

xserve



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Technical Work Group

Aggregate NDM Model

23rd May 2012

Agenda

- Overview of Aggregate NDM Model
- 2012/13 Model principles
- Model validation
- Review and conclusions

Aggregate NDM Model 1

- Following in-sourcing of service Xoserve has developed its own Aggregate NDM Demand Models.
- There are a number of differences to note:
 - Previous models have been an aggregate of individual NDM band models.
 - Xoserve version is top down approach using aggregated NDM demand and specifically developed for Demand Estimation
- Aggregate NDM Models used in following processes.
 - Calculation of Daily Adjustment Factors (DAFs) used in NDM allocation algorithm
 - Used in AQ Review calculation (derivation of WAALPS).

Aggregate NDM Model 2

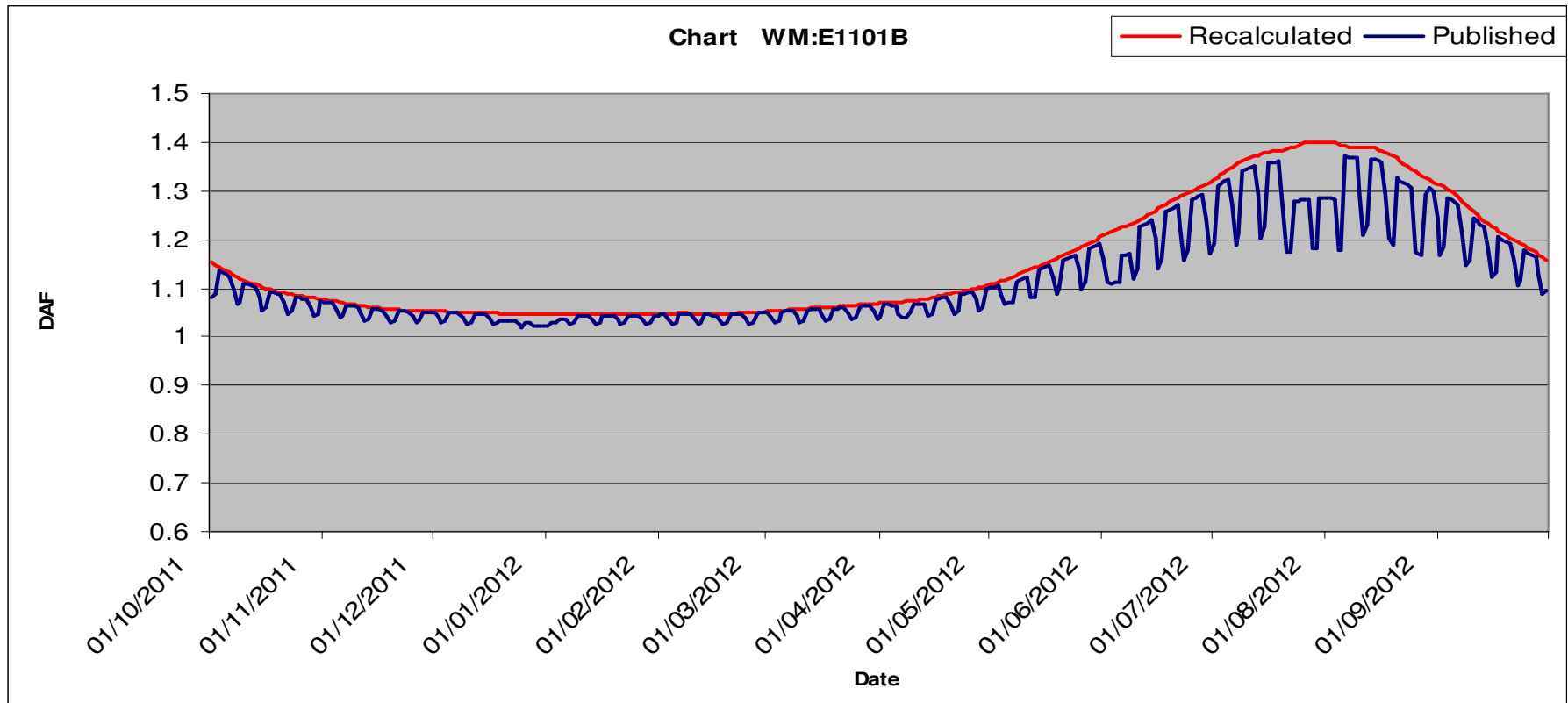
- Approach for 2012/13
 - Aggregated NDM demand from 3 previous gas years (2008/09, 2009/10, 2010/11) modelled against weather.
 - Demands adjusted to take into account impact of known significant (high) Measurement Errors (Action DE1105: 01 February 2011)
 - The model has been applied to the appropriate day of the week and holiday pattern of the target gas year 2012/13 - no forecast element added to the model
- Significant Measurement Errors:
 - Used ME register as published on JO website.
 - Included those of “High” significance (error >50GWHs over its duration)
 - Expert reports providing daily adjustments have been used where available

Aggregate NDM Model 3

- Model testing and validation to assess any impact from change of methods
 - Recalculated DAFs for LDZ WM for Gas Year 2011 using the new model.
 - Compared DAFs from the Xoserve model with those published for gas year 2011.
- Initial Results:
 - Indicated that the DAFs were of the same general magnitude and pattern
 - However there is no “jagged” pattern that existed in previous versions.
- Example charts are on the next slides

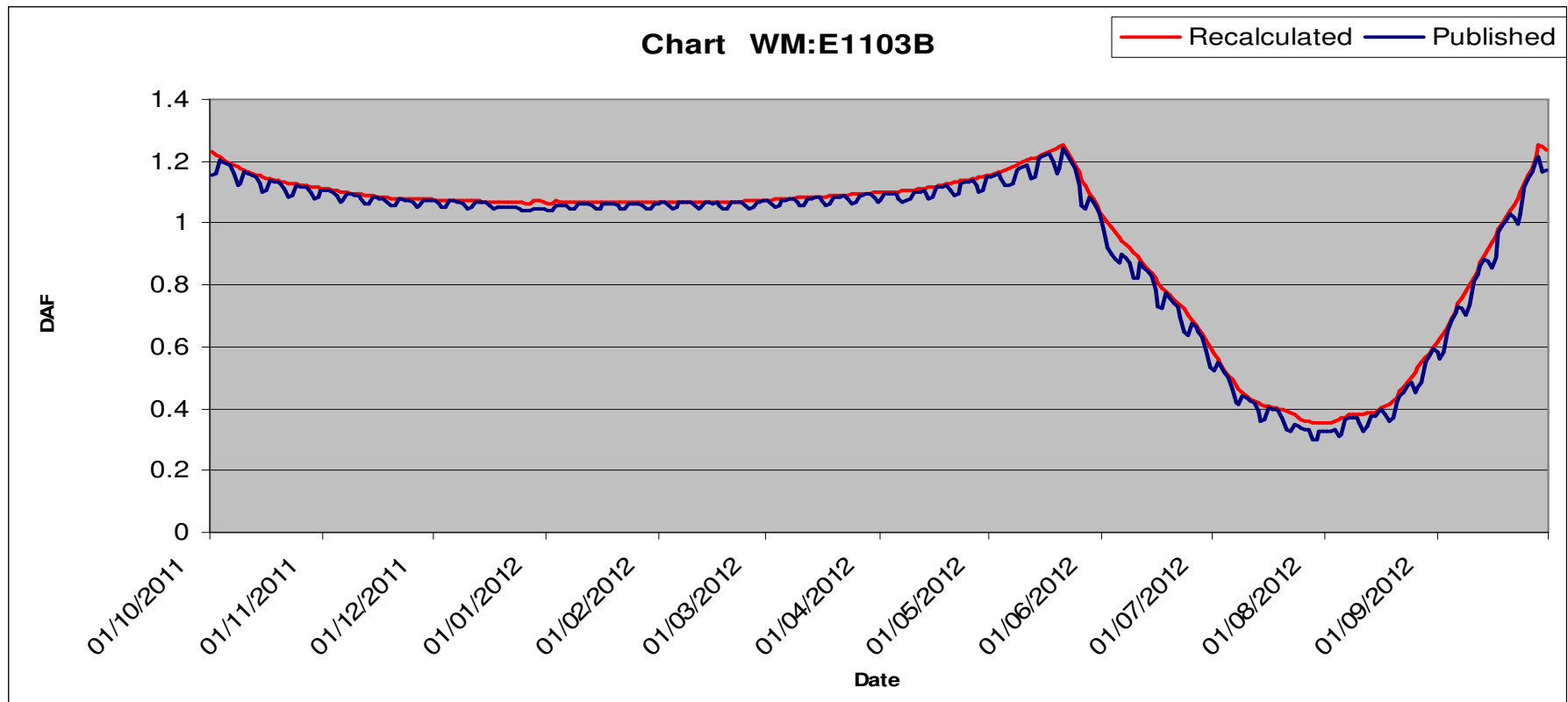
DAF chart – WM:E1101B

- Published versus Recalculated DAF



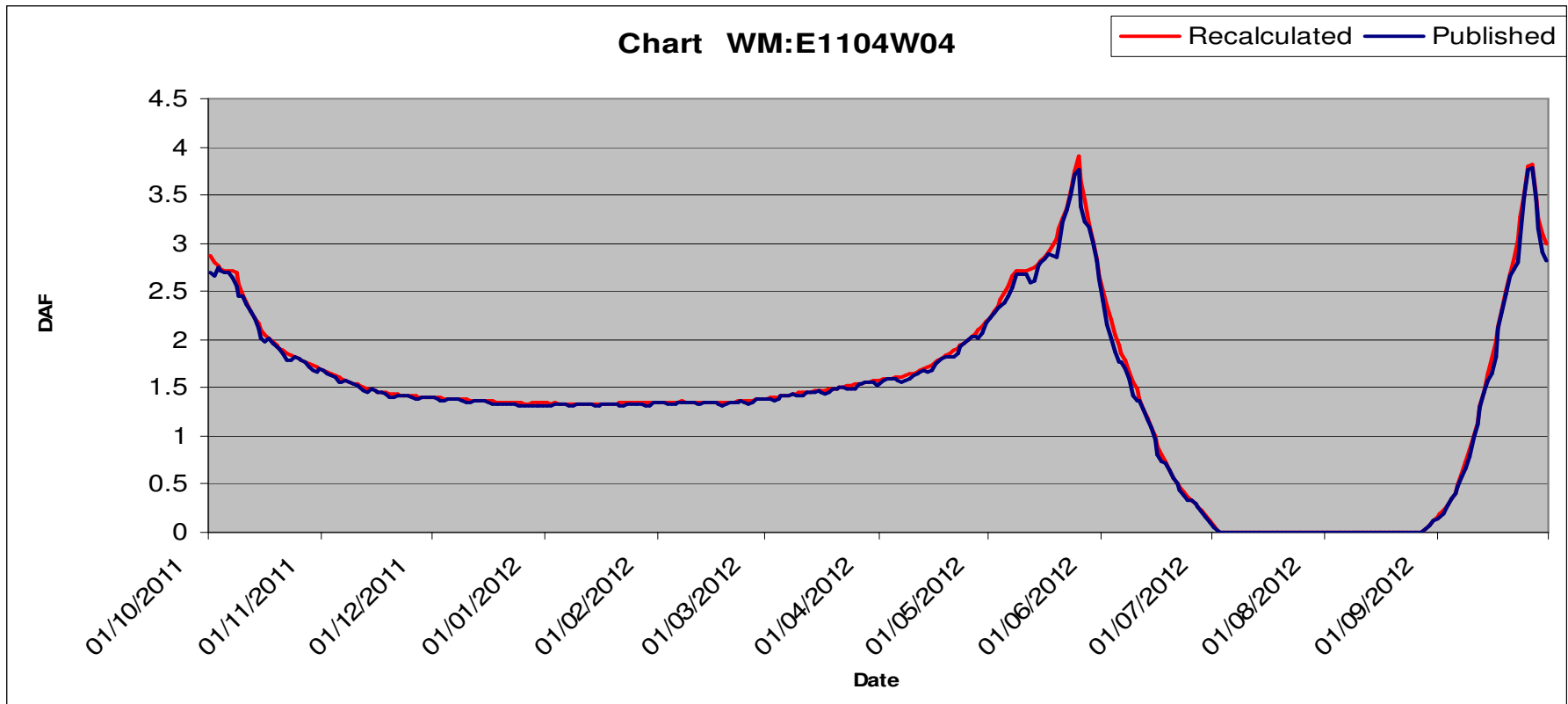
DAF chart – WM:E1103B

- Published versus Recalculated DAF



DAF chart – WM:E1104W04

- Published versus Recalculated DAF



Aggregate NDM Model 4

- Further Model testing and validation were required to assess any impact from change of methods:
 - Analysis of DAFs for other LDZs
 - Assessment of Allocation values.
 - Assessment of Scaling Factor performance
- Gas Year 2010 was used
 - Recalculated DAFs for Gas Year 2010 using the new model.
 - DAFs compared to the published DAFs.
 - Allocation have been compared between the existing and Xoserve basis.
 - Scaling Factors compared

Scaling Factor Analysis

Differences Between Average Values of SF Offsets from One Published to Recalculated (Gas Year 2010/11)

LDZ	Mon-Thur	Friday	Saturday	Sunday	Winter	Summer
SC	0.000	0.001	0.002	0.000	-0.001	0.001
NO	0.000	0.001	0.001	0.001	0.000	0.001
NW	0.000	0.002	0.002	0.000	0.000	0.002
NE	0.000	0.001	0.001	0.000	-0.001	0.001
EM	0.000	0.002	0.003	0.001	0.000	0.003
WM	0.000	0.001	0.003	0.000	-0.001	0.002
WN	0.000	0.001	0.002	0.000	-0.001	0.001
WS	0.000	0.001	0.001	0.000	-0.001	0.001
EA	0.000	0.001	0.001	0.000	0.000	0.000
NT	0.000	0.000	0.000	0.000	0.000	0.000
SE	0.001	0.001	0.000	0.000	-0.001	0.001
SO	0.000	0.000	0.000	0.000	-0.001	0.000
SW	0.000	0.001	0.000	-0.001	-0.001	0.000

- Green - indicates Recalculated resulted in scaling factor closer to 1.
- Red - indicates Published resulted in scaling factor closer to 1
- Grey - indicates no difference between two methods
- (All differences measured to 3 DP)

Conclusions

- Scaling Factors have generally improved
 - Mon – Thurs : no worse
 - Fri / Sat / Sun : show improvement
- DAFs are consistent except for the loss of weekend and holiday effects
- Demand models have consistent slope on all days
 - Weekends and Holidays affect intercept only
 - No reason for weekend / holiday effect to be visible in DAF shape
- Recommendation:
 - Ask TWG to note and accept the change and expect a “smoother” DAF shape in 2012 models.