12 Traffic & Transport

12.1 Introduction

The purpose of this chapter of the EIAR is to address the transport related issues that may arise in relation to the proposed Anaerobic Digestion Facility (herein referred to as the Proposed Development) during construction and operation and how the proposal will integrate with the existing traffic flows in the vicinity of the site.

Recommendations contained in this report are based on site observations, recorded traffic survey data, interpretation of collected data and information and consultation with relevant Authorities and interested parties.

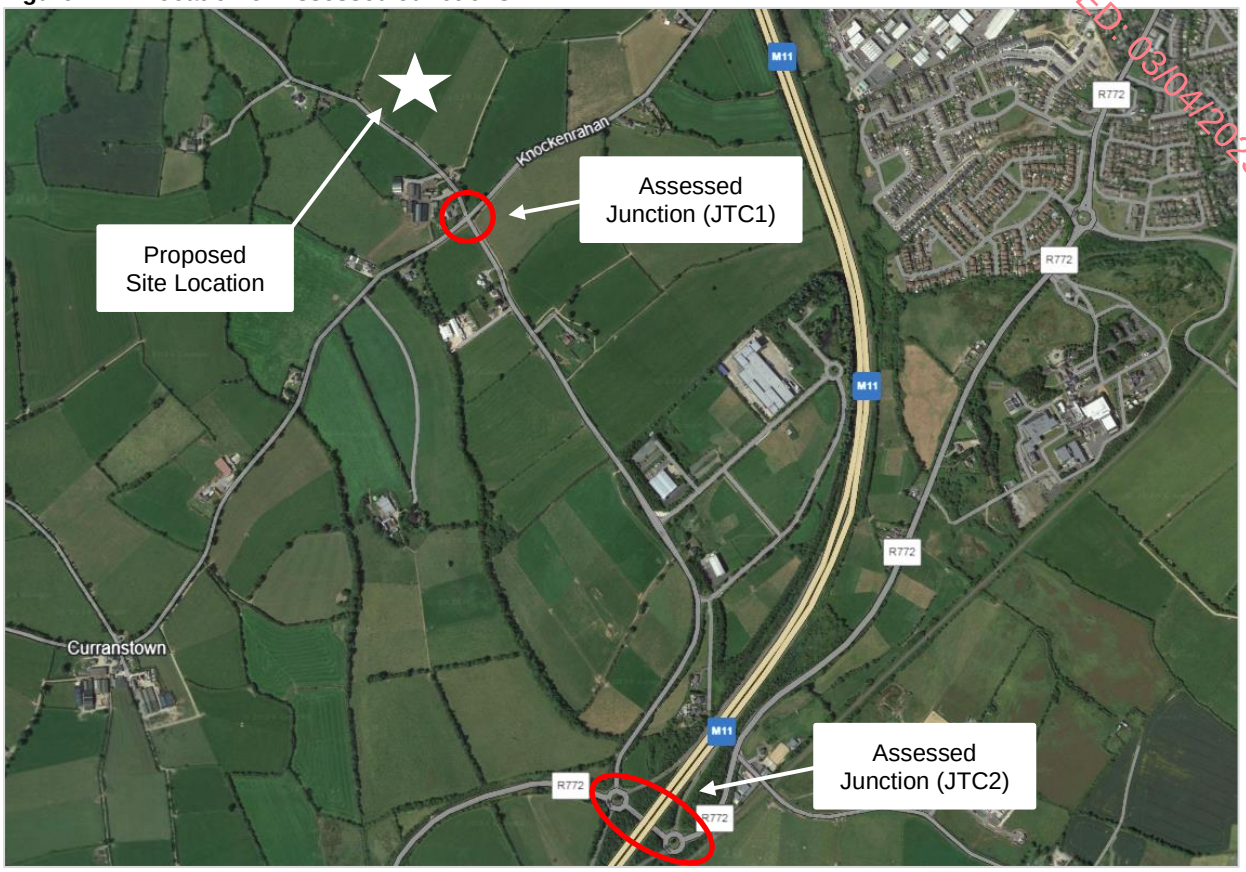
The objectives of this report are to assess the impact the Proposed Development will have on the surrounding road network, with the assessment focusing primarily on the priority junction formed by the local roads L2190 – Knockenrahan (or Coolgreaney Road) and L6187 - Ballyduff South (JTC1), in the vicinity of the proposed site, and the M11 Junction 21 (JTC2), shown in **Figure 12.1.** The report is produced to demonstrate how the Proposed Development will integrate with the existing traffic flows in the vicinity of the site and how the proposed traffic flows accessing the site will affect the existing road network.

ORS liaised with Wicklow County Council to scope the requirements for the Transportation Section of the EIAR. It was agreed that this section would assess the traffic volumes produced by the development and review the effects the proposal will generate along the road network in the vicinity of the site.

Therefore, in summary, the objectives of this report are to assess:

- The prevailing traffic conditions on the public road network in the vicinity of the Proposed Development that may influence conditions;
- The potential effect on the surrounding road network due to the anticipated traffic generated by the Proposed Development;
- The proposed access arrangements for the Proposed Development;
- Review of committed developments adjacent to the Proposed Development site;
- The pedestrian, cyclist and public transport connectivity in the vicinity of the site; and
- The parking requirements for the site.

Figure 12.1: Location of Assessed Junctions



12.2 Consultation

ORS have been commissioned to assess the potential impacts of the Proposed Development in terms of Traffic and Transportation during the construction and operational phases. The principal members of the ORS EIA team involved in this assessment include the following persons:

- **Project Scientist & Co-Author:**

  Angeliki Kalatha – M.Sc. (Civil Engineering – Transport and Project Management), M.Sc. (Engineering Project Management). Current Role: Senior Transportation Engineer. Experience ca. 8 years

- **Project Coordinator & Reviewer:**

  Oisín Doherty – B.Sc. (Geography with Environmental Science), MSc. (Environmental Management), CEnv, MIEnvSc. Current Role: Senior Environmental Consultant. Experience ca. 15 years.

Consultation between ORS and other members of the planning/design team was made in order to obtain information required to assess the potential construction and operational phase impacts on traffic and transport.

12.3 Assessment Methodology & Significance Criteria

This report will follow the principles set out in the Transport Infrastructure Ireland (TII) Publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines' and will assess the impact the Proposed Development, and the associated traffic flows, will have on the public road network in the vicinity of the site.

Reference was made to the following documents when preparing this report:

- Wicklow County Development Plan 2022 – 2028;
- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports, published in May 2022;
- TII Publication PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections, published in October 2021;
- TII Publication PE-PAG-02039 Project Appraisal Guidelines for National Roads Unit 16.1 – Expansion Factors for Short Period Traffic Counts;
- Traffic Management Guidelines, published in 2003; and
- Design Manual for Urban Roads and Streets, published in 2013.

12.3.1 Traffic and Transport Assessment Guidelines – PE-PDV-02045

The Transport Infrastructure Ireland (TII) Publication PE-PDV-02045, published in May 2014 sets the methodology to be followed in any given Traffic and Transport Assessment. The methodology that will be used in this assessment follows the guidelines set in this document and can be outlined as follows:

- Automatic Junction Turning Counts (JTC) were carried out on Tuesday 10th December 2024 at the priority crossroads formed by the local roads L2190 - Coolgreaney Road and L6187 - Ballyduff South, and the M11 Junction 21, by a third-party company called IDASO. The traffic counts were carried out during a 12-hour period from 07:00 AM to 07:00 PM and encompass all movements at the junction.
- Details on the expected traffic generated by the Proposed Development during construction and operation, as well as the haulage routes, were provided by the Developer.
- The impact of the change in traffic conditions following the opening of the development has then been determined and the operational performance of the existing junctions on the adjacent network was analysed. This has therefore enabled the parameters of the existing junctions to be tested and to ensure that they can accommodate the resultant flows and movements.
- The effect the Proposed Development will have on the road network was assessed against the TII threshold and it was found that the junctions do not exceed the threshold of 10% increase in traffic, therefore, a complete Traffic and Transport Assessment (TTA) is not required.

- The junctions were subjected to analysis as the majority of the traffic generated by the site will be composed of HGVs. The modelling showed that the junctions will function well below its theoretical capacity for all future design years with no queues or delays.
- Parking requirements were assessed against parking standards set in Appendix 1 | Development & Design Standards, Section 2.1.7 - *Car parking* and Section 2.1.8 - *Bicycle parking* of the Wicklow County Development Plan 2022 – 2028.

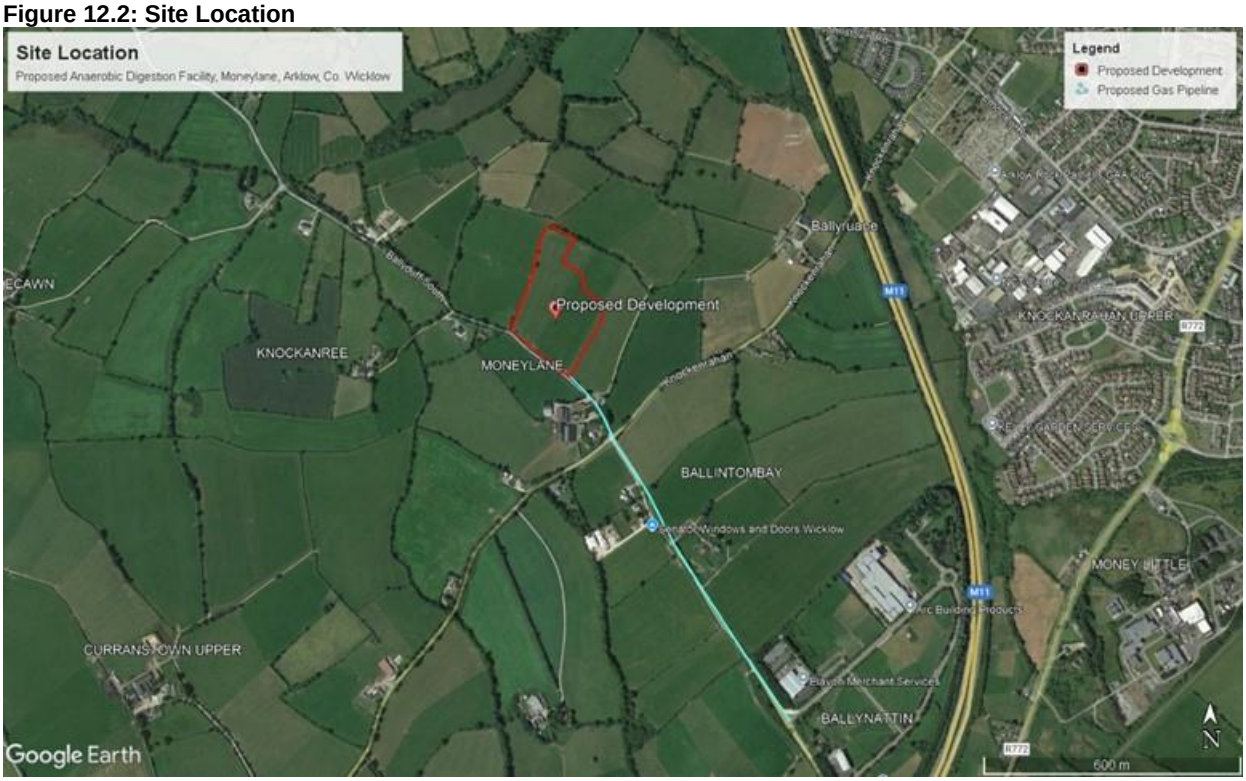
12.4 Description of Receiving Environment

12.4.1 Site Location

The Proposed Development site is located in the townland of Moneylane, Arklow, Co. Wicklow, approximately 2.1km southeast of the town of Arklow and approximately 23km southwest of Wicklow Town. The site area, shown in red, is *ca.*4.02ha, as shown in **Figure 12.2** below.

The site is currently used as agricultural pastureland and bounded to the north, south, east, and west by further agricultural pastureland. An operational farm is located ca. 100m to the southeast. The L6187 local road is located immediately to the west and provides access to the site.

Figure 12.2: Site Location



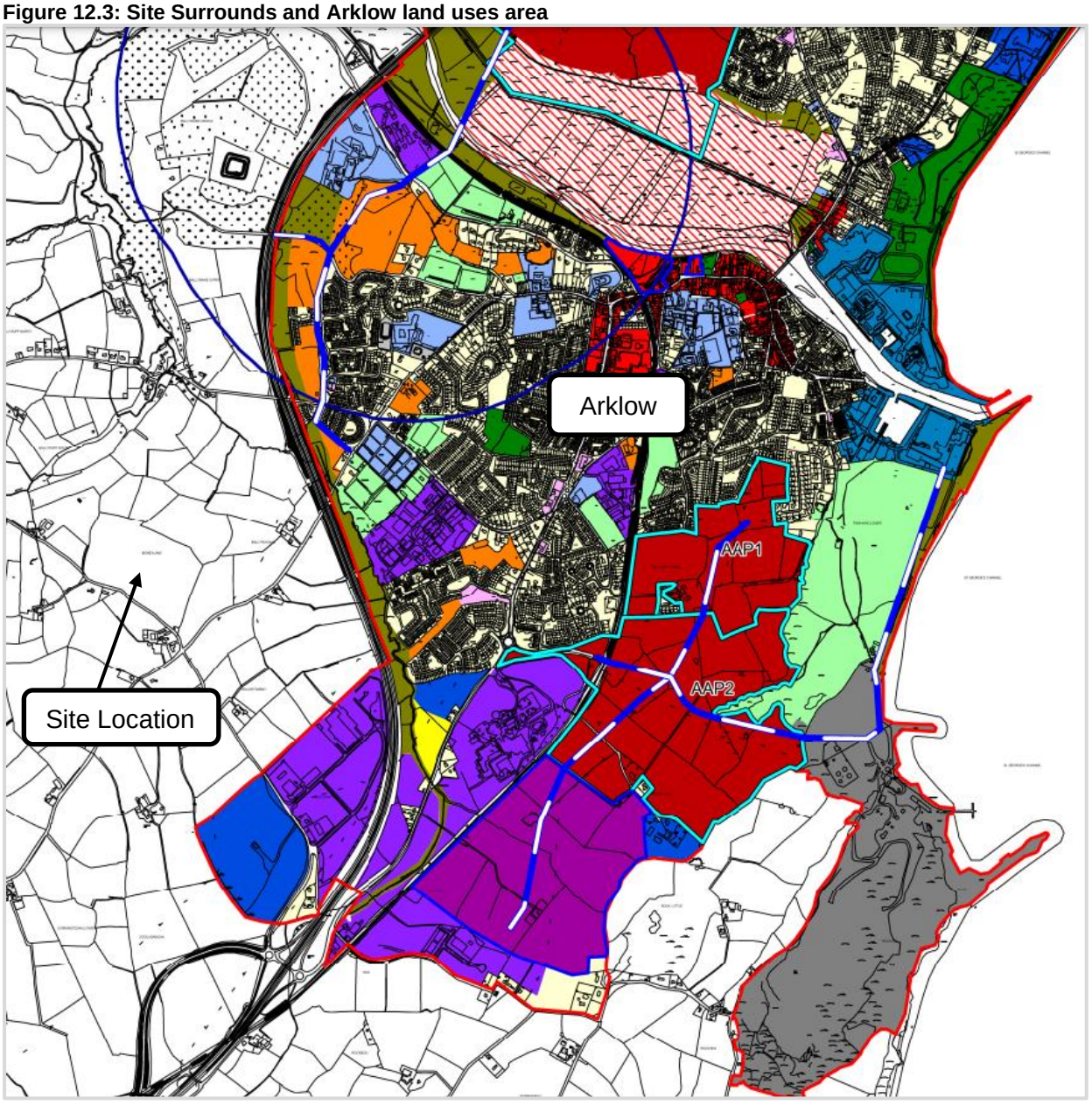
12.4.2 Existing Premises and Land Use

The Arklow and Environs Local Area Plan (LAP) 2018 - 2024 was consulted to determine the

zoning within and around the Proposed Development. The site is situated on unzoned land, approximately 1.9km southeast of the town of Arklow, Co. Wicklow. All lands located outside the LAP are considered to be within the 'rural area' with limited transport infrastructure in place.

The surrounds are shown in **Figure 12.3**.

Figure 12.3: Site Surrounds and Arklow land uses area



12.4.3 Proposed Development

The Proposed Development is described in Section 2.1.1 in Chapter 2, with **Figure 12.4** overleaf indicating the site layout.

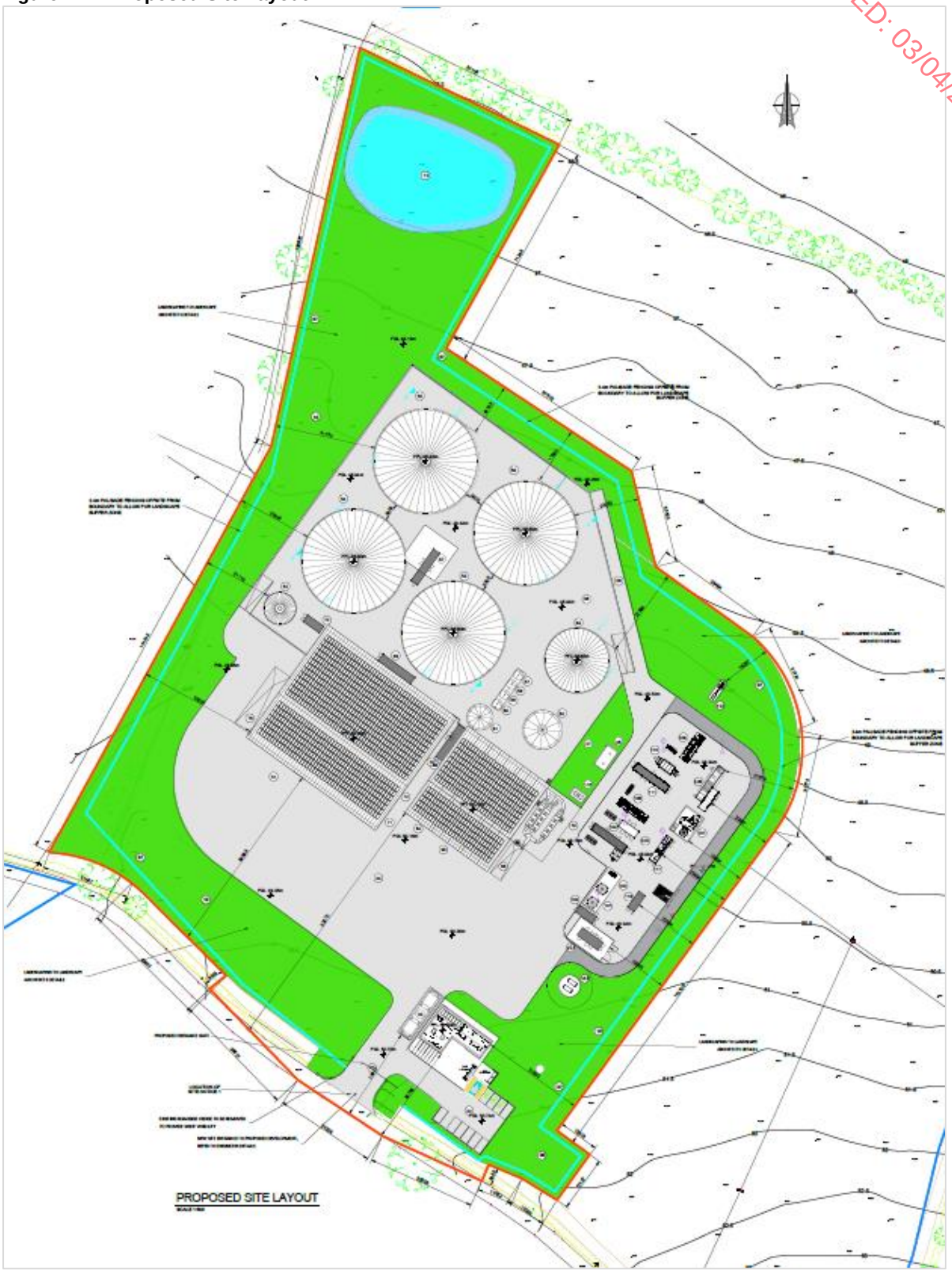
The Proposed Development will be capable of processing up to 90,000 tonnes of predominantly locally sourced agricultural manures, slurries, food processing residues and crop-based feedstock for the production of high quality biomethane (CH_4) to supply the existing gas network via the Grid Injection Unit (GIU), and renewable carbon dioxide (CO_2). In addition, the process will recycle locally sourced organic feedstocks to produce a nutrient rich biobased fertiliser which can be used as a direct replacement for chemical/mineral fertilisers. Digestate liquid and fibre will, on the whole, be returned to lands associated with feedstock supplies of crop and/or slurry, thereby promoting a local circular bioeconomy. The feedstock will be transported to the facility via the public road network and access the site through the Local Road L6187.

Up to 90,000 tonnes of organic feedstock will be required to generate biogas at the proposed AD facility, and a biobased fertiliser will be created. It is anticipated that the volume of this biobased fertiliser will be approximately 25,000 tonnes per annum, approximately 28% of the total volume of feedstock accepted at the facility. The biobased fertiliser can be in liquid form or fibre form and will be used on agricultural lands as a direct replacement for chemical/mineral fertilisers.

The biogas collected from the digesters will be passed through a biogas upgrading unit. This includes scrubbing and drying of the biogas for the production of a high-quality biomethane (CH_4) to supply the national gas network and renewable carbon dioxide (CO_2).

A detailed description of the Proposed Development is provided in **Chapter 2 – Project Description** of the Environmental Impact Assessment Report (EIAR).

Figure 12.4: Proposed Site Layout



12.4.4 Site Access

The site will be accessed via a proposed access road along the Ballyduff South Road (L6187) and vehicles travelling between the proposed site access and the surrounding network will make use of the L6187 local road. Vehicular access to the site is through a new proposed priority T-junction off the L6187 to the west of the site.

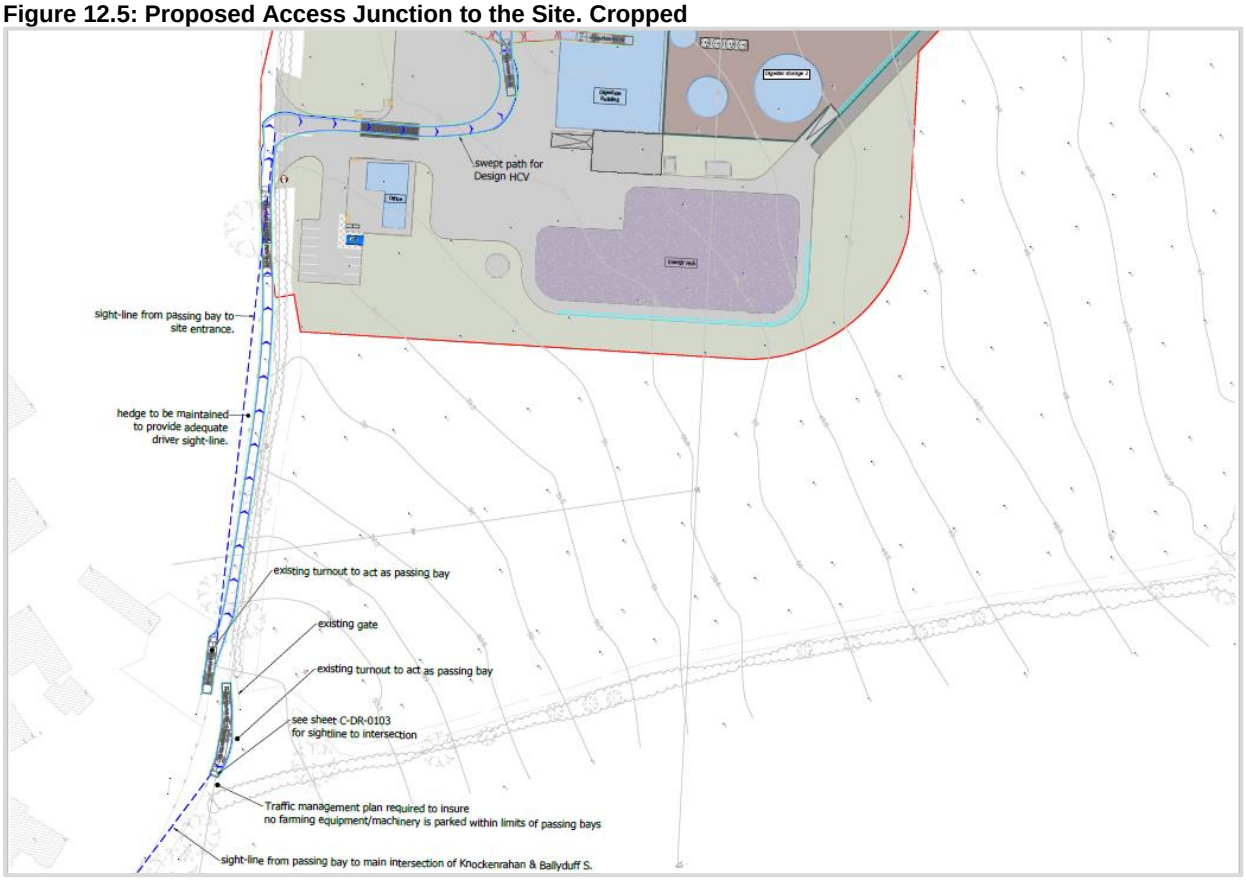
1No. passing bay will be provided along this road stretch, from the junction formed by the L2190 and the L6187 and northwards up to the site access, to facilitate the simultaneous passage of two large vehicles. 12No. car parking bays are provided to the southwest of the office area, while one circulation area (concrete apron) close to the Digestate Storage and the Reception Hall will be used for articulated lorry turning and reversing. An internal asphalt road will provide access to the Energy Hub to the southeast.

Figure 12.5 shows the proposed access junction layout off the L6187 road (site entrance).

The proposed access was designed to accommodate the expected HGV traffic and was designed in accordance with the Transport Infrastructure Ireland (TII) publication DN-GEO-03060.

The proposed site access road is a single lane carriageway, 12m wide. The Swept Path analysis for the site is shown on drawing Ref. **24118-DR-0103**.

Figure 12.5: Proposed Access Junction to the Site. Cropped



12.4.5 Car Parking

There is no parking guidance set out in the Wicklow County Development Plan for this specific type of development. The client has put forward peak staffing figures and parking provision has been assigned based on the specific needs of the development.

The site will have between 3No. to 5No. staff members on site at the same time. The number of parking spaces provided for staff and visitors of the development is 12No. spaces, located adjacent to the office building, with 1No. accessible parking space and 3No. dedicated EV charging points. The parking spaces provided are considered sufficient for the expected levels of traffic associated with the site.

The guidance stated in the development plan regarding accessible parking is that spaces shall be provided at a ratio of 5% of the parking numbers in new developments. The number of disabled parking spaces represents 8% of the spaces within this development, therefore, the requirements are met within the proposal.

Moreover, regarding electric vehicles, the document specifies in Table 2.2 that *non-residential buildings with more than 10 parking spaces within property boundary are to provide for the installation of at least one EV recharging point. Installation of ducting infrastructure for at least 1 in 5 parking spaces* is also required.

The Proposed Development aims to install 3No. EV charging points, in order to promote sustainable transportation. Therefore, the proposed parking arrangement adheres to the guidelines outlined in the County Wicklow Development Plan, ensuring compliance with electric vehicle charging standards.

12.4.6 Cycle Storage

Due to the nature of the development and the reduced number of staff accessing the site, trips by bicycle are not anticipated. There are currently no bicycle lanes on the surrounding local network and no dedicated means of accessing the site by bicycle other than by the proposed access point off the L6187.

Notwithstanding, the Proposed Development includes provision for 10No. bicycle parking spaces, aligning with the guidelines established in the Wicklow County Development Plan.

12.4.7 Existing Road Network

The Proposed Development plans include providing vehicular access from the L6187 to the west of the site. This access will primarily be via the Local Road L6187 and the M11 Motorway, located south of the site, and will utilise the L6187/L2190 junction. This crossroads is a 4-arm priority junction and the traffic associated with the site is expected to use this junction for both arrivals and departures. Traffic associated with the Proposed Development will be routed to avoid the L2190 – Knockenrahan (or Coolgreaney Road).

The L6187 is a single lane carriageway of approximately 4m wide. The L6187, also known as Ballyduff South Road, primarily serves as a local access route for residents and agricultural activities in the Ballyduff South area. It is a narrower rural road, with sections where the width

allows for single-lane traffic and passing bays. The L6187 does not feature road markings, and its alignment includes several bends and undulating sections typical of a rural roadway. Traffic volumes on the L6187 are low, consistent with its use as a minor road serving a sparsely populated area. At the L2190/L6187 junction, the road lacks road markings, which are essential for guiding vehicle drivers effectively. Currently, only a 'STOP' sign is present, which may not provide sufficient guidance for vehicles travelling down the local road. The alignment of the L6187 road in the area surrounding the Proposed Development site is relatively straight, with only minor curves. Additionally, the L6187 road does not feature footpaths or cycle lanes along either side of the carriageway. Furthermore, there are no streetlights installed in the vicinity of the application site.

The Proposed Development site is located adjacent to the L2190 local road. The L2190, also referred to as Knockenrahan or Coolgreaney Road, is a local road to the southwest of Arklow town in County Wicklow. This road connects Arklow to the surrounding rural areas, including the village of Coolgreaney, where it meets the R742 regional road. Within Arklow, it serves as a key route for accessing residential areas and local amenities, while also facilitating travel between the town and the countryside. Traffic associated with the Proposed Development will be routed to avoid the L2190 – Knockenrahan (or Coolgreaney Road).

Traffic volumes on the L2190 can be characterised as moderate closer to Arklow, particularly during peak commuting hours, with lighter volumes further into rural areas. The road is a single carriageway throughout, with a general width of approximately 5m near its junction with the L6187. In this section, there are no road markings, reflecting its rural context and the relatively low-speed nature of local traffic.

There are no footpaths or cycle lanes provided along the L2190 road, in the vicinity of the site access. The posted speed limit on the L2190 is 80 km/h.

For visual details, please refer to **Figures 12.6** to **12.8** below.

Figure 12.6: View of the L6187 in the Vicinity of the Proposed Site Access (Source: ORS)

Figure 12.7: View of the L2190 at the junction with the L6187 (Source: ORS)

Figure 12.8: View of the L2190/L6187 Junction (Source: ORS)

12.4.8 Proposed Road Network Improvements

At present, Wicklow County Council has no road improvement schemes on the L6187 or the L2190 that would affect the Proposed Development.

12.4.9 Existing Traffic Flows

Automated Junction Turning Counts (JTC) have been undertaken at the L2190/L6187 crossroads junction and the M11 Junction 21 on Tuesday 10th December 2024 by a third-party company named IDASO. The traffic counts were carried out during a 12-hour period from 07:00 AM to 07:00 PM. The traffic counts have been used to obtain accurate data on the prevailing traffic conditions along the road network in the vicinity of the site and to predict future traffic conditions. The traffic counts encompassed all movements of traffic: pedal cycles, cars, buses, LGVs and HGVs. The final number of traffic is presented in **Passenger Car Unit (PCU)**. PCU is the impact that a mode of transport has on traffic compared to a single car, e.g., a private car represents 1 PCU whereas an HGV represents 2.3 PCUs.

The AM and PM traffic peak periods were identified at the junctions, occurring between 08:15 and 09:15 in the morning and between 15:45 and 16:45 in the evening. However, there was a slight variation in peak hours for the southeastern roundabout of the M11 Junction 21 (Arklow Roundabout), with peak times recorded between 08:30 and 09:30 during the AM and 16:00 and 17:00 for the PM.

Table 12.1 summarises the AM and PM peak traffic flows.

Table 12.1: December 2024 Traffic Counts

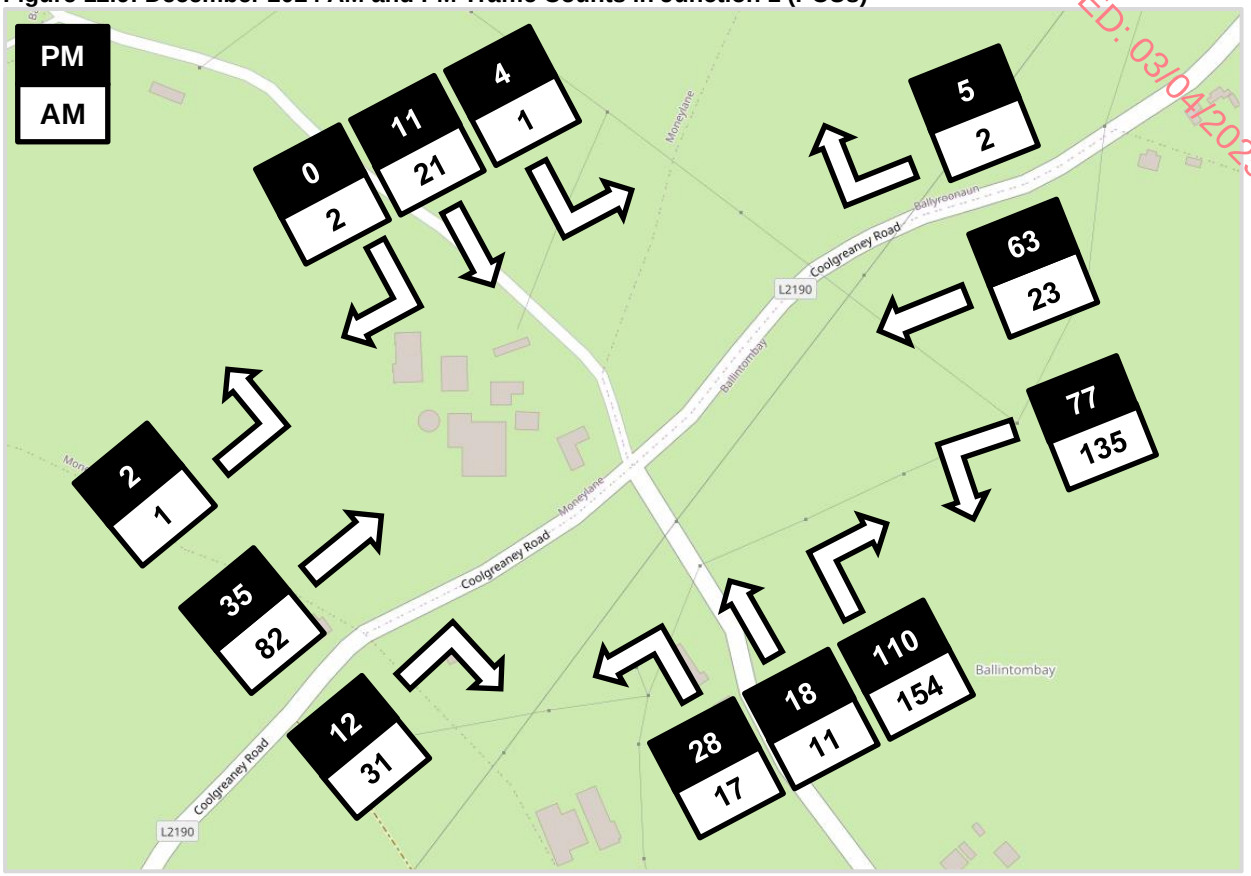
Junction (JTC)	AM Peak (PCU)	PM Peak (PCU)
1 – L2190/L6187 Junction	480	365
2a – M11 Junction 21 (Ballynattin Roundabout)	1093	841
2b – M11 Junction 21 (Arklow Roundabout)	953	1134

Figure 12.9 overleaf displays the traffic flows of all the vehicles observed in junction JTC1 in the AM and PM periods.

The traffic counts indicate that the majority of vehicles on Ballyduff South Road travel southeast toward the access road to L6187, with 87% doing so in the morning and 73% in the evening. Similarly, most traffic entering Ballyduff South Road arrives from the L6187, accounting for 11 vehicles during the AM peak and 18 vehicles during the PM peak. However, the highest traffic volumes are observed between the L2190 (Knockenrahan) and the L6187 to the south, in both directions.

HGV movements along the L6183 accounted for 43% of the northbound traffic during the morning peak and 11% of the southbound traffic. During the evening period, HGVs comprised 57% of the southbound traffic and 0% of the northbound traffic.

Figure 12.9: December 2024 AM and PM Traffic Counts in Junction 1 (PCUs)



Based on the TII Publication Project Appraisal Guidelines for National Roads Unit 16.1 – Expansion Factors for Short Period Traffic Counts, the Annual Average Daily Traffic (AADT) could be calculated using the traffic counts obtained at the existing junction. The AADT is accounted to be 3,823 PCU/day The morning and evening peak periods correspond to *ca*. 22% of the traffic along the road.

Figure 12.10 overleaf displays the traffic flows of all the vehicles observed in junction JTC2a in the AM and PM periods.

The traffic counts indicate that more than half of the vehicles on the L6187 Road travel northeast to access the M11, with 58% doing so in the morning peak. In contrast, only 28% of vehicles use the R772 link southeast to access the Arklow Roundabout during the AM period. However, during the afternoon peak, 58% of the traffic continues toward the Arklow Roundabout, while 23% turns onto the M11 slip road heading northbound on the motorway.

The majority of traffic exiting the Ballynattin Roundabout during the PM peak enters the L6187, accounting for 72% of movements. Conversely, during the AM peak, this pattern shifts, with 40% of vehicles arriving onto the L6187 from the Arklow Roundabout and 42% from the M11 northbound direction.

HGV movements to and from the L6187 arm at the roundabout range from 1% to 8% of traffic

during the morning peak. In the evening period, HGVs account for 4% to 17% of traffic.

Figure 12.10: December 2024 AM and PM Traffic Counts in Junction 2a (PCUs)

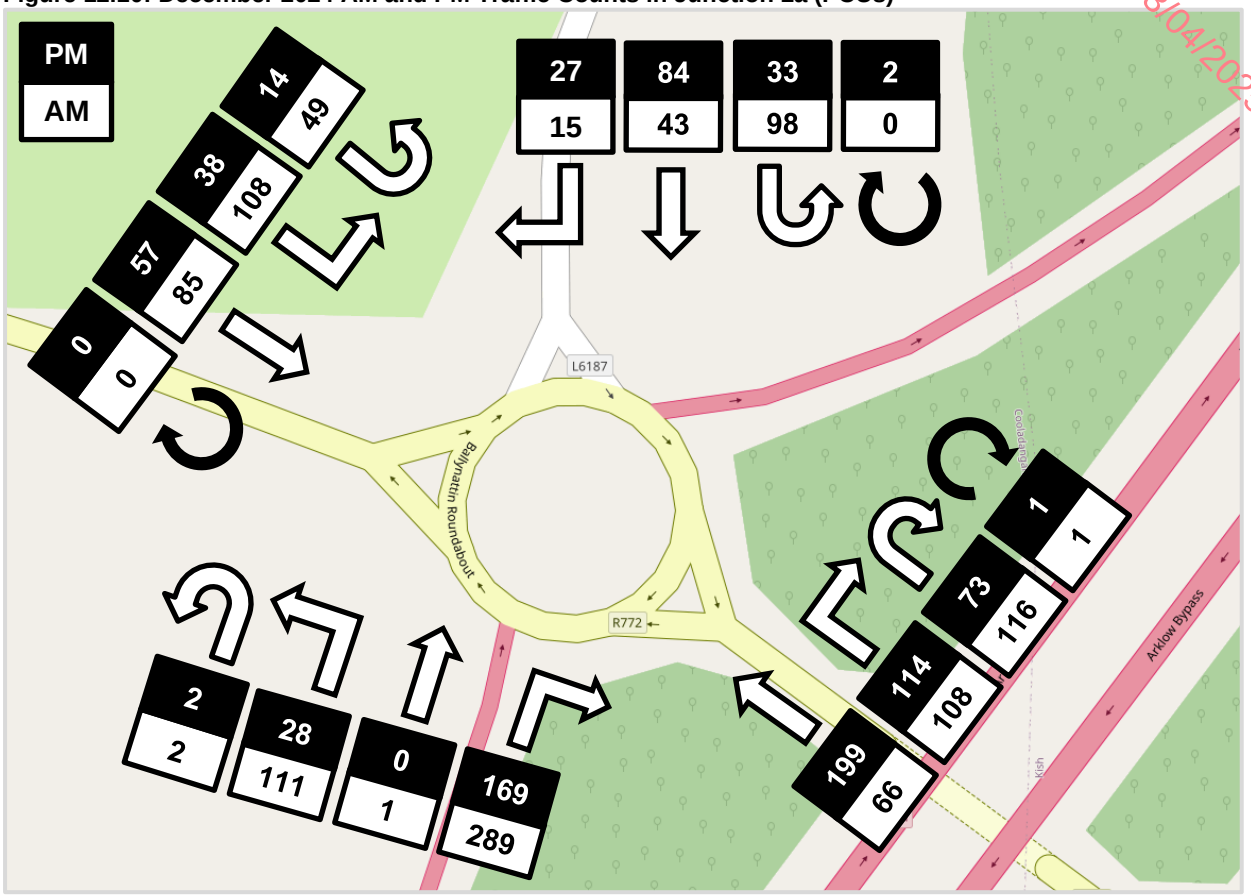


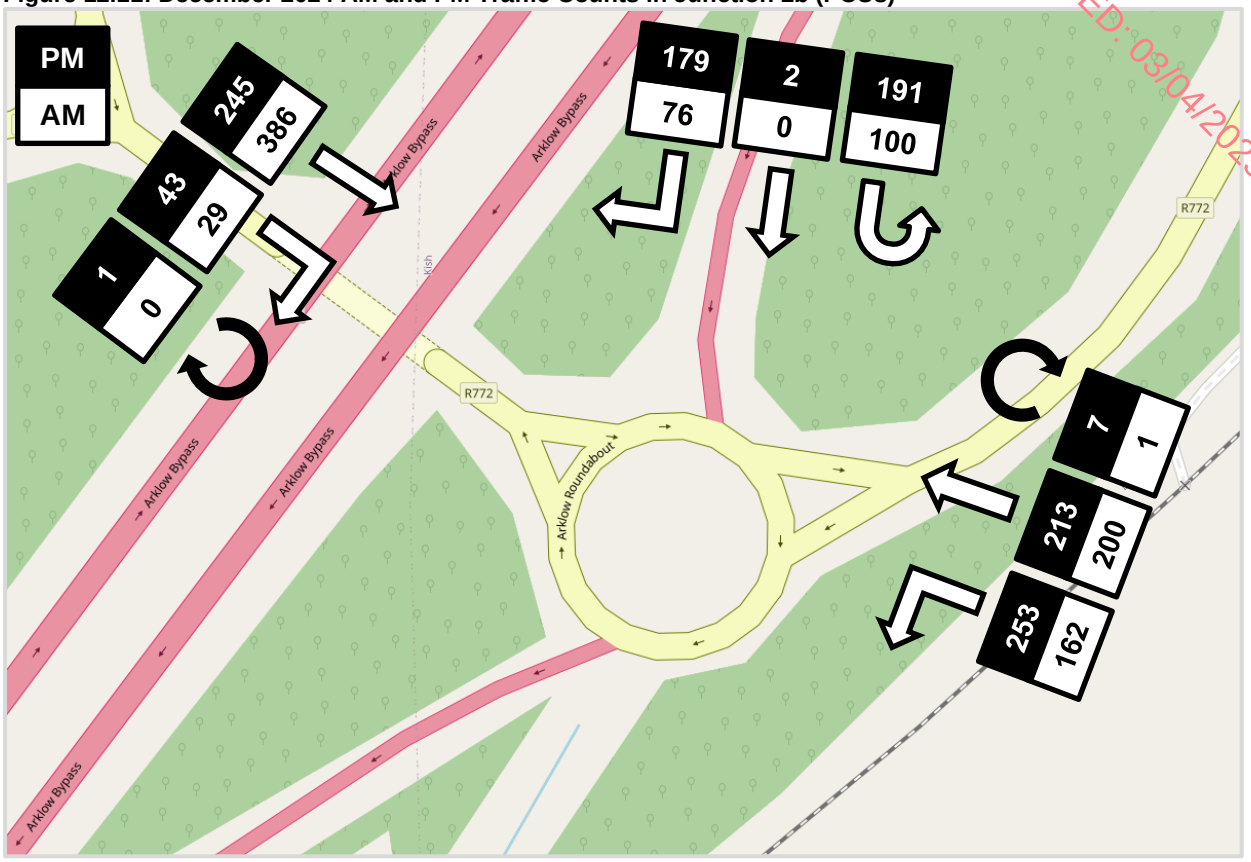
Figure 12.11 overleaf displays the traffic flows of all the vehicles observed in junction JTC2b in the AM and PM periods.

The traffic counts indicate that the majority of vehicles entering from the R772 link road and the Ballynattin Roundabout to the northwest continue on the R772 Road northeast, accounting for 93% in the morning peak and 85% in the evening peak. Conversely, only a small fraction of vehicles use the slip road to access the M11 in the southbound direction.

During the AM peak, 72% of the traffic entering the roundabout from the R772, or approximately 200 vehicles, turn right toward the R772 link road and the Ballynattin Roundabout. However, this percentage decreases to 54% during the PM peak.

HGV movements along the R772 accounted for 8% of the eastbound traffic during the morning peak, and 6% for westbound traffic. In the evening period, HGVs made up 4% of eastbound traffic and 5% of westbound traffic.

Figure 12.11: December 2024 AM and PM Traffic Counts in Junction 2b (PCUs)



12.4.10 Committed Developments Traffic Generation

As part of this Traffic Assessment, to assess the existing and expected traffic along the road network in the vicinity of the Proposed Development, the Wicklow County Council planning website was consulted to include all committed developments in the area.

As per the records available on the Wicklow County Council planning website, one significant planning application has been identified southeast of the site, located off the R772 near M11 Junction 21 (JTC2), under Ref. No. 24/88. This development is assumed to be completed and operational by 2027, the expected completion year for the proposed AD Plant. Information on traffic generation for the development was found on the documents available on the planning application public folder. The traffic generation was then added into the projected junction traffic to simulate the worst-case scenario.

Furthermore, another application that was granted permission is the planning application under Ref. No. 21/677 for a Biofuel facility which is also located in the Kish Business Park. The site is currently accessible from Clogga Road which intersects with the R772 near Junction 21 of the M11 south of Arklow. Information on traffic generation for the development was found on the documents available on the planning application public folder. This traffic has also been added into the projected junction traffic to simulate the worst-case scenario.

Due to the specific size of the development, it is anticipated that this traffic pattern will remain

consistent across all design years. It was also assumed that the traffic generated during the morning and evening peak will occur during the network's peak times. A worst-case scenario was assumed, with 100% of the traffic movements routed through the assessed M11 junction 21, due to limited information on the traffic split.

Finally, another planning application under Ref. No. 23/60464 for the construction of a new single storey industrial unit with ancillary 2 storey office accommodation (Total Floor Area 2310 m2) was identified which was granted permission on the 22nd of April 2024. The site is located to the southwest of the 21/667 application. A Traffic Impact Assessment was not prepared for the aforementioned planning application. Traffic volumes were estimated using the TRICS database for a Distribution/Warehousing development.

12.4.11 Future Year Traffic Growth

Transport Infrastructure Ireland (TII) issues a range of forecasts: low growth, central growth and high growth. The implementation of policies relating to the National Sustainable Mobility Policy will act as a deterrent to high growth in car-based travel. Low growth factors are however likely to be equally unrealistic at present, therefore, this assessment has used central growth factors, which was extracted from the TII Publication PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections, published in October 2021, outlined in **Tables 12.2** to **12.4** below.

The data used is for County Wicklow from 2016 to 2050 and is for Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs).

Table 12.2: Development Location Information

Development Location Information	
Location of Development	Wicklow
Sensitivity Area	Central
Year of Traffic Counts	2024
Year of Assessment	2025
Year of Development Construction	2027

Table 12.3: TII Annual Growth Rates (Central Growth) For Co. Wicklow

TII Annual Growth Rates (Central Growth) For Co. Wicklow		
	LGV	**HGV**
2016 – 2030	1.0157	1.0377
2030 – 2040	1.0051	1.0173
2040 – 2050	1.0047	1.0204

Table 12.4: Growth Factors for Future Design Years

Growth Factors for Future Design Years				
	Counts	**Opening**	**Opening +5**	**Opening +15**
Year	2024	2027	2032	2042
LGV	1.000	1.048	1.109	1.166
HGV	1.000	1.117	1.292	1.543

The traffic growth factors presented above have been used to predict the increase in the background traffic that will occur in future design years. The Proposed Development is expected to be fully constructed and operational in 2027.

Table 12.5 shows the predicted traffic flows along the L2190/L6187 junction, located in the immediate vicinity of the site access, for the year of the development conclusion, 5-year, 10-year and 15-year after the development conclusion.

Table 12.5: Traffic Flows in Future Design Years (PCUs)

Design Year		L2190 towards Arklow	L2190 towards Coolgreaney	L6187 towards the M11	L6187 towards Ballyduff South	Total Movements
2024, traffic counts	**AM**	237	42	187	14	480
	PM	149	92	99	25	365
2027	**AM**	256	45	202	15	518
	PM	163	99	108	27	397
2032	**AM**	282	50	223	16	571
	PM	181	111	121	30	443
2042	**AM**	315	249	56	18	638
	PM	206	126	137	35	504

12.5 Likely Significant Effects

12.5.1 Construction Phase

During the construction phase, deliveries and construction personnel will access the site on a daily basis. The arrivals and departures are expected to be spread out throughout the day; however, it is expected that they will be arranged in a manner to avoid traffic peak hours in the surrounding road network.

The construction will operate within Wicklow County Council's recommended hours, which are from 08:00 to 18:00 from Monday to Friday and between 08:00 to 14:00 on Saturdays. No works shall be carried out on Sundays and public holidays or outside the aforementioned hours. Construction traffic associated with the Proposed Development will include:

- Construction personnel accessing the site by private vehicles and vans
- Delivery of materials (here include what type of materials) by vans and HGVs
- Earthworks machinery (excavators, rollers and dumper trucks) transported by HGVs
- HGVs for the export surplus excavated material.

It is expected a maximum of 8No. to 10No. construction personnel to be at the site at the same time and the deliveries to be arranged during off-peak hours.

Haul routes for construction traffic are to be agreed upon with Wicklow County Council during the preparation of the Construction Traffic Management Plan (CTMP).

Table 12.6 below shows the expected generated traffic during construction phase.

Table 12.6: Expected Traffic During Construction Phase

Construction Traffic			
Time Range	**Arrivals**	**Departures**	**Total**
08:00-09:00	10	0	**10**
17:00-18:00	0	10	**10**

12.5.2 Operational Phase

The operation of an Anaerobic Digestion Facility involves producing renewable biogas through the decomposition of organic feedstock. The site will be operational 24 hours a day for 7 days a week with staff onsite during normal working hours from 6 AM to 8 PM. Outside of these hours, the process is monitored remotely. There are no shifts, and it is expected that between 3 and 5 staff members will be present at the premises during normal working hours. The Proposed Development will receive an intake of approximately 90,000 tonnes of feedstock per annum for anaerobic digestion. The process will produce a methane-rich biogas, which is converted into renewable energy or upgraded to biomethane which is injected to the natural gas grid, and a nutrient-rich fertiliser known as 'biobased fertiliser'.

The solid materials will arrive at the site by HGV/Walking Floor and the liquid form feedstock will arrive in bulk tankers. The average tonnes per load are assumed to be 30 tonnes. It is expected that traffic will be spread out throughout the day in order to minimise traffic issues in the road network.

Table 12.7 shows the expected feedstock accepted in the facility.

Table 12.7: Feedstock Intake Data

Feedstock in	Tonnes/year (312 days)	Tonnes/day	Average Load (T)	HGV-Tanker/day	Route	Total in/out Movements
Cattle Slurry	7,159	23	30	1	Local Roads (from East)	2
	4,772	15		1	Local Roads (from West)	2
Cattle Manure	781	3		1	Local Roads (from East)	2
	521	2		1	Local Roads (from West)	2
Poultry Litter	22,981	74		3	M11, L6187	6
Vegetables Residues	1,302	4		1	M11, L6187	2
Drinks Production Residues	18,595	60		2	M11, L6187	4
Dairy Production Residues	9,077	29		1	M11, L6187	2
Whole Crop Silage	17,368	56		2	M11, L6187 (from East)	4
	7,444	24		1	M11, L6187 (from West)	2
Subtotal	**90,000**	**288**		**14**		**28**

*It is important to note that the cattle manures and slurries will be sourced from agricultural

operators located in the vicinity of the site. Access to the site will be facilitated via local roads, **excluding routes to the north of Knockenrahan (Coolgreaney Road), which will not be used for transport.**

The feedstock will go through a digestion process and will produce a product named 'biobased fertiliser', which will be in form of fibre and liquid. Biobased fertiliser will be supplied for use on agricultural lands as a direct replacement for chemical/mineral fertilisers. It is proposed to provide biobased fertiliser to agricultural operators in the locality, particularly those who are providing crop-based feedstocks, thereby promoting a local circular bioeconomy.

Biobased fertiliser can be land spread during the spring, summer, and early autumn, but cannot be spread during the land spreading close period. During this winter period, biobased fertiliser will be stored on site. The number of transport movements will, therefore, generally remain the same throughout the year and reduce slightly during October-January.

Table 12.8 shows the expected tonnes of biobased fertiliser produced by the facility.

Table 12.8: Biobased Fertiliser Transport Data

Product	Tonnes/year	Tonnes/day (312 days)	Average Load (T)	HGV/Trailer/day	Total in/out Movements
Digestate Liquid Concentrate	17,000	55	30	1.83	4
Digestate Fibre	8,000	26		0.87	2
Subtotal	**25,000**	**71**		**3 (2.70)**	**6 (5.40)**

As already mentioned, the Proposed Development will employ approximately 5No. full time staff to operate the Anaerobic Digestion Facility. The traffic generated by the staff will consist of 5No. daily incoming trips and 5No. daily outgoing journeys.

Table 12.9 contains the trip generation associated with staff.

Table 12.9: Staff Traffic Generation

	AM	PM
Arrivals	5	0
Departure	0	5
Total staff movements	**5**	**5**

Table 12.10 summarises the expected traffic volumes and volumes of material generated by the feedstock input to the Proposed Development and the export of biobased fertiliser. The anticipated total traffic flows in and out of the site amount to an **average of 22No. vehicles** per day (44No. trips in and out in total), including approximately 34No. HGVs/Walking Floor/Tankers per day associated with the input of material and the export of biobased fertiliser.

These estimates are based on the maximum amount of organic feedstock the development can process, the maximum amount of biobased fertiliser removal from the Proposed Development, and the predicted staffing levels required to operate the facility.

Table 12.10: Total Movements In and Out of the Site on National Roads

	HGV/Walking Floor/Tankers/day	HGV/Walking Floor/Tankers/day in/out	Staff (in/out)	Total in/out Movements
Total Movements	17	34	5 (10)	44

The site will be operational 24 hours a day, 7 days a week, however, delivery of feedstock and export of fertiliser will be limited to occur only between 07:00 and 19:00 Monday to Friday and 07:00 to 16:00 on Saturday. As can be noted from the traffic generation profile shown above, there is no particular peak of traffic generated by the development, save for the times when staff arrive and depart from work. However, it has been assumed that in a worst-case scenario the projected delivery and export of material will take place during morning and evening peak hours, with an even spread of traffic for both periods.

Table 12.11 illustrates the expected AM and PM traffic flows associated with the Development.

Table 12.11: Expected AM and PM Traffic Flows

	Arrivals	Departures	Total
AM	14	8	22
PM	8	14	22
Average movements			**44**

In summary, the trip rate profile for the Proposed Development has been interpreted from first principles and has been sufficiently loaded to reflect a ‘worst-case scenario’. The trip rates are relevant given the type of development and the type of use. The trips found indicate that the level of traffic activity associated with this type of development is small and will correspond to approximately 3% of the L6187capacity, in the vicinity of the site. The figures derived from the first principles analysis are very robust, as a ‘worst case scenario’, the total daily trips expected from the development are 44.

With regard to HGV movements generated by the site, of the 44No. trips associated with the site, 34No. will involve heavy vehicles. Traffic counts indicate that during the AM peak, 11% of traffic exiting Ballyduff South onto the L6187 consisted of HGVs, while no heavy vehicles (0%) turned onto the L2190. Additionally, 43% of traffic exiting the L6187 and the M11, traveling northbound towards Ballyduff South, and 21% of traffic turning right onto the L2190 eastbound were composed of HGVs. The average percentage of HGVs at the junction during the morning peak was estimated to be 4.3% based on the 2024 traffic counts.

During the PM peak, 57% of traffic exiting Ballyduff South onto the L6187 consisted of HGVs, with no heavy vehicles (0%) turning onto the L2190. Furthermore, 25% of traffic on the L2190 turning right onto Ballyduff South consisted of HGVs. The average percentage of HGVs at the junction during the evening peak was estimated to be 4.5% based on the 2024 traffic counts.

Consequently, the additional HGV movements from the site are projected to increase HGV volumes on the junction by ca. 4%.

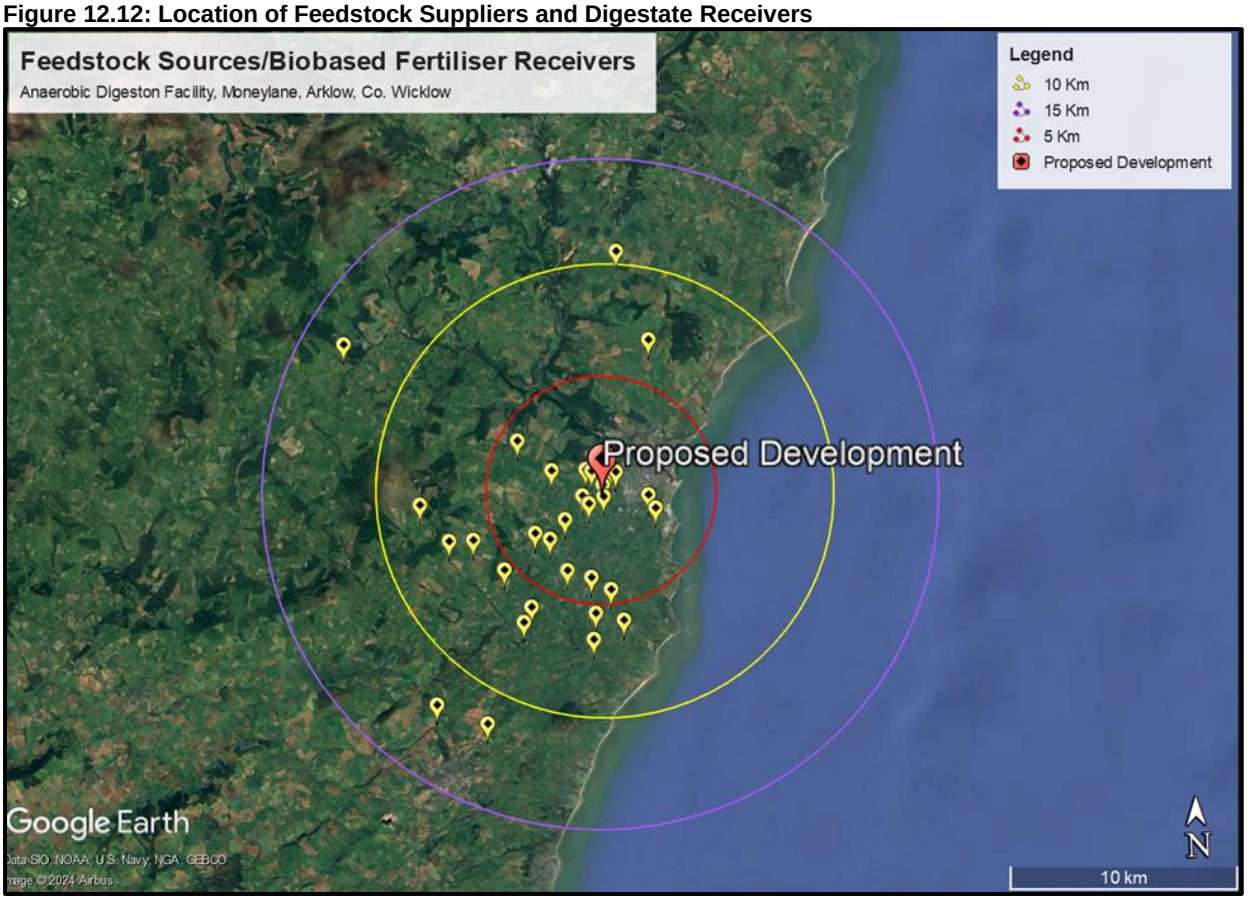
Traffic Distribution

The agricultural manures, slurries and crop-based feedstocks will be sourced from 41

agricultural operators in the area in the vicinity of the site. The geographical spread of feedstock suppliers is shown in **Figure 12.12**, with 92% (38) of these sources located within a 10km radius of the site and 100% (41) within a 15km radius of the site.

As can be seen from the map, the deliveries to and from the site will travel through the extensive road network in the vicinity of the site, composed of the Motorway M11, the Regional Roads R747 and R772 and the local roads L2190, L6187, L2172, L1002, L1006, L1007 and L1008. The roads are suitable to cater for the expected traffic volumes associated with the site.

Figure 12.12: Location of Feedstock Suppliers and Digestate Receivers



Traffic Impact Assessment

The Wicklow County Council Development Plan 2022 – 2028 requires that Traffic and Transport Assessments (TTA) shall be carried out as part of new developments in accordance with the thresholds set out in the 'Design Manual for Urban Roads and Streets' DMURS (DTTA-DHPLG) and the Traffic and Transport Assessment Guidelines (TII 2014).

The document states thresholds to be used as guidance when preparing a TTA, which are in accordance with the TII publication PE-PDV-02045 'Traffic and Transport Assessment Guidelines, published in May 2014.

During the operational phase, the site is projected to generate a total of 44No. vehicle trips per day. In a worst-case scenario, these trips are expected to distribute almost evenly between the

AM and PM peak periods, with *ca*. 22No. vehicles during the morning peak, and *ca*. 22No. out of the 44No, during the evening peak. This results in a maximum 4.2% increase in overall traffic flow during the AM peak and a 5.5% increase during the PM peak—both of which will not exceed the 10% threshold typically necessitating a Traffic and Transport Assessment (TTA).

The results of the TTA assessment are summarised in **Table 12.12**.

Table 12.12: Traffic Management Guidelines Thresholds for Transport Assessments (TII)

Applicable	Threshold for Transport Assessment
No	Traffic to and from the development exceeds 10% of the traffic flow on the adjoining road.
N/A	Traffic to and from the development exceeds 5% of the traffic flow on the adjoining road where congestion exists, or the location is sensitive
N/A	Residential development in excess of 200 dwellings
N/A	Office, education and hospital development in excess of 2,500m^2
N/A	Retail and leisure development in excess of 1,000m^2
N/A	Industrial development in excess of 5,000m^2
N/A	Distribution and warehousing in excess of 10,000m^2

Based on the traffic levels anticipated at the junctions assessed, the impact the operational phase of the proposed anaerobic digestion facility will have on the road network could be calculated, as shown in **Table 12.13**. As can be seen, the Proposed Development will generate approximately 22No. trips in the morning and approximately 22No. trips in the evening period, which is accounted to represent an increase of a maximum of 5.5% in the expected traffic flows in the road network in 2027, the assumed year of the development conclusion.

Table 12.13: Traffic Impact on the Neighbouring Junctions

Junction	2027 Projected Traffic plus committed developments		Traffic from Development to junction		Increase in Traffic		Threshold of 10% Increase	
	AM	PM	AM	PM	AM	PM	AM	PM
L2190/L6187Junction	518	397	22	22	4.2%	5.5%	Below	Below
M11 Junction 21 – Ballynattin Roundabout	1264	950	16	16	1.3%	1.7%	Below	Below
M11 Junction 21 – Arklow Roundabout	1143	1316	7	9	0.6%	0.7%	Below	Below

Consequently, the traffic generated by the Proposed Development does not meet the criteria for producing a full Traffic and Transport Assessment, as it will only add up to 22No. additional trips to the wider road network during both the morning and evening peak - a max. 4.2% and 5.5% increase, respectively, driven primarily by the area's relatively low existing traffic volumes.

Given that the majority of site-related traffic will consist of HGVs, junction modelling has been conducted to assess the impact of the Proposed Development on the existing junction.

Table 12.14 on the following page presents the anticipated average increase in HGV

movements due to the operations of the Proposed Development at the nearest junction to the site, which will be most affected.

Table 12.14: Impact the Proposed Development will have at the L2190/L6187 Junction

Assessment Year	Do-nothing				Do-something			
	HGV %		Total Traffic (Vehicles)		HGV %		Total Traffic (Vehicles)	
	AM	PM	AM	PM	AM	PM	AM	PM
2027, year of development conclusion	4.6%	4.8%	518	397	7.7%	8.9%	540	419
2032, 5 years after conclusion	5%	5.2%	571	443	7.9%	9%	593	465
2042, 15 years after conclusion	5.6%	5.9%	638	504	8.3%	9.5%	660	526

Junction Assessment

Traffic simulation was undertaken at the existing junctions in order to obtain the Ratio of Flow to Capacity (RFC) and the queue levels to determine if the existing junction will cater for the predicted level of traffic by the AD development when it becomes operational.

The **Ratio of Flow to Capacity (RFC)** describes the capacity of each approach to the junction and determines if the junction will cater for the predicted level of traffic. An RFC below 0.85 (85%) implies that an approach road is operating satisfactorily well within capacity; between 0.85 to 1.0 RFC means the approach operates well within capacity but at less optimal efficiency; and an RFC above 1.0 means that demand and capacity are equal and no further traffic can progress through the junction. The queue levels are presented in **Passenger Car Unit (PCU)** and quantify the total number of vehicles queueing on each arm.

Central Sensitivity traffic growth rates for Co. Wicklow, specified in the TII's Publication PE-PAG-02017 of October 2021, were applied to the existing background traffic and were not applied to the Proposed Development, as the development is limited by size.

The capacity assessments were modelled for three different scenarios:

- Base-year: 2025 traffic flows modelled according to traffic counts obtained in December 2024
- Do-nothing: modelled without the intervention of the Proposed Development. For this analysis, the traffic counts were factored up using TII's Central Growth Factor for the design years 2027, 2032 and 2042, the year of development conclusion, 5 and 15 years after conclusion, respectively
- Do-something: the impact of the traffic generated by the Proposed Development was added to the design years 2027, 2032 and 2042. This analysis will enable the comparison with the 'Do-nothing' scenario.

The L2190/L6187 junction was modelled using the TII approved TRL Software *PICADY* for priority junctions for the base year, the proposed year of development conclusion, 5 and 15

years after the development is fully concluded. The results are shown in **Table 12.15**.

Table 12.15: *PICADY* Results for L2190/L6187 Crossroad Junction

		AM		PM	
Analysis	**Stream**	**Queue (PCU)**	**Ratio of Flow to Capacity (RFC)**	**Queue (PCU)**	**Ratio of Flow to Capacity (RFC)**
1 – 2025, base year	B-ACD	0.9	0.47	0.6	0.39
	A-BCD	0	0.00	0	0.01
	D-ABC	0.1	0.06	0	0.03
	C-ABD	0.1	0.06	0	0.02
2 – 2027, do-nothing	B-ACD	1.1	0.50	0.7	0.41
	A-BCD	0	0.00	0	0.01
	D-ABC	0.1	0.06	0	0.04
	C-ABD	0.1	0.07	0	0.02
3 – 2027, do-something	B-ACD	1.2	0.53	0.8	0.43
	A-BCD	0	0.01	0	0.01
	D-ABC	0.1	0.08	0.1	0.07
	C-ABD	0.1	0.07	0	0.02
4 – 2032, do-nothing	B-ACD	1.4	0.57	0.9	0.46
	A-BCD	0	0.01	0	0.01
	D-ABC	0.1	0.07	0.1	0.04
	C-ABD	0.1	0.08	0	0.03
5 – 2032, do-something	B-ACD	1.6	0.60	0.9	0.48
	A-BCD	0	0.01	0	0.01
	D-ABC	0.1	0.09	0.1	0.07
	C-ABD	0.1	0.08	0	0.03
6 – 2042, do-nothing	B-ACD	2	0.66	1.2	0.53
	A-BCD	0	0.01	0	0.01
	D-ABC	0.1	0.09	0.1	0.05
	C-ABD	0.1	0.09	0	0.03
7 – 2042, do-something	B-ACD	2.3	0.69	1.3	0.55
	A-BCD	0	0.01	0	0.01
	D-ABC	0.1	0.11	0.1	0.08
	C-ABD	0.1	0.09	0	0.03

As can be seen from **Table 12.15**, the **L2190/ L6187 Priority (Knockenrahan/Ballyduff South) junction** is currently operating well below the theoretical capacity of 0.85, with a maximum Ratio of Flow to Capacity (RFC) of 0.47 (47%) in Arm B (L6187 – South), during the morning peak.

The junction is projected to operate well within capacity in the long term. In Analysis 7, for the projected year 2042 with the traffic generated by the proposal, the junction still operates comfortably within its capacity, with a maximum RFC value of 0.69 (69%) during the AM peak in Arm B. No significant queue formation is anticipated for every scenario assessed. Therefore, it can be considered that the junction will function comfortably below capacity for all design years with the inclusion of the Proposed Development.
The M11 Junction 21 was modelled using the TII approved TRL Software *ARCADY* for

roundabouts for the base year, the proposed year of development conclusion, 5 and 15 years after the development is fully concluded. The junction is designed as a dumbbell junction, which consists of two roundabouts situated on either side of the M11 motorway, Ballynattin Roundabout situated to the northwest of the motorway and Arklow Roundabout positioned to the southeast. These roundabouts are connected by a short stretch of road, allowing traffic from different directions to enter or exit the motorway smoothly.

The results are presented in **Table 12.16** for Ballynattin and **Table 12.17** for Arklow Roundabout.

Table 12.16: *ARCADY* Results for M11 Junction 21 – Ballynattin Roundabout

		AM		PM	
Analysis	**Arm**	**Queue (PCU)**	**Rate Flow Capacity (RFC)**	**Queue (PCU)**	**Rate Flow Capacity (RFC)**
1 – 2025, base traffic	Arm A	0.2	0.15	0.1	0.12
	Arm C	0.3	0.23	0.5	0.30
	Arm D	0.5	0.33	0.2	0.17
	Arm E	0.3	0.22	0.1	0.09
2 – 2027, do-nothing	Arm A	0.2	0.18	0.2	0.13
	Arm C	0.4	0.25	0.6	0.35
	Arm D	0.7	0.40	0.3	0.19
	Arm E	0.4	0.26	0.1	0.10
3 – 2027, do-something	Arm A	0.2	0.18	0.2	0.14
	Arm C	0.4	0.25	0.6	0.35
	Arm D	0.8	0.41	0.3	0.20
	Arm E	0.4	0.26	0.1	0.10
4 – 2032, do-nothing	Arm A	0.3	0.21	0.2	0.15
	Arm C	0.4	0.28	0.7	0.39
	Arm D	0.9	0.45	0.3	0.22
	Arm E	0.5	0.30	0.1	0.11
5 – 2032, do-something	Arm A	0.3	0.21	0.2	0.16
	Arm C	0.4	0.28	0.7	0.39
	Arm D	0.9	0.46	0.3	0.23
	Arm E	0.5	0.30	0.1	0.11
6 – 2042, do-nothing	Arm A	0.3	0.25	0.2	0.18
	Arm C	0.5	0.31	0.8	0.44
	Arm D	1.2	0.52	0.4	0.26
	Arm E	0.6	0.36	0.2	0.13
7 – 2042, do-something	Arm A	0.4	0.26	0.2	0.19
	Arm C	0.5	0.32	0.8	0.44
	Arm D	1.2	0.53	0.4	0.27
	Arm E	0.6	0.37	0.2	0.13

Ballynattin Roundabout is currently operating well below the theoretical capacity of 0.85, with

a maximum Ratio of Flow to Capacity (RFC) of 0.33 (33%) in Arm D (M11 Slip Off). In Analysis 2, with the inclusion of the committed developments mentioned in **Section 12.4.10**, the junction operates with a maximum RFC of 0.40 (40%) also in Arm D during the AM peak. When incorporating the traffic from the proposed development in Analysis 3, there is a minimal increase in RFC of 0.01, resulting in a value of 0.41 (41%) in Arm D during the AM period.

The junction is projected to operate well within capacity in the long term. In Analysis 7 with the additional traffic generated by the proposal, the junction is expected to operate comfortably within capacity during both the AM and PM peak, with a maximum RFC value of 0.53 (53%) in Arm D in the morning and 0.44 (44%) in Arm C (R772 (East) Arklow) in the evening.

Therefore, it can be considered that the junction will function comfortably below capacity for all design years with the inclusion of the Proposed Development.

Table 12.17: *ARCADY* Results for M11 Junction 21 – Arklow Roundabout

		AM		PM	
Analysis	**Arm**	**Queue (PCU)**	**Rate Flow Capacity (RFC)**	**Queue (PCU)**	**Rate Flow Capacity (RFC)**
1 – 2025, base traffic	Arm A	0.3	0.18	0.6	0.37
	Arm B	0.5	0.33	0.9	0.46
	Arm D	0.5	0.32	0.3	0.22
2 – 2027, do-nothing	Arm A	0.3	0.23	0.7	0.40
	Arm B	0.6	0.37	1.4	0.56
	Arm D	0.7	0.40	0.3	0.24
3 – 2027, do-something	Arm A	0.3	0.23	0.7	0.40
	Arm B	0.6	0.37	1.4	0.56
	Arm D	0.7	0.40	0.4	0.25
	Arm A	0.4	0.26	0.9	0.45
4 – 2032, do-nothing	Arm B	0.8	0.41	1.8	0.62
	Arm D	0.9	0.44	0.4	0.27
	Arm A	0.4	0.26	0.9	0.46
5 – 2032, do-something	Arm B	0.8	0.41	1.8	0.63
	Arm D	0.9	0.44	0.4	0.28
	Arm A	0.5	0.30	1.2	0.53
6 – 2042, do-nothing	Arm B	1	0.47	2.6	0.71
	Arm D	1	0.49	0.5	0.31
	Arm A	0.5	0.31	1.2	0.53
7 – 2042, do-something	Arm B	1	0.47	2.7	0.72
	Arm D	1.1	0.49	0.5	0.31
	Arm A	0.3	0.18	0.6	0.37

Arklow Roundabout is currently operating well below the theoretical capacity of 0.85, with a maximum Ratio of Flow to Capacity (RFC) of 0.46 (46%) in Arm B (Arklow R772 (East)). In Analysis 2, with the inclusion of the committed developments mentioned in **Section 12.4.10**,

the junction operates with a maximum RFC of 0.56 (56%) also in Arm B during the PM peak. When incorporating the traffic from the proposed development in Analysis 3, there is a minimal increase in RFC of 0.01, however the maximum RFC value remains at 0.40 (40%).

The junction is projected to operate well within capacity in the long term. In Analysis 7 with the additional traffic generated by the proposal, the junction is expected to operate comfortably within capacity during both the AM and PM peak, with a maximum RFC value of 0.49 (49%) in Arm D (R772) in the morning and 0.72 (72%) in Arm B in the evening. The maximum queue formation observed is 2.7 PCUs, equivalent to approximately 16m during the PM peak.

Therefore, it can be considered that the junction will function comfortably below capacity for all design years with the inclusion of the Proposed Development.

Additionally, traffic levels during the construction phase are expected to be lower than those anticipated during the operational phase and will be evenly distributed throughout the day. Therefore, it can be confidently concluded that both the construction and operational phases will have a **minimal impact** on the junctions' performance. The junctions assessed will maintain a notable level of residual capacity across all design years.

12.6 Mitigation Measures

This section will outline the proposed mitigation measures to reduce, minimise or eliminate the impact generated by the Proposed Development.

12.6.1 Construction

A detailed Traffic Management Plan (TMP), produced in accordance with Chapter 8 of the Traffic Signs Manual, will be finalised and agreed upon with the Local Authority prior to construction works commencement. The following mitigation measures are proposed during the construction phase of the development:

- Appointment of a Construction Project Manager to be responsible for the day-to-day implementation of measures outlined in the TMP;
- Identify routes to be used in the delivery and export of materials to the site and routes that shall be avoided by HGVs;
- Monitor the condition of the roads throughout the construction period and a truck-mounted vacuum mechanical sweeper will be assigned to roads along the haul route as required; and
- Access to the site to be monitored at all times by a banksman who will direct traffic safely into the construction site and facilitate the safe navigation of larger construction vehicles.

12.6.2 Operation

The operational phase of the development will generate a maximum of 44No. vehicle movements day, where 34No. are HGVs and 10No. are private vehicles and vans. The additional vehicles will represent a maximum of 5.5% increase in traffic and will not generate increased queues and delays along the road network in the vicinity of the site, therefore, no mitigation measures are proposed for the operational phase of the development.

12.7 Cumulative Effects

Within the European Commission - Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, dated May 1999, cumulative effects are described as "*impacts that result from incremental changes caused by other development, plans or projects together with the Proposed Development or developments*".

As discussed, the development will result in a relatively low increase in overall traffic flow in and around the proposed facility with a maximum average increase in HGV volumes in the road network of 4%, as indicated in **Table 12.14** above. HGV's have a heavy bearing on road networks and inflict the highest damage/ wear to road infrastructure. An increase in HGV's transporting feedstock and digestate through-out the local and regional road network will increase wear and tear on networks not designed to facilitate consistent heavy capacities.

12.8 Residual Impacts

As mentioned in previous sections, the proposed construction and operational phase of the development will generate a minimal impact on the road network in the vicinity of the site. The proposed mitigation measures proposed in **Section 12.6** will also help reduce or eliminate any potential impact associated with the proposal. The proposal, off the L6187 Local Road, close to the L2190 local road, is located in an 80km/h speed limit zone and the narrow road width of the L6187 will not give rise to potential hazards, on the other hand, will reduce traffic speeds and increase road safety benefits.

Queuing of vehicles is not anticipated on the L6187 due to the low number of vehicles predicted to enter the site on a daily basis. The proposal will have no negative impact on the overall road network associated with the proposed construction and operational phase of the site.

Overall, it is assessed that the development will have a **neutral**, **slight** and **long-term effect**.

12.9 Monitoring

The Construction Environmental Management Plan (CEMP) and Environmental Operating Plan (EOP) will include provision for the monitoring of construction and operational related traffic flows.

12.10 Summary of Significant Effects

This Traffic and Transport Assessment report was conducted to accompany the planning application for the proposed Anaerobic Digestion (AD) facility in the townlands of Moneylane, Arklow, Co. Wicklow.

The internal road network has been designed to provide a safe and efficient circulatory system that reduces the potential for conflicting movements within the site. The internal layout will ensure that employee traffic and delivery traffic must be segregated as much as possible. All signage and safety measures possible will be implemented to ensure maximum safety on the site.

The methodology applied in this assessment have been agreed upon with Wicklow County

ORS

Council. The existing priority junction that will be utilised for accessing or leaving the site was then subjected to capacity analysis to examine the potential effect the Proposed Development will have on the existing road network. Automated Junction Turning Counts (JTC) were carried out on Tuesday 10th December 2024 at the aforementioned junction formed by the L2190, and the L6187, in the vicinity of the proposed site to obtain current traffic levels on the road network. It was observed that a total Annual Average Daily Traffic (AADT) is 3,823 PCUs/day in the vicinity of the site, at the under-assessment crossroads.

In addition, based on their extensive experience, ORS proactively included traffic counts an analysis of the M11 Junction 21. This junction is expected to accommodate the majority of traffic generated by the Proposed Development. Its inclusion ensures a comprehensive assessment, confirming that the development will not adversely impact the surrounding road network.

The Proposed Development is expected to generate a maximum of 44No. vehicles a day during the operational phase, associated with the delivery of feedstock, the export of digestate and from private cars, therefore, it will increase to a maximum of 5.5% of the existing traffic along the L6187 during AM and PM peak periods, which is below the threshold set in Wicklow County Development Plan to produce a detailed Traffic and Transport Assessment (TTA). It also should be noted that this represents a very conservative scenario.

However, since the majority of the traffic associated with the site will be composed of Heavy Goods Vehicles (HGV), the junctions were modelled in detail, using the TII approved software *PICADY* (Priority Intersection Capacity and Delay) and *ARCADY* (Assessment of Roundabout Capacity and Delay) for the AM and PM peak periods.

It is summarised that the development will have a ***neutral, slight*** and ***long-term effect***.

12.11 Statement of Significance

From a transportation planning perspective, the Proposed Development will not adversely impact the functionality of the M11 Motorway and the L2190 and L6187 Local Roads in the vicinity of the proposed site and the junctions will function well below capacity for all future design years. There will be no queues or delays formed along both roads due to the Proposed Development, therefore, it can be concluded that the Proposed Development will not result in a detrimental effect on the existing road network in the vicinity of the site.

Where potential effects have been identified, mitigation measures have been provided which if implemented reduce the effect of significance***.*** The mitigation steps are presented in **Section 12.6**.

Overall, it is assessed that the development will have a ***neutral, slight*** and ***long-term effect***.