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CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE EXPANSION OF A MATERIALS RECOVERY FACILITY AT CAPPOGUE AND DUNSINK, BALLYCOOLIN ROAD, DUBLIN 11

Volume 2 – Main Body of the EIAR

Chapter 2 – Need for the Proposed Development

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2. NEED FOR THE PROPOSED DEVELOPMENT

2.1 Introduction

This chapter assess the need for the proposed development in the context of the existing and future waste management capacity requirements.

2.2 Statement of Competency

This chapter was prepared by Richard Deeney. Richard Deeney is a Senior Environmental Scientist with Fehily Timoney and Company. Richard has over 9 years' experience in environmental and planning consultancy. Richard has a B.Sc. in Environmental Management and an Advanced Diploma in Planning and Environmental Law with the Kings Inns. He has a vast amount of experience coordinating and completing EIAR's for a wide variety of development types including waste facilities, tourism development, quarries and manufacturing facilities. Richard has been involved in the completion of numerous EIA Need assessments for a wide range of proposed development types.

2.3 The Proposed Development

The proposed development is outlined in Chapter 1 – Introduction and a detailed description of the proposed development is set out in Chapter 4 - Existing and Proposed Development.

2.4 Context of the Proposed Development

The context in which the application for permission in respect of the proposed development is made reflects an Irish waste management sector which has undergone significant changes in the past number of years, and which continues to undergo change. The waste management sector has transitioned from being heavily 'landfill dependant', to one in which the role of landfill disposal as a waste management option is diminishing. This reflects the requirements and objectives of European and national legislation and policy, where waste management activities are focused on the higher tiers of the waste hierarchy (e.g. waste recovery, waste recycling). There has been a dramatic reduction in landfilling capacity in Ireland consequently. This reduced landfill capacity has not yet been fully offset by an increase in waste management capacity at waste recovery or recycling facilities.

Consequently, there is a need for additional Materials Recovery Facilities to promote the separation, recovery and recycling of wastes and diverting waste from landfilling in support of Circular Economy related objectives.

The need for increased recovery and recycling of waste is further promoted within the recently enacted Circular Economy and Miscellaneous Provisions Act 2022. This Act underpins and promotes Ireland's move away from the 'take-make-waste' linear economy model toward a circular economic model which promotes recycling and reuse.

2.5 Need for the Proposed Development

The need for the proposed development is influenced by several factors, as detailed below:

- The Applicant's need to augment its waste treatment capacity and manage the wastes it collects in a self-sufficient, efficient and cost-effective manner;
- Waste management policy and legislation promoting the need for a Circular Economy model;
- Increasing waste generation and demand for treatment capacity,
- Need for waste management infrastructure to facilitate achieving waste management targets;
- Specific need for rMSW pre-treatment capacity;
- Supporting the need for increased indigenous final treatment capacity.

2.5.1 The Applicant's need to augment its waste treatment capacity and manage the wastes it collects in a self-sufficient, efficient and cost-effective manner.

The Applicant has a need to augment its current waste treatment capacity in the context of increasing levels of waste generation nationally and their increasing share of the waste collection and management market.

The proposed development is being developed to meet the Applicant's own current and predicted waste management capacity requirements over the next 20 to 30 years.

A breakdown of the Applicants existing waste treatment capacity is shown in Table 2-1:

Table 2-1: Applicant Existing Waste Management Capacity

Site	Name of Facility	Waste Licence/permit Number	Licence/Permit	Waste Types	Allowable Tonnage Per Annum
Killeen Road	Thorntons Recycling Centre, Killeen Road, Dublin 10	W0044-02	EPA Licence	Mixed municipal waste, source segregated brown bin waste, bulky waste, construction and demolition (C&D), non-hazardous commercial, industrial and domestic wastes	250,000
Dunboyne	Thorntons Recycling Materials Recovery Facility and Civic Amenity Site, Dunboyne Industrial Estate, Dunboyne Co. Meath	W0206-01	EPA Licence	C&D waste and civic amenity facility for household waste	50,000

Site	Name of Facility	Waste Licence/permit Number	Licence/Permit	Waste Types	Allowable Tonnage Per Annum
Kilmanhamwood	Kilmainhamwood Compost, Kilmainhamwood Nobber, Co. Meath	W0195-02	EPA Licence	Source segregated brown bin commercial and industrial waste, grease trap waste, sludges	40,000
JFK	Unit 28, John F. Kennedy Road, JFK Industrial Estate, Naas Road, Dublin 12	W0227-01	EPA Licence	Household waste, commercial waste, industrial waste and C&D waste	95,000
Balbriggan	Stephenstown Business Park. Balbriggan, Co. Dublin	P1014-01	EPA Licence	Non-hazardous waste, including C&D wastes and residues from the mechanical treatment of waste. Solid recovered fuel (SRF) will be manufactured for use in cement kilns	50,000
Shredding	Thorntons Recylcing Secure Shredding Facility, UNIT 6 3B Henry Road Park West Business Park, Dublin 12	WFP-DC-11-0023-03	LA Permit	Paper, plastics and textiles	15,000
MDR Facility	Thorntons Recycling MDR MRF, Unit 51 Park West Business Park, Dublin 12	WFP-DC-10-0021-04	LA Permit	Mixed dry recyclables commercial, industrial and domestic	50,000
Unit S3A	Unit S3A, Henry Road, Parkwest Business Park, Dublin 12.	WFP-DC-20-0055-01	LA Permit	Non- hazardous dry recycling, paper cardboard, plastic and wooden packaging	35,000
Cappagh	Unit 1 Cappogue Industrial Park, Ballycoolin Road, Dublin 11.	WFP-FG-17-0001-04	LA Permit	Inert wastes, commercial, industrial and domestic waste, and C&D waste	49,500

In total, the Applicant currently has the capacity to accept 634,500 tonnes of waste per annum at its existing waste treatment facilities. In 2021 the Applicant collected an estimated 750,000 tonnes of waste material. The Applicant was required to send a substantial amount of this waste to third party waste management facilities.

At present therefore, the applicant relies significantly on third-party waste treatment facilities to accept and manage the waste it collects.

The Applicant is also in the process of acquiring another significantly sized waste management company which provides an extensive household and commercial waste collection service. This company has its own waste management facility in the western region, however the waste it collects in the eastern region is currently sent to third party waste treatment facilities. The purchase of this company will substantially increase the amount of waste treatment capacity the Applicant will require to manage the waste it collects.

The proposed development will facilitate the Applicant in managing the wastes it collects at its own waste management facilities. This will allow the Applicant to achieve self-sufficiency with respect to the waste management services it provides to its existing customers. It will further allow the Applicant to manage the waste that it collects in a more efficient and cost effective manner.

2.5.2 Waste management policy and legislation promoting the need for a Circular Economy Model

Chapter 5 of Volume 2 of this EIAR addresses the policy and legislative background of relevance to the proposed development, which supports the implementation of strategies to maximise recovery/recycling of waste and minimise disposal of waste to landfill, thereby supporting the objective of achieving a Circular Economy.

The proposed development relates to increasing the regional and national capacity for the following:

- rMSW sorting and pre-treatment to facilitate organic material treatment, metal recycling and energy recovery.
- Construction and Demolition (C&D) waste sorting and processing to enhance recycling.
- The acceptance and bulking of food waste, and its onward transfer to biological treatment facilities (I.e. composting facilities).
- The acceptance and bulking of Mixed Dry Recyclables (MDR), and its onward transfer to recycling facilities.

The proposed development supports the maximisation of recovery and recycling in keeping with national and regional policy and legislation.

The relevant waste management plan for the region is the Eastern-Midlands Region Waste Management Plan 2015-2021. The Southern Region Waste Management Plan 2015 – 2021 and Connacht-Ulster Region Waste Management Plan 2015 – 2021 are also relevant considering the scale of the proposed waste management facility and the geographical extent of the Applicants waste collection activities. Compliance with the policy objectives of these Plans are examined in detailed in Chapter 5 of this EIAR. The Plans clearly identify the need to maximise waste recovery and recycling, minimise disposal of waste to landfill, provide recovery and recycling waste management capacity regionally and nationally, promote the circular economy, and supply rMSW pre-treatment capacity, as required. The proposed development will clearly and substantively support meeting these various defined needs.

The Regional Waste Management Plans place a greater emphasis on self-sufficiency and proximity of waste management infrastructure on a scale and requires Irish authorities to develop and maintain indigenous waste management infrastructure.

The proposed development will ensure there is a greater level of waste management capacity in Ireland, thereby supporting the nation achieving the tenets of self-sufficiency and proximity as defined in Waste Management Legislation and Policy.

The proposed development will serve to promote waste sorting and separation and recovery, and onward recycling of segregated waste fractions, and will therefore support the principles and policies underpinning the Circular Economy and Miscellaneous Provisions Act 2022.

The need for developments of this nature has been identified and emphasized in a recent planning decision on a proposal to increase the operating capacity of a similar type of Materials Recovery Facility based in Millennium Business Park (An Bord Pleanála Planning Reference: 310332). In that case, the Planning Inspector concluded the following:

> *'Additional capacity for facilities which segregate wastes and feed into the circular economy, such as that proposed, are supported at a national level and in recent years increased resources have been assigned to the area in recognition of its strategic importance.*

2.5.3 Increasing waste generation and demand for waste management capacity

Municipal Waste Management Demand

Each of the three regional waste management plans provided projections of regional waste generation up to 2021 which, when combined, presented future national waste generation projections.

Figures presented within the regional plans were presented for every two years up to 2021 (i.e. 2013, 2015, 2017, 2019, 2021 etc.) These projections within the plans reflected a year-on-year growth of 2-3% for both household and commercial wastes.

The regional waste plans also envisaged a municipal waste generation total of approximately 3.9 million tonnes by 2030, which was determined by applying a 2.5% growth factor for the period for 2020 to 2030. While the tonnages for the intervening period between 2021 and 2030 are not presented within the plans, Table 2-1 applies this growth factor to project municipal waste generation between these years, and up to the year 2035 (the year in which the 65% municipal waste recycling target defined in the Waste Framework Directive is set for). Given that these projections form the basis on which the policy objectives within the regional plans are made, it is considered appropriate to utilise the projections made within these plans in this need assessment.

For clarity, the municipal waste figures presented are inclusive of household, commercial and industrial municipal wastes and include mixed dry recyclable waste (green bin), food and green waste (brown bin) and residual municipal solid waste (black bin).

Table 2-2: Regional Waste Management Plan Projections for Municipal Waste

Year		2019,t	2020,t	2021,t	2022,t	2023,t	2024,t	2025,t	2026,t	2027,t	2028,t	2029,t	2030,t	2031,t	2032,t	2033,t	2034,t	2035,t
Connacht/Ulster Region	*High Range*	503,076	516,525	529,973	543,222	556,803	570,723	584,991	599,616	614,606	629,971	645,721	661,864	678,411	695,371	712,755	730,574	748,838
	Low Range	484,967	492,498	500,029	512,530	525,343	538,477	551,938	565,737	579,880	594,377	609,237	624,468	640,080	656,082	672,484	689,296	706,528
Eastern/Midlands Region	*High Range*	1,567,862	1,612,747	1,657,632	1,699,073	1,741,550	1,785,088	1,829,716	1,875,458	1,922,345	1,970,404	2,019,664	2,070,155	2,121,909	2,174,957	2,229,331	2,285,064	2,342,190
	Low Range	1,537,059	1,565,549	1,594,038	1,633,889	1,674,736	1,716,605	1,759,520	1,803,508	1,848,595	1,894,810	1,942,181	1,990,735	2,040,503	2,091,516	2,143,804	2,197,399	2,252,334
Southern Region	*High Range*	1,042,278	1,070,181	1,098,083	1,125,535	1,153,673	1,182,515	1,212,078	1,242,380	1,273,440	1,305,276	1,337,908	1,371,355	1,405,639	1,440,780	1,476,799	1,513,719	1,551,562
	Low Range	1,009,926	1,026,803	1,043,680	1,069,772	1,096,516	1,123,929	1,152,027	1,180,828	1,210,349	1,240,608	1,271,623	1,303,413	1,335,998	1,369,398	1,403,633	1,438,724	1,474,692
Total Generated	*High Range*	3,113,216	3,199,452	3,285,688	3,367,830	3,452,026	3,538,327	3,626,785	3,717,454	3,810,391	3,905,651	4,003,292	4,103,374	4,205,958	4,311,107	4,418,885	4,529,357	4,642,591
	Low Range	3,031,952	3,084,850	3,137,747	3,216,191	3,296,595	3,379,010	3,463,486	3,550,073	3,638,825	3,729,795	3,823,040	3,918,616	4,016,581	4,116,996	4,219,921	4,325,419	4,433,554
	Midpoint	3,072,584	3,142,151	3,211,718	3,292,011	3,374,311	3,458,669	3,545,136	3,633,764	3,724,608	3,817,723	3,913,167	4,010,996	4,111,271	4,214,053	4,319,404	4,427,389	4,538,074

The EPA's National Waste Statistics Report from 2019 identifies that 3.1 m tonnes of municipal waste was generated in 2019. This figure is slightly higher but closely similar to the previously predicted figure in Table 2-1, which demonstrates that the predictions made in the regional plans have a reasonable level of accuracy and robustness and can be relied upon to inform policy and infrastructure development.

A clear and urgent need for additional municipal waste management capacity on both a regional and national level exists given municipal waste generation predictions going forward. The proposed facility will contribute to meeting this growing demand.

It is predicted that 4.5 m tonnes of municipal waste will be generated in 2035. The Waste Framework Directive sets a municipal waste recycling target of 65% for 2035. Assuming this target is achieved, it can be expected that approximately 2.9 m tonnes of municipal waste generated in 2035 will be subject to recycling through material recycling or composting/anaerobic digestion, and 1.6 m tonnes of municipal waste (rMSW) generated in 2035 will be subject to final treatment through energy recovery or landfilling. The proposed development will provide capacity for the future management of municipal waste including rMSW, food waste and MDR, and will enhance recycling rates in each of these wastes streams given the nature of processing and high degree of waste segregation that will occur at the facility.

Construction and Demolition (C&D) Waste

The published report, prepared on behalf of the three waste management regions, entitled 'Construction & Demolition Waste – Soil and Stone Recovery/Disposal Capacity' identifies a potential shortfall in capacity for C&D soil and stone in the range of c. 1.5 million tonnes in 2018 to just under 4 million tonnes in 2023. In the context of this proposed development, where potential to accept of this type of material at the proposed facility exists, this identified lack of capacity is a significant contextual issue.

Further to this, the EPA's National Waste Statistics Report for 2019 reports that 8.8 m tonnes of C&D waste was collected and managed in 2019, up from 6.2 m tonnes in 2018, and 4.7 million tonnes in 2017. The actual C&D waste figures in 2019 was far in excess of the forecasts for that year as estimated in the 'Construction & Demolition Waste – Soil and Stone Recovery/Disposal Capacity' document (5.2 million). This ongoing and substantial increase in C&D waste generation corresponds with an increase in construction activity nationally.

A distinct need for C&D waste management capacity is therefore needed nationally. The proposed facility will serve to accept, separate and promote the recovery and recycling of a variety of C&D sourced wastes.

According to the EPA's National Waste Statistics Report for 2019 only 7% of C&D waste was recycled, with most of it being sent for inert landfilling. The dominance of backfilling as a treatment operation reflects the large proportion of soil and stones in C&D waste. A need to improve C&D waste separation recycling practices still exists, however. The proposed facility will serve to separate C&D waste fractions, thereby allowing recyclable C&D waste fractions to be sent for onward re-processing and recycling as feasible (potentially achieving 'end-of waste' status), rather than being sent onwards for recovery through inert landfilling.

The EPA's 2019 statistics also show that 10% of C&D waste went for landfill disposal, which is the lowest tier of the waste hierarchy, and 54% of segregated wood, glass and plastic waste was sent for energy recovery. The high degree of C&D waste processing at the proposed development will enhance material C&D waste separation and recycling which in turn will reduce C&D waste treatment through disposal to landfill or energy recovery.

The EPA Waste Statistics Report also emphasises the potential for improving the recycling of C&D wastes. It states that the 'Improved recycling and prevention of C&D waste could be achieved by employing best practice circular construction activities, such as designing out waste, enhanced segregation of C&D materials into individual material stream and maximising the use of resources.' The proposed development will contribute to enhancing the segregation and recycling of C&D materials in line with waste policy.

Population Growth Impacting on Waste Generation

The Central Statistics Office (CRO) 2022 census determined that Ireland's current populations is 5.123 million. This represents a 7.6% increase in population since 2016.

The Economic and Social Research Institute (ESRI) in their research document entitled 'Regional Demographics and Structural Housing Demand at a County Level' (Dec. 2020) predicts that the population of Ireland will increase by around 926,000 people between 2016 and 2040 resulting in a total population of over 5.665 million people by the end of the period.

It is clear from census data and research predictions that Ireland's population is growing at a significant rate. This growth is expected to continue in the long-term and is expected to occur across multiple regions. For example, within its Regional Population Projections 2017 – 2036, the Central Statistics Office predicts that the 'Dublin Region' (inclusive of Dublin City, Dún Laoghaire–Rathdown, Fingal and South Dublin) will increase to 1,671,900 by 2036 (from a baseline of 1,335,900 in 2016).

An increasing population will lead to increasing waste generation. A clear need for additional waste management capacity nationally is needed given population growth predictions. The proposed development will meet this need by providing additional capacity for the management of municipal waste (including rMSW, food waste and MDR), and C&D waste.

2.5.4 Need for waste management infrastructure to facilitate achieving waste management targets

Under the revised Waste Framework Directive recycling targets for municipal waste will increase to 55% in 2025, 60% in 2030 and 65% in 2035. With a 37% recycling rate reported for 2019 by the EPA significant change is needed to meet these targets including greater capacity for separation and recovery of recyclable materials.

The revised Landfill Directive includes a target to reduce the landfilling of municipal waste to 10% or less by 2035. The EPA have reported that 15% of municipal waste was landfilled in 2019.

While the rate of landfill/disposal has decreased significantly since 2012 (1,027,577 tonnes) to 2019 (471,594 tonnes) maximising diversion of waste from landfill has always been a key objective of waste policy and additional supporting waste management infrastructure will be needed to continue diverting a greater proportion of municipal waste from landfill I.e. through material recovery and recycling.

The operation of the proposed facility will serve to promote material separation and recovery/recycling, the diversion of waste from landfill, and the pre-treatment of rMSW waste / recycling of rMSW waste fractions (e.g. metal waste and organic waste). The facility will therefore contribute to the achievement of the targets defined in the Waste Framework Directive and Landfill Directive.

2.5.5 Specific need for rMSW Pre-treatment Capacity

The EPA requires that all rMSW sent for energy recovery is pre-treated I.e. to ensure all recoverable/recyclable content of the waste is extracted prior to energy recovery. The proposed development is designed to support meeting these requirements and to help comply with the EPA's enforcement policy.

There has been and will continue to be a substantial increase in energy recovery capacity in Ireland. This form of waste treatment is currently an important component of Ireland's indigenous waste management infrastructure. Carranstown Waste to Energy facility commenced operations in 2011. This facility recently gained approval from An Bord Pleanála to increase its waste management capacity from 235,000 tonnes per annum to 280,000 tonnes per annum. The Dublin Waste to Energy facility commenced operations in 2017. This facility recently gained approval from the EPA to increase its intake capacity from 600,000 tonnes per annum to 690,000 tonnes per annum. A Planning Application is currently being prepared for the development of the Ringaskiddy Waste to Energy Facility which will accept 240,000 tonnes of waste per annum for processing. Combined with thermal capacity provided at three cement kilns within the country, indigenous thermal recovery of energy from waste will be the primary means of management of rMSW nationally going into the future.

Waste ultimately destined for these energy recovery facilities will need to be subject to pre-treatment operations prior to being sent to these facilities to ensure that recyclable waste fractions are separated from the waste in line with current waste management policy and EPA requirements, and to ensure that rMSW is suitable for energy recovery based on its thermal characteristics. The proposed facility will pre-treat MSW to facilitate enhanced recycling in this waste stream.

As discussed in Section 2.5.3, municipal waste generation will substantially increase in future years. Consequently, there will be a need for additional rMSW pre-treatment capacity going into the future. The proposed facility will therefore contribute to meeting the identified current and future MSW pre-treatment capacity needs on a regional and national scale.

2.5.6 Supporting the need for increased indigenous final treatment capacity

The EPA's 2019 waste statistics show that there is currently a deficit in national final treatment capacity. 40 per cent of all municipal waste (1.2 million tonnes) was exported for final treatment in 2019, up from 35 per cent in 2018.

Ireland's latest policy document entitled 'A Waste Action Plan for a Circular Economy' acknowledges the need to enhance national final treatment capacity. The following measure is defined in the plan:

- *'We will drive higher levels of segregation to support investment in treatment capacity.'*

Waste processing operations at the proposed development will ensure a very high degree of waste segregation. A facility of this nature will contribute to making the development of additional final treatment infrastructure (such as recycling facilities) more economically viable. The proposed development will therefore serve to support and underpin the enhancement of Ireland's final treatment and recycling capacity.

2.6 Conclusions

The proposed development will facilitate the applicant in augmenting its owns waste treatment capacity and in achieving its commercial objectives, namely by allowing the Applicant to accept and manage the wastes that it collects at waste management facilities under its control in a manner that is self-sufficient, efficient and cost effective.

The proposed development will improve waste management capacity regionally and nationally in accordance with the tenets of self-sufficiency and proximity as defined in Waste Management Legislation and Policy.

The proposed development will contribute to meeting waste management needs defined by Waste Management Policy and Legislation.

The proposed development will contribute toward meeting municipal waste and C&D waste management capacity needs.

The proposed development will support achieving Waste Management targets defined nationally under the Waste Framework Directive and Landfill Directive, including targets to increase rMSW recycling and reduce landfilling of waste.

The proposed development will contribute to meeting rMSW pre-treatment capacity need on a regional and national scale.

The proposed development will support and underpin the enhancement of Ireland's final treatment and recycling capacity.

2.7 References

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Southern Regional Waste Office, Southern Region Waste Management Plan 2015 – 2021.

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