

Table 2.19(i) Annual and seasonal average percentage frequencies of hourly wind speed by wind direction: Newcastle (1982–2011)

Direction / deg.	Percentage frequency for stated range of wind speed / m·s ⁻¹																
	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	20–22	22–24	24–26	26–28	28–30	30–32	All speeds
Annual average																	
Calm/variable	2.84	0.01															2.85
020 to 040	0.80	1.46	1.04	0.44	0.21	0.06	0.04	0.02	0.01	0.01	0.01	0.00					4.10
050 to 070	0.84	1.90	1.20	0.43	0.17	0.07	0.04	0.01	0.00								4.66
080 to 100	1.07	1.73	1.05	0.47	0.23	0.09	0.05	0.01									4.70
110 to 130	1.76	1.93	1.14	0.51	0.19	0.07	0.05	0.02	0.01								5.66
140 to 160	1.94	2.54	0.95	0.40	0.13	0.04	0.01	0.01	0.00								6.02
170 to 190	3.55	4.03	1.47	0.58	0.15	0.03	0.01	0.00									9.81
200 to 220	4.10	3.35	1.92	1.13	0.50	0.17	0.04	0.01	0.00								11.21
230 to 250	2.94	4.33	3.01	1.88	0.91	0.39	0.20	0.05	0.01	0.01	0.00	0.00					13.74
260 to 280	2.64	6.44	5.35	3.33	1.74	0.79	0.38	0.13	0.04	0.01	0.00	0.00					20.85
290 to 310	1.61	2.75	1.31	0.67	0.35	0.14	0.11	0.03	0.01	0.01	0.00						6.98
320 to 340	0.83	1.31	0.96	0.58	0.31	0.16	0.09	0.04	0.01	0.00		0.00					4.29
350 to 010	0.89	1.46	1.21	0.76	0.40	0.20	0.12	0.05	0.03	0.02	0.01	0.00					5.14
All directions	25.80	33.21	20.62	11.18	5.29	2.20	1.13	0.38	0.12	0.06	0.02	0.01					100.00
Spring average																	
Calm/variable	2.81	0.01															2.82
020 to 040	0.98	2.17	1.68	0.77	0.33	0.08	0.05	0.02	0.01	0.01							6.09
050 to 070	1.13	2.82	1.86	0.57	0.22	0.06	0.05	0.01									6.71
080 to 100	1.19	2.00	1.30	0.58	0.26	0.08	0.06	0.02									5.48
110 to 130	2.06	1.99	1.29	0.56	0.22	0.07	0.02										6.20
140 to 160	1.85	2.23	1.10	0.55	0.14	0.05	0.03	0.01	0.00								5.95
170 to 190	2.79	3.31	1.23	0.51	0.11	0.03	0.01										7.97
200 to 220	3.54	2.71	1.74	1.11	0.53	0.16	0.04	0.00	0.00								9.82
230 to 250	2.31	3.48	2.67	1.88	1.07	0.41	0.19	0.03	0.01	0.01							12.03
260 to 280	2.48	5.27	4.38	2.78	1.63	0.77	0.36	0.10	0.03								17.81
290 to 310	1.65	2.32	1.10	0.66	0.31	0.12	0.09	0.03	0.01								6.28
320 to 340	1.01	1.35	1.02	0.71	0.46	0.23	0.13	0.05	0.03	0.01		0.00					4.99
350 to 010	1.19	1.82	1.81	1.39	0.80	0.47	0.25	0.07	0.04	0.02	0.00	0.00					7.85
All directions	24.98	31.46	21.16	12.06	6.06	2.51	1.26	0.33	0.12	0.04	0.00	0.00					100.00
Summer average																	
Calm/variable	3.27	0.03															3.30
020 to 040	1.05	1.96	1.12	0.24	0.09	0.02		0.00		0.01							4.50
050 to 070	1.17	2.73	1.28	0.18	0.01	0.01	0.00	0.01	0.00								5.39
080 to 100	1.62	2.69	1.39	0.24	0.04	0.01	0.01	0.00									6.00
110 to 130	2.34	2.46	1.35	0.47	0.05	0.01	0.01										6.68
140 to 160	1.81	2.07	0.70	0.28	0.07	0.01	0.00										4.94
170 to 190	2.91	2.63	0.96	0.29	0.04	0.01	0.00										6.83
200 to 220	3.45	3.20	1.65	0.75	0.19	0.05	0.00										9.30
230 to 250	2.85	5.00	3.23	1.39	0.38	0.10	0.02										12.97
260 to 280	2.81	7.63	6.68	3.44	1.20	0.31	0.09	0.00									22.16
290 to 310	1.88	2.57	1.17	0.62	0.22	0.08	0.04	0.01		0.00							6.60
320 to 340	0.95	1.40	0.99	0.58	0.33	0.18	0.08	0.02									4.53
350 to 010	1.23	2.00	1.83	0.95	0.47	0.18	0.09	0.03	0.01	0.01	0.00						6.79
All directions	27.34	36.37	22.36	9.43	3.10	0.96	0.34	0.07	0.01	0.02	0.00						100.00
Autumn average																	
Calm/variable	2.75	0.00		0.00													2.75
020 to 040	0.72	1.00	0.74	0.34	0.21	0.06	0.03	0.02	0.00								3.12
050 to 070	0.66	1.20	0.75	0.33	0.16	0.06	0.00										3.16
080 to 100	0.92	1.58	0.85	0.44	0.19	0.02	0.01										4.01
110 to 130	1.57	2.07	1.23	0.62	0.21	0.05	0.01										5.77
140 to 160	2.24	3.35	1.07	0.35	0.11	0.02	0.01										7.14
170 to 190	4.50	5.40	1.87	0.62	0.18	0.04	0.02										12.62
200 to 220	4.70	3.87	1.93	1.10	0.56	0.16	0.04	0.00									12.35
230 to 250	3.24	4.90	2.83	1.75	0.83	0.32	0.10	0.01									13.98
260 to 280	2.60	6.39	4.98	3.51	1.84	0.76	0.32	0.10	0.02	0.00	0.00						20.51
290 to 310	1.52	2.86	1.48	0.71	0.35	0.16	0.11	0.02	0.01	0.01	0.00						7.23
320 to 340	0.76	1.26	1.09	0.50	0.22	0.10	0.05	0.03	0.01	0.01	0.00						4.03
350 to 010	0.70	1.08	0.70	0.41	0.17	0.08	0.09	0.06	0.03	0.01	0.00						3.33
All directions	26.87	34.96	19.52	10.69	5.02	1.82	0.77	0.23	0.07	0.03	0.01						100.00

Table continues

Table 2.19(i) Annual and seasonal average percentage frequencies of hourly wind speed wind direction: Newcastle (1982–2011) — *continued*

Direction / deg.	Percentage frequency for stated range of wind speed / m·s ⁻¹																
	0–2	2–4	4–6	6–8	8–10	10–12	12–14	14–16	16–18	18–20	20–22	22–24	24–26	26–28	28–30	30–32	All speeds
Winter average																	
Calm/variable	2.53																2.53
020 to 040	0.46	0.67	0.60	0.39	0.22	0.08	0.08	0.06	0.03	0.01	0.02	0.00					2.61
050 to 070	0.41	0.80	0.90	0.62	0.27	0.15	0.13	0.01	0.00								3.29
080 to 100	0.55	0.63	0.66	0.61	0.43	0.26	0.11	0.03	0.00								3.28
110 to 130	1.05	1.20	0.68	0.39	0.28	0.14	0.15	0.08	0.03	0.00							4.00
140 to 160	1.85	2.51	0.94	0.41	0.22	0.07	0.02	0.01	0.01	0.00							6.03
170 to 190	4.02	4.82	1.84	0.89	0.27	0.05	0.01	0.01									11.89
200 to 220	4.72	3.63	2.37	1.55	0.71	0.30	0.10	0.03	0.01		0.00						13.42
230 to 250	3.40	3.96	3.33	2.49	1.34	0.74	0.49	0.18	0.04	0.04	0.01	0.00					16.03
260 to 280	2.68	6.53	5.40	3.62	2.29	1.30	0.74	0.31	0.11	0.04	0.01	0.01					23.03
290 to 310	1.38	3.25	1.50	0.69	0.51	0.21	0.20	0.05	0.01	0.01	0.01						7.83
320 to 340	0.59	1.24	0.75	0.52	0.21	0.11	0.09	0.06	0.00								3.56
350 to 010	0.43	0.94	0.49	0.28	0.15	0.06	0.05	0.04	0.02	0.04	0.02	0.00					2.51
All directions	24.06	30.17	19.44	12.47	6.90	3.48	2.15	0.86	0.26	0.14	0.07	0.01					100.01