

# xserve



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## Response to Actions raised at Demand Estimation Technical Forum

June 2011



## Action DETF0601: Scaling Factor Effects

### Slide 1 of 3

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- **ACTION:** “Xoserve to provide estimated effects on Scaling Factor results for EUC Band 01B where non-domestic sites have been included”
- Slides 28 and 29 from the DETF presentation refer to adverse impacts to the Scaling Factor when including non-domestic supply points in 01B models.
- Request was made to see results of analysis which assessed impact to SF.
- Following slides display results of this analysis

## Action DETF0601: Scaling Factor Effects

### Slide 2 of 3

- Consequences of using smoothed models derived for EUC band 01B for gas year 2011/12, with data sets containing non-domestic data:

Will have adverse impact on Weekend SF offsets from one (Weekend allocation will decrease in most LDZs and weekend scaling factor will increase to compensate)

- *Estimated effect: Fri: up to 0.15 % pts. (avg. ~ 0.1 % pts.)  
Sat. up to 0.9 % pts. (avg. 0.4 % pts.)  
Sun. up to 1.1 % pts. (avg. 0.6 % pts.)*

*9 / 11 / 12 LDZs worse in respect of Fri / Sat / Sun*

- Analysis behind numbers shown on next slide

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# Action DETF0601: Scaling Factor Effects

## Slide 3 of 3

Weekend Coefficient as % of constant (Domestic only model)		
C <sub>3</sub> (Fri)	C <sub>4</sub> (Sat)	C <sub>5</sub> (Sun)
0.6%	0.9%	1.0%
1.0%	1.4%	1.6%
0.4%	1.2%	0.9%
0.7%	0.9%	1.5%
0.5%	1.0%	1.2%
0.8%	1.4%	1.4%
0.4%	1.2%	0.9%
0.5%	0.5%	0.6%
0.2%	0.9%	1.0%
0.0%	0.6%	0.9%
0.1%	1.2%	1.5%
0.1%	0.7%	1.0%
0.4%	0.7%	0.8%

Weekend Coefficient as % of constant (model including some non-domestics)		
C <sub>3</sub> (Fri)	C <sub>4</sub> (Sat)	C <sub>5</sub> (Sun)
0.5%	0.2%	0.2%
1.3%	0.4%	0.1%
0.2%	0.1%	-0.4%
1.7%	0.8%	0.6%
0.3%	0.1%	0.2%
0.6%	1.2%	1.1%
0.2%	0.1%	-0.4%
0.8%	0.9%	0.9%
0.2%	0.5%	0.5%
0.3%	0.7%	0.1%
0.0%	1.1%	1.5%
-0.2%	-0.1%	0.0%
0.4%	0.6%	0.7%

Difference In % pts.		
C <sub>3</sub> (Fri)	C <sub>4</sub> (Sat)	C <sub>5</sub> (Sun)
-0.1	-0.7	-0.8
0.3	-1.0	-1.5
-0.2	-1.2	-1.4
1.0	-0.2	-0.9
-0.2	-0.9	-1.0
-0.1	-0.2	-0.3
-0.2	-1.2	-1.4
0.3	0.4	0.3
0.0	-0.4	-0.5
0.3	0.1	-0.7
-0.1	-0.1	-0.1
-0.2	-0.8	-1.0
0.0	0.0	-0.1

• As at April 2011 EUC 01B made up 73.8% of total NDM load, therefore, estimated –ve impact on weekend NDM allocations:

- Average –ve FRI impact was -0.1 and Worst impact was -0.15
- Average –ve SAT impact was -0.4 and Worst impact was -0.9
- Average –ve SUN impact was -0.6 and Worst impact was -1.1

	C <sub>3</sub> (Fri)	C <sub>4</sub> (Sat)	C <sub>5</sub> (Sun)
MIN	-0.2	-1.2	-1.5
MAX	0.3	0.4	0.3
# Neg.	9	11	12

# Action DETF0602 : Non Domestic Sites Selection

## Slide 1 of 1

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- **ACTION:** “Xoserve to confirm how 4 non-domestic sites are selected”
- If possible 4 sites are chosen from the upper sub-band (30-73.2 MWh pa) as this is where the non-domestic sites are concentrated (in AQ terms).
- Preference is given to sites that have been included in previous years non-domestic analysis (to ensure consistency).
- Other than, where possible, meeting the above criteria the sites are chosen at random.

## Action DETF0603 : Splitting Band 3 and 4 Analysis

### Slide 1 of 3

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- **ACTION:** “Xoserve to provide details of previous Technical Forum analysis of splitting band 3 and 4”.
- Results from 2009 analysis have been provided, in particular slides 30 and 31 from original Technical Forum presentation
- All of these results are on the old seasonal normal basis and old holiday code rules which explains why the results for year 2008/09 are different to those seen in this years presentation.
- In 2009 there was no consistent trend across all LDZs and RMSE analysis also did not support a split of Band 3 and 4.

## Action DETF0603 : Splitting Band 3 & 4 Analysis

### Small NDM 732 to 2,196 MWh pa (Band 4) Split At 1465 MWh pa

#### Slide 2 of 3

	2008/09		2007/08		2006/07	
	732-1465 MWh pa	1465-2196 MWh pa	732-1465 MWh pa	1465-2196 MWh pa	732-1465 MWh pa	1465-2196 MWh pa
SC	41%	41%	40%	40%	40%	38%
NO	31%	33%	31%	31%	31%	29%
NW / WN	35%	40%	33%	37%	33%	36%
NE	35%	37%	34%	34%	32%	37%
EM	33%	35%	31%	37%	31%	33%
WM	29%	32%	29%	33%	26%	30%
EA	33%	35%	33%	34%	30%	32%
NT	36%	38%	36%	37%	33%	35%
SE	34%	39%	32%	35%	32%	33%
WS	29%	33%	28%	33%	26%	31%
SO	30%	31%	30%	33%	28%	32%
SW	32%	35%	33%	36%	32%	34%

- Majority of ILF differences small & inconsistent across LDZs within & between years
- 5 LDZs indicate  $\geq 2\%$  points ILF difference across all 3 years

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# Action DETF0603 : Splitting Band 3 & 4 Analysis

## Small NDM 732 to 2,196 MWh pa (Band 4) Split At 1465 MWh pa

### Slide 3 of 3

Population AQ Weighted RMSE Values Models Based on 2008/09 Data Set				
	NO SPLIT 732 to 2196	SPLIT 732 to 1465 1465 to 2196	Improvement (+) or Degradation (-) Using Two Bands	
			CURRENT: 08/09	07/08
SC	432642.6	476765.8	-10.2%	-3.5%
NO	290942.1	310788.3	-6.8%	-3.4%
NW / WN	688500.7	728897.7	-5.9%	-5.3%
NE	399684.5	413002.6	-3.3%	-3.3%
EM	498568.3	522354.0	-4.8%	-7.1%
WM	596824.8	639595.9	-7.2%	-8.2%
EA	175248.4	188398.0	-7.5%	-9.1%
NT	387221.8	405175.1	-4.6%	-3.3%
SE	529740.0	561290.8	-6.0%	-5.0%
WS	390688.2	420603.2	-7.7%	-6.8%
SO	403016.4	410425.7	-1.8%	-5.8%
SW	222004.5	236353.1	-6.5%	-4.2%
Overall	445993.0	474195.0	-6.3%	-6.0%

- No overall improvement in RMSE ('goodness of fit') when splitting Band 4
- Retain current approach
- EUC split at 1,465 is not proposed

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# Action DETF0604 : Estimated impact of removing gas days

## Slide 1 of 1

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- **ACTION:** “Xoserve to consider providing an estimated impact of removing the 4 gas days from the discussed model” (*SC 293-2196 MWh pa WAR band 4 – Slide 44*)
- We do not believe the data points should be removed as they are not data errors. However if they were, an estimated impact on the modelling results can be seen below:
  - ILF (Single year model) would reduce from 26.7 to 26%
  - CWV Intercept (Single year model) would change from 13.4 to 13.2
  - CWV Intercept (Smoothed model) would change from 13.2 to 13.1
- Overall impact is immaterial.

## Action DETF0605: Population of NDM Supply Point Numbers by EUC and LDZ Band 3 as at April 2011

Slide 1 of 6

Consumption Band 3 + WAR Band AQ 293,001 – 732,000 KWh					
LDZ	03B	03W01	03W02	03W03	03W04
SC	1080	1140	990	886	487
NO	645	655	460	403	259
NW	1374	1275	939	826	863
NE	721	667	517	484	429
EM	1122	898	728	679	813
WM	1140	730	671	624	918
WN	128	137	90	73	70
WS	368	305	228	202	246
EA	952	634	695	527	697
NT	1754	1217	1078	897	898
SE	1289	820	897	603	765
SO	1001	601	624	418	664
SW	726	569	466	334	515

- Note that numbers above exclude CSEPs
- Also note NDM sample includes some DM firm supply points as well as NDM.

## Action DETF0605: Population of NDM Supply Point Numbers by EUC and LDZ Band 4 as at April 2011

### Slide 2 of 6

Consumption Band 4 + WAR Band		AQ 732,001 – 2,196,000 KWh			
LDZ	04B	04W01	04W02	04W03	04W04
SC	381	794	491	359	186
NO	225	332	214	199	94
NW	494	686	363	422	400
NE	203	373	227	225	178
EM	392	471	291	325	324
WM	452	477	264	356	401
WN	43	78	46	34	31
WS	116	157	89	99	127
EA	378	383	267	264	298
NT	721	766	653	451	387
SE	477	427	366	306	288
SO	378	338	263	223	306
SW	267	347	180	154	196

- Note that numbers above exclude CSEPs
- Also note NDM sample includes some DM firm supply points as well as NDM.

## Action DETF0605: Population of NDM Supply Point Numbers by EUC and LDZ Band 5 as at April 2011

### Slide 3 of 6

Consumption Band 5 + WAR Band AQ 2,196,001 – 5,860,000 KWh					
LDZ	05B	05W01	05W02	05W03	05W04
SC	125	122	181	109	42
NO	92	86	51	45	28
NW	174	205	131	81	59
NE	76	102	57	46	32
EM	122	147	93	79	51
WM	144	136	85	73	63
WN	15	27	13	8	9
WS	44	42	28	22	13
EA	103	97	61	63	45
NT	223	135	227	137	60
SE	167	91	72	70	31
SO	147	78	62	71	41
SW	78	77	37	35	31

- Note that numbers above exclude CSEPs
- Also note NDM sample includes some DM firm supply points as well as NDM.

## Action DETF0605: Population of NDM Supply Point Numbers by EUC and LDZ Band 6 as at April 2011

Slide 4 of 6

Consumption Band 6 + WAR Band AQ 5,860,001 – 14,650,000 KWh					
LDZ	06B	06W01	06W02	06W03	06W04
SC	33	40	30	27	9
NO	21	24	18	17	8
NW	52	44	37	21	10
NE	39	25	14	10	11
EM	36	59	40	15	14
WM	44	34	31	21	13
WN	4	11	4	1	1
WS	20	14	8	8	9
EA	49	26	22	18	9
NT	72	24	62	49	15
SE	42	16	19	13	8
SO	25	22	12	21	23
SW	42	27	14	16	13

- Note that numbers above exclude CSEPs
- Also note NDM sample includes some DM firm supply points as well as NDM.

## Action DETF0605: Population of NDM Supply Point Numbers by EUC and LDZ Band 7 as at April 2011

Slide 5 of 6

Consumption Band 7 + WAR Band AQ 14,650,001 – 29,300,000 KWh					
LDZ	07B	07W01	07W02	07W03	07W04
SC	14	6	6	6	3
NO	12	5	2	4	0
NW	16	13	7	5	2
NE	11	13	9	4	1
EM	14	23	15	9	1
WM	14	16	6	10	0
WN	3	3	0	1	0
WS	4	0	1	4	2
EA	13	9	5	3	3
NT	12	6	3	8	3
SE	10	3	1	6	0
SO	11	1	3	4	7
SW	5	8	3	6	2

- Note that numbers above exclude CSEPs
- Also note NDM sample includes some DM firm supply points as well as NDM.

## Action DETF0605: Population of NDM Supply Point Numbers by EUC and LDZ Band 8 as at April 2011

Slide 6 of 6

Consumption Band 8 + WAR Band AQ 29,300,001 – 58,600,000 KWh					
LDZ	08B	08W01	08W02	08W03	08W04
SC	3	1	0	0	1
NO	0	3	1	0	1
NW	8	4	3	2	0
NE	8	3	0	0	0
EM	10	4	3	4	2
WM	4	3	5	6	4
WN	1	0	0	0	0
WS	2	3	0	0	0
EA	2	2	1	1	1
NT	4	2	0	1	1
SE	0	3	0	1	0
SO	1	4	1	2	2
SW	3	1	1	1	1

- Note that numbers above exclude CSEPs
- Also note NDM sample includes some DM firm supply points as well as NDM.