



DREHID MECHANICAL BIOLOGICAL TREATMENT FACILITY

WASTE LICENCE APPLICATION ENVIRONMENTAL IMPACT STATEMENT

VOLUME II

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TOBIN CONSULTING ENGINEERS



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TABLE OF CONTENTS

1	INTRODUCTION.....	1
1.1	BACKGROUND.....	1
1.1.1	<i>Background to Proposed Development.....</i>	<i>1</i>
1.1.2	<i>Company Background.....</i>	<i>5</i>
1.1.2.1	Business Development.....	5
1.1.2.2	Waste Management.....	6
1.1.2.3	Regulatory Compliance.....	7
1.2	PROPOSED DEVELOPMENT.....	7
1.2.1	<i>Proposed Development - MBT with Composting and Optional Dry Anaerobic Digestion (AD) Step.....</i>	<i>8</i>
1.3	PLANNING POLICY STRATEGY AND CONTEXT.....	11
1.3.1	<i>Relevant Planning and Development Policies.....</i>	<i>11</i>
1.3.1.1	National Spatial Strategy and National Development Plan.....	11
1.3.1.2	Regional Planning Guidelines for the Greater Dublin Area.....	13
1.3.1.3	Local and County Planning and Development Policies.....	15
1.3.1.4	Regional Waste Management Plan for County Kildare.....	21
1.3.1.5	Overall Compliance with Planning and Development Policies.....	26
1.3.2	<i>Relevant Sectoral Strategies and Guidance.....</i>	<i>27</i>
1.3.2.1	Government Waste Management Policies and Guidance.....	27
1.3.2.2	Sectoral Guidance and Reports from Other Relevant Bodies.....	34
1.3.2.3	Regional Waste Management Plans.....	41
1.3.3	<i>The Quantitative Need for the Facility.....</i>	<i>46</i>
1.3.4	<i>Overall Compliance with Waste Management Strategies and Guidance.....</i>	<i>48</i>
1.4	SITE LOCATION, CONTEXT AND PLANNING HISTORY.....	48
1.4.1	<i>Location of the Proposed Development Site.....</i>	<i>48</i>
1.4.2	<i>Planning History for the Site.....</i>	<i>49</i>
1.4.3	<i>Relevant Planning History for the Bord na Móna Landholding.....</i>	<i>49</i>
1.4.4	<i>Planning History for Area Surrounding the Bord na Móna Landholding.....</i>	<i>52</i>
1.4.5	<i>Overall Characteristics of the Proposed Development Site.....</i>	<i>52</i>
1.4.6	<i>Concluding Remarks –Strategic Planning Considerations.....</i>	<i>52</i>
1.5	ALTERNATIVES.....	53
1.5.1	<i>Alternative Processes.....</i>	<i>54</i>
1.5.1.1	Alternative Mechanical Treatment Processes.....	54
1.5.1.2	Alternative Biological Treatment Processes.....	55
1.5.2	<i>Alternative Sites.....</i>	<i>60</i>
1.5.3	<i>Do-Nothing Alternative.....</i>	<i>61</i>

1.6	BACKGROUND WORK FOR THE ENVIRONMENTAL IMPACT STATEMENT	61
1.7	CONSULTATION AND SCOPING.....	61
1.8	WASTE LICENCE, PLANNING AND ENVIRONMENTAL IMPACT STATEMENT	63
1.9	PROCEDURES AND STRUCTURE OF THE EIS	64
1.10	STUDY TEAM AND CONTRIBUTORS TO THE EIS.....	65
1.11	LIST OF DRAWINGS	66
2	DESCRIPTION OF EXISTING SITE AND PROPOSED DEVELOPMENT	67
2.1	EXISTING SITE.....	67
2.1.1	<i>Site Location</i>	67
2.1.2	<i>Proximity of Housing and Centres of Population</i>	68
2.1.3	<i>Land Use</i>	68
2.1.4	<i>Infrastructure</i>	69
2.1.4.1	Location of the Drehid MBT Facility (traffic and access)	69
2.1.4.2	Existing Traffic Flows on the Adjoining Road Network	69
2.1.4.3	Drehid Waste Management Facility	70
2.1.5	<i>Topography</i>	70
2.2	DETAIL OF THE PROPOSED DEVELOPMENT	75
2.2.1	<i>Proposed Site Infrastructure</i>	76
2.2.1.1	Site Access	76
2.2.1.2	Site Security	76
2.2.1.3	Administration and Welfare Building	77
2.2.1.4	Laboratory Facilities.....	78
2.2.1.5	Mechanical Treatment Building	78
2.2.1.6	Biological Treatment Buildings.....	79
2.2.1.7	Refining Building.....	79
2.2.1.8	SRF Building.....	79
2.2.1.9	Maintenance Building	79
2.2.1.10	SRF Storage Area.....	80
2.2.1.11	Biofilter/Odour Abatement Buildings.....	80
2.2.1.12	Weighbridge and Weighbridge Kiosk.....	80
2.2.1.13	Wheel wash	81
2.2.1.14	Fuel Storage.....	81
2.2.1.15	Site Roads, Parking and Hardstanding.....	82
2.2.1.16	Truck Wash/ Park & Skip Storage	82
2.2.1.17	Traffic Control	82
2.2.1.18	Potable Water Supply	83
2.2.1.19	Surface Water and Foul Water Infrastructure	83
2.2.1.20	MBT Process Waste Water Infrastructure.....	84
2.2.1.21	Other Services.....	85
2.2.1.22	Building Ventilation and Odour Abatement System	85
2.2.1.23	Fire Control System.....	86

2.2.1.24	Heat Transfer System.....	87
2.2.1.25	Gas Flare	87
2.2.2	<i>Project Construction Phase</i>	88
2.2.2.1	Construction Management Plan.....	88
2.2.2.2	Waste Generated during the Construction Phase and Fill Material Requirements	90
2.2.2.3	Construction Scheduling.....	90
2.2.2.4	Construction Quality Assurance	90
2.2.3	<i>Project Operational Phase</i>	91
2.2.3.1	Hours of Operation.....	91
2.2.3.2	Plant and Equipment	91
2.2.3.3	Waste Acceptance Procedures.....	92
2.2.3.4	Site Management Structure	93
2.2.3.5	Raw Materials and Energy	94
2.2.3.6	MBT Outputs.....	96
2.2.4	<i>Nuisance Controls</i>	98
2.2.4.1	General	98
2.2.4.2	Litter Control.....	98
2.2.4.3	Vermin Control.....	99
2.2.4.4	Odour Control.....	100
2.2.4.5	Fire Control.....	101
2.2.5	<i>Decommissioning</i>	102
2.2.6	<i>Health & Safety</i>	103
2.2.7	<i>Environmental Monitoring</i>	103
2.2.7.1	Dust Monitoring Programme.....	104
2.2.7.2	Groundwater Monitoring Programme.....	105
2.2.7.3	Meteorological Monitoring Programme	106
2.2.7.4	Noise Monitoring Programme	107
2.2.7.5	Air Monitoring Programme.....	107
2.2.7.6	Odour Monitoring Programme	108
2.2.7.7	Emissions to Water Monitoring Programme	108
2.2.7.8	Ecological Monitoring Programme	111
2.2.8	<i>Contingency Arrangements</i>	113
2.2.8.1	Contingency Plans for any Emergency On-Site.....	113
2.2.8.2	Contingency Plans for any Breakdowns On-Site.....	113
2.2.8.3	Contingency Plans in Respect of Absentee Staff.....	113
2.2.8.4	Contingency Procedures outside Normal Operating Hours	113
2.2.8.5	Contingency Plans in the Event of Environmental Contamination.....	114
2.3	OUTLINE OF THE MBT PROCESS –MBT WITH COMPOSTING (AND OPTIONAL DRY ANAEROBIC DIGESTION STEP)	114
2.3.1	<i>Configuration A (MBT with Composting)</i>	117
2.3.1.1	Waste Acceptance	117
2.3.1.2	Waste Pre-sorting.....	118
2.3.1.3	Mechanical Processing of Waste	119
2.3.1.4	Biological Processing of Waste	131
2.3.1.5	Stabilised Output Refining and Treatment.....	136
2.3.2	<i>Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	138
2.3.2.1	Biological Processing of Waste	139
3	SOCIO ECONOMIC	147

3.1	INTRODUCTION	147
3.1.1	<i>Methodology.....</i>	147
3.2	EXISTING ENVIRONMENT	147
3.2.1	<i>Land Use.....</i>	148
3.2.2	<i>Population.....</i>	148
3.2.3	<i>Employment.....</i>	150
3.2.4	<i>Tourism and Amenities.....</i>	152
3.2.5	<i>Activities</i>	154
3.3	POTENTIAL IMPACTS.....	155
3.3.1	<i>Potential Impacts of Configuration A (MBT with Composting).....</i>	155
3.3.2	<i>Potential Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	160
3.4	MITIGATION MEASURES	160
3.4.1	<i>Mitigation Measures for Configuration A (MBT with Composting).....</i>	160
3.4.2	<i>Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	161
4	ECOLOGY	163
4.1	INTRODUCTION.....	163
4.1.1	<i>Methodology.....</i>	164
4.2	EXISTING ENVIRONMENT.....	166
4.2.1	<i>Baseline Evaluation Criteria.....</i>	166
4.2.2	<i>Designated Conservation Sites</i>	168
4.2.3	<i>Rare and Protected Flora.....</i>	171
4.2.4	<i>Habitats within the proposed MBT development site</i>	171
4.2.5	<i>Fauna</i>	175
4.2.6	<i>Ecological Evaluation.....</i>	176
4.3	POTENTIAL IMPACTS.....	177
4.3.1	<i>Potential Impacts of Configuration A (MBT with Composting).....</i>	179
4.3.1.1	<i>Construction Phase.....</i>	179
4.3.1.2	<i>Operational Phase</i>	180
4.3.2	<i>Potential Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	181
4.4	MITIGATION MEASURES	181
4.4.1	<i>Mitigation Measures for Configuration A (MBT with Composting).....</i>	181
4.4.2	<i>Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	183

4.5	CONCLUSION.....	183
5	SOILS, GEOLOGY AND HYDROGEOLOGY	185
5.1	INTRODUCTION	185
5.2	METHODOLOGY.....	185
5.3	EXISTING ENVIRONMENT	186
5.3.1	<i>Soil and Subsoil Geology.....</i>	<i>186</i>
5.3.2	<i>Bedrock Geology.....</i>	<i>190</i>
5.3.3	<i>Geological information gathered from Site-Specific Investigations</i>	<i>191</i>
5.3.4	<i>Geotechnical analysis of subsoil material.....</i>	<i>193</i>
5.3.5	<i>Hydrogeology Data</i>	<i>193</i>
5.3.6	<i>Groundwater Vulnerability.....</i>	<i>198</i>
5.3.7	<i>Water Abstractions</i>	<i>198</i>
5.3.8	<i>Groundwater Piezometry.....</i>	<i>199</i>
5.4	POTENTIAL IMPACTS.....	202
5.4.1	<i>Potential Impact of Configuration A (MBT with Composting).....</i>	<i>202</i>
5.4.2	<i>Potential Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	<i>204</i>
5.5	MITIGATION MEASURES	204
5.5.1	<i>Mitigation Measures for Configuration A (MBT with Composting).....</i>	<i>204</i>
5.5.2	<i>Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	<i>206</i>
6	WATER.....	207
6.1	INTRODUCTION	207
6.1.1	<i>Methodology.....</i>	<i>207</i>
6.2	EXISTING ENVIRONMENT	208
6.2.1	<i>Drainage.....</i>	<i>208</i>
6.2.2	<i>Surface Water Flow Measurements</i>	<i>214</i>
6.2.3	<i>Surface Water Quality.....</i>	<i>217</i>
6.2.4	<i>Groundwater Chemistry</i>	<i>220</i>
6.2.5	<i>Water Framework Directive Requirements</i>	<i>225</i>
6.3	POTENTIAL IMPACTS.....	226
6.3.1	<i>Potential Impacts of Configuration A (MBT with Composting).....</i>	<i>226</i>
6.3.2	<i>Potential Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	<i>228</i>

6.4	MITIGATION MEASURES	228
6.4.1	<i>Mitigation Measures for Configuration A (MBT with Composting)</i>	228
6.4.2	<i>Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	234
6.5	CONCLUSION.....	234
7	CLIMATE	235
7.1	INTRODUCTION	235
7.1.1	<i>Methodology</i>	235
7.1.2	<i>Weather Observing Stations</i>	235
7.2	EXISTING ENVIRONMENT	235
7.2.1	<i>General Climate of Ireland</i>	235
7.2.2	<i>Rainfall</i>	236
7.2.3	<i>Evapotranspiration and Effective Rainfall</i>	237
7.2.4	<i>Wind</i>	238
7.3	POTENTIAL IMPACTS.....	239
7.3.1	<i>Potential Impacts of Configuration A (MBT with Composting)</i>	239
7.3.2	<i>Potential Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	239
7.4	MITIGATION MEASURES	240
7.4.1	<i>Mitigation Measures for Configuration A (MBT with Composting)</i>	240
7.4.2	<i>Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	240
7.5	CONCLUSION.....	241
8	AIR	243
8.1	AIR QUALITY, ODOUR & BIOAEROSOLS.....	243
8.1.1	INTRODUCTION	243
8.1.1.1	Methodology	243
8.1.2	EXISTING ENVIRONMENT.....	260
8.1.3	POTENTIAL IMPACTS.....	263
8.1.4	MITIGATION MEASURES.....	278
8.1.4.1	Construction Phase Mitigation.....	278
8.1.4.2	Operational Phase Mitigation.....	278
8.1.5	CONCLUSIONS	280
8.2	DUST	294
8.2.1	Introduction.....	294

8.2.1.1	Methodology	294
8.2.2	<i>Existing Environment</i>	294
8.2.3	<i>Potential Impacts</i>	298
8.2.3.1	Potential Impacts of Configuration A (MBT with Composting)	298
8.2.3.2	Potential Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting).....	298
8.2.4	<i>Mitigation Measures</i>	298
8.2.4.1	Mitigation Measures for Configuration A (MBT with Composting)	298
8.2.4.2	Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting).....	300
8.2.5	<i>Conclusion</i>	300
9	NOISE AND VIBRATION.....	301
9.1	INTRODUCTION.....	301
9.1.1	<i>Methodology</i>	301
9.2	EXISTING ENVIRONMENT	304
9.3	POTENTIAL IMPACTS.....	308
9.3.1	<i>Potential Construction Phase Impacts of Configuration A (MBT with Composting)</i> ..	308
9.3.2	<i>Potential Construction Phase Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	311
9.3.3	<i>Potential Operational Phase Impacts of Configuration A (MBT with Composting)</i> ..	311
9.3.4	<i>Potential Operational Phase Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	313
9.4	MITIGATION MEASURES.....	314
9.4.1	<i>Construction Phase Mitigation Measures for Configuration A (MBT with Composting)</i> 314	
9.4.2	<i>Construction Phase Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	315
9.4.3	<i>Operational Phase Mitigation Measures for Configuration A (MBT with Composting)</i> 315	
9.4.4	<i>Operational Phase Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	316
9.5	CONCLUSION.....	316
10	LANDSCAPE AND VISUAL.....	317
10.1	INTRODUCTION	317
10.1.1	<i>Methodology</i>	317
10.1.2	<i>Guidance Documents</i>	317
10.1.3	<i>Definition of Terms – Landscape and Visual Effects</i>	318

10.1.4	<i>Definition of Magnitude and Likelihood of Effects</i>	318
10.1.5	<i>Definition of Nature of Effects</i>	319
10.1.6	<i>Duration of Effects</i>	320
10.1.7	<i>Summary</i>	320
10.2	RECEIVING ENVIRONMENT	320
10.2.1	<i>Site Context</i>	320
10.2.2	<i>Landscape Character</i>	321
10.2.3	<i>Site visibility – General</i>	321
10.2.4	<i>Site visibility</i>	322
10.2.5	<i>Vulnerability / Sensitivity of existing views</i>	322
10.2.6	<i>Planning Context</i>	323
10.3	POTENTIAL EFFECTS	332
10.3.1	<i>Potential Effects of Configuration A (MBT with Composting)</i>	332
10.3.1.1	<i>Visual Effects</i>	332
10.3.1.2	<i>Landscape Effects</i>	333
10.3.2	<i>Potential Effects of Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	334
10.3.3	<i>The do-nothing impact</i>	334
10.3.4	<i>Effects on Designated Areas</i>	334
10.3.5	<i>Construction effects</i>	334
10.3.6	<i>Cumulative effects</i>	334
10.3.7	<i>Lighting effects</i>	335
10.3.8	<i>Effects arising from plumes being emitted from stacks</i>	336
10.4	MITIGATION MEASURES	336
10.4.1	<i>Mitigation Measures for Configuration A (MBT with Composting)</i>	336
10.4.1.1	<i>Location</i>	336
10.4.1.2	<i>Landscape design</i>	336
10.4.1.3	<i>Colour, materials and lighting</i>	337
10.4.2	<i>Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)</i>	337
10.5	CONCLUSION	337
11	TRAFFIC	339
11.1	INTRODUCTION	339
11.1.1	<i>Methodology</i>	339
11.2	EXISTING ENVIRONMENT	340
11.2.1	<i>Traffic Survey</i>	340
11.2.2	<i>Road Network</i>	340

11.2.3 *Proposed Road Network Improvements* 341

11.3 POTENTIAL IMPACTS 342

11.3.1 *Existing and Proposed Development (Scenarios)* 342

11.3.2 *Traffic Generation*..... 343

11.3.3 *Seasonal Adjustment*..... 349

11.3.4 *Traffic Growth* 349

11.3.5 *Trip Distribution* 350

11.3.6 *Junction Analysis* 357

11.3.7 *Link Capacity* 365

11.3.8 *Road Safety* 365

11.3.9 *Pedestrians and Cyclists* 367

11.3.10 *Car Parking* 367

11.3.11 *Public Transport*..... 367

11.4 MITIGATION MEASURES 367

11.5 CONCLUSION 368

12 ARCHAEOLOGY AND CULTURAL HERITAGE371

12.1 INTRODUCTION 371

12.2 EXISTING ENVIRONMENT 372

12.3 POTENTIAL IMPACTS 401

12.2.1 *Potential Impacts of Configuration A (MBT with Composting)*..... 401

12.2.2 *Potential Impacts of Configuration B (MBT with Dry Anaerobic Digestion and Composting)* 402

12.4. MITIGATION MEASURES 402

12.2.3 *Mitigation measures for Configuration A (MBT with Composting)* 402

12.2.4 *Mitigation measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting)* 402

12.5 CONCLUSIONS 402

13 INTERACTION OF THE FOREGOING.....405

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LIST OF TABLES

Table 1-1	Infrastructure Required within County Kildare to meet Targets.....	26
Table 1-2	Summary of National Biodegradable Waste Strategy Approach.....	36
Table 1-3	Key Planning Applications within the Bord na Móna Landholding.....	50
Table 1-4	Study Team and Contributors.....	65
Table 1-5	List of Drawings.....	66
Table 2-1	Outline of Site Areas.....	68
Table 2-2	Construction Waste and Fill Material Estimates.....	90
Table 2-3	Site Management Structure.....	93
Table 2-4	Estimated Raw Materials and Energy Usage for Operation of the Drehid MBT Facility – Configuration A (MBT with Composting).....	95
Table 2-5	Estimated Raw Materials and Energy Usage for Operation of the Drehid MBT Facility – Configuration B (MBT with Dry Anaerobic Digestion and Composting).....	95
Table 2-6	Estimated Annual Outputs for Configuration A (MBT with Composting).....	96
Table 2-7	Estimated Annual Outputs for Configuration B (MBT with Dry Anaerobic Digestion and Composting).....	97
Table 2-8	Proposed Dust Monitoring Locations.....	104
Table 2-9	Proposed Groundwater Monitoring Locations.....	105
Table 2-10	Proposed Analyses for Groundwater Samples.....	106
Table 2-11	Proposed Noise Monitoring Points.....	107
Table 2-12	Proposed Surface Water Monitoring Points.....	108
Table 2-13	Proposed Analyses for Surface Water Samples.....	110
Table 3-1	Population Change 2002-2011.....	149
Table 3-2	Quarterly National Household Survey (Q4 2011).....	150
Table 3-3	Live Register 2010-2011.....	151
Table 3-4	Occupational Groups in Timahoe South.....	151
Table 3-5	Overseas Tourism 2010.....	153
Table 4-1	Site Evaluation Criteria.....	167
Table 4-2	Designated conservation areas located within 10km of the site.....	169
Table 4-3	Rare and Protected Flora present in National Grid 10km square N73..	171
Table 4-4	Habitat Evaluation.....	177
Table 4-5	Criteria used in Ecological Impact Ass.(EPA, 2002, IEEM 2006).....	178
Table 5-1	Location and Elevation of Groundwater Monitoring Points and Piezometric Head.....	201
Table 6-1	Q Rating Table.....	218
Table 6-2	EPA Monitoring of Biological Quality of Waters on the River Figile....	219
Table 6-3	Biological Monitoring at Dillon’s Bridge (W0201-03 AER).....	220
Table 6-4:	Groundwater Quality (19 th October 2011).....	223
Table 6-5	Groundwater Chemistry from Samples obtained on 04/02/2003.....	224
Table 7-1	Designated Meteorological Stations for the proposed MBT Facility.....	236
Table 7-2	Average Monthly & Annual Precipitation (1960-1990).....	237
Table 7-3	Effective Rainfall for the proposed MBT Facility.....	238
Table 8-1	Ranking Table For Various Industrial Sources ⁽¹⁹⁾	248
Table 8-2	Indicative Odour Standards Based On Offensiveness Of Odour ⁽¹⁹⁾	248
Table 8-3	EU Ambient Air Quality Standards (Based on Directive 2008/50/EC (SI 180 of 2011).....	249
Table 8-4	Average Odour Concentration Values, Median And Percent Deviation ⁽²²⁾	254

Table 8-5	Average Odour Emission Factors, Median And Percent Deviation ⁽²²⁾	254
Table 8-6	Average Odour Concentrations As A Function Of Processing Days (Taken from Scaglia et al) ⁽²⁵⁾	255
Table 8-7	Average Odour Concentrations As A Function Of Processing Days (Taken from Orzi et al (except final row)) ⁽²⁸⁾	256
Table 8-8	Bioaerosol Concentrations From A Range Of Different Sources (EA (2009)) ⁽³²⁾	258
Table 8-9	Results Of NO ₂ Diffusion Tube Monitoring Carried Out Near The Proposed Drehid MBT Facility	261
Table 8-10	Results Of SO ₂ Diffusion Tube Monitoring Carried Out Near The Proposed Drehid MBT Facility	261
Table 8-11	Odour Concentrations & Odour Emission Rate (OER) From The Drehid MBT Facility – Configuration A (MBT with Composting) Based on Emission Rates from Sironi et al ⁽²²⁾	264
Table 8-12	Odour Concentrations & Odour Emission Rate (OER) From The Drehid MBT Facility – Configuration B (MBT with Dry Anaerobic Digestion and Composting) Based on Emission Rates from Sironi et al ⁽²²⁾ and Orzi et al ⁽²⁸⁾	265
Table 8-13	Bioaerosol Concentrations & Bioaerosol Emission Rate From The Drehid MBT Facility – Configuration A (MBT with Composting) Based on Emission Rates from Sanchez-Monedero et al (2003) ⁽³⁸⁾	266
Table 8-14	Bioaerosol Concentrations & Bioaerosol Emission Rate From The Drehid MBT Facility – Configuration B (MBT with Dry Anaerobic Digestion and Composting). Based on Emission Rates from Sanchez-Monedero et al (2003) ⁽³⁸⁾	267
Table 8-15	Drehid MBT Facility, County Kildare. Odour Emission Source Details for Configuration A (MBT with Composting)	268
Table 8-16	Drehid MBT Facility, County Kildare. Odour Emission Source Details for Configuration B (MBT with Dry Anaerobic Digestion and Composting)	268
Table 8-17	Drehid MBT Facility, County Kildare. Total & Gram-Negative Bacteria Emission Source Details for Config A (MBT with Composting)	269
Table 8-18	Drehid MBT Facility, County Kildare. Total & Gram-Negative Bacteria Emission Source Details for Configuration B (MBT with Dry Anaerobic Digestion and Composting)	269
Table 8-19	Drehid MBT Facility, County Kildare. Aspergillus Fumigatus Emission Source Details for Configuration A (MBT with Composting)	270
Table 8-20	Drehid MBT Facility, County Kildare. Aspergillus Fumigatus Emission Source Details for Configuration B (MBT with Dry Anaerobic Digestion and Composting)	270
Table 8-21	Drehid MBT Facility, County Kildare. NO ₂ and PM ₁₀ Emissions From The Proposed CHP Emission Points	271
Table 8-22	Dispersion Model Results – Predicted Odour Concentration At Worst-case Residential Receptor – Config A (MBT with Composting)	272
Table 8-23	Dispersion Model Results – Predicted Bioaerosol Concentrations At Worst-case Receptor – Configuration A (MBT with Composting)	273
Table 8-24	Dispersion model results – Predicted Odour Concentration At Worst-case Receptor – Configuration B (MBT with Dry Anaerobic Digestion and Composting)	274

Table 8-25	Dispersion model results – Predicted Bioaerosol Concentrations At Worst-case Receptor – Configuration B (MBT with Dry Anaerobic Digestion and Composting).....	275
Table 8-26	Dispersion Model Results From The CHPs – NO ₂ Ambient Concentrations.....	276
Table 8-27	Dispersion Model Results –PM ₁₀	277
Table 8-28	Dispersion Model Results – PM _{2.5}	278
Table 8-29	Dust Results within the Bord na Móna landholding during 2011	295
Table 8-30	Dust Results for January/ February 2012.....	296
Table 9-1	Decibel scale with indicative noise examples.....	302
Table 9-2	Baseline Noise Survey Locations.....	304
Table 9-3	Baseline Noise Survey Results 09/01/2012	307
Table 9-4	Predicted Construction Phase Noise Impacts.....	309
Table 9-5	Typical maximum permissible noise levels at the façade of dwellings during construction activities (NRA Draft guidelines for the treatment of noise and vibration in national road schemes 2004)	310
Table 9-6	NRA Allowable vibration during road construction in order to minimise the risk of building damage.....	310
Table 9-7	Predicted Daytime cumulative exterior noise levels from the proposed MBT Facility at 10m from each building (Configuration A (MBT with Composting)).....	312
Table 9-8	Predicted noise levels at nearest sensitive receptors (including operating composting facility and operating landfill)	312
Table 9-9	Predicted Daytime cumulative exterior noise levels from the proposed MBT Facility at 10m from each building (Configuration B (MBT with Dry Anaerobic Digestion and Composting)).....	313
Table 9-10	Predicted noise levels at nearest sensitive receptors (including operating composting facility and operating landfill)	314
Table 10-1	Criteria for the assessment of magnitude of effects on landscape character	318
Table 10-2	Definition of magnitude/degrees of visual effects resulting from the proposal	319
Table 11-1	Estimated Deliveries to the existing landfill and the MBT Facility from 2015.....	343
Table 11-2	Estimated HGV Traffic Departing the existing landfill and the MBT Facility from 2015.....	344
Table 11-3	Estimated HGV Traffic Generated by the existing landfill operating at 360,000 tonnes per annum.....	345
Table 11-4	Estimated Net Increase in Daily HGV Traffic Due to Proposed MBT Facility.....	346
Table 11-5	Estimated Increase in Hourly Traffic Generation Operational Phase...347	
Table 11-6	Estimated Hourly Traffic Generation Construction Phase.....	348
Table 11-7	Stress Test 1.....	352
Table 11-8	Stress Test 2.....	353
Table 11-9	Stress Test 3.....	354
Table 11-10	Stress Test 4	355
Table 11-11	Stress Test 5	356
Table 12-1	Recorded Archaeological Monuments in the Area	383

LIST OF FIGURES

Figure 1-1	Regional Site Location Map	4
Figure 1-2	Dublin and Mid East Regions(Spatial Vision for GDA).....	12
Figure 1-3	Development Plan Macro Environmental Sensitivity Map.....	16
Figure 1-4	Development Plan Landscape Character Areas Map.....	20
Figure 1-5	Development Plan Landscape Sensitivity Areas Map	20
Figure 1-6	European Union Waste Hierarchy	28
Figure 1-7	Summary of National Strategy on Biodegradable Waste Approach	31
Figure 1-8	EPA Waste Pre-Treatment / Diversion Flow Path.....	38
Figure 1-9	Map of Regional Waste Management Plans	42
Figure 2-1	Site Location Map.....	71
Figure 2-2	Site Layout Plan.....	72
Figure 2-3	Aerial Photograph of Landholding	73
Figure 2-4	Existing Site Topography Map.....	74
Figure 2-5	Environmental Monitoring Map	112
Figure 2-6	Process Flow Diagram (Configuration A).....	115
Figure 2-7	Process Flow Diagram (Configuration B).....	116
Figure 4-1	Designated Conservation Areas.....	170
Figure 4-2	Habitat Map	174
Figure 5-1:	Subsoils Geology Map	188
Figure 5-2:	Bedrock Geology Map	189
Figure 5-3:	Site Investigation Locations 2003.....	194
Figure 5-4:	Site Investigation Locations 2011.....	195
Figure 5-5	Aquifer Classification Map	196
Figure 5-6	Vulnerability Mapping Guidelines	198
Figure 5-7	Inferred Groundwater Contours.....	200
Figure 6-1:	Surface Water Catchments and Monitoring Locations	210
Figure 6-2	Regional Surface Water Catchment.....	211
Figure 6-3	Site Drainage Layout and Surface Water Features	212
Figure 8-1	Monitoring and Modelled Receptor Locations	283
Figure 8-2	Caseant Aerodrome Windrose 2006-2010	284
Figure 8-3	98 th ile of 1-hr Odour Concentrations (2007) -Config A	285
Figure 8-4	Maximum 1-hr Total Bacteria Concentrations (2007) -Config A	286
Figure 8-5	Maximum 1-hr A. Fumigatus Concentrations (2007) -Config A	287
Figure 8-6	98 th ile of 1-hr Odour Concentrations (2010) -Config B	288
Figure 8-7	Maximum 1-hr Total Bacteria Concentrations (2007) -Config B	289
Figure 8-8	Maximum 1-hr A. Fumigatus Concentrations (2010) -Config B	290
Figure 8-9	99.8 th ile of 1-hr NOx Concentrations (2007) -Config B	291
Figure 8-10	Annual Mean NO2 Concentrations (2009) -Config B	292
Figure 8-11	Annual Mean PM10 Concentrations -Config B	293
Figure 8-12	Dust Monitoring Locations.....	298
Figure 9-1	Noise Monitoring Locations	306
Figure 10-1	Visual Impact and Plate Locations.....	326
Figure 11-1	Haul Routes and Traffic Count Locations	370
Figure 12-1	Archaeological Features.....	378
Figure 12-2a-d	Sites and Monuments Mapping.....	379

LIST OF APPENDICES

Appendix 1.1	An Bord Pleanála Correspondence
Appendix 1.2	Need Assessment Report
Appendix 1.3	List of Planning References
Appendix 1.4	Copy of Consultation Correspondence
Appendix 1.5	Copy of Consultation Responses
Appendix 2.1	Building Ventilation and Odour Abatement Report
Appendix 2.2	Engineering Services Report
Appendix 2.3	Heat Transfer Description
Appendix 4.1	Screening Statement (Habitat Directive)
Appendix 5.1	Site Investigation Logs
Appendix 5.2	PSD Laboratory Test Results
Appendix 5.3	Aquifer Classification
Appendix 6.1	OPW Hydrometric Data
Appendix 6.2	EPA Biological Quality Data
Appendix 6.3	Weekly Monitoring Data (2011)
Appendix 6.4	Surface Water Management Data
Appendix 6.5	Correspondence from wastewater treatment facilities
Appendix 7.1	Casement Aerodrome Wind Rose Diagram
Appendix 8.1	Overview of the AERMOD dispersion model
Appendix 8.2	Meteorological Data - AERMET Pro
Appendix 8.3	Dust Monitoring Results
Appendix 11.1	Traffic Count Surveys
Appendix 11.2	Origin\Destination Traffic Demand Tables
Appendix 11.3	Junction Analysis

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 Background to Proposed Development

Bord Na Móna Plc. (hereafter referred to as Bord na Móna) proposes to develop a Mechanical Biological Treatment (MBT) facility (Drehid MBT Facility) in its landholding located within the townlands of Coolcarrigan and Drummond, Carbury, Co. Kildare.

The site is located within a larger Bord na Móna landholding, which comprises 2,544 hectares (ha). That landholding is outlined in blue on Figure 1.1 and is located within the townlands of Drehid, Ballynamullagh, Kilmurry, Mulgeeth, Mucklon, Timahoe East, Timahoe West, Coolcarrigan, Corduff, Coolearagh West, Allenwood North, Killinagh Upper, Killinagh Lower, Ballynakill Upper, Ballynakill Lower, Drummond, Kilkeaskin, Loughnacush and Parsonstown at Carbury, County Kildare.

The permitted and operational Drehid Waste Management Facility is located within this landholding and is located approximately 1km north of the proposed MBT Facility site. The MBT Facility site is located approximately 3.5km north of Allenwood and 10km south of Enfield. Access to the Drehid Waste Management Facility is by means of a 4.8 km long dedicated access road from the R403 regional road at Killinagh Upper (between Allenwood and Derrinturn). It is proposed that this access road will also be used for the MBT Facility.

The location of the proposed MBT Facility within the Bord na Móna landholding was optimised with regard to environmental considerations.

Given that access to the proposed MBT Facility will be by means of the already permitted and existing site entrance at the R403 regional road, it will be ultimately accessible via a network of regional routes which in turn link with the National Motorway network. The R403 lies south, and southwest and west of the site. The R403 joins the R402 at Carbury to the northwest of the site. The R402 connects to the M4 while the R403 connects to central and south County Kildare. The M4 (Dublin to Sligo/Galway) motorway is located approximately 9km to the north of the proposed MBT Facility location, while the M7 (Dublin to Limerick/Cork) motorway is located approximately 17km to the south of the proposed MBT Facility location.

This application by Bord na Móna for the development of the Drehid MBT Facility is being made directly to An Bord Pleanála as ‘*Strategic Infrastructure Development*’ under the provisions of Section 37 of the Planning and Development (Strategic

Infrastructure) Act, 2006, the Planning and Development Act, 2000 as amended and the associated Planning Regulations.

Strategic Infrastructure Development (SID) comprises defined categories of development which are considered to be of national or regional strategic importance. SID provisions were inserted into the Planning and Development Act, 2000, as amended, by the Planning and Development (Strategic Infrastructure) Act 2006. The 2006 Act provides generally for applications for permission/approval for specified private and public strategic infrastructure developments to be made directly to An Bord Pleanála.

The Seventh Schedule to the 2000 Act lists the classes of infrastructure development which, if considered by An Bord Pleanála to be strategic infrastructure development, require direct application for permission to An Bord Pleanála instead of the local planning authority. Specific SID project categories relating to private developers fall into three classes set out in the Seventh Schedule namely: energy infrastructure; transport infrastructure; and environmental infrastructure.

If a proposed development falls into one of these classes the prospective applicant must enter into a pre-application consultation process with An Bord Pleanála, in accordance with the provisions of Section 37B of the 2000 Act, as amended, in order for An Bord Pleanála to establish whether the proposed development is deemed to be SID.

Following pre-application consultations with the applicant, An Bord Pleanála must decide whether a Seventh Schedule development is (or is not) SID by reason of the fact that the proposed development would, if carried out, fall within one or more of the following criteria set out in Section 37A(2) of the 2000 Act:

- (a) the development would be of strategic economic or social importance to the State or the region in which it would be situate;
- (b) the development would contribute substantially to the fulfilment of any of the objectives in the National Spatial Strategy or in any regional planning guidelines in force in respect of the area or areas in which it would be situate;
- (c) the development would have a significant effect on the area of more than one planning authority.

If the proposed Seventh Schedule Development is deemed to be SID, An Bord Pleanála will confirm this, requiring the prospective applicant, if progressing, to make the planning application directly to An Bord Pleanála, or to scope the requirements of the obligatory Environmental Impact Statement (EIS) with An Bord Pleanála if they so wish.

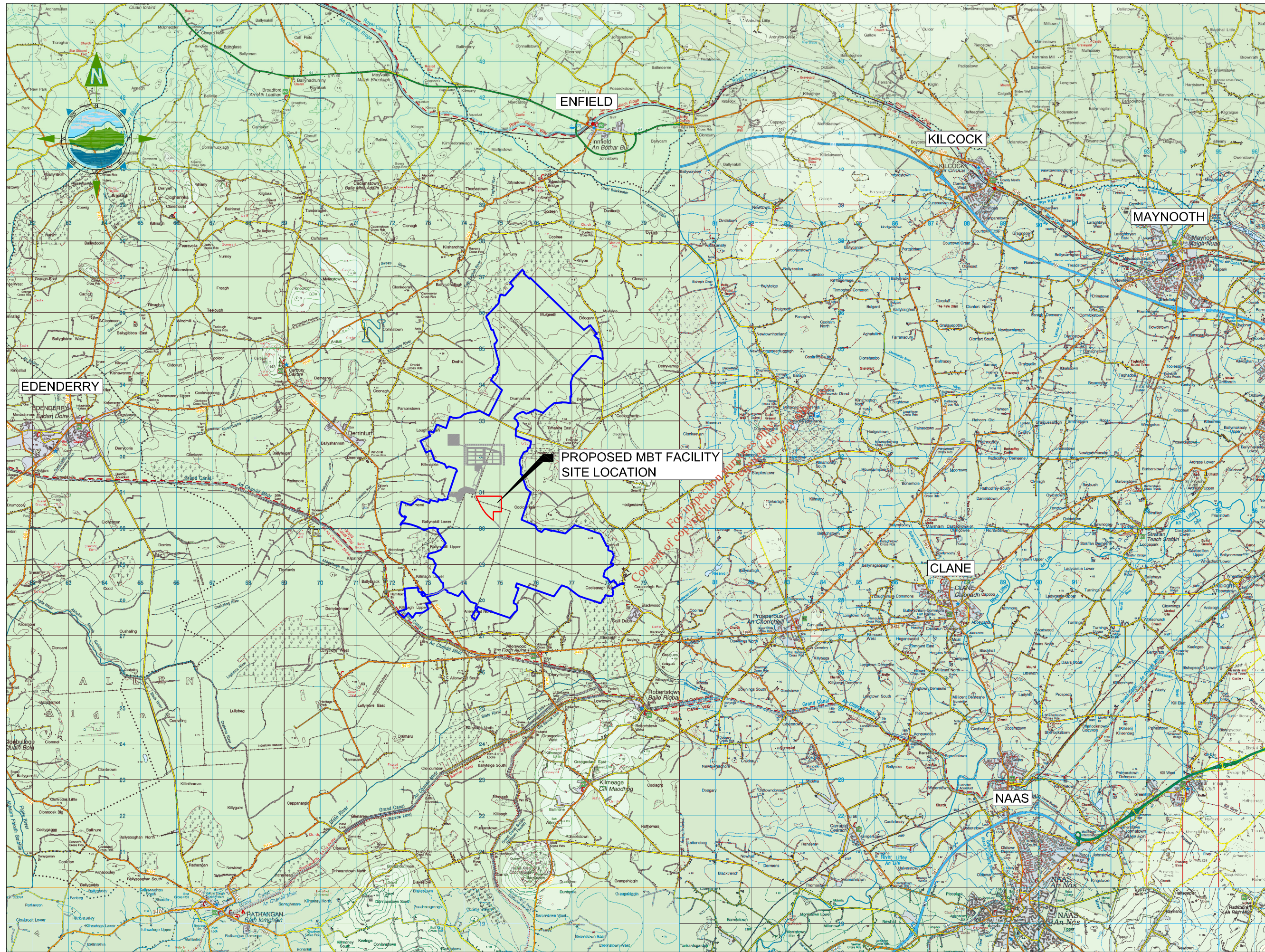
In October 2010, in accordance with the provisions of Section 37B of the 2000 Act as amended, Bord na Móna made a request to An Bord Pleanála for pre-application consultations in respect of the proposed development. Once this application for consultation was made, details of the proposed development were posted on the website of An Bord Pleanála (file reference 09.PC0106).

Subsequently, representatives of Bord na Móna met with staff of An Bord Pleanála in its offices on three separate occasions namely on the 7th of December 2010, on the 27th of April 2011 and on the 9th of August 2011. (Minutes of these meetings are included as Appendix 1.1 to this document).

Following the completion of the pre-application consultation process, and having regard to the nature and extent of the proposed development, An Bord Pleanála issued a notice in accordance with Section 37B(4)(a) of the 2000 Act as amended, that it was of the opinion that the proposed development would, if carried out, fall within each of paragraphs (a) to (c) of section 37A(2). (Please note that a copy of this notice from the Board dated 23rd March 2012, in this regard, has been enclosed at Appendix 1.1)

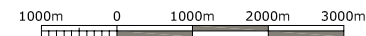
Following the issuing of this notice by the Board under Section 37B(4)(a) of the 2000 Act, as amended, and in accordance with the provisions of Section 37E of the Planning & Development Act 2000, as amended, Bord na Móna is now making this application for the proposed MBT facility directly to An Bord Pleanála.

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GENERAL LEGEND
 OWNERSHIP BOUNDARY
 EXISTING PERMITTED WASTE MANAGEMENT FACILITY
 ACTIVITY BOUNDARY

- NOTES**
- FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
 - ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
 - ENGINEER TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 - ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD



ISSUE	Date	Description	By	Chkd.
A	27.06.12	ISSUED FOR WASTE LICENCE	MN	ST

Client:
BORD NA MÓNA

Project:
 DREHID
 MECHANICAL BIOLOGICAL
 TREATMENT (MBT) FACILITY

Title:
 SITE OWNERSHIP PLAN

Scale @ A3: 1:100,000
 Prepared by: M. Nolan
 Checked: S. Tinnelly
 Date: November 2011
 Project Director: D. Grehan

TOBIN
 Patrick J. Tobin & Co. Ltd.
 Consulting, Civil and Structural Engineers,
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 Dublin 15, Ireland.
 tel: +353-(0)1-8030406
 fax: +353-(0)1-8030409
 e-mail: info@tobin.ie
 www.tobin.ie

Drawing No.: **Figure 1.1**
 Issue: **A**

1.1.2 Company Background

Bord Na Móna is Ireland's leading environmentally responsible integrated utility service provider. Established over 60 years ago to develop Ireland's peat resources, it is now active across a range of industries.

Today, Bord na Móna owns 80,000 hectares of peatland, located mainly in the Irish Midlands. To date this land has been primarily used for peat harvesting for energy and for horticulture growing media. Bord na Móna, employs approximately 2,100 people (2010/2011) and operates out of 30 localities mainly in Ireland, but also in the United Kingdom and eastern United States. In 2010/2011, it had a turnover of €382 million.

With a transition away from the traditional industries, heavily dependent on peat and other fossil fuels, Bord na Móna has embraced, at its core, a new vision for the future and a move to a new, more sustainable business. The Group's "A New Contract with Nature" creates a vision that ensures that Bord na Móna operations work in harmony with, and minimises the impact on, the environment. The Company's future pillars are renewable energy, resource recovery, environmental products and consumer products.

Bord na Móna's sustainability objectives for the future include:

- Diversion of waste from landfill
- The development of wind energy
- Increased levels of biomass co-fueelling at Edenderry Power
- Market leader in sustainable gardening and horticulture products
- Promote and enhance the national biodiversity on landholdings.

1.1.2.1 Business Development

Bord na Móna is now active across a wide range of industries with operating business units in the areas of:

- Fuels – the supply of peat as a fuel for the generation of electricity and to the residential heating market; and other fuel import and distribution businesses;
- Resource Recovery - the collection, recovery, recycling, treatment and disposal of waste;
- Land and Property – the management of the Company's land and property assets;
- Powergen – the management and operation of power generation assets which include the Edenderry Power Station, the Cushaling Peaking Plant and the Bellacorrick Wind Farm;
- Water – an emerging involvement in the management of water resources;
- Horticulture - a significant domestic and international business manufacturing and supplying peat and non-peat based horticultural products;

- Environmental - a leading solutions provider with a proven track record in the design, manufacture and installation of a wide portfolio of differentiated clean-tech technologies that deliver clean air and clean water solutions around the globe;
- Feedstock – the supply of peat and biomass materials for the generation of electricity in the Bord na Móna and ESB owned power stations as well as supplying peat for the Group’s briquette manufacture, growing media and peat filtration activities.

Innovation underlies all of these activities and plays a key role in developing new environmentally responsible products and services. Following the launch of its Innovation Centre in 2008, Bord na Móna is investing over €50m in innovation, research and development over a five year period.

Many of Bord na Móna’s current activities are regulated by the Environmental Protection Agency. Bord na Móna conducts its peat extraction activities under the terms of nine IPPC (Integrated Pollution Prevention Control) licenses and operates its Resource Recovery facilities, a peat deposition site and an ash repository site under the terms of a further nine Waste Licenses.

1.1.2.2 Waste Management

Bord na Móna’s Resource Recovery activity comprises an integrated waste management business providing collection, recovery, recycling, treatment, and disposal services. The principal focus is on delivering exceptional customer service and maximising the re-use potential of managed waste materials, where possible, within the broader Bord na Móna Group.

Advanced Environmental Solutions (Ireland) Ltd (AES), was acquired by the Group in 2007, creating an opportunity to establish a strong presence in the Waste Management sector in Ireland. Today, waste collection services operated under the AES brand, provide domestic waste management to over 100,000 residential homes throughout the Midlands, South East and Mid West regions, and 8,000 commercial customers nationwide.

In terms of management facilities, Bord na Móna operates engineered landfills for the environmentally responsible disposal of peat ash from Ireland’s 3 peat-fired power stations. The facilities are operated under the terms of the EPA licensing regime and cumulatively manage approximately 120,000 tonnes of waste each year.

Bord na Móna also operates a licensed composting facility near Athy, County Kildare. The facility is licensed to process 96,000 tonnes per annum (tpa) of green waste as

well as by-products from the brewing industry, cocoa shell and other biowaste. The final product is used to enhance the company's range of growing media products.

The Drehid Waste Management Facility - located immediately adjacent to the application site, is the Group's most extensive waste management facility. In 2005, Bord na Móna was granted planning permission¹ for the development of activities comprising an engineered residual landfill accepting 120,000 tpa; and a composting facility accepting 25,000 tpa of biowaste from household, commercial and industrial sources; and associated site infrastructure and development works. A waste licence was subsequently issued by the Environmental Protection Agency (EPA)². The facility commenced operations in February 2008.

Planning permission was granted by An Bord Pleanála³ in 2008 to intensify waste acceptance at the landfill to 360,000 tpa for a five-year period (until December 2013) and to extend the landfill footprint of the facility. The appropriate EPA waste licence⁴ was granted in 2009. That licence was reviewed in June 2009 as a result of the introduction of limits on the acceptance of biodegradable municipal waste at landfill. A revised waste licence was issued by the EPA in March 2010⁵.

More recent permissions include the development of a landfill gas utilisation plant (October 2011) and an increase in the floor area of the previously permitted composting facility (November 2011).

Elsewhere, the Group has secured planning permission for the development of a 99,000 tpa materials recycling and transfer facility at Drumman, Co. Offaly.

The company also provides consultancy services to the waste management industry.

1.1.2.3 Regulatory Compliance

Much of Bord na Móna's activities are carried out under the terms of a significant number of licenses issued by the Environmental Protection Agency. At present the Group holds 18 such licences - 9 IPPC and 9 waste licences.

1.2 PROPOSED DEVELOPMENT

As outlined in Section 1.1., Bord Na Móna proposes to develop a Mechanical Biological Treatment (MBT) facility within its landholding located within the

¹ Kildare County Council Reg. Ref. 04/371; An Bord Pleanála Ref. PL.09.212059

² EPA Ref. W0201-01

³ An Bord Pleanála Ref. PL09.PA004

⁴ EPA Ref. W0201-02

⁵ EPA Ref. W0201-03

townlands of Coolcarrigan and Drummond, Carbury, Co. Kildare. The extent of the Bord na Móna landholding, which comprises 2,544 hectares (ha), is outlined in blue on enclosed Figure 1.1. No modifications to already permitted facilities, including the entrance from the R403 regional road, are envisaged.

The proposed Drehid MBT Facility will primarily accept and process municipal solid waste and will provide for an overall capacity of 250,000 tonnes per annum (TPA).

Mechanical Biological Treatment through a combination of mechanical processing and biological treatment (such as composting and anaerobic digestion) reduces the volume of waste which requires treatment by disposal in landfill or incineration.

By virtue of the biological process in an MBT facility, biodegradable municipal waste can be biostabilised thereby eliminating its potential to generate methane (a harmful greenhouse gas) and leachate, thus contributing to the fulfilment of Ireland's targets under the Landfill Directive (1999/31/EC).

In deciding on the configuration of the biological process, and in particular the inclusion of Anaerobic Digestion (AD), consideration was had of the fiscal incentives for the development of AD– namely the Renewable Energy Feed In Tariff (REFIT). Regrettably, the current fiscal incentives in the Republic of Ireland make it difficult to create a compelling or indeed viable, economic argument for the development of AD. The REFIT for AD in the Republic of Ireland is currently significantly inferior to its equivalents in Northern Ireland and Italy (for example).

1.2.1 Proposed Development of MBT with Composting and Optional Dry Anaerobic Digestion (AD) Step

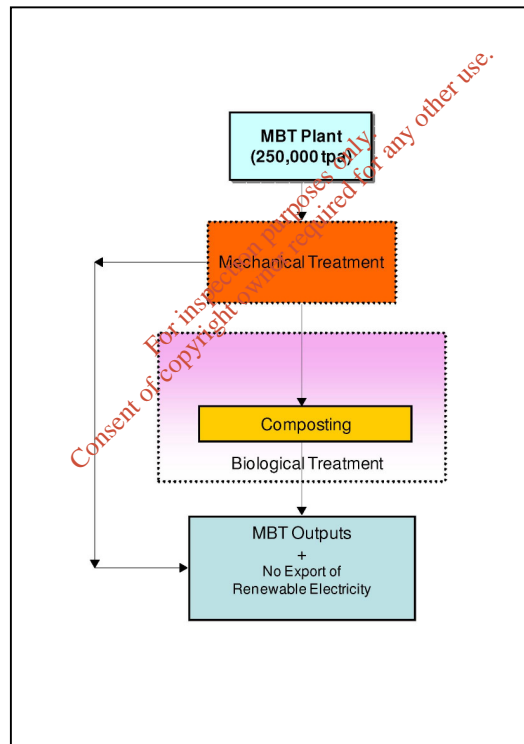
Therefore, Bord na Móna proposes the preparation of the Planning Application and Waste Licence Application for the proposed Drehid MBT Facility such that it provides for the development of an optional Dry AD step as part of the biological treatment stage. This approach has been subject to detailed pre-application discussions with both An Bord Pleanála and the EPA.

The biological treatment stage will include a composting step in any event. This Planning Application and Waste Licence Application includes for both scenarios (Configuration A (MBT with Composting), as illustrated in Flow Diagram No. 1 below and Configuration B (MBT with Dry Anaerobic Digestion and Composting) as illustrated in Flow Diagram No. 2 below) and the potential impacts and mitigation measures for both scenarios are considered for each environmental parameter within this EIS.

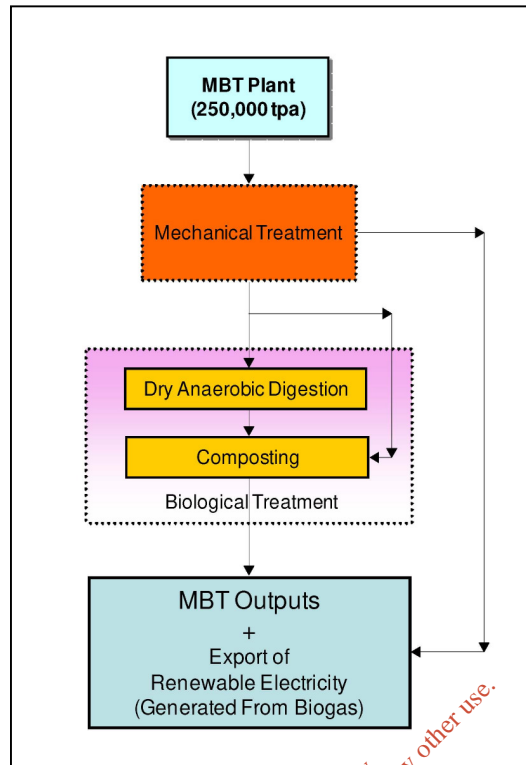
The design of the MBT Facility is such that there are no significant external differences between Configuration A (MBT with Composting) and Configuration B

(MBT with Dry Anaerobic Digestion and Composting). It is proposed that the AD plant and ancillary plant will be located within the enclosure of the biological treatment buildings. The main physical difference between the two Configurations will be that Configuration B will have a standby gas flare compound and a stack associated with the CHP plant. In addition, Configuration B will require physical infrastructure (i.e. overhead power line) to facilitate the export of electricity to the electricity network. Any required planning consents to facilitate this infrastructure will be arranged in due course by ESB Networks. Bord na Móna owned switch gear and transformers associated with the export of electricity will be located in the Electrical Room.

In the case of a decision to develop Configuration B (MBT with Dry Anaerobic Digestion and Composting), Bord na Móna will progress an application to ESB Networks for the export of electricity following the grant of regulatory approvals for the proposed development and prior to construction.



Flow Diagram No. 1. Configuration A (MBT with Composting)



Flow Diagram No. 2. Configuration B (MBT with Dry Anaerobic Digestion and Composting)

A detailed description of the development, including a description of the mechanical and biological processes for the MBT Facility with both Composting and the optional Dry Anaerobic Digestion Step, is included in Chapter 2 herein.

The proposed development will enhance recycling rates in the Kildare Waste Management Region and the wider geographical area. The proposed MBT Facility will ensure that waste is adequately pre-treated prior to being deposited in landfill in compliance with EPA guidance on Municipal Solid Waste Pre-treatment and Residuals Management, the 1999 Landfill Directive (1999/31/EC) and prevailing waste licence conditions. Ultimately, this will allow for the most rational use of previously permitted and available disposal capacity by ensuring that all waste that is finally disposed of to landfill has been subject to treatment and optimum rates of materials re-use and recycling, in accordance with the waste hierarchy.

The overall annual waste tonnage accepted at the existing Drehid Waste Management Facility and the proposed MBT facility will be the sum of the following:

- Municipal Solid Waste per annum accepted at the proposed 250,000 TPA MBT facility;

- Residual Municipal Solid Waste per annum accepted directly at the previously permitted 120,000 TPA landfill⁶; and
- Municipal Biowaste per annum accepted at the previously permitted 25,000 TPA composting facility.

However, in the context of the overall Bord na Móna facilities within this landholding, the combined annual waste tonnage accepted directly at the existing Drehid Waste Management Facility and at the proposed Drehid MBT Facility will be less than the 385,000 tonnes of waste per annum currently permitted for acceptance at the Drehid Waste Management Facility. At present the landfill at the existing Drehid Waste Management Facility is permitted to dispose of a total of 360,000 tpa, reverting to 120,000 tpa in December 2013. The proposed development will not involve any increase of landfilling above these maxima.

This EIS also considers the traffic implications of the MBT Facility being constructed and operating at the same time as the permitted Drehid Waste Management Facility (Landfill and Compost Facility) located within the Bord na Móna landholding and the implications of the MBT Facility operating beyond the life of the Drehid Waste Management Facility.

1.3 PLANNING POLICY STRATEGY AND CONTEXT

1.3.1 Relevant Planning and Development Policies

This section demonstrates that the proposed MBT facility fully complies with the detailed requirements of all relevant statutory planning and development plans and policies including the following:

- Planning policies set out in the National Spatial Strategy and National Development Plan;
- Planning policies set out in the Regional Planning Guidelines for the Greater Dublin Area, 2010 – 2022;
- Local and County planning and development policies as set out in the Kildare County Development Plan, 2011 – 2017; and
- Policies set out in the Regional Waste Management Plan for County Kildare, 2005 - 2010.

1.3.1.1 National Spatial Strategy and National Development Plan

The National Spatial Strategy (NSS) was launched in 2002 and proposed a 20-year spatial framework to achieve more balanced regional development in Ireland. The

⁶ The residual municipal solid waste per annum accepted directly at the previously permitted landfill will be 120,000 tonnes less the MBT residues (which will also be deposited in the landfill during the lifetime of the Drehid Waste Management Facility).

vision underlying the NSS was a better balance of social, economic, physical development and population growth between regions.

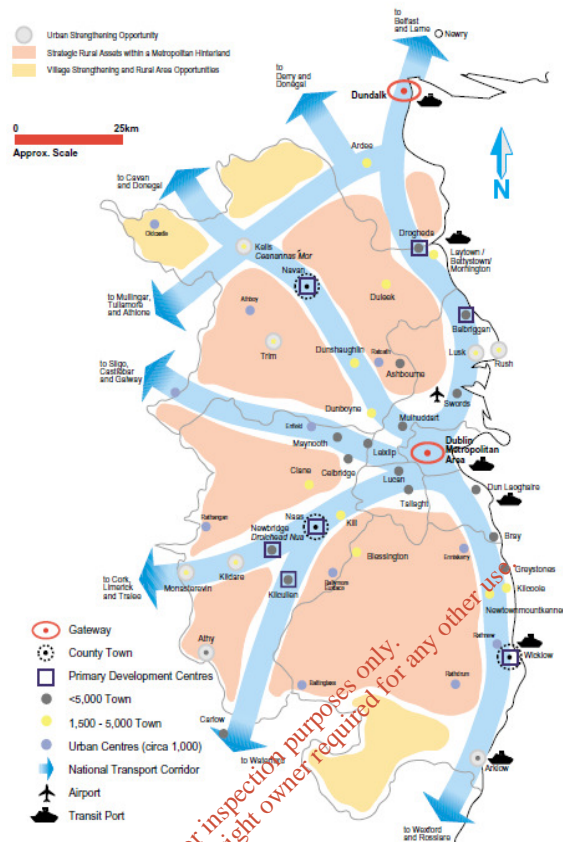


Figure 1-2 Dublin and Mid East Regions (Spatial Vision for GDA)

Source: National Spatial Strategy, Map 5, page 78, National Spatial Strategy 2002-2020

The vision for each of the eight regional planning areas set out in the NSS directly underpins the Regional Planning Guidelines for these areas including the RPGs for the Greater Dublin Area (which will be discussed in the following section). Figure 1.2 above illustrates the spatial vision for the Greater Dublin Area comprising the Dublin and Mid East Regional Authorities.

A key principle of the spatial vision for this region is to physically consolidate the growth of the metropolitan area (i.e. Dublin City and suburbs) while concentrating development in the hinterland of the metropolitan area (including County Kildare) in strategically placed urban centres.

Section 3.7 of the NSS specifically addresses the issue of the ‘Key Infrastructure’ required to realise the strategy. In relation to waste management infrastructure, the NSS states that:

Waste management is a particular current priority. Efficient, effective and cost competitive waste management facilities are essential if industrial and enterprise activity is to thrive and develop in a balanced way across Ireland⁷.

The National Development Plan 2007 - 2013 'sets out a strong framework for the promotion of regional development with a particular focus on investment in the National Spatial Strategy (NSS)⁸. The NDP also notes the significant changes in terms of population and economic growth that have taken place in the Greater Dublin Area (GDA) and notes that this growth 'has also brought challenges, particularly in the area of infrastructure'.

It is evident that the provision of the proposed Mechanical Biological Treatment Facility on the same landholding as the existing Drehid Waste Management Facility will play an important role in addressing such challenges by ensuring the provision of more efficient, effective and cost competitive waste management infrastructure in the region.

1.3.1.2 Regional Planning Guidelines for the Greater Dublin Area

The Regional Planning Guidelines for the Greater Dublin Area 2010-2022 aim to direct the future growth of the Greater Dublin Area over the medium to long term and work to implement the strategic planning framework set out in the National Spatial Strategy (NSS) published in 2002.

The Greater Dublin Area (GDA) incorporates the geographical area of Dublin City, Fingal, Dún Laoghaire-Rathdown, South Dublin, Kildare, Meath and Wicklow. The Regional Planning Guidelines (RPGs) for this area set out a strategy for development in two main areas namely, the Metropolitan Area, which includes Celbridge, Kilcock, Leixlip and Maynooth and; the Hinterland, which includes the remainder of County Kildare. According to the RPGs, development in this Hinterland area is to be:

"focused on the high quality integrated growth and consolidation of development in key identified towns, separated from each other by extensive areas of strategic green belt land devoted to agriculture and similar uses⁹.

Of particular relevance to the consideration of the proposed development is Chapter 6 of the RPGs which sets out the key physical infrastructure needs for the GDA, listing key areas of priority investment under the different types of infrastructure such as

⁷ Section 3.7, Page 56, National Spatial Strategy, DoEHLG, 2001

⁸ Page 22, 'Section 4: Integration of National Development Goals and Investment Strategies', National Development Plan, Government of Ireland, 2007

⁹ Section 2.2, page 33, Regional Planning Guidelines for the Greater Dublin Area, 2010-2022

transport, water supply, waste water and surface water treatment, energy and communications, and waste management.

Section 6.7 states “waste management infrastructure provision is an important part of the physical infrastructure investment needed in the GDA for population and economic growth”. Key strategic policies and recommendations for waste management are set out in Section 6.7.1 and include the following Strategic Policy which emphasises the need to provide a range of options for the treatment and final disposal of waste:

***PIP5:** To ensure, from environmental, business and public health needs, that waste management remains a priority for local authorities and waste management regions in continuing to invest in promoting and facilitating reuse and recycling by residential and commercial sources and that high standard options for treatment and final disposal of waste are available within the GDA.*

The following strategic recommendations from the same section of the RPGs are also particularly relevant in the consideration of the proposed development:

***PIR36** The new waste management strategy across the regions of the GDA should seek to facilitate a balanced use of resources and greater adaptability and robustness of services. Integrated waste management should be considered from the perspective of the GDA as one singular functioning economic and spatial unit and to increase economies of scale.*

***PIR37** Encourage the expansion of increased levels of diversion of biodegradable waste from landfill through provision of or support for biological treatment facilities and home composting.*

***PIR40** Waste management facilities should be appropriately managed and monitored according to best practice to maximise efficiencies and to protect human health and the natural environment.*

***PIR41** Plans and projects associated with waste management that have the potential to negatively impact on Natura 2000 sites will be subject to a Habitats Directive Assessment (HDA) according to Article 6 of the habitats directive and in accordance with best practice and guidance.*

It is clear from the policies included above that the proposed development of a mechanical biological treatment facility on the same landholding as the site of the existing waste management facility at Drehid will help achieve the objectives set out

in the RPGs by providing additional options for the treatment of waste in the region including increased levels of diversion of biodegradable waste from landfill.

In addition, as this EIS demonstrates, the proposed development has been designed and sited and will be built in accordance with best practice for the protection of human health and the natural environment.

1.3.1.3 Local and County Planning and Development Policies

A key policy document against which the proposed development is to be assessed is the Kildare County Development Plan, 2011-2017 which sets out an overall strategy for the proper planning and sustainable development of County Kildare over the period 2011-2017 and beyond to the horizon year of 2022.

The overall development strategy for the County is outlined in Chapter 2 ‘*Core Strategy*’ which establishes a strategic approach to the management of development in the county. This overall core strategy builds on the principles established in the previous Kildare County Development Plan 2005-2011 and the framework provided by the National Spatial Strategy (NSS) 2002-2020 (see section 1.3.1.1 of this Chapter) and the Regional Planning Guidelines for the Greater Dublin Area (RPGs) 2010-2022 (see section 1.3.1.2).

Section 2.6 of the Development Plan entitled ‘*SEA and the Settlement Strategy*’ contains a map (see Figure 1.3 overleaf) which illustrates environmental conditions at a very broad strategic level for the county as a whole, having regard to a range of separate environmental factors.

With regard to the location of the proposed development the Development Plan indicates that environmental sensitivities in the County increase towards the north-west on account of bogs and wetlands. The Plan also highlights the fact that there is a lower proximity and concentration of quality transport and high capacity water services in this area.

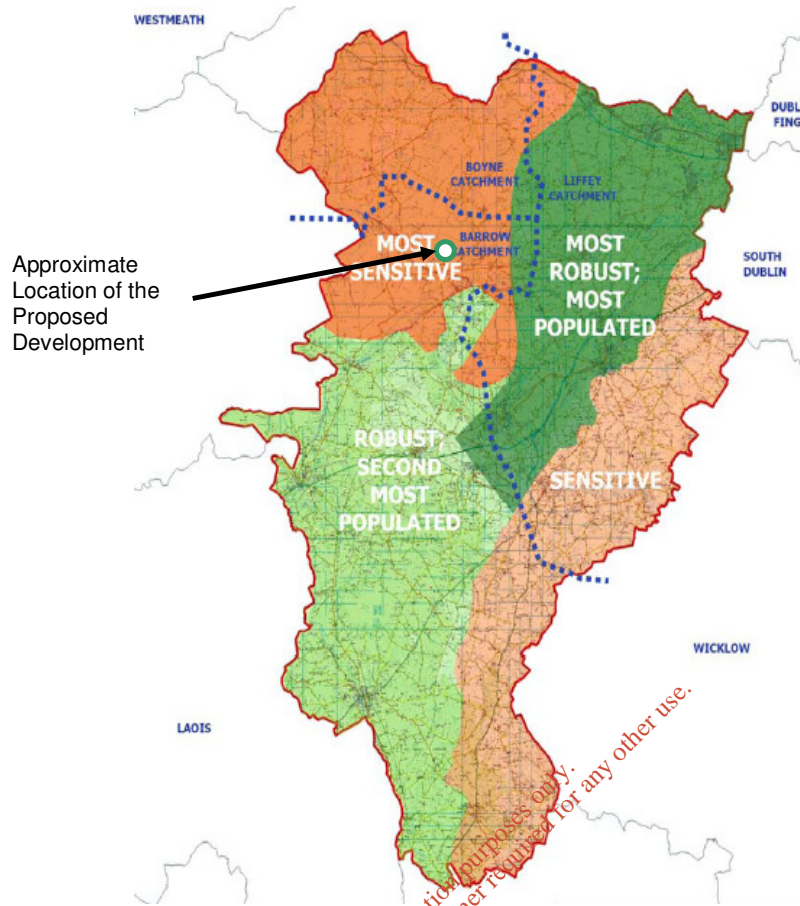


Figure 1-3 *Development Plan Macro Environmental Sensitivity Map*

Source: Section 2.6 Map 2.4, Kildare County Development Plan 2011-2017

It is important to note that according to the Development Plan “as the map illustrates a broad scale generalisation of sensitivities, all applications for development must be considered having regard to the individual environmental conditions of the subject site”.

In addition, Section 2.7 of the Plan ‘Preferred Development Strategy’ states that a key focus of the core strategy is on “protecting the environment by implementing an environmental protection policy which recognises the various environmentally sensitive zones within the county but not to mutually exclude appropriate and otherwise acceptable uses and development”.

The proposed development can be seen to fully comply with the Development Plan Core Strategy due to its use and its location on a site within the same landholding of a previously permitted Bord na Móna waste management facility. Furthermore, as this EIS demonstrates, the proposed development has been carefully sited and designed to take account of the individual environmental conditions of the subject site.

The next relevant section of the Development Plan for the purposes of the proposed development is *Chapter 5 ‘Economic Development’* a key aim of which is to “*support and facilitate the economic development of the county across a range of sectors*”. Section 5.5 identifies a number of factors which will influence the future economic development of the County including the availability of infrastructure. According to the Development Plan:

“Adequate infrastructure is paramount to facilitate future economic development activity in the county. This includes water services, effective public transport networks, energy, telecommunications, waste management, education facilities, etc.”¹⁰

Quality of Life is also identified as a key factor in facilitating future economic development and according to the Plan, specific actions which have been identified to improve quality of life include “*expanding infrastructural capacity for energy, waste, water and wastewater*¹¹.” The importance of providing such infrastructural capacity is highlighted by the inclusion of the objective E04 in Section 5.10 ‘*Economic Development Objectives*’:

EO 4: *To ensure the provision of water, wastewater treatment and waste management facilities to accommodate future economic growth of the county and to reserve capacity in water services infrastructure for employment generating uses.*

The proposed development of a state of the art Mechanical Biological Treatment Facility within the same landholding as the existing Drehid Waste Treatment facility fully accords with this objective in that it would represent a significant step in ensuring that the County has adequate waste management infrastructure to facilitate future economic growth.

The next relevant chapter of the Development Plan is *Chapter 7 ‘Water Drainage and Environmental Services’*. Section 7.9 of the Chapter which addresses Environmental Services includes a stated aim “*to conform to European, National and Regional policies in relation to the provision of waste management and to protect and enhance water, air and noise quality.*”

Building on this aim, the Plan sets out two policies of the Council which can be seen to directly relate to the proposed development namely:

¹⁰ Section 5.5.2, Kildare County Development Plan, Kildare County Council, 2011

¹¹ Section 5.5.3, Kildare County Development Plan, Kildare County Council, 2011

WM 1: To have regard, in the assessment of planning applications for waste management facilities inter alia, to the Waste Management Plan for County Kildare then prevailing, Waste Management Act 1996, EU Landfill Directive, EPA Landfill Manuals, EU Packaging and Packaging Waste Directive and DoEHLG policy statements viz. 'Changing Our Ways' and 'Preventing and Recycling Waste- Delivering Change' and 'Taking Stock and Moving Forward.'

WM 7: To ensure the provision of residual landfill in County Kildare (either directly by the Council or in co-operation or partnership with other local authorities and the private sector) is subject to the specific requirements of the County Kildare Waste Management Plan.¹²

As the following section of this report demonstrates, the proposed development of an MBT Facility adjacent to the Drehid Waste Management facility has been assessed against, and complies with, all relevant sectoral strategies and guidance including the Waste Management Plan for County Kildare.

In addition, this EIS demonstrates all possible measures were taken to ensure that the proposed development will not have an undue impact on the environment. Furthermore, it is clear that the provision of such an MBT Facility will help facilitate the continued provision of a residual landfill in the County by assisting the landfill to operate in accordance with its current licence requirements, that waste is pre-treated prior to deposition and that the volume of biodegradable waste deposited is reduced, as required under the Landfill Directive.

Due to the location of the subject site, regard has been had to Development Plan **Chapter 10 'Rural Development'**, and in particular to those policies which relate to boglands in these areas as set out in Section 10.5 specifically:

BL 1: To ensure that a balanced approach is taken to the development of the county's peat resources and the restoration of cutaway bogs, in order to minimise the negative impact on biodiversity and the archaeological and cultural heritage of the county.

BL 6: To support the development of the peatlands within the county for appropriate alternative uses, subject to environmental considerations and nature designations.

The proposed development fully complies with these policies in that it forms part of a balanced approach to an area characterised by peatlands which involves the further

¹² Section 7.10.1, Kildare County Development Plan, Kildare County Council, 2011

development of the Bord na Móna landholding at Carbury, Co. Kildare as a use which has full regard to all relevant environmental considerations and nature designations.

In the same way, the proposed development also fully complies with the key rural development objective, RDO 4 which is set out in Section 10.6:

***RDO 4:** To ensure that all new developments and practices do not undermine rural ecosystems, landscapes and conservation areas and are conducted in a manner consistent with the protection of the local environment and in line with national legislation and relevant guidelines.*

A final important section of the Development Plan in the consideration of the proposed development is Chapter 14 ‘Landscape, Recreation and Amenities’. In 2004, a Landscape Character Assessment of Kildare was undertaken and is contained in Volume II of the current County Development Plan.

As Figure 1.4 overleaf illustrates, this assessment has identified the area in which the subject site is located as ‘The Western Boglands’. According to the Landscape Character Assessment, the Western Boglands’ area is said to principally consist of peat extraction areas together with areas of pasture and large areas of woodland - both planted and naturalised.

Based on the findings of the Landscape Character Assessment a landscape sensitivity rating was developed for each of the Landscape Character Areas. Figure 1.5 shows that the Western Boglands Area has been designated a medium sensitivity landscape which, according to the Plan, *can accommodate development pressure but with limitations in the scale and magnitude*¹³.

¹³ Section 14.4.1, Kildare County Development Plan, Kildare County Council, 2011

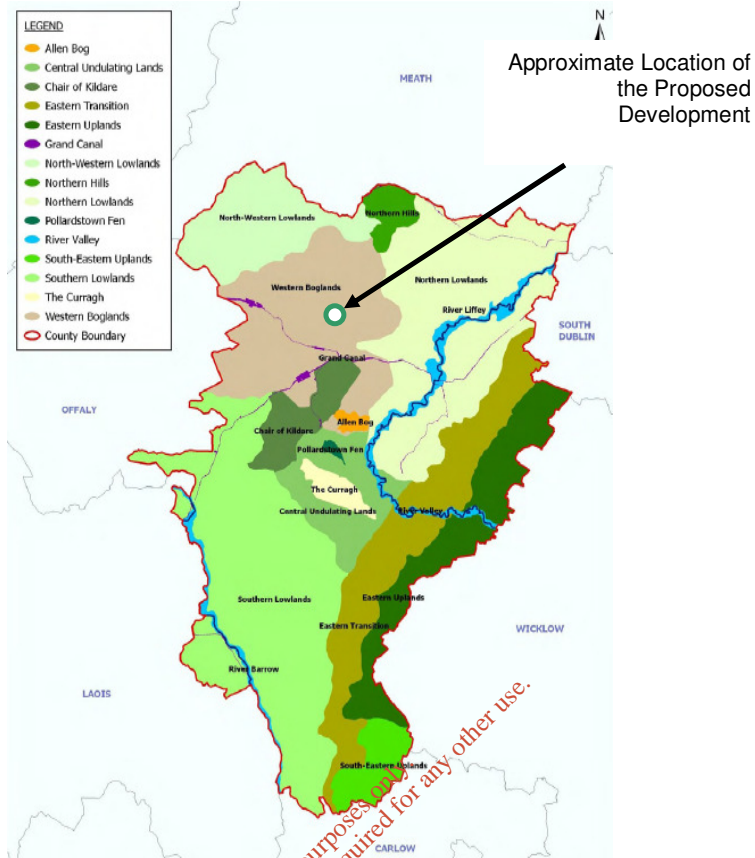


Figure 1-4 *Development Plan Landscape Character Areas Map*
 Source: Section 14.4. Map 14.1, Kildare County Development Plan 2011-2017

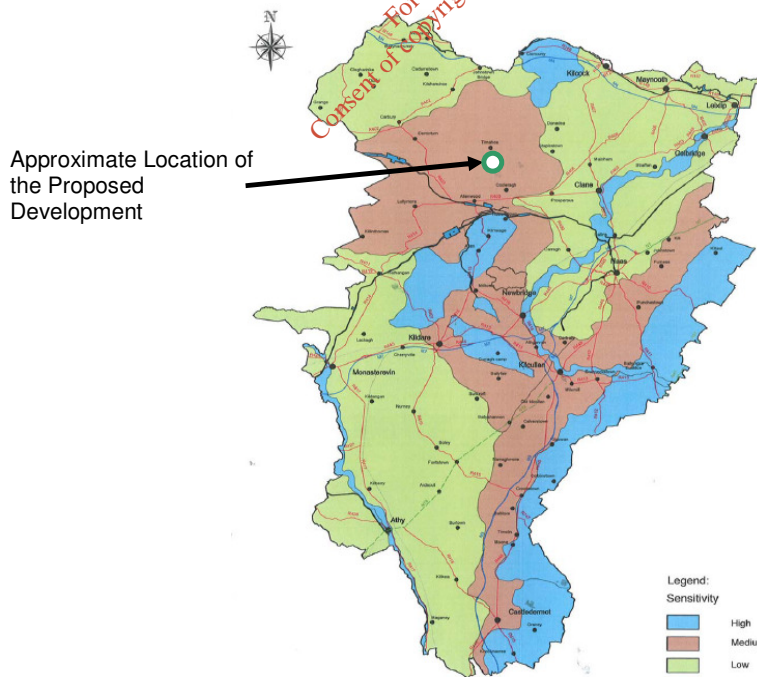


Figure 1-5 *Development Plan Landscape Sensitivity Areas Map*
 Source: Section 14.4. Map 14.2, Kildare County Development Plan 2011-2017

Chapter 14 also sets out specific landscape policies for lowlands plains and boglands character areas such as the Western Boglands including the following:

LL 1: To recognise that the lowlands are made up of a variety of working landscapes, which are critical resources for sustaining the economic and social well-being of the county.

LL 2: To continue to permit development that can utilise existing structures, settlement areas and infrastructure, whilst taking account of the visual absorption opportunities provided by existing topography and vegetation.

LL 3: To recognise that this lowland landscape character area includes areas of significant landscape and ecological value, which are worthy of protection.

LL 4: To recognise that intact boglands are critical natural resources for ecological and environmental reasons.

LL 5: To recognise that cutaway and cut-over boglands represent degraded landscapes and/or brownfield sites and thus are potentially robust to absorb a variety of appropriate developments¹⁴.

Due to its size, design and location adjacent to a permitted waste management facility at Drehid, it is clear that the proposed development will not have an undue impact on the Landscape Character of the area.

It is worth noting that the existing Waste Management Facility at Drehid has been evaluated by Kildare County Council and An Bord Pleanála on appeal and that both authorities previously noted that the development and operation of a waste management facility in this location is compliant with the policies relating to landscape character areas.

In summary, it is clear from the preceding sections of this report that the proposed development has had full regard to and is in full compliance with all relevant Kildare County Development Plan policies relating to the development of an additional waste management facility in the medium sensitivity Western Boglands landscape character area.

1.3.1.4 Regional Waste Management Plan for County Kildare

As was highlighted in the previous section, it is a key waste management policy of the Kildare County Development Plan to have regard, in the assessment of planning applications for waste management facilities, to the Waste Management Plan for County Kildare (2005-2010).

In addition to Development Plan policies, Section 22 of the Waste Management Act 1996 (as amended by Section 4 of the Waste Management (Amendment) Act 2001)

¹⁴ Section 14.8.2, Kildare County Development Plan, Kildare County Council, 2011

also provides a statutory link between a Development Plan under the Planning and Development Act 2000 and the Waste Management Plan.

The County Waste Management Plan (WMP) is a four volume document which sets out the overall waste management objectives for a period of five years and includes details on waste production with specific objectives for infrastructure. The structure of the document is as follows:

- Volume 1 - Executive Summary
- Volume 2 - Waste Management Plan for County Kildare
- Volume 3 - Waste Policy and Legislation and Developments in Waste Management Techniques
- Volume 4 - Appendices

For the sake of brevity, this review of the WMP will focus primarily on Volume 2 which contains the full Waste Management Plan for County Kildare. It will also focus primarily on sections and policies of the Plan which are of relevance for the consideration of this application for a Mechanical Biological Treatment Facility.

The opening sections of Volume 2 of the WMP provide detailed information regarding the volumes of different types of waste produced in County Kildare, the implementation of the previous waste management plan, waste management arrangements in the County, as well as waste generation forecasts.

It is important to note that the data used in these sections of the WMP was compiled from a number of sources which are now out of date including:

- the National Waste Database Report 2001
- the National Waste Database Interim Report 2002
- data provided by Kildare County Council (at the time of drafting in 2005); and
- AERs from licensed waste facilities within the County (as of the time of drafting)

Furthermore, it should be noted that the year 2009 was chosen as the design year of the 2005 - 2010 Plan. In light of the dated nature of this information, the applicant has recently carried out an up to date review of volumes of waste generation in County Kildare and in the surrounding Waste Management Regions.

The results of this review are included in the Need Assessment Report in Appendix 1.2 and summarised in Section 1.3.3 below which also provides a quantitative analysis of the role of the proposed development in providing needed additional waste treatment capacity.

The data formed the basis for the development of specific policies and objectives for the County which are in turn also based upon a thorough examination of a number of generic waste management scenarios for the County. The outcome of this analysis, which is presented in outline in the Executive Summary of the WMP and in detail in Section 7 of the Plan is for an integrated scenario including (amongst other measures):

- biological treatment facility(s) for the treatment of organic waste (food and garden) to form compost which can be re-used beneficially;
- dry material recovery facility(s) for the recycling/recovery of recyclable material in a dry material recovery facility - sorting and picking lines separate the waste into paper, cardboard, metals and plastic fractions;
- mechanical-biological treatment facility(s) for the treatment of the residual bin, which is a mixture of organic waste and recyclable materials - recyclables can be recovered/recycled from sorting and picking lines, and the remaining waste is then composted; and
- residual landfills(s) for material that cannot be recycled, and for material which is rejected from a biological treatment facility, dry material recovery facility or mechanical-biological treatment facility¹⁵.

Section 7 of the main WMP document summarises the reason that such an approach focused on mechanical biological treatment of the residual waste stream prior to disposal was “clearly preferred” as a result of the following factors:

- improved environmental performance over a range of parameters (although not all);
- exceeds policy and target requirements; and
- improved financial performance¹⁶.

The adoption of mechanical-biological treatment as a key element of the approach to waste management in the County is carried through into specific policy actions as set out in Section 8 of the WMP. For example, a key policy in relation to Waste Recovery and Recycling as set out in Section 8.4 of the Plan is that “*the provision of biological treatment by the private sector is promoted for biodegradable waste*¹⁷”.

Section 8.6 is also relevant in this case as it sets out specific policies of the Council with regard to primary waste fractions. With regard to the proposed development, this section states that the Council will “*promote the provision of biological treatment*

¹⁵ Section 3.1, page 10, Executive Summary, Kildare WMP, Kildare County Council, 2005

¹⁶ Section 7.4, page 85, Kildare WMP, Kildare County Council, 2005

¹⁷ Section 8.4, page 90, Kildare WMP, Kildare County Council, 2005

facilities by the private sector¹⁸” and that it will also “promote materials recovery facilities for dry recyclables by the private sector¹⁹,”

Section 8.7 ‘Final Disposal’ is also relevant in the case of the proposed development. This section states that:

in accordance with the Landfill Directive, wastes for landfilling will be pre-treated as required by the Directive” and furthermore that “in the medium to long term, Kildare County Council, where necessary, will consider alternative arrangements for the disposal of residual waste in cooperation with neighbouring regions and/or the private sector²⁰.

A key policy in terms of the consideration of the proposed development in planning and development terms is contained in Section 8.14 of the WMP which deals with the ‘Location of Waste Management Facilities’. This section starts by stating that

To provide adequately for waste management facilities, notwithstanding the zoning of land for the use solely or primarily of particular areas for particular purposes in development plans, or the absence of zoning provisions, approval for waste management facilities necessary for the proper implementation of the Plan will be considered open for consideration in all areas²¹.

After addressing the issue of the provision of additional public infrastructure, this section of the WMP lists the environmental protection areas which are to be taken into account in the consideration of the siting of future waste facilities.

In the case of the proposed development it is important to note that there are no outstanding issues in relation to the provision of additional public infrastructure and that full regard has been had to all relevant designated sites and species in the vicinity of the proposed facility.

Section 9 of the WMP describes the Roles and Responsibilities of various stakeholders in the successful implementation of the Plan. Section 9.1.4 addresses the role of the waste management industry stating that

The waste contracting industry will play an essential role in the provision of new infrastructure. It is crucial that proposals for new waste facilities are

¹⁸ Section 8.6.1, page 91, Kildare WMP, Kildare County Council, 2005

¹⁹ Section 8.6.3, page 92, Kildare WMP, Kildare County Council, 2005

²⁰ Section 8.7, page 92, Kildare WMP, Kildare County Council, 2005

²¹ Section 8.14, page 101, Kildare WMP, Kildare County Council, 2005

*considered positively, where they are environmentally appropriate, and where land use considerations are favourable*²².

Finally, Section 11 of the Plan 'Procurement' is also relevant to the consideration of the proposed development in that it states that

Kildare County Council's preference for the implementation of this Plan is that the major infrastructural requirements of the Plan will be provided by independent private sector companies, without direct procurement involvement from the County Council unless required.

This section goes on to list existing and proposed private sector facilities in the County as of 2005, the date of publication of the WMP. Once again, it is worth noting that the information and timelines provided in the WMP are now out of date. As a result, details as to the status of existing and proposed facilities in the area are set out in Appendix 1.2.

Section 11 also provides an indicative timeline for the delivery of key waste management infrastructure within the County which indicates that Mechanical Biological Treatment Facilities were to be provided by 2008²³. As Table 1-1 overleaf illustrates, this timeline was drafted having regard to the need for the Council to increase levels of material recovery, biological treatment and residual waste treatment in particular in order to meet specific legislative and policy targets.

²² Section 9.1.4, page 104, Kildare Waste Management Plan, 2005-2010

²³ Section 11, page 109, Kildare Waste Management Plan, 2005-2010

Table 1-1 Infrastructure Required within County Kildare to meet Targets

Source: Table 1.1, page 2, Executive Summary, Kildare County Waste Management Plan, 2005-2010

Target	Deadline	Infrastructure Required to Meet Targets
Landfill Directive: compliance with 25% target 2006	2006	three bin collection system material recovery facility(s) biological treatment facility(s) residual landfill
Landfill Directive: compliance with 50% target 2009	2009	three bin collection system material recovery facility(s) biological treatment facility(s) residual landfill
Landfill Directive: compliance with 65% target 2016	2013	three bin collection system material recovery facility(s) biological treatment facility(s) residual landfill
Changing Our Ways 35% recycling of municipal waste	2013	three bin collection system material recovery facility(s) biological treatment facility(s) residual landfill
Changing Our Ways a diversion of 50% of overall household waste away from landfill	2013	three bin collection system material recovery facility(s) biological treatment facility(s) residual landfill
Changing Our Ways a minimum of 65% reduction in biodegradable waste consigned to landfill	2013	three bin collection system material recovery facility(s) biological treatment facility(s) residual waste treatment facility(s) residual landfill

The high level review of the Kildare County Waste Management Plan presented in the previous sections indicates that the proposed development fully accords with the waste treatment scenario adopted in the Plan which seeks to minimise waste being sent directly to landfill through the provision of mechanical biological treatment infrastructure.

As a privately operated facility, adjacent to the site of the existing Drehid Waste Management Facility, the proposed development also complies with the overall approach to the procurement and provision of private waste management facilities in locations which are environmentally favourable where land use considerations are suitable.

1.3.1.5 Overall Compliance with Planning and Development Policies

In conclusion, it can be seen that the proposed development of an MBT Facility adjacent to the existing Drehid Waste Management Facility accords with the development principles set out in the relevant planning policy documents in that it will:

- play an important role in addressing infrastructural requirements highlighted in the NSS and NDP by ensuring the provision of more efficient, effective and cost competitive waste management infrastructure in the Greater Dublin Area;

- help to achieve the objectives set out in the RPGs by providing additional options for the treatment of waste in the region including increased levels of diversion of biodegradable waste from landfill;
- have full regard to and be in full compliance with all relevant Kildare County Development Plan polices relating to the development of an additional waste management facility in the medium sensitivity Western Boglands landscape character area; and
- support the waste management scenario adopted in the Kildare County Waste Management Plan which seeks to minimise waste being sent directly to landfill through the provision of additional mechanical biological treatment infrastructure.

Finally, it can be seen that the proposed development has been designed and sited, and will be built in accordance with best practice for the protection of human health and the natural environment as demonstrated in this EIS.

1.3.2 Relevant Sectoral Strategies and Guidance

In addition to all relevant planning policies, the proposed development of a Mechanical Biological Treatment facility adjacent to the existing Drehid Waste Management Facility has been assessed in the context of relevant sectoral policies and guidance including:

- Government policies (including recent draft policies) on the management and treatment of waste, as issued by the Department of the Environment, Community and Local Government;
- Sectoral policies set out by other relevant agencies such as the Environmental Protection Agency (EPA); and
- Policies set out in the Regional Waste Management Plans for the Waste Planning Regions adjacent to Kildare, which will be served by the proposal.

1.3.2.1 Government Waste Management Policies and Guidance

There has been a significant evolution in National Waste Management Policies as issued by the Department of Environment, Community and Local Government (DoECLG) (previously the Department of Environment, Heritage and Local Government - DoEHLG) since the mid to late 1990s.

Government policy documents have moved from an initial focus on the development of modern, engineered landfill capacity and the promotion of recycling to fiscal measures to influence environmental performance as well as policies promoting and directing the emerging technologies in this sector such as the development of commercial composting and biological treatment facilities.

In addition, government waste management guidance has been based on a regional approach to waste management and planning as embodied by the various regional waste management plans. Key waste management policy statements published by the now DoECLG since the late 1990s include:

1. Waste Management: Changing Our Ways – DoEHLG (1998);
2. Preventing and Recycling Waste: Delivering Change (March 2002);
3. Waste Management: Taking Stock and Moving Forward (April 2004);
4. National Overview of Waste Management Plans (2004)
5. Policy Guidance Notes under Section 60 of the Waste Management Act, 1996 (May 2005);
6. National Strategy on Biodegradable Waste (April 2006);
7. International Review of Waste Management Policy (September 2009);
8. Draft Statement of Waste Policy (July 2010);
9. Towards a New National Waste Policy - Discussion Document (August 2011).

The following sections of this report will provide a brief overview of each of these policy documents to demonstrate that the proposal accords with the Government's overall approach to waste management in Ireland.

1. “Waste Management: Changing Our Ways” – DoEHLG (1998)

The policy statement ‘*Waste Management: Changing Our Ways*’ was published by the Minister for the Environment and Local Government in October 1998. The policy approach adopted in ‘*Changing Our Ways*’ was one of integrated waste management based on the hierarchy of options officially adopted by the European Union.

The illustration in Figure 1.6 below indicates that this approach places greatest emphasis on waste prevention, followed by minimisation, re-use, recycling, energy recovery and, finally, the environmentally sustainable disposal of residual waste.

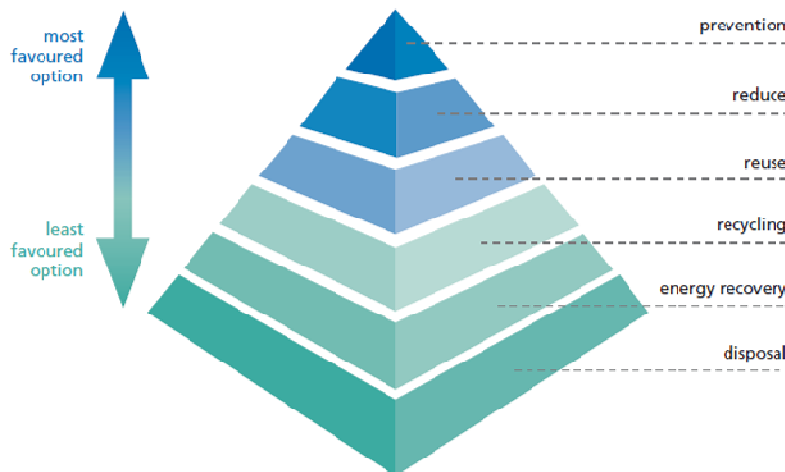


Figure 1-6 European Union Waste Hierarchy

Source: Page 5, *Municipal Solid Waste: Pre Treatment and Residuals Management*, EPA, 2009

The Government's '*Changing our Ways*' policy document highlighted the need for a new approach to the delivery of waste infrastructure and services, challenging the older model of stand-alone provision of waste services by individual local authorities. It also emphasised the need for co-operation with neighbouring local authorities and the utilisation of the potential of the private sector to contribute to the delivery of services.

Local authorities were encouraged to adopt a regional approach to waste management planning in order to secure a level of scale and activity which would provide a sound basis for the development of integrated and innovative waste management solutions.

Significantly '*Changing Our Ways*' also sought to secure and progress rationalisation of the municipal landfill network, the ultimate target being an integrated network of ca. 20 state-of-the-art facilities incorporating energy recovery and high standards of environmental protection²⁴.

2. Preventing and Recycling Waste: Delivering Change - DoEHLG (2002)

'*Preventing and Recycling Waste: Delivering Change*' evolved from, and was grounded in the '*Changing Our Ways*' document which established a national policy framework for the adoption and implementation of strategic waste management planning.

'*Delivering Change*' addressed the factors and practical considerations that are relevant to the achievement of Government policy objectives and for the prevention and recovery of waste. This policy statement established a series of objectives in terms of the implementation of the waste hierarchy based on minimisation of waste generation and improving levels of recycling of generated waste.

3. Waste Management: Taking Stock and Moving Forward - DoEHLG (2004)

The overall policy approach set out in '*Taking Stock and Moving Forward*' remained grounded in the concept of integrated waste management, based on the EU waste hierarchy and designed to achieve the ambitious targets set out in '*Changing Our Ways*' by 2013.

While '*Taking Stock and Moving Forward*' acknowledged the considerable progress made in improving waste management, it made it clear that further work remained to be done to put the full range and scale of waste infrastructure in place.

4. DoEHLG (2004) National Overview of Waste Management Plans

The '*National Overview of Waste Management Plans*' which was published in tandem with '*Taking Stock and Moving Forward*' set out on a region by region basis the

²⁴ As stated in Para. 4.1, *Changing our Ways*, DoEHLG, 1998

progress made (up to end-2003) in providing the principal pieces of waste infrastructure envisaged in local authority waste management plans.

In terms of the Kildare Region, the ‘*National Overview*’ concluded that the estimated landfill capacity in the County in 2001 was 2 years (based on the EPA National Waste Database Report, 2001); but that this had increased to 6 years in 2004 based largely on the EPA decision to issue a waste licence for a private municipal facility at Usk (which ultimately was never developed).

5. Policy Guidance Notes Under Section 60 of the Waste Management Act, 1996 - DoEHLG (2005)

Policy Guidance Notes pursuant to Section 60 of the Waste Management Act, 1996 (as amended), (circular WIR 04-05) were issued by the Minister in May 2005 to address the issue of actions against illegal waste activity as well as the movement of waste between waste management plan areas.

With specific regard to the movement of waste, the ‘*Policy Guidance Notes*’ addressed what it termed the “*unnecessarily restrictive*” approach to limiting waste management facilities to dealing only with wastes arising in the area to which the relevant Waste Management Plan applied.

According to these ‘*Policy Guidance Notes*’, such an unnecessarily restrictive approach “*may not be in keeping with the philosophy underpinning the regional approach to waste management planning and, by implication, the rational use of waste management infrastructure*”²⁵.

6. National Strategy on Biodegradable Waste - DoEHLG (2006) The ‘*National Strategy on Biodegradable Waste*’ set out Government policy for the diversion of biodegradable municipal waste (BMW) from landfill, building upon the key objectives established in preceding policy documents. The primary focus of the policy therefore was tackling the challenge of meeting the limits set for the quantity of biodegradable municipal waste which is permitted to be sent to landfill under the EU Landfill Directive (1999/31/EC).

In order to meet the targets set out in the various Waste Management Plans, the ‘*National Strategy on Biodegradable Waste*’ highlighted that a “*several-fold increase in recycling capacity and biological treatment capacity is required*” and that “*there is therefore an urgent need to procure the necessary alternative waste treatment capacity which will facilitate diversion of biodegradable municipal waste away from landfill*”²⁶.

²⁵ Page 4, Circular WIR: 04/05, DoEHLG, May 2005

²⁶ Section 2.2.7, Page 25, National Strategy on Biodegradable Waste’, DoEHLG, 2006

One of the ways the ‘*National Strategy on Biodegradable Waste*’ envisages this happening is through the increased use of Mechanical Biological Treatment (MBT):

MBT can provide an outlet to limit the quantity of biodegradable municipal waste which ultimately needs to be sent to landfill²⁷.

The ‘*National Strategy on Biodegradable Waste*’ goes on to specifically refer to Mechanical Biological Treatment as part of an overall strategy to reduce the environmental impacts of landfilling and meet the targets set in the EU Landfill Directive. This approach is illustrated in Figure 1.7 below.

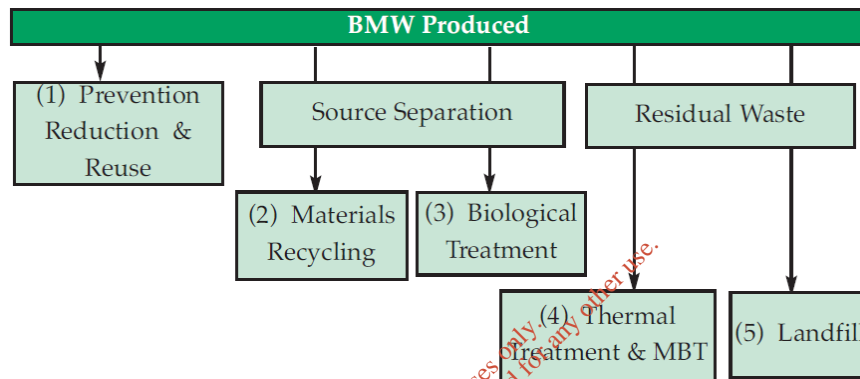


Figure 1-7 *Summary of National Strategy on Biodegradable Waste Approach*
Source: Section 5.1, Page 40, *National Strategy on Biodegradable Waste*, DoEHLG, 2006

7. International Review of Waste Management Policy (2009)

An International Review of Waste Management Policy was commissioned by the DoEHLG in 2008 and published in 2009. Prepared by Eunomia Research and Consulting (and Partners) the objective of the study was to identify possible challenges to policy at a national level in order to assist Ireland to move towards a sustainable resource and waste policy; and examine the prevailing legal, institutional and organisational arrangements and analyse potential changes which could assist in achieving policy goals, as well as national and international obligations.

The report makes a number of significant recommendations and emphasises the importance of waste minimisation and prevention with only the smallest volumes of waste then requiring treatment and/or disposal. Ultimately it concludes that the impact of waste policies should increase recycling and composting / digestion at the expense of other forms of residual waste treatment, including incineration and possibly also, MBT. Key to the development of those residual facilities that are then necessary, it supports the imposition of the Residual Waste Levies at a rate which favours MBT over both thermal treatment and disposal to landfill – i.e. per tonne

²⁷ Section 2.2.7, Page 25, *National Strategy on Biodegradable Waste*, DoEHLG, 2006

levies for disposal to MBT are lower than the levies on thermal treatment which are, in turn, lower than the levies associated with disposal to landfill.

8. Draft Statement of Waste Policy - DoEHLG (2009)

The Department of the Environment's 2009 *'Draft Statement of Waste Policy'* outlined the key principles and actions which it is envisaged will inform Irish waste policy for the coming decade and beyond. A key stated aim set out in the *'Draft Statement'* was to use *"all appropriate legislative and fiscal measures... to move away from traditional landfill and mass burn incineration, towards higher levels of recycling and mechanical/biological treatment"*²⁸.

This Draft Statement was thereby intended to build on the commitments in the Programme for Government agreed in 2007 which *"clearly flagged a future for waste management that would seek to take advantage of the development of technologies such as Mechanical Biological Treatment (MBT), to ensure the achievement of maximum environmental performance"*²⁹.

According to the Draft Statement these commitments were reinforced in the Renewed Programme for Government agreed in 2009 which *"undertook to use a resource management approach to waste and embed resource recovery and sustainable production and consumption systems in waste policy, leading to increased employment and new opportunities for business"*³⁰.

Due to the fact that a new Government (with its own Programme for Government) was elected shortly after the publication of the *'Draft Statement'*, the recommendations set out in the report have yet to be fully adopted. Despite this, the document is still relevant in that it highlights the need to consider the increased use of technologies such as Mechanical Biological Treatment to ensure that all relevant waste management targets are met.

9. Towards a New National Waste Policy - DoECLG (2011)

In August 2011, the current government published its own consultation document on waste management in Ireland entitled *'Toward a New National Waste Policy'*. This document is not intended to be prescriptive, but rather puts forward an outline of possible policy initiatives for consultation and takes on board submissions made to the previous government's *'Draft Statement of Waste Policy'*.

'Towards a New National Waste Policy' was prepared in light of the transposition of the Waste Framework Directive (2008/98/EC) into Irish law in March 2011. The substantive changes in the Directive are aimed at encouraging the greater reuse and

²⁸ Section 1, Page 3, Draft Statement of Waste Policy, DoEHLG, 2009

²⁹ Section 1, Page 3, Draft Statement of Waste Policy, DoEHLG, 2009

³⁰ Section 1, Page 3, Draft Statement of Waste Policy, DoEHLG, 2009

recycling of waste, whilst it also sets out to simplify the fragmented legal framework that has regulated the waste sector to date. The Directive also requires Member States to apply the waste hierarchy as a priority order in waste prevention and management legislation and policy.

‘Towards a New National Waste Policy’ was also prepared having regard to commitments set out in the 2011-2016 Programme for Government entitled *‘Government for National Recovery 2011-2016’* in relation to the development of a sustainable waste policy. A key objective of this Programme for Government is to *“develop a national waste policy that will adhere to the EU waste hierarchy and favours a coherent approach to waste management that minimises waste going to landfill, and that maximises the resources that can be recovered from it”³¹*.

According to *‘Towards a New National Waste Policy’*, the development of a new waste policy is to be guided by a set of principles which, taken together with our obligations as an EU Member State, will inform how Ireland deals with its waste in the coming decade and beyond. One such principle is that *“the policy will be sufficiently flexible to respond to emerging developments in relation to technology, operational practice and wider thinking in the waste management policy realm”*. The document goes on to state that:

Waste, just like many other sectors, has developed a range of technologies and practices in recent decades and will develop newer, more efficient and effective technologies and practices in the years ahead. The policy will allow for flexibility to take advantage of new thinking and advances once such approaches are proven³²

‘Towards a New National Waste Policy’ highlights the use of such technologies in the recovery of waste. Processes which the policy document classes as being on the recovery tier include *“the use of Solid Recovered Fuel from a mechanical-biological treatment plant as a source of energy in industry”*. Such processes were identified by the Government as having an important role to play *“as Ireland develops a range of alternatives to landfill and seeks to maximise the value of material which has previously been discarded”³³*.

In relation to the overall operation of the waste management planning system, *‘Towards a New National Waste Policy’* continues to emphasise the need for flexibility in relation to inter-regional movements of waste. According to the policy document this is to ensure *“that regional boundaries do not operate in a rigid*

³¹ Section 2, Page 4, *Towards a New National Waste Policy*, DoECLG, 2011

³² Section 3, Page 7, *Towards a New National Waste Policy*, DoECLG, 2011

³³ Section 7.4, Page 20, *Towards a New National Waste Policy*, DoECLG, 2011

manner, preventing the most efficient use of infrastructure in pursuit of overall national targets/obligations³⁴”.

Summary of Government Waste Management Policy

The brief review of government waste management policy presented in the preceding pages indicates a growing emphasis on the need to meet ambitious landfill diversion targets set out in various EU Directives by improving Ireland’s waste management system as a whole.

This approach includes adopting a more flexible approach to the regional treatment of waste flows which must be seen in the national context of Ireland’s commitments to meeting its waste management policy objectives. It also entails a growing emphasis on the use of new technologies such as mechanical biological treatment to reduce the overall volume of waste being sent directly to landfill as well as to meet targets with respect to the biodegradable fraction within that residual waste stream.

It can be seen therefore, that in both of these respects, the proposed development of a Mechanical Biological Treatment Facility fully accords with this approach and would make a significant contribution in helping Ireland meet its national waste policy management objectives.

1.3.2.2 Sectoral Guidance and Reports from Other Relevant Bodies

In addition to the policy documents dealt with in the preceding pages of this Chapter, the proposed development has also been considered in light of general sectoral guidance and reports from the Environmental Protection Agency (EPA) and Forfás.

The Environmental Protection Agency is responsible for the licensing and environmental enforcement of major waste facilities in Ireland. In addition, it is also responsible for producing national statistics on waste generation and management in Ireland, including information on waste exports and imports.

Forfás is Ireland’s policy advisory board for enterprise, trade, science, technology and innovation, operating under the auspices of the Department of Enterprise, Trade and Employment. Since 2006, the organisation has prepared annual Waste Benchmarking Studies in order to assess Ireland’s waste management performance.

A number of relevant documents from these organisations will be dealt with in the following sections of this Chapter including the following:

³⁴ Section 8.1, Page 25, Towards a New National Waste Policy, DoECLG, 2011

1. Critical Analysis of the Potential of Mechanical Biological Treatment for Irish Waste Management - EPA (2008)
2. Municipal Solid Waste: Pre Treatment and Residuals Management - EPA (2009)
3. National Waste Report 2010 - EPA (2012)
4. Waste Management Benchmarking Updates - Forfás (2009 and 2010)

1. Critical Analysis of the Potential of Mechanical Biological Treatment for Irish Waste Management - EPA (2008)

As part of the EPA research programme for the period 2007-2013, a consultancy team was contracted to produce a report investigating the potential role that mechanical biological treatment of waste can play within the Irish waste management sector.

The overall aims of this project were to provide information in relation to MBT that may inform future government policy and to identify issues that require addressing in order to establish conditions that are suitable to the development of MBT facilities in Ireland³⁵.

The report describes the growth of MBT in Europe in the face of changing legislative requirements to develop a method for treating residual municipal solid waste (MSW) material, and thereby reduce the need for traditional landfill disposal. It goes on to explain that the MBT industry in Ireland can be considered to be in its infancy with no facilities of the scale or complexity of those seen in countries with an established MBT industry, such as Germany or Austria³⁶.

Significantly however, the report also points out that there are a number of operators in Ireland that are striving to develop dedicated MBT facilities and that there are various configurations of technologies in operation that could be termed MBT. This growth can be seen to be linked to ongoing developments in European legislation, particularly Council Directive 99/31/EC of 26 April 1999 on the landfill of waste, which requires alternative treatment methods to be employed to pre-treat all waste prior to landfilling³⁷.

As part of the research project, the current Waste Management Plans for each of the ten Waste Management Regions were assessed to fully determine the role that MBT

³⁵ Page 1, Volume 1 'Summary of Findings', Critical Analysis of the Potential of Mechanical Biological Treatment for Irish Waste Management, EPA, 2008

³⁶ Section 1.3, Pages 8 and 9, Volume 2 'Research Report', Critical Analysis of the Potential of Mechanical Biological Treatment for Irish Waste Management, EPA, 2008

³⁷ Page XIII, Volume 2 Research Report, Critical Analysis of the Potential of Mechanical Biological Treatment for Irish Waste Management, EPA, 2008

could play in each region, in line with the stated objectives of the Plans. A key finding of the report in relation to this assessment was that:

while seven of the ten waste management regions indicate a preference for thermal treatment as the primary residual waste management solution, eight regions also indicate that MBT can play a role in the treatment of residual waste, particularly in the short term where thermal capacity may not be available³⁸.

Table 1-2 below (which is taken from Section 3.2 of the report) summarises the preferred residual treatment techniques for each of the Waste Management Regions.

Table 1-2 Summary of National Biodegradable Waste Strategy Approach

Region	Thermal Treatment Recommended	MBT Recommended	2 or 3-bin collection system recommended
Connacht	Y	Y	3 bin
Cork	Y	Y	3 bin
Donegal	N*	Y	3 bin
Dublin	Y	N	3 bin
Kildare	N*	Y	3 bin
Limerick / Clare / Kerry	Y	Y	3 bin
Midlands	Y	Y	3 bin
North East	Y	Y	3 bin
South East	Y	N	3 bin
Wicklow	N*	Y	3 bin

* will look at developments in neighbouring regions

Source: Table 3.6, Page 56, Volume 2 Research Report, Critical Analysis of the Potential of Mechanical Biological Treatment for Irish Waste Management, EPA, 2008

The overall findings of the EPA's Critical Analysis Report in relation to the approach to Mechanical Biological Treatment adopted in regional Waste Management Plans is succinctly summed up in the following passage from the report:

All of the Waste Management Plans demonstrate a commitment to the integrated approach to waste management which has been elaborated in Government policy and, in particular, to meeting the targets established in the National Strategy on Biodegradable Waste. All regions have accepted the importance of an appropriate 3-bin collection system and recognise that residual biodegradable waste will arise that will require pre-treatment before landfilling. Where thermal treatment of residual waste is the preferred policy, those Regions also recognise that MBT may play a role in integrated waste management, particularly in the short term where the required diversion rates

³⁸ Page 3, Volume 2 Research Report, Critical Analysis of the Potential of Mechanical Biological Treatment for Irish Waste Management, EPA, 2008

are lower and where thermal treatment facilities may not be available. This is due to the acknowledgement that the establishment of a thermal treatment facility is a lengthy process and that some form of pre-treatment is required in order to achieve the diversion targets laid down in Council Decision 99/31/EC on the landfill of waste.³⁹

2. Municipal Solid Waste: Pre Treatment and Residuals Management - EPA (2009)

The EPA technical guidance document ‘*Municipal Solid Waste - Pre-treatment and Residuals Management*’ set out the Environmental Protection Agency (EPA) standard for minimum acceptable pre-treatment for Municipal Solid Waste (MSW) accepted for landfilling or incineration at EPA licensed waste facilities.

This document is of particular relevance to the proposed development as it deals with the pre-treatment of waste which includes processes such as source separation, manual sorting and mechanical treatment, composting and anaerobic digestion. The document refers to the ‘*National Strategy on Biodegradable Waste*’ which pointed out that meeting landfill diversion targets will require that a certain proportion of residual biowaste is pre-treated prior to landfill.

The technical guidance document goes on to state that Article 5(2) of the Waste Management (Facility Permit & Registration) Regulations, 2008 defines MBT as “*the treatment of residual municipal waste through a combination of mechanical processing and biological stabilisation, in order to stabilise and reduce the volume of waste which requires disposal*”⁴⁰.

Figure 1.8 below, illustrates the central role the EPA envisages MBT playing in the waste management process as one of the main pre-treatment / diversion options upstream of the final incineration and landfill of residual waste.

³⁹ Page 56, Volume 2 Research Report, Critical Analysis of the Potential of Mechanical Biological Treatment for Irish Waste Management, EPA, 2008

⁴⁰ Page 14, Municipal Solid Waste: Pre Treatment and Residuals Management, EPA, 2009

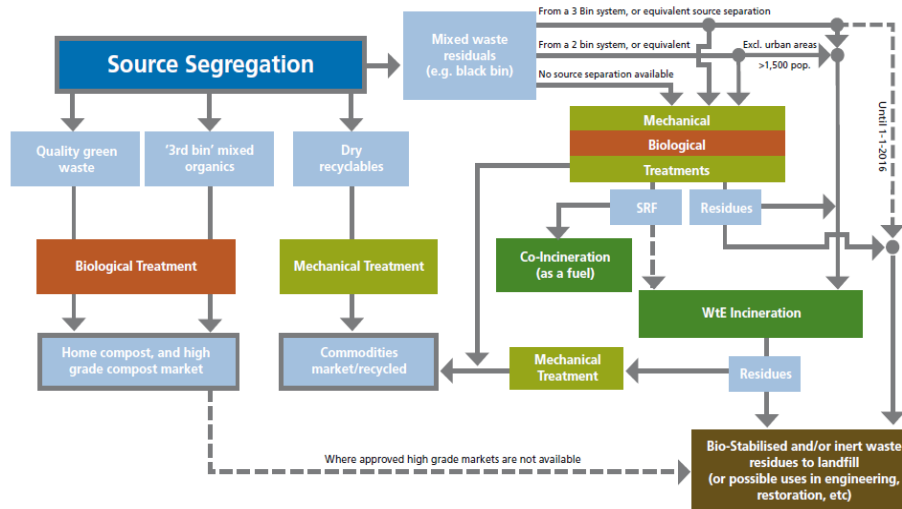


Figure 1-8 EPA Waste Pre-Treatment / Diversion Flow Path

Source: Page 17, Municipal Solid Waste: Pre Treatment and Residuals Management, EPA, 2009

A key overall conclusion of the EPA's 2009 Municipal Solid Waste document is that more needs to be done to ensure that less waste is sent directly to landfill by making greater use of other waste treatment facilities. As the concluding comments to the document state:

Ireland will not meet its National Strategy on Biodegradable Waste and EU obligations in relation to pre-treatment of municipal solid waste prior to landfilling or incineration if action is not taken to provide the waste source-separation and treatment infrastructure necessary. Accordingly, any new landfill or incinerator proposal will have to be planned in the context of the availability of appropriate waste pre-treatment facilities (including diversion infrastructure)⁴¹.

3. National Waste Report 2010 - EPA (2012)

The objective of the EPA's *National Waste Report* is to present the most up to date information available on waste generation and management in Ireland, as reported to the EPA. The most recent report is for the calendar year 2010 and deals with municipal solid wastes, waste streams subject to producer responsibility initiatives as well as construction & demolition and hazardous wastes.

According to the report, the economic downturn is having a marked influence on waste generation, which has decreased by 16% since it peaked in 2007. Household waste generation is decreasing in line with decreasing personal consumption and despite a population increase.

⁴¹ Page 20, Municipal Solid Waste: Pre Treatment and Residuals Management, EPA, 2009

The economic downturn (and consequent reduction in waste generation) has resulted in Ireland moving towards achievement of the EU Landfill Directive targets for biodegradable waste diversion. There remains some risk that Ireland will fail to meet the July 2013 and 2016 Landfill Directive targets for diversion of biodegradable municipal waste from landfill (a further 250,000 t of biodegradable municipal waste will need to be diverted from landfill in order to meet the 2013 target and 433,000t diverted to meet the 2016 target). In relation to achievement of nationally expressed waste management targets Ireland has been less successful. Of note is the report's reference to Ireland remaining underdeveloped with respect to the sophistication of essential waste infrastructure for the pre-treatment of municipal waste prior to disposal (e.g. anaerobic digestion, waste to energy, mechanical biological treatment etc.)⁴². The Report states that it will be a challenge to meet waste diversion and waste recovery targets if municipal waste generation increases with economic recovery and the necessary waste infrastructure is not in place.

The Report notes that the EU Waste Framework Directive (2008/98/EC), transposed into Irish legislation by the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011) will be a significant influence and driver of change in waste management practices and governance in Ireland and elsewhere over the coming decade, particularly with the legal obligation to ensure that waste is managed in accordance with the waste hierarchy (with prevention at the top)⁴³.

The Report concludes that the diversion of very large quantities of biodegradable waste from landfill remains a priority that must be addressed, as does the improvement in recycling rates for municipal wastes. In addition the priority actions for biodegradable municipal waste management in Ireland for the foreseeable future are similar to those identified in previous National Waste Reports, and include the need to (amongst others):

“Ensure there is adequate infrastructure for the bio-stabilisation of waste treatment residuals destined for landfill. Whilst much of the effort to date in relation to biodegradable waste has been around the source separation and treatment of the collected fraction, the waste characterisation surveys undertaken for the EPA demonstrate that a residual bin from a 3-bin collection service will still contain a considerable fraction of biodegradable materials (up to 47% for household collections). If Ireland is to meet the 2013 and 2016 EU Landfill Directive diversion targets, then infrastructure will have to be developed that will treat this residual fraction;”

⁴² Page xii, National Waste Report 2010, EPA, 2012

⁴³ Page xii, National Waste Report 2010, EPA, 2012

Additionally, the EPA Report goes on to provide details of the levels of different types of waste produced and treated through the various regional waste management areas. This information is dealt with in detail in Appendix 1.2 which sets out the quantitative rationale (the ‘need’) for the proposed development of additional waste treatment capacity of the type proposed.

4. Waste Management Benchmarking Updates - Forfás (2009 and 2010)

In its role as Ireland's policy advisory board for enterprise and science, Forfás publishes regular reports on the state of the country's waste management infrastructure which is seen as having a key role to play in the overall competitiveness of the national economy. Key findings set out in the previous two such reports state that:

- *Ireland continues to have a relatively high reliance on landfill for waste treatment and Irish companies continue to have a limited choice of waste treatment solutions compared to their competitors*⁴⁴
- *Waste management infrastructure rollout in Ireland remains slow. A range of infrastructures necessary to meet Ireland's waste management requirements need to be accelerated including: thermal treatment capacity to recover energy from municipal and industrial waste; thermal treatment or landfill capacity for hazardous waste; biological treatment (composting, anaerobic digestion) and reprocessing capacity for recovered materials (e.g. paper, glass, plastic, metal recycled materials)*⁴⁵.
- *Although still remaining high, Irish municipal waste generation per capita decreased in 2008 (most recent data available) in line with the slowdown in economic activity and increased waste prevention measures. Future volumes of municipal waste are expected to increase within the coming decade, necessitating investment in waste management infrastructure*⁴⁶.

The most recent 2010 Forfás Waste Management Benchmarking Report sets out a number of specific policy objectives which should be put in place to avoid impacting on the competitiveness of Irish enterprise one of which entitled, ‘*Delivering necessary waste infrastructure*’ states that

- *There is an urgent need to accelerate the delivery of waste infrastructure projects along the waste hierarchy to deal with future projected increases in waste. Specific infrastructures that need to be prioritised include:*
 - *Thermal treatment capacity to recover energy from municipal and industrial waste.*

⁴⁴ Press Release, Waste Management Benchmarking Update, Forfás, 2009

⁴⁵ Page 2, Press Release for the Waste Management Benchmarking Update, Forfás, 2009

⁴⁶ Page 4, Waste Management Benchmarking Update, Forfás, 2010

- *Thermal treatment or landfill capacity for hazardous waste.*
- *Biological treatment capacity (composting, anaerobic digestion).*
- *Reprocessing capacity for recovered materials⁴⁷.*

Summary of Relevant Sectoral Policy Guidance

In summary, the EPA and Forfás sectoral policy guidance documents reviewed in the previous sections all emphasise the challenges facing Ireland in meeting its obligations under the latest EU Waste Management Directives and in particular the EU Landfill Directive.

They also point out that despite improvements in the country's waste management system (including the introduction of three bin municipal waste collection in many areas) not enough is being done to make use of new waste management technologies such as MBT to reduce the amount of waste being sent directly to landfill.

It is clear therefore that the proposed development of a 250,000 TPA MBT Facility would represent a significant step forward in the use of this technology and would make a considerable contribution to ongoing efforts to meet national targets relating to the diversion of biodegradable municipal waste from landfill.

1.3.2.3 Regional Waste Management Plans

Since the mid 1990s waste in Ireland has been managed and planned for, on a regional basis. The Waste Management Act, 1996 introduced the requirement for Local Authorities to make and implement detailed Waste Management Plans (WMPs). Nationally, there are ten Waste Management Regions (as illustrated in **Figure 1.9**).

⁴⁷ Page 7, Waste Management Benchmarking Update, Forfás, 2010

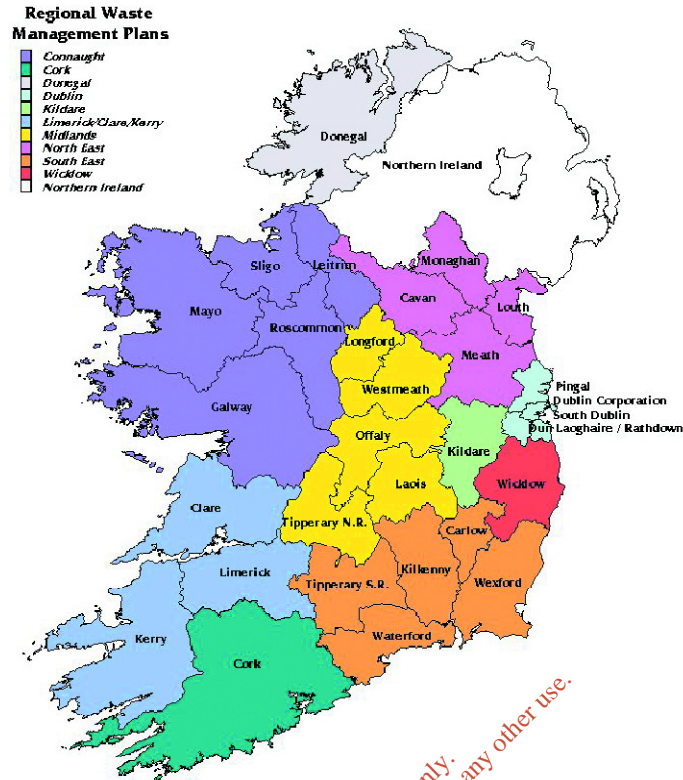


Figure 1-9 *Map of Regional Waste Management Plans*

Source: Page 57, *Waste Management: Taking Stock and Moving Forward*, DoEHLG, 2004

The following section of this Chapter will briefly outline the overall approach to the provision of additional waste management infrastructure set out in the Regional Waste Management Plans (WMPs) for the following Waste Planning Regions adjacent to Kildare:

- the County Wicklow Waste Management Region
- the Midlands Waste Management Region
- the Southeast Waste Management Region
- the Dublin Waste Management Region
- the Northeast Waste Management Region

It should be noted that the following section does not address the detailed quantitative need assessment for the proposed Drehid MBT Facility as this issue has been dealt with in the ‘Need Assessment Report’ included in Appendix 1.2 and summarised in Section 1.3.3 below.

Wicklow County Council (2006) - Wicklow WMP 2006-2011

The County Wicklow (Replacement) Waste Management Plan 2006-2011 was adopted by the Wicklow County Manager in July 2006. The principal aim of the Plan was stated as being “to ensure compliance with both European and National waste management policies, in particular, the recovery and diversion targets outlined in the

*EU Landfill and Packaging Directives*⁴⁸ and that compliance with these recovery and diversion targets involves the provision and implementation of various waste management techniques and infrastructure.

In order to identify the most suitable and appropriate waste management techniques to meet the requirements of the County, a number of different waste treatment scenarios were considered for the management of municipal solid waste arisings in Wicklow including:

- Landfill only (Scenario 1)
- MBT and Landfill (Scenario 2a)
- MBT and Thermal (Scenario 2b)
- Thermal (Scenario 3)⁴⁹.

This analysis found that from an environmental perspective any waste management scenario with a thermal treatment element has the lowest relative environmental impact potential (Scenarios 2b or 3). Scenarios 2a and 3 were said to perform best at meeting the recovery and diversion targets set out in European and National waste policy and legislation. The thermal treatment option (Scenario 3) was said to be the most cost effective provided that access is gained to a thermal treatment facility outside of the County.

However, due to the fact that County Wicklow does not have the overall waste quantities to generate the economies of scale required to make thermal treatment a realistic option, mechanical biological treatment of the residual waste stream prior to disposal to landfill was selected as the preferred option by Wicklow County Council for the following reasons:

- *improved environmental performance over a range of parameters*
- *exceeds policy and target requirements*
- *improved financial performance*⁵⁰.

The assessment outlined above is significant in the context of the proposed application as it demonstrates that mechanical biological treatment technology has been recognised as having an important role to play in the overall approach to the treatment and management of waste into the future.

Offaly County Council (2006) - Midlands WMP 2005-2010

⁴⁸ Page 98, Wicklow Regional Waste Management Plan, Wicklow County Council, 2006

⁴⁹ Page 118, Wicklow Regional Waste Management Plan, Wicklow County Council, 2006

⁵⁰ Page 119, Wicklow Regional Waste Management Plan, Wicklow County Council, 2006

The Waste Management Plan for the Midlands Region was adopted in 2006 following a statutory review of the previous Waste Management Plan for the five Local Authority areas of Offaly, Laois, Longford, Westmeath and North Tipperary.

A stated goal of the Midlands Regional WMP is to reduce the level of biodegradable content of the residual waste stream being disposed to landfill. To do so, the Plan stated that it will be necessary to progress quickly the integrated infrastructure in the Region including:

- *sustained promotion of waste prevention and minimisation*
- *expansion of the dry recyclable collection*
- *introducing separate collection of the biodegradable waste in the Region*
- *developing Biological and Thermal Treatment capacity options for the Region*
- *developing alternative pre-treatments in the Region such as Mechanical Biological Treatment (MBT) or Mechanical Separation⁵¹.*

Similar to other Regional WMPs, the Midlands WMP allowed for a flexible approach to the inter-regional movement of waste, explaining that “*the capacity of waste facilities in the Region should, as far as possible, satisfy the needs of the Region whilst allowing some element of flexibility of movement of waste into and out of the Region*”⁵².

The favourable approach to Mechanical Biological Treatment technologies and the relatively flexible approach to inter-regional waste transfers set out in the Midlands Regional Waste Management Plan would seem to indicate a broad acceptance by the five Local Authorities who make up the region of the principal of the proposed development.

South Tipperary County Council (2006) – Southeast WMP 2006-2011

South Tipperary County Council acted as Lead Authority for the preparation of the Joint Waste Management Plan for the South East 2006 - 2011. The constituent local authorities participating in the plan and which form the Region are Carlow County Council, Waterford City Council, Kilkenny County Council, Waterford County Council, South Tipperary County Council and Wexford County Council.

Similar to the Wicklow Waste Management Plan, the Southeast WMP included an overall assessment of different waste management scenarios/strategies to establish which would be most appropriate for the region⁵³. The four scenarios for the treatment of waste from residual bins tested included:

⁵¹ Page 80, Midlands Regional Waste Management Plan, Offaly County Council, 2006

⁵² Executive Summary, Midlands Regional Waste Management Plan, Offaly County Council, 2006

⁵³ Page 23, Southeast Regional Waste Management Plan, South Tipperary County Council, 2006

- Landfill only
- Mechanical & Biological Treatment (MBT) and Landfill
- MBT and Thermal Treatment
- Thermal Treatment.

When the environmental, policy and cost implications of each of the scenarios were compared in detail, approaches which included MBT technology scored well, placing it second behind the thermal treatment of waste as the preferred option to form part of an integrated waste management approach in the South East Region. It should be noted that no significant steps have been taken to develop thermal treatment capacity in the Southeast Region.

Dublin Local Authorities (2005) - Dublin WMP 2005-2010

The Waste Management Plan for the Dublin Region has been developed jointly by Dublin City Council, South Dublin County Council, Fingal County Council and Dun Laoghaire-Rathdown County Council. The first Regional Waste Management Plan for Dublin became effective in 2001. This plan was subsequently reviewed in 2004-2005 culminating in the current Plan which was due for review in 2010.

Despite the dated nature of the 2005 Dublin WMP (especially given the current economic climate), a number of the policies set out in the Plan can be still seen to be relevant with regard to the waste management policy rational for the proposed development⁵⁴.

Firstly, the 2005 WMP stated in relation to landfill policy that a critical shortage of municipal landfill capacity was imminent with the closure of Ballyogan Landfill in 2005, Arthurstown Landfill in 2007, and the planned closure of Balleally Landfill. As a result, the Plan emphasised the importance of the timely delivery of the proposed Fingal Landfill to replace these facilities and provide adequate safe disposal for residual waste in accordance with the Plan.

Another central policy aim of the plan which relates to Energy Recovery specified that a Waste to Energy (Incineration) plant be developed at the preferred location in the Poolbeg Peninsula, Dublin with a capacity of between 400,000 and 600,000 tonnes/annum. According to the Plan, by using this facility to treat non-hazardous municipal waste, the Region could ensure that the obligations of the EU Landfill Directive are met.

A third key policy which is of relevance to the consideration of the proposed development is for the Regional Co-operation and Movement of Waste. Under this

⁵⁴ Page xvii, Dublin Regional Waste Management Plan, Dublin Local Authorities, 2005

Policy, the Plan confirmed that as the Dublin Region lies within the Greater Dublin Area (GDA) for the purpose of spatial and strategic planning, that the Dublin Local Authorities would be supportive of co-operation with neighbouring counties to enable efficient development of infrastructural capacity for waste management.

Currently, neither the Fingal (Nevitt Tooman) Landfill nor the Poolbeg Waste to Energy plant has been developed. The landfill option has been abandoned by Fingal County Council completely and there is no construction start date for Poolbeg as yet.

Meath County Council (2006) – Northeast WMP 2005-2010

The current Northeast Regional Waste Management Plan sets out the waste management policy for the North East Region for the period of 2005 – 2010. For the purpose of the Waste Management Plan, the North East Region consists of the administrative areas of the counties of Cavan, Louth, Meath and Monaghan.

While the Northeast WMP does not include specific policies relating to the provision of additional MBT infrastructure, similar to other Plans it does recognise the need for flexibility with respect to the movement of waste across regional boundaries⁵⁵.

Summary of Regional Waste Management Plans

The outline of key policies presented above is significant as it highlights a growing acceptance of MBT technology as an important part of the waste management system in Ireland.

Furthermore, the review highlighted the flexible approach to the inter-regional movement of waste adopted in the relevant Regional Waste Management Plans. This approach is significant as it enables the development of appropriately sized waste management facilities at suitable locations which can take advantage of the inter-regional economies of scale required to ensure the most efficient treatment of waste.

It is clear therefore that the proposed development fully complies with the approach to waste management set out in the various Regional WMPs by providing a state of the art Mechanical Biological Treatment Facility within the same landholding as an existing Waste Management Treatment Facility in County Kildare.

1.3.3 The Quantitative Need for the Facility

In support of this application, Bord na Móna has commissioned a ‘Need Assessment Report’, attached as Appendix 1.2.

The purpose of this ‘Need Assessment Report’ is to provide a clear and concise scrutiny of available data and trends to assist in the forming of a definitive opinion of

⁵⁵ Page ix, Northeast Regional Waste Management Plan, Meath County Council, 2006

the potential to develop the Drehid MBT Facility. The Report has been compiled, having regard to:

- a) Current Waste Policy and Legislative Drivers;
- b) Current waste disposal and recovery facilities in the Kildare, Wicklow, Midlands⁵⁶ and South Eastern⁵⁷ Waste Management Regions; and,
- c) Trends evident from recently published data on waste statistics.

This Report examined a number of scenarios to demonstrate the need for the development of an MBT Facility to service the four subject waste management regions with the needs assessment carried out on the basis of 3 separate scenarios, each of which take into account current pre-treatment capacity and rates of recycling:

- Scenario 1 – Waste projections based on the current volume of waste landfilled in the 4 No. regions;
- Scenario 2 - Waste projections based on the current volume of waste arisings in the 4 No. regions; and
- Scenario 3 – Waste projections based on a pro-rata estimation of regional waste arisings based on overall national population and waste volumes and regional population statistics.

All of the need assessments carried out for the 3 No. scenarios, have clearly demonstrated that surplus biodegradable municipal waste (BMW) will exist as a percentage of the overall municipal solid waste (MSW) within the subject waste management regions by 2016 and beyond and that there is a clear need for waste treatment infrastructure to deal with this waste. The Drehid MBT at a capacity of 250,000 TPA of MSW, with the potential to divert 145,000 TPA of biowaste from landfill, is also shown to be a conservative capacity to serve the regions.

The need assessment presented in Appendix 1.2 should also be considered in light of the fact that it is desirable that as much BMW as possible is diverted from landfill and that Ireland strives to:

- achieve the landfill directive targets by surpassing them in some regions in order to compensate for under-achievement in others, or (and preferably); and
- surpass them state-wide.

Clearly the Drehid MBT Facility will provide a valuable contribution to the achievement of the above objectives.

⁵⁶ The Midlands Waste Management Region includes Offaly, Laois, Longford, Westmeath and North Tipperary.

⁵⁷ The South Eastern Waste Management Region includes Kilkenny, Waterford (City and County), South Tipperary, Wexford and Carlow.

In addition, a significant volume of waste is also available outside of the boundaries of the four waste management regions and this waste will also need to be diverted from landfill. The waste arising outside of the subject regions may be diverted to other facilities in the future, such as the Poolbeg Energy from Waste (EfW) Facility, but the proposed Drehid MBT Facility will be well positioned to accept this municipal waste for pre-treatment, if required.

In summary, as shown in the 'Need Assessment Report' included in Appendix 1.2 there is a proven need for the proposed Bord na Móna Drehid MBT Facility in order to contribute to the achievement of Ireland's BMW diversion targets as set by the EU Landfill Directive and to provide a more sustainable solution to the management of increasing volumes of municipal waste within the Kildare Waste Management Region, the Wicklow Waste Management Region, the Midlands Waste Management Region and the South East Waste Management Region.

1.3.4 Overall Compliance with Waste Management Strategies and Guidance

In conclusion, it can be seen that the proposed development of an MBT Facility on this site, accords with the waste management principles set out in the relevant strategy and guidance documents in that it will:

- Contribute to the national effort to meet targets set out in Government Waste Management Policy aimed at reducing the overall volume of waste sent to landfills in Ireland
- Result in a significant step forward in the use of the Mechanical Biological Treatment technology in line with the more integrated approach to waste management as favoured by sectoral policy guidance
- Provide an appropriately sized waste management facility at a suitable location which is positioned to take advantage of the inter-regional economies of scale required to ensure the most efficient treatment of waste.

Finally, it can be seen that the proposed development has been designed and sited and will be built in accordance with best practice for the protection of human health and the natural environment (as demonstrated by this EIS).

1.4 SITE LOCATION, CONTEXT AND PLANNING HISTORY

1.4.1 Location of the Proposed Development Site

The 29ha site accommodating the proposed development is located within the townlands of Coolcarrigan and Drummond, Carbury, Co. Kildare. The site lies to the immediate east of the access road serving the existing Drehid Waste Management Facility.

The site is immediately adjacent to the Drehid Waste Management Facility which is currently being operated in accordance with the relevant planning permissions and waste licence. The largest concentration of houses in the vicinity is to the west in the village of Derrinturn, some 3km north west of the proposed MBT Facility footprint, while both Allenwood and Coill Dubh are in excess of 3km to the southeast and east of the proposed MBT Facility respectively. There are no significant residential/commercial developments planned within close proximity of the site.

The R403 lies south, southwest and west of the site. The R403 joins the R402 at Carbury to the northwest of the site. The R402 connects to the M4 while the R403 connects to central and south County Kildare. The M4 (Dublin to Sligo/Galway) Motorway is located approximately 9km to the north of the site, while the M7 (Dublin to Limerick/Cork) Motorway is located approximately 17km to the south of the site.

Access to the MBT Facility will be via the existing, permitted site entrance at the R403 regional road and the existing facility access road. It will be accessible via a network of regional routes which in turn link with the National Motorway network. These routes have been previously approved for the existing and operational Drehid Waste Management Facility.

The site is located within a more extensive Bord na Móna landholding of some 2,544 hectares. That landholding is located within the townlands of Ballynamullagh, Kilmurry, Mulgeeth, Mucklon, Timahoe East, Timahoe West, Coolcarrigan, Corduff, Coolearagh West, Allenwood North, Killinagh Upper, Killinagh Lower, Ballynakill Upper, Ballynakill Lower, Drummond, Kilkeaskin, Loughnacush, and Parsonstown.

1.4.2 Planning History for the Site

This application relates to a 29ha site located within the larger Bord na Móna owned landholding. There is no record of any planning applications within the subject site. The application boundary however immediately abuts the boundary of previous applications – namely those relating to the development of the adjacent Drehid Waste Management Facility.

1.4.3 Relevant Planning History for the Bord na Móna Landholding

Within the broader landholding, the Drehid Waste Management Facility has been developed and is operational. The key planning files associated with the development of that Facility are set out in Table 1-3 below.

Table 1-3 Key Planning Applications within the Bord na Móna Landholding (associated with the Drehid Waste Management Facility Site)

BRIEF DESCRIPTION OF PREVIOUS APPLICATIONS	REG. NO.	GRANT DATE
Construction of Drehid Waste Management Facility consisting of an engineered landfill site for an operational lifespan of 20 years	04/371 / PL.09. 212059	13/04/05 / 21/11/05
Proposed extension and intensification of the Drehid Waste Management Facility	PL.09. PA0004	31/10/08
Extension of the appropriate period of the planning permission granted in 2005 under KCC reg. ref. 04/371 and ABP ref. PL09 212059	10/1172	25/02/11
Development of a landfill gas utilisation plant which will be phased and will generate up to 4.99MW of electricity for input into the national grid.	11/537	19/10/11
An extension (with a gross floor space of approximately 383 square meters) to the previously permitted composting facility.	11/902	02/11/11

The following sections provide outline descriptions of all relevant planning applications submitted in respect of the Drehid Waste Management Facility site. It also provides details of waste licenses issued by the Environmental Protection Agency in relation to the operation of that existing facility.

Grant of Planning Permission and EPA Waste Licence in November 2005

The Drehid Waste Management Facility was granted permission by Kildare County Council (KCC) in April 2005, under *KCC Reg. Ref No. 04/371* subject to a number of conditions. In November 2005 An Bord Pleanála (ABP) upheld that planning decision with revised conditions (*ABP Ref No. PL.09.212059*), following an appeal and an Oral Hearing. The Environmental Protection Agency (EPA) issued a Waste Licence for the facility in August 2005 (*EPA Ref No. W0201-01*).

Under the aforementioned planning permission and in accordance with the aforementioned Waste Licence, 120,000 TPA (tonnes per annum) of waste can be disposed of to the engineered landfill site with an additional 25,000 TPA permitted for treatment at a composting facility. The operational life of this facility is 20 years.

This planning permission also provided for all associated site development works including the development of an access road from the R403 regional road to the location of the landfill and composting facility. Construction of the facility commenced in August 2006 and it commenced accepting waste in February 2008.

Grant of Planning Permission, October 2008 and EPA Waste Licence, April 2009

In April 2008 a Planning Application was lodged directly with An Bord Pleanála (under the provisions of the Planning and Development (Strategic Infrastructure) Act 2006) to intensify waste acceptance and to extend the landfill footprint of the facility.

The Planning Application proposed the disposal of an additional 240,000 TPA of waste (over and above that previously permitted) for 7 years, with the development reverting back to receiving the previously permitted 120,000 TPA thereafter.

In October 2008, following an Oral Hearing, An Bord Pleanála granted planning permission (*ABP Ref No. PL09 .PA0004*) to intensify waste acceptance (for disposal to landfill) to 360,000 TPA until December 2013, with tonnage for disposal at the landfill element of the facility, thereafter, to be restricted to the 120,000 TPA maximum previously permitted.

The permission also included for a landfill facility extension which involves the construction of additional landfill capacity in the form of lined and contained cells to ensure that the previously permitted overall life span and/or annual capacity of the landfill element of the facility is not reduced as a consequence of the temporary intensification (*ABP Ref No. PL.09.212059*). The Environmental Protection Agency issued a revised Waste Licence for the facility in April 2009 (*EPA Ref No. W0201-02*).

Grant of Revised Waste Licence, March 2010

In June 2009 the EPA initiated a Waste Licence review for the Drehid Waste Management Facility. The grounds for the review related to the introduction of limits on the acceptance of biodegradable municipal waste at landfill following the publishing of a technical guidance document on Municipal Solid Waste Pre-treatment and Residuals Management. The Environmental Protection Agency issued a revised Waste Licence for the facility in March 2010 (*EPA Ref No. W0201-03*).

Extension of Duration of Planning Permission, February 2011

In November 2010, Bord na Móna applied under Section 42 of the Planning and Development Act, 2000 (as amended) for the extension of the appropriate period of the Planning Permission granted in 2005 (*KCC Reg. Ref No. 04/371, An Bord Pleanála Ref No. PL09.212059*) by an additional two years.

In its February 2011 decision (*KCC Reg. Ref No. 10/1172*), Kildare County Council granted an extension of the duration of the aforementioned Planning Permission for construction of the Drehid Waste Management Facility for a period of two years from the 14th of January 2011.

Grant of Planning Permission for Landfill Gas Utilisation Plant, October 2011

In May 2011, Bord na Móna lodged a Planning Application with Kildare County Council (KCC Reg. Ref No. 11/537) for the development of a landfill gas utilisation plant. The proposed development of the landfill gas utilisation plant will be phased and will generate up to 4.99 MW of electricity for input into the national grid. Planning permission was granted for this application in October 2011.

Planning Permission Granted for a Composting Facility Extension, November 2011

Most recently, a planning application was lodged for an extension, with a gross floor space of approximately 383 square metres, to the previously permitted composting facility. No increase to the previously permitted waste acceptance of 25,000 tonnes per annum at the composting facility was proposed, rather, an extension to provide additional floor space. Planning permission was granted for this development by Kildare County Council in November 2011.

1.4.4 Planning History for Area Surrounding the Bord na Móna Landholding

As the proposed development is situated in a rural part of County Kildare, a thorough search of Kildare County Council's website indicated that the majority of planning applications made in recent years in the vicinity of the proposed development have been for small developments such as single dwellings.

For a detailed list of planning applications made in the area surrounding the subject site and the Drehid Waste Management Facility please refer to Appendix 1.3 of this EIS.

1.4.5 Overall Characteristics of the Proposed Development Site

The proposed development is characteristic of an industrial facility which manages and treats waste. The specific site of the proposed MBT Facility is currently a cutover bog and it will be located adjacent to the Drehid Waste Management facility. There is no conflict between this proposed land use and current land uses within the Bord na Móna landholding, at the adjacent Waste Management Facility, or in the surrounding area. Moreover, there is no precedent in the planning history of the site, or of the adjacent Drehid Waste Management Facility, that precludes the granting of planning permission for the proposed development.

1.4.6 Concluding Remarks –Strategic Planning Considerations

This section briefly summarises the findings of previous sections of this Chapter which demonstrated that the proposed development of an MBT Facility on this site is in full compliance with all relevant planning and development, sectoral policy and environmental assessment requirements.

As set out above, the proposed development fully accords with the principles set out in the relevant planning policy documents in that it will:

- Have full regard to and be in full compliance with all relevant Kildare County Development Plan polices relating to the development of an additional waste management facility in the medium sensitivity Western Boglands landscape character area;
- Support the waste treatment scenario adopted in the Kildare County Waste Management Plan which seeks to minimise waste being sent directly to landfill through the provision of additional mechanical biological treatment infrastructure;
- Help to achieve the objectives set out in the RPGs by providing additional options for the treatment of waste in the region including increased levels of diversion of biodegradable waste from landfill; and
- Play an important role in addressing infrastructural requirements highlighted in the NSS and NDP by ensuring the provision of more efficient, effective and cost effective waste management infrastructure in the Greater Dublin Area.

As also demonstrated above, the proposed development is in accordance with the waste management principles set out in the relevant sectoral policy documents in that it will:

- Contribute to the national effort to meet targets set out in Government Waste Management Policy aimed at reducing the overall volume of waste sent to landfills in Ireland;
- Result in a significant step forward in the use of the Mechanical Biological Treatment technology in line with the more integrated approach to waste management as favoured by sectoral policy guidance; and
- Provide an appropriately sized waste management facility at a suitable location which is positioned to take advantage of the inter-regional economies of scale required to ensure the most efficient treatment of waste.

1.5 ALTERNATIVES

Schedule 6 of the Planning and Development Regulations (2001) specify that the EIS should include ‘*An outline of the main alternatives studied by the developer and an indication of the main reasons for his or her choice, taking into account the effects on the environment*’.

The EPA publication, Guidelines on the information to be contained in Environmental Impact Statements, states ‘*The consideration of alternatives also needs to be set within the parameters of the availability of land (it may be the only suitable land available to the developer) or the need for the project to accommodate demands or opportunities which are site specific. Such considerations should be on the basis of alternatives within the site, e.g. design, layout*’.

1.5.1 Alternative Processes

Waste management in Ireland and across the EU is based on the internationally adopted waste management hierarchy, with the emphasis on waste prevention, minimisation, re-use, recycling, recovery and disposal - in decreasing order of preference.

The National Strategy on Biodegradable Waste was published in April 2006 and sets out measures to progressively divert biodegradable municipal waste from landfill in accordance with the agreed targets in EU Directive 1999/31/EC on the landfill of waste i.e. the achievement of the targets for diversion of BMW from landfill.

The profile of the activities proposed for the Drehid MBT Facility, including the optional Dry Anaerobic Digestion element, means that the proposed development can be classified as a recycling and energy recovery facility as per the Waste Hierarchy.

1.5.1.1 Alternative Mechanical Treatment Processes

Alternatives for the mechanical treatment process were considered. Consideration was afforded to the level of technology and automated equipment to be deployed.

Extraction of recyclables can be undertaken by means of picking stations or automated equipment.

A picking station is essentially a slow moving belt conveyor which travels through an enclosed cabin. Within the cabin, operators manually pick items, such as recyclables, from the moving waste stream and deposit the said items in provided chutes which lead to bins or transfer conveyors. The environment within the cabin of the picking station is generally controlled in respect of noise, dust and temperature. Fresh air is typically ducted into the cabin from the outside environment thereby enhancing the working environment within the picking station cabin.

Automated equipment for the extraction of recyclables includes ballistic separators and Near Infra Red (NIR) sorting machines. Typically, a ballistic separator comprises of a series of paddles which are positioned on an incline. A rotating eccentric shaft arrangement connected to the paddles causes the paddles to have an upwards and forwards cyclical motion. The throwing action, generated by the paddles, is such that flat items (two dimensional items – e.g. papers and cardboard) continue to move up the incline of the paddles while three dimensional items (e.g. metals cans and plastic bottles) eventually move down the incline of the paddles (due to the tendency for three dimensional items to roll). NIR sorting machines utilise the near infrared part of the electromagnetic spectrum. NIR sorters operate by measuring the electromagnetic spectrum of NIR wavelengths reflected and absorbed by a material. Individual polymer types absorb and reflect different spectra under infrared light. The intensity

of infrared light reflected off the surface of the material at a range of frequencies is measured and the results compared against known polymer signals to determine the resin type for each piece of material. In this way, chosen recyclables can be positively extracted from the waste stream.

It was decided to propose a mechanical treatment process which involved a high level of technology and automated equipment on the following basis:

- Higher quality recyclables are extracted by automated equipment in comparison to picking stations. An automated process is considered inherently consistent unlike manual picking which is prone to the variability of human behaviour;
- Higher recycling rates are achieved by automated equipment in comparison to picking stations. Again, higher recycling rates are a function of the consistency of automated equipment; and
- The use of automated equipment is considered more favourable than picking stations from an operational health and safety perspective.

1.5.1.2 Alternative Biological Treatment Processes

Alternatives for the biological treatment process were considered as outlined herein. Composting and anaerobic digestion were considered for the stabilisation of the organic fraction to satisfy EPA requirements.

Composting and anaerobic digestion are natural processes of decomposition that take place under controlled conditions in the presence and absence of oxygen respectively. In the case of anaerobic digestion, methane gas is generated which is converted to green electricity and heat. The electricity can be exported to the national grid, while the heat can be used in the MBT process (e.g. in the drying of solid recovered fuel).

As discussed in Section 1.2, in contemplating the inclusion of Anaerobic Digestion (AD) in the MBT process, consideration was had of the fiscal incentives for the development of AD – namely the Renewable Energy Feed in Tariff (REFIT). Regrettably, the current fiscal incentives in the Republic of Ireland make it difficult to create a compelling or indeed viable, economic argument for the development of AD. The current REFIT for AD in the Republic of Ireland is significantly inferior to its equivalents in Northern Ireland and Italy (for example).

Therefore, Bord na Móna proposes the preparation of the Planning Application and Waste Licence Application for the proposed Drehid MBT Facility such that it provides for the development of an optional AD step as part of the biological treatment stage.

Anaerobic Digestion Processes

AD can be developed in the form of a wet AD process or a dry AD process. A wet AD process generally requires a feedstock with a maximum dry solids content of 20%, while a dry AD process can process feedstock with a higher dry solids content.

The wet AD process involves the pumping of liquid substrate into large digester vessels where anaerobic conditions are maintained. The feedstock within the digester vessels is continually agitated to promote its uniform degradation into biogas. Wet AD is ideally suited for slurries (cattle manures/pig manures with low solids content – less than 20%) as opposed to solid waste organic fines with high solids content (typically greater than 40%). Wet AD of solid waste organic fines typically requires the conversion of feedstock into a “pumpable” liquid substrate.

Unlike the wet AD process, the biomass substrate in dry AD does not need to be mechanically stirred or pumped through pipes, and therefore the process is not susceptible to problems of blockage in the system. The digestion process is not affected by any undigestible pieces of inert material in the substrate as they can be easily removed from the digestate in a subsequent process. In comparison to wet AD, dry AD typically involves the placement of the feedstock into horizontal concrete vessels by means of a loading shovel. When the vessel is filled, a gas tight door is closed and the anaerobic digestion process commences.

It was decided to propose a dry AD process on the following basis:

- Dry AD is relatively contamination tolerant in comparison to wet AD. Organic fines will contain undigestible items such as plastics, textiles and glass. In a wet AD process it is necessary to remove such items in order to allow the feedstock to be pumped into the digester vessels. The removal of undigestible items, particularly plastic, is considered to be significantly challenging at wet AD facilities. Equipment associated with removal of undesirable items is considered to be prone to high maintenance and downtime;
- Typically, a wet AD process will produce significant volumes of waste water which would require treatment on site or transport to a licensed waste water treatment plant. In comparison, the volumes of waste water produced by a dry AD process are not considered significant; and
- The post composting of digestate from a wet AD plant is considered to pose process difficulties due its higher moisture content in comparison to dryer digestate from a dry AD process.

Composting Processes

The most obvious and simple form of composting is the straightforward compost heap, where organic waste is simply left in a pile where natural processes take their course and compost is produced. The development of different, more industrialised forms of compost production systems has been driven by a desire to manipulate one or more of the process parameters in order to optimise the composting process in

terms of emissions control (particularly odour), quality, production time or space requirements.

The classification of every composting system is beyond the scope of this assessment; hence for the purpose of this section, composting systems have been classified into four categories as follows:

- Outdoor Systems;
- Indoor Windrow Systems;
- Tunnel Systems;
- Continuous Flow Systems;

The last three categories listed can generically be referred to as enclosed or in-vessel systems where the process conditions including air supply, moisture content and temperature can be controlled and all potential emissions (air and effluent) can be contained, collected and treated.

Outdoor Systems

Outdoor systems are generally simple in design and construction. The two main types of system applied are the windrow system and the static pile system. In the windrow system, feedstock is placed in rows and turned periodically, usually by mechanical equipment. Oxygen is supplied primarily by natural ventilation resulting from the buoyancy of hot gases in the windrow, and by gas exchange during turning. In the static pile system no agitation or turning of the static bed occurs during the composting cycle. An air distribution system is applied underneath the composting material to allow either forced (blown air) or induced aeration (sucked air). In practice, intermediate systems, e.g. aerated windrows or periodically turned static piles, are common.

Process and emission control possibilities for outdoor systems are limited, apart from induced static pile systems, where the process air might be transported through a biofilter. Since prevailing weather conditions directly affects operations, the composting process usually takes several months.

Of particular relevance is the fact that outdoor systems do not comply with the requirements of the Department of Agriculture, Food and the Marine for the processing of Animal By-Products. An enclosed system is required to achieve the requirements imposed by Animal By-Products Regulations.

Indoor Windrow Systems

Indoor windrow systems can be very simple in design and construction. In this arrangement, the feedstock is formed into windrows within an enclosed building. In addition, air control systems and machinery for the turning and movement of the composting mass can be utilised, which make indoor windrow systems more

sophisticated and provide for significantly more process control. The indoor windrow system therefore allows for the flexibility to begin operations at a relatively low process control level and eventually to modify the system to provide for a higher level of process control.

The operational capacity of an indoor windrow system is quite flexible, within a specific range, as the height and length of the windrow and rate of aeration can be adjusted according to the required throughput.

Indoor windrow systems require the odour abatement system to process all the air space within the building in comparison to enclosed tunnel systems where only the process air within the tunnel requires intensive treatment.

Tunnel Composting Systems

Tunnel composting involves the composting of organic waste in fully enclosed concrete tunnels. Each composting tunnel typically comprises of a sealed concrete structure provided with an insulated loading door on the roof and an insulated unloading door on the front. The concrete floor includes a piped aeration system. Air is forced, from the floor, vertically upwards and through the composting mass. Process air is collected in the headspace between the roof of the tunnel and the composting mass. This collected air is either re-circulated within the composting mass or directed to the odour abatement system for treatment.

The enclosed nature of the tunnel composting system facilitates optimum and focused use of aerated air thereby facilitating extensive process control. As the tunnels are fully enclosed, optimum temperatures and levels of humidity can be maintained throughout the entire composting mass. High rates of aeration are typically a feature of tunnel composting systems. The abovementioned attributes facilitate high rates of biological stabilisation.

Various process parameters including aeration rates, air moisture and oxygen levels can be controlled from a central process computer. In addition, due to the modular layout of tunnel systems, several units can be operated independently, which provides for significant flexibility in the operational phase.

Continuous Flow Composting Systems

In continuous flow composting systems the organic waste flows horizontally or vertically through a reactor while the forced aerated composting process occurs. As fresh feedstock is loaded into one end of the system, processed material is discharged out the far end. Continuous flow composting systems allow adequate control of the process conditions. However, since the retention time in the reactor is relatively short (typically 12-14 days) an extensive post-composting step is required.

Continuous flow systems are typically produced in a manufacturing environment prior to being transported to a waste management facility. Continuous flow systems are typically manufactured from metals, plastics and composites and are therefore considered to be less robust than other composting systems that comprise of concrete. Continuous flow systems are typically suited to small scale applications where the system can be delivered to site in modular form thereby facilitating a relatively short construction phase.

Selected Composting Technologies

In deciding on the composting technologies to be proposed for the biological treatment stage, cognisance was had of the EPA's stabilisation requirement (as set out in waste licences for landfill facilities) for biodegradable municipal waste, where stabilisation means the reduction of decomposition properties of the waste to such an extent that offensive odours are minimised and that the respiration activity after four days is less than 10mgO₂/gDM until 1st January 2016 and less than 7mgO₂/gDM thereafter.

As outlined previously, an outdoor system does not allow for the provision of process and emission control measures, which could therefore lead to odour nuisances at or near the facility. The composting process is dependent on the prevailing weather conditions leading to extended composting time requirements. In addition, it is considered that the consistency of the output can not be guaranteed using an outdoor system. As such, an outdoor system was considered not suitable.

Continuous flow systems were considered unfeasible due to the scale of the proposed MBT Facility where the biological treatment process will be required to process in excess of 100,000 tonnes of organic fines per annum.

Owing to the high aeration rates and process control provided by tunnel composting systems and the resultant high rates of biological stabilisation, it was decided to propose a tunnel composting system for the first stage of the composting process at the Drehid MBT Facility. In addition, the first stage of the composting process is the most critical with respect to odour emissions, since easily biodegradable components (e.g. sugars, proteins and fats) are degraded at a high rate, thus causing gaseous by-products. The use of fully enclosed composting tunnels, within a fully enclosed building, for this intensive phase of the biological treatment process, provides double containment features in respect of odour abatement.

An indoor windrow system was selected for the final stage of the composting process (i.e. the maturation stage). As the intensive phase of the composting process will have been undertaken in the tunnel composting system, a lower level of aeration and process control is adequate for the maturation stage. In the indoor windrow system, the composting mass will be placed into trapezoidal windrows within dedicated

maturation bays inside a fully enclosed building. The windrows will be frequently turned (to de-compact material and to encourage optimum decomposition) by means of a diesel powered mobile windrow turner. It is envisaged that the trapezoidal windrows will be turned weekly. The under floor aeration system will be operated as a negative pressure system thereby minimising the generation of odourous compounds during the maturation stage.

1.5.2 Alternative Sites

TOBIN Consulting Engineers on behalf of Bord na Móna identified the site in the townlands of Coolcarrigan and Drummond within the Bord na Móna landholding at Carbury, Co. Kildare, as a suitable and appropriate site for the development of an MBT Facility.

The proposed location emerged as a suitable site for an MBT Facility due to

- the large available land bank;
- the remoteness from dwellings;
- access to national/regional roads;
- natural screening;
- distance from ecologically protected areas;
- distance from archaeologically/architecturally protected sites/structures;
- the natural protection offered by the surficial deposits to the underlying bedrock aquifer. Their nature and thickness gives a low vulnerability rating, and the most favourable groundwater protection scheme response, i.e. R1; and
- the existence of an already permitted and operational Waste Management Facility within the landholding.

In addition, a baseline assessment for this project was completed prior to the design of the facility, which allowed for the optimisation of the siting of the facility, within the overall Bord na Móna landholding. In particular, sensitive areas such as natural watercourses, areas of bog-woodland and potential archaeological sites etc. were avoided. The facility is also sited at a significant distance from the local road network and residential properties, with the nearest residence being approximately 1 kilometre from the proposed MBT Facility footprint.

Also, it should be emphasised that the location of the proposed MBT Facility within the same landholding as the Drehid Waste Management Facility means that the necessary waste infrastructure for managing a significant volume of municipal waste will be within the same landholding. This represents a rational clustering of uses and an avoidance of conflicts or nuisance arising from locating such uses adjacent to sensitive receptors.

1.5.3 Do-Nothing Alternative

The proposed development, i.e. the Drehid MBT Facility is wholly necessary to ensure that both the immediate and future needs of the Kildare Waste Management Region, the Wicklow Waste Management Region, the Midlands Waste Management Region and the South East Waste Management Region are protected and enhanced. The facility will also be available to accept waste from other regions including the Dublin Waste Management Region, if required.

As outlined above, there are numerous waste management policies and moreover legislative requirements which necessitate the development of waste treatment facilities which specifically will allow Ireland meet its landfill diversion targets. In addition, the waste licences for the Drehid landfill and other such similar licensed landfills in adjoining waste management regions require that all waste is pre-treated prior to deposition and that the volume of biodegradable waste is progressively reduced. This proposed facility will assist in meeting the above targets and licence requirements and simply the “Do Nothing” alternative is not a real alternative.

1.6 BACKGROUND WORK FOR THE ENVIRONMENTAL IMPACT STATEMENT

All contributors to this EIS undertook comprehensive investigations of the site and surrounding area, during the course of the baseline studies.

The meteorological data used to determine the climatic conditions pertaining to the site are based on a rainfall station located at Lullymore. The evapotranspiration data was obtained from the synoptic station at Casement Aerodrome, County Dublin. The information supplied in this EIS is the best information available from the Meteorological Service.

1.7 CONSULTATION AND SCOPING

The purpose of this section is to provide an overview of the consultation process followed to date in respect of the proposed facility. In accordance with Section 4 of the *Guidelines on the Information to be Contained in Environmental Impact Statements (EPA, 2002)* and Article 213 of the Planning and Development (Strategic Infrastructure) Act 2006, the consultation process consisted of consultation with competent bodies, prescribed bodies and interested parties. The primary objective of involving competent bodies, prescribed bodies and interested parties at an early stage in the EIA process is to aid scoping of the EIA and to ensure that the EIA addresses the issues associated with the proposed development that are likely to be of significance.

The following lists the various parties consulted to-date. Copies of the Consultation Letters, as issued in January 2012, are included in Appendix 1.4.

- Kildare County Council (Water and Environmental Services)
- Kildare County Council (Planning and Economic Development)
- Kildare County Council (Transportation and Public Safety)
- Kildare County Council (Conservation Officer)
- Kildare County Council (Fire Safety Officer)
- Environmental Protection Agency (EPA)
- Development Applications Unit, Department of the Environment, Community and Local Government
- Department of the Communications, Energy and Natural Resources
- Department of the Arts, Heritage and Gaeltacht
- An Chomhairle Ealaíon
- Department of Agriculture, Food and the Marine
- Inland Fisheries Ireland (IFI)
- An Taisce
- Commission for Energy Regulation (CER)
- Irish Peatland Conservation Council (IPCC)
- Heritage Council
- Irish Native Woodland Trust
- Geological Survey of Ireland (GSI)
- BirdWatch Ireland
- Irish Wildlife Trust
- Irish Forestry Board (Coillte Teoranta)
- Irish Farmers Association
- Fáilte Ireland
- National Roads Authority
- National Parks and Wildlife Service (NPWS)
- Teagasc
- Electricity Supply Board (ESB)
- Bord Gáis
- Health and Safety Authority (HSA)

Responses were received from Bord Gáis Networks, ESB Networks, Inland Fisheries Ireland, the Department of Agriculture, Food and the Marine, Kildare County Council, National Roads Authority, the Department of Arts, Heritage and the Gaeltacht (Development Applications Unit). These are included in Appendix 1.5.

As detailed in Section 1.1.1 herein, 3 No. pre-application consultation meetings were held with An Bord Pleanála. Pre-application consultation meetings were also held with Kildare County Council in February and March 2012, with a representative of the Health Service Executive in attendance at the February meeting. A pre-application consultation meeting was also held with the Environmental Protection Agency (EPA) in September 2011.

In addition, Bord na Móna representatives had a meeting with members of the Department of Agriculture, Food and the Marine on March 23rd 2011, at the Department's Naas office to facilitate a discussion on the proposed development of MBT infrastructure.

1.8 WASTE LICENCE, PLANNING AND ENVIRONMENTAL IMPACT STATEMENT

The Waste Management Act (1996) designates the Environmental Protection Agency as the sole licensing authority for landfills, above a certain threshold level of activity.

The Waste Management (Licensing) Regulations 2004 provide for the continued operation of the system of licensing by the Environmental Protection Agency of waste recovery and disposal activities under Part V of the Waste Management Act, 1996. The Regulations set out procedures for the making of waste licence applications, reviews of licences and consideration by the Agency of objections, including the holding of oral hearings.

The Waste Management (Licensing) Regulations 2000 (save for articles 3 and 4 and the First Schedule), Waste Management (Licensing)(Amendment) Regulations 2001, Waste Management (Licensing)(Amendment) Regulations 2002 and European Communities (Amendment of Waste Management (Licensing) Regulations 2000) Regulations 2002 are revoked by the 2004 Regulations.

These Regulations specify the classes of activity that are liable to licensing by the EPA and prescribes the information to be addressed in the licence applications.

The Waste Management Act (1996) as amended by the European Communities (Amendment of the Waste Management Act, 1996) Regulations, 1998, defines the *principal activity* proposed at this location as 'Recycling or reclamation of organic substances which are not used as solvents. (including composting and other biological processes)' (Class 2 of the Fourth Schedule (Waste Recovery Activities) of the Act). In compliance with the Regulations a Waste Licence must be sought by Bord na Móna, in respect of the proposed development of the MBT Facility.

An Environmental Impact Statement (EIS) is required to accompany a Waste Licence Application, where the volumes for disposal are above a certain threshold volume (greater than 25,000 tonnes per annum), as outlined at class 11(c) in Part II of the First Schedule of Article 24 in the European Communities (Environmental Impact Assessment) Regulations, 1989 (S.I. No 349 of 1989), as amended by S.I. No. 351 of 1998. These regulations have subsequently been amended by the European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1999 (S.I. No. 93 of 1999). The capacity of the proposed MBT Facility is above the

threshold value and therefore an EIS will accompany the Waste Licence Application to the Environmental Protection Agency.

Under Part X, Section 176 of the Planning and Development Act, 2000, which repeals and re-enacts with amendments the Local Government (Planning and Development) Acts, 1963 to 1999, the circumstances under which an Environmental Impact Assessment may be required for certain developments are defined in Article 24 of the E.I.A. Regulations. The proposed facility is a development, which is of a class specified in Part II of the First Schedule of Article 24 of S.I. 349 of 1989. An EIS therefore accompanies the planning application to An Bord Pleanála in line with the requirements of the Planning and Development (Strategic Infrastructure) Act 2006 as discussed in more detail in Section 1.1 of this EIS.

1.9 PROCEDURES AND STRUCTURE OF THE EIS

The consequences of any major engineering project are generally presented in the form of an Environmental Impact Statement (EIS). This EIS contains information on the scale and nature of the proposed development, a description of the existing environment, impact assessment of the proposed development and mitigation measures to mitigate and/or reduce the impact on the receiving environment.

The structure and content of the Environmental Impact Statement has been based on the following documents, as published by the Environmental Protection Agency.

- Advice Notes on Current Practice in the preparation of Environmental Impact Statements (2003).
- Guidelines on the information to be contained in Environmental Impact Statements (2002).

This Environmental Impact Statement provides for:

- A description of the site and the existing environment;
- A description of the proposed development;
- The impacts, if any, resulting from the proposed development;
- The measures to mitigate any adverse impacts; and
- A non-technical summary.

The minimum information that must be contained in an EIS is specified in Part X of the Planning and Development Act, 2000 and Schedule 6 of the Planning and Development Regulations, 2001. The structure and content of this EIS has been based on the legislative requirements as set out in Part X of the Planning and Development Act, 2000 and Part 10 of the Planning and Development Regulations, 2001 and the guidance documents by the Environmental Protection Agency as outlined above.

The overall EIS is arranged in four volumes, as follows:

- Volume I: Non Technical Summary;
- Volume II: Environmental Impact Statement;
- Volume III: Drawings; and
- Volume IV: Appendices.

Volume II of the EIS contains the main text body and is divided into a number of chapters. Chapters 1 and 2 include an overall Introduction and Description of the Site and the Proposed Development. The specialist chapters (Chapters 3 to 12) include:

- Section 1: Introduction;
- Section 2: Description of Site and Existing Environment;
- Section 3: Potential Impacts -
Potential Impact of Configuration A (MBT with Composting)
Potential Impact of Configuration B (MBT with Dry Anaerobic Digestion and Composting); and
- Section 4: Proposed Mitigation Measures -
Mitigation Measures for Configuration A (MBT with Composting)
Mitigation Measures for Configuration B (MBT with Dry Anaerobic Digestion and Composting).

1.10 STUDY TEAM AND CONTRIBUTORS TO THE EIS

This EIS has been prepared by a team of consultants co-ordinated by TOBIN Consulting Engineers. The relevant inputs of the various members of the Study Team are as follows:

Table 1-4 Study Team and Contributors

TOBIN Consulting Engineers	Project Management, Production, Evaluation and Reporting. Noise and Vibration, Climate, Socio-Economic, Dust, Ecology, Water, Soils & Geology and Hydrogeology, Traffic, Interaction of the Foregoing and Engineering Design.
URS (Scott Wilson)	Landscape & Visual
Arch Consultancy, Consultant Archaeologists	Archaeology and Cultural Heritage
AWN Consulting Ltd.	Air Quality and Odour Modelling
AOS Planning Ltd.	Planning

In addition to the main Study Team outlined above the following firms also made contributions to the EIS, namely:

- IGSL Ltd. Borehole Drilling/ Soil Analyses / Trial Pits
- ORS Ltd. Topographical Survey
- Alcontrol Laboratories (Ireland) Dust Analysis
- Abacus Transportation Surveys Traffic Counts
- SLR Consulting and Bord na Móna MBT Process Design

In addition monitoring data for groundwater, surface water, dust and noise compiled for the adjacent Drehid Waste Management Facility was provided by Bord na Móna Environmental.

1.11 LIST OF DRAWINGS

Table 1-5 below contains a list of Drawings included in Volume III, which accompanies this EIS.

Table 1-5 List of Drawings

DRAWING NO.	DRAWING TITLE	DRAWING NO.	DRAWING TITLE
6301-2300	Regional Site Location Map	6301-2315	Standard Wheelwash Details
6301-2301	Site Location Map	6301-2316	Weighbridge General Arrangement –Plan & Sections
6301-2302	Existing Site Topography Map	6301-2317	Typical Fencing Details
6301-2303	Site Layout Plan	6301-2318	Surface, Process & Fire Water Pump Station – General Arrangement -1 of 2
6301-2304	Services –General Arrangement	6301-2319	Surface, Process & Fire Water Pump Station – General Arrangement -2 of 2
6301-2305	Surface Water –General Arrangement	6301-2320	Heat Transfer Pipes –Schematic & Details
6301-2306	Foul Water –General Arrangement	6301-2321	Landscaping Plan
6301-2307	Watermain –General Arrangement	6301-2322	Administration and Welfare Building –Plan & Elevations
6301-2308	Proposed Heat Transfer Pipes	6301-2323	Typical Biofilter/Odour Abatement Building –Plan & Elevations
6301-2309	Longitudinal Section through existing topography	6301-2324	SRF Building
6301-2310	Attenuation Lagoons (Ponds) 1 & 2 – general arrangement & section	6301-2325 & 6301-2336	Mechanical Treatment Building Plan & Elevation
6301-2311	Typical Road & Carpark Construction Details	6301-2326	Refining Building
6301-2312	Typical Manhole Details	6301-2327	Maintenance Building
6301-2313	Typical Watermain Details	6301-2328 to 6301-2335	Biological Treatment Building –Plans & Elevations (Configuration A & B)
6301-2314	Trench Bedding Details	6301-2337	Fuel Storage Area – Plan & Elevation