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#### **Review of consumption estimation**

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#### **Presentation structure**

- Review of estimation accuracy
- Comparison with electricity industry
- Materiality
- Top down estimation
- Suggestions for improvements in current approaches
- Transmission balancing charges
- Summary and recommendations



#### Review of estimation accuracy

- Rule 37 sets the accuracy range for the difference between initial and final allocation submissions. This was ±15% to 30 September 2009
- The GAR170 report for January 2010 was used to analyse the accuracy of non-TOU submissions over the period October 2008 to September 2009 and contained only 2 final submission months Oct 08 and Nov 08
- The analysis assumed that interim values would be similar to final values for the other months
- It was found that:
  - a large number of breaches occurred with low error volumes;
  - the number of breaches over the 15% threshold was highest in the Spring and Summer months; and
  - the number of breaches under the -15% threshold was highest in Winter



#### Number of actual and potential breaches

| Month  | Under<br>threshold | Over<br>threshold | Total<br>breaches | Updated<br>Total<br>Breaches |
|--------|--------------------|-------------------|-------------------|------------------------------|
| Oct-08 | 30                 | 87                | 117*              | 117*                         |
| Nov-08 | 33                 | 97                | 130*              | 130*                         |
| Dec-08 | 42                 | 90                | 132               | 160*                         |
| Jan-09 | 47                 | 93                | 140               | 135*                         |
| Feb-09 | 66                 | 52                | 118               | 124*                         |
| Mar-09 | 64                 | 50                | 114               | 117*                         |
| Apr-09 | 66                 | 43                | 109               | 109                          |
| May-09 | 147                | 21                | 168               | 168                          |
| Jun-09 | 110                | 39                | 149               | 149                          |
| Jul-09 | 74                 | 25                | 99                | 99                           |
| Aug-09 | 46                 | 83                | 129               | 129                          |
| Sep-09 | 48                 | 73                | 121               | 121                          |

\*denotes a final month



## Updated



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Analysis of breaches

# **ELECTRICITY versus GAS**



#### Electricity versus Gas

- Electricity Rules have GR-170 report showing error between initial and subsequent submissions
- Threshold for initial volumes in the Electricity Rules before a submission is considered to be in breach is equivalent to 360GJ
- The actual threshold used in the GR-170 report is 0
- The breaches per submission were compared over the period Jan 09 to Sept 09
- The gas industry appears to less accurate



#### Electricity versus Gas





Analysis of breaches

## MATERIALITY



#### There have been a sizable number of breaches of the r37 accuracy requirement





Gas Industry Co

# On average, 30% of allocation submissions breach the accuracy requirement each month





# A materiality threshold could eliminate a large number of low-value breaches





#### 200 GJ seems to strike the right balance as a threshold

| Threshold<br>(GJ) | Breaches<br>eliminated | Value<br>eliminated |                     |
|-------------------|------------------------|---------------------|---------------------|
| 50                | 61%                    | 2%                  |                     |
| 100               | 11%                    | 2%                  | Would eliminate     |
| 200               | 10%                    | 5%                  | <br>82% of breaches |
| 300               | 4%                     | 3%                  | 9% of value         |
| 360               | 2%                     | 2%                  |                     |
| 400               | 1%                     | 1%                  |                     |
| 500               | 2%                     | 2%                  |                     |
| 600               | 1%                     | 2%                  |                     |
| 700               | 1%                     | 2%                  |                     |



## Would there be a downside to having a materiality threshold?







# MARKET SHARE

Top Down approach

#### Top Down allocation

 It was suggested that the accuracy of initial submissions could be improved by using Market Share for a Top Down allocation

• Market Share over all gates for GP3-6



#### Market share variations





•An analysis of the market share by volume over the period Oct 08 to Sept 09 showed that there was a significant amount of volatility.

•Due to this volatility of market share and the fact that there are very few final submission months it is difficult to make any useful projections using market share.

•This may have been to broad/high level.



#### Market share allocations at gas gate level

- Market Share at Gas Gate Level for GP3-6
- Five gates were chosen and the following process was undertaken.
  - 4 month average of the non-TOU quantities per retailer was calculated
  - At each gas gate, the TOU volumes for the gas gate were deducted from the injection quantity
  - GP3-6 four month market share average was applied to the residual gas volume.
  - This figure was then used as the predicted initial submission volume and compared to the final submission to see if it resulted in a reduction of the number of breaches.
- The outcome of the analysis indicated that the total number of breaches increased from 30 to 45



#### GP 3-6 Market Share





•The quantities were further split into GP4 and GP6 but there was no consistent pattern that would indicate that this approach would improve accuracy across all retailers



#### GP4 market share





#### GP6 market share





- The analysis indicates that gas gate market share varied considerably over the 4 months there was final data for, and it is therefore likely to be too variable to implement a top down approach to allocate gas gate residual volumes to retailers.
- It is possible that market shares may become more stable and that when more final data is available it may be useful to repeat the analysis.

**Recommend revisit the approach after 12 months**.



Questionnaire

# **RETAILER RESPONSES**



### Major factors influencing accuracy





#### Accuracy of submissions





### Meter reading

- Smart meters for both gas and electricity are creating a revolution in the management of consumer accounts and the ability to have two way communications with meters.
- Focused on the electricity meters but companies like British Gas are rolling out both electricity and gas meters in dual fuel households.
- Advanced metering infrastructures have the capability to cater for multi-utility applications so that the potential for gas meters to be read remotely is being created.
- The costs and benefits of installing smart gas meters are matters for the individual retailers to consider
- The standards and data handling protocols are matters for the industry to consider



- There is a potential role for Gas Industry Co to facilitate the work involved in moving to remote meter reading for gas consumers in GPs 4 and 6.
  - functional specification for smart gas meters;
  - integration of smart gas meters into the advanced metering infrastructures being established;
  - access provisions for gas utilities to existing smart meters with multi-utility capability to provide protection of access rights for gas utilities;
  - management of data from multi-utility metering installations;
  - coordinated pilot study on dual fuel smart metering to determine the costs and potential benefits of such installations relative to single fuel installations.



#### Smart meters – data management





### Gas gate residual profiles conclusion

- If the production of the GGRPs is done before the initial submissions for GP4 and GP6 are processed this would enable retailers to provide more accurate submissions
- The Allocation Agent believes that this could be achieved cost effectively



#### Accuracy of estimates





### **Retailer response recommendations**

#### • The reconciliation process be amended so that:

- the production of the GGRPs is done before the initial submissions for GP4 and GP6 are processed; and
- that retailers apply the resultant SADSVs before submitting the consumption information for GP4 and GP6 to the Allocation Agent.
- Gas Industry Co initiate a project to investigate the issues which could facilitate the introduction of smart gas meters



Transmission balancing charges

## WASH-UPS



### Transmission balancing charges

- Accuracy of initial submissions is critical because there is no washup of the balancing charges allocated by the Vector
- Vector has no incentive to develop its system to enable washups to occur based on subsequent submissions
- Vector currently carries the prudential risk
- Participants have incentives to be inaccurate and could benefit from a robust allocation system



### Transmission balancing charges – wash-ups

 Current system would cost in excess of \$1.5 million to automate

- The benefits would include:
  - Reduction in retailers' risk
  - Increased security and integrity from moving from spreadsheets
  - Less incentive to "game" seasonal effects
  - Clearing manager approach could be implemented
  - Vector would have less risk
  - Vector could have incentives to innovate



### Summary of recommendations

- Gas Industry Co introduces a volume materiality threshold of 200GJ for reducing the number of breaches of rule 37 that are processed through the compliance regime.
- The use of top down allocation using market shares be revisited in 12 months' time when more data will be available and the quality of the data may have improved.
- The reconciliation process be amended so that:
  - the production of the GGRPs is done before the initial submissions for GP4 and GP6 are processed; and
  - that retailers apply the resultant SADSVs before submitting the consumption information for GP4 and GP6 to the Allocation Agent.
- Gas Industry Co initiate a project to investigate the issues which could facilitate the introduction of smart gas meters:
- A full cost benefit study be undertaken on the automation of the BPP system to enable the revision of transmission balancing charges.
- The risks to Vector as the party managing the BPP should be examined, and the funding and governance arrangements reviewed, to investigate a clearing house approach to the balancing pool.

