
Operation	No impacts.					
Decommissioning	As per construction phase.					
LANDSCAPE AND VISUAL (EIAR CHAPTER 10)						
Construction	Effects to landscape character or visual amenity within the locality or the wider study area resulting from the visibility of construction activities. Effects resulting from the visibility of temporary site infrastructure such as	The landscape and visual effects and their significance at construction stage will range from Not Significant to Significant Adverse.	Tall machinery will only be on Site between Months 6 to 18 of the development programme; Construction traffic will be managed to reduce visual disturbances on local residents; Lighting will be kept	Range from Moderate to Significant Adverse in close proximity to the construction site (up to approximately 500m from the Proposed Development site); Not Significant to Slight Adverse in the wider study area	ST/T	LV1 and LV2

DEVELOPMENT PHASE	ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND EMBEDDED MITIGATION MEASURES)	CLASSIFICATION OF EFFECT PRIOR TO MITIGATION	MITIGATION/ ENHANCEMENT (IF IDENTIFIED)	CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION	NATURE OF EFFECT(S) (LT/ MT/ ST AND T/ P AND D/ IN)	MITIGATION ITEM NUMBER (REFER TO TABLE 20.3)
	site traffic, machinery working on elevated ground and construction compounds.		to essential locations only, with the position and direction of lighting being designed to minimise intrusion and disturbance to adjacent areas; Use of full cut-off lanterns are proposed to minimise light spillage and upward escape of light onto adjacent areas; Lighting will be minimised in terms of number of lights and the power of the lights (lux level); Directional lighting, facing and located away from any surrounding vegetation; and Lighting will be turned off where possible when not	(beyond approximately 500m)		

DEVELOPMENT PHASE	ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND EMBEDDED MITIGATION MEASURES)	CLASSIFICATION OF EFFECT PRIOR TO MITIGATION	MITIGATION/ ENHANCEMENT (IF IDENTIFIED)	CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION	NATURE OF EFFECT(S) (LT/ MT/ ST AND T/ P AND D/ IN)	MITIGATION ITEM NUMBER (REFER TO TABLE 20.3)
			in use except to meet the minimum requirements for Health and Safety.			
Operation	Likely effects of the development on views and visual amenity such as the potential for the development to alter (beneficial or adverse) the composition of the view from a viewpoint. The main landscape and visual effects of the Proposed Development will be associated with the introduction of the air intake and emissions stack, integrating with the established industrial character of the site and its surroundings.	The landscape effects will range from Slight and Moderate Adverse. Visual effects range from Slight to Moderate Adverse.	Given the scale and location of the Proposed Development, the main landscape and visual mitigation measures focus on architectural mitigation (colour and finishes of the scheme) and minimising lighting during night-time. Hence measures will be implemented immediately and come into effect following the completion of construction works.	The landscape effects will range from Slight and Moderate Adverse (dependent on distance from Site). Residual visual effects will range from Slight to Moderate Adverse.	MT/LT	LV1 and LV2
Decommissioning	As per landscape construction phase.					

DEVELOPMENT PHASE	ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND EMBEDDED MITIGATION MEASURES)	CLASSIFICATION OF EFFECT PRIOR TO MITIGATION	MITIGATION/ ENHANCEMENT (IF IDENTIFIED)	CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION	NATURE OF EFFECT(S) (LT/ MT/ ST AND T/ P AND D/ IN)	MITIGATION ITEM NUMBER (REFER TO TABLE 20.3)
NOISE AND VIBRATION (EIAR CHAPTER 11)						
Construction	Construction noise levels predicted to be below relevant assessment criteria.	Not significant	Implementation of mitigation measures outlined in the oCEMP and final Contractor's CEMP	Not significant	Short-term	NV1
	Construction traffic noise levels predicted to result in negligible and minor impacts.				Direct (construction noise)	
Operation	Operational noise levels exceed relevant criteria.	Very significant	Selection of appropriate plant Noise barriers	Not significant	Long-term Direct	NV2 and NV3
Decommissioning	No significant effects identified.					N/A
WATER ENVIRONMENT (EIAR CHAPTER 12)						
Construction	No significant effects identified. Nonetheless, measures outlined in the oCEMP and Contractor's CEMP will be implemented.					W1
Operation	No significant effects identified. Embedded mitigation measures include a surface water drainage system, fuel storage tank, hazard prevention and emergency planning, routine maintenance, and application of an Industrial Emissions Licence.					W2
Decommissioning	No significant effects identified.					W3
SOILS AND GEOLOGY (EIAR CHAPTER 13)						
Construction	No significant effects identified.					N/A

DEVELOPMENT PHASE	ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND EMBEDDED MITIGATION MEASURES)	CLASSIFICATION OF EFFECT PRIOR TO MITIGATION	MITIGATION/ ENHANCEMENT (IF IDENTIFIED)	CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION	NATURE OF EFFECT(S) (LT/ MT/ ST AND T/ P AND D/ IN)	MITIGATION ITEM NUMBER (REFER TO TABLE 20.3)
Operation	No significant effects identified.					N/A
Decommissioning	No significant effects identified.					N/A
TRAFFIC (EIAR CHAPTER 14)						
Construction	Road Surface Quality impacted by HGV construction traffic flow generated by the development on LP4310 Gurtymadden to Tynagh Road.	Moderate Adverse	Pavement Assessments have been completed to show existing road quality and ensure it remains the same as current conditions. These will be used as a baseline to monitor and to assess if any damages are made to the road surface as a result of the Proposed Development. Any damages will be fixed to ensure road quality remains the same as current conditions.	Negligible Adverse	ST/T/D	T1
	HGV construction traffic flow generated	Moderate Adverse	Specified route restrictions will be put in place to	Minor adverse	ST/T/D	T2

DEVELOPMENT PHASE	ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND EMBEDDED MITIGATION MEASURES)	CLASSIFICATION OF EFFECT PRIOR TO MITIGATION	MITIGATION/ ENHANCEMENT (IF IDENTIFIED)	CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION	NATURE OF EFFECT(S) (LT/ MT/ ST AND T/ P AND D/ IN)	MITIGATION ITEM NUMBER (REFER TO TABLE 20.3)
	by the development on minor roads.		ensure the HGV traffic on the road is acceptable and travels towards the National Road Network are as quick and efficient as possible.			
Operation	No significant effects identified.					N/A
Decommissioning	No significant effects identified.					N/A
LAND USE (EIAR CHAPTER 15)						
Construction	No significant effects identified.					N/A
Operation	No significant effects identified.					N/A
Decommissioning	No significant effects identified.					N/A
POPULATION AND HUMAN HEALTH (EIAR CHAPTER 16)						
Construction	No significant adverse effects identified.					PHH1
Operation	No significant adverse effects identified.					PHH1
Decommissioning	No significant effects identified.					PHH1
MATERIAL ASSETS (EIAR CHAPTER 17)						
Construction	No significant effects identified.					MA1
Operation	No significant effects identified.					MA2

DEVELOPMENT PHASE	ENVIRONMENTAL IMPACT (FOLLOWING DEVELOPMENT DESIGN AND EMBEDDED MITIGATION MEASURES)	CLASSIFICATION OF EFFECT PRIOR TO MITIGATION	MITIGATION/ ENHANCEMENT (IF IDENTIFIED)	CLASSIFICATION OF RESIDUAL EFFECT AFTER MITIGATION	NATURE OF EFFECT(S) (LT/ MT/ ST AND T/ P AND D/ IN)	MITIGATION ITEM NUMBER (REFER TO TABLE 20.3)
Decommissioning	No significant effects identified.					N/A
MAJOR ACCIDENTS AND DISASTERS (EIAR CHAPTER 18)						
Construction	No significant effects identified.					MAD1
Operation	No significant effects identified.					MAD2
Decommissioning	No significant effects identified					N/A

Note: Lt = long term, Mt = medium term, St = short term, P = permanent, T = temporary, D = direct and In = indirect.

20.2.7 The following is a summary of the environmental impacts during construction, operation and decommissioning of each technical assessment.

Air Quality (EIAR Chapter 7)

Construction Phase

20.2.8 The air quality assessment of construction impacts assumes that the impact avoidance measures outlined within Chapter 7 will be incorporated into the design of the Proposed Development, as they are standard good practice measures that are routinely applied across large construction sites. No specific additional mitigation has been identified as necessary for the construction phase of the Proposed Development. No significant effects have been identified.

Operational Phase

20.2.9 The air quality assessment of impacts at opening has assumed that the Emission Limit Values (ELVs) will be met for the operational plant as required and in accordance with use of Best Available Techniques (BAT) under the EPA's environmental permitting regime. No specific additional mitigation has been identified as necessary for the operational phase of the Proposed Development. For this reason, the residual effects would be as reported within Chapter 7. No significant effects have been identified.

Decommissioning Phase

20.2.10 Consistent with construction mitigation, it has been assumed that relevant best practice mitigation measures would be in place during any decommissioning works. No significant effects are anticipated.

Climate (EIAR Chapter 7 and Appendix 7B)

20.2.11 The total GHGs from constructing the Proposed Development are estimated to be 8,484 tCO_{2e}.

20.2.12 The gross GHGs operating the Proposed Development over its (at least) 25-year life are estimated to be 9,203,947 tCO_{2e}. Annual emissions are expected to be approximately 368,158 tCO_{2e}.

20.2.13 The Proposed Development can be defined as 'moderate adverse' effect. The plant will continue to operate beyond 2050 and therefore falls short of fully contributing to ROI's net zero trajectory

20.2.14 However, it is also acknowledged that whilst the ROI is moving towards decarbonising the grid, gas-fired peaking plant power stations are required as an important part of the overall transition fuel mix in order to ensure the ROI's energy security. The operational requirements of the Proposed Development will inevitably change during its design life and it will be subject to regular reviews to identify potential modifications and amendments to enable continued alignment with ROI climate goals.

Cultural Heritage and Archaeology (EIAR Chapter 8)

Construction Phase

20.2.15 Construction of the Proposed Development under consideration has the likelihood to impact heritage assets in the following ways:

- Partial or total removal of heritage assets during site clearance and construction of the Proposed Development and associated features and infrastructure adjacent to the existing Tynagh Power Station and on the site of the former mine. This includes

the erection of a 40m flue gas stack which will be constructed on the land to the north of the existing Tynagh Power Station site; and

- Change to the setting of heritage assets, including visual and noise intrusion, and changes in traffic levels (construction phase only).

20.2.16 The Site has been severely disturbed by previous development associated with the mine and construction of the adjoining Power Station, with the result that any heritage assets that may have existed, including the former laneway to the settlement at Gortareask, will have been destroyed.

20.2.17 There is one designated heritage asset within the 1km study area which is recorded on the Country's Record of Protected Structures and is considered regionally important, a thatched cottage (RPS 3648). Impacts to the thatched cottage (RPS 3648), which refer to changes in the setting that effect the special interests or qualities of the asset, would be of slight significance and the effect would be short-term and adverse.

20.2.18 Castletown Bridge (RPS 3651) is located on the LP4310 Road between the Site and the N65. There will be an increase in traffic using the road during construction including commuting site workers and vehicles transporting materials and equipment. Construction traffic will not pass directly over Castletown Bridge so traffic noise and vibration as well as the physical presence of traffic will not affect the ability to understand this asset. Castletown Bridge (RPS 3651) is located approximately 10m from the current trafficked bridge, and with the low number of HGV movements that will associated with the construction and operation phase of the Proposed Development, the Castletown Bridge will not be impacted by major vibrations from passing HGV traffic. Additionally, due to its distance from the Site, Castletown Bridge will not be impacted by any potential construction or operational vibration originating from the Proposed Development.

20.2.19 It should also be noted that the bridge is currently adjacent to a busy road with volumes of traffic already passing it. The change to setting would be such that the special interests or qualities of the bridge are slightly affected without a noticeable change leading to a magnitude of impact of negligible leading to a significance of effect of slight. The slight significance of effect would be short-term and adverse.

20.2.20 There will be an increase in traffic using the N65 and LP4310 during construction including commuting site workers and vehicles transporting materials and equipment. This traffic will pass directly by Ryans (RPS 332) as well as the entrance gates to Rathmore House (RPS 3657) which are located on the north side of the N65 and considered to be of regional importance. There would be no impact to these assets.

Operational Phase

20.2.21 Significant effects for the operation of the Proposed Development derive from changes to the setting of heritage assets. These largely mirror the effects assessed for the permanent presence of the Proposed Development as detailed above in the assessment of the construction phase. There would be no change to the effects assessed for the designated assets within the wider study area due to the permanent presence of the Proposed Development during the operational phase. Additionally, the level of traffic associated with the construction phase will not be present during the operational phase also reducing impact. Given this, there is no need to reassess each designated heritage asset as the significance of effect will remain as determined for the Construction Phase.

20.2.22 While the settings of the highlighted designated assets located on the LP4310 and N65 within the 5km study area will be improved during the operational phase by the removal

of construction-related personnel and items, this could be off-set by visual, noise and dust intrusion arising from the operational Proposed Development. In particular, the OCGT will have the functionality to fire on locally stored diesel distillate during emergency scenarios. While this will not lead to additional visual, noise or dust issues, the OCGT will require a supply of distillate to fuel it during emergency scenarios.

20.2.23 This distillate will be delivered to the Site by road with vehicles passing the Protected Structures located on the LP4310 and N65. However, such trips will be infrequent and only as and when required. Given this, the settings of the Protected Structures will not be noticeably affected especially given the existing traffic on the roads. No operational impacts related to traffic, noise, dust, and vibration are therefore anticipated.

Decommissioning Phase

20.2.24 Effects arising from the process of decommissioning of the Proposed Development are considered to be of a similar nature and duration to those arising from the construction process and therefore have not been considered separately in the Cultural Heritage assessment.

Biodiversity (EiAR Chapter 9)

Construction Phase

20.2.25 There are thirteen European sites within 15km of the Site, the closest of which is Slieve Aughty Mountains SPA, 6.1km south-west of the Site. A Habitats Regulations Assessment (HRA) Screening for Appropriate Assessment has been prepared in parallel by AECOM on behalf of the Applicant to inform the competent authority when determining whether the Proposed Development will have likely significant effects on any European sites, considering the Proposed Development alone and in-combination with other plans and projects. It concluded there will be no likely significant effects to any European site as a result of the construction phase of the Proposed Development.

20.2.26 Potential impacts to breeding birds during construction include habitat loss (i.e., removal of buildings) and injury or mortality. Likely potential impacts include disturbance and injury to adults and their eggs, young and nests, and could be significant at Local (higher) geographic scale in the absence of mitigation. 24 species of birds were observed within or adjacent to the site, including four species of conservation concern for breeding in Ireland displaying breeding behaviour, namely meadow pipit, goldcrest, greenfinch and willow warbler. At particular risk is the meadow pipit which is considered likely to be breeding on Site. Removal of the grassland on Site to facilitate the Proposed Development will remove the suitable habitat for this species and is likely to displace the breeding pair. Removal of other habitats on Site is likely to disturb or displace other species of breeding birds. During construction, there will potentially be an increase of lighting, noise, and visual disturbance. A temporary increase of such impacts during the breeding season could cause abandonment of territories or nests and is considered to constitute a significant effect. Subject to population-level impacts which are difficult to predict, duration of these likely impacts could last from being temporary (i.e., during construction phase) or permanent if breeding birds are lost from the Site.

20.2.27 Common lizard is potentially present on Site but was not recorded incidentally during surveys. Impacts to lizard during the construction phase are minor habitat loss, and injury or mortality of hibernating lizards and these could be significant at Local (higher) geographic scale in the absence of mitigation.

- 20.2.28 A medium-sized breeding population of smooth newt was found in a small pond within the Site, approximately 50m north of the Proposed Development construction/operation footprint. Construction of the Proposed Development may impact this nationally protected species through loss of terrestrial and breeding habitat, injury or mortality of breeding newts and hibernating newts in the grassland to be removed, and pollution of the waterbody (if retained) via contaminated surface run-off resulting in the potential loss of the site population. Impacts could be significant at the County (medium) geographic scale in the absence of mitigation.
- 20.2.29 The pond supporting the newt population will remain intact and a full suite of pollution prevention measures will be in place during the construction phase, including silt fencing around the pond to prevent sediment runoff into the pond, and a buffer of at least 10m between the pond and construction works and refuelling of machinery and plant.
- 20.2.30 Two notable butterfly species were recorded outside the Site boundary to the west of the Site but are likely to be found on Site within the semi-improved grassland. Marsh fritillary is a vulnerable Annex II-listed species, while wood white, which is presumed to be the wood white *Leptidea sinopsis* on a precautionary basis, is not protected but near-threatened. Both species may breed on site and larval food plants of both species are present across the site.
- 20.2.31 Potential impacts of the construction phase of the Proposed Development on these butterflies include loss of habitat and potential injury or mortality of larvae which may be present within the grassland. Marsh fritillary larvae hibernate between late September and February or early March and become chrysalises in April/May and emerge as adult butterflies two to three weeks later. During this time, larvae are particularly susceptible to disturbance and habitat destruction. Removal of this habitat must be completed following checks for larvae of marsh fritillary between August and September when larval webs on devil's-bit scabious are conspicuous and before larvae begin to hibernate. Vegetation clearance must be completed in late spring / early summer (as advised at the time by the ECoW) when adults are on the wing. Should larval webs be found in the area of grassland to be removed, works should be halted and further advice sought from an Ecological Clerk of Works and relevant consultees.
- 20.2.32 With the implementation of mitigation measures, residual impacts to protected mammals, breeding birds, smooth newt, lizard, and marsh fritillary are not significant.

Operational Phase

- 20.2.33 Air quality modelling has concluded that the Proposed Development will not give rise to significant adverse air quality effects on sensitive habitats or species within European sites (EIA Chapter 7, Volume I and Appendix 7A, EIA Volume II).
- 20.2.34 The Screening for Appropriate Assessment also concluded there will be no likely significant effects to any European site as a result of the operational phase of the Proposed Development. Full details are presented in Appendix 9D (refer to EIA Volume II).
- 20.2.35 There are no operational phase impacts predicted that would impact breeding birds, mammals such as hedgehog and Irish hare, amphibians, common lizard and butterflies.
- 20.2.36 There are no potential impacts from the operational phase of the Proposed Development that are predicted to impact wintering birds. Birds within the survey area are already acclimated to noise and disturbance from the adjacent existing Tynagh Power Station, the Approved Development Ref: 21/2192, the industrial Sperrins Galvanising works and,

as such, the addition of an OCGT would have no discernible or predicted effect on the low number of birds currently using the Site and surrounding areas.

Decommissioning Phase

20.2.37 Effects arising from the process of decommissioning of the Proposed Development are considered to be of a similar nature and duration to those arising from the construction process and therefore have not been considered separately.

20.2.38 A Decommissioning Plan (including a Decommissioning Environmental Management Plan (DEMP)) will be prepared and agreed with the relevant authority at that time. The DEMP will consider in detail all likely environmental risks on the Site and contain guidance on how risks can be removed or mitigated. Decommissioning activities will be conducted in accordance with the appropriate guidance and legislation at the time of the Proposed Development's closure.

Landscape and Visual (EiAR Chapter 10)

Construction Phase

20.2.39 Landscape and visual effects and their significance at construction stage will be temporary adverse and will result in:

- Likely effects to landscape character or visual amenity within the locality or the wider study area as a result of the visibility of construction activities such as, scaffolding, cranes, the movement of construction vehicles along local roads, and other tall equipment such as machinery on site;
- Effects of temporary site infrastructure such as site traffic and temporary site construction compounds; and
- Likely direct effects arising from construction of the development will be confined to the Site.

20.2.40 The highest landscape and visual effects during the construction stage will be experienced in the vicinity of the Site, from locations with open or partial views of the Proposed Development. Principal views of construction works will likely be experienced within a radius of up to approximately 500m from the boundary of the Site in all directions due to the Proposed Developments location and the location of the existing Tynagh CCGT Power Station, which is an existing feature within this area of Co. Galway. Construction works will also be visible beyond 500m and the 5km study area in views at elevation, particularly to the north where there is little vegetation screening. While discernible, the construction effects in long distance views are not considered significant as they form part of a wide panoramic view in which they form one visible component of many.

Operational Phase

20.2.41 The main landscape effects of the Proposed Development will be associated with the introduction of additional industrial infrastructure and emissions stack associated with the proposed OCGT, leading to an intensification of the established industrial character of the Site and its surroundings. It is considered that the Proposed Development will not significantly alter the prevailing landscape character within the study area, however the industrial character within the overall landscape character area will intensify further with its introduction.

- 20.2.42 Direct and long-term change or modification will occur locally where the Proposed Development will be physically located, in particular the introduction of additional building infrastructure on an area of land adjacent to the existing Tynagh CCGT Power Station Site. The magnitude of landscape change is considered High and the resulting significance Slight Neutral as the site is already industrial in character.
- 20.2.43 Indirect change will occur outside of the Site boundary, where the visibility of the Proposed Development has an influence on the perception of the character of the landscape. The indirect change in landscape character is greatest in its immediate and close surroundings where open and partial views are possible within approximately 500m radius from the Site boundary in views from the north, south and west. Views from the south-west and east are largely screened by vegetation and landform. A significant bund associated with the former mine screens views from the south-western section of the study area. The magnitude of change in these areas is considered Medium. The significance of landscape effects on the landscape character is therefore considered to be Moderate Adverse.
- 20.2.44 Indirect change and the significance of landscape effects will reduce with increasing distance from the Site in the remaining study area (between approximately 3km and 5km from the Site boundary) to Moderate and Slight Adverse. Given the prominence of the existing 55m emissions stack associated with the existing Tynagh CCGT Power Station, the intensification of the industrial character can be recognised over long distances throughout the wider study area in available views.
- 20.2.45 Visual effects will mainly relate to the introduction of industrial buildings/ plant and an emissions stack which will intensify the industrial nature of the site and immediate surrounds.
- 20.2.46 The main visual receptor groups are local residents, vehicle travellers, and pedestrians.
- 20.2.47 The Proposed Development will add to the existing industrial building complex within the Tynagh CCGT Power Station Site. Depending on weather conditions, the proposed 40m emissions stack will be visible from elevated locations to the north, beyond 3km. It will introduce another industrial feature, with additional buildings, such as the air intake building becoming more prominent within available views. However, the existing Tynagh CCGT Power Station with its 55m high emissions stack will remain the most prominent industrial feature particularly in views immediately west and south-west of the Site boundary (refer to Photomontage 01 – 03, Appendix 10A, EIA Volume III) as well as in elevated views north and north-east within an area of approximately 3km radius from the Site (refer to Photomontage 05). Long distance (up to approximately 5km) views from elevated areas further north will be possible where elevated and open views of the Proposed Development become available.
- 20.2.48 The magnitude of visual effects on local residents and residential areas with views of the Proposed Development within approximately 500m are considered to range from Low to High and with effects ranging between Slight Neutral –Moderate Adverse depending on the openness of views and intervening screening by vegetation, topography or built structures. The highest visual effects will be experienced within approximately 500m radius from locations with open or partial views of the proposed emissions stack and sections of the building.
- 20.2.49 Views beyond approximately 500m will comprise mainly the upper sections of the emission stack and air intake plant, which will be recognisable but, as for the entire Proposed Development, it will be seen in conjunction with the existing already prominent Tynagh CCGT Power Station structures including the existing 55m emissions stack as

well as Approved Development Ref: 21/2192, as seen in Viewpoint/ Photomontage 03. The magnitude of visual change is considered Low - Medium and the significance Slight Neutral - Moderate Adverse.

20.2.50 In long distance views ranging between approximately 1km – 3km, particularly from the N65 to the north and Tynagh Village to the south, effects will vary from Low to Medium and their significance from Moderate Adverse to Slight Neutral. While the Proposed Development will intensify and extend the perceived industrial character within the receiving landscape and become a new feature within the existing view, the change will be additional elements seen in conjunction with the existing prominent elements and will likely be perceived as one development, this can be seen in Viewpoint/ Photomontage 05. The proposed architectural mitigation measures in terms of façade design and colour will help integrate the Proposed Development into its setting. The magnitude of visual effects is considered Medium and its significance Moderate Adverse.

Decommissioning Phase

20.2.51 The Proposed Development will be decommissioned when it reaches the end of its useful life at some point after 2052. At that time, detailed decommissioning procedures will be produced in line with prevailing best practice to ensure that there will be no significant, negative environmental effects from the decommissioning of the Proposed Development. As a result, additional potential impacts and associated effects arising during the decommissioning phase are not anticipated above and beyond those already assessed during the construction phase.

Noise and Vibration (EIA Chapter 11)

Construction Phase

20.2.52 The weekday daytime and Saturday morning construction noise criteria for all the identified closest receptors is 65 dB $L_{Aeq,T}$ (façade).

20.2.53 The Applicant and Engineering Design Team anticipate that the noisiest period of construction activity will be during months 8 and 9, when piling and other civil engineering works are taking place. If construction noise levels during this period are demonstrated to be compliant with the nominated criteria, it follows that construction noise levels will be compliant at all other times.

20.2.54 No significant adverse effect is predicted at noise-sensitive receptor positions with regard to construction phase noise levels generated by on-site activities.

20.2.55 With regard to construction traffic noise, a negligible impact is predicted on the N65, and a minor impact is predicted on LP4310 Gurtymaden to Tynagh Road. Therefore, no significant adverse effect is expected at noise sensitive receptor positions as a result of additional construction traffic on existing roads.

Operational Phase

20.2.56 Noise assessments concluded that, without mitigation measures, noise emissions from the Proposed Development would not comply with the relevant assessment criteria. However, mitigation measures were incorporated into the Proposed Development design so that predicted residual noise levels associated with the operation of the Proposed Development are below said criteria at all selected receptors and assessed to be not significant. The effects of operational noise will be long-term and occur whenever the development is in operation.

Decommissioning Phase

20.2.57 Effects arising from the process of decommissioning of the Proposed Development are likely to be of a similar nature and duration to those arising from the construction process. This is because similar processes will be employed, except for piling activities which are not required and therefore have not been considered separately in EIA Chapter 11. Where this assessment refers to potential construction effects, these are also representative of predicted decommissioning effects.

Water Environment (EIA Chapter 12)*Construction Phase**Surface Water Quality: Suspended Fine Sediment*

20.2.58 Chapter 12 describes the broad range of surface runoff control measures that will be utilised on the Site, which will be described by the Engineering and Construction (E&C) Contractor in the Construction Environmental Management Plan (CEMP).

20.2.59 Using the source-pathway-receptor approach, the source is the numerous construction activities that might generate runoff laden with fine sediment, including construction of the surface water drainage system. The pathway is the process of runoff over the impermeable surfaces on the Site towards watercourses, and likelihood for direct mobilisation of runoff water into the existing drainage system.

20.2.60 With the embedded mitigation measures described in Chapter 12 in place, there would be a negligible impact to the surface water environment, and this would give a negligible effect for all waterbodies. As a medium importance receptor this would give an imperceptible effect.

Surface Water Quality: Chemical Spillages

20.2.61 During construction, fuel, hydraulic fluids, solvents, grouts, paints and detergents and other potentially polluting substances will be stored and/ or used on the Site. There may also be substantial volumes of stagnant water or other liquid/ chemical substances within the existing drainage network and other redundant process infrastructure on the Site. Leaks and spillages of the aforementioned substances (the source in the source-pathway-receptor approach) would pollute the nearby surface watercourses if their use or removal is not carefully controlled and if spillages enter the existing drainage network or waterbodies directly (the pathway in the source-pathway-receptor approach).

20.2.62 Given the implementation of the mitigation measures as described in Chapter 12, including implementation of the CEMP, and that there are no direct works to watercourses, then there would be a negligible impact.

Effects on Groundwater

20.2.63 There is a likelihood for contaminated soil or fill material exposed or disturbed during construction to reach the identified groundwater receptors and for contaminants to be introduced to the subsurface as a result of spillages, and to migrate into groundwater or surface water receptors (as baseflow or contributions to stream flow). Rain falling on exposed soil washes or leaches contaminants (if present) into the soil and downwards into the water table, which varies between 1m and 5m below the surface based on available site investigation information. The superficial deposits are present beneath the Made Ground to depths of between 1.8m and 9+m.

20.2.64 There is a likelihood of groundwater being encountered in excavations at depths between 1.2m and 5.3m below grade, depending on location, and potential for temporary dewatering to be required.

20.2.65 With the embedded mitigation measures outlined in Chapter 12 and Chapter 13 (of this EIA) in place, the magnitude of impact to groundwater quality through the mobilisation of existing contaminants in soil and the migration of introduced contaminants in soil as a result of spillages into groundwater receptors is likely to be negligible. This would result in an imperceptible effect on a high sensitivity receptor.

Effects on Watercourse Hydromorphology

20.2.66 There are no direct works to watercourses required for the Proposed Development such as new culverts or structures. The surface water drainage network will use an existing outfall to the former open pit mine. As such, there is no impact on the hydromorphology of watercourses during construction.

Fluvial and Coastal Flood Risk

20.2.67 The construction phase of the Proposed Development would not involve works in a fluvial flood plain.

20.2.68 With the implementation of standard construction methods and mitigation as described in the oCEMP, this risk can be effectively minimised (for example by monitoring weather forecasts and flood warnings, by ensuring an adequate temporary drainage system is in place and maintained throughout the construction phase and avoiding stockpiling material on floodplains). As such, the magnitude of flooding from these sources during construction is considered negligible, on site and further downstream. This gives rise to an imperceptible effect in EIA terms.

Surface Water Flood Risk

20.2.69 The Site would in general be at a low risk from surface water flooding. During the works, existing surface flow paths may be disrupted and altered due to site clearance, earthworks, and excavation work. The exposure and compaction of bare ground and the construction of impermeable surfaces would alter the rates and volume of runoff and increase the risk from surface water flooding. However, with the implementation of standard construction methods and mitigation measures, this risk will be effectively minimised. As such, the magnitude of flooding impact from these sources during construction is considered to be negligible, resulting in an imperceptible effect.

Groundwater Flood Risk

20.2.70 Any excavations on the Site have the likelihood to liberate groundwater in some areas. With the implementation of the measures outlined in the oCEMP, this risk will be effectively minimised, giving a negligible magnitude of impact, resulting in an imperceptible effect.

Operational Phase

Potential Pollution of Surface Watercourses: Surface Water Routine Runoff and Accidental Spillages

20.2.71 The proposed surface water drainage system for the Proposed Development will tie into the existing on-site water treatment plant, which outfalls to the former enclosed open pit mine under the conditions set out in the Industrial Emissions (IE) Licence.

20.2.72 Using the source-pathway-receptor approach, the source of pollution would be contaminants on impermeable surfaces on site (e.g., metals or oils from vehicles on roads, fuel leaks from tanks and pipelines) which are transferred by the pathway of the surface water drainage network to the surface water environment (the receptor).

20.2.73 The Proposed Drainage Layout is included in Appendix 12A (refer to EIA Volume II) and frames the parameters that will be developed at the detailed design stage. Pollution controls will be included to prevent accidental discharge of pollutants to surface watercourses. Given that the Drainage Strategy will have to meet standards required by the IE Licence and local/ national policy requirements, and that measures will be in place for dealing with spillages and firewater, then a negligible impact from surface water drainage is predicted to surface water receptors, which are considered to be of high sensitivity. This would result in an imperceptible effect.

Potential Pollution of Groundwater: Runoff and Accidental Spillages

20.2.74 There is a likelihood for contaminants introduced to soil as a result of accidental spillages or leakages to migrate into groundwater receptors. The protection of groundwater quality during the operation phase will be achieved through implementation of the Drainage Strategy, with all surface water being directed to the existing outfall via treatment systems. With the proposed mitigation in place, the risk of surface water runoff from the hardstanding areas of the Site containing significant levels of contaminants is low.

20.2.75 Through implementation of the embedded mitigation measures outlined in Chapters 12 and 13 in place, the impact magnitude of spillages in soil migrating into groundwater receptors is negligible. This would give an imperceptible effect for the aquifer.

Flood Risk

20.2.76 The Flood Risk Assessment (Appendix 12A, EIA Volume II) concluded the Proposed Development is not at risk from fluvial flooding and is at a very low risk from groundwater flooding.

20.2.77 There is no process effluent drainage discharge to watercourses associated with the Proposed Development, and surface water runoff will be discharged at the greenfield runoff rate (1-2 litres/second/hectare) to the former open pit mine under conditions of an environmental permit. As such, there will be negligible impact on surface water flooding.

20.2.78 Based on the above it is concluded that the operational Proposed Development is not at risk from any external sources of flooding and nor do the proposals cause an increase in upstream or downstream flood risk. As such the flood risk during operation is imperceptible.

Decommissioning Phase

20.2.79 A Decommissioning Plan (including a DEMP) will be produced and agreed with the EPA as part of the Environmental Permitting and site surrender process.

20.2.80 Measures to control mobilisation of fine sediments and to control spillages associated with the use of chemicals and plant on site, as described in the outline CEMP (refer to Appendix 5A for oCEMP), would similarly apply to the decommissioning procedures. Given the restricted nature of the decommissioning works in comparison to construction as well as the implementation of best practice, the potential for impacts is considered to be negligible.

Soils and Geology (EIA Chapter 13)

Construction Phase

- 20.2.81 No impact to or removal of agricultural land or to soil resources is envisaged and all works are on unvegetated Made Ground. It is anticipated that clean fill material will be imported to raise ground levels to elevations similar to the existing Tynagh CCGT Power Station.
- 20.2.82 Given the implementation of the mitigation measures as described in Chapters 12 and 13, including implementation of the CEMP, and that there are no direct works to watercourses, the impact magnitude of existing or introduced contaminants in the subsurface migrating via the subsurface into surface water receptors would be negligible on Lough Derg and/ or the River Shannon and the Lisduff (Kilcrow)_020 river (Poor quality) or its tributaries (Poor quality). This would give a negligible effect for all of the waterbodies. As a medium importance receptor this would give an imperceptible effect.
- 20.2.83 For groundwater impacts, with the embedded mitigation measures outlined in Chapters 12 and 13, including implementation of the CEMP, the magnitude of impact to groundwater quality through the mobilisation of existing contaminants in soil and the migration of introduced contaminants in soil as a result of spillages into groundwater receptors is likely to be negligible. This would result in an Imperceptible effect on a high sensitivity receptor (Bedrock Aquifer).
- 20.2.84 The impact magnitude on construction workers (high importance), off-site residential receptors (very high importance) and off-site urban/ industrial land users (medium importance) is likely to be negligible due to the lack of extensive excavations, and control measures in practice with implementation of the CEMP, with no further requirements for control measures to reduce risks to human health/ make land suitable for intended use. This would give an Imperceptible additional risk for off-site residential receptors, off-site urban/ industrial receptors, and construction workers.

Operational Phase

- 20.2.85 The Proposed Development will not result in a loss of agricultural land or change in land use classification. However, there is a possibility that contaminants could be introduced to the subsurface and soil resources as a result of accidental leakages from fuel storage areas. This would result in a small adverse impact, resulting in a small adverse effect on Urban grade land. These effects are considered to be Imperceptible.
- 20.2.86 The impact magnitude of existing or introduced contaminants in the subsurface migrating into surface water receptors would be negligible. Overall, this gives a slight adverse effect. These effects are considered to be Imperceptible and therefore no additional mitigation is required, over and above that set in Chapters 12 and 13.
- 20.2.87 The impact magnitude of spillages in soil migrating into groundwater receptors is negligible, with a very low risk of pollution leakages. This would give a small adverse effect for the superficial deposits and Limestone bedrock aquifers. These effects are considered to be Imperceptible and therefore no additional mitigation is required, over and above that set out in Chapters 12 and 13.

Decommissioning

- 20.2.88 Given the restricted nature of the decommissioning works in comparison to construction, as well as the prior uses of the site to any decommissioning, a Decommissioning Plan (including a DEMP) will be produced and agreed with the EPA as part of the IE Licence surrender process. An environmental Baseline Assessment report at the time of commencement of operations will be referred to and updated to determine if any

additional contamination has occurred and what, if any, rehabilitation is required prior to IE Licence surrender.

20.2.89 The predicted impacts on soils and geological receptors likely to occur during the decommissioning phase are anticipated to be similar to those likely to occur during the construction phase with the exception of the impacts relating to unidentified contamination.

Traffic (EIAR Chapter 14)

Construction Phase

20.2.90 All HGVs will be directed to only use the section of LP4310 Tynagh Road north of the Site to travel to/ from the Site. This is the shortest and most efficient connection to the N65 and the wider National Road Network. Staff will also be encouraged to travel in this direction. This haulage route restriction (travelling north on LP4310 Tynagh Road) will be a requirement within the Construction Traffic Management Plan (CTMP).

20.2.91 The construction phase of the development is 18-24 months in duration. Peak HGV traffic is expected during Months 1-3. During these months, a maximum of 39 HGVS will arrive to the site each day (78 two-way trips).

20.2.92 Staff trips have been calculated based on a car occupancy rate of 1.5. Therefore, 200 staff equates to 133 vehicles (or 266 LGV two-way trips).

20.2.93 A link capacity assessment verified that LP4310 Tynagh Road will continue to operate with ample spare capacity even in a worst-case scenario where all staff and HGV traffic is on the network during peak periods. All links assessed were also able to run within capacity even in situations where existing traffic, development traffic, and outage traffic associated with the existing Tynagh CCGT Power Station were on the network.

20.2.94 The peak hour traffic impact and daily traffic impact on the site access junction on LP4310 Tynagh Road will exceed the 10% threshold. This threshold is only minorly exceeded and is likely to be due to the low background traffic flows. It should also be reminded that the 12 trips assessed were doubled to allow for a robust assessment. In reality, if HGVs were to arrive uniformly throughout the day, the percentage impacts would be halved.

20.2.95 It should also be noted that this traffic impact is temporary, i.e. HGV peak for 12 weeks. It is therefore considered that this impact is not of concern and will not have a detrimental effect on the road network.

20.2.96 Additionally, it is also considered that the existing Tynagh CCGT Power Station will experience outages during the construction phase of the Proposed Development. During these outages, approximately 180 no. staff will be arriving to the site (120 no. vehicles based on 1.5 car occupancy).

20.2.97 These trips already have approval, i.e., maintenance for the existing operation of the Tynagh CCGT Power Station site. However, there was not an outage during the time of the traffic counts collected for the study/ assessment and therefore these potential additional flows were not recorded. The results show that the traffic remains within the road capacity even with the addition of outage traffic.

20.2.98 Due to the high traffic impact, a pavement (road surface) assessment has been completed on the LP4310 Gurty Madden to Tynagh Road to identify the current state of the local road network (see EIAR Vol II Appendix 14A). The overall impact on road pavements and below ground infrastructure on the N65 (National Network Road) from

construction vehicles associated with the Proposed Development, in comparison with current traffic, is considered negligible.

20.2.99 Three abnormal loads are expected to arrive to the Site during the construction phase. These are expected to travel from either Dublin or Shannon Foynes Port to the Site. The abnormal loads route along the LP4310 Gurtymadden to Tynagh Road and into the existing site has already been tracked for a previous application in 2003 (reference 042193) for the existing Tynagh CCGT Power Station. Once appointed, the E&C Contractor will be required to provide a detailed report on these routes and inform the relevant authorities before travel.

Potential Construction Overlap

20.2.100 In November 2021, a planning application and EiAR were submitted to Galway County Council (GCC) for a separate development project, a 299MW OCGT plant on the western portion of the existing Tynagh Power Station site. While the Applicant is unable to implement Approved Development Ref: 21/2192 (refer to EiAR Chapter 1), it is assumed in this EiAR that the construction phase of the Approved Development Ref: 21/2192 could (although unlikely) be before or after the construction of the Proposed Development (i.e. not concurrent and the peak periods would not overlap).

20.2.101 The construction period of the Approved Development could therefore potentially overlap for three months with the construction period of the Proposed Development, Tynagh North. Chapter 14 of this EiAR and Appendix 14H sets out the construction period overlap between the Proposed Development (Tynagh North) and the Approved Development Ref: 21/2192 which could occur for approximately 3 months at either end of the Proposed Development construction phase (i.e. but not concurrent construction phases). In the event of an overlap of the 3 months the total daily traffic assessed (and considered acceptable) within the EiAR Chapter 14: Traffic chapter is higher than the cumulative traffic during the overlap and, therefore, the trips during the potential overlap period do not need to be assessed separately. The results of showed that the traffic remains within road capacity and therefore no significant cumulative impact is expected.

Operational Phase

20.2.102 The operational phase of the development has been determined to be negligible due to the small daily traffic flow generation (5 - 10 daily arrivals). This generation is expected to be LGVs and is not believed to have any major impact on the local road network.

20.2.103 During the operational stage, the gas generation plant will fire primarily natural gas to generate power. Natural gas is currently piped to the Site (through an existing pipe) and there will be no vehicle movements associated with the Proposed Development in this respect.

20.2.104 If the gas supply were to fail, the plant has the ability to function on back up distillate fuel which is stored on site. In these scenarios, approximately 60 no. HGVs would deliver additional distillate fuel to the site (to the on-site storage tanks) by road during day-time hours.

20.2.105 During emergency scenarios (when operating with distillate fuel) up to 60 no. HGV vehicles could arrive to the Site over a day. However, these are not expected to be a frequent or regular occurrence and generate fewer daily trips than were assessed for the construction phase. Therefore, no further assessment has been undertaken.

20.2.106 Operation using back up fuel is only expected to occur during an emergency scenario and during compliance tests. Therefore, it is not expected that the delivery of back up

fuel would be frequent. An emergency scenario has never occurred at the existing Tynagh CCGT Power Station Site and back-up fuel has only been required for testing purposes.

- 20.2.107 Routine maintenance operations will be scheduled to take place during the daytime (delivery) hours and will only extend into the night-time and/ or weekends should this prove necessary to maintaining the continuity of the process during emergency situations. Any non-routine maintenance and repair operations will be undertaken as and when they arise.
- 20.2.108 There is also the possibility that the existing Tynagh CCGT Power Station may experience an outage during the operational phase. However, this was assessed in the construction phase (which has higher traffic flows) and did not cause issues with road capacity. Road capacity would therefore still be acceptable when operational traffic and CCGT outage traffic overlap.
- 20.2.109 All operational trips will access the Site via the existing access with adequate parking provision available on Site to accommodate the staff vehicles.

Decommissioning

- 20.2.110 Full details of the decommissioning works would be presented in a Decommissioning Plan (including a DEMP) as part of the IE Licence and site surrender process for the Proposed Development at the end of the design life.
- 20.2.111 Effects arising from the process of decommissioning of the Proposed Development are considered to be of a similar nature and duration to those arising from the construction process and therefore decommissioning has not been considered.

Land use (EiAR Chapter 15)

Construction Phase

- 20.2.112 The study area is located within the Landscape Character Type (LCT) defined as the Central Galway Complex, within an area classified as having Low Landscape Sensitivity, thus being unlikely to be adversely affected by change.
- 20.2.113 The Proposed Development will be located adjacent to the existing Tynagh CCGT Power Station which has been operational since 2006 and is regulated as a Lower Tier COMAH / Seveso Installation. The impact will be neutral.
- 20.2.114 It is determined that there will be no direct or indirect impact to residential land uses during the construction period. There are no private residential land uses due for demolition or due to be vested as a result of the Proposed Development.
- 20.2.115 The existing businesses located within proximity to the Site will not be directly impacted by the construction phase. Sperrin Galvanisers Ltd is the only business within 500m from the Site. The sensitivity of the area can be considered "low" both for dust soiling impacts and for human health impacts from PM10 releases from all activities, on account of the distance from the activity source to the receptors, and the existing low background concentration particulates (<24µg/m³). The magnitude of impact during construction is unchanged (no impact) resulting in a Neutral significance of impact. There will be no indirect impact to industry and business development land.
- 20.2.116 During the construction period of the Proposed Development, there will be no direct or indirect impact on the permitted planning application by Sperrin Galvanisers Ltd (Reference Number: 19633). The acoustic barriers permitted in this application are currently under construction.

Operational Phase

- 20.2.117 No LCA's will be directly impacted in the operational phase and there will be no change to the Lower Tier COMAH/ Seveso site designation.
- 20.2.118 There are no residential land use areas directly or indirectly impacted by the Operational Phase of the Proposed Development.
- 20.2.119 The existing businesses located within proximity to the Site will remain unaffected directly and indirectly by the operational phase of the Proposed Development.
- 20.2.120 There are no lands zoned for industry or business which are directly impacted by the Site. There will be no indirect impacts to industry and business development land. The magnitude of impact during operation is unchanged (no impact) resulting in Neutral significance of impact.
- 20.2.121 No other planning applications (received or approved within the last five years) will be impacted directly or indirectly within the operational phase.

Decommissioning Phase

- 20.2.122 The relevant best practice mitigation measures will be in place during any decommissioning and demolition works, and the surrounding environment and receptors at the time of decommissioning will be identified through due process and documented in a DEMP. The decommissioning works will be similar in impacts to the construction phase and have been assessed accordingly. The Significance of impact is Neutral or Slight Adverse.

Population and Human Health (EIA Chapter 16)

- 20.2.123 This chapter assessed the potential population and human health impacts with reference to the following EIA chapters: Chapter 7: Air Quality and Climate, Chapter 11: Noise and Vibration, Chapter 12: Water Environment, and Chapter 13: Soils and Geology. The conclusions were as follows:

Air Quality

- 20.2.124 The risk of impact from dust and particulates upon human receptors during construction has been classed as Low for the following activities: demolition; earthworks; construction; and track-out. This is due to the distance from the activity source to the receptors, and the existing low background concentration of particulates.
- 20.2.125 For operational impacts, the impact upon human receptors from NO₂ or CO from the Proposed Development emissions has been assessed. The impacts have been identified as Negligible due to not exceeding any AQS.

Noise and Vibration

- 20.2.126 The impacts on residential (human) receptors from construction noise and vibration are assessed to be Negligible due to the Predicted Construction Sound Pressure Level being below the assessment criteria. Impacts on human health from the Construction Phase Traffic on the LP4310 Gurtymadden to Tynagh Road have been found to be Minor due to a 1.5dB increase in noise from road traffic. The N65 would experience a Negligible impact due to it only having a 0.3dB increase.
- 20.2.127 Operational phase noise emissions were predicted to exceed the relevant noise criteria at nearby sensitive receptor locations. However, with the incorporation of mitigation measures into the Proposed Development's design, no significant adverse impact is expected at residential receptor positions with regards to operational phase sound levels.

Water Environment

- 20.2.128 No direct construction adverse impacts to human health were identified in Chapter 12: Water Environment. Without mitigation during construction, adverse impacts could exist such as: spillages; contaminated and sediment laden site runoff; groundwater flooding; and changes to overland flow. However, the oCEMP details mitigation measures which will be employed before, during and after works. These measures include spill kits, installation of drainage system (which will include oil interceptors), and monitoring of surface water features.
- 20.2.129 Adverse impacts that could indirectly impact human health during the operational phase were identified in Chapter 12: Water Environment. In particular, these include contamination of ground water, surface water from spills, and flooding due to a change in impermeable surfaces. However, with the implementation of standard construction methods and mitigation measures, this risk will be effectively minimised.

Soils and Geology

- 20.2.130 In terms of adverse human health construction impacts related to soils and geology, temporary impacts could exist for off-site receptors such as urban/ industrial land users, residents, and construction workers through the inhalation of contaminated dust and dermal contact with contaminated soil following ground disturbance.
- 20.2.131 Adverse operational impacts relating to contamination of groundwater which could potentially indirectly impact human receptors has been identified in Chapter 12: Water Environment. These would only occur in the event that standard construction practices were not adhered to or if mitigation was not implemented.

Employment

- 20.2.132 With regard to the construction phase, levels of employment will vary throughout the construction period. Local businesses will also benefit from the opportunity to supply materials and plant and equipment during the construction phase which will represent a significant capital investment. The impact would therefore likely be Moderate Beneficial during construction.
- 20.2.133 There will be a high degree of automation in the Proposed Development with all processes controlled from a central control room. During the operational phase, the Proposed Development will be operated, maintained, and managed by suitably qualified and trained personnel. The impact would therefore likely be Minor Beneficial during operation.

Population

- 20.2.134 The Proposed Development would have a Negligible impact upon the regional population of Galway during construction. However, a temporary increase in the number of workers during construction phase (potentially up to 200 at peak time) may require employees to stay in the local area. It is not expected this would have adverse impact, rather it may have a beneficial impact in terms of goods and services providers.
- 20.2.135 Once operational, the Proposed Development would not have an impact upon the local or regional population. Due to a projected increase in population, the Proposed Development would likely bring beneficial impacts in terms of a reliable power supply during periods of high demand in the future. This is pertinent due to the Regional Spatial and Economic Strategy Plan for compact growth in urbanised areas of Galway and the wider towns in the Northern and Western Regional Area.

Material Assets (EIA Chapter 17)*Construction Phase*

- 20.2.136 The estimates of waste generated for the Proposed Development during construction demonstrate that the estimated tonnage produced for the Proposed Development would be Negligible (Not Significant) in line with the stated methodology in Chapter 17 (less than 0.1% of the remaining landfill capacity of the Connacht – Ulster Region (CUR)).
- 20.2.137 In a worst-case scenario, any wastes not recycled or reused would be sent to landfill. In this scenario there would also be a Negligible impact as the total waste would not exceed 0.1% of the available landfill capacity in the CUR region (within 30km) for inert material.
- 20.2.138 Based on the topographical data of the existing Site and the Proposed Development layout and floor levels it is calculated that the site clearance and levelling of the site layout will require a fill importation requirement of 21,000m³. The volume of excavation and cut on the brownfield site will be limited and there will be no export of any excavated material off site.
- 20.2.139 In the construction phase, there will be an underground electrical connection to the existing substation compound. There may be impacts, but this is to be designed and constructed by the electricity network operator.
- 20.2.140 In terms of significance, there will be a low sensitivity associated with these material assets. The magnitude of impact will be ‘no change’ as there will be no measurable change in utilities required. As a result, for this material asset, the significance of impact without mitigation will be Neutral.

Operational Phase

- 20.2.141 The Proposed Development is required under the Grid Code to maintain a secondary fuel supply of approximately 5,400 tonnes (6,600m³) of distillate fuel which will be contained in a tank within a bunded area. The purpose of this secondary fuel is to ensure that power can still be supplied to the electricity network in the event of an interruption to supply from the gas connection. The secondary fuel will only be used in the unlikely event that both the gas connection is unavailable and the other generation on the transmission grid cannot meet demand.
- 20.2.142 A fuel treatment system will be included to remove any contaminants from the secondary fuel that may accumulate during storage, which will be collected in a tank contained within the bunded area prior to its safe disposal. The tank would be emptied when necessary, approximately twice per annum.
- 20.2.143 A fuel forwarding pump will forward the secondary fuel from the storage area to the plant when required.
- 20.2.144 The safe disposal of contaminants from the secondary fuel supply will not be significant in terms of amount or frequency.
- 20.2.145 As a result, and in line with the stated methodology presented in Chapter 17, this would represent a Negligible impact (no waste arisings) and thus is considered not significant.
- 20.2.146 In terms of other waste used as part of the operation and running of the Proposed Development, small quantities of other chemicals (i.e., lubrication oils, propane, CO₂, cleaning agents and glycol/ antifreeze) will also be delivered to and from the Proposed Development. They are expected to be low and thus not considered significant.

- 20.2.147 In a worst-case scenario for a development of this type, the consumable wastes produced are considered Negligible when compared to the methodology outlined in Chapter 17.
- 20.2.148 This is due to the fact that chemicals and effluents will increase in amount by less than 0.1% of current annual waste arisings in the region.
- 20.2.149 The Proposed Development will have an underground electrical connection to the existing substation. An additional electrical bay will be located within the existing electrical substation compound to allow the plant to export electricity to the electricity network. This new infrastructure will be designed and constructed by the electricity network operator.
- 20.2.150 The existing grid infrastructure has a low sensitivity as the substation already exists and only a connection is required. The magnitude of impact will be moderate as there will be additional power generation created. As a result, for this material asset change the significance of impact without mitigation will be Slight Beneficial.

Decommissioning Phase

- 20.2.151 Full details of the decommissioning works would be presented in a Decommissioning Plan (including a DEMP) to be produced and agreed with EPA as part of the IE Licence and site surrender process for the facility at the end of the design life.
- 20.2.152 Effects arising from the process of decommissioning of the Proposed Development are considered to be of a similar nature and duration to those arising from the construction process and therefore have not been considered separately in this chapter. The majority of materials produced during decommissioning are likely to be concrete and steel, which are both likely to be recycled rather than disposed of.

Major Accidents and Disasters (EIA Chapter 18)

Construction Phase

- 20.2.153 The assessment of major accidents and disasters has concluded that a loss of containment of dangerous substances and subsequent fire and/ or explosion is the most credible potential accident which could occur at the Proposed Development.
- 20.2.154 Small quantities of these substances may be present during construction and their use will be controlled by the contractors' health, safety, and environmental management procedures.

Operational Phase

- 20.2.155 The likelihood of a loss of containment of natural gas or distillate fuel which results in a fire and/ or explosion is low, however the consequences of such an event can be significant.
- 20.2.156 Fires and explosions can cause significant harm to people and the environment as a result of the direct effects of thermal radiation and overpressure, plumes containing harmful materials and firewater runoff containing distillate fuel and products of combustion. The Proposed Development will therefore be developed with installed safety systems to prevent a loss of containment and subsequent fire and/ or explosion including:
- The design and construction of process equipment, structural assets, and pipework systems to internationally recognised engineering standards and best practice;
 - Use of welded pipework to minimise joints, installation of flange guards and routing pipework sections below ground to minimise the risk of accidental damage;

- Introduction of a planned, preventative maintenance and asset inspection regime to minimise the potential for failures and defects; and
- Site surfacing will be impervious in all areas where distillate fuel could be present and routed to process drainage systems where oil can be contained and removed should a release occur. Where distillate pipes are routed underground, containment systems with leak detection are standard industrial practice. However, below ground sections are avoided and minimised wherever practicable.

20.2.157 The inventory of substances including natural gas and distillate fuel present within equipment and pipework will be safely isolated and removed prior to dismantling and decommissioning.

20.2.158 The potential impact of natural disasters including climate change effects, such as rising temperatures, storms and flooding, has been considered with an assessment that the overall residual risk from these events causing a major accident as neutral or slight.

20.2.159 The risk of a major accident or disaster from the Proposed Development has been assessed as 'Slight'. Neutral or Slight adverse impacts will be adequately addressed by implementing the mitigation measures described in this assessment.

20.2.160 There will be no significant residual impacts associated with major accidents and disasters.

Decommissioning Phase

20.2.161 Effects arising from the process of decommissioning of the Proposed Development are considered to be of a similar nature and duration to those arising from the construction process which have been assessed and therefore have not been considered separately in this chapter.

20.2.162 A Decommissioning Plan (including a Decommissioning Environmental Management Plan) will be produced and agreed as part of the Industrial Emissions (IE) Licence of the site and site surrender process.

Cumulative Effects and Interactions (EIAR Chapter 19)

20.2.163 Other proposed developments that are also likely to be constructed and operated in the future, and that have the likelihood to generate cumulative environmental effects together with the Proposed Development (and the Approved Development Ref: 21/2192 and the existing Tynagh Power Station), have been identified and are presented in EIAR Chapter 19. Significant cumulative effects may be possible due to the nature of these developments (e.g., the potential to release emissions to air in the vicinity of the same receptors) or their location (e.g., close enough to the Proposed Development to affect the same receptors). Developments which have already been constructed are taken into account in each of the above topic-specific assessments.

20.2.164 The likelihood for cumulative effects with these other developments has been considered for all of the environmental topics by a review of the available information (including this EIAR and any detailed environmental modelling information where available). Through the consideration of the information available (at the time of assessment), it is concluded that there is no potential for any significant residual cumulative effects of the planning applications.

20.2.165 All other assessment topics have concluded that there is no likelihood for significant cumulative effects to arise as a result of the construction or operational phases of the Proposed Development when considered alongside the other identified developments.

20.2.166 Combined effects are defined as those resulting from a single development, in these circumstances the Proposed Development, on any one receptor that may collectively cause a greater effect (such as the combined effects of noise and air quality/ dust impacts during construction on local residents). Mitigation of combined effects is best achieved through management and control measures to prevent the individual impacts in the first instance or reduce the impacts themselves and therefore reduce the likelihood of such interactions occurring. On the basis of the findings in Chapter 19, it was considered that human/ residential and ecological receptors will experience no significant combined effects as a result of dust, noise, water, road traffic, and visual during the construction, operational and decommissioning phases.

20.3 Schedule of Environmental Commitments

20.3.1 As described throughout each of the previous chapters within the EIAR, there are instances where the environmental effects associated with the Proposed Development may be of such a magnitude as to warrant mitigation measures. These measures are deemed necessary to minimise environmental impacts during the operation, construction and/ or maintenance phases of the Proposed Development.

20.3.2 This Schedule of Environmental Commitments (Table 20.3) provides a collective summary of the proposed mitigation measures. Specifically, the following have been tabulated:

- Mitigation measure item number;
- Approximate location of mitigation measure;
- Mitigation objective and commitment;
- Potential timing of the mitigation measure;
- Potential monitoring requirements; and
- Potential additional consultation proposed.

20.3.3 As described in the schedule, there may be a requirement for additional consultation to be carried out (i.e., with statutory bodies and other interested parties). Table 20.3 provides a brief summary of the overall committed mitigation measures.

Table 20.3: Schedule of Environmental Commitments

MITIGATION ITEM NO.	APPROX LOCATION	MITIGATION OBJECTIVE AND COMMITMENT	POTENTIAL MITIGATION MEASURE	TIMING OF MITIGATION MEASURE	MONITORING REQUIREMENTS	ADDITIONAL REQUIREMENT
AIR QUALITY (EIAR CHAPTER 7)						
N/A	N/A	N/A	N/A	N/A	N/A	N/A
CULTURAL HERITAGE AND ARCHAEOLOGY (EIAR CHAPTER 8)						
N/A	N/A	N/A	N/A	N/A	N/A	N/A
BIODIVERSITY (EIAR CHAPTER 9)						
B1	Location of existing grassland and adjacent to Site.	Re-establish species-rich grassland and suitability for a wide range of taxa.	Bare ground adjacent to Site allowed to recolonise naturally with grassland. Manage the grassland for lifetime of the development for biodiversity.	Following construction phase. During operation phase.	Annual monitoring for biodiversity.	N/A
B2	Existing habitat to be removed.	Prevent injury/mortality of protected mammals.	Check habitats to be removed for hedgehog prior to removal.	Prior to construction phase.	None.	N/A
B3	Habitats on Site.	Protect breeding newts, and protect terrestrial habitat used by newts.	Retain breeding pond. Pollution prevention measures. Checks prior to habitat removal.	Prior to, during, and following construction phase.	Regular monitoring of pollution prevention during construction. Annual checks of pond for breeding newt.	N/A

MITIGATION ITEM NO.	APPROX LOCATION	MITIGATION OBJECTIVE AND COMMITMENT	POTENTIAL MITIGATION MEASURE	TIMING OF MITIGATION MEASURE	MONITORING REQUIREMENTS	ADDITIONAL REQUIREMENT
B4	Habitats on Site.	Protect breeding birds.	Removal of vegetation outside breeding season (March – August inclusive). Checks prior to habitat removal.	During and following construction phase.	None	N/A
B5	Habitats on Site.	Protect lizard.	Checks prior to habitat removal.	Prior to and following construction phase.	None	N/A
B6	Habitats on Site.	Protect butterflies.	Checks for marsh fritillary larvae in grassland. Habitat removal at correct time of year. Retain grassland if marsh fritillary present.	Prior to, during, and following construction phase.	Annual monitoring for marsh fritillary presence.	N/A
LANDSCAPE AND VISUAL (EIAR CHAPTER 10)						
LV1	Proposed Site Location	Maximise visual integration of proposed buildings into their environment	Selection of appropriate colours, materials and textures for built structures to minimise their visual impact and to allow buildings to be as unobtrusive as possible against their backdrop.	Planning and Operational Phase	Regular maintenance during operation	N/A
LV2	Proposed Site Location	Reduction of visual effects due to additional lighting	Lighting will be kept to essential locations only, with the position and direction of lighting being designed to minimise intrusion and disturbance to adjacent areas. Use of full cut-off lanterns are proposed to minimise light spillage and upward escape of light onto adjacent areas.	Operational Phase	Regular maintenance during operation	N/A

MITIGATION ITEM NO.	APPROX LOCATION	MITIGATION OBJECTIVE AND COMMITMENT	POTENTIAL MITIGATION MEASURE	TIMING OF MITIGATION MEASURE	MONITORING REQUIREMENTS	ADDITIONAL REQUIREMENT
NOISE AND VIBRATION (EIAR CHAPTER 11)						
NV1	Construction site	Reduce construction noise levels	Use of 'Best Practicable Means' (BPM)	Throughout construction	None	None
NV2	OCGT plant	Reduce operational noise levels at source	Selection of plant with appropriate sound power levels (see Table 11.14 Operational Plant Sound Power Levels)	Prior to operation	None	None
NV3	Surrounding OCGT plant	Reduce operational noise propagation	7.0 m high acoustic barrier around the fin fan cooler 8.0 m high acoustic barrier around the transformers 10.0 m high barrier around the generator, turbine, diffuser and stack base	Prior to operation	None	None
WATER ENVIRONMENT (EIAR CHAPTER 12)						
W1	Proposed Development Site	Prevent flooding	During the construction phase, the Contractor will monitor weather forecasts on a monthly, weekly and daily basis, and plan works accordingly. In addition, the Contractor will sign up to weather warning alerts and describe in the Emergency Response Plan the actions it will take in the event of a possible flood event. These actions will be hierarchal meaning that as the risk increases the Contractor will implement more stringent protection measures.	During construction phase	N/A	N/A
W2	Proposed Development Site	Prevent contamination of groundwater and watercourses from	Contractor to plan and implement the measures outlined within the oCEMP (Appendix 5A) in their CEMP.	During construction	Monitoring to be implemented as per oCEMP.	N/A

MITIGATION ITEM NO.	APPROX LOCATION	MITIGATION OBJECTIVE AND COMMITMENT	POTENTIAL MITIGATION MEASURE	TIMING OF MITIGATION MEASURE	MONITORING REQUIREMENTS	ADDITIONAL REQUIREMENT
		fuel/ oil/ chemical spillages.				
W3	Proposed Development Site	Prevent contamination of groundwater and watercourses from mobilisation of contaminants beneath the site	A Decommissioning Plan (including a Decommissioning Environmental Management Plan) will be produced and agreed with the EPA as part of any future updated Environmental Licence requirements and site surrender processes.	Before decommissioning	If set out in Decommissioning Management Plan	N/A
SOILS AND GEOLOGY (EIAR CHAPTER 13)						
N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRAFFIC (EIAR CHAPTER 14)						
T1	LP4310 Tynagh Road, North of the Site access until the Gurty Madden Road/ N65 crossroads	Pavement Assessment in place to ensure the quality of the Tynagh Road is maintained.	Pavement assessment has been completed on existing road surface and condition.	Before and after construction with additional review during the construction phase.	A monitoring report will be required to show any changes in road surface quality.	Potential road improvements if surface is damaged by construction traffic.
T2	LP4310 Tynagh Road	Restrictions put in place to prevent construction phase HGVs travelling on Tynagh Road to the south of the Site access.	Restrictions put in place to ensure all construction HGVs travel north out of the Site. This will be enforced through the Construction Traffic Management Plan.	During the Construction phase	Restrictions to be monitored to ensure they are enforced.	N/A

MITIGATION ITEM NO.	APPROX LOCATION	MITIGATION OBJECTIVE AND COMMITMENT	POTENTIAL MITIGATION MEASURE	TIMING OF MITIGATION MEASURE	MONITORING REQUIREMENTS	ADDITIONAL REQUIREMENT
LAND USE (EIAR CHAPTER 15)						
N/A	N/A	N/A	N/A	N/A	N/A	N/A
POPULATION AND HUMAN HEALTH (EIAR CHAPTER 16)						
PHH1	Proposed Development Site	As outlined in other technical chapters: prevent dust emissions; reduce noise and vibration levels to an acceptable level and prevent contamination of groundwater and watercourses from fuel/ oil/ chemical spillages.	Contractor to plan and implement the measures outlined within the oCEMP (Appendix 5A) in their CEMP. Measures to prevent impacts upon humans to be incorporated into any Risk Assessments and Method Statements prior to the works taking place.	During construction phase	Monitoring to be implemented as per Contractor's Environmental Management System, following the Plan – Do – Check – Act procedure. Daily visual monitoring during works to ensure no impacts upon residents. Noise monitoring to be implemented if required (as per parameters outlined in the oCEMP).	N/A
MATERIAL ASSETS (EIAR CHAPTER 17)						
MA1	All of site extents	Ensure all utilities are recorded before construction activities begin.	Production of an up-to-date utilities plan for the existing site.	Before construction phase	N/A	N/A

MITIGATION ITEM NO.	APPROX LOCATION	MITIGATION OBJECTIVE AND COMMITMENT	POTENTIAL MITIGATION MEASURE	TIMING OF MITIGATION MEASURE	MONITORING REQUIREMENTS	ADDITIONAL REQUIREMENT
MA2	All of site extents	Ensure all wastes are managed during construction via the CEMP and Site Waste Management Plan.	Production of CEMP by the E&C Contractor and Site Waste Management Plan as part of Permit.	Construction and operational phase	Review of waste on yearly basis or as recommended by finalised CEMP.	N/A
MAJOR ACCIDENTS AND DIASTERS (EIAR CHAPTER 18)						
MAD1	All of site extents	Prevent major accidents and disaster hazards	Production of a site-specific Health and Safety Plan by the E&C Contractor	Before construction phase	Monitoring to be implemented as per Health and Safety Plan	N/A
MAD2	All of site extents	Prevent major accidents and disaster hazards	Production of an Emergency Response Plan prior to the commencement of operations to manage major accident and disaster hazards.	Before operational phase	Regular maintenance and inspection of all facilities	N/A