

MP15 / MP18

Modification Group 28th June 2001

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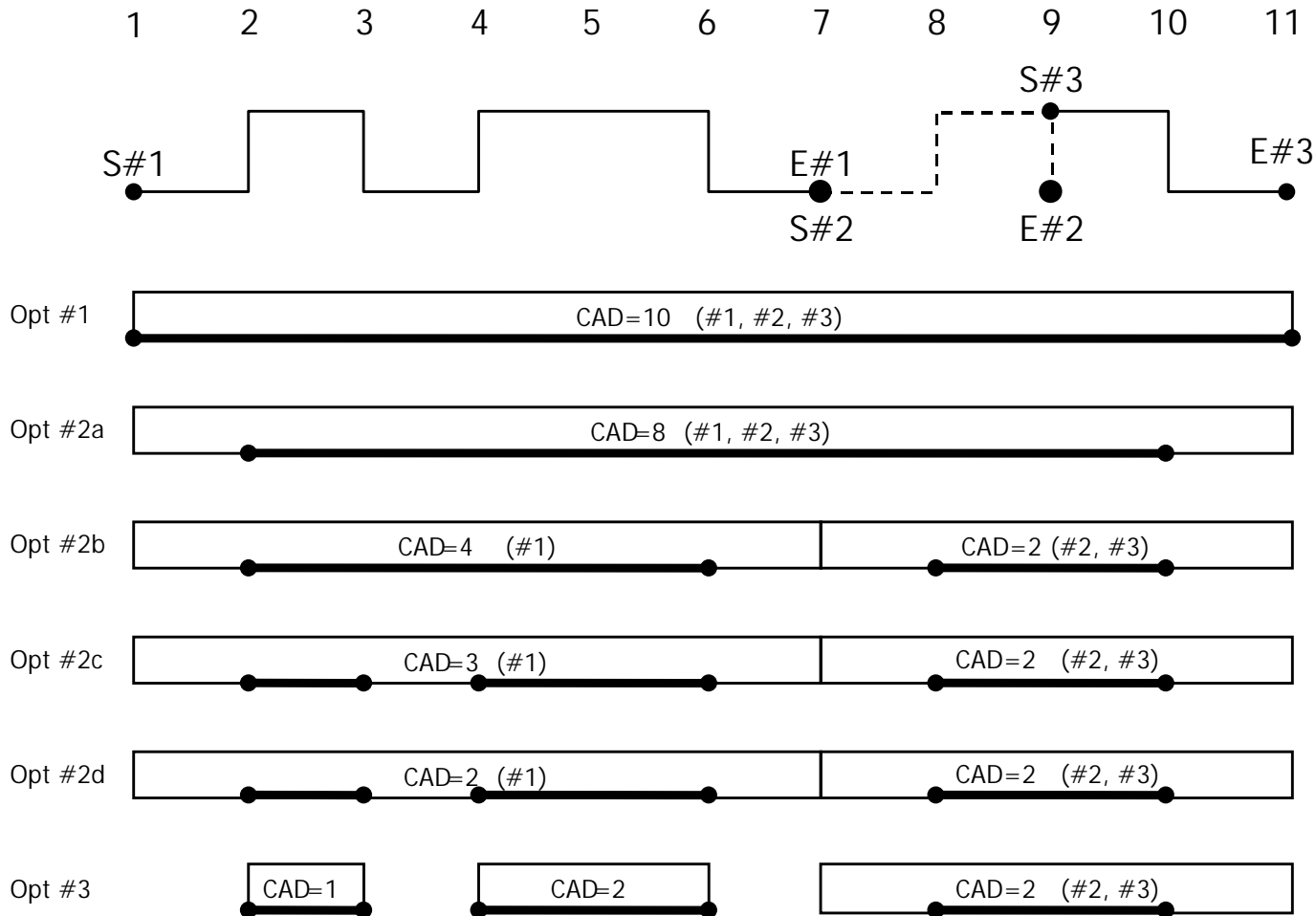
- **3 Generic Approaches**
 - Simple acceptance analysis
 - Acceptance and FPN analysis
 - Redefining acceptance volumes for non-zero profiles
- **Option 1 has 3 sub-categories**
 - Different workarounds can achieve different levels of conformance

CAD/CID Definition

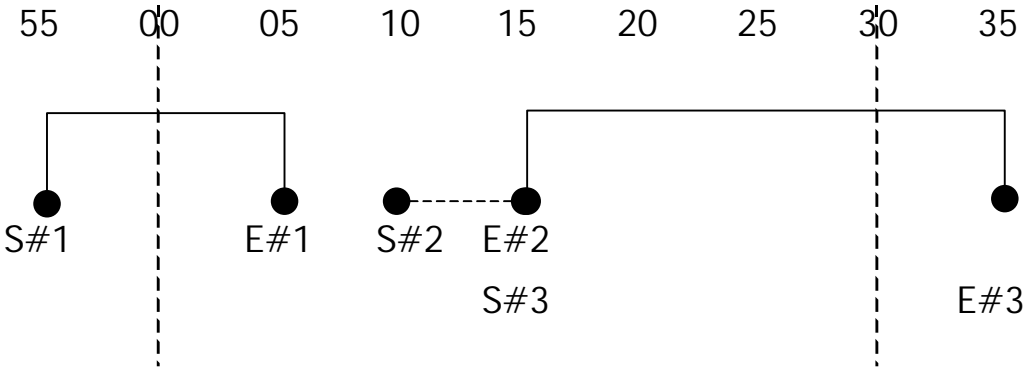


- CAD - The Continuous Acceptance Duration is the overall duration of one or more overlapping acceptances.
- CID - The Continuous Instruction Duration is the limit against which each CAD^k_i is examined.

CID Definition - Options 1-3



CID Definition - Option 1



			<u>Include Volumes</u>
Opt #1a	CAD=10 (#1)	CAD=25 (#2, #3)	none
Opt #1b	CAD=10 (#1)	CAD=25 (#2, #3)	#2 #3 (15 mins)
Opt #1c	CAD=10 (#1)	CAD=20 (#3)	#3 (15 mins)

- P15 / P18A Analysis of Acceptances
 - 10 days during June
 - 31 days during May
- Recalculated Prices For P18A (CID Option 1a)
 - 31 days during May
- Analysis of Stack Sizes and Default Periods
- Top 10 “Interesting” Periods

P15 - 10 Days during June



	Acceptances	Periods
Total	4477	11581
Limit = 0	12%	31%
5	17%	38%
10	23%	43%
15	29%	49%
20	36%	54%
25	44%	60%
30	52%	65%

The "Total" figure is prior to any processing, whereas the percentage figures relate to the number of acceptances or periods removed as a result of P15

P18A - 10 Days during June



	Acceptances	CID-Total	CID-Fast	CID-Norm
Total	4477	1996 100%	173 9%	1823 91%
CID = 0	0%	0%	0%	0%
5	2%	4%	42%	1%
10	5%	10%	76%	4%
15	9%	19%	95%	12%
20	13%	26%	98%	19%
25	17%	34%	99%	28%
30	19%	39%	100%	33%

The "Total" figure is prior to any processing, whereas the percentage figures relate to the number of acceptances removed as a result of P18A (CID Option 1b)

P18A - 31 Days during May



	Acceptances	CID-Total	CID-Fast	CID-Norm
Total	14829	7120 100%	1074 15%	6046 85%
CID = 0	0%	0%	0%	0%
5	2%	4%	23%	0%
10	6%	11%	63%	2%
15	11%	20%	87%	9%
20	16%	28%	91%	17%
25	20%	35%	95%	25%
30	23%	40%	97%	30%

The "Total" figure is prior to any processing, whereas the percentage figures relate to the number of acceptances removed as a result of P18A (CID Option 1b)

Period Average Graphs



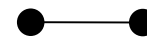
The following graphs provide a simulation of the distribution of the SBP and SSP against Settlement Period with various values of CID (CID Option #1a).

The top set of lines represent the SBP, whilst the lower set represent the SSP.

Example

Price 1	1	1
Price 2	2	2
Price 3	3	3
Price 4	4	4
Price 5	5	30
25%	2	2
Median	3	3
75%	4	4
Average	3	8

Key



Represents the median - i.e. the middle price of the sample (50%)



Represents the band from the 25% to the 75% quartile.

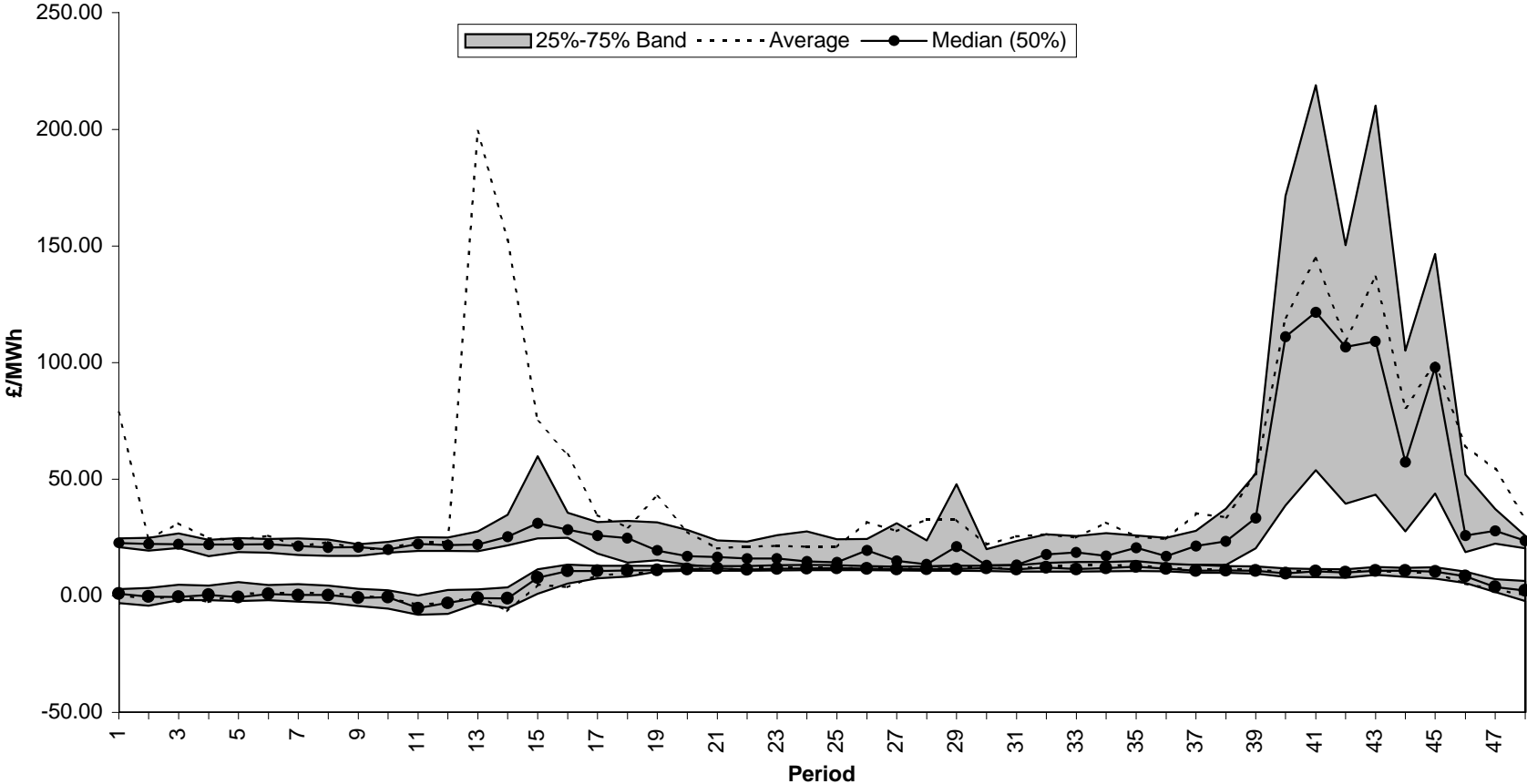


Represents the arithmetic mean, or average - its value is heavily influenced by large prices.

P.Avg (Current)



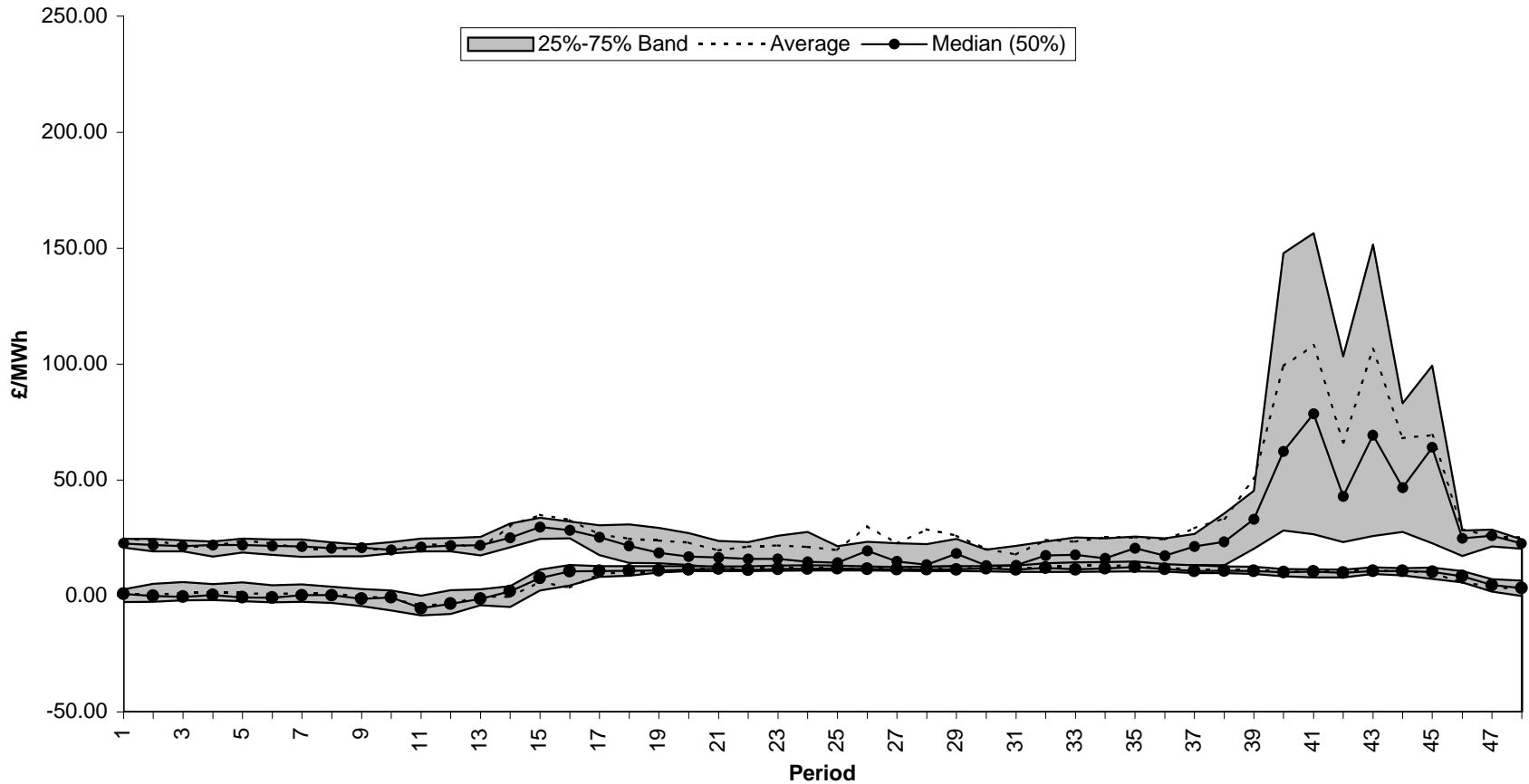
Period Average



P.Avg (No Fast Dynamics)



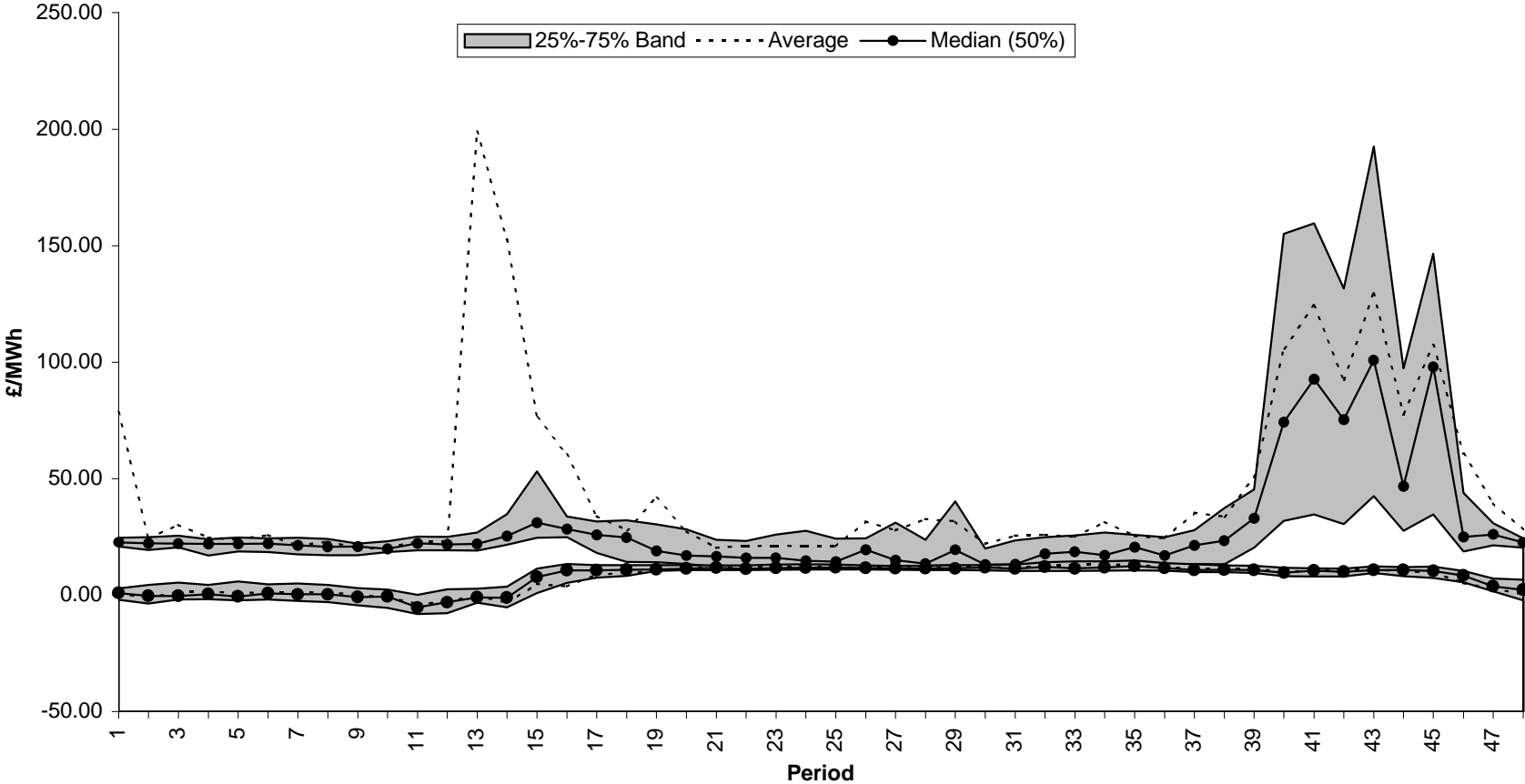
Period Average



P.Avg (CID = 5)



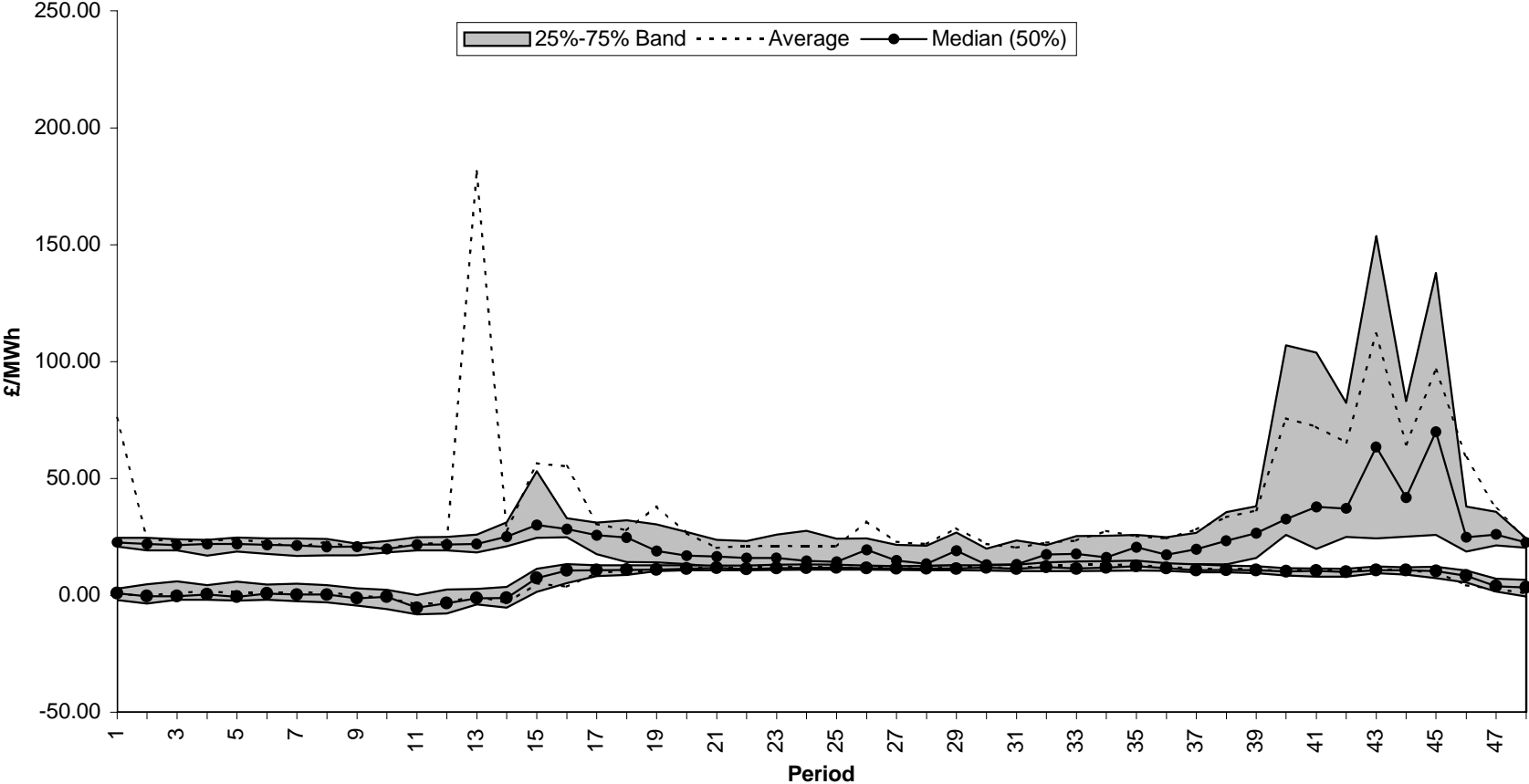
Period Average



P.Avg (CID = 10)



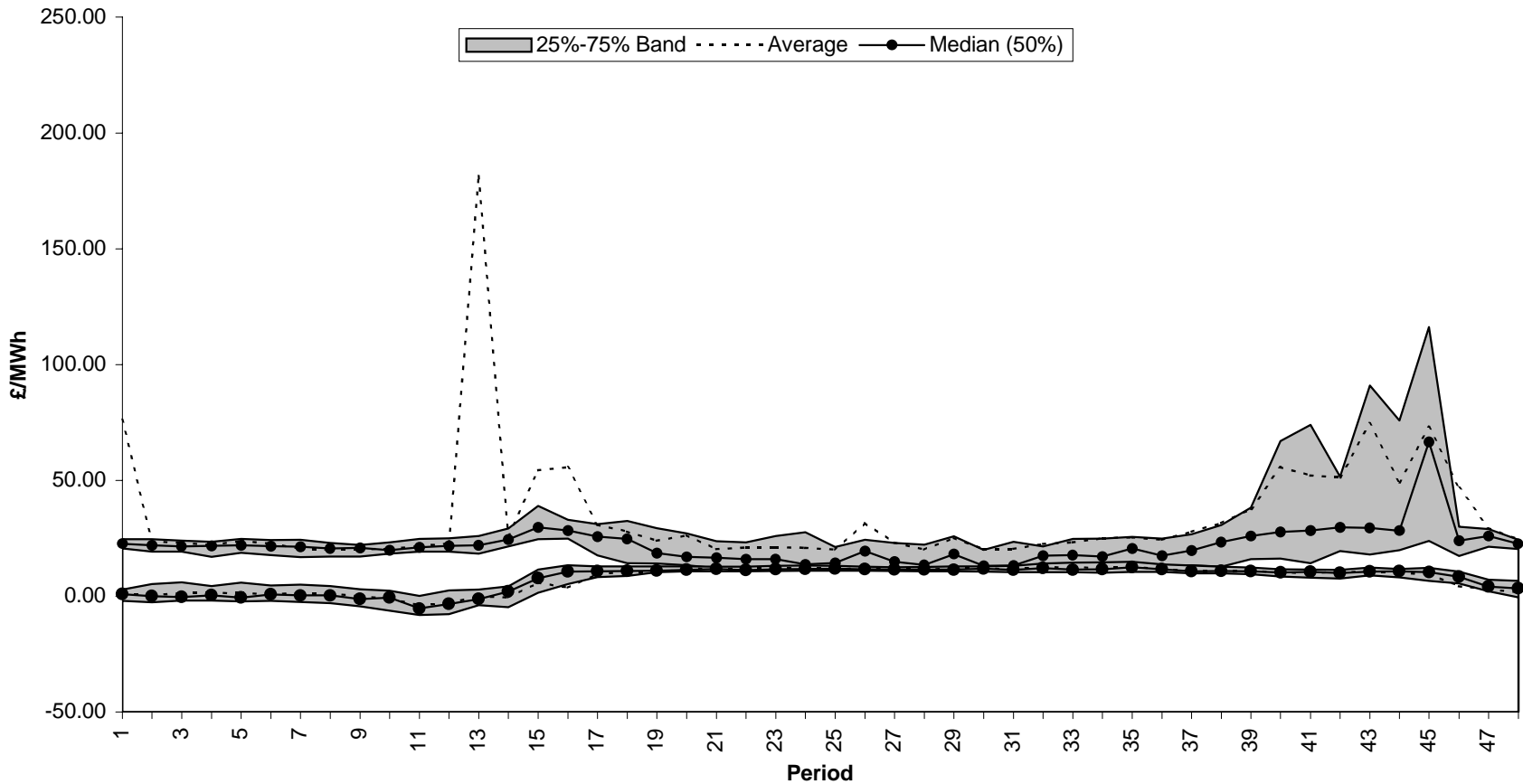
Period Average



P.Avg (CID = 15)



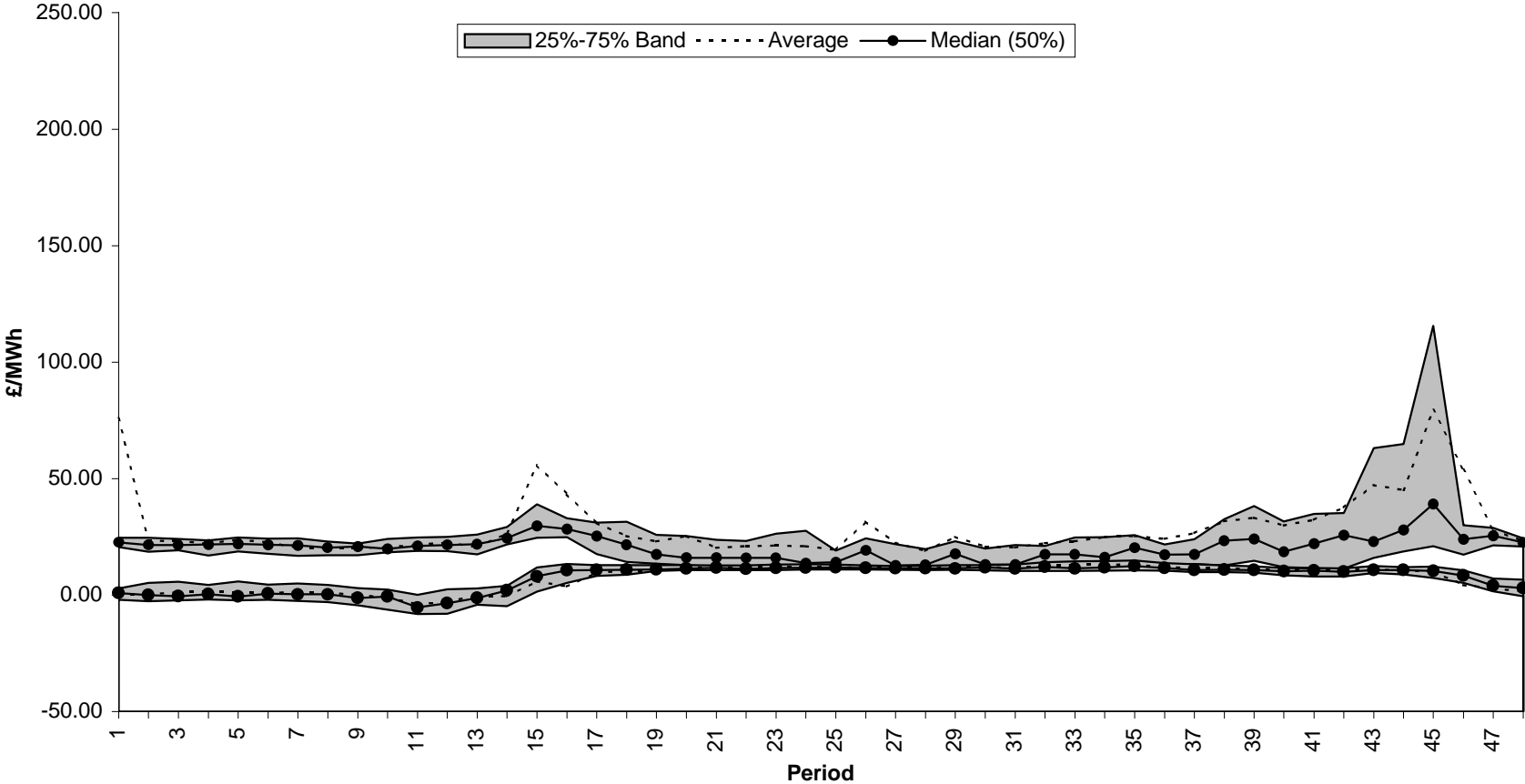
Period Average



P.Avg (CID = 20)



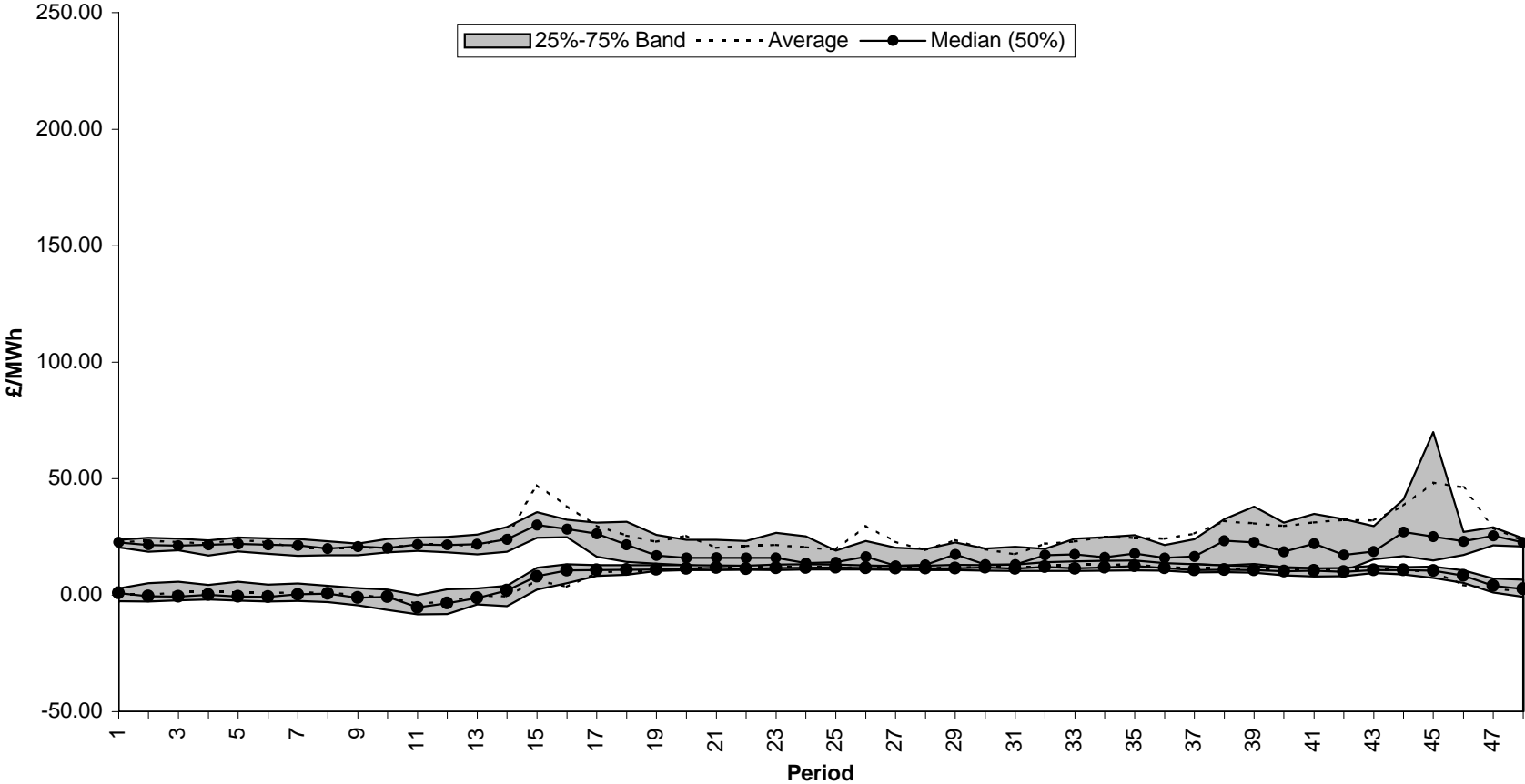
Period Average



P.Avg (CID = 25)



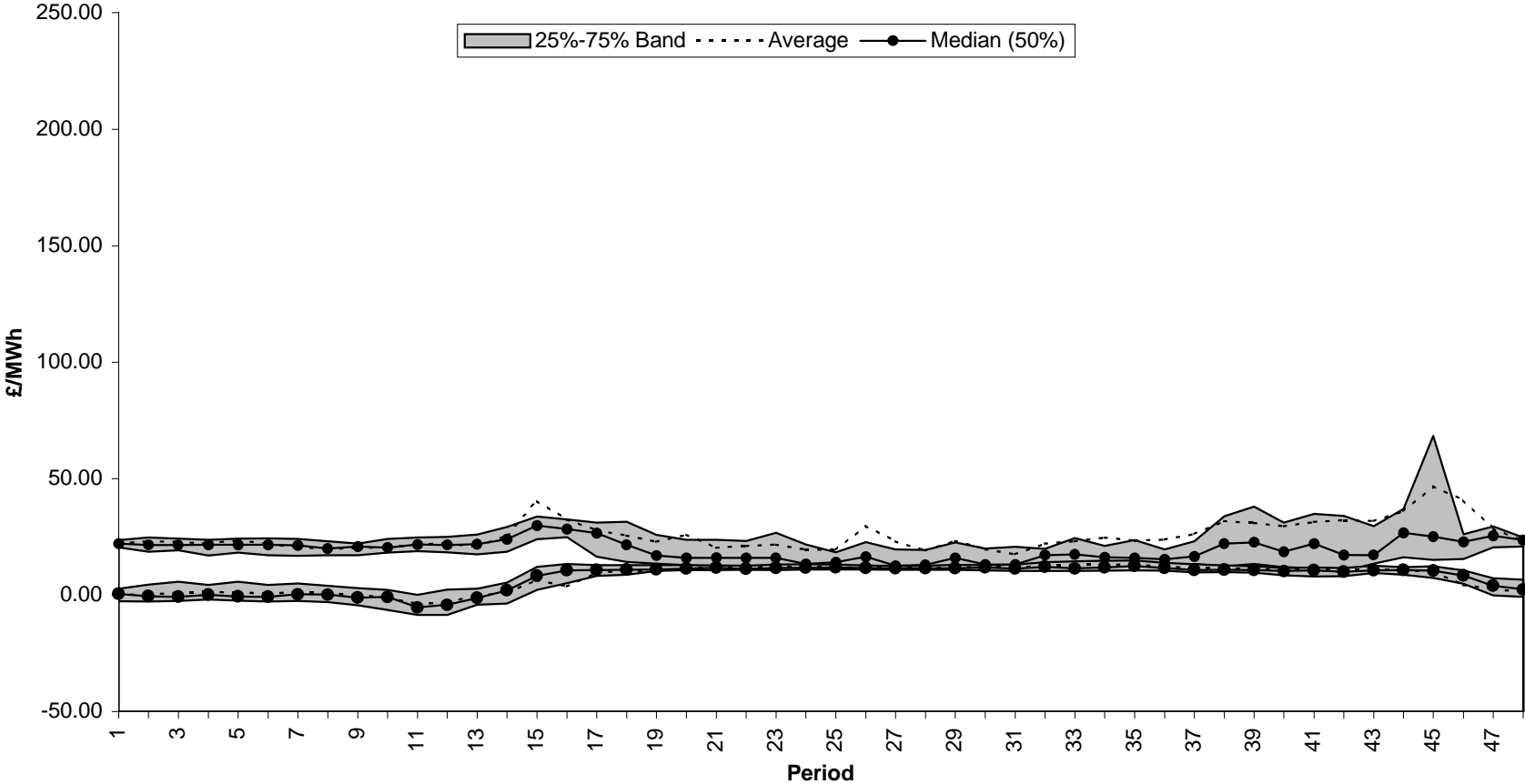
Period Average



P.Avg (CID = 30)



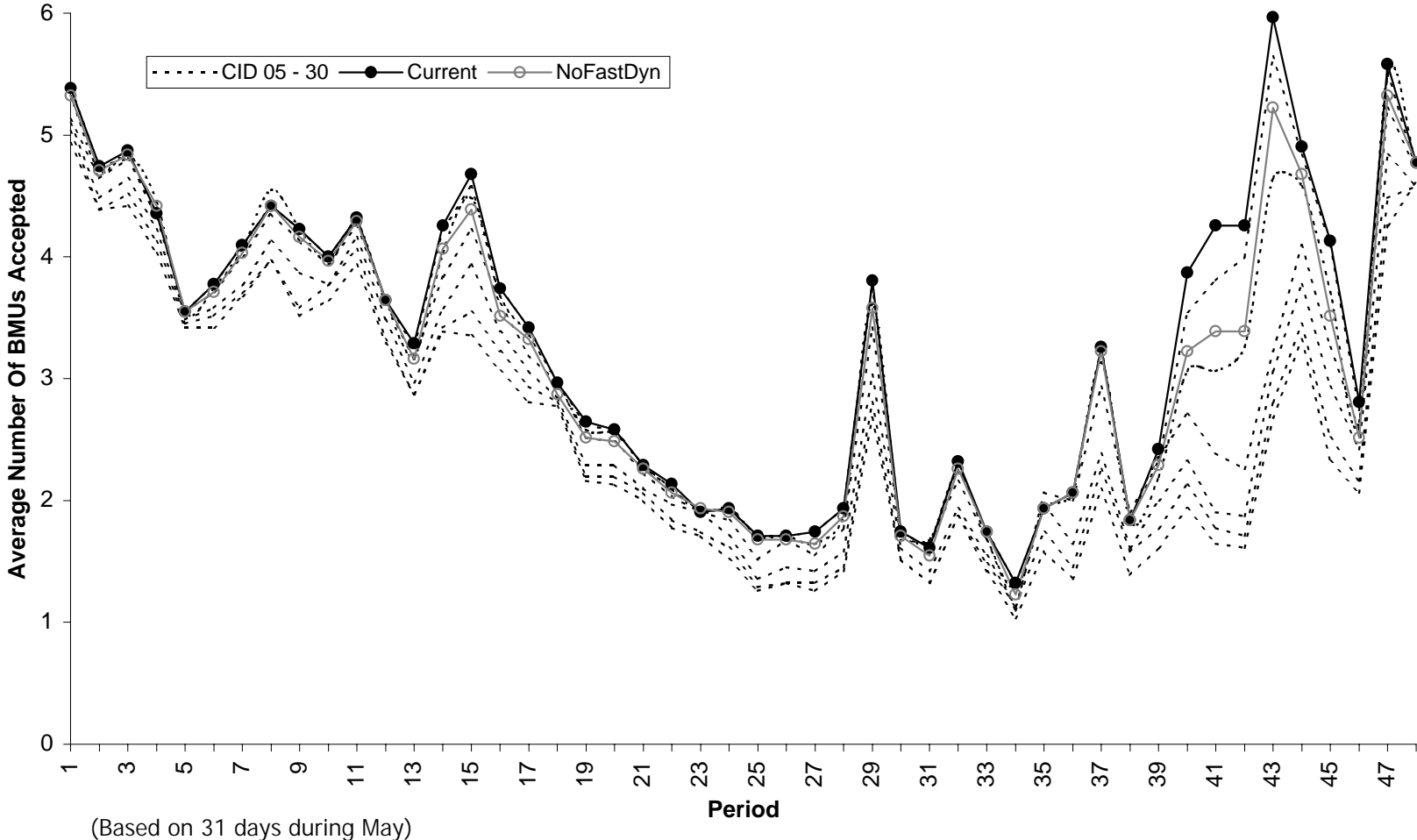
Period Average



Analysis of Smaller Stack



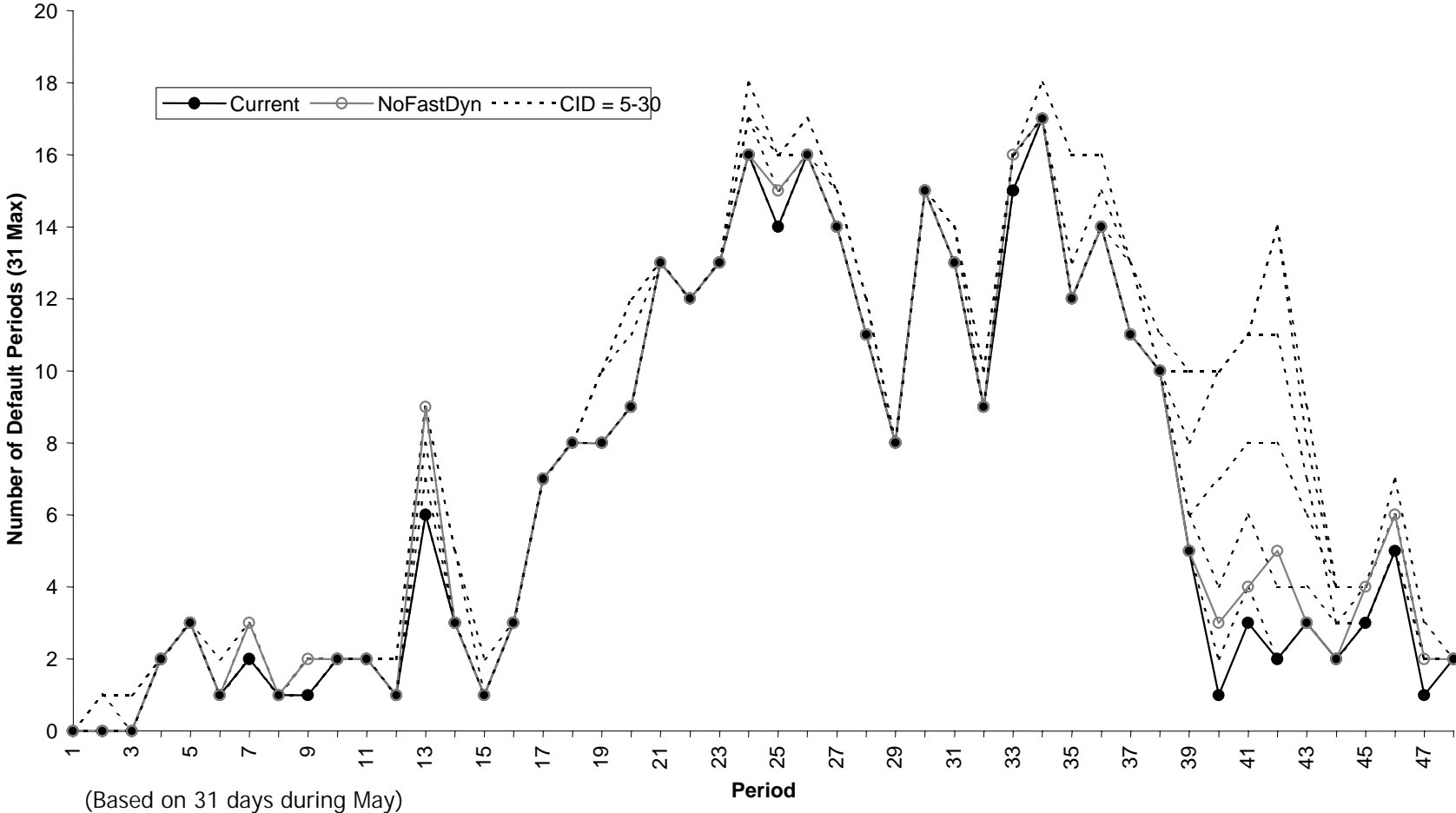
Analysis of the Smaller Stack



Analysis of Default Periods



Analysis of Default Periods



Top 10 “Interesting” Periods



Settlement Date	Period	Current SBP	CID						No Fast Dynamics
			5	10	15	20	25	30	
05-May-01	13	5000	5000	5000	5000	11	11	11	11
18-May-01	14	3090	3090	15	15	15	15	15	15
18-May-01	1	1597	1597	1597	1597	1597	30	21	30
05-May-01	15	680	778	224	224	270	33	11	31
08-May-01	45	269	587	587	114	571	99	35	95
16-May-01	46	167	167	167	167	455	455	455	25
29-May-01	41	475	475	273	273	7	7	6	273
22-May-01	47	470	17	17	17	17	17	17	17
10-May-01	43	417	461	461	70	70	70	70	270
15-May-01	14	460	460	34	36	36	36	36	34

Conclusions



- CID of 15 will not remove all spikes
- CID of 30 will flatten evening peak
- Some prices can increase
- 50% of periods during day already have a default price
- CID can increase the incidence of default prices to 50% during the evening

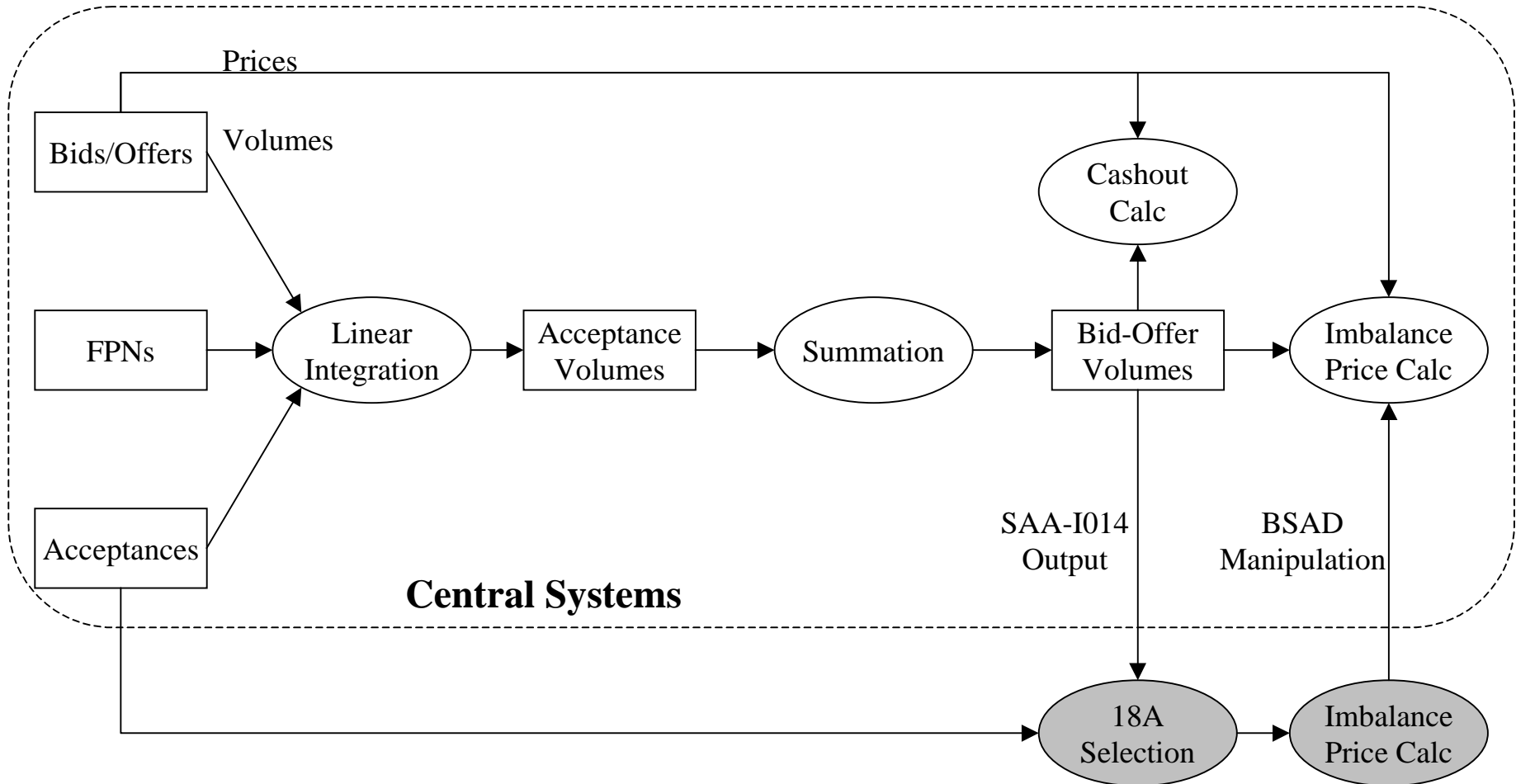
Principles



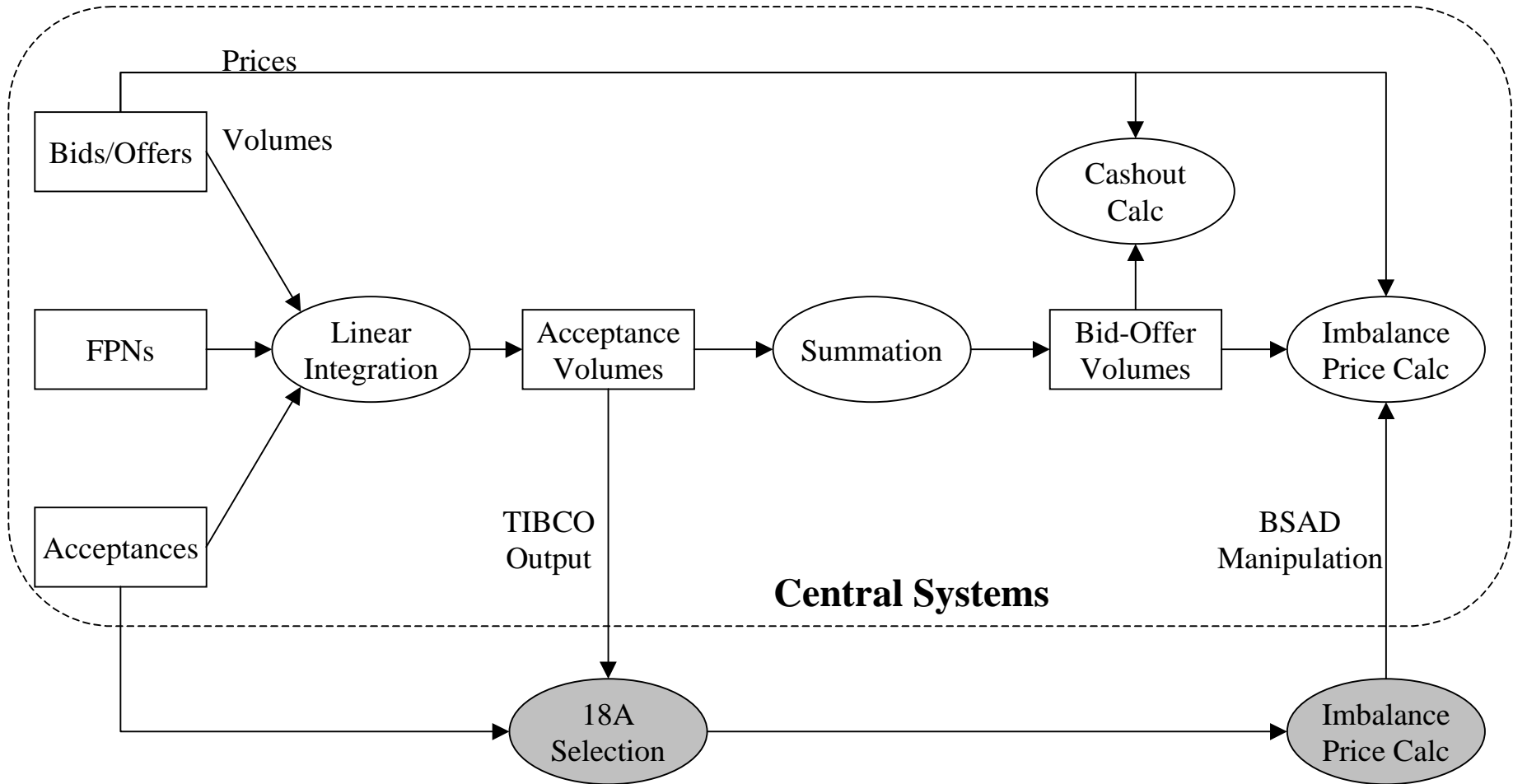
1. Price stability between Settlement Runs
2. Central Service Provider To Operate
3. Consistency with enduring solution
4. Minimise errors due to communications
5. Intellectual Purity of solution

- Architectures #1a and #1b based on external pricing engine and modified BSAD submissions
- Architecture #2 based on extension to P10 software change to make use of “Deemed Acceptance Flag”
- Architecture #3 shows an enduring solution for CID Option 3.

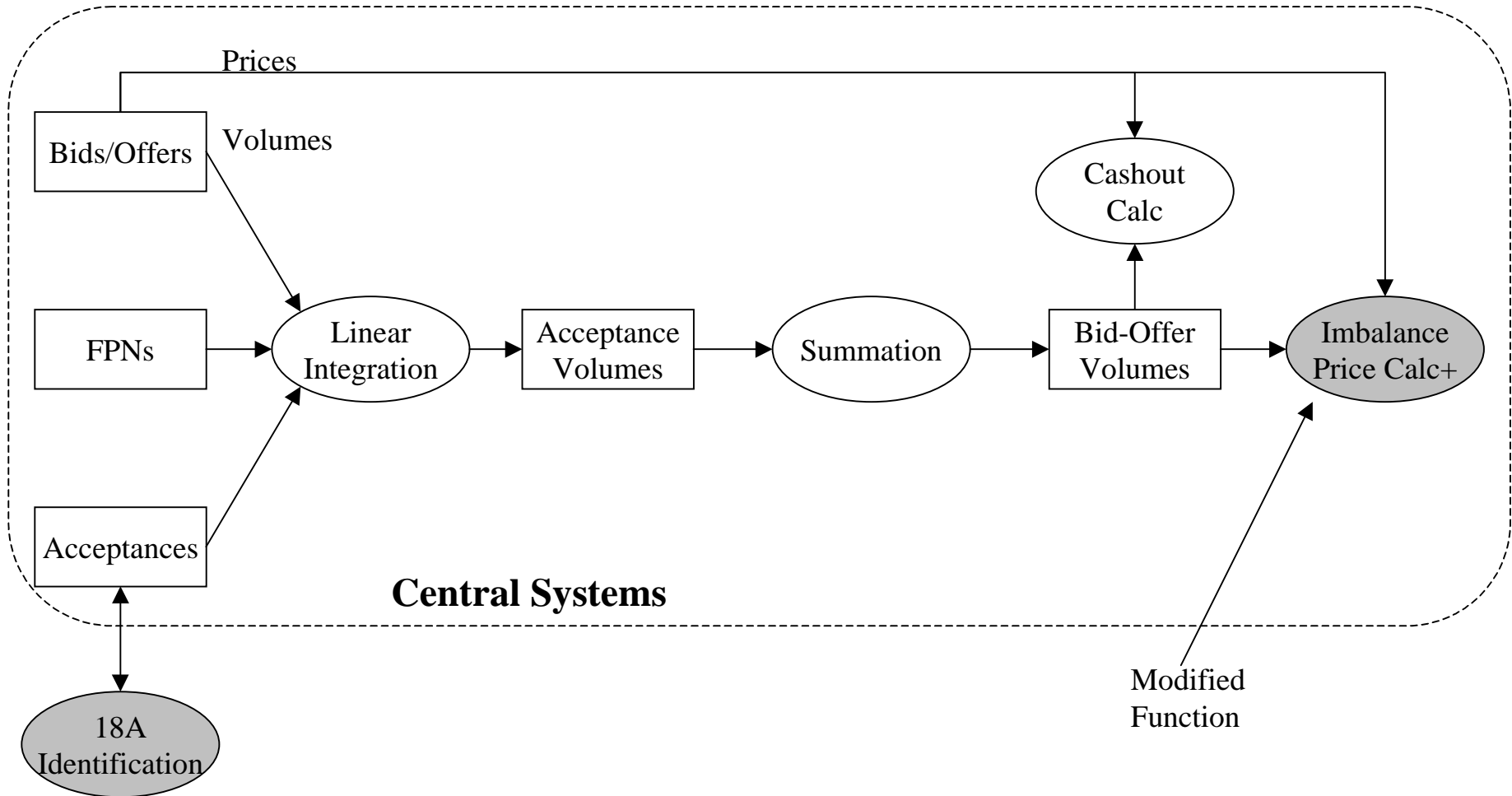
System Architecture #1a



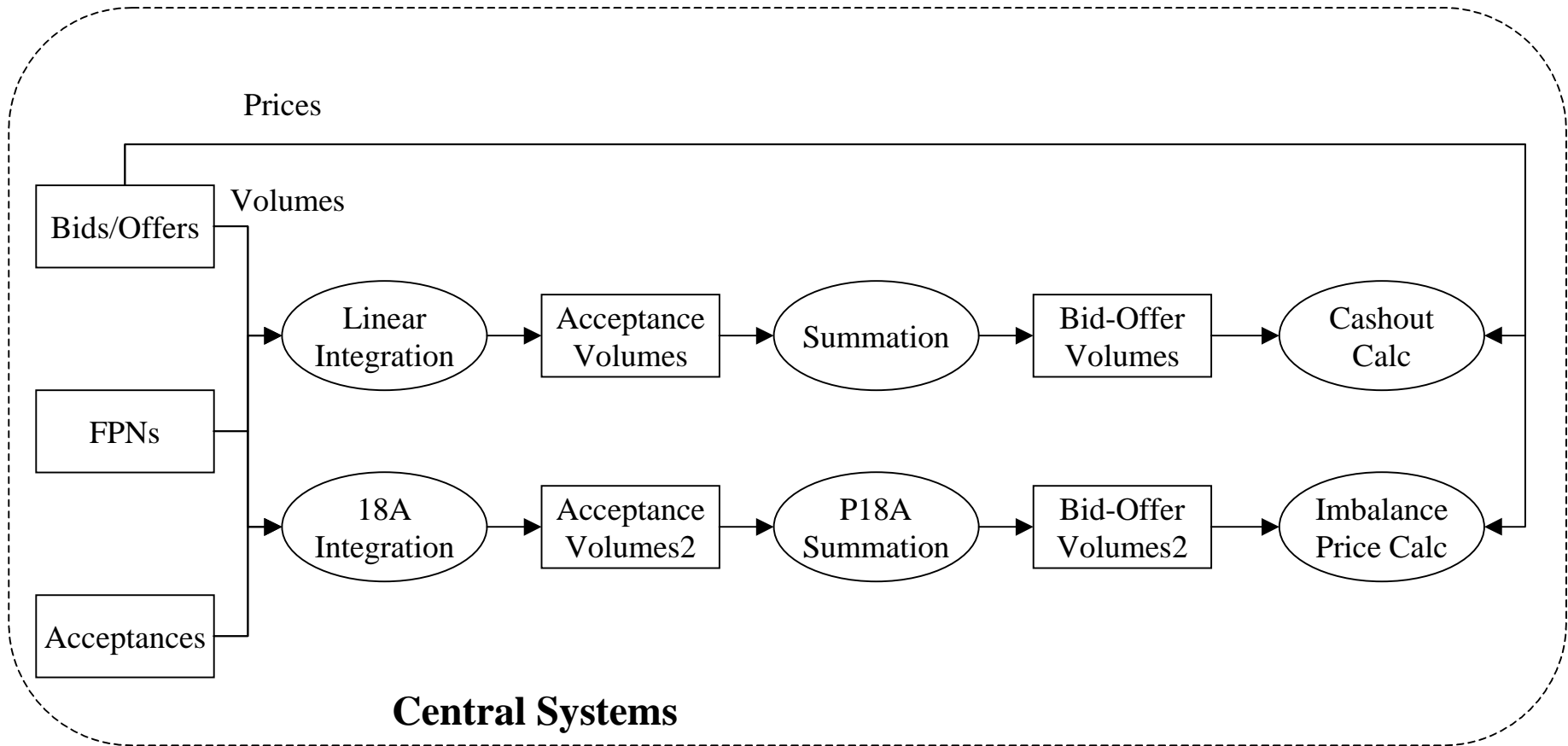
System Architecture #1b



System Architecture #2



System Architecture #3



Architecture Analysis



ARCHITECTURE	WORKAROUND SOLUTION	ENDURING SOLUTION	CID OPTIONS
#1A	Y	N	1A
#1B	Y	N	1B, 1C, 2
#2	Y	Y	1B, 1C, 2
#3	N	Y	3

Workaround #1



-
- Make use of the Elexon Monitoring system
 - Feed prices into SAA using modified BSAD
 - Return data in time for SF Settlement Run
 - Implement CID Option #1a
 - Requires no change to Central Systems
 - Requires operational service from Elexon

Workaround #2



- P18A hook provided in P10 software change
- Price calculation remains with Central Systems
- All manual steps in calculating prices to remain with Central Services Provider
- Modify data in time for II Settlement Run
- Implement CID Option #1b or #1c
- Potential enduring solution

Workaround Analysis



WORKAROUND	SYSTEM ARCHITECTURE	CID OPTION	PRICE CALCULATION
#1	#1a	#1a	Prior to SF
#2	#2	#1c	Prior to II

Workaround Principles



Measure		#1	#2
1	Reduced "Settlement Day" issues when enduring solution introduced	N	Y
2	Operational Service run by CSP	N	Y
	Pricing engine in SAA	N	Y
	Minimal dependency on CSP for developing solution	Y	N
3	Capable of forming basis of enduring solution	N	Y
	Requires no changes to SAA, which may need to be removed	Y	N
4	Does not require the use of BSAD manipulation	N	Y
	Minimise co-ordination between parties and workarounds	N	Y
5	Can differentiate between BMU acceptances within a period	N	Y

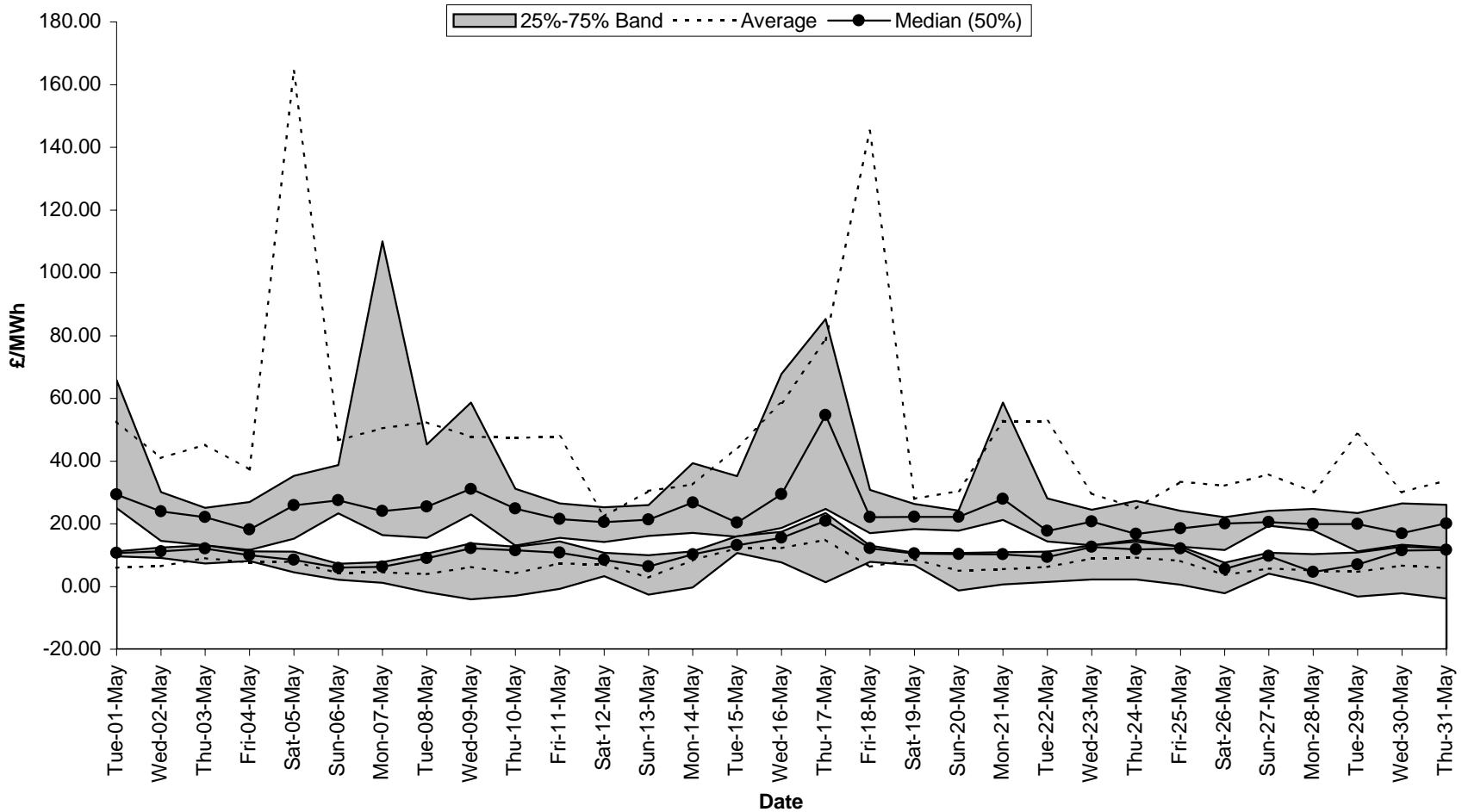
Supporting Slides



D.Avg (Current)



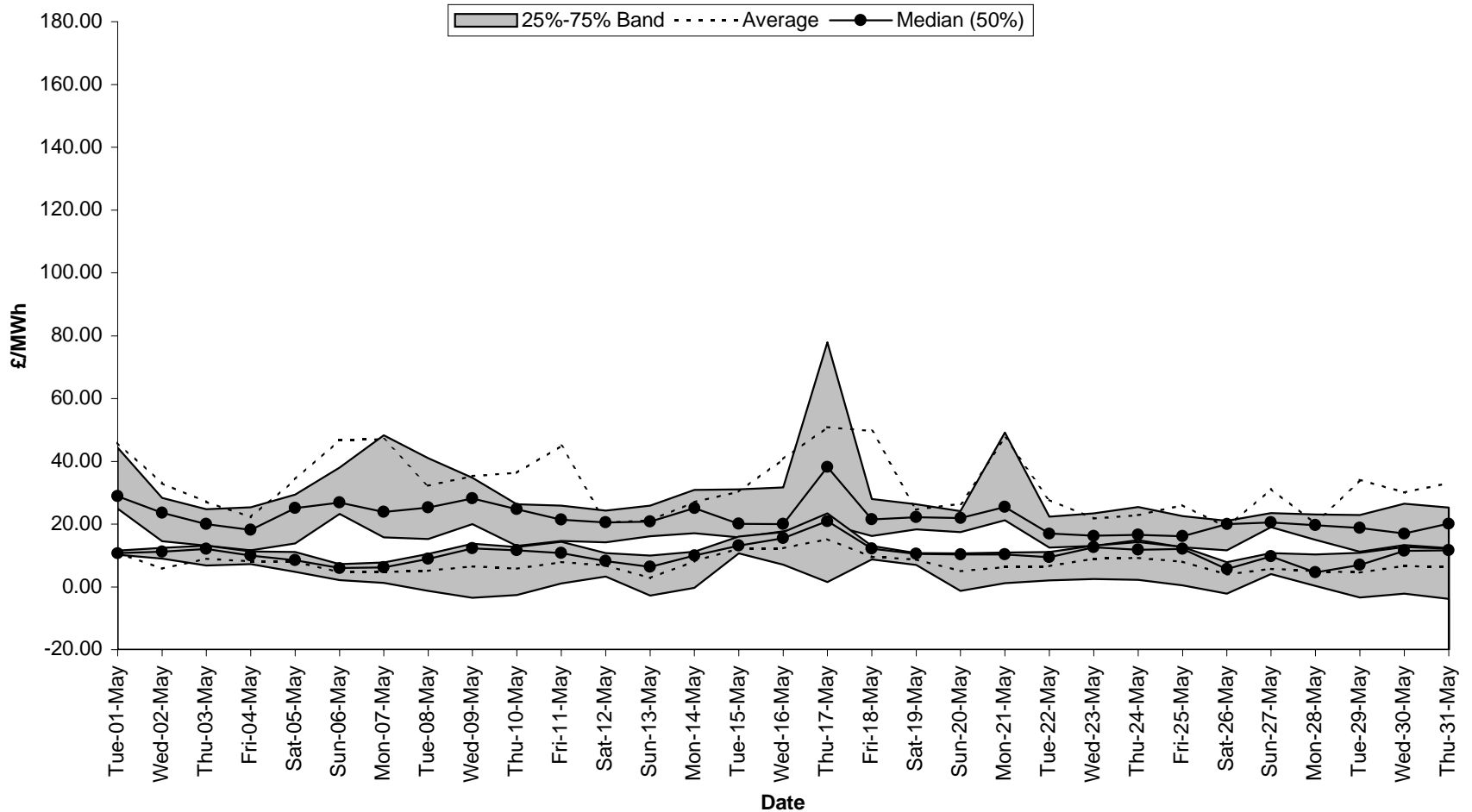
Daily Average



D.Avg (No Fast Dynamics)



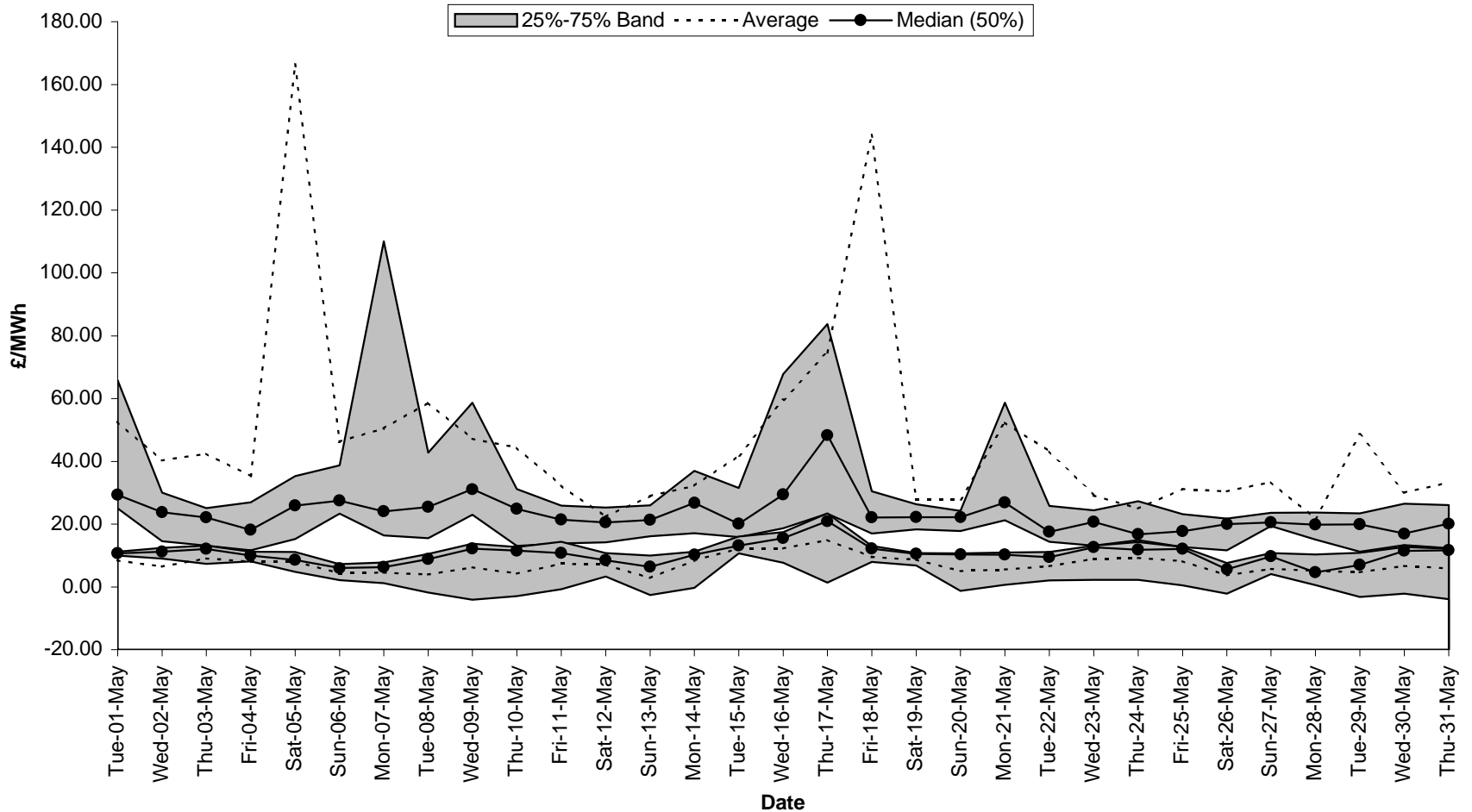
Daily Average



D.Avg (CID = 5)



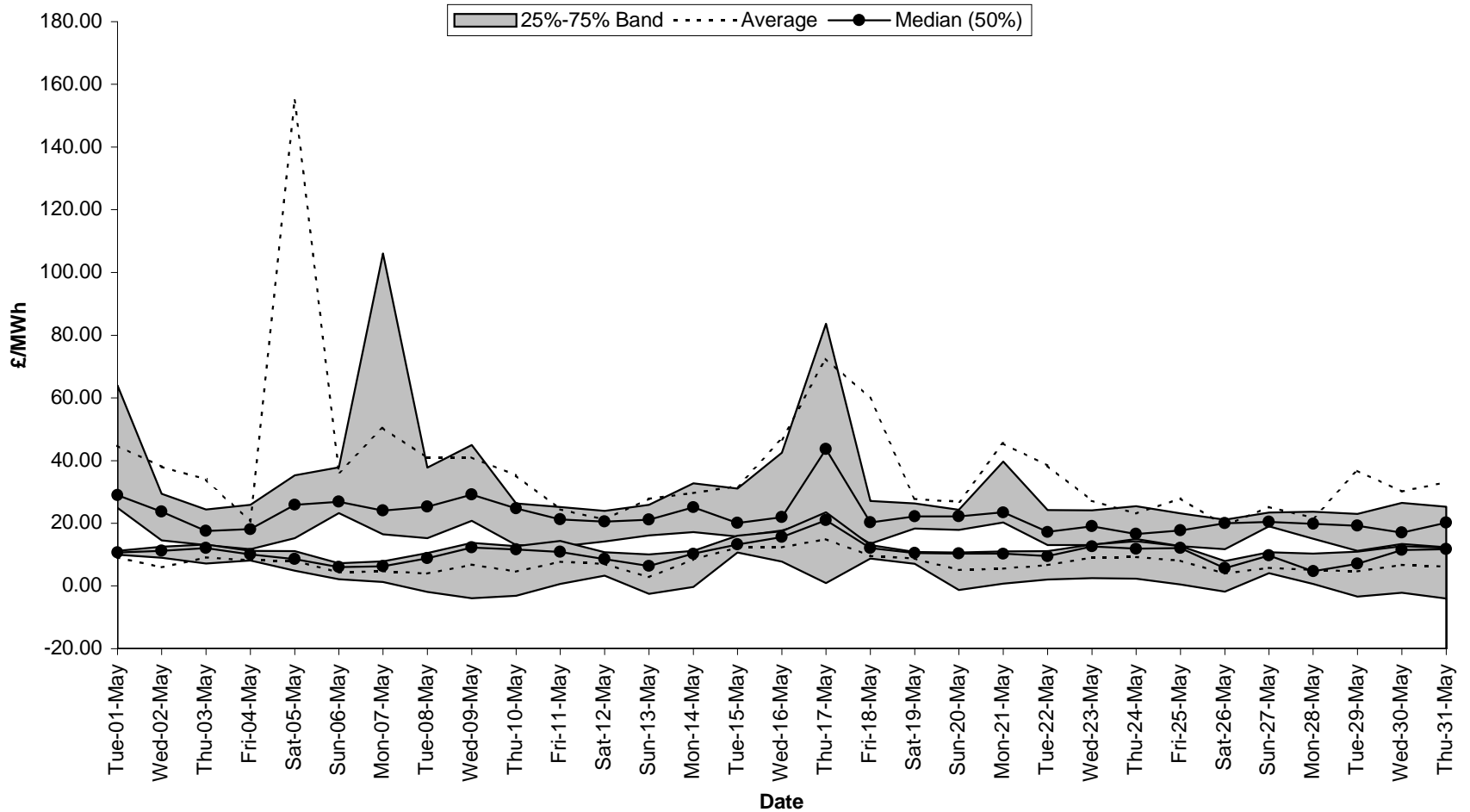
Daily Average



D.Avg (CID = 10)



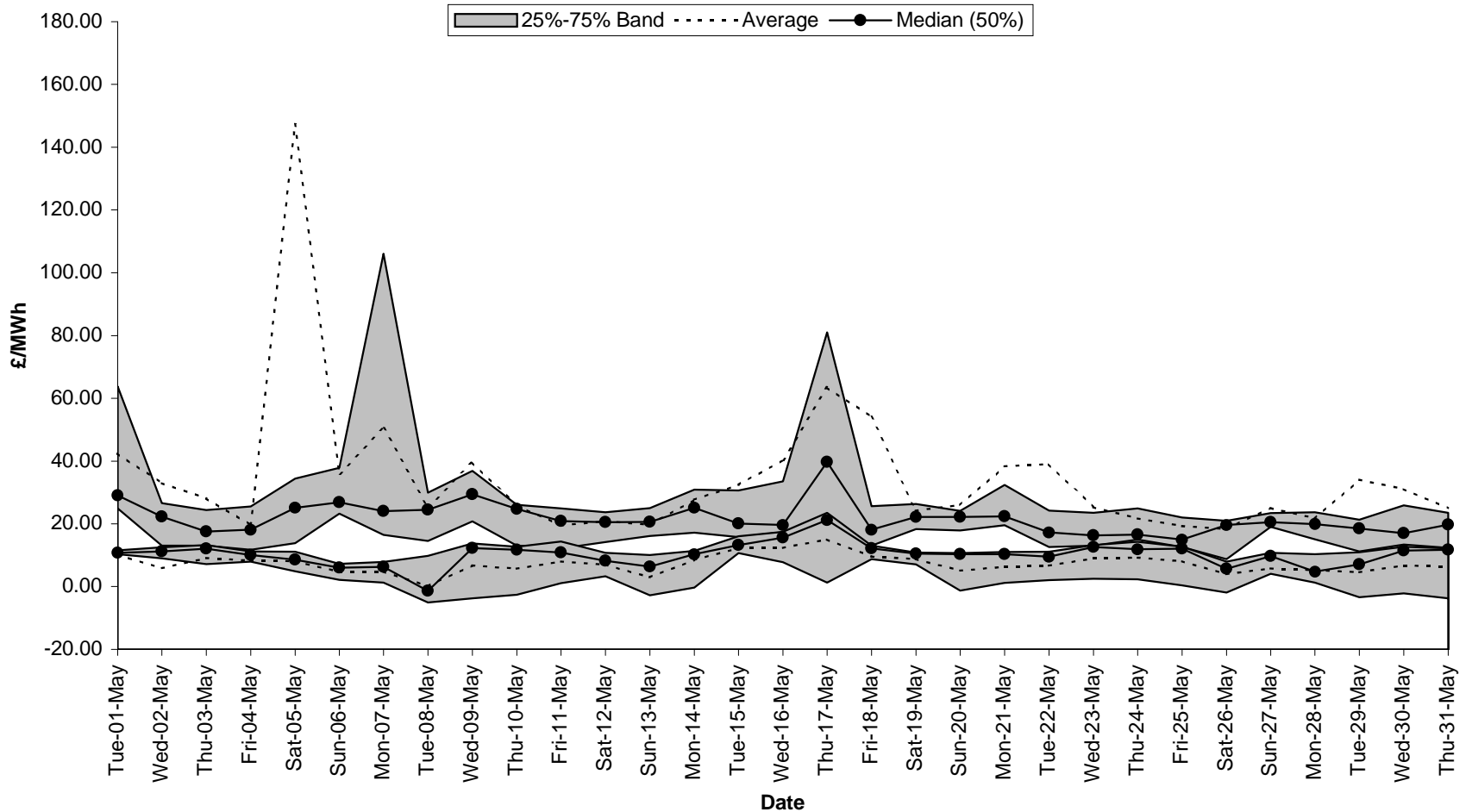
Daily Average



D.Avg (CID = 15)



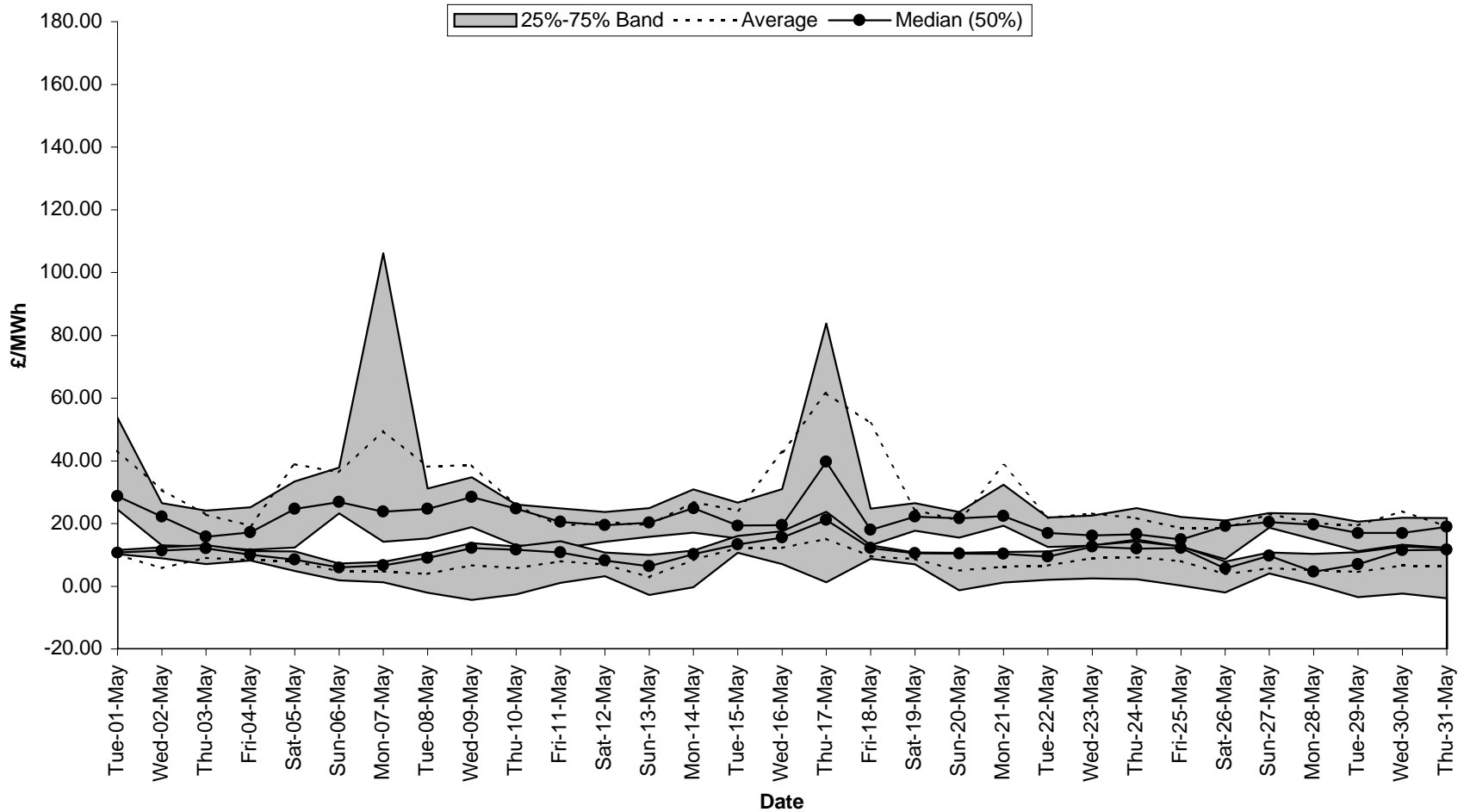
Daily Average



D.Avg (CID = 20)



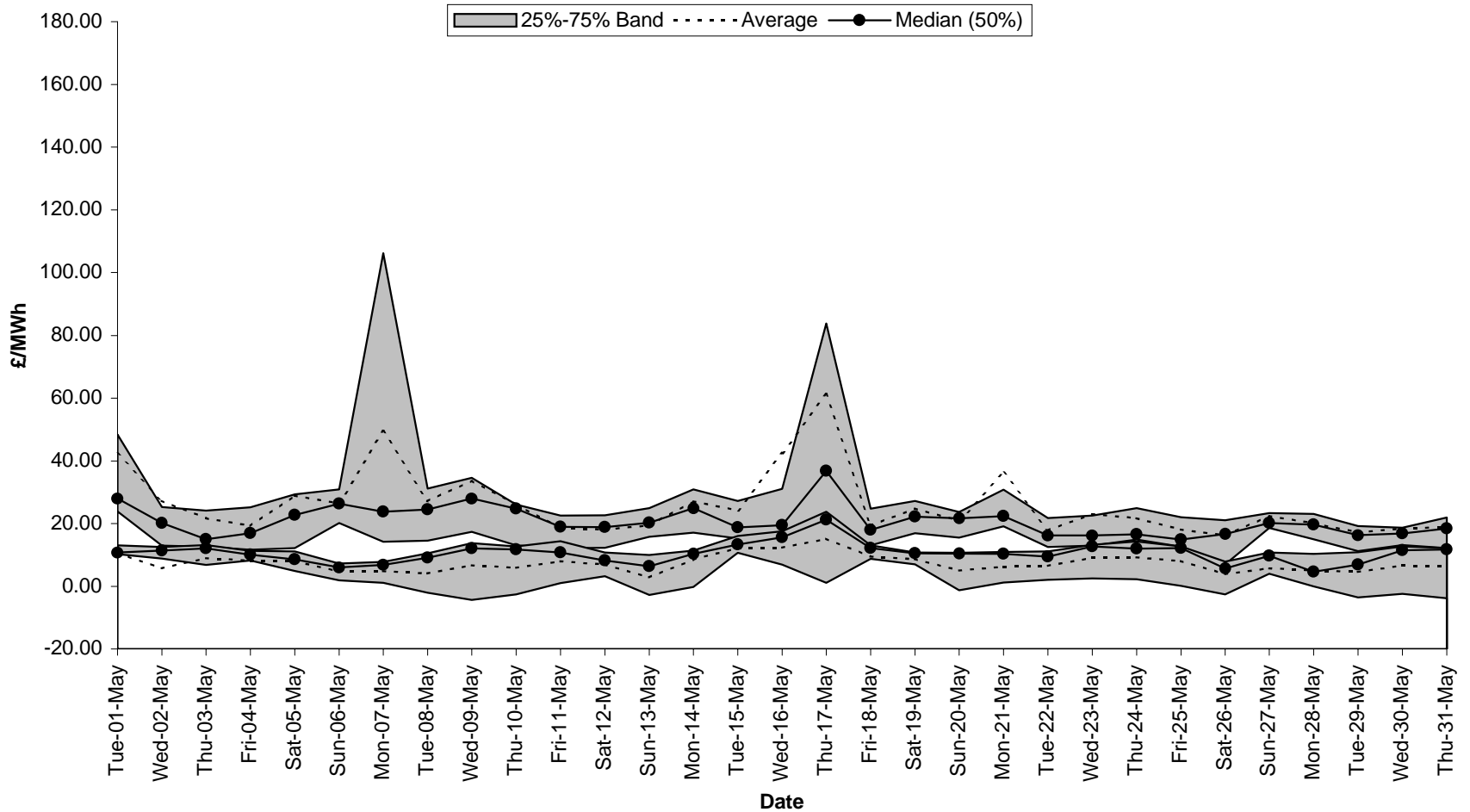
Daily Average



D.Avg (CID = 25)



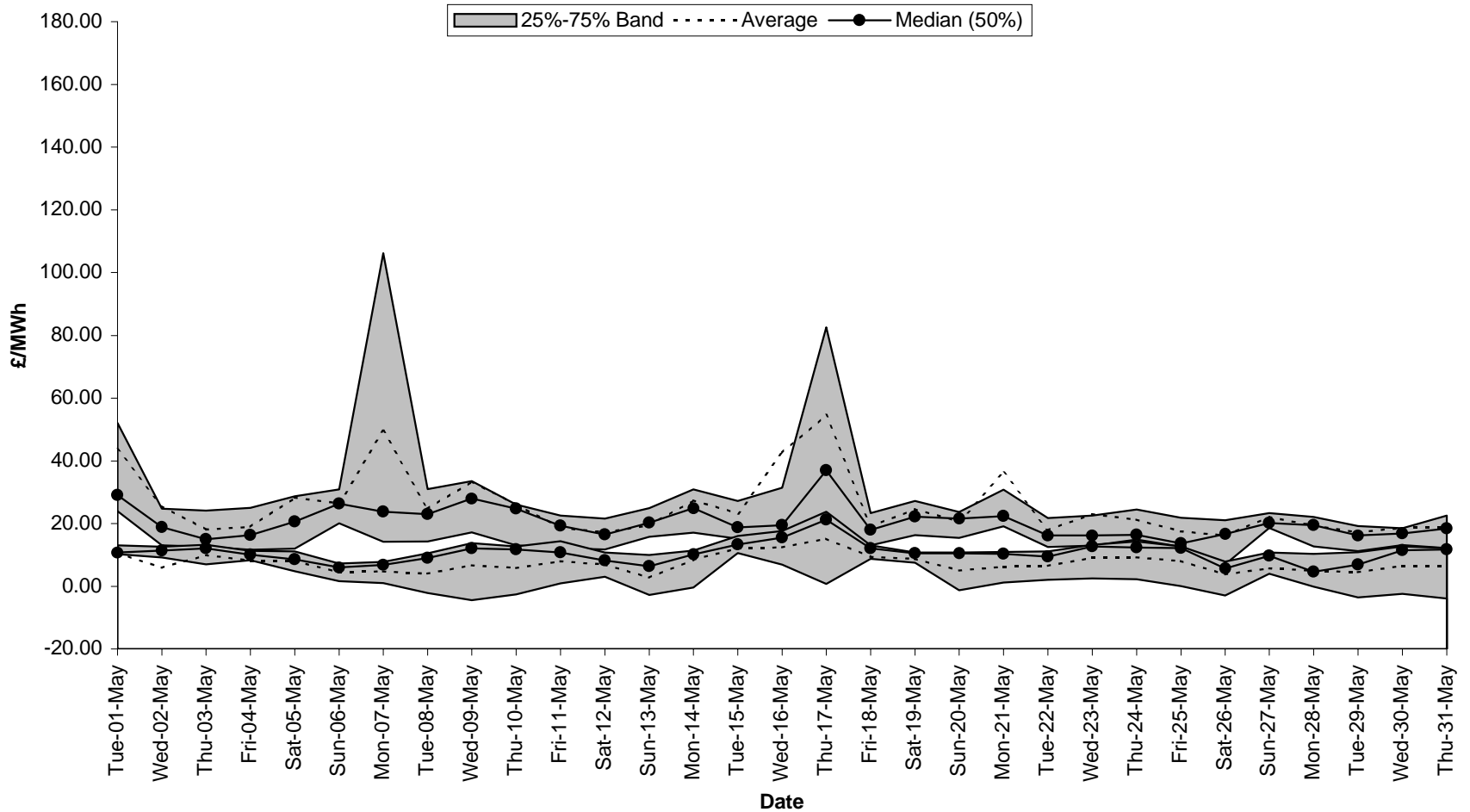
Daily Average



D.Avg (CID = 30)



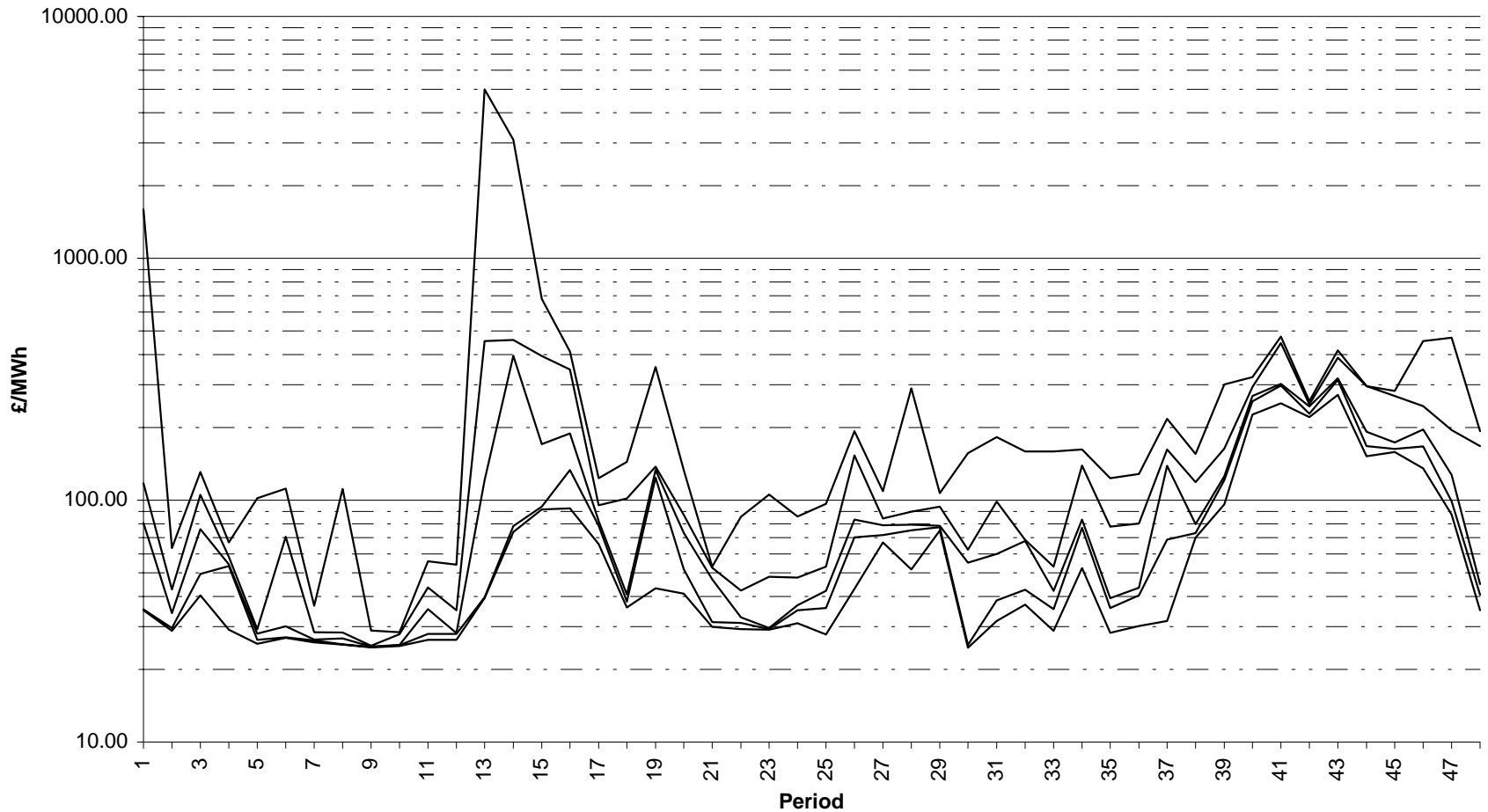
Daily Average



P.Max (Current)



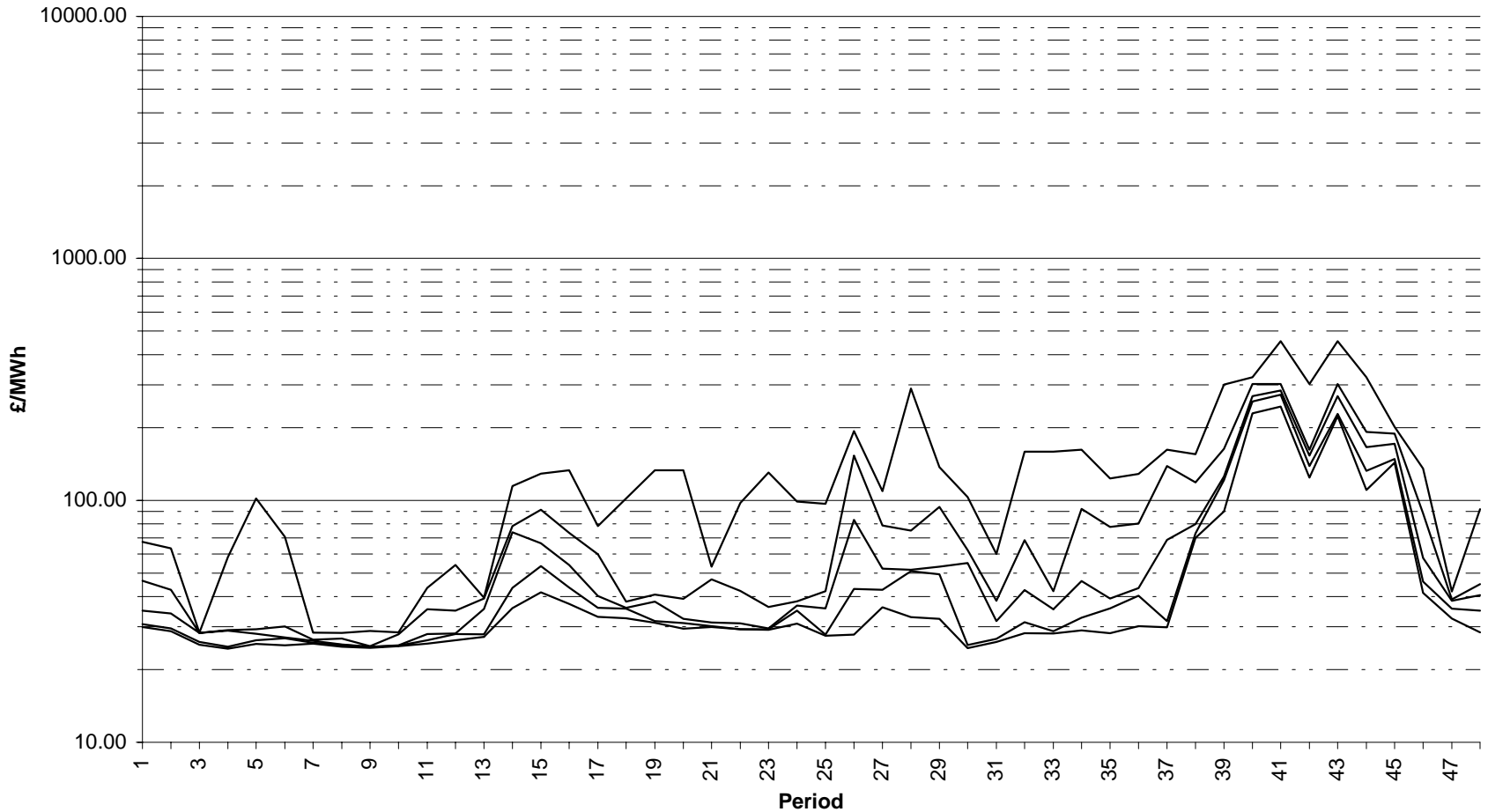
Top 5 Period SBP Prices



P.Max (No Fast Dynamics)



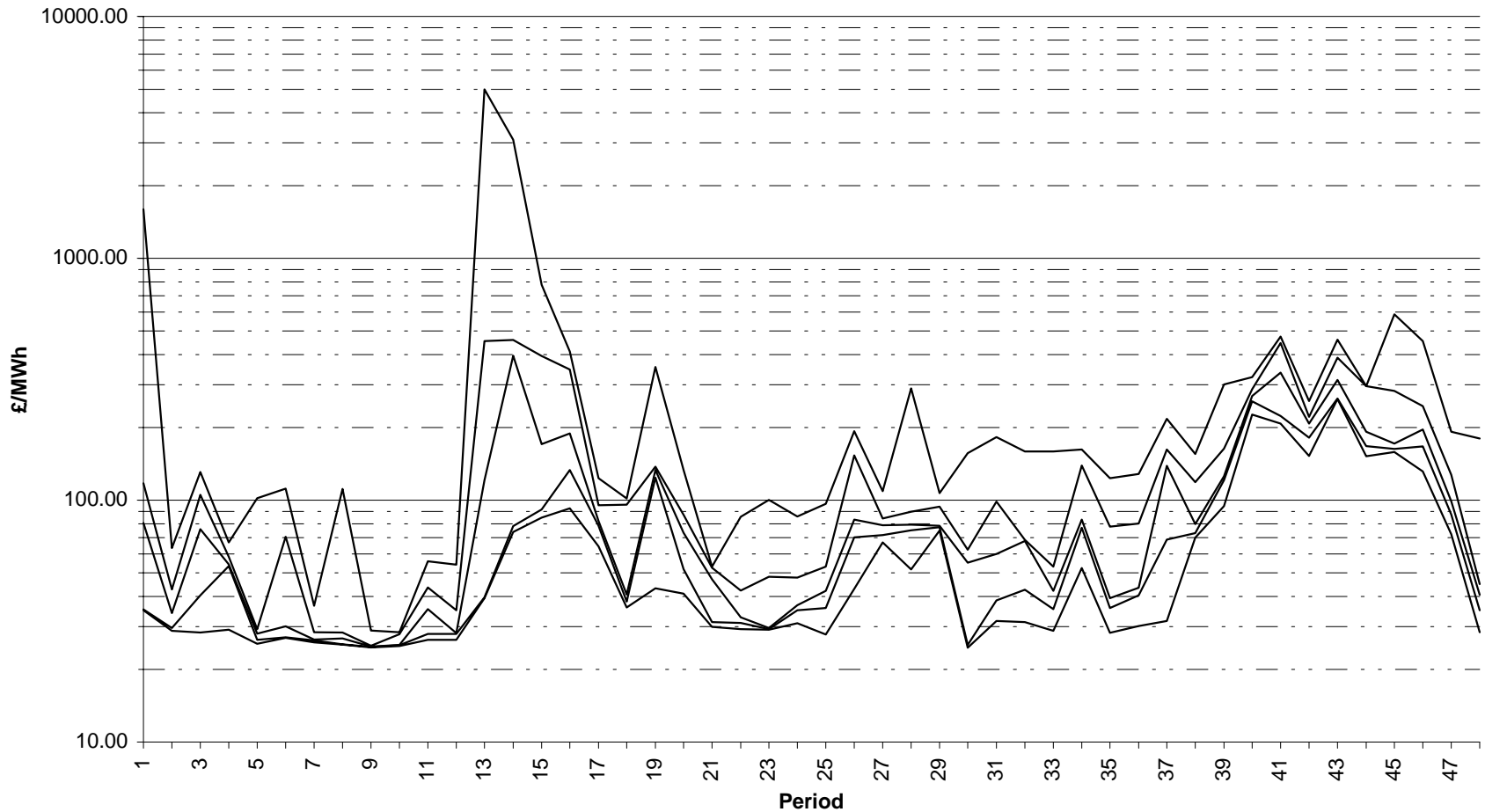
Top 5 Period SBP Prices



P.Max (CID = 5)



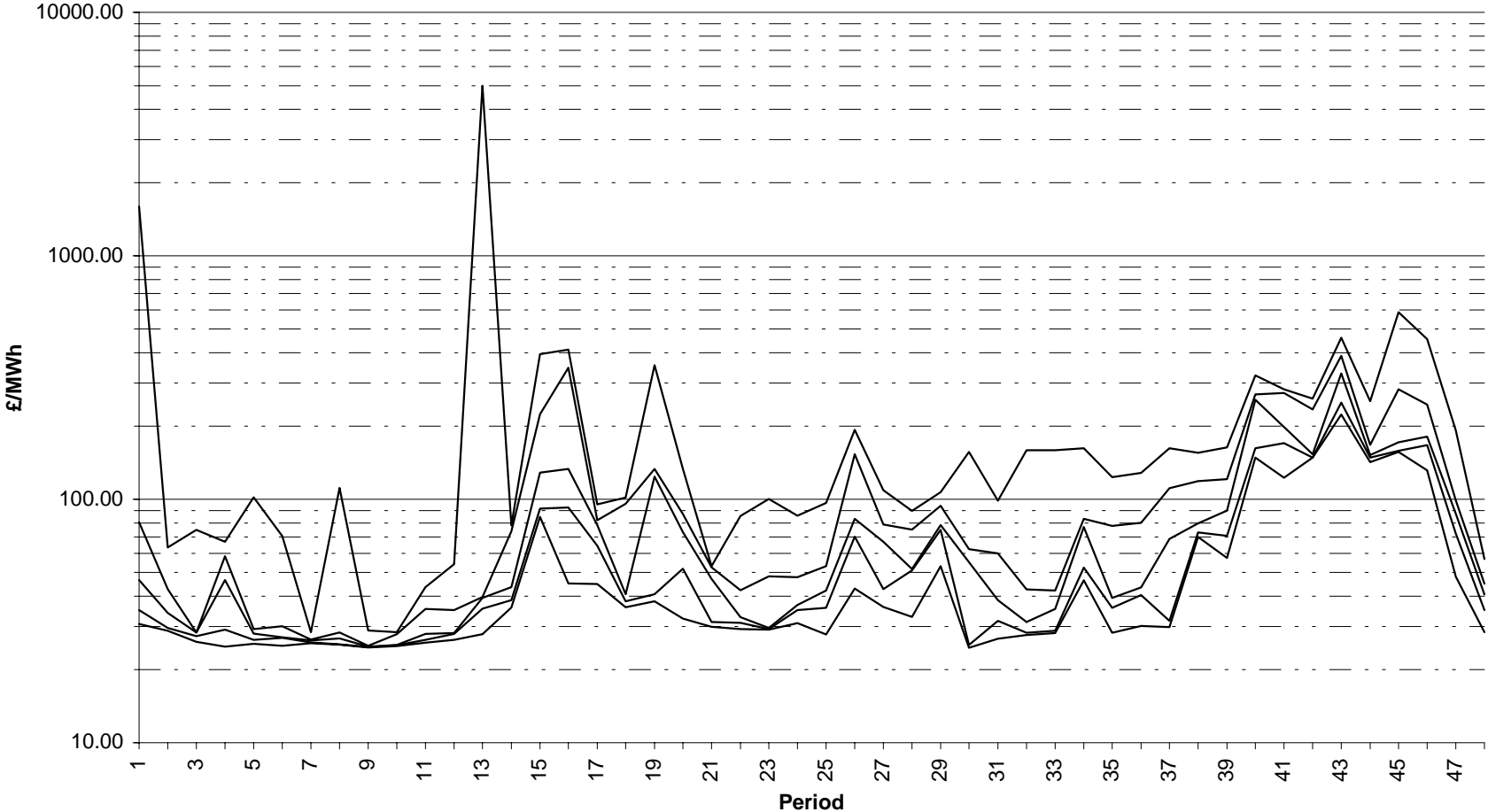
Top 5 Period SBP Prices



P.Max (CID = 10)



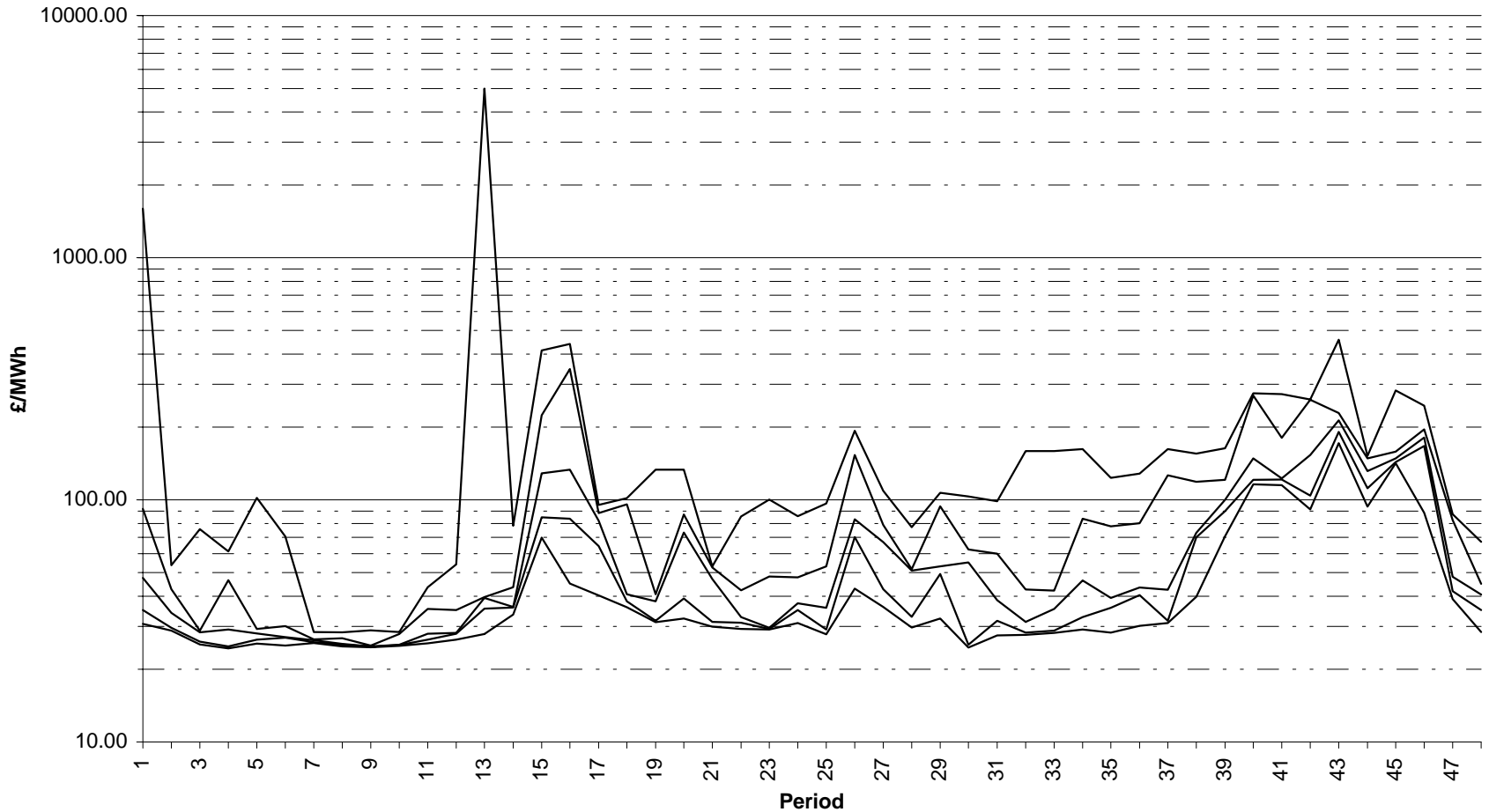
Top 5 Period SBP Prices



P.Max (CID = 15)



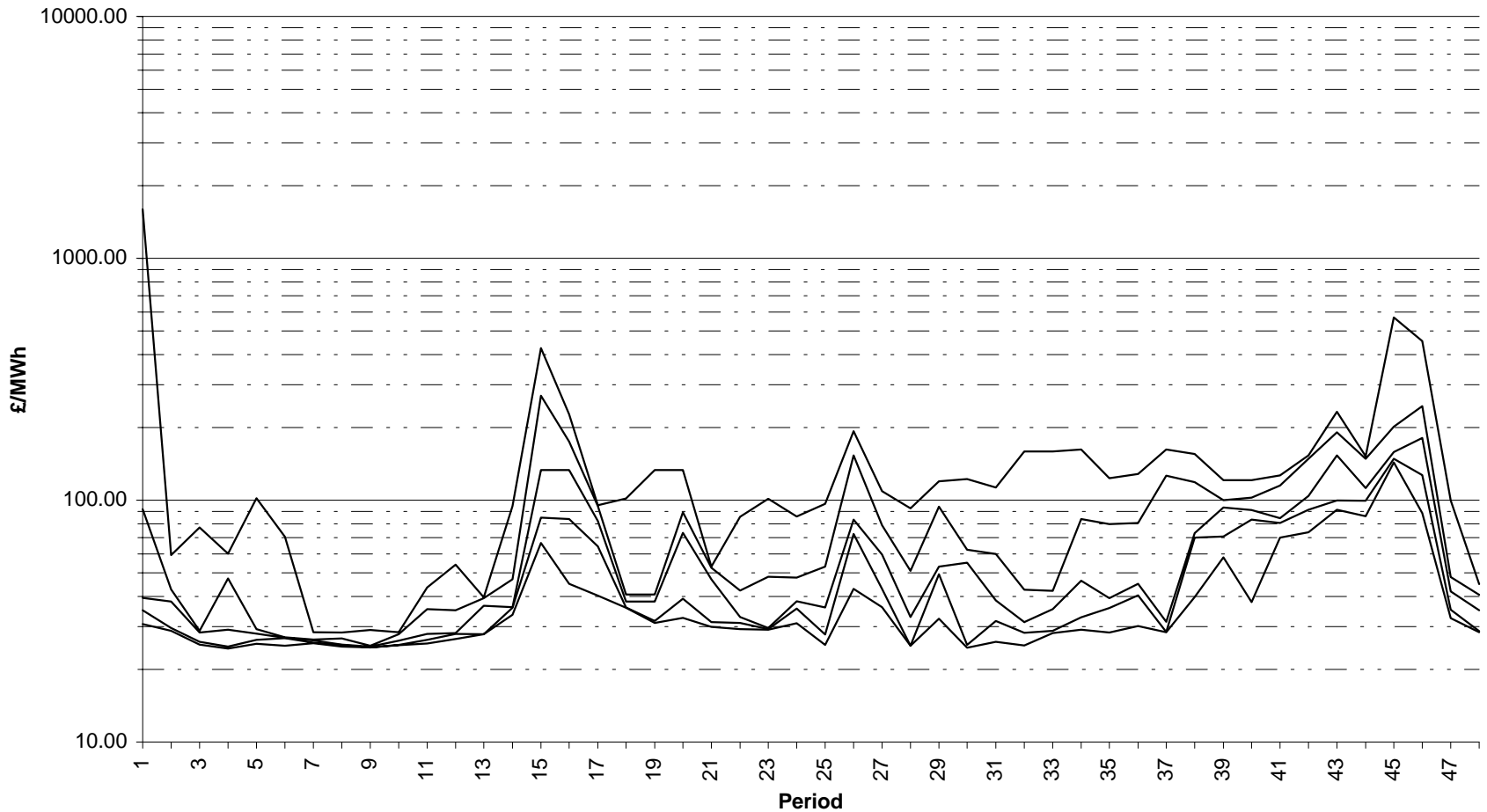
Top 5 Period SBP Prices



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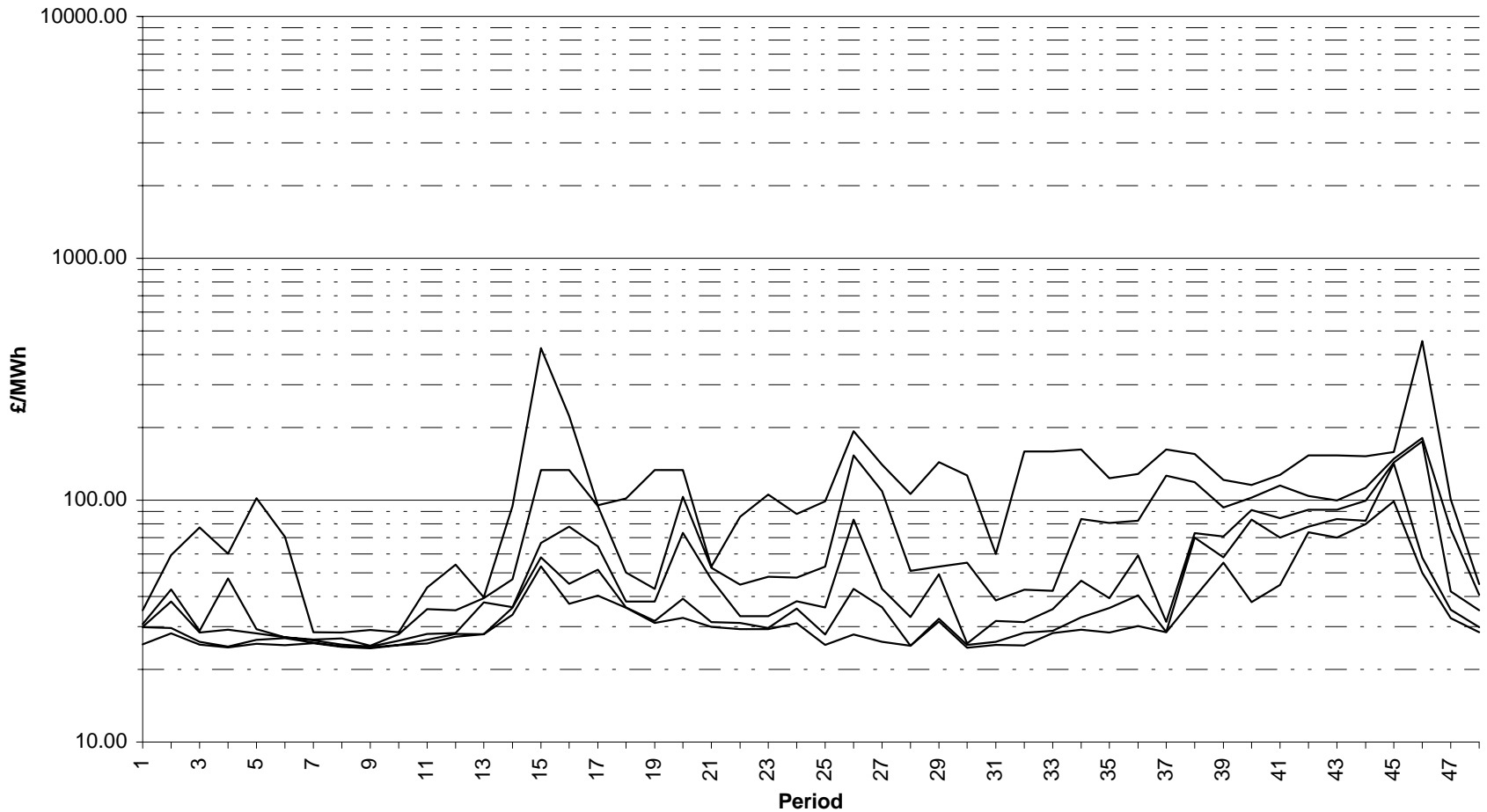
Top 5 Period SBP Prices



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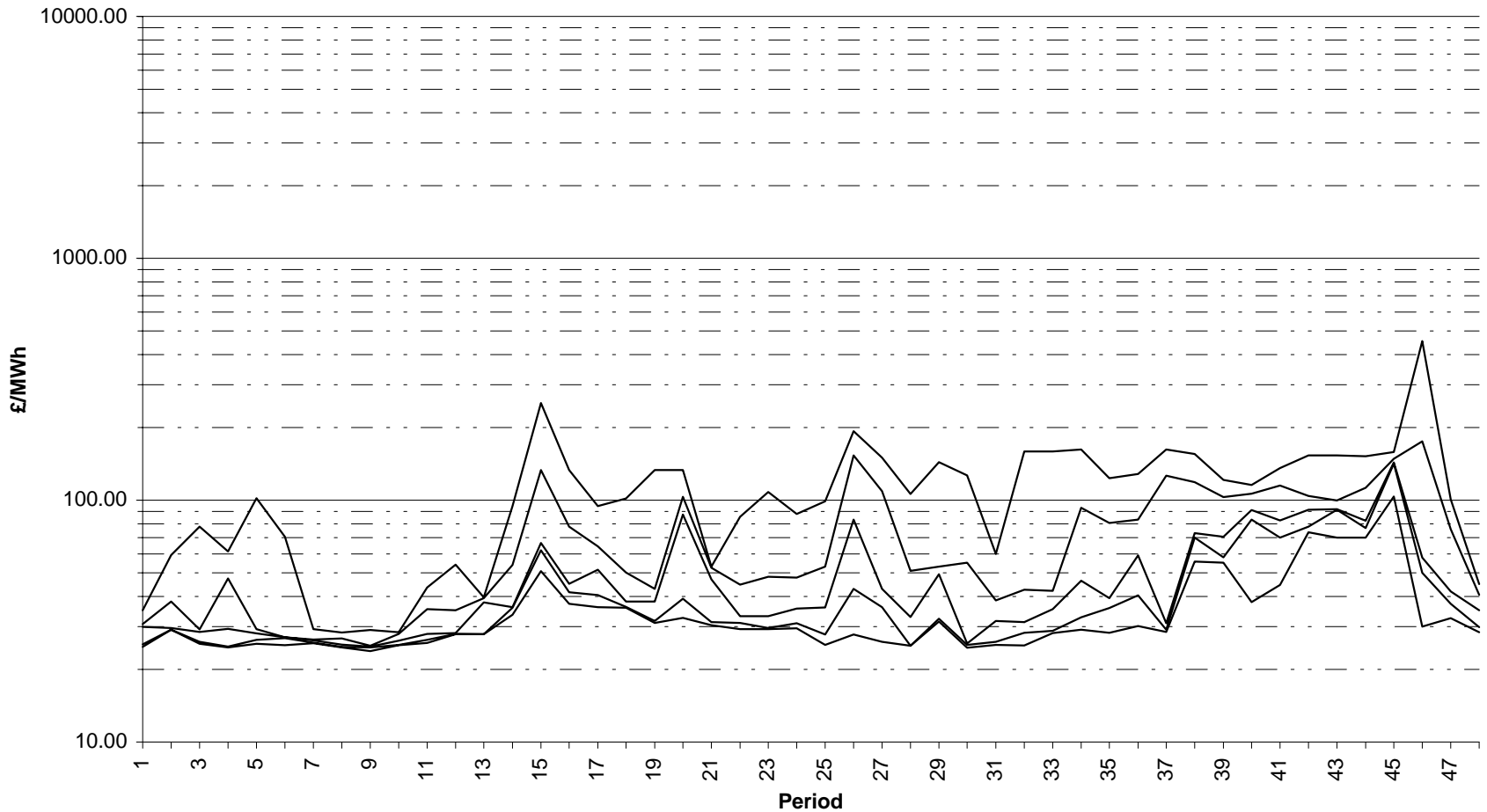
Top 5 Period SBP Prices



P.Max (CID = 30)



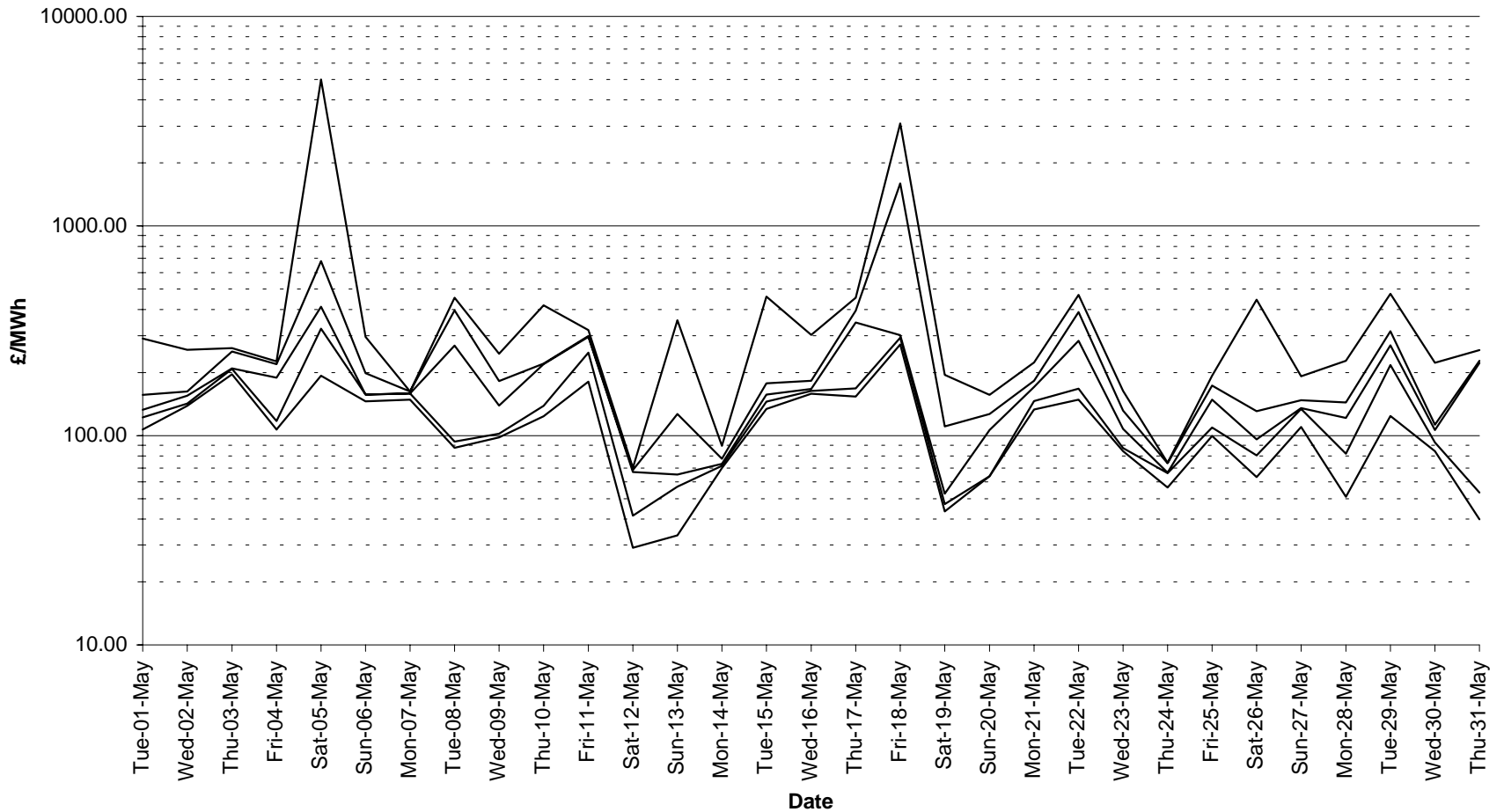
Top 5 Period SBP Prices



D.Max (Current)



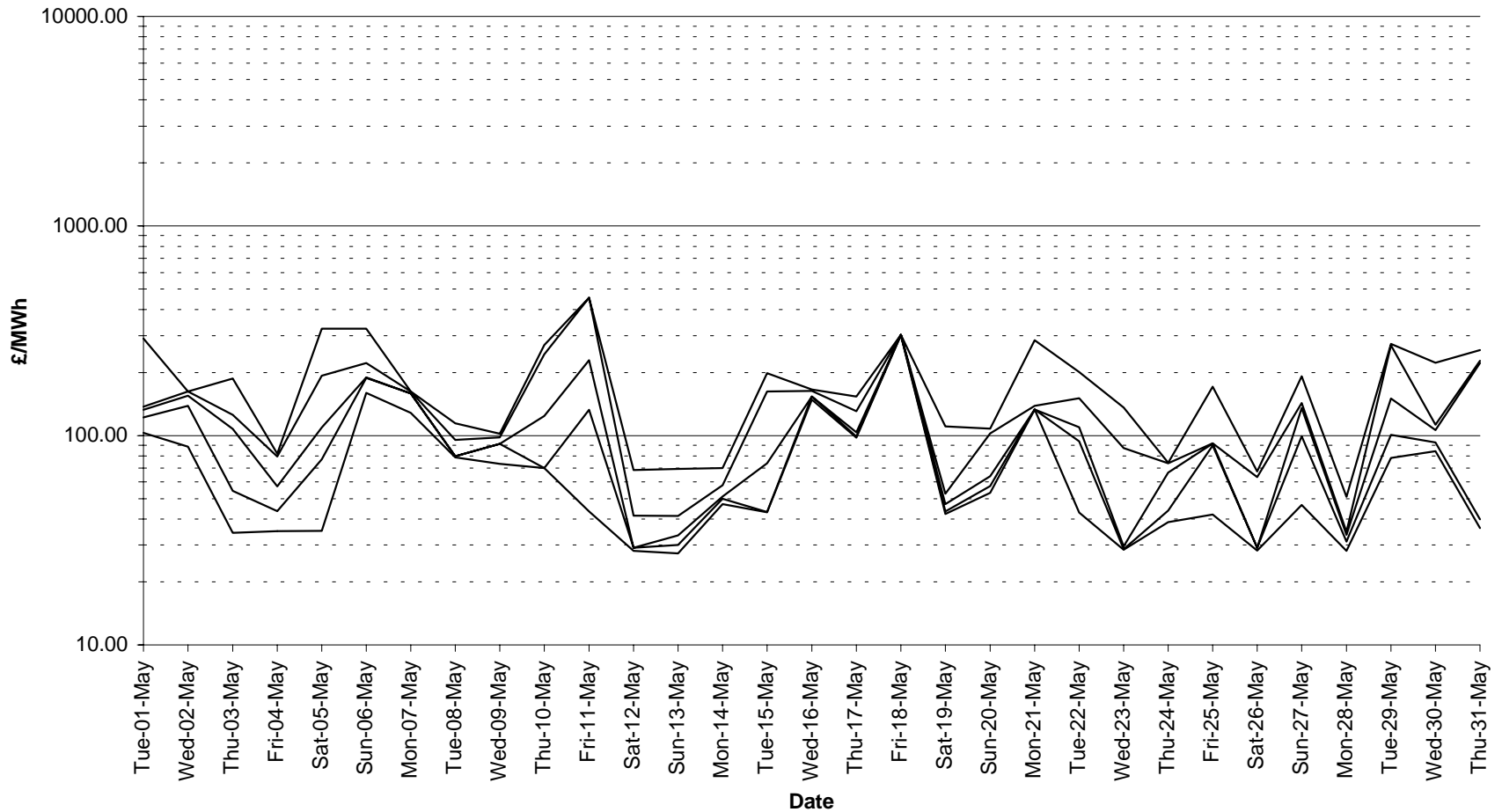
Top 5 Daily SBP Prices



D.Max (No Fast Dynamics)



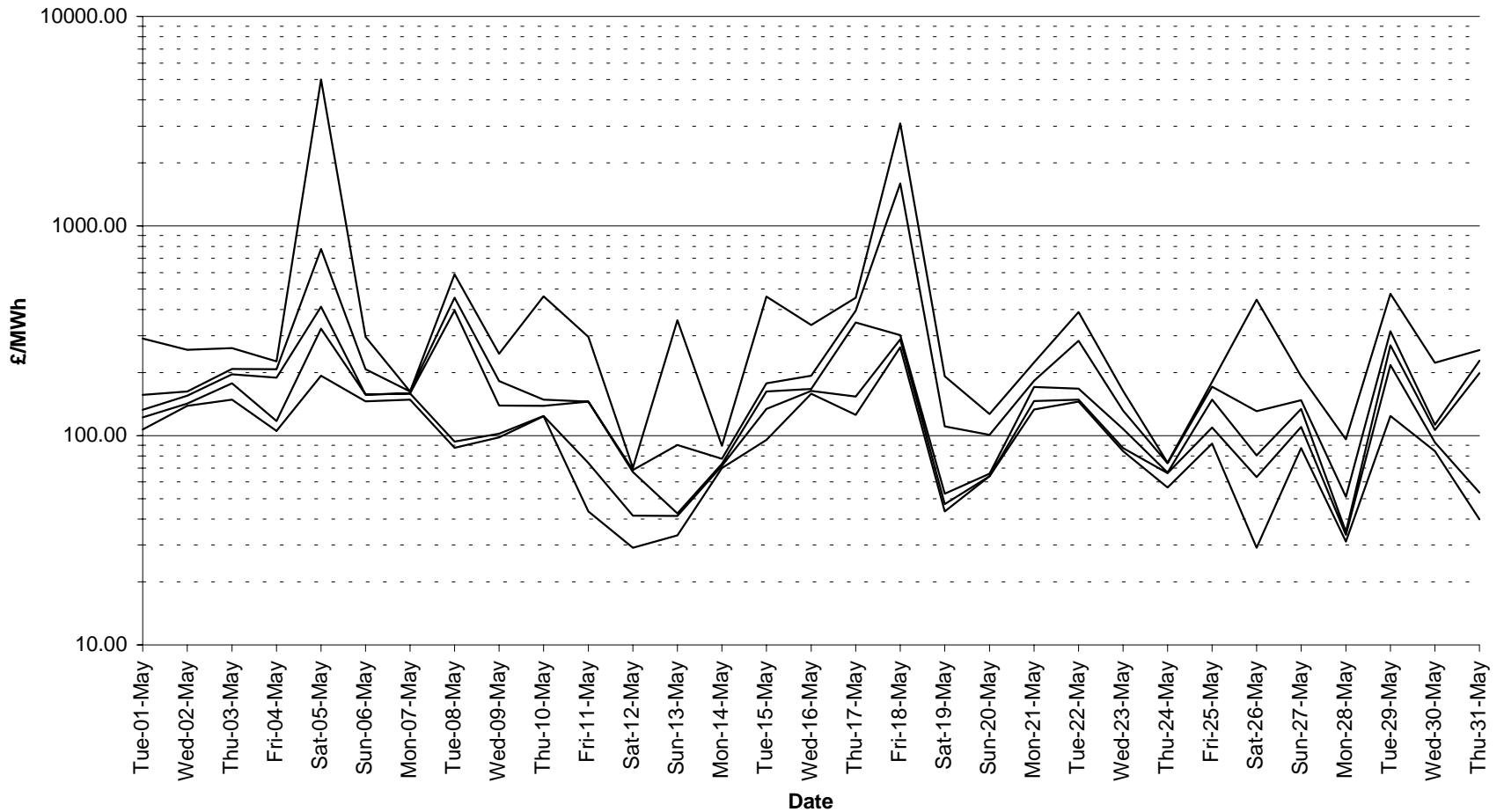
Top 5 Daily SBP Prices



D.Max (CID = 5)



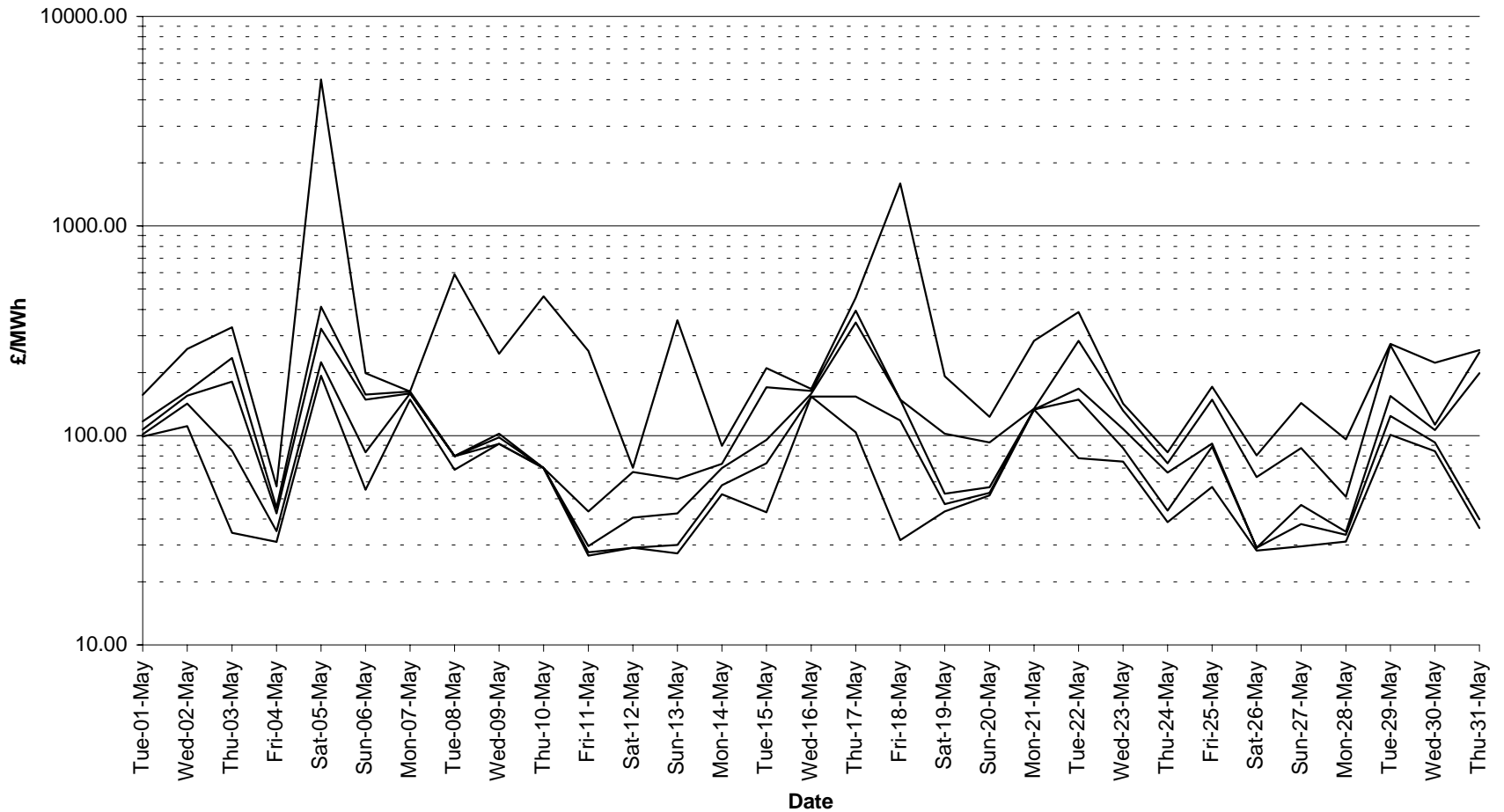
Top 5 Daily SBP Prices



D.Max (CID = 10)



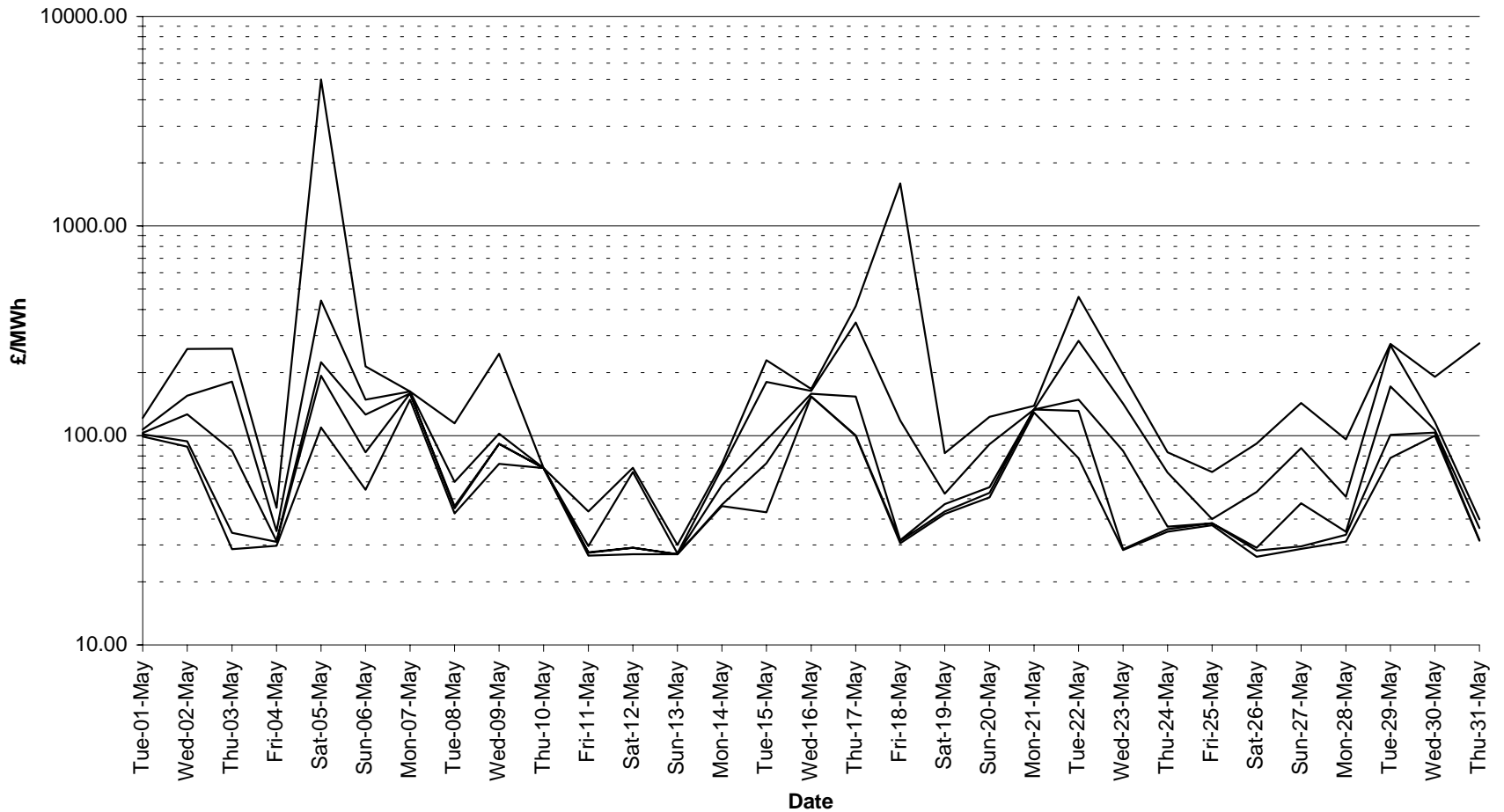
Top 5 Daily SBP Prices



D.Max (CID = 15)



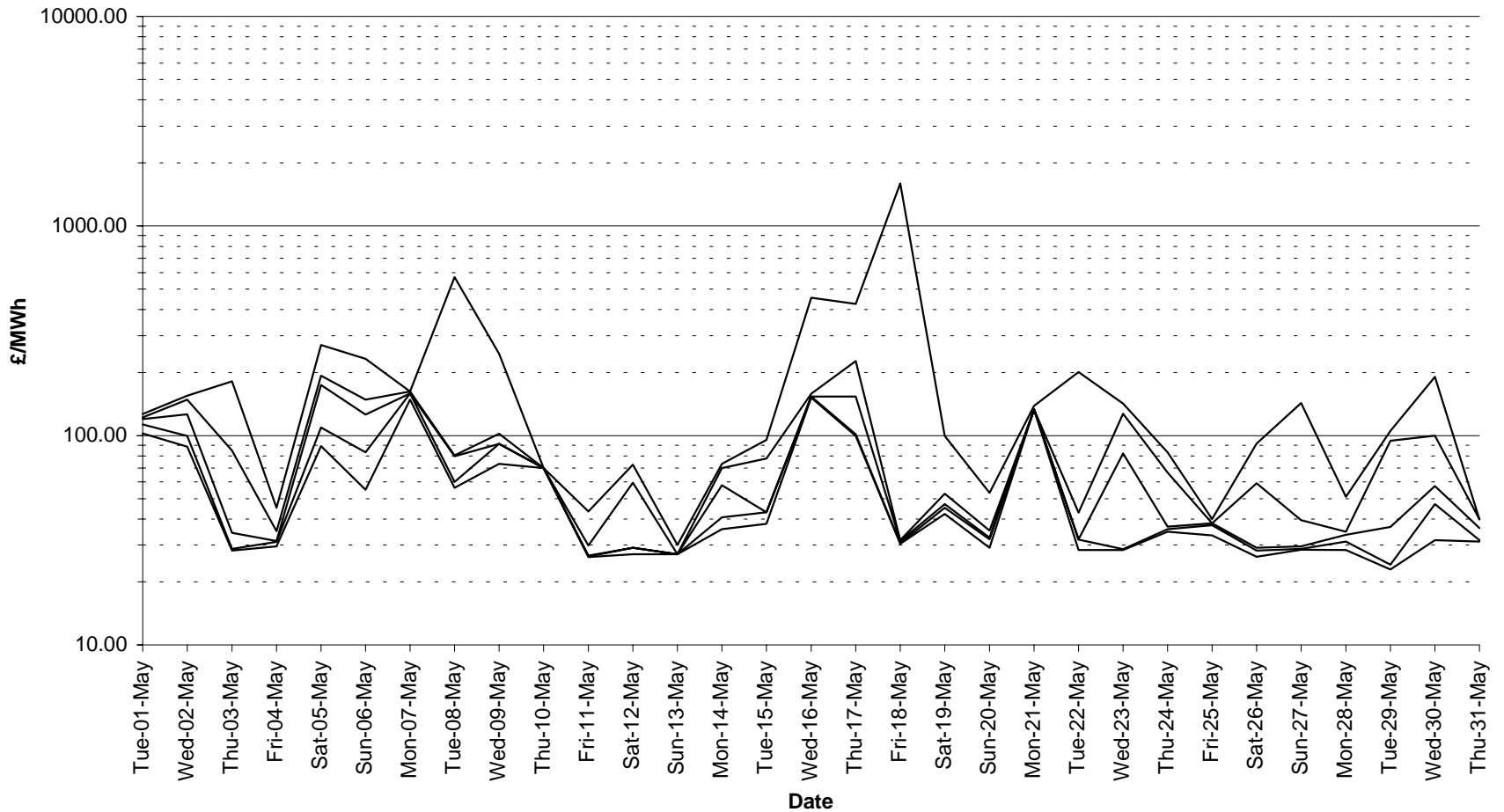
Top 5 Daily SBP Prices



D.Max (CID = 20)



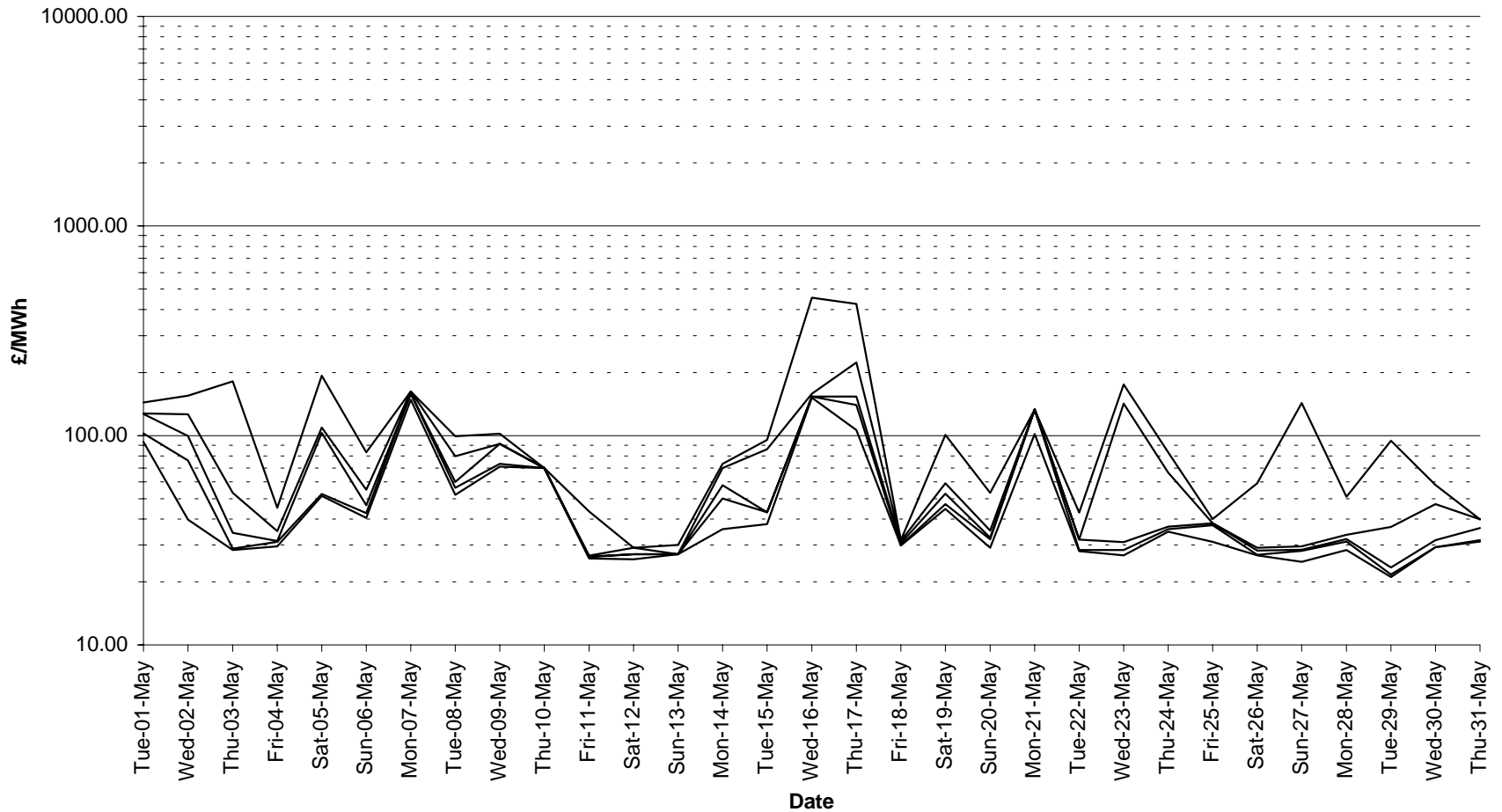
Top 5 Daily SBP Prices



D.Max (CID = 25)



Top 5 Daily SBP Prices



D.Max (CID = 30)



Top 5 Daily SBP Prices

