Report for Multinet Gas

INDEPENDENT EXPERT OPINION ON MULTINET'S FORECAST MAINTENANCE & CAPITAL EXPENDITURE ON METERING

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Contents

1.0 Executive Summary.

Asset Integrity Australasia Pty Ltd (AIA) has been requested by Multinet Gas (Multinet) to make an independent review of their resubmission to the AER in respect of their metering costs and volumes, in particular focussing on forecast volumes and costs of the large expenditure activities of replacement of meters and the refurbishment of meters.

AIA have undertaken this review with consultants who have extensive experience in metering technology, meter replacement policies and metering operations.

In order to undertake this review, AIA has reviewed the AER Draft Decision and received from Mutinet historical data on costs and volumes, in particular 2011 data upon which, as set out by the AER, comparisons of forecast costs and volumes should be based. The data that AIA examined and reports that AIA reviewed are included in Appendices, together with AIA calculations.

After examining the Multinet Gas Asset Management Plan, the Small Meter Strategy July 2012 to June 2018 and the NIEIR Energy Report (Dec 2011), interviewing Multinet engineers, examining historical and forecast costs and volumes, AIA made the following assessments:-

1. AIA concur with the AER Draft Decision that the forecast volumes for meter removal, repair and replacement are reasonable. This reflects the significant historic and forecast year on year variation in volumes due to the 15 year meter life cycle programme of testing and replacement or life extension of meter families. AIA concur with the AER Draft Decision that this programme is prudent to optimise the life of meters.

2. The forecast unit costs for meter replacement activities from 2013 to 2017 ($27.05) are reasonable when compared to historic unit costs ($26.42) for 2011. AIA therefore assess that 2013 to 2017 unit costs align with the 2011 historic unit costs and can be applied to 2013 to 2017 volumes to determine forecast costs.

3. AIA does not concur with the AER Draft Decision that 2011 costs should form the basis of 2013 to 2017 costs as 2011 was a year with particularly low volumes. AIA therefore proposes that as the AER Draft Decision agrees with the annual variation in volumes, then the AER should apply forecast volumes that have been assessed to be reasonable, together with reasonable unit costs that align with historical levels to calculate forecast expenditure. This is the basis of the Multinet resubmission with which AIA has assessed and agrees with the forecast volumes and unit costs applied to determine meter replacement costs.

4. The forecast unit costs for meter refurbishment (repair) activities from 2013 to 2017 ($60.28) are reasonable when compared to historic unit costs in 2008 to 2010 ($59.14). In examining the historic costs for this activity the actual costs and the unit costs appeared to AIA to be anomalous as unit costs were not aligned with 2008 to 2010 unit costs and were at a level less than the contract repair rate.

5. AIA therefore assessed that it was not prudent or reasonable to use the 2011 costs, so historic comparisons were made with 2008 to 2010 costs and volumes. Again this supports

AIA's view that 2011 costs should not be used as a basis for determining costs in future years due to the significant annual variation in meter work volumes, essentially due to the 15 year cycle of testing and repair of meter families.

6. AIA proposes that the AER should apply reasonable unit costs aligned with historic levels together with forecast volumes that are deemed to be reasonable (as agreed by the AER Draft Decision) to determine forecast meter refurbishment costs.

   This is the basis of the Multinet resubmission with which AIA agrees with the forecast volumes and unit costs applied to determine the meter refurbishment costs.

7. Overall, AIA considers that the principal of applying meter activity forecast volumes and forecast unit costs to determine the forecast OPEX of metering activity is appropriate and reasonable for metering activities where annual volumes vary significantly depending on the meter families cycle of testing and replacement. AIA therefore considers that the Multinet resubmission based on these principals should be the basis of the AER Final Decision on metering OPEX, rather than using the costs of 2011 as the basis of future expenditure.

   AIA has also reviewed the costs for other activities in metering Opex and AIA confirms that the annual historic expenditure on the metering activities that have significant annual expenditures (TNA39 Meter change, TNA Replace lead connections, TNA44 Slabs and enclosures and TNA45 slab enclosure safety meter regulator sets) is overall higher than the annual forecasts for 2013 to 2017 (an average annual total of $353,022 compared with forecast $323,022). This, together with evidence of the beneficial results of moving to two service providers in a competitive tendering process (see 8 below) provides confidence that the overall forecast metering costs are reasonable.

8. The strategic decision by Multinet to move from one main service provider (Jemena) to two providers (Jemena and Comdain) has resulted in Comdain providing significantly lower unit costs than Jemena for metering activities (see Appendices 1 and 3).

   This indicates that the move to two service providers has been a prudent one providing an element of competitiveness to the recently tendered contracts resulting in a reduction in the average unit costs for 2013 to 2017 than was likely to be the case if Multinet retained Jemena as the single service provider. These new contract costs are sustainable over the term of the 2013 to 2017 review period.

   This also provides support of the assessment by AIA that forecast unit costs for meter replacement and meter refurbishment are reasonable, based on comparisons with historic costs and volumes. As the unit costs for other metering activities have been established by the same competitive tender process and the 2013 to 2017 forecast metering costs are based on these competitive unit costs, then AIA assesses the costs for the 2013 to 2017 metering forecasts are reasonable.

   Accordingly AIA has satisfied itself that forecasts of volumes and costs in the Multinet Gas resubmission complies with the National Gas Rules 74 and 91 as the volume forecasts have been arrived at on a reasonable basis that is underpinned by a 15 year cycle testing and

repair policy, and the unit costs were contracted on a competitive process with two service providers that is deemed prudent and sustainable with high value unit costs demonstrably aligned to historical costs.

2.0 Introduction.

Asset Integrity Australasia Pty Ltd (AIA) has been requested by Multinet to make an independent review of their submission to the AER in respect of their metering OPEX, in particular focussing on the volumes and costs of large expenditure activities of the replacement of meters and the refurbishment of meters.

AIA have undertaken this review with consultants who have extensive experience in metering technology, meter replacement policies and metering operations (see Appendix 7 for relevant experience of the consultants)

The brief given to AIA by Multinet was:-

Purpose and scope of independent opinion

You are asked to provide an independent expert opinion in response to the following questions:

(a). Does Multinet's forecast of network metering expenditure (including volumes) for the period from 1 January 2013 to 31 December 2017 satisfy the rules provided below.

(b). Can Multinet's forecast costs and forecast volume of work be referenced to the actual level of work in the 2008 – 2011 period.

(c). If the answer to question (a or b) is "no", what is your estimate of the forecast network metering and volumes that would satisfy the gas expenditure criteria?

Your opinion may be included in Multinet's response to access arrangement revision proposal to the AER, in order to assist in demonstrating that Multinet's actual and forecast network metering expenditure accords with the criteria noted above.

In answering the questions:

(e). You should identify those matters where you have relied on information provided by Multinet management or in expert reports, in relation to, for example:

- *Multinet's historical volumes and prices paid; and*
- *Multinet's asset management processes and asset management plans.*

(f). You should read the attached Federal Court Guidelines for Expert Witnesses and make all inquiries that you believe are desirable and appropriate in the light of the scope given to you.

Rule 74 Forecasts and estimates

(1). Information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate.

(2). A forecast or estimate:

(a). must be arrived at on a reasonable basis; and
(b). must represent the best forecast or estimate possible in the circumstances. And

Rule 91 Criteria governing operating expenditure

(1). Operating expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

(2). The AER's discretion under this rule is limited.

In order to undertake this review, AIA has reviewed the AER Draft Decision and received from Mutinet their 2013 to 2017 resubmission of volumes and costs together with historical data on costs and volumes. In particular, focus was given to 2011 data upon which, as set out by the AER in their Draft Decision, comparisons of forecast costs and volumes should be based. The data that AIA examined and reports that AIA reviewed are included in Appendices, together with AIA calculations.

The AIA report focuses on 3 main areas of Multinet's resubmission of costs and volumes for 2013 to 2017:-

1. The forecast volumes for the high value activities of meter replacement and meter repair which are driven by a Multinet policy to optimise meter working lives.
2. The forecast unit costs for meter replacement with comparisons made with historical data to assess the reasonableness of forecast costs
3. The forecast unit costs of meter repair with comparisons made with historic data to assess the reasonableness of unit costs.

Other metering activities of lower value, where historic volumes were not evident, were reviewed on the basis of comparing forecast expenditure with historic expenditure. This, together with an assessment of any cost reductions being achieved by Multinet by moving to a more competitive service provider tender process, provides an indication on the reasonableness of the 2013 to 2017 metering volume and cost forecasts.

3.0 Meter Volumes.

3.1 Introduction.

Asset Integrity Australasia Pty Ltd (AIA) has been requested by Multinet to make an independent review of their submission to the AER in respect of their forecast volumes and costs for the swap out of meters and the refurbishment of meters.

AIA have undertaken this review with consultants who have extensive experience in metering technology, meter replacement policies and metering operations.

3.2 Reference Material.

An extensive review has been undertaken of the documentation supplied by Multinet. This documentation has including spreadsheets, reports and email correspondence, including revisions to a number of the originally submitted spreadsheets and reports.

The spreadsheets and reports that have formed the bulk of the reviewed and referenced material have included the following:

3.3 Documents.

Small Meter – Strategy. July 2012 – June 2018. Multinet Gas Asset Management. March 2012.

Multinet ***Gas Network Asset Management Plan***. 2012/13-2017/18. March 2012.

C-1 NIEIR Energy Report. National Institute of Economic and Industry Research. December 2011.

3.4 Spreadsheets.

Revised GAAR South (Refer Table 6.1 in Appendices).
Revised GAAR North (Refer Table 6.2 in Appendices).
Large Meter Forecast
Maintenance compare for DD, tab "Fisher" (Refer Table 6.5 in Appendices).

3.5 Other.

Meter sales / delivery documentation from Landis & Gyr
Email correspondence (various)

3.6 Discussion

The annual meter volumes, both historic and projected, have been reviewed for the meter categories of:

- TNA 34 Repair of meters less than or equal to 8m^3/hr
- TNA 35 Repair of meters greater than 8m^3/hr
- TNA 42 Change time expired of meters larger than 8 m^3/hr, and
- TNA 43 Change time expired of meters less than or equal to 8 m^3/hr.

The aim of the review was to determine if any marked inconsistency existed between the relevant historic data sets and the projected meter numbers for each of the four meter categories, as defined above.

Within the four meter categories, a significant number of meter types with varying origins of manufacture can exist. Meters are generally assigned to a meter family type for operational purposes.

Multinet maintains a meter integrity program that involves sampling testing of meter families at pre-determined periods.

The assumptions in the program that were accepted by the AER in their Draft Decision are:-

1. Gallus 2000 meter are removed after 15 years life.
2. Meters currently extended 5 years at the next test are extended 3 years, then 1 year, then fail.
3. Meters currently extended 3 years at the next test are extended 1 year then fail and removed the following year.
4. Meters planned for future testing are extended beyond the GAAR period.
5. 2013 based on actual sample test results.
6. Meters above $10m^3$/hr not included.
7. U6 meters removed due to manufacturing fault and are not repairable.

For the bulk of the meter population, the small consumer gas meter, this requires the sample testing at the end of the initial 15 year service period and also thereafter, as applicable, at on-going compliance periods. These meter tests are in conformity with industry Standards and practices. Should a meter family fail these prescribed tests, then the meter population is replaced during the following year. This helps maintain the integrity of the total in-service meter population. Multinet proposes to retain the meters that have passed the sample testing program in field operation. Provided theses meter life extensions are in compliance with Standard AS/NZS 4944:2006, as proposed by Multinet, then this action is supported.

This process results in significant annual variations in meters being swapped out and refurbished as demonstrated by the historic and forecast volumes of TNA34, TNA35, TNA42 and TNA43.

Some meter families have been nominated by Multinet as being unrepairable. As these meter families have most likely been acquired for a particular purchase cycle, their withdrawal from service represents a spike in new (replacement) meter purchases and a decrease in the number of meters requiring refurbishment at the time of withdrawal from service. It is possible that the number of meters requiring refurbishment in a particular year

could be minimal due to the families of meters being removed from service that are considered not repairable.

The policy for the early withdrawal from service of meter families having a known defect and/or inability for effective refurbishment, signifies Multinet as a prudent operator

Examples of where actual meter types and/or calibration, refurbishment and replacement practices deviate from a stable or reasonably constant supply are:

- Where a meter type is prematurely withdrawn from service or considered not repairable. An example being the Gallus GAL 2000 meter, being removed from service after a 15 years life. These meters contain a plastic measurement module which is not capable of being economically repaired as well as having poor paint adhesion causing extensive body corrosion. The corrosion and meter accuracy drift of these meters means Gallus meter families invariably fail the leak and or the accuracy test at 15 years.
- Variations in the life extension of some meters
- Meters taken out will either be repairable or non repairable. An assumed percentage of the meters belonging to a particular meter family will be taken as being unrepairable. This number is based on historical experience through the meter replacement program.
- Of the repairable meter families, historical data indicates around 90% are repairable.

Multinet has a policy of having at least two suppliers of new gas meters and at least two service providers for meter repair, refurbishment and calibration services. As such, meter family types and numbers can and do vary significantly from year to year. This supplier and service provider requirement is viewed as being a prudent move on behalf of Multinet.

From a review of the historical data for the meter categories of TNA34, TNA35, TNA42 and TNA 43, the projected meter numbers for each of the categories for the calendar year periods of 2013 to 2017, inclusive, there is no noticeable anomaly with respect to the past actual and projected sets of data.

Although it is noted that the ratio of the annual number of repaired meters to the number of change time expired meters does vary annually for both size class of meters (≤ 8.0 m^3/hr and >8.0 m^3/hr), the average of the projected period (2013 to 2017 inclusive) is 0.8 for the class of meters ≤ 8.0 m^3/hr., and 0.79 for the class of meters >8.0 m^3/hr. This result is expected and confirms the overall meter non-repairable rate, together with the influence of the performance of the various meter families on the total annual meter repair numbers. The averaged meter refurbishment rates of 0.8 and 0.79 (80% and 79%) are considered reasonable and appear consistent with the relevant historical records.

This also indicates that Multinet is correctly applying the repair and change time expired data to the forward meter requirements. The projected annual meter volumes for the four meter categories have been evenly split between the North and South regions for the period 2013 to 2017, inclusive. Although it is unlikely that the volumes will be exactly equal, the assumption in making the equal split is considered reasonable.

3.7 Conclusion on Meter Volumes.

AIA, having undertaken this review, assess that the annual meter volume forecasts for the calendar year periods 2013 to 2017, inclusive, appear reasonable and have sensible consistency with the historical data. This is in line with AER's Draft Decision where on Page 56 AER notes that Multinet forecast volumes for meter removals, refurbishments and replacement are reasonable:-

"The AER considers that Multinet's revised volume forecasts for the number of meters removed, refurbished and replaced have been arrived at on a reasonable basis. As such this revised volume forecast provides the best estimate possible in the circumstances and is reflective of the volume of removals which would be incurred by a prudent and efficient service provider."

Considerable dialogue between Multinet and the AIA team has been conducted with respect to the various meter volumes. AIA is now satisfied that the meter volumes, as given by the tables below, are realistic and consistent with the historic meter volume data.

	2013	2014	2015	2016	2017
TE Families to be removed	18,135	40,066	71,589	24,290	33,034
Less TE Families non repairable	18,135	4,709	-	-	2,352
Equals TE Families repairable	-	35,357	71,589	24,290	30,682
FLE sample	1,300	1,300	1,452	1,604	1,604
Defective	2,373	2,376	2,380	2,384	2,388
Total potentially repairable meters	3,673	39,033	75,421	28,278	34,674
Total meters removed	21,808	43,742	75,421	28,278	37,026
New Fixes ($6m^3$/hr)	6,727	6,739	6,698	6,369	6,253
Total new fixes	6,727	6,739	6,698	6,369	6,253
New meters in stock	3,500	3,500	3,500	3,500	3,500
Total meters required	28,535	50,481	82,119	34,647	43,279
Less repairable meters	3,306	35,129	67,879	25,450	31,207
New Meter Purchase	25,229	15,351	14,240	9,197	12,072

Reconciliation to Table 6.1 Tariff V, L and D – Volumes, customers and MHQ – TOTAL MULTINET

	2013	2014	2015	2016	2017
NIEIR Tariff V Total	8,797	8,809	8,768	8,439	8,323
Standard annual new connections larger than $6m^3/h$					
10m3/h	1,500	1,500	1,500	1,500	1,500
AL425	300	300	300	300	300
AL800	70	70	70	70	70
AL1000	200	200	200	200	200
$6m^3/h$	6,727	6,739	6,698	6,369	6,253

This Table includes full five year quantities. Other Tables are for 4.5 years

In reviewing AER's Draft Decision it was noted that AER based their forecast costs on Multinet 2011 actual costs. AIA consider this principal may be appropriate for many of the Multinet work activities that are relatively consistent every year, however, AIA do not consider that this principle is appropriate for the metering activities as the OPEX costs are directly proportional to volumes and the volumes vary significantly year on year in line with the 15 year cycles of meter family testing.

AIA therefore support the current resubmission by Multinet on metering activities where the forecast costs are based on forecast volumes and unit costs. AER and AIA assesses the forecast volumes to be reasonable, and AIA assess the forecast unit costs are reasonable and aligned with historical costs (see Sections 4 and 5).

Note: The process that AIA has undertaken throughout this review has relied on information supplied by Multinet, the data itself has not been independently validated.

4.0 Meter Replacement.

Asset Integrity Australasia Pty Ltd (AIA) has been requested by Multinet to make an independent review of their submission to the AER in respect of their forecast volumes and costs for the high cost activity of the replacement of meters.

In order to undertake this review, AIA has received from Mutinet historical data on costs and volumes, in particular 2011 data upon which, as set out by the AER, comparisons of forecast costs and volumes should be based. The data and reports reviewed are included in Appendices.

When making comparisons of unit costs, AIA have made adjustments to the 2011 data to ensure that any comparisons are like for like, which is particularly important as historical data is based on one service provider, but forecasts are based on 2 service providers. Adjustments to the 2011 data make accommodations to ensure comparisons are fair in relation to volume weighted unit costs of the 2 service providers and the differences in the ratio of work between large meters and small meters, which would otherwise skew comparisons. These adjustments are explained more fully in the body of the report.

4.1 Comparison of Meter Replacement (Swap out) Unit Costs.

This section focuses on work activities TNA 42 (replacement of meters larger than $8m^3/hr$) and TNA 43 (replacement of meters equal to or smaller than $8m^3/hr$). Both these work activities include the cost of replacement excluding the cost of the meter.

The Multinet forecasts for volumes and costs have been provided for each of the two service providers, namely Jemena and Comdain. The forecast costs used for comparisons are based on:

- Calendar Year;
- 2012 Prices;
- Transition costs for moving from one to two service providers;
- Direct Costs of the service providers;
- Limb 2 Payments (different for each service provider).

As expected, the TNA 42 and TNA 43 costs are different for each service provider. In order to make a comparison between the historical costs in 2011 and the forecast costs in Multinets resubmission, to avoid the vagaries of comparing each unit cost for TNA 42 and 43 for each service provider (for example the Comdain unit cost for TNA 42 and TNA 43 are the same and hence combining provides a better overall benchmark), AIA has compared the volume weighted unit costs of the combined TNA 42 and 43. This will give a good indication on the overall effect on the Multinet customers of their price forecasts over the period.

As the North and South TNA 42 and 43 meter ratios are the same, the approach in taking a volume weighted unit cost is considered reasonable

As mentioned in the Background section, in order to achieve meaningful comparisons between historic unit costs and the forecast unit costs the following forecast and historical unit costs have been compared.

4.2 Forecast Unit Costs

For the combined years 2013 to 2017 the volume weighted unit costs of the combined TNA 42 and TNA 43 are calculated at 2012 prices for both the service providers to determine the average volume weighted unit cost for all meter replacements over the period 2013 to 2017. This is calculated to be $27.05. (See Appendix 1)

Jemena were, until recently, the only service provider and currently have been awarded the North area of Multinet. The Jemena prices for the forecast combined volume weighted unit cost for all the meters they are planning to replace in the North over the period 2014 to 2017 is calculated to be $28.59, with Comdain tendering $25.45. This indicates that an improved cost to Multinet customers for meter replacement has been achieved by the strategy of moving to two service providers.

4.3 Historical Unit Costs

For 2011, the volume weighted unit cost for a combined TNA 42 and 43 is calculated to be $29.99. However this volume weighted unit cost has a much higher proportion of the more expensive large meter replacements. In order to make a fair comparison, the ratio of large to small meters needs to be adjusted to be the same as the ratio of large to small meters from 2013 to 2017.

This is done by reducing the volume and the proportional costs of large meters in 2011. (Calculated by a factor of 6.16; See Appendix 2)

This produces a 2011 volume weighted unit cost for all meter replacements adjusted to the 2014 to 2017 large to small meter ratio to be $26.42 in 2012 prices.(see Appendix 2)

The forecast combined volume weighted unit cost of all meter replacements over the period 2013 to 2017 of $27.05 is therefore assessed as reasonable when compared to the 2011 benchmark of $26.42.

4.4 Conclusions for Meter Replacement

The forecast unit cost for a combined TNA42 and TNA43 over the years 2013 to 2017 is $27.05

When compared to 2011 costs and volumes, the 2011 unit cost has been adjusted to account for the different TNA43/TNA42 ratio in the period 2034 to 2017, otherwise the 2011 unit cost would be unfairly high for comparative purposes. The 2011 combined unit cost for TNA42 and TNA43 at 2012 prices and volume ration adjusted is calculated to be $26.42

The average combined forecast unit cost of $27.05 is therefore considered by AIA to be reasonable and aligned with historical unit costs.

AIA therefore consider that the Multinet forecast of volumes and costs for the TNA42 and TNA43 activities from 2013 to 2017 are reasonable having assessed the volumes as being reasonable (see Section 3) and the unit costs as being reasonable and aligned with historical unit costs.

AIA therefore proposes that as the AER Draft Decision agrees with the annual variation in volumes, then the AER should apply forecast volumes that are assessed to be reasonable together with reasonable unit costs that align with historical levels to calculate forecast expenditure. This is the basis of the Multinet resubmission with which AIA has assessed and agrees with the forecast volumes and unit costs applied to determine meter replacement costs.

5.0 Meter Repair.

5.1 Introduction

This section focuses on work activities TNA 34 (refurbishment of meters equal to or smaller than 8m^3/hr) and TNA 35 (replacement of meters larger than 8m^3/hr). The Multinet forecasts for volumes and costs have been provided for each of the two service providers, namely Jemena and Comdain. The forecast costs used for comparisons are based on:

- Calendar Year;
- 2012 Prices;
- Transition costs for moving from one to two service providers;
- Direct Costs of the service providers;
- Margin uplift (different for each service provider).

The data and reports reviewed are included in Appendices.

5.2 Forecast Unit Costs

AIA has examined the forecast unit costs of these activities, and for each service provider the projected volumes are the same and the projected costs are reasonably consistent over the 2013 to 2017 period (see Appendix 3). The combined volume weighted unit cost for both TNA34 and TNA35 for both service providers is calculated to be $60.28. It is noted that as with the TNA42 and TNA43 activities, the unit costs from Comdain are less than that from Jemena, again indicating the benefit gained by Multinet of the prudent strategy of moving to 2 service providers.

5.3 Historical Unit Costs

Looking at the historical costs and volumes (Appendix 4), the unit costs appear relatively consistent for 2008 to 2010, especially for the high volume TNA34 repairs, but 2011 appears anomalous with very low unit costs for TNA34 and very high unit costs for TNA35. In particular, the TNA34 unit cost of $35.87 is less than the contract value for the repair of the meter of $39.99. As the 2011 volumes were based on the meter repairer independent data used for their invoicing, AIA considers the 2011 costs for these activities are suspect and producing anomalous unit costs. It is therefore not considered reasonable or prudent to use the 2011actual costs to determine 2011 unit cost benchmarks that could be used as a fair comparison to the forecast volumes and costs. Additionally, for the same reasons together with the significant annual variation in volumes for metering activities, it is also not considered reasonable or prudent to use the actual costs in 2011 as a basis for assessing costs in 2013 to 2017.

To establish if the forecast costs align with historical costs, AIA have therefore compared the combined forecast costs and volumes of TNA34 and TNA35 from 2034 to 2017 with the combined historical costs and volumes from 2008 to 2010 at 2012 prices.

However, as with TNA42 and TNA43, there is a significant difference in the ratio of small to large meters between the forecast volumes and historical volumes. AIA again considers it fair and reasonable to adjust the historic figures to have the same TNA34/TNA35 meter ratio as the forecast volumes (otherwise the historic unit costs would appear too high for comparative purposes).

5.4 Assessment

The combined TNA34 and TNA35 unit cost, volume weighted and volume ratio adjusted for 2008 to 2010 and in 2012 prices is calculated to be $59.14 (see Appendix 5). AIA therefore considers the forecast combined unit cost of $60.28 is reasonable when compared to this average combined historical unit cost.

Additionally, the individual and average unit costs for the forecast TNA 34 and TNA 35 unit costs also are assessed as reasonable when compared with individual and average TNA 34 and TNA 35 unit costs from 2008 to 2010 in 2012 prices. (Appendix 5).

The average forecast unit cost for TNA34 for both service providers is $58.83 (Appendix 3) compared to the average historic unit cost 2008 to 2010 of $57.38 (Appendix 5).

The average forecast unit cost for TNA35 for both service providers is $349 compared to the average historic unit cost 2008 to 2010 of $413. It must be noted that the unit cost of TNA35 in particular may vary significantly from year to year as the unit cost of repair varies between $80 and $2,270 depending on the type and size of meter being repaired (Refer I&C Repair Cost XL)

AIA therefore assess the forecast unit costs of TNA34 and TNA35 to be reasonable when compared to historical unit costs.

5.5 Conclusions for Meter Repairs

The forecast combined unit cost of the TNA 34 and TNA35 activities are calculated to be $60.31. This unit cost is a combination of service providers, Jemena and Comdain, with Comdain providing the most competitive unit cost of $53.97 compared to $66.26 from Jemena, demonstrating the prudent long term strategy of Multinet in moving to 2 service providers.

The historical costs in 2011 appear anomalous and it is not considered reasonable or prudent to use them as a basis to determine the forecast unit costs. Instead, AIA has used 2008 to 2010 historical unit costs as a basis of comparison. These unit costs have been adjusted for 2012 prices and adjusted to have the same TNA34/TNA35 volume ratio as the forecast volumes, otherwise the historical unit costs would be biased high which would not provide a valid comparison. The historical 2008 to 2010 combined unit cost in 2012 prices and volume ratio adjusted is $59.14.

The combined TNA34 and TNA35 forecast unit costs are $60.12 compared to the historical unit cost of $59.14.

This forecast unit cost is considered by AIA to be reasonable and a valid basis to use in conjunction with forecast volumes to determine the forecast annual costs.

AIA therefore supports the principals applied by Multinet to determine their forecast annual costs in TNA34 and TNA35 activities.

AIA therefore proposes that as the AER Draft Decision agrees with the annual variation in volumes, then the AER should apply forecast volumes that are assessed to be reasonable together with reasonable unit costs that align with historical levels to calculate forecast expenditure. This is the basis of the Multinet resubmission that AIA has assessed and agrees with the forecast volumes and unit costs applied to determine meter replacement costs.

These principals are supported for other metering activities on the basis of the cyclical trends of significant annual variations in metering activities.

6.0 Summary of Review.

After examining the Multinet Gas Asset Management Plan, the Small Meter Strategy July 2012 to June 2018 and the NIEIR Energy Report (Dec 2011), interviewing Multinet engineers, examining historical and forecast costs and volumes, AIA has made the following assessments:-

1. AIA concurs with the AER Draft Decision that the forecast volumes for meter removal, repair and replacement are reasonable. This reflects the significant historic and forecast year on year variation in volumes essentially due to the 15 year meter life cycle programme of testing and replacement or life extension of meter families. AIA concur with the AER Draft Decision that this programme is prudent to optimise the life of meters.

2. The forecast unit costs for meter replacement activities from 2013 to 2017 ($27.05) are reasonable when compared to historic unit costs ($26.42) for 2011. AIA therefore assess that 2013 to 2017 unit costs align with the 2011 historic unit costs and can be applied to 2013 to 2017 volumes to determine forecast costs.

3. AIA does not concur with the AER Draft Decision that 2011 meter replacement costs should form the basis of 2013 to 2017 costs as 2011 was a year with particularly low volumes. AIA therefore proposes that as the AER Draft Decision agrees with the annual variation in volumes, then the AER should apply forecast volumes that have been assessed to be reasonable, together with reasonable unit costs that align with historical levels to calculate forecast expenditure. This is the basis of the Multinet resubmission with which AIA has assessed and agrees with the forecast volumes and unit costs that are applied to determine meter replacement costs.

4 The forecast unit costs for meter refurbishment (repair) activities from 2013 to 2017 ($60.28) are reasonable when compared to historic unit costs in 2008 to 2010 ($59.14). In examining the historic costs for this activity the actual costs and the unit costs appeared to AIA to be anomalous as unit costs were not aligned with 2008 to 2010 unit costs and were at a level less than the contract repair rate.

5 AIA therefore assessed that it was not prudent or reasonable to use the 2011 costs, so instead, historic comparisons were made with 2008 to 2010 costs and volumes. Again this supports AIA's view that 2011 costs should not be used as a basis for determining costs in future years due to the significant annual variation in meter work volumes, essentially due to the 15 year cycle of testing and repairs of meter families.

6. AIA proposes that the AER should apply reasonable unit costs aligned with historic levels together with forecast volumes that are deemed to be reasonable (as agreed by the AER Draft Decision) to determine forecast meter refurbishment costs.

   This is the basis of the Multinet resubmission with which AIA agrees with the forecast volumes and unit costs applied to determine the meter refurbishment costs.

7 Overall, AIA considers that the principal of applying meter activity forecast volumes and forecast unit costs to determine the forecast OPEX of metering activity is appropriate and reasonable for metering activities where annual volumes vary significantly depending on the meter families cycle of testing and replacement. AIA therefore considers that the Multinet resubmission based on these principals should be the basis of the AER Final Decision on metering OPEX, rather than using the costs of 2011 as the basis of future expenditure.

AIA has also reviewed the costs for other activities in metering OPEX. AIA confirms that the annual historic expenditure on the metering activities that have significant annual expenditures (TNA39 Meter change, TNA Replace lead connections, TNA44 Slabs and enclosures and TNA 45 slab enclosure safety meter regulator sets) is overall higher than the annual forecasts forecast for 2013 to 2017 (An average annual total of $353,022 compared with forecast $323,022) .

This, together with evidence of the beneficial results of moving to two service providers in a competitive tendering process (see 8 below) provides confidence that the overall forecast metering costs are reasonable.

8. The strategic decision by Multinet to move from one main service provider (Jemena) to two providers (Jemena and Comdain) has resulted in Comdain providing significantly lower unit costs than Jemena for metering activities (Jemena combined replacement unit cost of $28.59 compared to Comdain at $25.45; and for the combined meter repair unit cost, Jemena are $66.26 compared to Comdain at $53.97 – see Sections 4.2 and 5.5 above)

This indicates that the move to two service providers has been a prudent one providing an element of competitiveness to the recently tendered contracts resulting in a reduction in the average unit costs for 2013 to 2017 than was likely to be the case if Multinet retained Jemena as the single service provider. These new contract costs are sustainable over the term of the 2013 to 2017 review period.

This also provides support of the assessment by AIA that forecast unit costs for meter replacement and meter refurbishment are reasonable, based on comparisons with historic costs and volumes. As the unit costs for other metering activities have been established by this same competitive tender process and the 2013 to 2017 forecast metering costs are based on these competitive unit costs, then AIA assesses the costs for the 2013 to 2017 metering forecasts are reasonable.

Accordingly AIA has satisfied itself that forecasts of volumes and costs in the Multinet Gas resubmission complies with the National Gas Rules 74 and 91 as the volume forecasts have been arrived at on a reasonable basis that is underpinned by the 15 year cycle testing and repair policy, and the unit costs were contracted on a competitive process with two service providers that is deemed prudent and sustainable with high value unit costs demonstrably aligned to historical costs.

7.0 Appendices.

Appendix 1

FORECAST OF VOLUME WEIGHTED UNIT COSTS FOR COMBINED TNA 42 & TNA 43, OVER PERIOD 2013 TO 2017, BASED ON 2012 PRICES.

[1]South Data:

TNA 42	2013	2014	2015	2016	2017	TOTAL
VOLUME	69	137	93	119	97	515
COST ($)	1,708	3,429	2,355	3,049	2,527	13,068

TNA 43	2013	2014	2015	2016	2017	TOTAL
VOLUME	4,534	20,033	35,795	12,145	16,517	89,024
COST ($)	113,016	501,406	906,285	312,535	430,220	2,263,462

[2]North Data:

TNA 42	2013	2014	2015	2016	2017	TOTAL
VOLUME	69	137	93	119	97	515
COST ($)	13,981	27,943	18,977	24,248	19,867	105,016

TNA 43	2013	2014	2015	2016	2017	TOTAL
VOLUME	4,534	20,033	35,795	12,145	16,517	89,024
COST ($)	125,356	553,495	989,268	336,533	458,032	2,462,684

Combined Volume Weighted Unit Cost:

COST	**$4,844,230**
VOLUME	**179,078**
[4]UNIT COST	**$27.05**

[1] Spread sheet: "Copy of South Meters Opex GAAR Results Summary"
[2] Spread sheet: "Copy of North Meters Opex GAAR Results Summary 11/10/2012 V3"

Appendix 2

2011 UNIT COST COMBINED TNA 42 & TNA 43, VOLUME WEIGHTED AND VOLUME RATIO ADJUSTED TO 2013 TO 2017 FORECAST.

[1]South Data:

VOLUME	2013	2014	2015	2016	2017	TOTAL
TNA 42	64	137	93	119	97	446
TNA 43	4,534	20,033	35,795	12,145	16,517	84,490

[2]North Data:

VOLUME	2013	2014	2015	2016	2017	TOTAL
TNA 42	64	137	93	119	97	446
TNA 43	4,534	20,033	35,795	12,145	16,517	84,490

2013 to 2017 Volume Ratio:

TNA 43	**178,048**
TNA 42	1,020
[4]RATIO:	174.56

[3]2011 Actual Volumes:

VOLUME	2011
TNA 42	582
TNA 43	16,501

2011 Volume Ratio:

TNA 43	**16,501**
TNA 42	582
[4]RATIO	28.35

[1] Spread sheet: "Copy of South Meters Opex GAAR Results Summary"
[2] Spread sheet: "Copy of North Meters Opex GAAR Results Summary 11/10/2012 V3"
[3] Spread sheet: "Maintenance Compare DD", tab "Fisher"
[4] Top field divided by bottom field

To adjust the 2011 combined volume weighted unit cost of TNA 42 and TNA 43 so that is compatible with the 2013 to 2017 combined volume weighted unit cost, the 2011 unit cost is adjusted to the 2013 to 2017 volume ratio of 175.

To achieve this it's 2011 TNA 42 volumes and costs are adjusted by a factor calculated from the two ratio:

2013-2017 RATIO	**174.56**
2011 RATIO	28.35
[4]ADJUSTED RATIO:	6.16

[3]2011 Volume Ratio Adjustments:

- TNA 42

VOLUME	**582**
ADJUSTED RATIO	6.16
[4]ADJUSTED VOLUME:	95

COST	**$105,954.00**
ADJUSTED RATIO	6.16
[4]ADJUSTED COST:	$17,208.12

The 2011 unit cost combined TNA 42 and TNA 43, volume weighted and volume ratio adjusted to 2013 to 2017 forecasts are:

[3]2011 Unit Costs:

2011	ACTUAL VOLUME	VOLUME RATIO (ADJUSTED)	ACTUAL COSTS ($)	VOLUME RATIO COSTS (ADJUSTED)
TNA 42	582	95	105,954	17,208
TNA 43	16,501	16,501	406,427	406,427

2011 Actual Unit Cost (TNA 42 and TNA 43):

TOTAL	2011
ACTUAL COSTS	512,381
ACTUAL VOLUME	17,083
[4]PRICE:	$29.99

[3] Spread sheet: "Maintenance Compare DD", tab "Fisher"
[4] Top field divided by bottom field
[4] Top field divided by bottom field

2011 Unit Cost (TNA 42 and TNA 43) volume weighted and volume ratio adjusted:

TOTAL	**2011**
VOLUME RATIO COSTS (ADJ)	423,635
VOLUME RATIO (ADJ)	16,596
[4]PRICE:	$25.53

2012 Unit Cost Prices:

Unit cost prices 2012 uplifted by 3.52% inflation on 2011 prices.

2011 PRICE ($)	**25.53**
INFLATION (%)	3.52
2012 PRICE:	$26.42

Appendix 3

FORECAST OF VOLUME WEIGHTED UNIT COSTS FOR COMBINED TNA 34 & TNA 35, OVER PERIOD 2013 TO 2017, BASED ON 2012 PRICES.

[3]South Data:

TNA 34	2013	2014	2015	2016	2017	TOTAL
COST ($)	52,448	1,119,245	2,187,772	833,714	1,034,756	5,227,935
VOLUME	826	17,565	33,939	12,725	15,603	80,658
[4]UNIT COST	63.50	$63.72	$64.46	$65.52	$66.32	$64.82

TNA 35	2013	2014	2015	2016	2017	TOTAL
COST ($)	19,269	36,632	30,211	38,686	32,290	157,088
VOLUME	51	96	78	98	81	404
[4]UNIT COST	377.82	$381.58	$387.32	$394.76	$398.64	$388.83

TNA 34 & 35	2013	2014	2015	2016	2017	TOTAL
UNIT COST	$81.78	$65.45	$65.20	$68.03	$68.03	$66.43

[4]North Data:

TNA 34	2013	2014	2015	2016	2017	TOTAL
COST ($)	43,763	928,931	1,792,858	672,728	823,977	4,262,257
VOLUME	826	17,565	33,939	12,725	15,603	80,658
[4]UNIT COST	$52.98	$52.89	$52.83	$52.87	$52.81	$52.84

TNA 35	2013	2014	2015	2016	2017	TOTAL
COST ($)	15,663	29,614	24,109	30,391	25,028	124,805
VOLUME	51	96	78	98	81	404
[4]UNIT COST	$307.12	$308.48	$309.09	$310.11	$308.99	$308.92

TNA 34 & 35	2013	2014	2015	2016	2017	TOTAL
UNIT COST	$67.76	$54.27	$53.41	$54.83	$54.13	$54.12

[3] Spread sheet: "Revised GAAR South Rev1"
[4] Spread sheet: "North meters GAAR Resub"
[4] Top field divided by bottom field

South Data Volume Weighted Unit Cost:

- Individual (2013) Volume Weighted Unit Cost:

COST ($)	**71,717**
VOLUME	877
[4]UNIT COST	$81.78

- Individual (2014) Volume Weighted Unit Cost:

COST ($)	**1,155,877**
VOLUME	17,661
[4]UNIT COST	$65.45

- Individual (2015) Volume Weighted Unit Cost:

COST ($)	**2,217,983**
VOLUME	34,017
[4]UNIT COST	$65.20

- Individual (2016) Volume Weighted Unit Cost:

COST ($)	**872,400**
VOLUME	12,823
[4]UNIT COST	$68.03

- Individual (2017) Volume Weighted Unit Cost:

COST ($)	**1,067,046**
VOLUME	15,683
[4]UNIT COST	$68.03

- Combined Volume Weighted Unit Cost:

COST ($)	**5,385,023**
VOLUME	81,062
[4]UNIT COST	$66.43

[4] Top field divided by bottom field

North Data Volume Weighted Unit Cost:

- Individual (2013) Volume Weighted Unit Cost:

COST ($)	**59,426**
VOLUME	877
[4]UNIT COST	$67.76

- Individual (2014) Volume Weighted Unit Cost:

COST ($)	**958,545**
VOLUME	17,661
[4]UNIT COST	$54.27

- Individual (2015) Volume Weighted Unit Cost:

COST ($)	**1,816,967**
VOLUME	34,017
[4]UNIT COST	$53.41

- Individual (2016) Volume Weighted Unit Cost:

COST ($)	**703,119**
VOLUME	12,823
[4]UNIT COST	$54.83

- Individual (2017) Volume Weighted Unit Cost:

COST ($)	**849,005**
VOLUME	15,684
[4]UNIT COST	$54.13

- Combined Volume Weighted Unit Cost:

COST ($)	**4,387,062**
VOLUME	81,062
[4]UNIT COST	$54.12

Combined (South and North Data) Volume Weighted Unit Cost:

COST ($)	**9,772,085**
VOLUME	162,124
[4]UNIT COST	$60.28

[4] Top field divided by bottom field

[4] Top field divided by bottom field

Appendix 4

HISTORICAL DATA VOLUME WEIGHTED AND COMBINED UNIT COST FOR TNA 34 & TNA 35

Historical Data:

TNA 34	2008	2009	2010	2011	TOTAL
COST ($)	2,197,424	1,030,114	452,208	437,792	4,117,538
VOLUME	41,236	20,583	9,221	12,204	83,244
[4]UNIT COST	$53.29	$50.05	$49.04	$35.87	$49.46

TNA 35	2008	2009	2010	2011	TOTAL
COST ($)	260,986	414,357	279,534	493,914	1,448,791
VOLUME	1,214	488	810	833	3,345
[4]UNIT COST	$214.98	$849.09	$345.10	$592.93	$433.12

TNA 34 & 35	2008	2009	2010	2011	TOTAL
UNIT COST	$57.91	$68.55	$72.95	$71.47	$64.28

REFERENCES

COSTS ARE FROM SPREADSHEET "MAINTENANCE COMPARE FOR DD" TAB "FISHER"

VOLUMES ARE FROM

TABLE * PROVIDED FROM METER REPAIR COMPANY

SPREADSHEET FROM MULTINET "INDUSTRIAL AND COMMERCIAL METERS REPAIRED 2008 TO 2011"

Appendix 5

HISTORICAL 2008 TO 2010 TNA34 AND TNA35 UNIT COST DATA, ADJUSTED FOR 2012 PRICES, ADJUSTED TO 2013 TO 2017 VOLUME RATIO.

Historical Data:

TNA 34	2008	2009	2010	TOTAL
COST ($)	2,197,424	1,030,114	452,208	3,679,746
VOLUME	41,236	20,583	9,221	71,040
[4]UNIT COST	$53.29	$50.05	$49.04	$51.80

TNA 35	2008	2009	2010	TOTAL
COST ($)	260,986	414,357	279,534	954,875
VOLUME	1,214	488	810	2,512
[4]UNIT COST	$214.98	$849.09	$345.10	$380.13

TNA 34 & 35	2008	2009	2010	TOTAL
UNIT COST	$57.91	$68.55	$72.95	$63.01

2008 to 2010 Costs (TNA 34 and TNA 35) by Respective CPI:

TNA 34	2008	2009	2010	TOTAL
COST ($)	2,197,424	1,030,114	452,208	3,679,746
INFLATION FACTOR	1.1311	1.0775	1.064	-
INFLATED COSTS:	$2,485,506	$1,109,948	$481,149	$4,076,603
UNIT COST	$60.28	$53.93	$52.18	$57.38

TNA 35	2008	2009	2010	TOTAL
COST ($)	260,986	414,357	279,534	954,877
INFLATION FACTOR	1.1311	1.0775	1.064	-
INFLATED COSTS:	$295,201	$446,470	$297,424	$1,039,095
UNIT COST	$243.16	$914.90	$367.19	$413.65

[4] Top field divided by bottom field

Inflation Factors from Multinet Economic Assumptions Spreadsheet

TNA 34 & 35	2008	2009	2010	TOTAL
ACTUAL COSTS ($)	2,458,410	1,444,471	731,742	4,634,623
INFLATION FACTOR	1.1311	1.0775	1.064	-
INFLATED COSTS:	$2,780,708	$1,556,418	$778,573	$5,115,699

TNA 34 & 35	2008	2009	2010	TOTAL
UNIT COST	$65.51	$73.87	$77.62	$69.55

2013 to 2017 Volume Ratio:

TNA 34	161,316
TNA 35	808
[4]RATIO	200

2008 to 2010 Actual Volumes:

VOLUME	2008 - 2010
TNA 34	71,040
TNA 35	2,512

2008 to 2010 Actual Volume Ratio:

TNA 34	71,040
TNA 35	2,512
[4]RATIO	28

To enable a fair comparison between forecast and historical unit costs, the historical costs and volumes are adjusted to have the same TNA34/TNA35 meter volume ratio as in 2013 to 2017.

To achieve this, the 2008 to 2010 TNA 35 volumes and costs are adjusted by a factor calculated from the two ratios:

2013-2017 RATIO	200
2008-2010 RATIO	28
[4]ADJUSTED RATIO:	7.13

[4] Top field divided by bottom field

2008 to 2010 Volume Ratio Adjustments:

For TNA 35

VOLUME	**2,512**
ADJUSTED RATIO	7.13
[4]ADJUSTED VOLUME:	352

COST	**$1,039,095**
ADJUSTED RATIO	7.13
[4]ADJUSTED COST:	$145,729

The 2008 to 2010 costs and volumes for TNA 34 and TNA 35, in 2012 prices and volume ratio adjusted to 2013 to 2017 forecasts are:

2008-2010	ACTUAL VOLUME	VOLUME RATIO (ADJUSTED)	COSTS IN 2012 ($)	VOLUME RATIO COSTS (ADJUSTED) ($)
TNA 34	71,040	71,040	4,076,603	4,076,603
TNA 35	2,512	352	1,039,095	145,729

2008 to 2010 Combined Unit Cost (TNA 34 and TNA 35), in 2012 prices and volume ratio adjusted:

TOTAL	2008-2010
ADJUSTED COSTS	$4,222,332
ADJUSTED VOLUME	71,392
[4]UNIT COST	$59.14

[4] Top field divided by bottom field

Appendix 6

Table 6.1 South Refurbishment.

Tables 6.1 and 6.2 (total of 8 Tables) are derived from the Multinet spreadsheets of the same name.

Table 6.1(a) South Unit Costs – Tender Limb 1

Multinet Gas TCE Pricing Proposal		South	South	South	South	South
		FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Network Operations Services Operating Costs		Unit Cost	Unit Cost	Unit Cost	Unit Cost	Unit Cost
		Tender - limb 1				
TNA32	Maint Flow Computer/ Telemetry Point	244.47	246.51	250.27	254.76	256.54
TNA33	Maint of Data Logger/ Telemetry	75.95	76.68	77.96	79.46	80.13
TNA34	Repair Of Meters less than or equal to 8m3/hr	57.56	58.03	58.91	59.95	60.36
TNA35	Repair Meters > 8m3/hr	345.75	348.65	353.97	360.32	362.85
TNA39	Change/Replace Meter less than or equal to 8m3/hr	32.56	32.82	33.32	33.91	34.14
TNA40	Change/Replace Meter equal to or larger than 8m3/hr	32.56	32.82	33.32	33.91	34.14
TNA41	Replacement - Lead Connections	40.70	41.03	41.65	42.38	42.67
TNA42	Change Time Exp Meter equal to or larger than 8m3	22.61	22.79	23.14	23.55	23.71
TNA43	Change Time Exp Meter less than or equal to 8 m3/hr	22.61	22.79	23.14	23.55	23.71
TNA51	Relocation Flow Meters	678.83	645.57	655.19	664.96	674.87
TNA52	Relocation Data Loggers	678.83	684.48	694.91	707.34	712.26
TNA53	Testing of Meters smaller than or equal to 8m3/hr	-	-	-	-	-
TSF	Maintain Specialist Equipment	125,884.52	127,129.96	129,268.62	131,785.94	132,912.37

Table 6.1(b). South Volumes

Multinet Gas TCE Pricing Proposal		South	South	South	South	South
		CY 2013	CY 2014	CY 2015	CY 2016	CY 2017
Network Operations Services Operating Costs		Vols	Vols	Vols	Vols	Vols
TNA32	Maint Flow Computer/ Telemetry Point	43.00	86.00	86.00	87.00	88.00
TNA33	Maint of Data Logger/ Telemetry	62.00	121.00	120.00	120.00	117.00
TNA34	Repair Of Meters less than or equal to 8m3/hr	826.43	17,564.63	33,939.45	12,725.10	15,603.30
TNA35	Repair Meters > 8m3/hr	50.55	95.70	78.00	98.25	81.00
TNA39	Change/Replace Meter less than or equal to 8m3/hr	593.25	1,187.75	1,190.00	1,192.00	1,194.00
TNA40	Change/Replace Meter equal to or larger than 8m3/hr	18.25	36.50	37.50	38.00	38.25
TNA41	Replacement - Lead Connections	96.00	177.00	177.00	177.00	177.00
TNA42	Change Time Exp Meter equal to or larger than 8m3	68.50	137.00	93.00	118.50	97.00
TNA43	Change Time Exp Meter less than or equal to 8 m3/hr	4,533.75	20,033.00	35,794.50	12,145.00	16,517.00
TNA51	Relocation Flow Meters	1.00	-	-	-	-
TNA52	Relocation Data Loggers	2.00	2.00	2.00	2.00	2.00
TNA53	Testing of Meters smaller than or equal to 8m3/hr	-	-	-	-	-
TSF	Maintain Specialist Equipment	1.00	1.00	1.00	1.00	1.00

Note 2013 CY volumes for half year only. OSA applies for first half 2013 CY

Table 6.1(c). South Unit Costs – Tender Limb 2 real 2012 conversion

Multinet Gas TCE Pricing Proposal		South	South	South	South	South
		CY 2013	CY 2014	CY 2015	CY 2016	CY 2017
Network Operations Services Operating Costs		Unit Cost	Unit Cost	Unit Cost	Unit Cost	Unit Cost
		Tender limb 2 plus real 12 conversion				
TNA32	Maint Flow Computer/ Telemetry Point	269.52	271	274	278	282
TNA33	Maint of Data Logger/ Telemetry	84	84	85	87	88
TNA34	Repair Of Meters less than or equal to 8m3/hr	63	64	64	66	66
TNA35	Repair Meters > 8m3/hr	381	383	387	394	399
TNA39	Change/Replace Meter less than or equal to 8m3/hr	36	36	36	37	38
TNA40	Change/Replace Meter equal to or larger than 8m3/hr	36	36	36	37	38
TNA41	Replacement - Lead Connections	45	45	46	46	47
TNA42	Change Time Exp Meter equal to or larger than 8m3	25	25	25	26	26
TNA43	Change Time Exp Meter less than or equal to 8 m3/hr	25	25	25	26	26
TNA51	Relocation Flow Meters	748		-	-	-
TNA52	Relocation Data Loggers	748	752	760	773	783
TNA53	Testing of Meters smaller than or equal to 8m3/hr	-	-	-	-	-
TSF	Maintain Specialist Equipment					

Table 6.1(d)

Multinet Gas TCE Pricing Proposal		South	South	South	South	South
		Total Cost ($)	Total Cost ($)	Total Cost ($)	Total Cost ($)	Total Cost ($)
ions Services Operating Costs		CY 2013	CY 2014	CY 2015	CY 2016	CY 2017
TNA32	Maint Flow Computer/ Telemetry Point	11,590	23,276	23,551	24,220	24,803
TNA33	Maint of Data Logger/ Telemetry	5,191	10,181	10,230	10,413	10,293
TNA34	Repair Of Meters less than or equal to 8m3/hr	52,448	1,119,245	2,187,772	833,714	1,034,756
TNA35	Repair Meters > 8m3/hr	19,269	36,632	30,211	38,686	32,290
TNA39	Change/Replace Meter less than or equal to 8m3/hr	21,295	42,808	43,387	44,171	44,784
TNA40	Change/Replace Meter equal to or larger than 8m3/hr	655	1,316	1,367	1,408	1,435
TNA41	Replacement - Lead Connections	4,307	7,974	8,067	8,199	8,299
TNA42	Change Time Exp Meter equal to or larger than 8m3	1,708	3,429	2,355	3,049	2,527
TNA43	Change Time Exp Meter less than or equal to 8 m3/hr	113,016	501,406	906,285	312,535	430,220
TNA51	Relocation Flow Meters	748	-	-	-	-
TNA52	Relocation Data Loggers	1,497	1,503	1,521	1,546	1,565
TNA53	Testing of Meters smaller than or equal to 8m3/hr	-	-	-	-	-
TSF	Maintain Specialist Equipment	69,393	139,473	141,338	143,905	145,913
		301,117	**1,887,242**	**3,356,083**	**1,421,847**	**1,736,883**

Note 2013 CY volumes for half year only. OSA applies for first half 2013 CY

Table 6.2 North Refurbishment.

Table 6.2(a)

Multinet Gas TCE Pricing Proposal		North	North	North	North	North
Jemena		FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Network Operations Services Operating Costs		Unit Cost	Unit Cost	Unit Cost	Unit Cost	Unit Cost
		Tender - limb 1				
TNA32	Maint Flow Computer/ Telemetry Point	285.83	285.09	285.17	285.54	284.54
TNA33	Maint of Data Logger/ Telemetry	285.81	285.07	285.14	285.51	284.52
TNA34	Repair Of Meters less than or equal to 8m3/hr	47.37	47.24	47.26	47.32	47.15
TNA35	Repair Meters > 8m3/hr	277.14	276.42	276.50	276.85	275.89
TNA39	Change/Replace Meter less than or equal to 8m3/hr	46.14	46.15	46.37	46.64	46.70
TNA40	Change/Replace Meter equal to or larger than 8m3/hr	141.62	142.43	144.39	146.54	148.04
TNA41	Replacement - Lead Connections	108.94	109.54	111.02	112.65	113.77
TNA42	Change Time Exp Meter equal to or larger than 8m3	182.56	182.31	182.72	183.32	183.07
TNA43	Change Time Exp Meter less than or equal to 8 m3/hr	24.73	24.69	24.75	24.82	24.78
TNA51	Relocation Flow Meters	1,029.51	1,026.84	1,027.12	1,028.43	1,024.86
TNA52	Relocation Data Loggers	1,029.51	1,026.84	1,027.12	1,028.43	1,024.86
TNA53	Testing of Meters smaller than or equal to 8m3/hr	-	-	-	-	-
TSF	Maintain Specialist Equipment	87,085.07	87,504.23	88,182.80	88,959.31	89,321.11

Table 6.2(b).

Multinet Gas TCE Pricing Proposal		North	North	North	North	North
Jemena		CY 2013	CY 2014	CY 2015	CY 2016	CY 2017
Network Operations Services Operating Costs		Vols	Vols	Vols	Vols	Vols
TNA32	Maint Flow Computer/ Telemetry Point	79.00	158.00	158.00	158.00	158.00
TNA33	Maint of Data Logger/ Telemetry	80.00	159.00	159.00	159.00	159.00
TNA34	Repair Of Meters less than or equal to 8m3/hr	826.43	17,564.63	33,939.45	12,725.10	15,603.30
TNA35	Repair Meters > 8m3/hr	50.55	95.70	78.00	98.25	81.00
TNA39	Change/Replace Meter less than or equal to 8m3/hr	593.25	1,187.75	1,190.00	1,192.00	1,194.00
TNA40	Change/Replace Meter equal to or larger than 8m3/hr	18.25	36.50	37.50	38.00	38.25
TNA41	Replacement - Lead Connections	80.00	161.00	161.00	161.00	161.00
TNA42	Change Time Exp Meter equal to or larger than 8m3	68.50	137.00	93.00	118.50	97.00
TNA43	Change Time Exp Meter less than or equal to 8 m3/hr	4,533.75	20,033.00	35,794.50	12,145.00	16,517.00
TNA51	Relocation Flow Meters	1.00	1.00	1.00	1.00	1.00
TNA52	Relocation Data Loggers	1.00	2.00	2.00	2.00	2.00
TNA53	Testing of Meters smaller than or equal to 8m3/hr	-	-	-	-	-
TSF	Maintain Specialist Equipment	1.00	1.00	1.00	1.00	1.00

Note 2013 CY volumes for half year only. OSA applies for first half 2013 CY

Table 6.2(c).

Multinet Gas TCE Pricing Proposal		North	North	North	North	North
Jemena		CY 2013	CY 2014	CY 2015	CY 2016	CY 2017
Network Operations Services Operating Costs		Unit Cost	Unit Cost	Unit Cost	Unit Cost	Unit Cost
		Tender limb 2 plus real 12 conversion				
TNA32	Maint Flow Computer/ Telemetry Point	320	319	319	319	319
TNA33	Maint of Data Logger/ Telemetry	320	319	319	319	319
TNA34	Repair Of Meters less than or equal to 8m3/hr	53	53	53	53	53
TNA35	Repair Meters > 8m3/hr	310	309	309	309	309
TNA39	Change/Replace Meter less than or equal to 8m3/hr	52	52	52	52	52
TNA40	Change/Replace Meter equal to or larger than 8m3/hr	158	159	160	163	165
TNA41	Replacement - Lead Connections	122	122	123	125	127
TNA42	Change Time Exp Meter equal to or larger than 8m3	204	204	204	205	205
TNA43	Change Time Exp Meter less than or equal to 8 m3/hr	28	28	28	28	28
TNA51	Relocation Flow Meters	1,151	1,150	1,148	1,149	1,148
TNA52	Relocation Data Loggers	1,151	1,150	1,148	1,149	1,148
TNA53	Testing of Meters smaller than or equal to 8m3/hr	-	-	-	-	-
TSF	Maintain Specialist Equipment					

Table 6.2(d).

Multinet Gas TCE Pricing Proposal		North	North	North	North	North
Jemena		Total Cost ($)	Total Cost ($)	Total Cost ($)	Total Cost ($)	Total Cost ($)
Network Operations Services Operating Costs		CY 2013	CY 2014	CY 2015	CY 2016	CY 2017
TNA32	Maint Flow Computer/ Telemetry Point	25,246	50,426	50,368	50,407	50,351
TNA33	Maint of Data Logger/ Telemetry	25,563	50,740	50,682	50,721	50,665
TNA34	Repair Of Meters less than or equal to 8m3/hr	43,763	928,931	1,792,858	672,728	823,977
TNA35	Repair Meters > 8m3/hr	15,663	29,614	24,109	30,391	25,028
TNA39	Change/Replace Meter less than or equal to 8m3/hr	30,606	61,281	61,548	61,979	62,300
TNA40	Change/Replace Meter equal to or larger than 8m3/hr	2,890	5,796	6,013	6,180	6,299
TNA41	Replacement - Lead Connections	9,744	19,663	19,851	20,130	20,378
TNA42	Change Time Exp Meter equal to or larger than 8m3	13,981	27,943	18,977	24,248	19,867
TNA43	Change Time Exp Meter less than or equal to 8 m3/hr	125,356	553,495	989,268	336,533	458,032
TNA51	Relocation Flow Meters	1,151	1,150	1,148	1,149	1,148
TNA52	Relocation Data Loggers	1,151	2,299	2,296	2,298	2,296
TNA53	Testing of Meters smaller than or equal to 8m3/hr	-	-	-	-	-
TSF	Maintain Specialist Equipment	48,681	97,597	98,210	99,024	99,660
		678,145	**2,491,362**	**3,783,534**	**2,032,127**	**2,301,536**

Note 2013 CY volumes for half year only. OSA applies for first half 2013 CY

Table 6.3 Y4 Summary.

	2013	2014	2015	2016	2017	Total	
North	678,145	2,491,362	3,783,534	2,032,127	2,301,536	11,286,704	2,508,156.41
South	301,117	1,887,242	3,356,083	1,421,847	1,736,883	8,703,173	1,934,038.34
Total	979,262	4,378,604	7,139,617	3,453,974	4,038,420	19,989,876	4,442,194.75
		2008	**2009**	**2010**	**2011**	**Total**	
NB Metering (Operational)		2,666,763	1,645,527	959,951	1,160,894	6,433,135	
NU Install replacement meters GAS		1,386,462	656,222	572,496	512,381	3,127,562	
		4,053,225	2,301,750	1,532,447	1,673,275	9,560,697	
Convert to real 2012		1.13	1.08	1.06	1.04		
Real 2012 values		4,584,796	2,480,084	1,630,611	1,732,173	10,427,663	2,606,915.82
				Differnce to year 4		- 2,710,022	- 13,550,110.27

Table 6.4 Historical Meter Repairs up to 8m^3/hr – Source EDMI.

Meter Type	2008	2009	2010	2011	2012	Totals
602	33440	17221	7163	11043	17027	85894
602R					2980	2980
602RR					3966	2966
610	467		200	100		767
610R				102	15512	15614
MR8	1280					1280
MR8HI	6049	3362	1858	480		11749
RKMR8				479	361	840
Totals	**41236**	**20583**	**9221**	**12204**	**38846**	**122090**

Table 6.5 Industrial and Commercial Meters Repaired by Calendar Year.

Meter Type	2008	2009	2010	2011
Diaphragms				
AL425	286	61	265	80
AL800	7		6	9
AL1000	498	61	135	256
AL1400	49	35	58	69
AL2300	55	45	73	52
AL5000	64	49	67	74
RKMR12	88	72	66	119
RK1000	84	87	27	30
RK3000	14	14	17	13
RK5000	12	51	57	35
RK10000	5		14	15
Smith 400	2			
Smith 700	1			
Rotaries				
Roots 5M	4		2	3
Roots 7M	6		2	3
Roots 11M	6		4	5
Roots 16M	11	4	6	9
Roots 23M	3	9	1	1
Roots 38M				7
Romet 85				1
Romet 140				4
Romet 200	1		1	2
Romet 300	2			3
Romet 450	2			5
Romet 650				1
RVG G65				2
Instromet G40				1
Instromet G100				4
Instromet G250				1
Turbines				
GT4	7		3	5
GT6	5		3	8
GT8	1		2	3
RKT18				4
RKT30	1			5
RKT60				2
G2500			1	
Fluxi G160				2
TOTAL	1214	488	810	833

Table 6.6 Volume and Costing Details for TNA 42 and TNA 43 –Reference spreadsheet: Maintenance for DD, tab "Fisher". The below Table is an extract of the referenced spreadsheet.

	2008	2009	2010	2011
	2008 Actual	2009 Actual	2010 Actual	2011 actual
TNA42	562	492	394	582
TNA43	68,274	23,636	20,272	16,501
Total	68,836.00	24,128.00	20,666.00	17,083.00
	2008	**2009**	**2010**	**2011**
	Act $	**Act $**	**Act $**	**Act $**
TNA42	36,375.13	78,604.67	66,410.40	105,953.92
TNA43	1,350,087.30	577,617.74	506,085.98	406,427.21
Total	**1,386,462.43**	**656,222.41**	**572,496.38**	**512,381.13**

Appendix 7.

Consultants Experience Relating to Project

1. Dr. Bob Fisher

1	Name of Consulting Professional:	Dr. Bob Fisher
2	Designation:	Managing Director GTL Business International Pty and Asset Integrity Australasia Pty
3	Age:	61
4	Nationality:	British
5	Educational/Professional Qualifications:	Ph.D.,MSc.,BSc., C.Eng, M.I.GasE.
6	Degree of Proficiency in English:	First language – fluent
7	Relevant Experience: a. Period b. Employer c. Position d. Details of major work involvement and responsibility	 1996-present GTL Business International Pty, Asset Integrity Australasia Pty Ltd Managing Director Provision of technical and strategic advice particularly in relation to technical matters such as unaccounted for gas,risk based replacement policies and energy allocation algorithms. Advised government and industry clients in Victoria and Western Australia, Hong Kong, Thailand and Ireland.
8	Relevant Experience: a. Period b. Employer c. Position d. Details of major work involvement and responsibility	 2001-2004 Inexus Director of Engineering for Independent Pipelines, Quadrant Pipelines and Independent Meters Engineering Director of largest independent gas transporters in UK – and one of the first independent meter companies.
9	Relevant Experience: a. Period b. Employer c. Position d. Details of major work involvement and responsibility	 1993-1996 British Gas Transco Lead Area Engineer Responsible for BG distribution policy and involved extensive negotiation with Health and Safety Executive and other government organisations, in particular in relation to BG Transco replacement policy.
10	Relevant Experience: a. Period b. Employer c. Position d. Details of major work involvement and responsibility	 1982-1993 British Gas Various senior engineering operations roles covering distribution and transmission functions. Responsible for major maintenance, construction activities on network assets including all aspects of meter operations from domestic to Industrial and Commercial.

2. Dr. David Pack

- Officer in charge of the then State Energy Commission of Western Australia (SECWA) gas meter repair and calibration facility. This facility repaired refurbished and calibrated domestic and small to medium size commercial and industrial gas meters.
- Member and sometime Chairperson of the then Australian Gas Association (AGA) Gas Measurement Committee. This committee had membership of all the Australian gas utilities and initiated and oversaw 'Round-Robin' testing and evaluation of gas meters as well as the development of Standards and Procedures for the testing and performance of gas meters and pressure regulators.
- Member of Standards Australia Oil and Gas Measurement Committee (ME/49).
- National Association of Testing Authorities, Australia (NATA) Metrology Assessor – oil and gas systems (all categories).
- Member of the then Panel of Experts advising the Western Australian Government Office of Energy on natural gas related issues.
- 2012 Technical Expert (advisor) to the Western Australian Government on broadening of the W.A. natural gas specification.
- Author of a number of published technical papers on natural gas measurement and properties.
- Part-time researcher and lecturer in hydrocarbon flow assurance issues.
- Over 30 years experience in the gas industry, both in direct operational areas and consultancy activities. Consultancy activities have been national and international.