



National
Qualifications
2019

X733/77/11

Geography

TUESDAY, 28 MAY

9:00 AM – 11:30 AM

Total marks — 50

Attempt ALL questions.

You will receive credit for appropriately labelled sketch maps and diagrams.

You must use the supplementary items and tracing overlays provided for annotation or as a base for diagrams. These resources should be placed inside the front cover of your answer booklet.

You should use the atlas provided.

Write your answers clearly in the answer booklet provided. In the answer booklet you must clearly identify the question number you are attempting.

Use blue or black ink. You may use pencil for the completion of Supplementary item B — tracing overlay.

Before leaving the examination room you must give your answer booklet to the Invigilator; if you do not, you may lose all the marks for this paper.



* X 7 3 3 7 7 1 1 *

Total marks — 50
Attempt ALL questions

Question 1 — Map interpretation

To answer this question you will need to use

- Supplementary item A — Ordnance Survey (OS) Map Extract Liverpool
- Supplementary item B — tracing overlay
- the atlas provided.

You should make detailed use of the whole map extract as well as using your atlas appropriately. You should also carefully read the information in the text box.

A new indoor concert venue is to be built in the Liverpool area to accommodate major concert tours. The existing venue, Echo Arena (343894), was built in 2008 with a seating capacity of 10,000. The new venue would have the potential to seat 20,000 which would equal the capacity of the O2 Arena in London. This venue will form a significant part of the ongoing redevelopment and regeneration of Liverpool. Planning permission would be available for both brownfield and greenfield sites.

- (a) (i) On the tracing overlay (Supplementary item B) draw accurately to scale a suitable site for the venue. The size of the site, including car parking, is to be 250m by 200m. 3
- (ii) Discuss the advantages and disadvantages of your chosen site. 8
- (iii) Explain the impacts the development may have on the surrounding area. 3

- (b) Choose **two** land uses from the list below.

Allerton Golf Course (GR 4186)
Wavertree Technology Park (GR 3890)
National Trail (along the coast from GR 338904 south east to GR 360868)

For each of the chosen land uses, discuss the factors that may have influenced their location. You should use map evidence to support your answer. 6

Question 2 — Gathering and processing techniques

To answer this question you will need to use

- Supplementary item A — Ordnance Survey (OS) Map Extract Liverpool
- Supplementary item C.

'Making travel work for everyone'

As part of Liverpool's Regeneration Programme the city council are preparing to spend £500million on Liverpool's roads to promote the city as a healthy and safe place in which to live, work, invest and study. At the heart of this programme is a bold and ambitious target that by 2025, 10% of all journeys will be made by bicycle. To achieve this target, the council recognises that a high quality environment will need to be created and that this will involve making improvements to the infrastructure and the introduction of new initiatives.

Study the table and map on Supplementary item C.

- (a) A flow-line diagram is being considered for presenting the data shown in the table. Explain how this technique could be used to process the data. You may wish to refer to Diagram 2 in your answer.

4

Merseyside Active Travel Strategy – 'to improve the environment with infrastructure and facilities to create safe route networks for pedestrians and cyclists'.

- (b) In addition to the data shown in Diagram 1, discuss **three** other ways that appropriate data could be gathered in order to plan and prioritise the next stage of Liverpool's transport regeneration programme.

6

[Turn over for next question

Question 3 — Geographical data handling

To answer this question you will need to use

- Supplementary item A — Ordnance Survey (OS) Map Extract Liverpool
- Supplementary item D
- the atlas provided.

In 2015, renewable energy generation was at a record-breaking level and led to a fall of 4% in the UK's annual carbon dioxide emissions. Diagram 1 shows the changes in renewable electricity generation in the UK from 2007 to 2015.

The Burbo Bank Offshore Wind Farm is located on the Burbo Flats in Liverpool Bay, at the entrance to the River Mersey (see Diagrams 2 and 3). Initially 25 wind turbines were built in 2007. Planning permission was granted in 2014 to extend the wind farm and a further 32 wind turbines were added. Each turbine is 195m tall making them amongst the tallest in the world. The wind farm became fully operational in 2017.

- (a) Study Diagram 4.

A polar graph has been used to show the wind speed and direction in Liverpool Bay in number of hours per year.

Describe the patterns shown in the polar graph.

4

- (b) Study Diagrams 4 and 5.

A table has been used to show the expected monthly wind speeds in Liverpool Bay.

Evaluate the effectiveness of the polar graph in comparison with the table in showing wind data.

5

- (c) Study Diagrams 2 and 3.

Discuss the suitability of Burbo Bank for the location of an offshore wind farm.

6

The town of Crosby is located on the coast to the north west of Liverpool (see Diagram 2). Crosby is an affluent area with some expensive housing, where residents have clear views of the Snowdonia Mountains in Wales.

The coastal area around Crosby has natural sand dunes, with nature reserves, which are habitats for red squirrels and bird sanctuaries.

- (d) Suggest potential concerns that may arise should there be future expansion of the Burbo Banks Offshore Wind Farm.

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Question 2(b) Quote is adapted from “Merseyside Active Travel Strategy.”
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National
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2019

X733/77/21

**Geography
Supplementary items**

TUESDAY, 28 MAY

9:00 AM – 11:30 AM

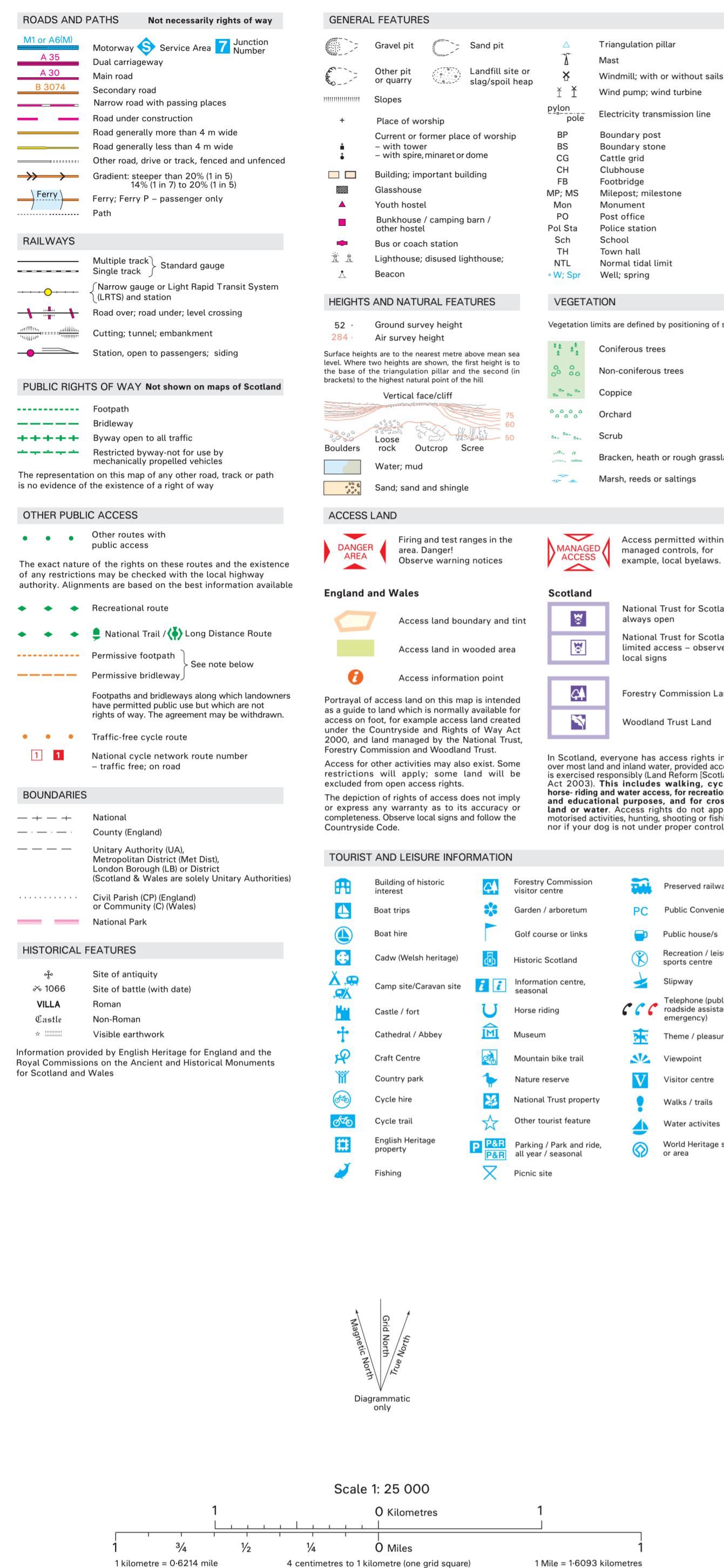
- | | |
|------------|--|
| X733/77/31 | Supplementary item A — OS map |
| X733/77/41 | Supplementary item B — tracing overlay |
| X733/77/51 | Supplementary item C |
| | Supplementary item D |
| | Spare tracing paper |



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National
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2019

X733/77/41

Geography
Supplementary item C
for Q2

TUESDAY, 28 MAY

9:00 AM – 11:30 AM



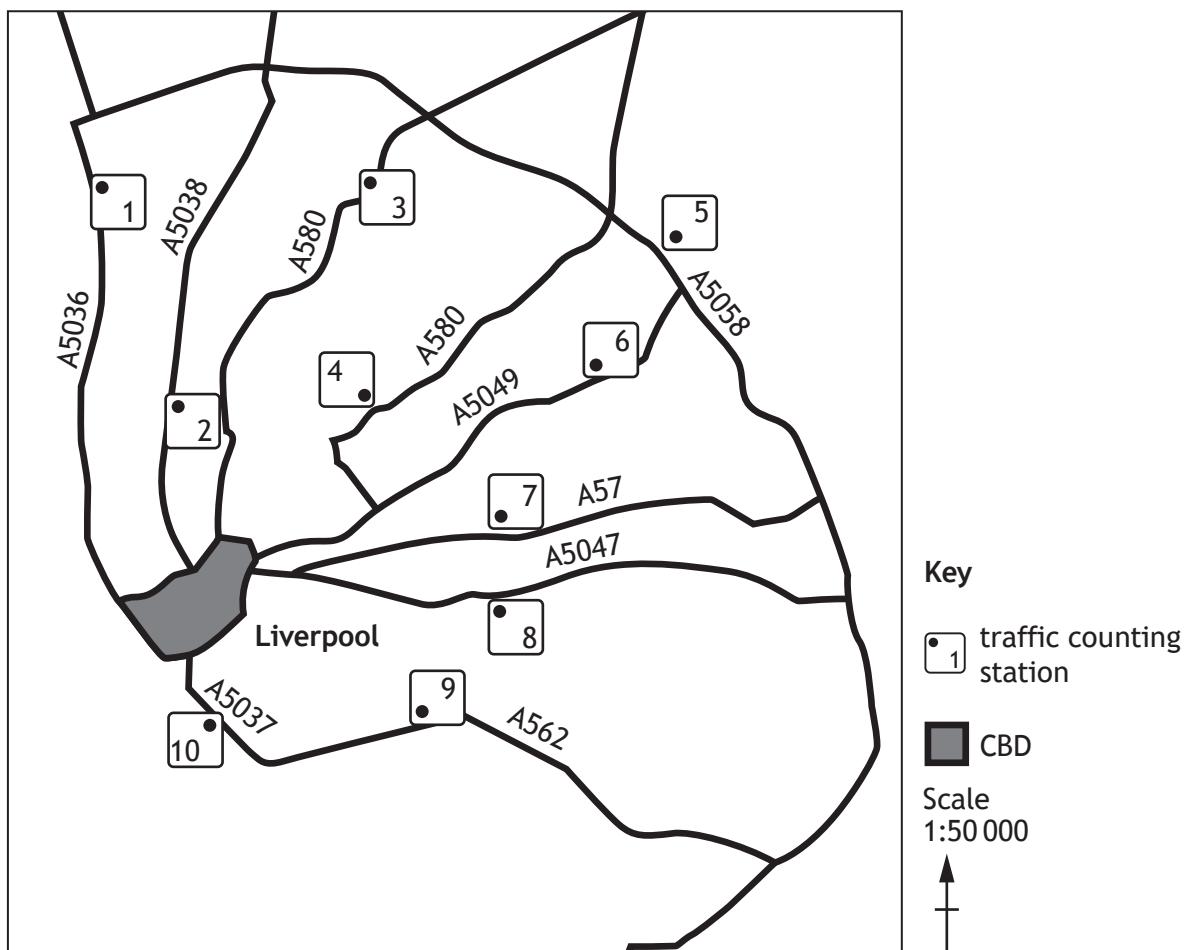
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SUPPLEMENTARY ITEM C

Diagram 1 Cyclists on selected urban routes in Liverpool (average daily number, 2016)

Traffic counting station number	Road number	Average daily number of cyclists travelling to CBD
1	A5036	38
2	A5038	165
3	A580	145
4	A580	48
5	A5058	57
6	A5049	80
7	A57	200
8	A5047 (A5080)	121
9	A562	128
10	A5037	58

Diagram 2 Selected urban roads and traffic counting stations



[END OF SUPPLEMENTARY ITEM C]



National
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**Geography
Supplementary item D
for Q3**

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SUPPLEMENTARY ITEM D

Diagram 1 Changes in renewable electricity generation in the UK from 2007 to 2015

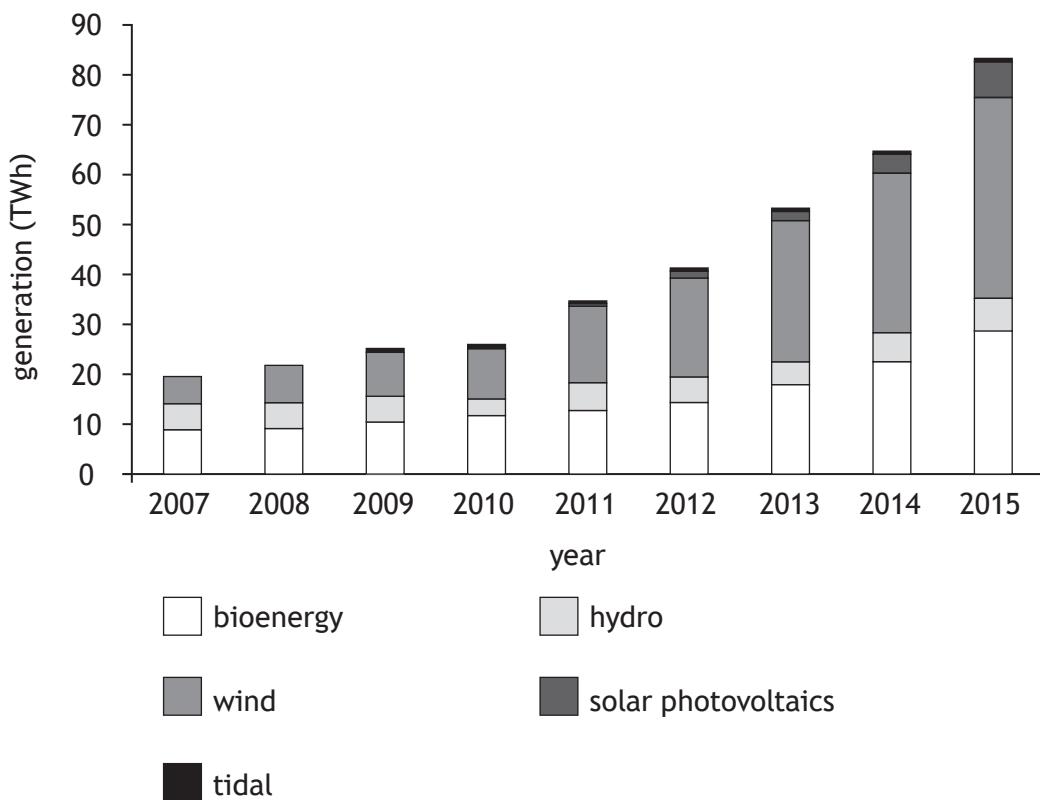
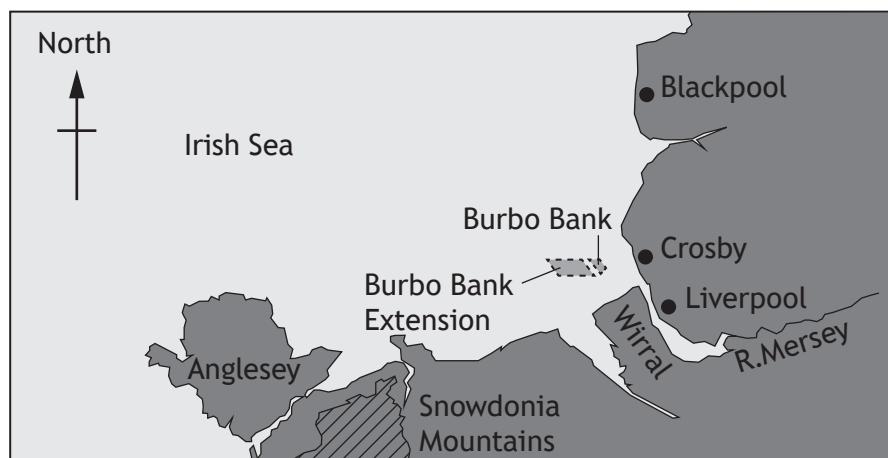


Diagram 2 Location of Burbo Bank Offshore Wind Farm



SUPPLEMENTARY ITEM D (continued)

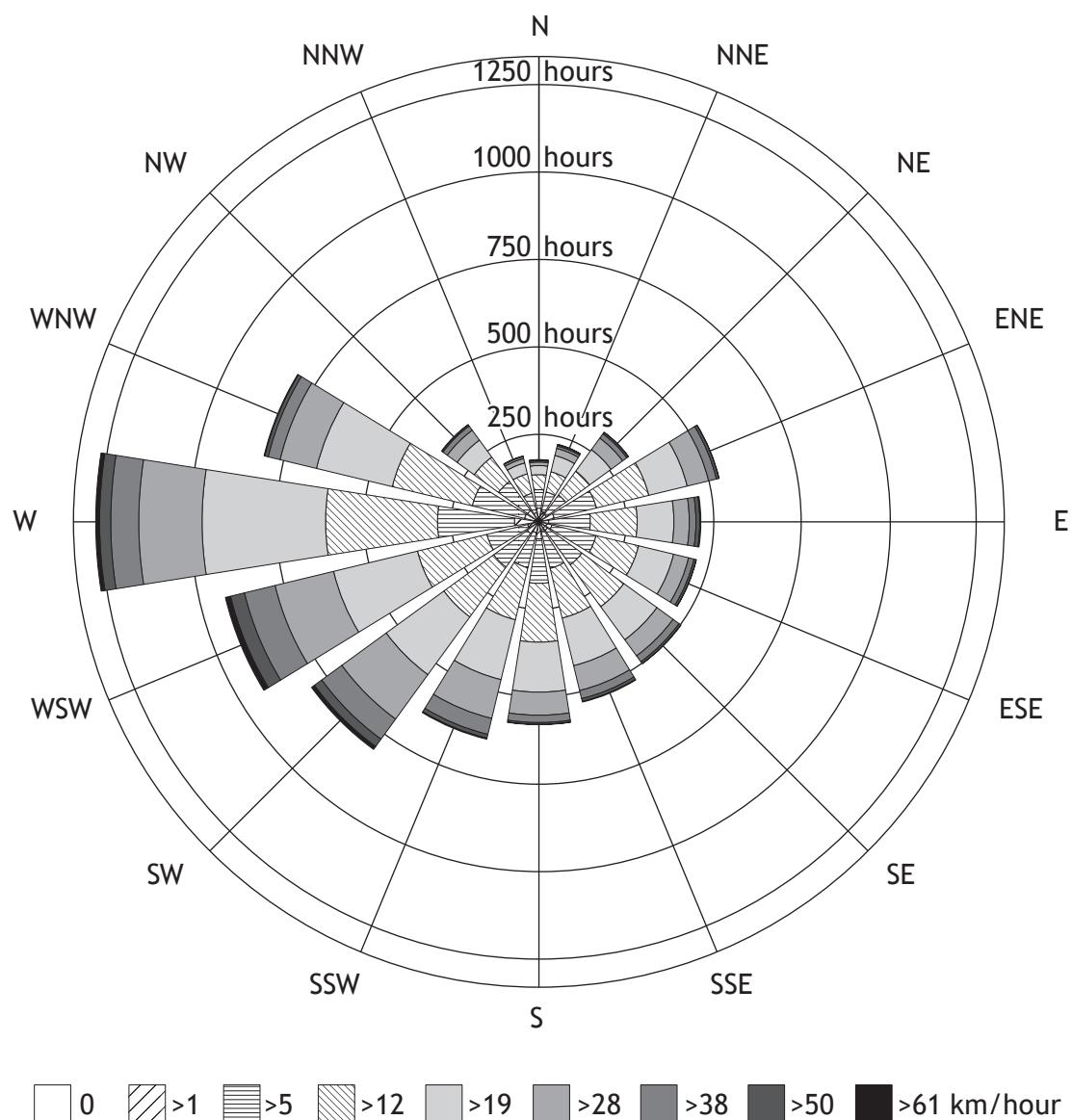
Diagram 3 A view towards the Burbo Bank Offshore Wind Farm (taken from the Wirral coast)



[Turn over for Diagram 4]

SUPPLEMENTARY ITEM D (continued)

Diagram 4 Polar graph to show annual wind speed and direction in Liverpool Bay (number of hours per year)



SUPPLEMENTARY ITEM D (continued)**Diagram 5** A table to show expected monthly wind speeds in Liverpool Bay (km/hour)

Wind speed km/hour	J	F	M	A	M	J	J	A	S	O	N	D
0–1	0	0	0	0	0	0	0	0	0	0	0	0
2–5	0	0	0	0	0	0	0	0	0	0	0	0
6–12	0	1	0	1	1	2	1	1	2	1	1	1
13–19	4	3	4	6	7	8	9	8	8	6	4	4
20–28	6	6	8	10	12	13	14	14	11	9	8	6
29–38	7	6	8	8	8	6	6	7	7	9	8	7
39–50	6	6	6	4	3	1	1	1	2	4	6	7
51–60	5	4	4	1	0	0	0	0	0	2	2	4
61+	3	2	1	0	0	0	0	0	0	0	1	2

[END OF SUPPLEMENTARY ITEM D]

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Diagram 5 https://www.energetskiportal.rs/wp-content/uploads/2016/11/sunset-2469106_1920.jpg