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# Appendix 5 – Higher Walton

Flexible Service requirement Spring 2020

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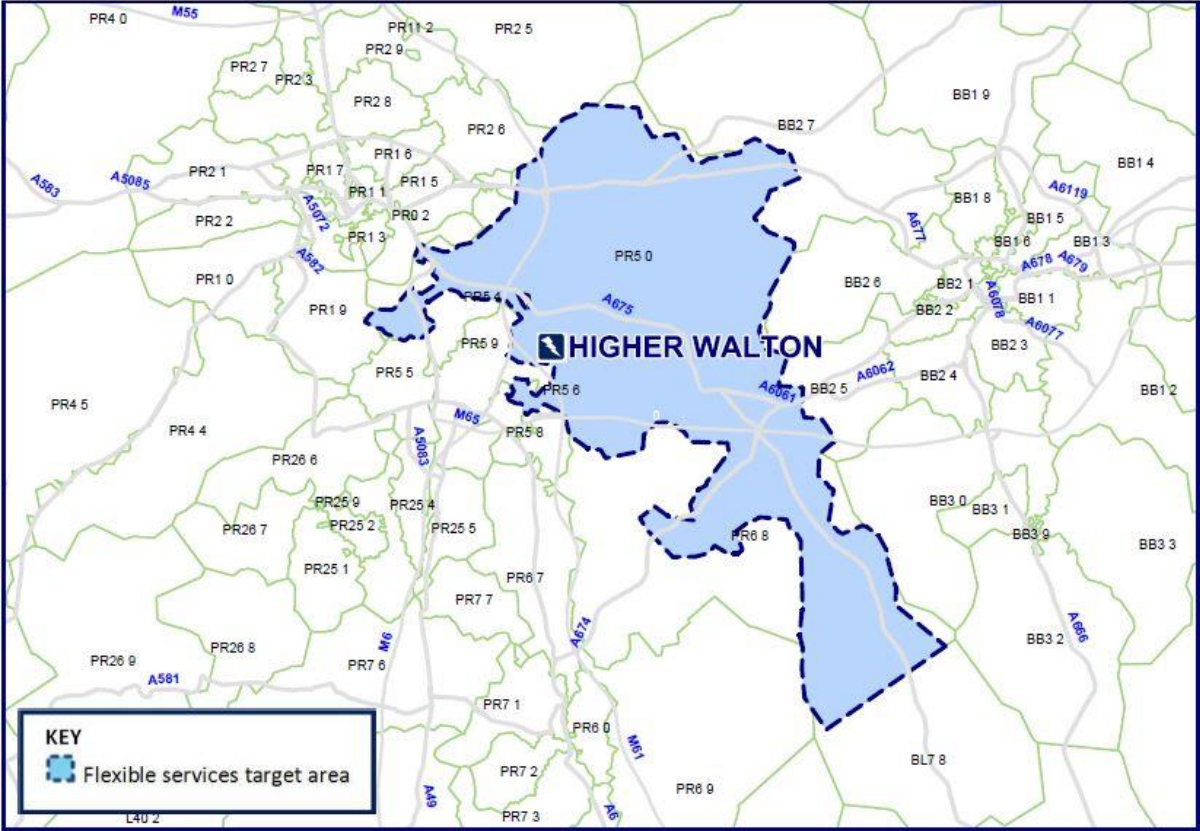
# 1 NETWORK REQUIREMENTS

## 1.1 Higher Walton

We are currently seeking flexible services for one of our primary substations in Higher Walton.

The flexible services target area for this requirement are the regions of Higher Walton and Samlesbury which are to the east of Preston, as illustrated in Figure 1.1.1.

Figure 1.1.1: Flexible services target area for Higher Walton



The requirement in Higher Walton is for a DYNAMIC response, which means that we only require flexible services in the event of a network abnormality. Figure 1.1.2 shows the service characteristics of this type of response.

Figure 1.1.2: Service characteristics of a DYNAMIC response


Type of Response	When to Act	Trigger	Certainty of Utilisation	Risk to network assets	Frequency of use
 <b>DYNAMIC</b>	Post Fault	Network abnormality	Uncertain	High	Low

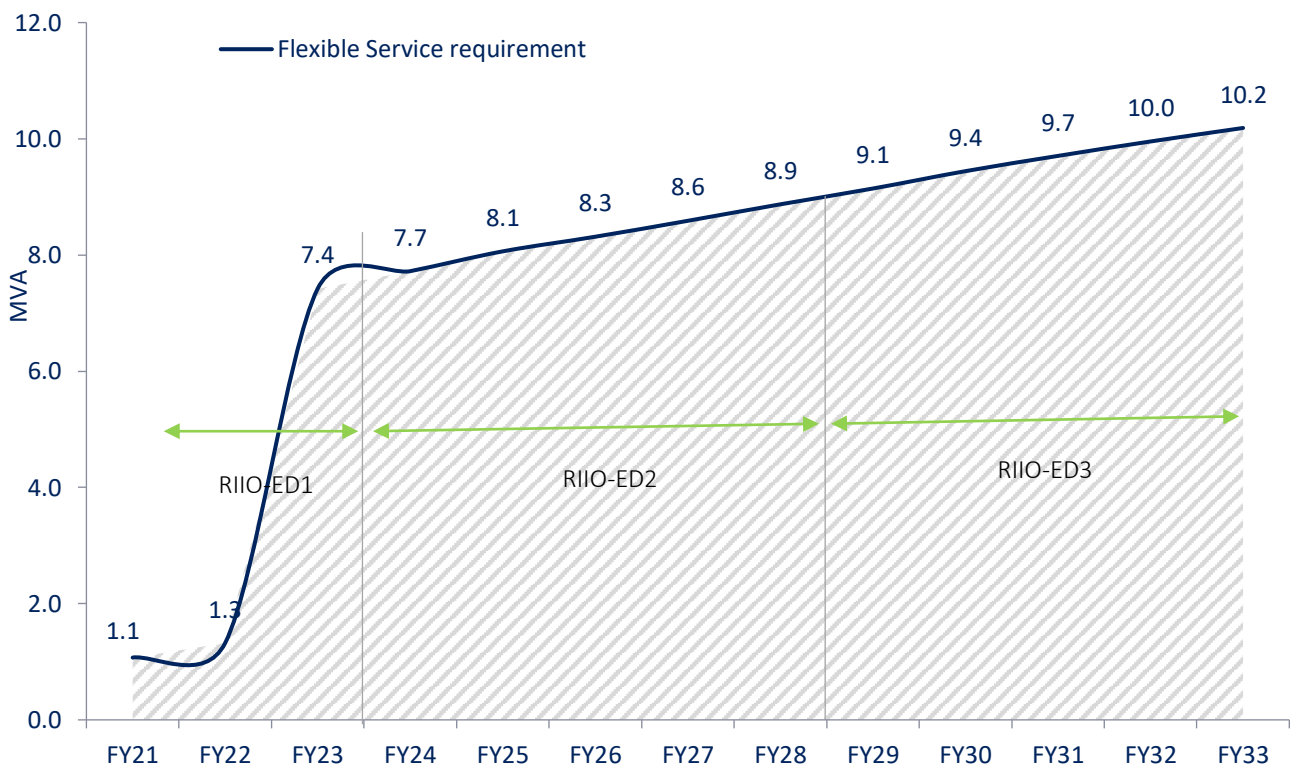
Figure 1.1.3 summarizes the requirement in this area, detailing the amount of capacity required and the service window.

Figure 1.1.3: Flexible service requirements for Higher Walton

Year	Feeding postcodes	MVA required	Period	Time of day	Service window	Days
2020/21	BB2 7, PR5 0,4&8, PR6 8	1.1	Winter	Evening	17:00 – 22:00	All week
2021 / 22		1.3	Winter	Evening	16:30 – 22:00	All week
2022 / 23		4.5	Summer	All day	07:00 – 00:00	All week
		7.4	Winter	All day	00:00 – 04:00 & 07:00 – 00:00	All week

The below chart shows how we expect the flexible service requirement may increase over the course of time.

Figure 1.1.4: Forecasted flexible service requirement up to FY33



## 2 FY21 Requirements

Figure 2.1. Monthly requirement for FY21

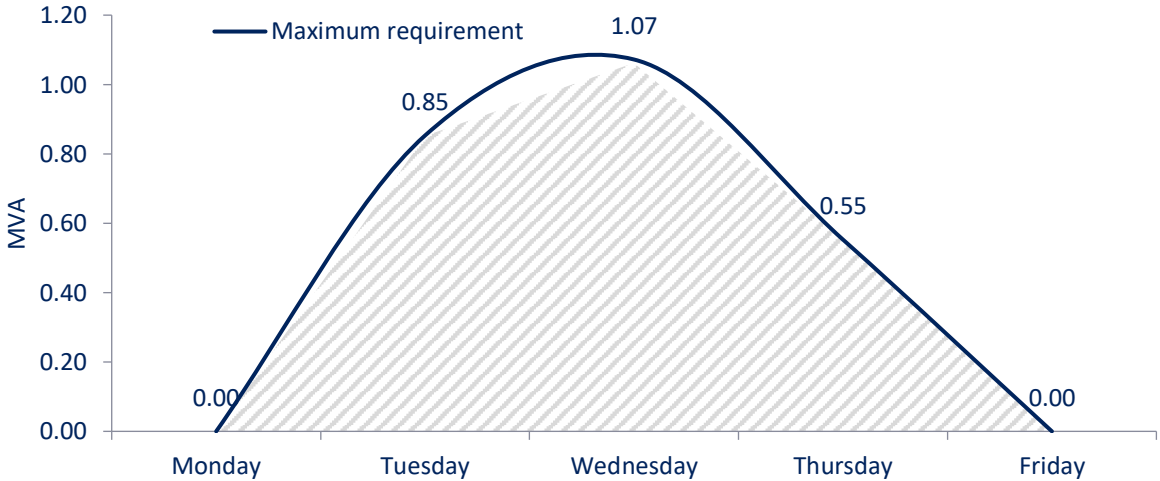


Figure 2.2. Weekly requirement for FY21

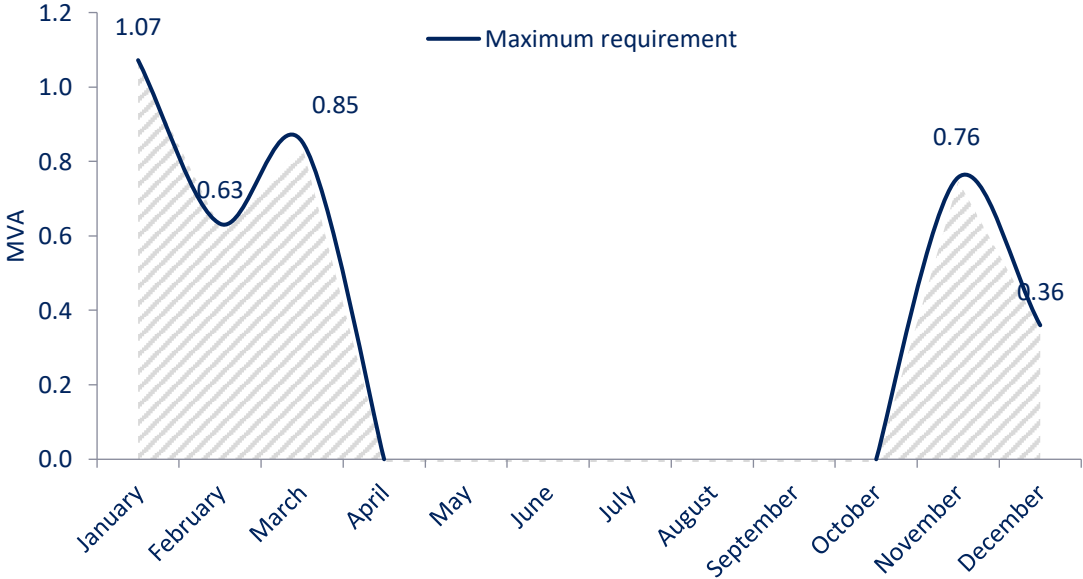


Figure 2.3. Daily Requirement for FY21

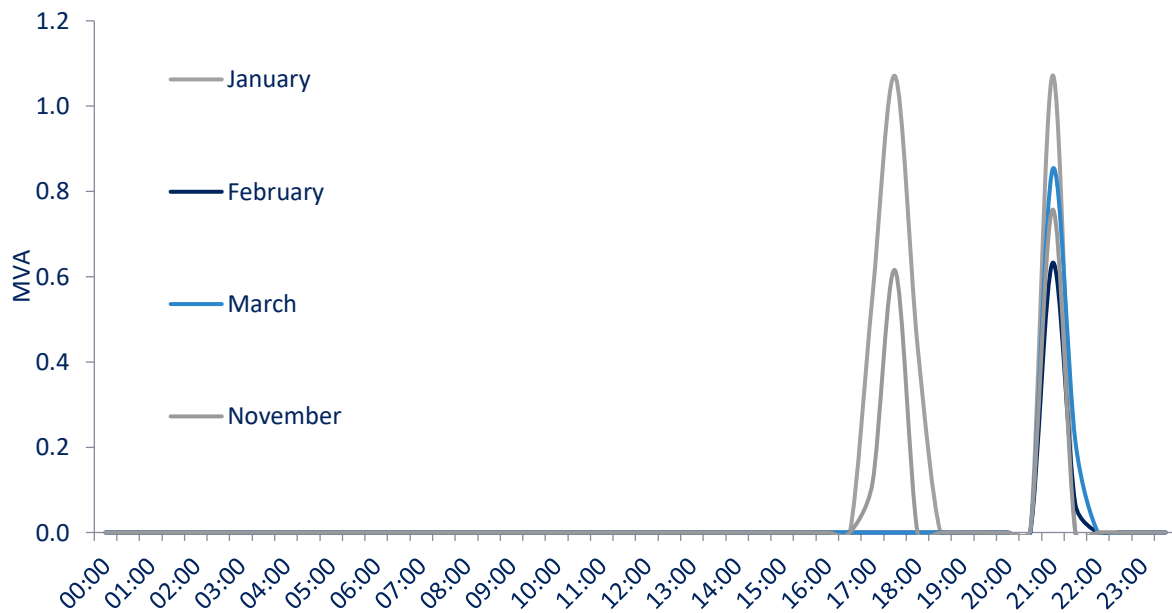


Figure 2.4. Half hourly detailed requirement for FY21

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

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Time of day	Jan	Feb	Mar	Nov
08:30 - 09:00	0	0	0	0
09:00 - 09:30	0	0	0	0
09:30 - 10:00	0	0	0	0
10:00 - 10:30	0	0	0	0
10:30 - 11:00	0	0	0	0
11:00 - 11:30	0	0	0	0
11:30 - 12:00	0	0	0	0
12:00 - 12:30	0	0	0	0
12:30 - 13:00	0	0	0	0
13:00 - 13:30	0	0	0	0
13:30 - 14:00	0	0	0	0
14:00 - 14:30	0	0	0	0
14:30 - 15:00	0	0	0	0
15:00 - 15:30	0	0	0	0
15:30 - 16:00	0	0	0	0
16:00 - 16:30	0	0	0	0
16:30 - 17:00	0	0	0	0
17:00 - 17:30	0.55	0	0	0
17:30 - 18:00	1.07	0	0	0.62
18:00 - 18:30	0	0	0	0
18:30 - 19:00	0	0	0	0
19:00 - 19:30	0	0	0	0
19:30 - 20:00	0	0	0	0
20:00 - 20:30	0	0	0	0
20:30 - 21:00	0	0	0	0
21:00 - 21:30	1.07	0.63	0.85	0.76
21:30 - 22:00	0	0	0	0
22:00 - 22:30	0	0	0	0
22:30 - 23:00	0	0	0	0
23:00 - 23:30	0	0	0	0
23:30 - 00:00	0	0	0	0

### 3 FY22 requirements

Figure 3.1. Monthly requirement:

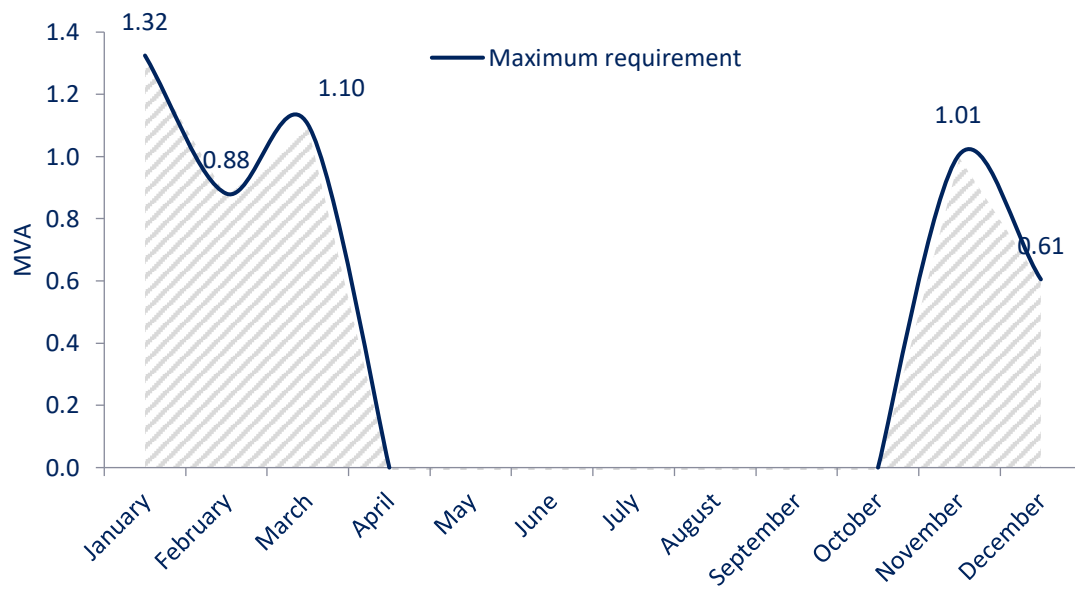


Figure 3.2 Weekly requirement

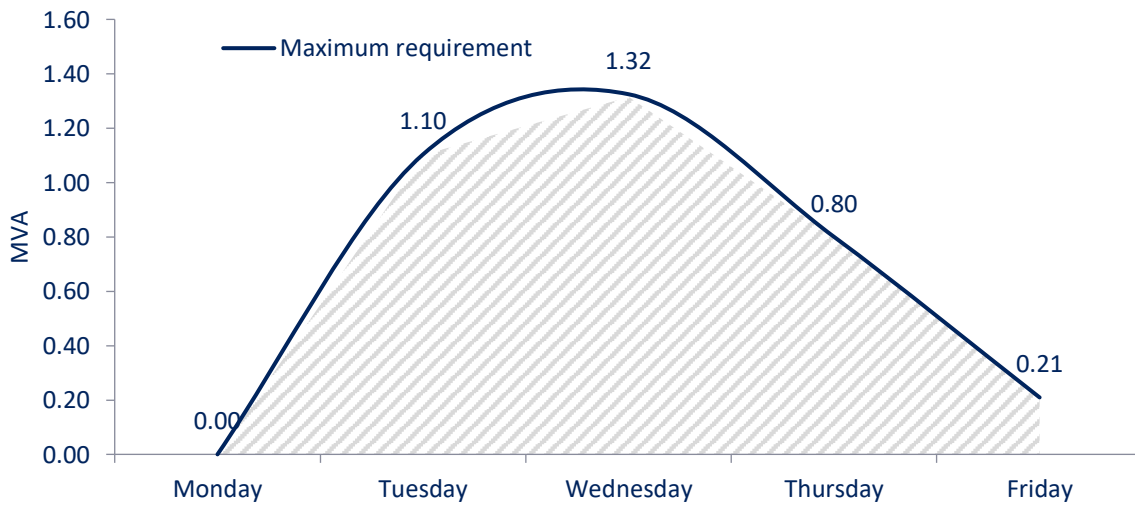


Figure 3.3 Daily Requirement

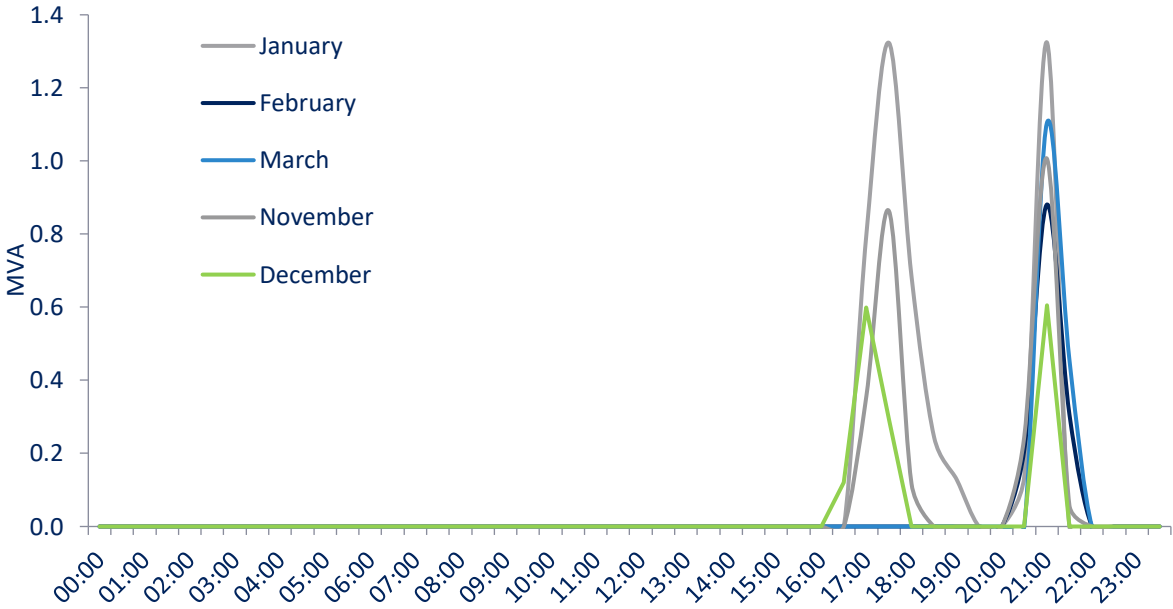


Figure 3.4 Half hourly detailed requirement:

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



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

<i>Time of day</i>	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Nov</i>	<i>Dec</i>
15:00 - 15:30	0	0	0	0	0
15:30 - 16:00	0	0	0	0	0
16:00 - 16:30	0	0	0	0	0
16:30 - 17:00	0	0	0	0	0.12
17:00 - 17:30	0.80	0	0	0.36	0.60
17:30 - 18:00	1.32	0	0	0.86	0.29
18:00 - 18:30	0.68	0	0	0.12	0
18:30 - 19:00	0.24	0	0	0	0
19:00 - 19:30	0.13	0	0	0	0
19:30 - 20:00	0	0	0	0	0
20:00 - 20:30	0	0	0	0	0
20:30 - 21:00	0.14	0.21	0	0.25	0
21:00 - 21:30	1.32	0.88	1.10	1.01	0.61
21:30 - 22:00	0.00	0.31	0.46	0.06	0
22:00 - 22:30	0	0	0	0	0
22:30 - 23:00	0	0	0	0	0
23:00 - 23:30	0	0	0	0	0
23:30 - 00:00	0	0	0	0	0

## 4 FY23 requirements

Figure 4.1. Monthly requirement for FY23

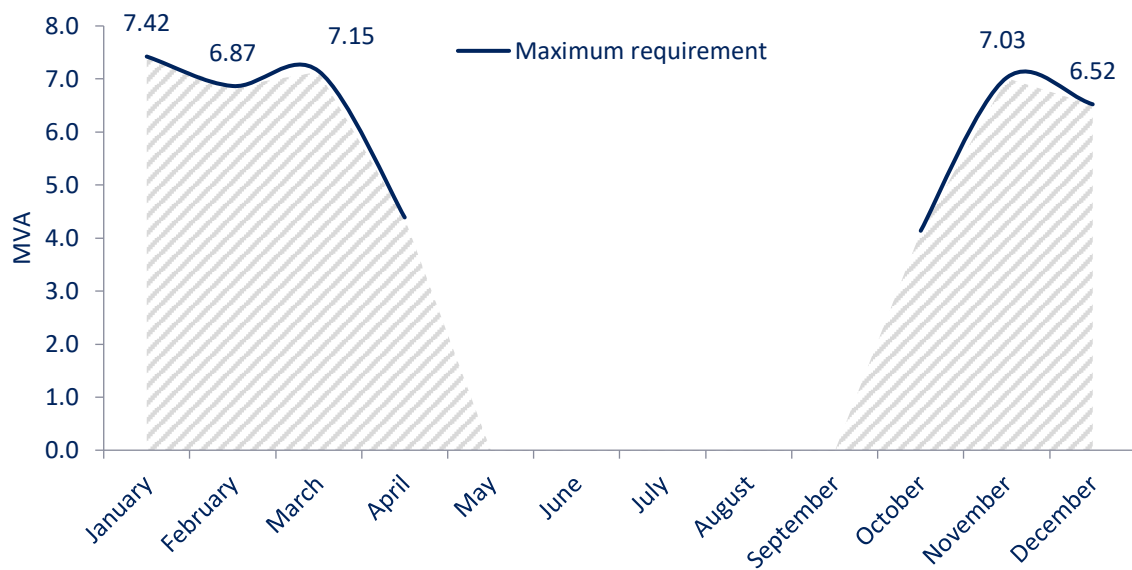


Figure 4.2 Weekly requirement for FY23

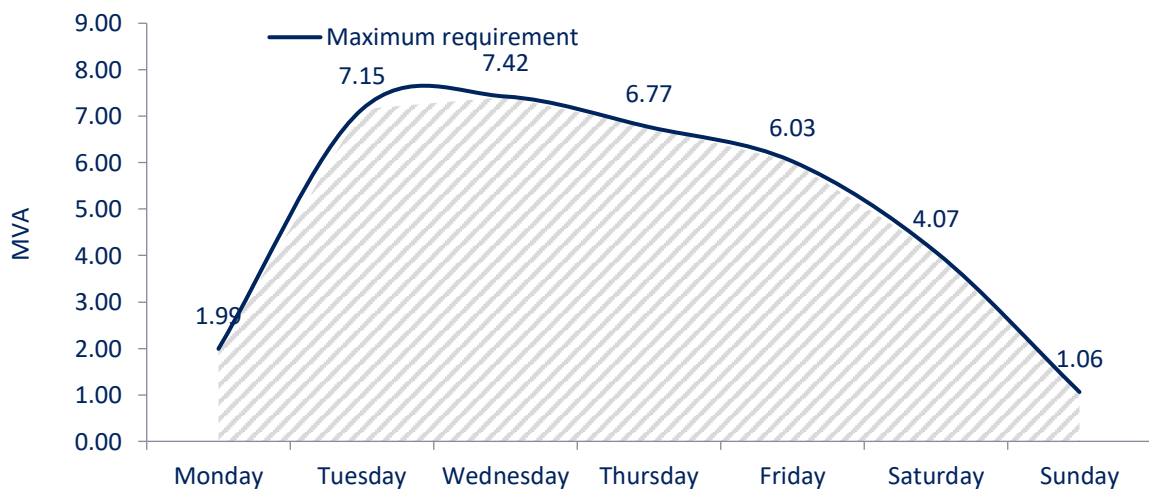


Figure 4.3 Daily Requirement for FY23

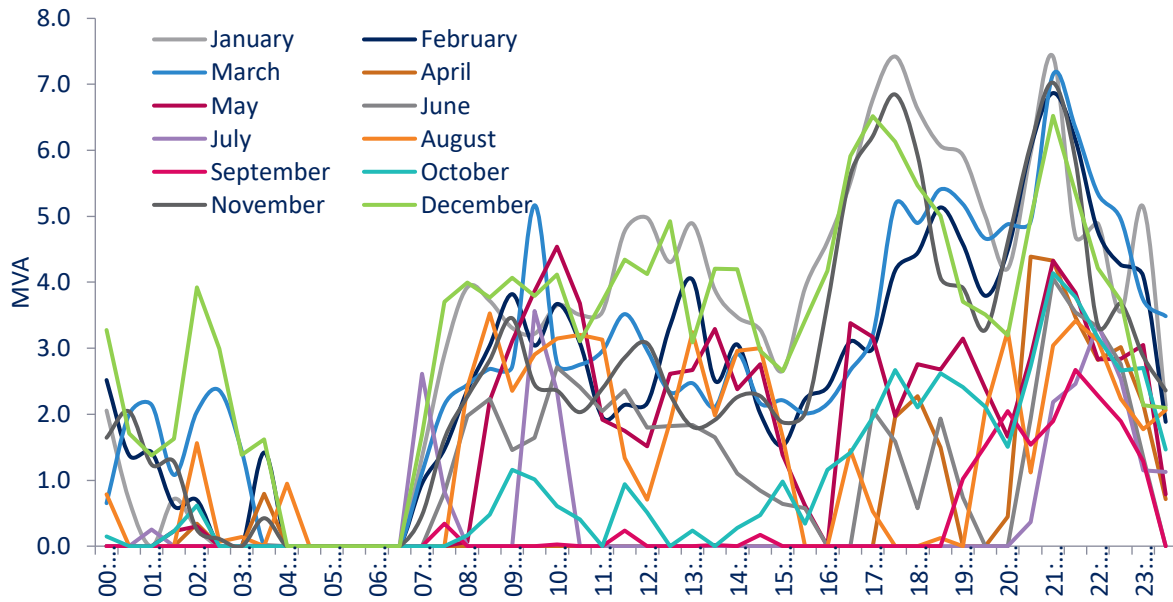


Figure 4.4 Half hourly detailed requirement:

Time of day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
00:00 - 00:30	2.06	2.52	0.65	0	0	0	0	0.78	0	0.15	1.64	3.28
00:30 - 01:00	0.70	1.38	2.00	0	0	0	0	0	0	0	2.04	1.71
01:00 - 01:30	0	1.42	2.14	0	0	0	0.26	0	0	0	1.24	1.38
01:30 - 02:00	0.72	0.60	1.08	0.00	0.23	0	0	0	0	0.23	1.28	1.63
02:00 - 02:30	0.27	0.70	2.03	0.35	0.30	0	0	1.56	0	0.61	0.26	3.93
02:30 - 03:00	0	0	2.36	0	0	0	0	0.06	0	0	0.11	2.99
03:00 - 03:30	0	0	1.44	0	0	0	0	0.14	0	0	0	1.38
03:30 - 04:00	0	1.42	0	0.80	0	0.02	0	0	0	0	0.42	1.62
04:00 - 04:30	0	0	0	0	0	0	0	0.95	0	0	0	0
04:30 - 05:00	0	0	0	0	0	0	0	0	0	0	0	0
05:00 - 05:30	0	0	0	0	0	0	0	0	0	0	0	0
05:30 - 06:00	0	0	0	0	0	0	0	0	0	0	0	0
06:00 - 06:30	0	0	0	0	0	0	0	0	0	0	0	0
06:30 - 07:00	0	0	0	0	0	0	0	0	0	0	0	0
07:00 - 07:30	1.35	0.95	1.11	0	0	0	2.61	0	0	0	0.47	1.69
07:30 - 08:00	2.91	1.48	2.15	0	0	0.81	0.83	0	0.34	0	1.63	3.70
08:00 - 08:30	3.92	2.35	2.44	0	0.07	1.97	0	2.41	0	0.16	2.26	4.00

Time of day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
08:30 - 09:00	3.72	3.04	2.69	0	2.21	2.23	0	3.53	0	0.48	2.82	3.77
09:00 - 09:30	3.31	3.82	2.72	0	3.11	1.45	0	2.35	0	1.15	3.46	4.07
09:30 - 10:00	3.22	3.04	5.17	0	3.86	1.64	3.57	2.91	0	1.01	2.45	3.80
10:00 - 10:30	3.65	3.67	2.77	0	4.54	2.71	2.35	3.15	0.02	0.61	2.36	4.11
10:30 - 11:00	3.51	3.08	2.75	0	3.68	2.41	0	3.20	0	0.41	2.03	3.10
11:00 - 11:30	3.55	1.96	2.96	0	1.92	2.05	0	3.13	0	0.00	2.39	3.71
11:30 - 12:00	4.78	2.14	3.52	0	1.75	2.37	0	1.34	0.24	0.94	2.86	4.34
12:00 - 12:30	4.97	2.17	2.96	0	1.51	1.80	0	0.70	0	0.51	3.07	4.12
12:30 - 13:00	4.30	3.33	2.33	0	2.61	1.82	0	1.89	0	0	2.30	4.93
13:00 - 13:30	4.89	4.04	2.47	0	2.67	1.84	0	3.24	0	0.23	1.81	3.09
13:30 - 14:00	3.88	2.51	2.11	0	3.30	1.65	0	1.99	0.02	0.00	1.91	4.20
14:00 - 14:30	3.47	3.06	2.91	0	2.38	1.10	0	2.96	0	0.28	2.26	4.20
14:30 - 15:00	3.28	2.02	2.17	0	2.76	0.84	0	3.00	0.17	0.47	2.28	2.96
15:00 - 15:30	2.66	1.53	2.21	0	1.38	0.64	0	1.66	0	0.98	1.88	2.65
15:30 - 16:00	3.92	2.23	2.01	0	0.62	0.57	0	0	0	0.34	2.02	3.42
16:00 - 16:30	4.62	2.41	2.16	0	0	0	0	0	0	1.16	3.69	4.17
16:30 - 17:00	5.50	3.10	2.66	0	3.38	0	0	1.45	0	1.41	5.61	5.92
17:00 - 17:30	6.77	2.99	3.19	0	3.17	2.06	0	0.53	0	1.95	6.21	6.52
17:30 - 18:00	7.42	4.18	5.18	1.95	1.98	1.59	0	0	0	2.67	6.85	6.13
18:00 - 18:30	6.62	4.45	4.90	2.28	2.76	0.57	0	0	0	2.10	5.91	5.47
18:30 - 19:00	6.07	5.13	5.41	1.50	2.68	1.93	0	0.12	0	2.62	4.08	5.01
19:00 - 19:30	5.93	4.58	5.19	0	3.15	0.74	0	0	1.02	2.41	3.92	3.71
19:30 - 20:00	5.00	3.79	4.66	0	2.39	0	0	2.07	1.52	2.11	3.28	3.51
20:00 - 20:30	4.21	4.49	4.88	0.45	1.66	0	0	3.26	2.05	1.51	4.62	3.19
20:30 - 21:00	5.94	6.03	4.91	4.39	2.87	1.93	0.37	1.12	1.53	2.72	6.07	4.97
21:00 - 21:30	7.42	6.87	7.15	4.33	4.33	4.06	2.18	3.04	1.89	4.14	7.03	6.52
21:30 - 22:00	4.69	6.15	6.34	3.47	3.84	3.55	2.46	3.41	2.67	3.77	5.84	5.35
22:00 - 22:30	4.89	4.77	5.34	2.83	2.83	3.33	3.36	3.12	2.28	3.17	3.34	4.22
22:30 - 23:00	3.55	4.27	4.96	3.02	2.84	2.76	2.54	2.24	1.89	2.66	3.68	3.72
23:00 - 23:30	5.14	4.10	3.74	2.15	3.05	1.35	1.15	1.77	1.29	2.70	2.88	2.14
23:30 - 00:00	2.13	1.88	3.49	0.71	0.79	0	1.13	2.06	0	1.46	2.36	2.10