



BALDONNELL 110KV SUBSTATION ENVIRONMENTAL IMPACT ASSESSMENT REPORT (EIAR) VOLUME II – EIAR MAIN REPORT JUNE 2023

BALDONNELL 110KV SUBSTATION

ENVIRONMENTAL IMPACT ASSESSMENT REPORT - VOLUME II

	Document Control Sheet				
Document Reference	11069				
Report Status	Planning Issue				
Report Date	June 2023				
Current Revision	Planning Issue				
Client:	Greener Ideas Ltd.				
Client Address:	C/O Bord Gáis Energy Ltd				
	1 Warrington Place				
	Dublin 2				
	D02 HH27				
Project Number	11069				

Galway Office Fairgreen House, Fairgreen Road, Galway, H91 AXK8, Ireland. Tel: +353 (0)91 565 211	Dublin Office Block 10-4, Blanchardstown Corporate Park, Dublin 15, D15 X98N, Ireland. Tel: +353 (0)1 803 0406	Castlebar Office Market Square, Castlebar, Mayo, F23 Y427, Ireland. Tel: +353 (0)94 902 1401	Unit 4 Crescent Court, St Nessan's Road, Dooradoyle, Limerick V94 V298 Ireland Tel: +353 (0)61 574 413	Sligo Office The Gateway Building Floor 3, Northwest Business Park Collooney, Sligo Ireland
---	--	--	--	--

Revision	Description	Author:	Date	Reviewed By:	Date	Authorise d by:	Date
А	Planning Issue	Various	06/06/2023	EV/CN	06/06/2023	LB	06/06/2023

TOBIN Consulting Engineers

Disclaime

This Document is Copyright of TOBIN Consulting Engineers Limited. This document and its contents have been prepared for the sole use of our Client. No liability is accepted by TOBIN Consulting Engineers Limited for the use of this report, or its contents for any other use than for which it was prepared.













Table of Contents

1.0	INTRODUCTION	1-1
1.1	BACKGROUND	1-1
1.2	APPLICANT	1-2
1.3	SITE LOCATION	1-2
1.4	LAND OWNERSHIP	1-3
1.5	STATUTORY CONSENT OVERVIEW	1-3
1.5.1	Proposed Baldonnell Substation Consenting Process	
	Gas Fired Power Plant Consenting Process	
1.6	STRUCTURE OF EIA REPORT	
2.0	EIA REPORT METHODOLOGY	2-1
2.1	INTRODUCTION	2-1
2.2	REQUIREMENT FOR ENVIRONMENTAL IMPACT ASSESSMENT	
2.2.1	EIA Directive Context	
2.2.2	EIA and Planning Legislation in Ireland	2-1
	EIA Screening	
2.3	EIA GUIDANCE	2-2
2.4	EIA REPORT CONSULTATIONS	2-3
2.4.1	Consultation with An Bord Pleanála	2-3
Const	ultation with Statutory and Non-Statutory Bodies	2-3
2.5	EIA REPORT PRODUCTION	2-9
2.5.1	Characterisation of the Baseline Environment	2-9
2.5.2	Consideration of Alternatives	2-9
	Description of Significant Effects	
2.5.4	Assessment of Significant Effects	2-11
<i>2.5.5</i>	Mitigation and Monitoring	2-13
	Cumulative Effects	
	Residual Effects	
2.6	ASSUMPTIONS AND LIMITATIONS OF ASSESSMENT	2-14
2.7	PROJECT TEAM AND CONTRIBUTORS TO THE EIAR	2-15
3.0	DESCRIPTION OF DEVELOPMENT	3-1
3.1	OPERATIONAL OVERVIEW	3-1
3.2	DESCRIPTION OF PROPOSED DEVELOPMENT	3-2
3.2.1	Substation	3-2
	Grid Connection	
3.2.3	Temporary Construction Compound	3-3
3.3	GAS FIRED PEAKING POWER PLANT	3-3



3.4	CONSTRUCTION PHASE ACTIVITIES	3-3
3.4.1	Construction Phase Description and Duration	3-3
3.4.2	Construction Environmental Management Plan	3-4
3.4.3	Construction and Demolition Waste Management Plan	3-4
3.4.4	Pre-Construction	<i>3-5</i>
3.4.5	Civil and Construction Works	3-6
3.5	OPERATIONAL PHASE ACTIVITIES	3-6
3.5.1	Hours of Operation	3-6
3.5.2	Operational Staff	3-6
3.5.3	Utilities and Services	3-7
3.6	HEALTH AND SAFETY CONSIDERATIONS	3-8
3.6.1	Project Supervisor Construction Stage	3-8
3.6.2	Seveso	3-9
	Chemical Storage	
3.6.4	Firefighting Systems and Controls	
3.7	DECOMMISSIONING	3-9
4.0	NEED FOR THE OVERALL DEVELOPMENT	. 4-1
4.1	INTRODUCTION	4-1
4.2	EUROPEAN POLICY CONTEXT	4-1
4.2.1	European Green Deal	4-1
4.2.2	A Clean Planet for all: A European strategic long-term vision for a prospe	erous,
	ern, competitive and climate neutral economy (2018)	
	Europe 2030 Climate and Energy Framework	
4.2.4	Renewable Energy Directive 2009/28/EC & 2018/2001/EU	
4.3	NATIONAL POLICY CONTEXT	
	Project Ireland 2040 - Our Plan (National Planning Framework)	
	Revised National Development Plan 2021-2030	
	Government White Paper – Ireland's Transition to a Low Carbon Energy Fo	
	Climate Action Plan 2023 (CAP23) Changing Ireland for the Better	
	NATIONAL POWER GENERATION CAPACITY CONTEXT	
	DS3 Programme	
	Strategy 2020-25 Transform the Power System for Future Generations	
	East Coast Generation Opportunity Assessment (EirGrid, February 2019)	
	Shaping our Electricity Future Roadmap (2021)	
	Generation Capacity Statement 2022-2031	
	Government Statement on the Role of Data Centres in Ireland's Enter	
	egy (2022)	
447	Letter of Support	4-13



4.5	SUMMARY OF NEED FOR THE OVERALL DEVELOPMENT4	l-13
5.0	CONSIDERATION OF ALTERNATIVES	5-1
5.1	INTRODUCTION	
5.2	DO NOTHING SCENARIO	
5.3	ALTERNATIVE CONNECTION POINTS AND TECHNOLOGIES	
5.4	ALTERNATIVE LOCATIONS	
5.5	ALTERNATIVE SITE LAYOUT AND CABLE ROUTE SELECTION	
5.6	ALTERNATIVE CONSTRUCTION AND DECOMMISSION	
	CTICES	
6.0	PLANNING POLICY	
6.1	INTRODUCTION	
6.2	EUROPEAN AND NATIONAL POLICY CONTEXT	
6.3	REGIONAL POLICY CONTEXT	
	Regional Spatial and Economic Strategy for the Eastern and Midland Region.	
6.4	LOCAL POLICY CONTEXT	
	Policy & Objectives Overview	
	Land Use Zoning	
6.4.3	Planning History of Application site and Environs	
6.5	PLANNING CONCLUSIONS	6-7
7.0	POPULATION AND HUMAN HEALTH	7-1
7.1	INTRODUCTION	
7.1.1	Proposed Development	
7.1.1.	1Substation	<i>7-1</i>
7.1.1.2	2Grid Connection	. <i>7-2</i>
7.1.1.3	3Temporary Construction Compound	. <i>7-2</i>
<i>7.1.2</i>	Statement of Authority	7-2
7.2	METHODOLOGY	7-2
7.2.1	General	7-2
7.2.2	Population	7-3
7.2.2.	1Employment	<i>7-3</i>
	2Tourism 7-3	
	Human Health	
	1EIA Directive	
	2EPA EIAR Guidelines (2022)	
	3IEMA Discussion Document (2017)	
	4Health Impact Assessment and Environmental Impact Assessment	
	5Health Protection	
	Consultation	
7.3	EXISTING ENVIRONMENT	7-7



7.3.1 Population	7-7
7.3.1.1Land Use	
7.3.1.2Population Trends	<i>7-9</i>
7.3.1.3Property Receptors	7-11
7.3.1.4Property Values	7-13
7.3.1.5Employment and Economy	7-13
7.3.1.6Tourism 7-16	
7.3.2 Human Health	<i>7-18</i>
7.4 ASSESSMENT OF SIGNIFICANT EFFECTS ON POPULATION	7-22
7.4.1 Do Nothing Effects	<i>7-22</i>
7.4.2 Construction Phase	<i>7-22</i>
7.4.2.1Land Use	<i>7-22</i>
7.4.2.2Population Trends	7-22
7.4.2.3Property Receptors	7-22
7.4.2.4Property Value	7-23
7.4.2.5Employment/Economy	<i>7-23</i>
7.4.2.6Tourism 7-23	
7.4.3 Operational Phase	7-23
7.4.3.1Land Use	7-23
7.4.3.2Population Trends	<i>7-24</i>
7.4.3.3Property Receptors	<i>7-24</i>
7.4.3.4Property Values	7-24
7.4.3.5Employment / Economy	7-24
7.4.3.6Tourism 7-24	
7.4.4 Decommissioning Phase	
7.5 ASSESSMENT OF SIGNIFICANT EFFECTS ON HUMAN HEALTH	7-25
7.5.1 Do Nothing Effects	7-25
7.5.2 Construction Phase	7-25
7.5.2.1Air Quality and Dust Emissions	7-25
7.5.2.2Noise and Vibration	7-26
7.5.2.3Health and Safety	7-26
7.5.3 Operational Phase	7-26
7.5.3.1Air Quality	7-26
7.5.3.2Noise and Vibration	7-26
7.5.3.3Health Benefits	
7.5.3.4Residential Amenity	
7.5.4 Decommissioning Phase	
7.6 MITIGATION AND MONITORING MEASURES	7-28
7.6.1 Construction Phase	7-28
7.6.2 Operational Phase	
7.6.3 Decommissioning Phase	



7.7	CUMULATIVE EFFECTS	7-28
7.8	RESIDUAL EFFECTS	7-28
7.8.1	Construction Phase	<i>7-28</i>
7.8.2	Operational Phase	<i>7-29</i>
7.8.3	Decommissioning Phase	<i>7-29</i>
8.0	LAND, SOILS AND GEOLOGY	8-1
8.1	INTRODUCTION	8-1
8.1.1	Statement of Authority	8-1
8.2	METHODOLOGY	8-2
8.2.1	Relevant Guidance	<i>8-2</i>
8.2.2	Public Information Sources	8-2
8.3	EXISTING ENVIRONMENT	8-3
8.3.1	Site Topography and Geomorphology	<i>8-3</i>
8.3.2	Land Use	<i>8-3</i>
8.3.3	Regional Soils and Subsoils	8-3
8.3.4	Bedrock	8-4
8.3.5	Mineral / Aggregate Resources	8-7
8.3.6	Geological Heritage	8-7
8.3.7	Soil Contamination	8-7
8.3.8	Geohazards	8-7
8.4	POTENTIAL EFFECTS OF THE DEVELOPMENT	8-8
<i>8.4.1</i>	Do-Nothing Scenario	8-8
<i>8.4.2</i>	Potential Effects During Construction	8-8
<i>8.4.3</i>	Potential Effects During Operation	8-10
<i>8.4.4</i>	Potential Effects During Decommissioning	8-10
<i>8.4.5</i>	Summary of Potential Impacts	8-11
8.4.6	Major Accidents	
8.5	MITIGATION MEASURES	8-13
<i>8.5.1</i>	Mitigation Measures During Construction Phase	8-13
<i>8.5.2</i>	Management of Excavated Materials	8-13
<i>8.5.3</i>	Mitigation Measures During Operational Phase	8-14
<i>8.5.4</i>	Mitigation Measures During Decommissioning Phase	<i>8-15</i>
8.6	CUMULATIVE IMPACTS	8-16
8.7	RESIDUAL IMPACTS	8-16
8.7.1	Summary of Residual Impacts	8-16
8.8	CONCLUSION	8-19
9.0	HYDROLOGY & HYDROGEOLOGY	9-1
9.1	INTRODUCTION	
9.1.1	Statement of Authority	



9.1.2	Scope of Assessment	9-2
9.1.3	Legislative / Guidance Review	
9.1.4	Study Methodology	<i>9-3</i>
9.2	EXISTING ENVIRONMENT	9-5
9.2.2	Topography	9-5
9.2.3	Surface Water Hydrology	9-5
9.2.4	Hydrogeology/Groundwater	
9.3	POTENTIAL EFFECTS	9-16
9.3.1	Introduction	
9.3.2	Do Nothing Scenario	
9.3.3	Worst Case Scenario	
9.3.4	Construction Phase	
9.3.5	Operational Phase	
9.3.6	Decommissioning Phase	
9.4	MITIGATION MEASURES	9-24
9.4.1	Mitigation by Avoidance	
9.4.2	Mitigation by Prevention and Reduction	
9.4.3	Mitigation Measures - Construction Phase	
9.4.4	Mitigation Measures - Operational Phase	
9.4.5	Decommissioning Phase	
9.5	RESIDUAL EFFECTS	9-31
9.6	CUMULATIVE IMPACTS	9-32
9.7	CONCLUSIONS	9-33
9.8	GLOSSARY	9-34
10.0	AIR QUALITY AND CLIMATE	10-1
10.1	INTRODUCTION	10-1
10.1.	1 Statement of Competency	
10.2	METHODOLOGY	10-1
10.2.	1 Criteria for Rating of Impacts	
10.2.1		
10.2.1		
10.2.1		
10.2.2	2 Construction Phase	
10.2.2		
10.2.2		
10.2.3	3 Operational Phase	
10.2.3	-	
10.2.3		
10.3	BASELINE ENVIRONMENT	
	1 Meteorological Data	



10.3.2 Background Concentrations of Pollutants	10-7
10.3.3 Sensitivity of the Receiving Environment	
10.3.4 Climate Baseline	10-10
10.4 POTENTIAL IMPACTS	10-10
10.4.1 Construction Phase	
10.4.1.1 Air Quality	10-10
10.4.1.2 Human Health	
10.4.1.3 Sensitive Ecosystems	10-13
10.4.1.4 Climate	10-14
10.4.2 Operational Phase	10-14
10.4.2.1 Air Quality	
10.4.2.2 Human Health	
10.4.2.3 Sensitive Ecosystems	
10.4.2.4 Climate	
10.5 MITIGATION MEASURES	
10.5.1 Construction Phase	
10.5.2 Operational Phase	
10.6 CUMULATIVE IMPACTS	10-15
10.6.1 Construction Phase	10-15
10.6.2 Operational Stage	10-16
10.7 RESIDUAL IMPACTS	10-16
10.7.1 Construction Stage	10-16
10.7.1.1 Air Quality	10-16
10.7.1.2 Human Health	10-16
10.7.2 Operational Stage	10-16
10.8 MONITORING	10-17
10.8.1 Construction Phase	10-17
10.8.2 Operational Phase	10-17
10.9 INTERACTIONS	
10.10 SCHEDULE OF ENVIRONMENTAL COMMITME	NTS 10-17
10.11 REFERENCES	
11.0 NOISE AND VIBRATION	11-1
11.1 INTRODUCTION	11-1
11.1.1 Statement of Authority	
11.1.2 Fundamentals of Acoustics	
11.2 METHODOLOGY	11-3
11.2.1 Guidance Documents and Assessment Criteria	
11.2.2 EPA Description of Effects	
11.2.3 Assessment Methodology	
11.3 EXISTING ENVIRONMENT	



11.4 POT	ENTIAL EFFECTS	11-19
11.4.1 Do l	Nothing Effects	11-19
	ential Effects – Construction Phase	
11.4.3 Pote	ential Effects – Operational Phase	11-23
11.5 MIT	IGATION MEASURES	11-27
11.5.1 Con	struction and Decommissioning Phases	11-27
	rational Phase	
11.5.3 Dec	ommissioning Phase	11-29
11.5.4 Mor	nitoring	11-29
11.6 RES	DUAL EFFECTS	11-29
11.6.1 Con	struction / Decommissioning Phases	11-29
	rational Phase	
11.6.3 Cum	nulative Effects	11-31
11.7 CON	ICLUSION	11-31
11.8 REF	ERENCES	11-32
12.0 BIC	DDIVERSITY	12-1
12.1 INT	RODUCTION	12-1
12.2 STA	TEMENT OF AUTHORITY	12-1
	THODOLOGY	
	islation, Plans, Policies and Guidance	
_	dy Area	
12.3.2.1	Zone of Influence	
12.3.2.2	Consultations	
12.3.2.3	Desk Study	
12.3.2.4	Field Survey	12-5
12.3.2.5	Survey Limitations	12-6
12.4 BAS	SELINE EVALUATION CRITERIA	12-6
12.5 EXI	STING ENVIRONMENT	12-9
12.5.1 Out	tput of Desk Study	<i>12-9</i>
12.5.1.1	Designated Conservation Sites	
12.5.1.2	Sites of International Importance	
12.5.1.3	Sites of National Importance	
12.5.1.4	Other Sites of Conservation Interest	
12.5.1.5	Data from Ecological Stakeholders	12-17
12.5.1.6	National Biodiversity Data Centre	12-17
12.5.1.7	Bat Landscape Tool	
<i>12.5.1.8</i>	Surface Water Features - Water Framework Directive	12-18
12.5.1.9	Inland Fisheries Ireland	12-19
12.5.1.10	Review of Previous Ecological Assessments	<i>12-19</i>
12.5.2 Out	tput of Field Surveys	12-20



12.5.2.1	Habitats and Flora	12-20
12.5.2.2	Mosaic of Wet Grassland (GS4) and Spoil and Bare Ground (ED2)	12-20
12.5.2.3	Building and Artificial Surfaces (BL3)	
12.5.2.4	Dry Meadows and Grassy Verges (GS2)	12-21
<i>12.5.2.5</i>	Hedgerow (WL1) and Treeline (WL2)	12-22
12.5.2.6	Depositing Lowland River (FW2)	12-23
12.5.2.7	Drainage Ditch (FW4)	12-24
12.5.2.8	Fauna	12-26
12.5.2.9	Badger	12-26
<i>12.5.2.10</i>	Otter	12-26
12.5.2.11	Bats	
12.5.2.12	Other Small Mammals	12-26
12.5.2.13	Birds	12-27
12.5.2.14	Herpetofauna and Reptile Species	12-28
<i>12.5.2.15</i>	Aquatic Species	12-28
12.5.3 Sumi	mary of Ecological Evaluation	12-28
12.6 IMPA	ACT ASSESSMENT	12-30
12.6.1 Do N	lothing Effects	12-30
12.6.2 Asse	ssment of Impacts on Designated Sites	12-30
12.6.2.1	European Sites	
12.6.2.2	National Sites	
12.6.3 Cons	struction Phase Impacts	12-31
12.6.3.1	Impacts to Habitats and Flora	
12.6.3.2	Habitat Loss	12-31
12.6.3.3	Habitat Degradation due to Water Quality Impacts	12-32
12.6.3.4	Habitat Degradation due to Air Quality Impacts (Dust)	12-32
12.6.3.5	Habitat Degradation due to dispersion of Invasive Plant Species	
12.6.3.6	Impacts to Fauna	<i>12-33</i>
12.6.3.7	Otter	<i>12-33</i>
12.6.3.8	Other Mammal Species	<i>12-33</i>
12.6.3.9	Breeding and Wintering Bird Species	<i>12-33</i>
12.6.3.10	Fish and Aquatic Species	12-34
12.6.4 Oper	rational Phase Impacts	12-34
12.6.4.1	Habitat Degradation due to Surface Water Quality Impacts	12-34
12.6.4.2	Disturbance (Noise and Lighting)	12-35
12.6.5 Decc	ommissioning Phase Impacts	12-35
12.7 MITI	GATION MEASURES	12-35
12.7.1 Cons	struction Phase Mitigation Measures	12-36
12.7.1.1	Construction Environmental Management Plan	
12.7.1.2	Appointment of Environmental / Ecological Clerk of Works	
12.7.1.3	Pre-construction Botanical Survey	
12.7.1.4	Clearance of Vegetation	12-36



<i>12.7.1</i>	4.5 Management of Invasive Species and Pathogens	<i>12-36</i>
12.7.1	1.6 Protection of Baldonnell Stream	<i>12-37</i>
12.7.1	1.7 Protection of Nesting Birds	<i>12-38</i>
12.7.2	2 Operational Phase Mitigation	<i>12-38</i>
12.7.2		
12.7.2		
12.7.3	3 Decommissioning Phase Mitigation Measures	<i>12-38</i>
12.8	CUMULATIVE EFFECTS	12-38
<i>12.8.</i> 2	1 Projects	12-39
	2 Plans	
12.9	RESIDUAL EFFECTS	12-39
12.9.	1 Construction Phase	12-40
12.9.2	2 Operational Phase	12-40
12.9.3	3 Decommissioning Phase	12-40
12.10	REFERENCE	12-41
13.0	CULTURAL HERITAGE	13-1
13.1	INTRODUCTION	13-1
13.1.1	Statement of Authority	13-1
	METHODOLOGY	
13.2.1	Definitions	13-1
	PLegislation and Guidelines	
13.2.3	Consultation	13-2
13.2.4	Paper Survey	13-2
	Field Inspection	
13.3	BASELINE ENVIRONMENT	13-4
13.3.1	Archaeological and Historical Background	13-4
	Summary of Previous Archaeological Fieldwork	
	Cartographic Analysis	
	County Development Plan	
	5 Stray Finds within the Surrounding Area	
	6 Aerial Photographic Analysis	
	7 Field Inspection	
	CONCLUSIONS	
	ASSESSMENT OF SIGNIFICANT EFFECTS	
	Do Nothing Scenario	
	Construction Phase	
	Operational Phase	
	MITIGATION AND MONITORING MEASURES	
13.6.1	Construction Phase	13-20



13.6.2	2 Operational phase	
13.7		
13.8	RESIDUAL EFFECTS	13-20
13.9	REFERENCES	13-21
14.0	LANDSCAPE/TOWNSCAPE & VISUAL IMPACT ASSESSMEN	NT.14-1
14.1	INTRODUCTION	14-1
<i>14.1.</i>	1 Statement of Authority	14-1
14.2	METHODOLOGY	14-1
14.2.	1 LANDSCAPE / TOWNSCAPE IMPACT ASSESSMENT CRITERIA	14-2
14.2.	2 Visual Impact Assessment Criteria	14-5
	3 IMPACT MAGNITUDE	
	4 VISUAL IMPACT SIGNIFICANCE	
	5 QUALITY OF EFFECTS	
	6 EXTENT OF STUDY AREA	
	EXISTING ENVIRONMENT	
	1 Landscape/Townscape Context	
	PLANNING CONTEXT	
	1 SOUTH COUNTY DUBLIN DEVELOPMENT PLAN (CDP) 2022-2028	
	VISUAL BASELINE	
	1 IDENTIFICATION OF VIEWSHED REFERENCE POINTS AS A BA	
	MITIGATION AND MONITORING MEASURES	
	ASSESSMENT OF SIGNIFICANT EFFECTS	
	1 LANDSCAPE / TOWNSCAPE EFFECTS	
14.7.		
	1.2 Do-nothing scenario	
	1.3 Magnitude of Landscape / Townscape Effects	
14.8	VISUAL IMPACT ASSESSMENT	14-21
<i>14.8.</i>	1 VISUAL RECEPTOR SENSITIVITY	14-21
	2 MAGNITUDE OF VISUAL EFFECT	
14.9 29	OVERVIEW OF LANDSCAPE / TOWNSCAPE AND VISUAL EFFI	ECTS 14-
14.1	0 OVERALL SIGNIFICANCE OF IMPACT	14-29
15.0	TRAFFIC AND TRANSPORTATION	15-1
15.1	INTRODUCTION	15-1
	METHODOLOGY	
	.1 Policy and Guidelines Context	
	.2 Consultation	



15.2.3 Jun	ction Analysis	15-2
15.2.4 Ass	sessment Time and Years	15-3
15.3 BAS	ELINE ENVIRONMENT	15-3
15.3.1 Exi	sting Road Network	15-3
15.3.2 Pro	posed Network Improvements	15-3
	posed Site Access Junction	
	ffic Survey	
	ESSMENT OF SIGNIFICANT EFFECTS	
	Nothing Scenario	
	Something Scenario	
	1ULATIVE EFFECTS	
	GATION AND MONITORING MEASURES	
	nstruction Phase	
	eration phase	
	commissioning Phase	
	DUAL IMPACTS	
	nstruction Phase	
15.7.2 Op	erational Phase	15-7
15.7.3 Dec	commissioning Phase	15-7
15.8 REFI	ERENCES	15-8
16.0 MAT	TERIAL ASSETS	16-1
16.1 INTR	ODUCTION	16-1
16.2 MET	HODOLOGY	16-1
16.2.1 Rele	vant Guidelines, Policy, and Legislation	
	Collection Methods	
	sultation	
16.3 BASE	ELINE ENVIRONMENT	16-2
16.3.1 Base	line Environment – Material Assets of Human Origin	
16.3.1.1	Existing Properties	
16.3.1.2	Road Network	
<i>16.3.1.3</i>	Rail Network	
16.3.1.4	Canals	
<i>16.3.1.5</i>	Recreational Facilities and Amenities	
<i>16.3.1.6</i>	Public Utilities - Gas Network	16-3



<i>16.3.1.7</i>	Public Utilities - Power Infrastructure	16-4
16.3.1.8	Public Utilities - Communications Infrastructure	16-4
16.3.1.9	Public Utilities - Water Supply Infrastructure	16-4
16.3.1.10	Public Utilities - Wastewater Collection Infrastructure	16-4
16.3.1.11	Pedestrian Ways	16-4
<i>16.3.1.12</i>	Aviation	16-4
16.3.2 Base	eline Environment - Material Assets of Natural Origin	16-5
<i>16.3.2.1</i>	Land Resources	16-5
16.3.2.2	Geological Resources	16-5
16.3.2.3	Natural Amenities (watercourses)	16-5
16.3.2.4	Raw Materials	
16.4 ASSE	ESSMENT OF SIGNIFICANT EFFECTS	16-5
16.4.1 Do N	Nothing Scenario	16-5
16.4.2 Do S	Something Scenario	16-5
16.4.3 Cons	struction Phase Effects	16-6
16.4.3.1	Existing Land/Properties	16-6
16.4.3.2	Road Network	16-6
16.4.3.3	Rail Network	16-6
16.4.3.4	Canal Network	16-6
16.4.3.5	Recreational Facilities and Amenities	16-6
16.4.3.6	Public Utilities	16-6
16.4.3.7	Pedestrian Ways	
<i>16.4.3.8</i>	Aviation	
16.4.3.9	Land Resources	
<i>16.4.3.10</i>	Geological Resources	
16.4.3.11	Natural Amenities (e.g., watercourses)	16-7
<i>16.4.3.12</i>	Raw Materials	16-7
16.4.4 Ope	rational Phase Impacts	16-8
16.4.4.1	Existing Properties	16-8
16.4.4.2	Road Network	16-8
16.4.4.3	Rail Network	16-8
16.4.4.4	Canal Network	16-8
16.4.4.5	Recreational Facilities and Amenities	16-8
16.4.4.6	Public Utilities	16-8
16.4.4.7	Pedestrian Ways	16-8
16.4.4.8	Aviation	16-9
16.4.4.9	Land resources	16-9
16.4.4.10	Geological Resource	16-9
16.4.4.11	Natural Amenities (e.g., watercourses)	
16.4.4.12	Raw Materials	16-9
16.5 MITI	GATION AND MONITORING MEASURES	16-10
16.5.1 Cons	struction Phase	16-10



16.5.1.1	Existing Land/Properties	16-10
16.5.1.2	Road Network	16-10
<i>16.5.1.3</i>	Public Utilities	16-10
<i>16.5.1.4</i>	Aviation	16-10
<i>16.5.1.5</i>	Land Resources	16-10
16.5.1.6	Geological Resource	
16.5.1.7	Natural Amenities (e.g., watercourses)	
<i>16.5.1.8</i>	Raw Materials	
	ation phase	
16.6 CUM	JLATIVE EFFECTS	16-11
16.7 RESID	OUAL IMPACTS	16-11
16.8 REFE	RENCES	16-12
17.0 MAJ	OR ACCIDENTS AND DISASTERS	17-1
17.1 INTRO	ODUCTION	17-1
17.2 METH	HODOLOGY	17-1
17.2.1 Conte	ext	
17.2.2 Site S	pecific Risk Assessment Methodology	
17.3 BASE	LINE ENVIRONMENT	17-2
17.3.1 Dubli	n Region Climatic Events	
17.4 ASSES	SSMENT OF SIGNIFICANT EFFECTS	17-3
17.4.1 Do No	othing Scenario	17-3
	cation of Seveso Directive	
	tial Major Accidents or Disasters	
	GATION AND MONITORING MEASURES	
	JLATIVE EFFECTS	
	OUAL EFFECTS	
18.0 INTE	RACTIONS OF THE FOREGOING	18-1
	ODUCTION	
	JSSION OF INTERACTIONS	
18.2.1 Popul	ation and Human Health	
	Soils and Geology	
	ology and Hydrogeology	
	and Vibration	
	Accidents	
18.3 CONO		18-8



Table of Tables

Table 1-1: Structure of EIA Report	1-5
Table 2-1: List of Consultees and Record of Consultations	2-4
Table 2-2: Extracted from the EPA Guidelines (2022)2	<u>'-11</u>
Table 2-3: List of Company Contributors to the EIAR2	:-15
Table 2-4: List of Competent Experts Contributing to the EIAR2	:-16
Table 7-1 Population Trends 2006-2016	7-9
Table 7-2 Population Density 2016 Census7	'- 1 0
Table 7-3 Population Trends 2016 to 2022 (Preliminary Results)7	'- 11
Table 7-4 Property Receptors within 1 km of the Proposed Substation7	'-12
Table 7-5 Labour Force Survey (Q1 2023)7	'-14
Table 7-6 Live Register Figures (April 2022 – April 2023)7	'-15
Table 7-7 Overseas Tourism Statistics (2018 & 2019)7	'- 1 7
Table 8-1: Significance of Land and Soils Criteria – Construction Phase (Pre-mitigation) 8	-11
Table 8-2: Significance of Land and Soils Criteria – Operational Phase (Pre-mitigation)8	-11
Table 8-3: Significance of Land and Soils Criteria – Decommissioning Phase (Pre-mitigation) 12	.8-
Table 8-4: Significance of Land and Soils Criteria – Construction Phase (Post-mitigation) 8	i-17
Table 8-5: Significance of Land and Soils Criteria – Operational Phase (Post-mitigation)8	i-17
Table 8-6: Significance of Land and Soils Criteria – Decommissioning Phase (Post-mitigation 17	า) 8-
Table 9-1: Waterbodies (within 2km radius) and the Proposed Development Site	.9-9
Table 9-2: Relationship between Biotic Indices and Water Quality Classes9	·-13
Table 9-3: Relationship between Biotic Indices and Water Quality Classes (Sourced from E Maps/ Water, accessed in February 2021)9	
Table 9-4: Bedrock Aquifer Classification and Characteristics9	·-15
Table 9-5: Pre-mitigation Magnitude and Significance of Hydrological/Hydrogeological Crite - Construction9	





Table 9-6: Pre-mitigation Magnitude and Significance of Hydrological/Hydrogeologica – Operational	
Table 9-7: Pre-mitigation Magnitude and Significance of Hydrological/Hydrogeologica – Decommissioning	
Table 9-8: Magnitude and Significance of Hydrological Criteria – construction (residual	
Table 9-9: Magnitude and Significance of Hydrological Criteria – operational (residual	impacts)
Table 9-10: Magnitude and Significance of Hydrological Criteria – Decommissioning impacts)	
Table 10-1: Air Quality Standards 2011 (Based on Directive 2008/50/EC)	10-2
Table 10-2: Year Carbon Budgets 2021-2025, 2026-2030 and 2031-2025 (Departme	
Table 10-3: Sectoral Emission Ceiling 2030 (Department of the Taoiseach, 2022)	10-4
Table 10-4: Trends In Zone A Air Quality – PM ₁₀ (μg/m³)	10-8
Table 10-5: Sensitivity of the Area to Dust Soiling Effects on People and Property	10-9
Table 10-6: Sensitivity of the Area to Human Health Impacts	10-9
Table 10-7: Risk of Dust Impacts - Earthworks	10-11
Table 10-8: Risk of Dust Impacts – Construction	10-12
Table 10-9: Risk of Dust Impacts – Trackout	10-12
Table 10-10: Summary of Dust Impact Risk used to Define Site-Specific Mitigation	10-13
Table 11-1: Example Threshold Potential Significant Effect at Dwellings	11-4
Table 11-2: Description of the magnitude of impacts. Adapted from DMRB Table 3.16.	11-6
Table 11-3: Allowable Vibration at Sensitive Properties (TII, 2014)	11-7
Table 11-4: Likely Impacts Associated with Change in Traffic Noise Level (Source: Ta	
Table 11-5: NG4 Approach for Determining Appropriate Noise Criteria	11-8
Table 11-6: Operational Noise Impact Scale	11-11
Table 11-7: Summary of Noise Data for EIAR Noise Model	11-15
Table 11-8: Atmospheric Attenuation Assumed for Noise Calculations (dB per km)	11-16





Table 11-9: Assessment Locations	. 11-17
Table 11-10: Noise Monitoring Results	. 11-18
Table 11-11: Typical Construction Noise Emission Levels	. 11-20
Table 11-12: Review of Potential Daytime Construction Noise Levels	. 11-21
Table 11-13: Review of Potential Daytime Construction Noise Impact	. 11-22
Table 11-14: Predicted Noise Levels	. 11-23
Table 11-15: Review of Overall Noise Levels	. 11-24
Table 11-16: Review of Predicted Changes in Existing Noise Levels – Day	. 11-24
Table 12-1: Site Evaluation Criteria	12-6
Table 12-2: Description of Effects	12-8
Table 12-3: Designated Conservation Sites within 15km of the Proposed Development	. 12-11
Table 12-4: Previous Records of Protected Fauna and Flora within the 2km grid square	
Table 12-5: Results of the Bat Landscape Tool	. 12-18
Table 12-6: Summary of Key Ecological Receptors	. 12-29
Table 133-1: Recorded Archaeological Sites	. 13-14
Table 133-2: Place Name Analysis	. 13-18
Table 14-1: Landscape/Townscape Value and Sensitivity	14-3
Table 14-2: Magnitude of Landscape/Townscape Impacts	14-4
Table 14-3: Impact Significance Graph	14-5
Table 14-4: Magnitude of Visual Impacts	14-7
Table 14-5: Outline Description of Selected Viewshed Reference Points (VRPs)	. 14-17
Table 15-1:Expected Peak Trip Generation for Proposed Development for AM Peak Hou	ır 15-5
Table 15-2: Expected Peak Trip Generation for Proposed Development for PM Peak Ho	ur 15-6
Table 17-1: Risk Classification - Likelihood	17-2
Table 17-2: Risk Classification - Consequence	17-2
Table 17-3: Summary of Major Accidents	17-5





Table 17-4: Mitigation and Monitoring Measures	17-14
Table 17-5: Overview of Potential Risk	17-19
Table 18-1: Interaction between Environmental Topic (positive and negative)	18-2
<u>Table of Figures</u>	
Figure 1-1: Regional Site Location Map	1-6
Figure 1-2: Site Location Map	1-7
Figure 2-1: EIA Process	2-10
Figure 3- 1: Site Layout Plan	3-11
Figure 3- 2: Construction Compound Site Location	3-12
Figure 3- 3: Approved Gas Fired Power Plant Site Layout	3-13
Figure 4-1: European Green Deal	4-1
Figure 4-2: GHG emissions trajectory in a 1.5 degrees C scenario	4-2
Figure 4-3: Primary and Supporting Goals of Strategy 2020-25	4-9
Figure 4-4: Total Electricity Requirement Forecast for Ireland 2021 -2031	4-11
Figure 4-5: Ireland Median Demand Scenario illustrating the approximate spilt into sectors	
Figure 4-6: Core Scenario Adequacy Results for Ireland, in terms of surplus or defici	
Figure 5-1: Alternative Cable Connections	5-3
Figure 5-2: Alternative site layout and cable route selection	5-5
Figure 7-1: Four-step Risk Assessment Process (Source: USEPA, 2016)	7-7
Figure 7-2: Property Receptors identified within 1 km of the proposed s (GeoDirectory, 2023)	
Figure 7-3 - Map indicating Deprivation Levels in South County Dublin (HSE 202 Profile for South Dublin)	
Figure 8-1 Subsoil Map	8-5
Figure 8-2 Geology Map	8-6
Figure 9-1: Regional Catchment Delineation Overview	9-7



Figure 10-1: Casement Aerodrome Windrose 2017 – 2021 (Met Éireann, 2023)10-7
Figure 11-1: dB(A) Scale & Indicative Noise Levels – (EPA: Guidance Note for Noise: Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4 – 2016)) . 11-3
Figure 11-2: Noise Monitoring Locations
Figure 12-1: Designates Sites Map 12-16
Figure 12-2: Habitat Map of the Proposed Development
Figure 13-1: Site location showing recorded monuments (Google Satellite)13-5
Figure 14-1: Study Area14-9
Figure 14-2: Site context within Profile Park14-11
Figure 14-3: Site context adjacent to permitted Gas Fired Peaking Power Plant Plant 14-12
Figure 14-4: Directly north of Profile Park is the built-up Kilbarry Industrial Park 14-12
Figure 14-5: Entrance to Grange Castle South Business Park to the west of the site 14-13
Figure 14-6: Grange Castle Golf Club in the east of the study area14-13
Figure 14-7: South Dublin Development Plan land use zoning in the location of the proposed development (indicative redline)
Figure 14-8: Viewpoint Selection Map14-17
Figure 15-1: Junction Locations15-2
Figure 15-2: Traffic Count Locations
<u>Table of Photographs</u>
Photo 1: Mosaic of Wet Grassland and Bare Ground
Photo 2: Dry Meadow at the Proposed Construction Compound
Photo 3: Treeline Along the Eastern Boundary of the Construction Compound
Photo 4: Drainage Ditch Located at the Eastern Boundary of the Construction Compound 12-24
Photo 5: Possible Snipe Tracks12-28

