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Awel y Môr Offshore Wind Farm

Category 6: Environmental Statement

Volume 5, Annex 9.2: Trip Generation and Distribution Calculations

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www.awelymor.cymru

RWE Renewables UK Swindon Limited

Windmill Hill Business Park
Whitehill Way
Swindon
Wiltshire SN5 6PB
T +44 (0)8456 720 090
www.rwe.com

Registered office:
RWE Renewables UK
Swindon Limited
Windmill Hill Business Park
Whitehill Way
Swindon



AWEL Y MÔR OFFSHORE WIND FARM

Volume 5, Annex 9.2 Trip Generation and Distribution

Prepared for: GoBe Consultants (on behalf of RWE Renewables UK)



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1.0 Introduction

This report is a technical annex (Volume 5, Annex 9.2) of Volume 3, Chapter 9: Traffic and Transport (application ref: 6.3.10), of the Environmental Statement (ES) accompanying the DCO application.

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The report sets out the trip generation and distribution (parameters and results) associated with the Maximum Design Scenario (MDS) used for the assessment of the likely significant effects associated with the onshore elements of the Awel y Môr Offshore Wind Farm (AyM OWF) on traffic and transport.

The MDS sets out the maximum design parameters of the combined project assets that result in the greatest potential for change in relation to each impact assessed.

2.0 Source of data

The project design consultant has derived the trip generation forecasts for the construction phase of AyM across the anticipated 18 month construction programme (see Figure 2 of Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.1)).

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The data and details of how the construction traffic forecasts have been calculated is provided in **Appendix A** and includes a breakdown of the anticipated daily number of two-way (arrivals and departures), employee and Heavy Goods Vehicle (HGV) movements per month, for the Route Sections that comprise the onshore ECC, the Substation and the unlicensed works associated with the existing National Grid (NG) Bodelwyddan Substation.

It should be noted there are some differences between the sections derived for the trip generation and the onshore ECC Route Sections, as set out below:

- Route Section A Intertidal (Mean Low Water to Mean High Water) = Beach Access
- Route Section B Intertidal (Mean High Water) to B5119 = Landfall Horizontal Directional Drilling (HDD);
- Route Section C B5119 Dyserth Road to A525 = Section 1;
- Route Section D A525 to A547 Abergele Road = Section 2 and Section 3 to the north of the A547 Abergele Road;
- Route Section E A547 to A55 = Section 3 to the south of the A547 Abergele Road;
- Route Section F A55 to B5381 = Section 4; and
- Route Section G South of B5381 = 400kV works

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3.0 Maximum design scenario (MDS)

3.1 Construction route summary

The proposed construction access routes have been identified in Volume 5, Annex 9.1 Baseline Technical Report (application ref: 6.5.9.1). **Table 3-1** below summarises the highway links that are envisaged would be used for access to and from each of the construction accesses associated with each of the onshore ECC Route Section.

Table 3-1 Summary of construction access highway links by route section

Highway Link	Route S	ection					
	A	В	С	D	Е	F	Substation, G and Existing National Grid Substation
A548 Rhyl Coast Road/ Victoria Road West	√						
B5119		✓	✓				
A525 North of A547	✓	√	✓	✓			
A547 East of Rhuddlan		√	✓				
A547 eastern Rhuddlan bypass		√	✓				
A525 western Rhuddlan bypass	✓	✓	✓	✓			
A547 Abergele Road				✓	✓		
A525 South of A547	✓	✓		✓	✓		
Bodelwyddan Road					✓		
B5381 Glascoed Road							✓
Ffordd William Morgan						✓	✓
A55 Junction 26					✓	✓	✓
A55 Junction 27	✓	✓	✓	✓	✓		

For the majority of the construction accesses, there is one proposed construction access route to and from the A55, with the exception of construction accesses that would be located on the B5119 (Accesses D and E). Two route options for construction access routes between the A55 and both of these access routes are being considered for the assessment of construction traffic associated with AyM in Volume 3, Chapter 9:

- A55 Junction 27, A525 via Rhyl, B5119 (west of the onshore ECC); and
- A55 Junction 27, A525, A547, B5119 (east of the onshore ECC)

For the construction accesses that would be located off the B5381 Glascoed Road (Accesses Q) it has been assumed that construction vehicle routing would be via Junction 26 of the A55, rather than via Junction 27 of the

A55, given this is a more suitable route for HGVs.

3.2 Total trip generation

The minimum, maximum and average daily vehicle movements associated with this scenario (based on total vehicle movements, HGV movements or employee vehicle movements) are shown in **Table 3-2.**

Table 3-2 Trip generation summary

Route	Total vehicles			HGVs			Employee vehicles		
Section	Min	Max	Average	Min	Max	Average	Min	Max	Average
А	0	73	12	0	22	3	0	51	9
В	0	80	50	0	33	14	0	60	36
С	93	159	127	9	59	40	51	128	87
D	0	121	74	0	42	17	0	104	57
E	81	194	141	14	97	52	51	137	89
F	0	106	43	0	26	9	0	88	34
G	0	130	67	0	44	18	0	102	49
Existing National Grid substation	2	84	34	2	22	8	0	62	26
Substation	119	119	119	89	89	89	30	30	30
Total	295	1,066	667	114	434	250	132	762	417

It should be noted that whilst the maximum number of vehicles per day are identified for each Section in **Table 3-2**, these vehicle movements would not necessarily occur at the same time, as the maximum values are for different months in some cases.

3.3 Trip generation and distribution parameters

3.3.1 Trip generation parameters

In order to undertake an assessment of the likely significant effects of the MDS identified for the construction phase of AyM, a number of trip generation and distribution parameters have been identified, which have been discussed with Expert Topic Group (ETG) members as part of the Evidence Plan process. The assumptions have been informed by the evolving project design parameters and are considered suitable in order to provide a robust but reasonable forecast of the likely traffic effects of AyM during construction.

The key trip generation parameters are:

- Core working hours 07:00 to 19:00, which doesn't take into account some 24 hour working that may be required for HDD works:
 - o 80% arriving and departing outside of the peak hours (most likely arriving before 07:00 and

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leaving after 19:00);

- o 20% arriving and departing during the peak hours (likely to be much less);
- Core HGV deliveries 07:00 to 19:00;
- The two-way HGV movements assumes a vehicle arriving at a construction access and TCC, uploading and departing at the same access;
- The HGV movements along each of the haul roads is not known and is not specifically assessed as part of Volume 3, Chapter 9. The AyM construction traffic data that has been provided to inform Volume 3, Chapter 3.10: Noise and Vibration (application ref: 6.3.10), for the assessment of receptors along the haul roads, it has assumed that all HGVs arriving would also use the haul roads;
- Car occupancy 2 people per car, which is considered a conservative estimate, given core working hours
 will be the same for the majority of workers, who may frequent the same local accommodation and wish
 share travel costs; and
- The two-way employee movements assumes a vehicle arriving at a construction access and TCC in the morning and leaving in the evening, as per the assumptions above.

3.3.2 Traffic distribution parameters

In terms of the traffic distribution parameters, all HGV traffic associated with the construction phase of AyM is assumed to arrive from and depart to the A55, at Junction 26 or Junction 27. For the purposes of the assessment HGVs and construction worker vehicles will use the same routes to ensure a robust assessment along these highway links and junctions. However, in reality, depending on the proportion of local workers and the availability of local accommodation for workers who do not live in the local area, the distribution of construction worker vehicles is likely to be spread across the wider network, reducing the level of likely impact across the local highway network.

As there are some ECC Route Sections that could be accessed from different highway links that form the core construction access routes, some assumptions have been made regarding the proportion of HGV and construction worker vehicles to and from each of these access locations as follows:

Route Section A

100% via A548 Victoria Road West (Access A)/ A548 Rhyl Coast Road (Access B1 and B2)

Route Section B¹

• 100% via the B5119 (Access D)

Route Section C

Maximum 50% via the B5119 (Access E); and

¹ There would be some infrequent minor vehicle movements associated with Access B1, C1, C2 and C3 for HDD monitoring; however, these are not included in the assessment.

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Maximum 100% via the A547 (Access G)

Route Section D

- Maximum 100% via the A525 (Access H); and
- Negligible number of vehicles associated with Access I

Route Section E

- Maximum 50% via the A525 north of Junction 27 of the A55 comprising:
 - Maximum 50% via the A547 Abergele Road (Access J);
 - o Maximum 50% via Bodelwyddan Road (Access L); and
- Maximum 50% via the A55 Junction 26 (Access O1 or O2)

Route Section F

- Maximum 100% via the minor road south of the A55 at Junction 26; and
- Maximum 100% via the B5381 Glascoed Road (Access Q)

Proposed Substation

100% via the B5381 Glascoed Road (Access Q)

Route Section G

- Maximum 100% via the B5381 Glascoed Road (Access Q); and
- Maximum 100% via the B5381 Glascoed Road (Access S)

Existing National Grid substation

100% B5381 via the B5381 Glascoed Road (Access S)

3.3.3 Trip generation assessment scenarios

A number of trip generation and distribution scenarios are set out below, which consider the greatest potential for change on each of the highway links listed in **Section 3.1**, based on the assumptions set out above.

Assessment scenario 1a/1b

Assessment 1a/ 1b considers the peak total vehicle movements associated with Route Section A (Month 7) with any vehicles for ECC Route Sections B or C using the B5119 assumed to use:

- a) the route via Rhyl; or
- b) The route via the A547

The distribution parameters are:

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- ECC Route Section A 100% via A548 Rhyl Coast Road / Victoria Road West;
- ECC Route Section B 100% to Access D (B5119)
- ECC Route Section C 50% to Access G (A547) and 50% to Access E (B5119);
- ECC Route Section D 100% to Access H (A525);
- ECC Route Section E 50% to Access J (A547 Abergele Road) and 50% to Access O1 or O2 (Private road access from Junction 26 of the A55);
- ECC Route Section F 100% to Access Q (B5381 Glascoed Road);
- Proposed substation 100% to Access Q (B5381 Glascoed Road);
- ECC Route Section G 100% to Access Q (B5381 Glascoed Road); and
- Existing National Grid substation 100% to Access S (B5381 Glascoed Road)

Assessment scenario 2a/2b

Assessment 2a/ 2b considers the peak total vehicle movements associated with Route Sections B and C (Month 6) with:

- a) 100% of ECC Route Section B vehicles to Access D (B5119), 50% of Route Section C vehicles to Access E (B5119) and 50% of Route Section C vehicles to Access G (A547); and
- b) 100% of ECC Route Section B vehicles to Access D (B5119) and 100% of ECC Route Section C vehicles to Access G (A547)

The distribution parameters for all other Route Sections, including the proposed substation and existing National Grid substation are the same as assessment scenario 1a.

Assessment scenario 3

Assessment 3 considers the peak total vehicle movements associated with Route Section D (Month 6) with:

100% to Access H (A525)

The distribution parameters for all other ECC Route Sections, including the proposed substation and existing National Grid substation are the same as assessment scenario 1a.

Assessment scenario 4a/4b/4c

Assessment 4a/ 4b considers the peak total vehicle movements associated with ECC Route Section E (Month 7). Assessment 4c considers the peak HGV movements associated with Route Section E (Month 1) with:

- a) 50% to Access J (A547 Abergele Road) and 50% to Access O1 or O2 (Private road accessed off the A55 Junction 26);
- b) 50% to Access L (Bodelwyddan Road) and 50% to Access O1 or O2 (Private road accessed off the A55

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Junction 26); and

c) 50% to Access L (Bodelwyddan Road) and 50% to Access O1 or O2 (Private road accessed off the A55 Junction 26)

The distribution parameters for all other ECC Route Sections including the proposed substation and existing National Grid substation are the same as assessment scenario 1a.

Assessment scenario 5

Assessment 5 considers the peak total vehicle movements associated with Route Section F (Month 12) with:

100% to Access Q (Glascoed Road)

The distribution parameters for all other Route Sections, including the existing National Grid substation are the same as assessment scenario 1a.

Assessment scenario 6

Assessment 6 considers the peak total vehicle movements associated with the proposed Substation (any month) with:

100% to Access Q (B5381 Glascoed Road

The distribution parameters for all other Route Sections, including existing National Grid substation are the same as assessment scenario 1a.

Assessment Scenario 7a/7b

Assessment 7a/ 7b considers the peak total vehicle movements associated with ECC Route Section G and the existing National Grid Substation (Month 10) with:

- a) 100% of ECC Route Section G vehicles to Access Q (B5381 Glascoed Road), 100% of the existing National Grid substation vehicle to Access S (B5381 Glascoed Road); and
- b) 100% of ECC Route Section G vehicles to Access S (B5381 Glascoed Road), 100% of existing National Grid substation vehicles to Access S (B5381 Glascoed Road);

The distribution parameters for all other Route Sections including the proposed substation are the same as assessment scenario 1a.

3.3.4 Trip generation per highway link

The daily two-way vehicular trip generation (total, LGV and HGV) on each highway link for assessment scenarios 1 to 7 is provided in **Appendix C.** A summary of the maximum two-way trip generation (from assessment scenarios 1 to 7) on each highway link is shown in **Table 3-3** below:

Table 3-3 Maximum two-way daily vehicle movements on each highway link

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Highway Link	Maximum two-way ²			
	HGV	LGV	Total	
A548 Rhyl Coast Road/ Victoria Road West	22	26	48	
B5519 east of Rhyl	57	53	107	
B5119 west of the onshore ECC	57	53	107	
B5119 east of the onshore ECC	57	53	107	
A547 east of Rhuddlan	33	41	74	
A547 eastern Rhuddlan bypass	83	85	159	
A525 north of Rhuddlan	66	86	148	
A525 western Rhuddlan bypass	92	126	203	
A547 Abergele Road	39	57	96	
Bodelwyddan Road	49	34	63	
A525 south of Bodelwyddan Road	130	167	292	
B5381 Glascoed Road	143	119	262	
Ffordd William Morgan	146	130	276	

Using the assumptions set out in **Section 3.3.1** the MDS, the forecast total morning (08:00 to 09:00) and evening (16:00 to 17:00) peak hour trip generation associated with each individual highway link (distinct, not occurring simultaneously) is shown in **Table 3-4.**

Table 3-4 Maximum two-way peak hour vehicle movements on each highway link

Highway Link	Maximum two-way				
	HGV	LGV	Total		
A548 Rhyl Coast Road/ Victoria Road West	2	3	4		
B5519 east of Rhyl	5	5	10		

² The maximum HGV, LGV and total vehicles may be from different assessment scenarios for the same link

Highway Link	Maximum two-way			
	HGV	LGV	Total	
B5119 west of the onshore ECC	5	5	10	
B5119 east of the onshore ECC	5	5	10	
A547 east of Rhuddlan	3	4	7	
A547 eastern Rhuddlan bypass	7	9	15	
A525 north of Rhuddlan	5	9	14	
A525 western Rhuddlan bypass	8	13	20	
A547 Abergele Road	3	6	9	
Bodelwyddan Road	4	3	7	
A525 south of Bodelwyddan Road	11	17	28	
B5381 Glascoed Road	12	12	24	
Ffordd William Morgan	12	13	25	

As **Table 3-4** shows, even with a robust estimate of 20% of construction workers arriving at or departing from the construction sites during highway peak hours, the maximum number of two-way vehicle movements on any highway link is 28 during peak hours (on the A525 south of Bodelwyddan Road), which is less than the 30 typically used as a threshold for the consideration for the requirement for a capacity assessment at a junction.

APPENDIX A

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Trip Generation Data – ECC Route Sections

Awel y Môr **Offshore Wind Farm**

Issue 13.3

Onshore Transport

Project Key Summary Inforr	Comments - Entire Tab			
Wind Turbine Capacity	Small		Large	Source of all data on this tab is:
Max Rotor Diameter (m)	250		306	
				Ecodoc: 003915374-03 which
				1
Maximum Quantity of WTGs Installed	50		34	Substation transport data is on the Onshore Substation tab
Project Area (km2)		78	•	1

Key

Cable Route Section	Start	End	Access
Beach access		N/A	Either Garford Road or Ferguson Avenue
Landfall HDD	TJB South of railway	N/A	Dyserth Road
Section 1	TJB South of railway	HDD Exit for A525 Crossing	Either Dyserth Road, A525 or both
Section 2	HDD Exit for A525 Crossing	HDD Exit for River Clwyd	A525
Section 3	HDD Exit for River Clwyd	HDD Exit for A55 Crossing	A547, Bodelwyddan Road, A55 or a combination
	HDD Exit for A55 Crossing	AYM Project Substation	Glascoed Road (AyM substation entrance) or
Section 4			unnamed road to North of AyM substation or both
	AYM Project Substation	NG Substation	Glascoed Road:
400kV Route			Either AyM substation entrance or NG substation entrance
Unlicensed Works at	NG Substation	NG Substation	Glascoed Road:
Bodelwyddan Substation			Either AyM substation entrance or NG substation entrance

Transport Metrics

Average Total Two-Way Vehicle Movements Per Day Including miscellaneous allowances

Bodelwyddan Substation

Total

31 21 Beach Access (see note) 137 Landfall HDD Section 1 151 184 144 Section 2 Section 3 Section 4 400kV Works Unlicensed Works at

Overall	Minimum	Maximum	Average
Beach Access (see note)	0	73	12
Landfall HDD	0	80	50
Section 1	93	159	127
Section 2	0	121	74
Section 3	81	194	141
Section 4	0	106	43
400kV Works	0	130	67
Unlicensed Works at			
Bodelwyddan Substation	2	84	34
Whole works (excluding substation	n)		548

 (Note - Programme of works shown is indicative only. Timing of unlicensed works dependant on Project Substation and NG Substation Programme etc)

 Total
 346
 404
 436
 631
 596
 642
 558
 601
 557
 696
 588
 594

Average Total Two-Way HGV Movements Per Day

Including miscellaneous allowances 33 29 17 Beach Access (see note) Landfall HDD Section 1 15 17 16 14 57 97 30 46 95 29 62 46 Section 2 32 28 27 19 Section 3 Section 4 400kV Works Unlicensed Works at (Note - Programme of works shown is indicative only. Timing of unlicensed works dependant on Project Substation and NG Substation Programme etc.)
 178
 192
 139
 197
 166
 194
 160
 147
 132
 130
 188 195 173 191 197 Total

Overall	Minimum	Maximum	Average
Beach Access (see note)	0	22	3
Landfall HDD	0	33	14
Section 1	9	59	40
Section 2	0	42	17
Section 3	14	97	52
Section 4	0	26	9
400kV Works	0	44	18
Unlicensed Works at			
Bodelwyddan Substation	2	22	8
Whole works (excluding substate	tion)		161

Average Total Employees Two Way Movements per day

		Months																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Beach Access (see note)	0	0	0	0	0	0	51	20	20	0	0	0	20	20	38	0	0	0
Landfall HDD	0	0	53	51	51	49	27	27	27	42	25	0	29	55	47	47	60	60
Section 1	53	53	82	93	104	102	110	106	115	128	110	104	84	88	69	55	51	51
Section 2	0	44	62	77	77	104	77	60	51	82	58	82	66	64	60	47	18	0
Section 3	53	53	51	80	102	124	137	113	124	115	126	115	95	88	69	55	51	51
Section 4	0	0	0	62	47	0	0	55	22	75	75	88	58	64	60	0	0	0
400kV Works	0	0	0	49	49	47	47	71	86	102	97	86	66	66	66	47	0	0
Unlicensed Works at Bodelwyddan Substation	62	62	49	22	0	22	0	22	0	22	0	22	0	22	0	47	60	58
(Note - Programme of works show	n is indica	tive only. T	iming of u	nlicensed	works dep	endant on	Project Su	bstation a	nd NG Sub	station Pro	ogramme e	etc)						
Total	168	212	297	434	430	448	398	454	425	566	491	497	398	447	371	298	240	220

Overall	Minimum	Maximum	Average
Beach Access (see note)	0	51	9
Landfall HDD	0	60	36
Section 1	51	128	87
Section 2	0	104	57
Section 3	51	137	89
Section 4	0	88	34
400kV Works	0	102	49
Unlicensed Works at			
Bodelwyddan Substation	0	62	26
Whole works (excluding substation	on)		387

APPENDIX B

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Trip Generation Data – Substation

Substation transport metrics

Substation Construction - maximum vehicle movements

Parameter	Base Value	Comments	Reference
Total movements - Civil main works	86.33	e.g. 25,900 over 60weeks	Request ID Gobe#86
(AADT)	80.33	This is a naturally conservative value, dominated by	Ecodoc: 003753846-06
Total movements - M&E equipment	1.33	e.g. 150 over 45weeks	Request ID Gobe#86
deliveries (AADT)	1.55		Ecodoc: 003753846-06
Total movements - Abnormal load	4 for transformers	2 Transformers on 20-24 axle frame trailers	Request ID Gobe#86
deliveries	8 for oversized indivisible plant	Oversized indivisible plant such as shunt reactors and	Ecodoc: 003753846-06
	8 for 20 Axle frame trailers	and special order vehicles (>44t and oversize)	
	16 for special order vehicles		
Total movements - light	20-30	Vans, 4x4 and cars	Request ID Gobe#86
vehicles/cars (AADT)	20-30		Ecodoc: 003753846-06
Total movements - hazardous waste	0.7	e.g. 200 over 60 weeks	Request ID Gobe#86
(AADT)	0.7	8x8 rigid skip/tipper lorry	Ecodoc: 003753846-06
Total movements - non hazardous	0.4	e.g. 116 over 60 weeks	Request ID Gobe#86
waste (AADT)	0.4	8x8 rigid skip lorry	Ecodoc: 003753846-06

APPENDIX 03

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Assessment Scenarios Trip Generation

Trip Generation Assessment Scenario 1a and 1b

Total flows at each section including Substation works

Route Section	Total V	'ehicles			HGVs					
			Average			Average			Average	
Beach Access (A)	0	73	12	0	22	3	0	51	9	
Landfall HDD (B)	0	80	50	0	33	14	0	60	36	
Section 1 (C)	93	159	127	9	59	40	51	128	87	
Section 2 (D north of River Clwyd)	0	121	74	0	42	17	0	104	57	
Section 3 (E / D south of River Clwyd)	81	194	141	14	97	52	51	137	89	
Section 4 (F)	0	106	43	0	26	9	0	88	34	
400 kv works (G)	0	130	67	0	44	18	0	102	49	
Bodelwyddan Substation	2	84	34	2	22	8	0	62	26	
Substation	119	119	119	89	89	89	30	30	30	

Beach Access (A)	73	51	26	22
Landfall HDD (B)	60	27	14	33
Section 1 (C)	138	110	55	28
Section 2 (D north of River Clwyd)	91	77	39	14
Section 3 (E / D south of River Clwyd)	194	137	69	57
Section 4 (F)	0	0	0	0
400 kv works (G)	73	47	24	26
Bodelwyddan Substation	2	0	0	2
Substation	119	30	30	89

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%	50.0%						
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			50.0%						
A525 north of Rhuddlan	100%	100.0%	50.0%	100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100.0%								
B5119 West									
B5119 East		100.0%	50.0%						
A547 East of Rhuddlan		100.0%	50.0%						
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100.0%			100.0%					
A525 North of A547	100.0%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100.0%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

a - via rulyi												
	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total		
A548 Rhyl Coast Road	22	0	0	0	0	0	0	0	0	22		
B5119 West	0	33	0	0	0	0	0	0	0	33		
B5119 East	0	0	0	0	0	0	0	0	0	0		
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0		
A547 at Access H	0	0	0	0	0	0	0	0	0	0		
A525 north of Rhuddlan	22	33	0	14	0	0	0	0	0	69		
A525 North of A547	22	33	0	14	0	0	0	0	0	69		
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29		
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0		
A525 south of	22	33	0	14	29	0	0	0	0	98		
B5381 East of Access O	0	0	0	0	0	0	26	0	89	115		
Ffordd William Morgan	0	0	0	0	0	0	26	2	89	117		

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	22	0	0	0	0	0	0	0	0	22
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	33	0	0	0	0	0	0	0	33
A547 East of Rhuddlan	0	33	0	0	0	0	0	0	0	33
A547 at Access H	0	33	0	0	0	0	0	0	0	33
A525 north of Rhuddlan	22	0	0	14	0	0	0	0	0	36
A525 North of A547	22	33	0	14	0	0	0	0	0	69
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	22	33	0	14	29	0	0	0	0	98
B5381 East of Access O	0	0	0	0	0	0	26	0	89	115
Ffordd William Morgan	0	0	0	0	0	0	26	2	89	117

1a - via Rhyl										
	Beach Access	Landfall HDD	Section1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	26	0	0	0	0	0	0	0	0	26
B5119 West	0	14	28	0	0	0	0	0	0	41
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	28	0	0	0	0	0	0	28
A525 north of Rhuddlan	26	14	28	39	0	0	0	0	0	105
A525 North of A547	26	14	55	39	0	0	0	0	0	133
A547 Abergele Road	0	0	0	0	34	0	0	0	0	34
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	26	14	55	39	34	0	0	0	0	167
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	0	30	54

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	26	0	0	0	0	0	0	0	0	26
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	14	28	0	0	0	0	0	0	41
A547 East of Rhuddlan	0	14	28	0	0	0	0	0	0	41
A547 at Access H	0	14	55	0	0	0	0	0	0	69
A525 north of Rhuddlan	26	0	0	39	0	0	0	0	0	64
A525 North of A547	26	14	55	39	0	0	0	0	0	133
A547 Abergele Road	0	0	0	0	34	0	0	0	0	34
	0	0	0	0	0	0	0	0	0	0
A525 south of	26	14	55	39	34	0	0	0	0	167
	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	0	30	54

Trip Generation Assessment Scenario 2a and 2b

Total flows at each section including Substation works

andfall HDD (B) ection 1 (C) ection 2 (D north of River Clwyd) ection 3 (E / D south of River Clwyd) ection 4 (F) 00 kv works (G)							Employees			
	Min									
Beach Access (A)	0	73	12	0	22	3	0	51	9	
Landfall HDD (B)	0	80	50	0	33	14	0	60	36	
Section 1 (C)	93	159	127	9	59	40	51	128	87	
Section 2 (D north of River Clwyd)	0	121	74	0	42	17	0	104	57	
Section 3 (E / D south of River Clwyd)	81	194	141	14	97	52	51	137	89	
Section 4 (F)	0	106	43	0	26	9	0	88	34	
400 kv works (G)	0	130	67	0	44	18	0	102	49	
Bodelwyddan Substation	2	84	34	2	22	8	0	62	26	
Substation	119	119	119	89	89	89	30	30	30	

Beach Access (A)	0	0	0	0
Landfall HDD (B)	80	49	25	31
Section 1 (C)	154	102	51	52
Section 2 (D north of River Clwyd)	121	104	52	17
Section 3 (E / D south of River Clwyd)	184	124	62	60
Section 4 (F)	3	0	0	3
400 kv works (G)	75	47	24	28
Bodelwyddan Substation	25	22	11	3
Substation	119	30	30	89

a via Phy

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%	50.0%						
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			50.0%						
A525 north of Rhuddlan	100%	100.0%	50.0%	100.0%					
A525 North of A547	100%		100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

a via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%	50.0%						
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%		50.0%	100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

b via Rhyl

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%							
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			100.0%						
A525 north of Rhuddlan	100%	100.0%		100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

2b via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%							
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%			100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

HGVS

2a via Rhyl										
	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	31	26	0	0	0	0	0	0	57
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	26	0	0	0	0	0	0	26
A525 north of Rhuddlan	0	31	26	17	0	0	0	0	0	74
A525 North of A547	0	0	52	17	0	0	0	0	0	69
A547 Abergele Road	0	0	0	0	30	0	0	0	0	30
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	0	31	52	17	30	0	0	0	0	130
B5381 East of Access O	0	0	0	0	0	3	28	0	89	120
Ffordd William Morgan	n	n	n	n	n	3	28	3	89	123

la via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	31	26	0	0	0	0	0	0	57
A547 East of Rhuddlan	0	31	0	0	0	0	0	0	0	31
A547 at Access H	0	31	52	0	0	0	0	0	0	83
A525 north of Rhuddlan	0	0	26	17	0	0	0	0	0	43
A525 North of A547	0	31	52	17	0	0	0	0	0	100
A547 Abergele Road	0	0	0	0	30	0	0	0	0	30
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
AS2S south of Rodolwooddan Road	0	31	52	17	30	0	0	0	0	130
B5381 East of Access O	0	0	0	0	0	3	28	0	89	120
Ffordd William Morgan	0	0	0	0	0	3	28	3	89	123

2b via Rhyl

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	31	0	0	0	0	0	0	0	31
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	52	0	0	0	0	0	0	52
A525 north of Rhuddlan	0	31	0	17	0	0	0	0	0	48
A525 North of A547	0	31	52	17	0	0	0	0	0	100
A547 Abergele Road	0	0	0	0	30	0	0	0	0	30
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of Rodelworldon Road	0	31	52	17	30	0	0	0	0	130
B5381 East of Access O	0	0	0	0	0	3	28	0	89	120
Ffordd William Morgan	n	n	n	n	n	3	78	3	89	173

2b via A54

	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	31	0	0	0	0	0	0	0	31
A547 East of Rhuddlan	0	31	0	0	0	0	0	0	0	31
A547 at Access H	0	31	52	0	0	0	0	0	0	83
A525 north of Rhuddlan	0	0	0	17	0	0	0	0	0	17
A525 North of A547	0	31	52	17	0	0	0	0	0	100
A547 Abergele Road	0	0	0	0	30	0	0	0	0	30
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of Rodelyandan Road	0	31	52	17	30	0	0	0	0	130
B5381 East of Access O	0	0	0	0	0	3	28	0	89	120
Ffordd William Morgan	0	0	0	0	0	3	28	3	89	123

ployee Vehicles

2a via Rhyl

Za via Kliyi										
	Beach Access	Landfall HDD	Section1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	25	26	0	0	0	0	0	0	50
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	26	0	0	0	0	0	0	26
A525 north of Rhuddlan	0	25	26	52	0	0	0	0	0	102
A525 North of A547	0	0	51	52	0	0	0	0	0	103
A547 Abergele Road	0	0	0	0	31	0	0	0	0	31
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	0	25	51	52	31	0	0	0	0	159
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	11	30	65

a via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	25	26	0	0	0	0	0	0	50
A547 East of Rhuddlan	0	25	0	0	0	0	0	0	0	25
A547 at Access H	0	25	51	0	0	0	0	0	0	76
A525 north of Rhuddlan	0	0	26	52	0	0	0	0	0	78
A525 North of A547	0	25	51	52	0	0	0	0	0	128
A547 Abergele Road	0	0	0	0	31	0	0	0	0	31
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of Rodelanddan Road	0	25	51	52	31	0	0	0	0	159
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	11	30	65

b via Rhyl

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	25	0	0	0	0	0	0	0	25
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	51	0	0	0	0	0	0	51
A525 north of Rhuddlan	0	25	0	52	0	0	0	0	0	77
A547 Abergele Road	0	25	51	52	0	0	0	0	0	128
A525 South of A547	0	0	0	0	31	0	0	0	0	31
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of Rodelworlden Road	0	25	51	52	31	0	0	0	0	159
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	n	n	n	n	n	n	24	11	30	65

2b via A547

	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	25	0	0	0	0	0	0	0	25
A547 East of Rhuddlan	0	25	0	0	0	0	0	0	0	25
A547 at Access H	0	25	51	0	0	0	0	0	0	76
A525 north of Rhuddlan	0	0	0	52	0	0	0	0	0	52
A547 Abergele Road	0	25	51	52	0	0	0	0	0	128
A525 South of A547	0	0	0	0	31	0	0	0	0	31
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of Rodelweddan Road	0	25	51	52	31	0	0	0	0	159
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	11	30	65

Trip Generation Assessment Scenario 3

Total flows at each section including Substation works

Route Section							Employees			
Beach Access (A)	0	73	12	0	22	3	0	51	9	
Landfall HDD (B)	0	80	50	0	33	14	0	60	36	
Section 1 (C)	93	159	127	9	59	40	51	128	87	
Section 2 (D north of River Clwyd)	0	121	74	0	42	17	0	104	57	
Section 3 (E / D south of River Clwyd)	81	194	141	14	97	52	51	137	89	
Section 4 (F)	0	106	43	0	26	9	0	88	34	
400 kv works (G)	0	130	67	0	44	18	0	102	49	
Bodelwyddan Substation	2	84	34	2	22	8	0	62	26	
Substation	119	119	119	89	89	89	30	30	30	

Beach Access (A)	0	0	0	0
Landfall HDD (B)	80	49	25	31
Section 1 (C)	154	102	51	52
Section 2 (D north of River Clwyd)	121	104	52	17
Section 3 (E / D south of River Clwyd)	184	124	62	60
Section 4 (F)	3	0	0	3
400 kv works (G)	75	47	24	28
Bodelwyddan Substation	25	22	11	3
Substation	119	30	30	89

3 - via Rhyl

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%	50.0%						
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			50.0%						
A525 north of Rhuddlan	100%	100.0%	50.0%	100.0%					
A525 North of A547	100%		100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

3 - via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%	50.0%						
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%			100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

HGV

3 - via Rhy

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	31	26	0	0	0	0	0	0	57
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	26	0	0	0	0	0	0	26
A525 north of Rhuddlan	0	31	26	17	0	0	0	0	0	74
A525 North of A547	0	0	52	17	0	0	0	0	0	69
A547 Abergele Road	0	0	0	0	30	0	0	0	0	30
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of Rodolwoddan Road	0	31	52	17	30	0	0	0	0	130
B5381 East of Access O	0	0	0	0	0	3	28	0	89	120
Ffordd William Morgan	0	0	0	0	0	3	28	3	89	123

3 - via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	31	26	0	0	0	0	0	0	57
A547 East of Rhuddlan	0	31	0	0	0	0	0	0	0	31
A547 at Access H	0	31	52	0	0	0	0	0	0	83
A525 north of Rhuddlan	0	0	0	17	0	0	0	0	0	17
A525 North of A547	0	31	52	17	0	0	0	0	0	100
A547 Abergele Road	0	0	0	0	30	0	0	0	0	30
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of	0	31	52	17	30	0	0	0	0	130
B5381 East of Access O	0	0	0	0	0	3	28	0	89	120
Ffordd William Morgan	0	0	0	0	0	3	28	3	89	123

mployee Vehicles

3 - via Rhyl

3 - via Rhyl										
	Beach Access	Landfall HDD	Section1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	25	26	0	0	0	0	0	0	50
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	26	0	0	0	0	0	0	26
A525 north of Rhuddlan	0	25	26	52	0	0	0	0	0	102
A525 North of A547	0	0	51	52	0	0	0	0	0	103
A547 Abergele Road	0	0	0	0	31	0	0	0	0	31
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	0	25	51	52	31	0	0	0	0	159
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	11	30	65

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tot
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	25	26	0	0	0	0	0	0	50
A547 East of Rhuddlan	0	25	0	0	0	0	0	0	0	25
A547 at Access H	0	25	51	0	0	0	0	0	0	76
A525 north of Rhuddlan	0	0	0	52	0	0	0	0	0	52
A525 North of A547	0	25	51	52	0	0	0	0	0	128
A547 Abergele Road	0	0	0	0	31	0	0	0	0	31
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of Rodolunddan Road	0	25	51	52	31	0	0	0	0	159
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	11	30	65

Trip Generation Assessment Scenario 4a and 4b

Total flows at each section including Substation works

Route Section	Total V	ehicles			HGVs		Employees			
Route Section										
Beach Access (A)	0	73	12	0	22	3	0	51	9	
Landfall HDD (B)	0	80	50	0	33	14	0	60	36	
Section 1 (C)	93	159	127	9	59	40	51	128	87	
Section 2 (D north of River Clwyd)	0	121	74	0	42	17	0	104	57	
Section 3 (E / D south of River Clwyd)	81	194	141	14	97	52	51	137	89	
Section 4 (F)	0	106	43	0	26	9	0	88	34	
400 kv works (G)	0	130	67	0	44	18	0	102	49	
Bodelwyddan Substation	2	84	34	2	22	8	0	62	26	
Substation	119	119	119	89	89	89	30	30	30	

Route Section				
Beach Access (A)	73	51	26	22
Landfall HDD (B)	60	27	14	33
Section 1 (C)	138	110	55	28
Section 2 (D north of River Clwyd)	91	77	39	14
Section 3 (E / D south of River Clwyd)	194	137	69	57
Section 4 (F)	0	0	0	0
400 kv works (G)	73	47	24	26
Bodelwyddan Substation	2	0	0	2
Substation	119	30	30	89

4a via Rhyl

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%	50.0%						
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			50.0%						
A525 north of Rhuddlan	100%	100.0%	50.0%	100.0%					
A525 North of A547	100%		100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%	50.0%						
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%		50.0%	100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%							
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			100.0%						
A525 north of Rhuddlan	100%	100.0%		100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road									
Bodelwyddan Road					50.0%				
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%							
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%			100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road									
Bodelwyddan Road					50.0%				
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	22	0	0	0	0	0	0	0	0	22
B5119 West	0	33	14	0	0	0	0	0	0	47
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	14	0	0	0	0	0	0	14
A525 north of Rhuddlan	22	33	14	14	0	0	0	0	0	83
A525 North of A547	22	0	28	14	0	0	0	0	0	64
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of Rodelwarddan Road	22	33	28	14	29	0	0	0	0	126
	0	0	0	0	0	0	26	0	89	115
Ffordd William Morgan	0	0	0	0	0	0	26	2	89	117

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	22	0	0	0	0	0	0	0	0	22
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	33	14	0	0	0	0	0	0	47
A547 East of Rhuddlan	0	33	0	0	0	0	0	0	0	33
A547 at Access H	0	33	28	0	0	0	0	0	0	61
A525 north of Rhuddlan	22	0	14	14	0	0	0	0	0	50
A525 North of A547	22	33	28	14	0	0	0	0	0	97
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of	22	33	28	14	29	0	0	0	0	126
B5381 East of Access O	0	0	0	0	0	0	26	0	89	115
Ffordd William Morgan	0	0	0	0	0	0	26	2	89	117

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	22	0	0	0	0	0	0	0	0	22
B5119 West	0	33	0	0	0	0	0	0	0	33
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	28	0	0	0	0	0	0	28
A525 north of Rhuddlan	22	33	0	14	0	0	0	0	0	69
A525 North of A547	22	33	28	14	0	0	0	0	0	97
A547 Abergele Road	0	0	0	0	0	0	0	0	0	0
Bodelwyddan Road	0	0	0	0	29	0	0	0	0	29
A525 south of Rodelworldan Road	22	33	28	14	29	0	0	0	0	126
B5381 East of Access O	0	0	0	0	0	0	26	0	89	115
Ffordd William Morgan	n	n	n	n	n	n	26	2	89	117

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation	Total
A548 Rhyl Coast Road	22	0	0	0	0	0	0	0	0	22
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	33	0	0	0	0	0	0	0	33
A547 East of Rhuddlan	0	33	0	0	0	0	0	0	0	33
A547 at Access H	0	33	28	0	0	0	0	0	0	61
A525 north of Rhuddlan	22	0	0	14	0	0	0	0	0	36
A525 North of A547	22	33	28	14	0	0	0	0	0	97
A547 Abergele Road	0	0	0	0	0	0	0	0	0	0
Bodelwyddan Road	0	0	0	0	29	0	0	0	0	29
AS2S South of Rodolworldon Road	22	33	28	14	29	0	0	0	0	126
B5381 East of Access O	0	0	0	0	0	0	26	0	89	115
Ffordd William Morgan	0	0	0	0	0	0	26	2	89	117

4a via Rhyl										
	Beach Access	Landfall HDD	Section1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	26	0	0	0	0	0	0	0	0	26
B5119 West	0	14	28	0	0	0	0	0	0	41
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	28	0	0	0	0	0	0	28
A525 north of Rhuddlan	26	14	28	39	0	0	0	0	0	105
A525 North of A547	26	0	55	39	0	0	0	0	0	119
A547 Abergele Road	0	0	0	0	34	0	0	0	0	34
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of	26	14	55	39	34	0	0	0	0	167
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	n	n	n	n	n	n	24	n	30	54

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	26	0	0	0	0	0	0	0	0	26
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	14	28	0	0	0	0	0	0	41
A547 East of Rhuddlan	0	14	0	0	0	0	0	0	0	14
A547 at Access H	0	14	55	0	0	0	0	0	0	69
A525 north of Rhuddlan	26	0	28	39	0	0	0	0	0	92
A525 North of A547	26	14	55	39	0	0	0	0	0	133
A547 Abergele Road	0	0	0	0	34	0	0	0	0	34
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of	26	14	55	39	34	0	0	0	0	167
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	0	30	54

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	26	0	0	0	0	0	0	0	0	26
B5119 West	0	14	0	0	0	0	0	0	0	14
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	55	0	0	0	0	0	0	55
A525 north of Rhuddlan	26	14	0	39	0	0	0	0	0	78
A547 Abergele Road	26	14	55	39	0	0	0	0	0	133
A525 South of A547	0	0	0	0	0	0	0	0	0	0
Bodelwyddan Road	0	0	0	0	34	0	0	0	0	34
A525 south of Rodelwordson Road	26	14	55	39	34	0	0	0	0	167
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	0	30	54

	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Tota
A548 Rhyl Coast Road	26	0	0	0	0	0	0	0	0	26
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	14	0	0	0	0	0	0	0	14
A547 East of Rhuddlan	0	14	0	0	0	0	0	0	0	14
A547 at Access H	0	14	55	0	0	0	0	0	0	69
A525 north of Rhuddlan	26	0	0	39	0	0	0	0	0	64
A547 Abergele Road	26	14	55	39	0	0	0	0	0	133
A525 South of A547	0	0	0	0	0	0	0	0	0	0
Bodelwyddan Road	0	0	0	0	34	0	0	0	0	34
A525 South of Rodolunddan Road	26	14	55	39	34	0	0	0	0	167
B5381 East of Access O	0	0	0	0	0	0	24	0	30	54
Ffordd William Morgan	0	0	0	0	0	0	24	0	30	54

Trip Generation Assessment Scenario 4c

Total flows at each section including Substation works

Route Section										
noute section										
Beach Access (A)	0	73	12	0	22	3	0	51	9	
Landfall HDD (B)	0	80	50	0	33	14	0	60	36	
Section 1 (C)	93	159	127	9	59	40	51	128	87	
Section 2 (D north of River Clwyd)	0	121	74	0	42	17	0	104	57	
Section 3 (E / D south of River Clwyd)	81	194	141	14	97	52	51	137	89	
Section 4 (F)	0	106	43	0	26	9	0	88	34	
400 kv works (G)	0	130	67	0	44	18	0	102	49	
Bodelwyddan Substation	2	84	34	2	22	8	0	62	26	
Substation	119	119	119	89	89	89	30	30	30	

Route Section				
Beach Access (A)	0	0	0	0
Landfall HDD (B)	0	0	0	0
Section 1 (C)	112	53	27	59
Section 2 (D north of River Clwyd)	0	0	0	0
Section 3 (E / D south of River Clwyd)	150	53	27	97
Section 4 (F)	0	0	0	0
400 kv works (G)	0	0	0	0
Bodelwyddan Substation	84	62	31	22
Substation	119	30	30	89

5 - via Rhyl

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%	50.0%						
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			50.0%						
A525 north of Rhuddlan	100%	100.0%	50.0%	100.0%					
A525 North of A547	100%		100.0%	100.0%					
A547 Abergele Road									
Bodelwyddan Road					50.0%				
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

5 - via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%	50.0%						
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%			100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road									
Bodelwyddan Road					50.0%				
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	30	0	0	0	0	0	0	30
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	30	0	0	0	0	0	0	30
A525 north of Rhuddlan	0	0	30	0	0	0	0	0	0	30
A525 North of A547	0	0	59	0	0	0	0	0	0	59
A547 Abergele Road	0	0	0	0	0	0	0	0	0	0
Bodelwyddan Road	0	0	0	0	49	0	0	0	0	49
A525 south of Rodolworldon Road	0	0	59	0	49	0	0	0	0	108
B5381 East of Access O	0	0	0	0	0	0	0	0	89	89
Ffordd William Morgan	0	0	0	0	0	0	0	22	89	111

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	0	30	0	0	0	0	0	0	30
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	59	0	0	0	0	0	0	59
A525 north of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A525 North of A547	0	0	59	0	0	0	0	0	0	59
A547 Abergele Road	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	49	0	0	0	0	49
A525 South of Rodolwoddan Road	0	0	59	0	49	0	0	0	0	108
B5381 East of Access O	0	0	0	0	0	0	0	0	89	89
Ffordd William Morgan	0	0	0	0	0	0	0	22	89	111

5 - via Rhyl						5 - via Rhyl												
	Beach Access	Landfall HDD	Section1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota								
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0								
B5119 West	0	0	13	0	0	0	0	0	0	13								
B5119 East	0	0	0	0	0	0	0	0	0	0								
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0								
A547 at Access H	0	0	13	0	0	0	0	0	0	13								
A525 north of Rhuddlan	0	0	13	0	0	0	0	0	0	13								
A525 North of A547	0	0	27	0	0	0	0	0	0	27								
A547 Abergele Road	0	0	0	0	0	0	0	0	0	0								
Bodelwyddan Road	0	0	0	0	13	0	0	0	0	13								
A525 South of	0	0	27	0	13	0	0	0	0	40								
B5381 East of Access O	0	0	0	0	0	0	0	0	30	30								
Ffordd William Morgan	0	0	0	0	0	0	0	31	30	61								

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	0	13	0	0	0	0	0	0	13
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	27	0	0	0	0	0	0	27
A525 north of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A525 North of A547	0	0	27	0	0	0	0	0	0	27
A547 Abergele Road	0	0	0	0	0	0	0	0	0	0
Bodelwyddan Road	0	0	0	0	13	0	0	0	0	13
A525 SOUTH OF Rodelanddan Road	0	0	27	0	13	0	0	0	0	40
B5381 East of Access O	0	0	0	0	0	0	0	0	30	30
Ffordd William Morgan	0	0	0	0	0	0	0	31	30	61

Trip Generation Assessment Scenario 5

Total flows at each section including Substation works

Route Section	Total V									
	Min									
Beach Access (A)	0	73	12	0	22	3	0	51	9	
Landfall HDD (B)	0	80	50	0	33	14	0	60	36	
Section 1 (C)	93	159	127	9	59	40	51	128	87	
Section 2 (D north of River Clwyd)	0	121	74	0	42	17	0	104	57	
Section 3 (E / D south of River Clwyd)	81	194	141	14	97	52	51	137	89	
Section 4 (F)	0	106	43	0	26	9	0	88	34	
400 kv works (G)	0	130	67	0	44	18	0	102	49	
Bodelwyddan Substation	2	84	34	2	22	8	0	62	26	
Substation	119	119	119	89	89	89	30	30	30	

Beach Access (A)	0	0	0	0
Landfall HDD (B)	2	0	0	2
Section 1 (C)	127	104	52	23
Section 2 (D north of River Clwyd)	92	82	41	10
Section 3 (E / D south of River Clwyd)	144	115	58	29
Section 4 (F)	106	88	44	18
400 kv works (G)	98	86	43	12
Bodelwyddan Substation	25	22	11	3
Substation	119	30	30	89

5 - via Rhyl

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%	50.0%						
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			50.0%						
A525 north of Rhuddlan	100%	100.0%	50.0%	100.0%					
A525 North of A547	100%		100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

5 - via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%	50.0%						
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%			100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

HGV

5 - via Rhy

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	2	12	0	0	0	0	0	0	14
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	12	0	0	0	0	0	0	12
A525 north of Rhuddlan	0	2	12	10	0	0	0	0	0	24
A525 North of A547	0	0	23	10	0	0	0	0	0	33
A547 Abergele Road	0	0	0	0	15	0	0	0	0	15
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of Rodolworldon Road	0	2	23	10	15	0	0	0	0	50
B5381 East of Access O	0	0	0	0	0	18	12	0	89	119
Ffordd William Morgan	0	0	0	0	0	18	12	3	89	122

5 - via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	2	12	0	0	0	0	0	0	14
A547 East of Rhuddlan	0	2	0	0	0	0	0	0	0	2
A547 at Access H	0	2	23	0	0	0	0	0	0	25
A525 north of Rhuddlan	0	0	0	10	0	0	0	0	0	10
A525 North of A547	0	2	23	10	0	0	0	0	0	35
A547 Abergele Road	0	0	0	0	15	0	0	0	0	15
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of Redebunden Road	0	2	23	10	15	0	0	0	0	50
B5381 East of Access O	0	0	0	0	0	18	12	0	89	119
Ffordd William Morgan	0	0	0	0	0	18	12	3	89	122

ployee Vehicles

via Rhyl

5 - via Knyi	- Via Niiyi												
	Beach Access	Landfall HDD	Section1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota			
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0			
B5119 West	0	0	26	0	0	0	0	0	0	26			
B5119 East	0	0	0	0	0	0	0	0	0	0			
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0			
A547 at Access H	0	0	26	0	0	0	0	0	0	26			
A525 north of Rhuddlan	0	0	26	41	0	0	0	0	0	67			
A525 North of A547	0	0	52	41	0	0	0	0	0	93			
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29			
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0			
A525 South of Rodelworldan Road	0	0	52	41	29	0	0	0	0	122			
B5381 East of Access O	0	0	0	0	0	44	43	0	30	117			
Ffordd William Morgan	0	0	0	0	0	44	43	11	30	128			

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tot		
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0		
B5119 West	0	0	0	0	0	0	0	0	0	0		
B5119 East	0	0	26	0	0	0	0	0	0	26		
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0		
A547 at Access H	0	0	52	0	0	0	0	0	0	52		
A525 north of Rhuddlan	0	0	0	41	0	0	0	0	0	41		
A525 North of A547	0	0	52	41	0	0	0	0	0	93		
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29		
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0		
A525 South of Rodelanddon Road	0	0	52	41	29	0	0	0	0	122		
B5381 East of Access O	0	0	0	0	0	44	43	0	30	117		
Ffordd William Morgan	0	0	0	0	0	44	43	11	30	128		

Trip Generation Assessment Scenario 6

Total flows at each section including Substation works

Route Section	Total V						Employees			
Noute Section	Min									
Beach Access (A)	0	73	12	0	22	3	0	51	9	
Landfall HDD (B)	0	80	50	0	33	14	0	60	36	
Section 1 (C)	93	159	127	9	59	40	51	128	87	
Section 2 (D north of River Clwyd)	0	121	74	0	42	17	0	104	57	
Section 3 (E / D south of River Clwyd)	81	194	141	14	97	52	51	137	89	
Section 4 (F)	0	106	43	0	26	9	0	88	34	
400 kv works (G)	0	130	67	0	44	18	0	102	49	
Bodelwyddan Substation	2	84	34	2	22	8	0	62	26	
Substation	119	119	119	89	89	89	30	30	30	

Route Section				
Beach Access (A)	0	0	0	0
Landfall HDD (B)	50	42	21	8
Section 1 (C)	156	128	64	28
Section 2 (D north of River Clwyd)	92	82	41	10
Section 3 (E / D south of River Clwyd)	142	115	58	27
Section 4 (F)	101	75	38	26
400 kv works (G)	130	102	51	28
Bodelwyddan Substation	25	22	11	3
Substation	119	30	30	89

5 - via Rhyl

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%	50.0%						
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			50.0%						
A525 north of Rhuddlan	100%	100.0%	50.0%	100.0%					
A525 North of A547	100%		100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

5 - via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%	50.0%						
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%			100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

5 - via Rhyl

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	8	14	0	0	0	0	0	0	22
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	14	0	0	0	0	0	0	14
A525 north of Rhuddlan	0	8	14	10	0	0	0	0	0	32
A525 North of A547	0	0	28	10	0	0	0	0	0	38
A547 Abergele Road	0	0	0	0	14	0	0	0	0	14
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of Rodelwardon Road	0	8	28	10	14	0	0	0	0	60
B5381 East of Access O	0	0	0	0	0	26	28	0	89	143
Ffordd William Morgan	0	0	0	0	0	26	28	3	89	146

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total	
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0	
B5119 West	0	0	0	0	0	0	0	0	0	0	
B5119 East	0	8	14	0	0	0	0	0	0	22	
A547 East of Rhuddlan	0	8	0	0	0	0	0	0	0	8	
A547 at Access H	0	8	28	0	0	0	0	0	0	36	
A525 north of Rhuddlan	0	0	0	10	0	0	0	0	0	10	
A525 North of A547	0	8	28	10	0	0	0	0	0	46	
A547 Abergele Road	0	0	0	0	14	0	0	0	0	14	
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0	
A525 South of Rodelanddan Road	0	8	28	10	14	0	0	0	0	60	
B5381 East of Access O	0	0	0	0	0	26	28	0	89	143	
Ffordd William Morgan	0	0	0	0	0	26	28	3	89	146	

5 - VIA KIIYI	- via ruiyi												
	Beach Access	Landfall HDD	Section1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota			
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0			
B5119 West	0	21	32	0	0	0	0	0	0	53			
B5119 East	0	0	0	0	0	0	0	0	0	0			
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0			
A547 at Access H	0	0	32	0	0	0	0	0	0	32			
A525 north of Rhuddlan	0	21	32	41	0	0	0	0	0	94			
A525 North of A547	0	0	64	41	0	0	0	0	0	105			
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29			
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0			
A525 South of	0	21	64	41	29	0	0	0	0	155			
B5381 East of Access O	0	0	0	0	0	38	51	0	30	119			
Ffordd William Morgan	0	0	0	0	0	38	51	11	30	130			

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	21	32	0	0	0	0	0	0	53
A547 East of Rhuddlan	0	21	0	0	0	0	0	0	0	21
A547 at Access H	0	21	64	0	0	0	0	0	0	85
A525 north of Rhuddlan	0	0	0	41	0	0	0	0	0	41
A525 North of A547	0	21	64	41	0	0	0	0	0	126
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
AS25 south of Rodelwarddan Road	0	21	64	41	29	0	0	0	0	155
B5381 East of Access O	0	0	0	0	0	38	51	0	30	119
Ffordd William Morgan	0	0	0	0	0	38	51	11	30	130

Trip Generation Assessment Scenario 7a and 7b

Total flows at each section including Substation works

Route Section	Total V	ehicles			HGVs					
Route Section										
Beach Access (A)	0	73	12	0	22	3	0	51	9	
Landfall HDD (B)	0	80	50	0	33	14	0	60	36	
Section 1 (C)	93	159	127	9	59	40	51	128	87	
Section 2 (D north of River Clwyd)	0	121	74	0	42	17	0	104	57	
Section 3 (E / D south of River Clwyd)	81	194	141	14	97	52	51	137	89	
Section 4 (F)	0	106	43	0	26	9	0	88	34	
400 kv works (G)	0	130	67	0	44	18	0	102	49	
Bodelwyddan Substation	2	84	34	2	22	8	0	62	26	
Substation	119	119	119	89	89	89	30	30	30	

Beach Access (A)	0	0	0	0
Landfall HDD (B)	50	42	21	8
Section 1 (C)	156	128	64	28
Section 2 (D north of River Clwyd)	92	82	41	10
Section 3 (E / D south of River Clwyd)	142	115	58	27
Section 4 (F)	101	75	38	26
400 kv works (G)	130	102	51	28
Bodelwyddan Substation	25	22	11	3
C. barretta		20		

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%	50.0%						
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			50.0%						
A525 north of Rhuddlan	100%	100.0%	50.0%	100.0%					
A525 North of A547	100%		100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

6a via A547

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%							
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%		50.0%	100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O						100.0%	100.0%		100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

ou via illiyi									
	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West		100.0%							
B5119 East									
A547 East of Rhuddlan									
A547 at Access H			100.0%						
A525 north of Rhuddlan	100%	100.0%		100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O									100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation
A548 Rhyl Coast Road	100%								
B5119 West									
B5119 East		100.0%							
A547 East of Rhuddlan		100.0%							
A547 at Access H		100.0%	100.0%						
A525 north of Rhuddlan	100%			100.0%					
A525 North of A547	100%	100.0%	100.0%	100.0%					
A547 Abergele Road					50.0%				
Bodelwyddan Road									
A525 south of Bodelwyddan Road	100%	100.0%	100.0%	100.0%	50.0%				
B5381 East of Access O									100.0%
Ffordd William Morgan						100.0%	100.0%	100.0%	100.0%

6a via Rhyl										
	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	8	14	0	0	0	0	0	0	22
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	14	0	0	0	0	0	0	14
A525 north of Rhuddlan	0	8	14	10	0	0	0	0	0	32
A525 North of A547	0	0	28	10	0	0	0	0	0	38
A547 Abergele Road	0	0	0	0	14	0	0	0	0	14
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of	0	8	28	10	14	0	0	0	0	60
B5381 East of Access O	0	0	0	0	0	26	28	0	89	143
Ffordd William Morgan	0	0	0	0	0	26	28	3	89	146

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	8	0	0	0	0	0	0	0	8
A547 East of Rhuddlan	0	8	0	0	0	0	0	0	0	8
A547 at Access H	0	8	28	0	0	0	0	0	0	36
A525 north of Rhuddlan	0	0	14	10	0	0	0	0	0	24
A525 North of A547	0	8	28	10	0	0	0	0	0	46
A547 Abergele Road	0	0	0	0	14	0	0	0	0	14
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	0	8	28	10	14	0	0	0	0	60
B5381 East of Access O	0	0	0	0	0	26	28	0	89	143
Ffordd William Morgan	0	0	0	0	0	26	28	3	89	146

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	8	0	0	0	0	0	0	0	8
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	28	0	0	0	0	0	0	28
A525 north of Rhuddlan	0	8	0	10	0	0	0	0	0	18
A525 North of A547	0	8	28	10	0	0	0	0	0	46
A547 Abergele Road	0	0	0	0	14	0	0	0	0	14
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of	0	8	28	10	14	0	0	0	0	60
B5381 East of Access O	0	0	0	0	0	0	0	0	89	89
Ffordd William Morgan	0	0	0	0	0	26	28	3	89	146

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	8	0	0	0	0	0	0	0	8
A547 East of Rhuddlan	0	8	0	0	0	0	0	0	0	8
A547 at Access H	0	8	28	0	0	0	0	0	0	36
A525 north of Rhuddlan	0	0	0	10	0	0	0	0	0	10
A525 North of A547	0	8	28	10	0	0	0	0	0	46
A547 Abergele Road	0	0	0	0	14	0	0	0	0	14
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	0	8	28	10	14	0	0	0	0	60
B5381 East of Access O	0	0	0	0	0	0	0	0	89	89
Ffordd William Morgan	0	0	0	0	0	26	28	3	89	146

ia via Rhyl										
	Beach Access	Landfall HDD	Section1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Tota
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	21	32	0	0	0	0	0	0	53
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	32	0	0	0	0	0	0	32
A525 north of Rhuddlan	0	21	32	41	0	0	0	0	0	94
A525 North of A547	0	0	64	41	0	0	0	0	0	105
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	0	21	64	41	29	0	0	0	0	155
B5381 East of Access O	0	0	0	0	0	38	51	0	30	119
Ffordd William Morgan	0	0	0	0	0	38	51	11	30	130

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	21	0	0	0	0	0	0	0	21
A547 East of Rhuddlan	0	21	0	0	0	0	0	0	0	21
A547 at Access H	0	21	64	0	0	0	0	0	0	85
A525 north of Rhuddlan	0	0	32	41	0	0	0	0	0	73
A525 North of A547	0	21	64	41	0	0	0	0	0	126
A547 Abergele Road	0	0	0	0	29	0	0	0	0	29
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	0	21	64	41	29	0	0	0	0	155
B5381 East of Access O	0	0	0	0	0	38	51	0	30	119
Ffordd William Morgan	0	0	0	0	0	38	51	11	30	130

	Beach Access	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Bodelwyddan Substation	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	21	0	0	0	0	0	0	0	21
B5119 East	0	0	0	0	0	0	0	0	0	0
A547 East of Rhuddlan	0	0	0	0	0	0	0	0	0	0
A547 at Access H	0	0	64	0	0	0	0	0	0	64
A525 north of Rhuddlan	0	21	0	41	0	0	0	0	0	62
A547 Abergele Road	0	21	64	41	0	0	0	0	0	126
A525 South of A547	0	0	0	0	29	0	0	0	0	29
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 South of Redelynyddan Road	0	21	64	41	29	0	0	0	0	155
B5381 East of Access O	0	0	0	0	0	0	0	0	30	30
Ffordd William Morgan	0	0	0	0	0	38	51	11	30	130

	Landfall HDD	Section 1	Section 2	Section 3	Section 4	400 kv works	Bodelwyddan Substation	Substation	Total	Total
A548 Rhyl Coast Road	0	0	0	0	0	0	0	0	0	0
B5119 West	0	0	0	0	0	0	0	0	0	0
B5119 East	0	21	0	0	0	0	0	0	0	21
A547 East of Rhuddlan	0	21	0	0	0	0	0	0	0	21
A547 at Access H	0	21	64	0	0	0	0	0	0	85
A525 north of Rhuddlan	0	0	0	41	0	0	0	0	0	41
A547 Abergele Road	0	21	64	41	0	0	0	0	0	126
A525 South of A547	0	0	0	0	29	0	0	0	0	29
Bodelwyddan Road	0	0	0	0	0	0	0	0	0	0
A525 south of	0	21	64	41	29	0	0	0	0	155
B5381 East of Access O	0	0	0	0	0	0	0	0	30	30
Ffordd William Morgan	0	0	0	0	0	38	51	11	30	130

EUROPEAN OFFICES

United Kingdom

AYLESBURY

T: +44 (0)1844 337380 T: +44 (0)203 6915810

LONDON

MAIDSTONE

NEWCASTLE UPON TYNE

NOTTINGHAM

SHEFFIELD

SHREWSBURY

STIRLING

WORCESTER

BELFAST

T: +44 (0)1622 609242 belfast@slrconsulting.com

BRADFORD-ON-AVON

MANCHESTER (Denton) T: +44 (0)161 5498410 T: +44 (0)1225 309400

BRISTOL

MANCHESTER (Media City) T: +44 (0)117 9064280 T: +44 (0)161 8727564

CARDIFF

T: +44 (0)2920 491010 T: +44 (0)191 2611966

CHELMSFORD

T: +44 (0)1245 392170 T: +44 (0)115 9647280

EDINBURGH

T: +44 (0)131 3356830 T: +44 (0)114 2455153

EXETER

T: +44 (0)1392 490152 T: +44 (0)1743 239250

GLASGOW

T: +44 (0)141 3535037 T: +44 (0)1786 239900

GUILDFORD

T: +44 (0)1483 889800 T: +44 (0)1905 751310

Ireland

France

DUBLIN

T: +353 (0)1 296 4667

GRENOBLE

T: +33 (0)4 76 70 93 41





RWE Renewables UK Swindon Limited

Windmill Hill Business Park Whitehill Way Swindon Wiltshire SN5 6PB T +44 (0)8456 720 090

www.rwe.com

Registered office: RWE Renewables UK Swindon Limited Windmill Hill Business Park Whitehill Way Swindon