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Appendix 4 - Golborne

Flexible Service requirement Spring 2020

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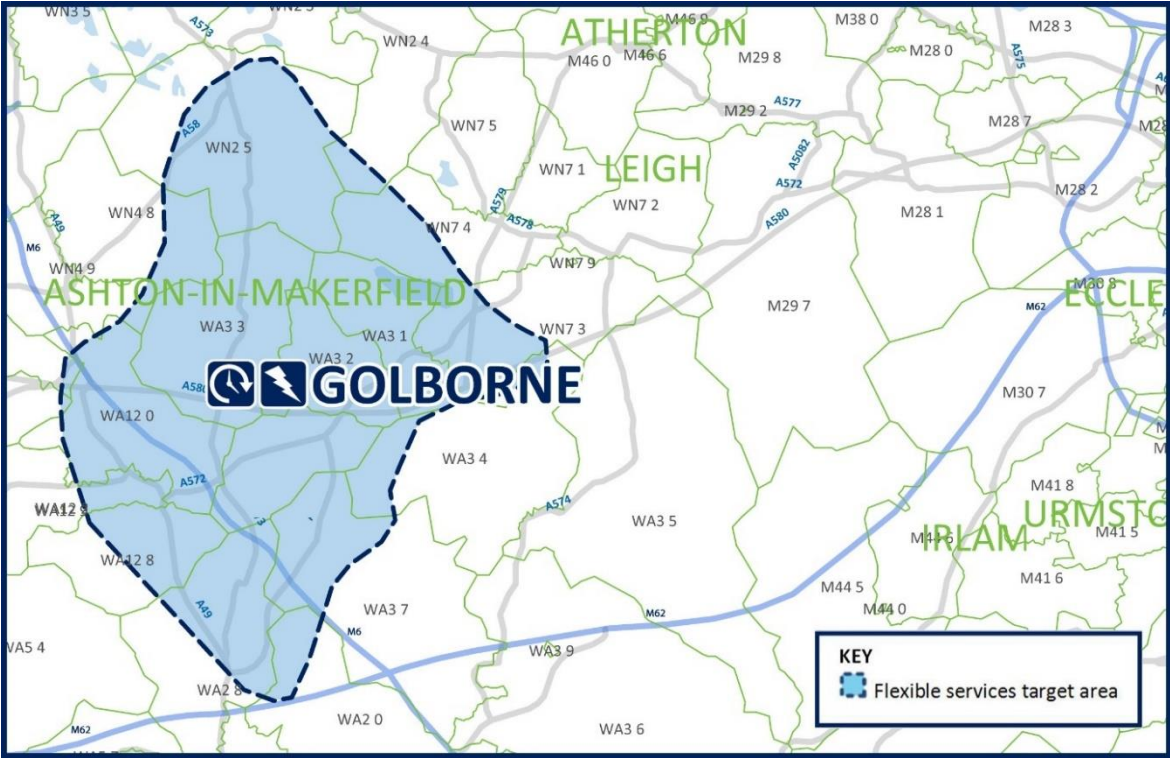
1 NETWORK REQUIREMENTS

1.1 Golborne

We are currently seeking flexible services for our primary substation in Golborne.

The flexible services target area for this requirement is located around the town of Golborne which is South of Wigan as illustrated in Figure 1.1.1.

Figure 1.1.1: Flexible services target area for Golborne



The requirement in Golborne is for both a DYNAMIC and SECURE response. A DYNAMIC response means that we only require flexible services in the event of a network abnormality, whereas a SECURE response would require flexible services during a period of peak demand. Figure 2.1.2 shows the service characteristics of these types of response.

Figure 1.1.2: Service characteristics of a DYNAMIC and SECURE response



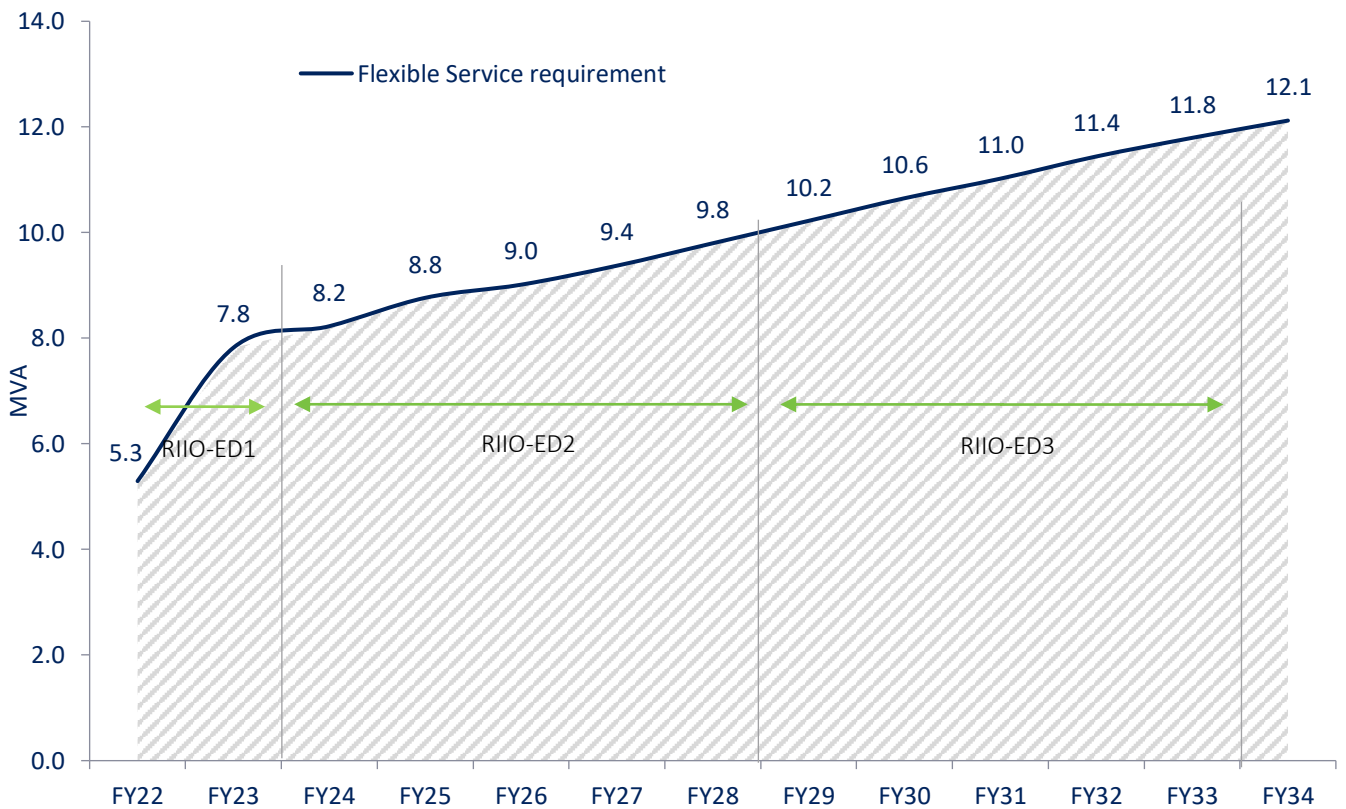
Type of Response	When to Act	Trigger	Certainty of Utilisation	Risk to network assets	Frequency of use
 DYNAMIC	Post Fault	Network abnormality	Uncertain	High	Low
 SECURE	Pre Fault	Scheduled	Certain	Med	High

Figure 1.1.3 summaries the requirement in this area, detailing the amount of capacity required and the service window.

Figure 1.1.3: Flexible service requirements for Golborne

20 21 /		5.30	Nov- Mar	Eveni ng	15:30 – 21:00	All we ek	Dyna mic
22	WA12 0, 8&9, WA3 1-	5.50	Oct- Mar	All day	07:30 – 21:30	All we ek	Dyna mic
20 22 /	8, WN7 3&4 & WN4 8	2.30	Nov- Jan	Eveni ng	16:30 – 19:00	All we ek	Secur e

Figure 2.2.3: Forecasted flexible service requirement up to FY34



1 FY22 Requirements

Figure 2.1 Monthly requirement for FY22

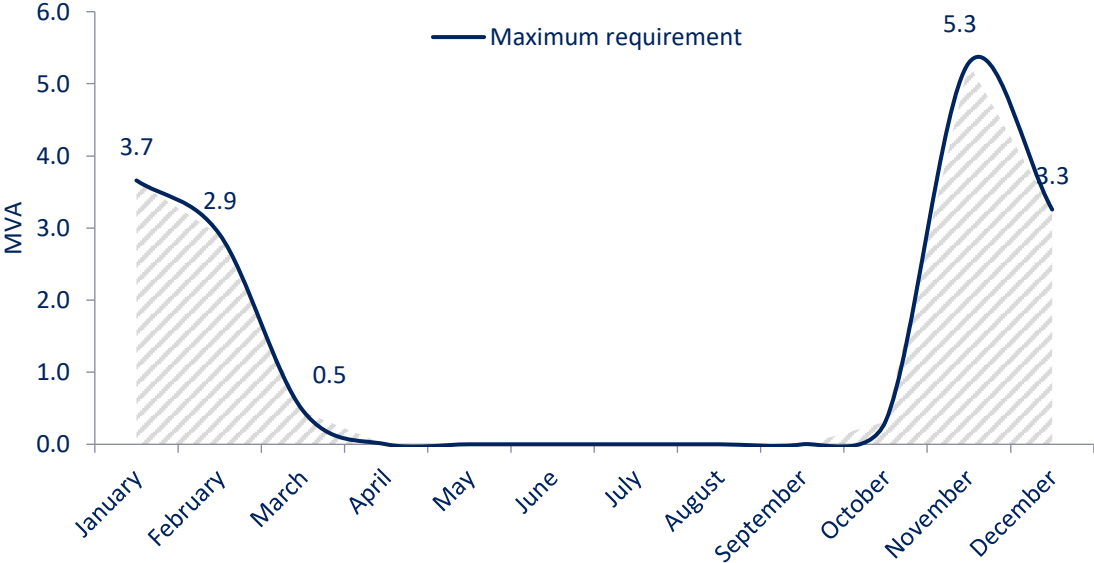


Figure 2.2. Weekly requirement

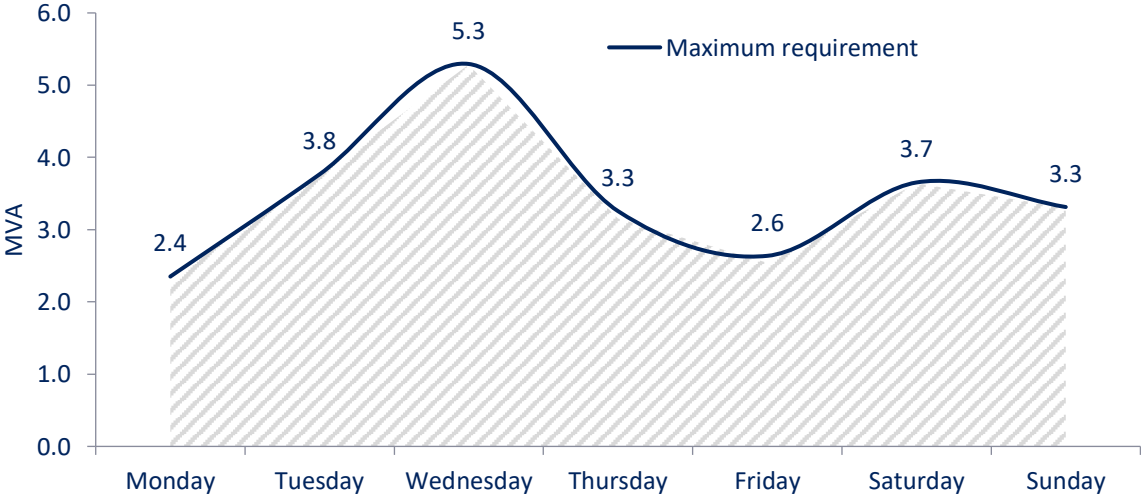


Figure 2.3. Daily Requirement

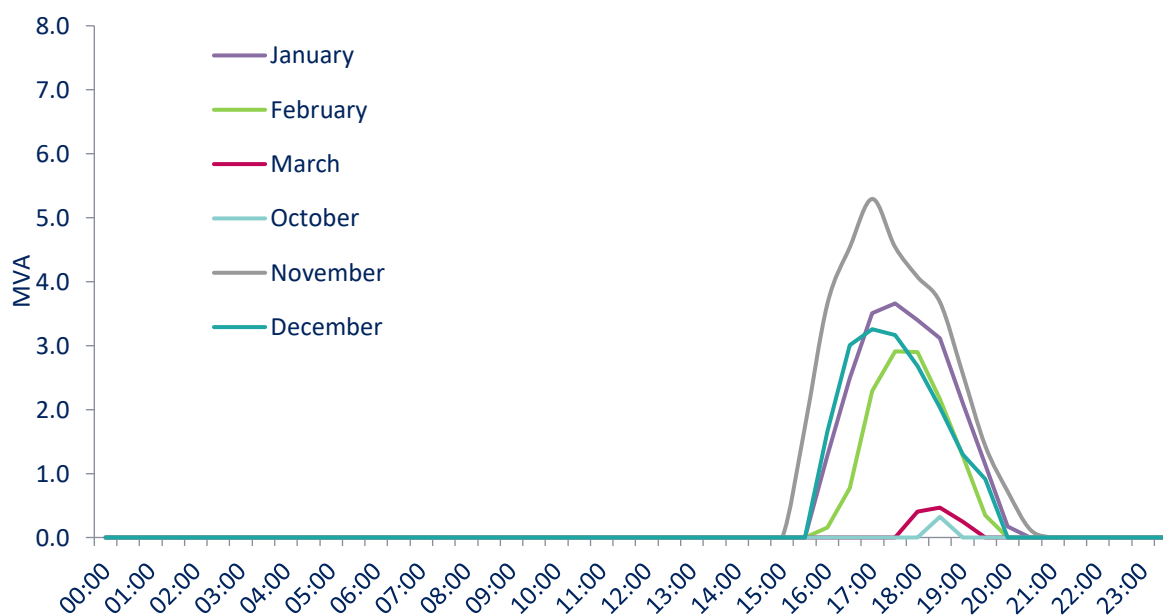


Figure 2.4. Half hourly detailed requirement:

Time of day	Jan	Feb	Mar	Oct	Nov	Dec
00:00 - 00:30	0	0	0	0	0	0
00:30 - 01:00	0	0	0	0	0	0
01:00 - 01:30	0	0	0	0	0	0
01:30 - 02:00	0	0	0	0	0	0
02:00 - 02:30	0	0	0	0	0	0
02:30 - 03:00	0	0	0	0	0	0
03:00 - 03:30	0	0	0	0	0	0
03:30 - 04:00	0	0	0	0	0	0
04:00 - 04:30	0	0	0	0	0	0
04:30 - 05:00	0	0	0	0	0	0
05:00 - 05:30	0	0	0	0	0	0

<i>Time of day</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
05:30 - 06:00	0	0	0	0	0	0
06:00 - 06:30	0	0	0	0	0	0
06:30 - 07:00	0	0	0	0	0	0
07:00 - 07:30	0	0	0	0	0	0
07:30 - 08:00	0	0	0	0	0	0
08:00 - 08:30	0	0	0	0	0	0
08:30 - 09:00	0	0	0	0	0	0
09:00 - 09:30	0	0	0	0	0	0
09:30 - 10:00	0	0	0	0	0	0
10:00 - 10:30	0	0	0	0	0	0
10:30 - 11:00	0	0	0	0	0	0
11:00 - 11:30	0	0	0	0	0	0
11:30 - 12:00	0	0	0	0	0	0
12:00 - 12:30	0	0	0	0	0	0
12:30 - 13:00	0	0	0	0	0	0
13:00 - 13:30	0	0	0	0	0	0
13:30 - 14:00	0	0	0	0	0	0
14:00 - 14:30	0	0	0	0	0	0
14:30 - 15:00	0	0	0	0	0	0
15:00 - 15:30	0	0	0	0	0	0

<i>Time of day</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
15:30 - 16:00	0	0	0	0	1.71	0.00
16:00 - 16:30	1.28	0.16	0	0	3.65	1.66
16:30 - 17:00	2.49	0.77	0	0	4.54	3.00
17:00 - 17:30	3.50	2.29	0	0	5.29	3.26
17:30 - 18:00	3.66	2.91	0	0	4.55	3.16
18:00 - 18:30	3.40	2.90	0.40	0	4.07	2.68
18:30 - 19:00	3.12	2.16	0.47	0.32	3.67	2.03
19:00 - 19:30	2.09	1.27	0.25	0	2.57	1.29
19:30 - 20:00	1.14	0.35	0	0	1.44	0.92
20:00 - 20:30	0.17	0	0	0	0.72	0.00
20:30 - 21:00	0	0	0	0	0.12	0.00
21:00 - 21:30	0	0	0	0	0	0
21:30 - 22:00	0	0	0	0	0	0
22:00 - 22:30	0	0	0	0	0	0
22:30 - 23:00	0	0	0	0	0	0
23:00 - 23:30	0	0	0	0	0	0
23:30 - 00:00	0	0	0	0	0	0

2 FY23 requirements

Figure 3.1. Monthly requirement for FY23

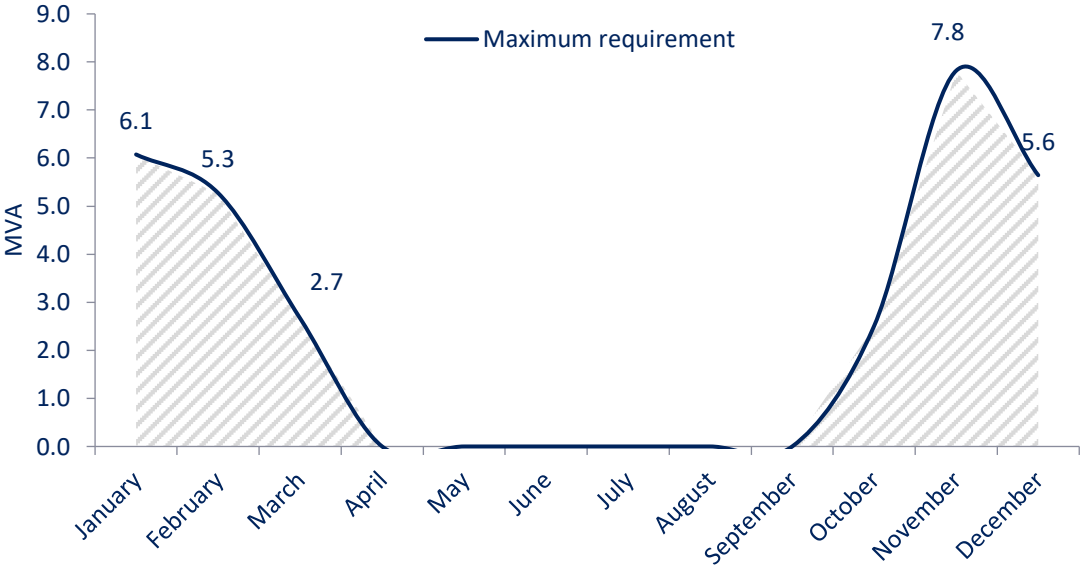


Figure 3.2. Weekly requirement for FY23

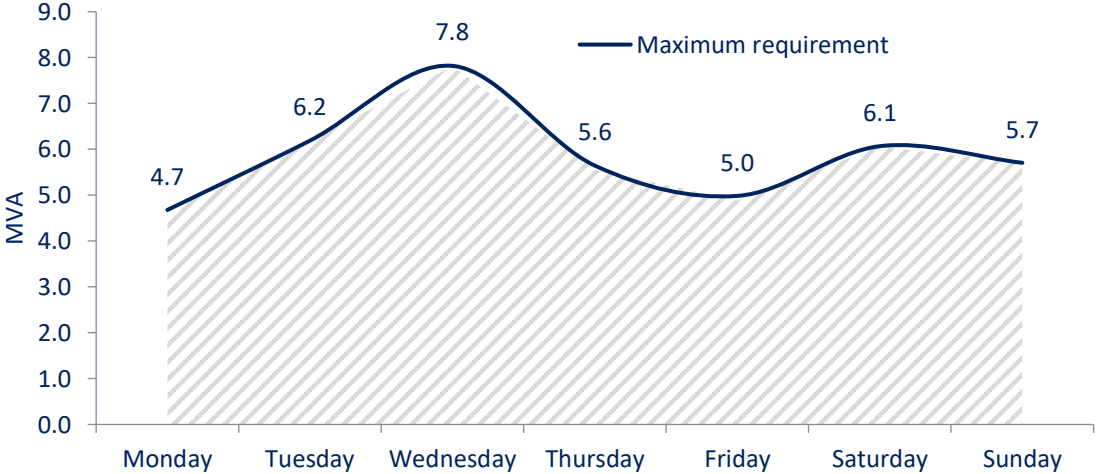


Figure 3.3 Daily Requirement for FY23

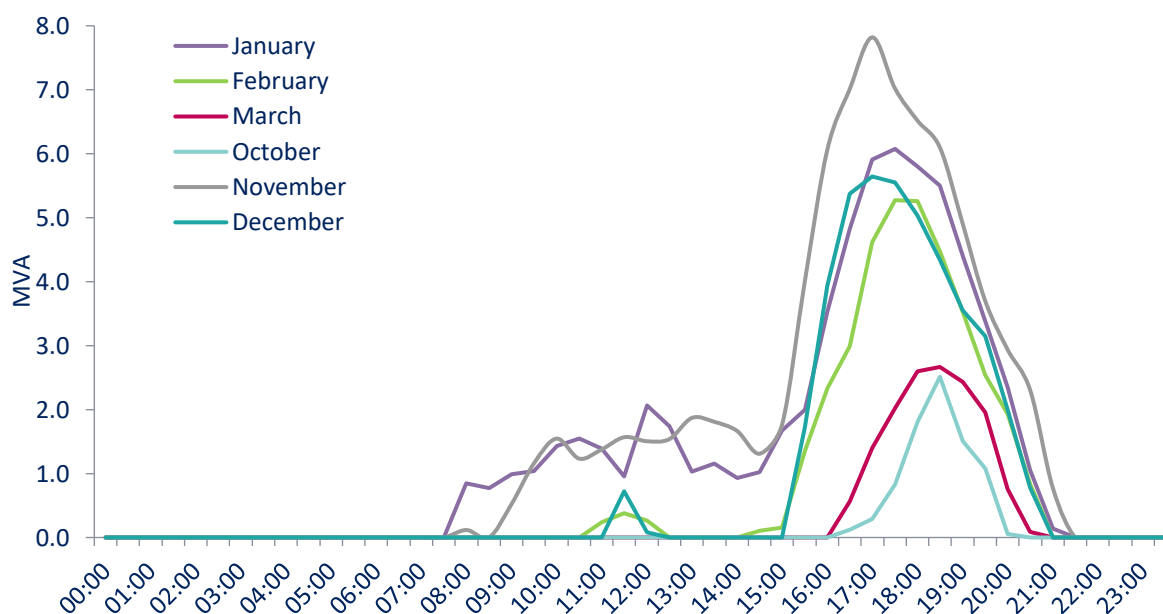


Figure 3.4. Half hourly detailed requirement for FY23

Time of day	Jan	Feb	Mar	Oct	Nov	Dec
00:00 - 00:30	0	0	0	0	0	0
00:30 - 01:00	0	0	0	0	0	0
01:00 - 01:30	0	0	0	0	0	0
01:30 - 02:00	0	0	0	0	0	0
02:00 - 02:30	0	0	0	0	0	0
02:30 - 03:00	0	0	0	0	0	0
03:00 - 03:30	0	0	0	0	0	0
03:30 - 04:00	0	0	0	0	0	0
04:00 - 04:30	0	0	0	0	0	0
04:30 - 05:00	0	0	0	0	0	0
05:00 - 05:30	0	0	0	0	0	0
05:30 - 06:00	0	0	0	0	0	0
06:00 - 06:30	0	0	0	0	0	0
06:30 - 07:00	0	0	0	0	0	0
07:00 - 07:30	0	0	0	0	0	0
07:30 - 08:00	0	0	0	0	0	0
08:00 - 08:30	0.84	0	0	0	0.12	0

Time of day	Jan	Feb	Mar	Oct	Nov	Dec
08:30 - 09:00	0.77	0	0	0	0	0
09:00 - 09:30	0.99	0	0	0	0.52	0
09:30 - 10:00	1.04	0	0	0	1.16	0
10:00 - 10:30	1.43	0	0	0	1.55	0
10:30 - 11:00	1.55	0	0	0	1.23	0
11:00 - 11:30	1.39	0.23	0	0	1.38	0
11:30 - 12:00	0.95	0.38	0	0	1.57	0.72
12:00 - 12:30	2.06	0.26	0	0	1.50	0.08
12:30 - 13:00	1.74	0	0	0	1.54	0
13:00 - 13:30	1.03	0	0	0	1.87	0
13:30 - 14:00	1.16	0	0	0	1.81	0
14:00 - 14:30	0.93	0	0	0	1.67	0
14:30 - 15:00	1.02	0.10	0	0	1.31	0
15:00 - 15:30	1.67	0.15	0	0	1.77	0
15:30 - 16:00	2.00	1.36	0	0	4.00	1.73
16:00 - 16:30	3.53	2.33	0	0	6.06	3.94
16:30 - 17:00	4.83	2.99	0.56	0.12	7.01	5.37
17:00 - 17:30	5.91	4.61	1.39	0.29	7.82	5.64
17:30 - 18:00	6.08	5.27	2.02	0.83	7.02	5.55
18:00 - 18:30	5.80	5.26	2.60	1.80	6.52	5.03
18:30 - 19:00	5.50	4.48	2.67	2.51	6.09	4.34
19:00 - 19:30	4.40	3.52	2.43	1.51	4.91	3.55
19:30 - 20:00	3.38	2.54	1.96	1.08	3.70	3.15
20:00 - 20:30	2.35	1.93	0.75	0.05	2.93	2.00
20:30 - 21:00	1.06	0.84	0.08	0	2.30	0.78
21:00 - 21:30	0.13	0	0	0	0.77	0
21:30 - 22:00	0	0	0	0	0	0
22:00 - 22:30	0	0	0	0	0	0
22:30 - 23:00	0	0	0	0	0	0
23:00 - 23:30	0	0	0	0	0	0
23:30 - 00:00	0	0	0	0	0	0