# REVIEW OF GAS FRC COST PASS-THROUGH
# APT ALLGAS

**Prepared for**

QUEENSLAND COMPETITION AUTHORITY

***PB** Quality System:*

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## GLOSSARY

| | |
|---|---|
| BTB | Business To Business |
| Capex | Capital Expenditure |
| CPU | Central Processing Unit |
| FRC | Full Retail Contestability |
| FTE | Full Time Equivalent |
| GB | Gigabyte |
| GIS | Geographic Interface System |
| GRMO | Gas Retail Market Operator |
| IT | Information Technology |
| MIRN | Metering Installation Registration Number |
| Opex | Operating Expenditure |
| QCA | Queensland Competition Authority |
| QLD | Queensland |
| SCADA | Supervisory Control and Data Acquisition |
| SME | Subject Matter Expert |
| TJ | Terajoule |
| XML | Extensible Mark-up Language |

# EXECUTIVE SUMMARY

The Queensland Competition Authority (QCA) has engaged PB Associates (PB) to assist with the review of a Submission from the Queensland gas distributor APT Allgas Energy Pty Limited (Allgas). The Submission[1] contains details of costs that have been, or will be, incurred by Allgas preparing to operate in a market environment of Full Retail Contestability (FRC).

As a result of the intended introduction of FRC on 1 July 2007, Allgas has upgraded its internal information technology systems solution, installed new metering and allowed for the hiring of new staff. The main task of this review is to ensure the FRC costs included by Allgas in its Submission are prudent, efficient and incremental. Prudent and efficient costs are those that do not exceed an amount incurred by a prudent gas entity acting efficiently in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering services. Incremental costs are those costs that can be specifically attributed to the introduction of FRC, and are in addition to the normal capital and operating costs of running the Allgas gas distribution business in a non-FRC market and have already been allowed for in the current Allgas' access arrangement[2].

PB has considered the detailed components of capital and operating expenditure proposed by Allgas. This has involved considering the Allgas submission, meeting with Allgas and collecting additional information. PB has considered each component to ensure the proposed expenditure is prudent, efficient and incremental.

The total FRC related capital expenditure (Capex) and operating expenditure (Opex) that PB considers to represent a prudent, efficient and incremental level of cost is detailed in Table 1-1 below[3].

**Table 1-1 Allgas proposed total FRC costs vs. PB's recommendations**

| $ | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| **Original Allgas submission (provided June 2007)** | | | | | | |
| Capex | 5,218,000 | 3,334,000 | | | | 8,552,000 |
| Opex | 3,988,000 | 3,755,000 | 2,351,000 | 2,202,000 | 2,205,000 | 14,501,000 |
| Total | 9,206,000 | 7,089,000 | 2,351,000 | 2,202,000 | 2,205,000 | 23,053,000 |
| | | | | | | |
| **Revised Allgas submission (provided January 2008)** | | | | | | |
| Capex | 4,206,111 | 6,447,708 | | | | 10,653,819 |
| Opex | 2,770,889 | 3,296,840 | 2,634,429 | 2,734,602 | 2,836,334 | 14,273,093 |
| Total | 6,976,999 | 9,744,548 | 2,634,429 | 2,734,602 | 2,836,334 | 24,926,912 |
| | | | | | | |
| **PB Recommendation** | | | | | | |
| Capex | 6,111 | 2,318,013 | | | | 2,324,124 |
| Opex | 2,189,889 | 2,333,439 | 1,502,143 | 1,503,315 | 1,506,048 | 9,034,834 |
| Total | 2,196,000 | 4,651,452 | 1,502,143 | 1,503,315 | 1,506,048 | 11,358,958 |

[1] APT Allgas Energy Pty Limited. Full Retail Competition Cost Pass-Through Submission to the Queensland Competition Authority. 5th June 2007.
[2] QCA. Final Approval - Revised Access Arrangement for Gas Distribution Networks: Allgas Energy. June 2006.
[3] Where PB is quoting Allgas provided values taken from its original or subsequent updates to its Submission, no attempt to correct rounding inconsistencies with the totals has been made.

Table 1-2 shows the original Allgas Submission proposed Capex, the latest Allgas revision and the PB recommendation for the individual Capex components.

**Table 1-2 Allgas proposed FRC Capex vs. PB's recommendations**

| Capex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| **Original Allgas submission (provided June 2007)** | | | |
| Hansen System | 2,966,000 | 576,000 | 3,542,000 |
| Partial Integration costs | 486,000 | 245,000 | 731,000 |
| GIS | 0 | 1,908,000 | 1,908,000 |
| Interval Meter System | 606,000 | 606,000 | 1,212,000 |
| Project Establishment | 1,160,000 | 0 | 1,160,000 |
| Total | 5,218,000 | 3,335,000 | 8,553,000 |
| | | | |
| **Revised Allgas submission (provided January 2008)** | | | |
| 1. Hansen Technologies | 1,511,461 | 2,003,000 | 3,514,461 |
| 2. Interval Meters | 527,374 | 300,967 | 828,341 |
| 3. Internal & other costs | 1,187,712 | 127,850 | 1,315,562 |
| 4. Integration costs APT | 232,898 | 1,056,972 | 1,289,870 |
| 5. GIS | 0 | 1,908,000 | 1,908,000 |
| 6. PABX | 84,464 | 6,480 | 90,944 |
| 7. Additional items | 0 | 69,120 | 69,120 |
| Contingency | 0 | 487,659 | 487,659 |
| Overheads | 662,202 | 487,659 | 1,149,861 |
| Total | 4,206,111 | 6,447,7078 | 10,653,818 |
| | | | |
| **PB Recommendation** | | | |
| 1. Hansen Technologies | 1,511,461 | *1,503,000* | *3,014,461* |
| 2. Interval Meters | 527,374 | 300,967 | 828,341 |
| 3. Internal & other costs | 1,187,712 | 127,850 | 1,315,562 |
| 4. Integration costs APT | 232,898 | *267,281* | *500,179* |
| 5. GIS | 0 | *0* | *0* |
| 6. PABX | 84,464 | 6,480 | 90,944 |
| 7. Additional items | 0 | *57,600* | *57,600* |
| Contingency | 0 | *0* | *0* |
| Overheads | 662,202 | *54,835* | *717,037* |
| Total | 4,206,111 | *2,318,013* | *6,524,124* |
| 2005 Access Arrangement | *-4,200,000* | *0* | *-4,200,000* |
| Total | *6,111* | *2,318,013* | *2,324,124* |

*Notes: Allgas proposed no capital expenditure in 2008/09, 2009/10 and 2010/11*
*Numbers in red italics are those impacted by PB recommendations*

The variance between the revised Allgas Submission (January 2008) and PB's recommendation is as follows:

- A reduction of $4.2 million from the total Capex in 2006/07 to allow for expenditure relating to amounts previously included in the 2005 Access Arrangement.
- A reduction of $1.908 million in 2007/08 from "5. GIS", for the upgrade of the GIS system.
- A reduction of $1 million from 2007/08 consisting of $0.5 million from "1. Hansen Technologies" and $0.5 million from "4. Integration costs APT", for the Maximo to Hansen Hub system interface.

- A reduction of $55,196 from 2007/08 from “4. Integration costs to APT”, for double counting of the Maximo system costs.
- A reduction of $170,000 from 2007/08 from “4. Integration costs to APT” for an additional amount budgeted for the Maximo interface.
- A reduction of $487,659 from 2007/08 for contingency.
- A reduction of $64,495 from 2007/08 for contingency included in the “4. Integration costs to APT” item.
- A reduction of $11,520 from 2007/08 for contingency included in the “7. Additional Items” amount.
- A reduction of $432,824 from 2007/08 from the “Overheads” line item.

The explanations for the individual Capex recommendations are included in Section 4 of this report.

Table 1-3 shows the original Allgas Submission proposed Opex, the latest Allgas revision and the PB recommendation for the individual Opex components.

**Table 1-3 Allgas proposed FRC Opex vs. PB's recommendations**

| Opex $ | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| **Original Allgas Submission (provided June 2007)** | | | | | | |
| LogicaCMG | 2,127,000 | 339,000 | 0 | 0 | 0 | 2,466,000 |
| Ombudsman Scheme | 115,000 | 115,000 | 115,000 | 115,000 | 115,000 | 575,000 |
| Hansen Software Licensing | 0 | 151,000 | 153,000 | 154,000 | 157,000 | 615,000 |
| Third party software licensing | 0 | 58,000 | 58,000 | 58,000 | 58,000 | 232,000 |
| Escrow Agmt (Hansen code) | 0 | 3,000 | 3,000 | 3,000 | 3,000 | 12,000 |
| Hosting | 144,000 | 415,000 | 415,000 | 415,000 | 415,000 | 1,804,000 |
| Additional FRC staff | 378,000 | 1,512,000 | 1,210,000 | 1,058,000 | 1,058,000 | 5,216,000 |
| Brennan IT support & mgmt | 0 | 29,000 | 58,000 | 58,000 | 58,000 | 203,000 |
| Interval Meters | 0 | 341,000 | 341,000 | 341,000 | 341,000 | 1,364,000 |
| Project Establishment | 1,224,000 | 792,000 | 0 | 0 | 0 | 2,016,000 |
| Total | 3,988,000 | 3,755,000 | 2,351,000 | 2,202,000 | 2,205,000 | 14,503,000 |
| | | | | | | |
| **Revised Allgas Submission (provided January 2008)** | | | | | | |
| LogicaCMG | 1,067,530 | 288,964 | 0 | 0 | 0 | 1,356,494 |
| Interval Meters | 0 | 247,116 | 264,453 | 264,626 | 264,359 | 1,040,554 |
| Ombudsman Scheme | 0 | 115,000 | 115,000 | 115,000 | 115,000 | 460,000 |
| Hansen Software Licensing | 300,000 | 151,000 | 153,000 | 154,000 | 157,000 | 915,000 |
| 3rd party software licensing | 95,000 | 58,000 | 58,000 | 58,000 | 58,000 | 327,000 |
| Escrow Ag't. (Hansen code) | 0 | 1,850 | 1,850 | 1,850 | 1,850 | 7,400 |
| Hosting | 144,000 | 415,000 | 415,000 | 415,000 | 415,000 | 1,804,000 |
| Additional FRC staff | 193,359 | 1,138,500 | 1,237,500 | 1,336,500 | 1,435,500 | 5,341,359 |
| Brennan IT support & mgmt | 0 | 29,000 | 58,000 | 58,000 | 58,000 | 203,000 |
| Director, proj.mgr, bus.analyst | 485,000 | 247,290 | 0 | 0 | 0 | 732,290 |
| Project establishment | 486,000 | 0 | 0 | 0 | 0 | 486,000 |
| Retesting FRC system AGL | 0 | 184,320 | 0 | 0 | 0 | 184,320 |
| Testing new entrant retailers | 0 | 0 | 60,826 | 60,826 | 60,826 | 182,478 |
| Promotion and training | 0 | 250,000 | 100,000 | 100,000 | 100,000 | 550,000 |
| Increased call centre staff | 0 | 144,000 | 144,000 | 144,000 | 144,000 | 576,000 |
| DME & VENCorp post FRC committee | 0 | 26,800 | 26,800 | 26,800 | 26,800 | 107,200 |
| Total | 2,770,889 | 3,296,840 | 2,634,429 | 2,734,602 | 2,836,3354 | 14,273,0953 |
| | | | | | | |
| **PB Recommendation** | | | | | | |
| LogicaCMG | 1,067,530 | 288,964 | 0 | 0 | 0 | 1,356,494 |
| Interval Meters | 0 | *196,005* | *197,618* | *197,790* | *197,523* | *788,936* |
| Ombudsman Scheme | 0 | *98,000* | *93,000* | *93,000* | *93,000* | *377,000* |
| Hansen Software Licensing | 300,000 | 151,000 | 153,000 | 154,000 | 157,000 | 915,000 |
| 3rd party software licensing | *0* | *0* | *0* | *0* | *0* | *0* |
| Escrow Ag't. (Hansen code) | 0 | 1,850 | 1,850 | 1,850 | 1,850 | 7,400 |
| Hosting | 144,000 | 415,000 | 415,000 | 415,000 | 415,000 | 1,804,000 |
| Additional FRC staff | 193,359 | *742,500* | *556,875* | *556,875* | *556,875* | *2,606,484* |
| Brennan IT support & mgmt | 0 | 29,000 | 58,000 | 58,000 | 58,000 | 203,000 |
| Director, proj.mgr, bus.analyst | 485,000 | *200,000* | 0 | 0 | 0 | *685,000* |
| Project establishment | *0* | 0 | 0 | 0 | 0 | *0* |
| Retesting FRC system AGL | 0 | 184,320 | 0 | 0 | 0 | 184,320 |
| Testing new entrant retailers | 0 | 0 | *0* | *0* | *0* | *0* |
| Promotion and training | 0 | *0* | *0* | *0* | *0* | *0* |
| Increased call centre staff | 0 | *0* | *0* | *0* | *0* | *0* |
| DME & Vencorp post FRC committee | 0 | 26,800 | 26,800 | 26,800 | 26,800 | 107,200 |
| Total | *2,189,889* | *2,333,439* | *1,502,143* | *1,503,315* | *1,506,048* | *9,034,834* |

*Note: numbers in red italics are those impacted by PB recommendations*

The variance between the Opex totals in the revised Allgas Submission (January 2008) and PB's recommendation is as follows:

- A reduction of $486,000 million for the "Project Establishment" costs.
- A reduction of $17,000 in 2007/08, and $22,000 in each of the 2008/09, 2009/10 and 2010/11 periods from "Ombudsman scheme" costs.
- A reduction of $396,000 in 2007/08, $670,625 in 2008/09, $779,625 in 2009/10 and $878,625 in 2010/11 for "Additional FRC staff".
- A reduction of $95,000 in 2006/07 and $58,000 in each subsequent year for 3rd party software licensing.
- A reduction of $250,000 from 2007/08, and $100,000 from each of the years 2008/09, 2009/10 and 2010/11 for promotion and training.
- A reduction of $47,290 from the forecast "Director, project manager and business analysts" costs in 2007/08.
- A reduction of $60,826 from each of the 2008/09, 2009/10 and 2010/11 periods for testing new entrant retailers.
- A reduction of $51,111 in 2007/08 and a reduction of $66,835 in each of the years 2008/09, 2009/10 and 2010/11 for "Interval metering" costs. See section 6.6 of the report.
- A reduction of $144,000 from each of years 2007/08, 2008/09, 2009/10 and 2010/11 for "increased call centre staff" costs.

The explanations for the individual Opex recommendations are included in Section 5 of this report.

# 1. INTRODUCTION

The Queensland Competition Authority (QCA) has engaged PB Associates (PB) to assist with the review of a Submission from the Queensland gas distributor APT Allgas Energy Pty Limited (Allgas). The Submission[4] contains details of costs that have been, or will be, incurred by Allgas preparing to operate in a market environment of Full Retail Contestability (FRC).

## 1.1 Background to Allgas FRC cost recovery Submission

The introduction of FRC in Queensland means that all gas customers are able to choose their gas retailer (customers with greater than 1TJ demand have been contestable since 1 November 2005).

FRC became active on the FRC date, 1 July, 2007. This is the date the initial "Gas Industry Code" as defined under Section 270c of the Gas Supply Act 2003 (Qld), became effective. Part of the regulatory framework governing the market operations of the Gas Retail Market Operator (GRMO), retailers and distributors is defined in the "Retail Market Rules", version 1.0, 5 February 2007, published by the Energy Competition Committee, Queensland Government Department of Mines and Energy.

In order to operate as a gas distributor in a FRC market environment, Allgas must adhere to the Retail Market Rules, mentioned above. In order to comply with the new regulations, Allgas are required to make some changes to its business systems and processes. The costs associated with these changes have not been allowed for in the current Access Arrangement, and hence Allgas is seeking to recover these additional, or incremental, capital and operating costs through the appropriate regulatory mechanism.

The original Submission was received by QCA on 5th June 2007. Since the original application was made, Allgas has revised its application including the costs. This review considers the costs included in the latest version provided by Allgas, dated 29th January 2008. Costs proposed by Allgas in its original Submission in June 2007 are presented in this report for information only.

## 1.2 Terms of Reference

The Authority outlined the terms of reference for assessing APT Allgas' FRC Cost Pass-through Application as follows:

- identify the scope of additional responsibilities of APT Allgas under FRC in Queensland;
- review existing IT and other systems and identify the range of alternative options available to either augment or replace existing systems and processes needed to meet its FRC obligations, including those proposed by APT Allgas;

[4] APT Allgas Energy Pty Limited. Full Retail Competition Cost Pass-Through Submission to the Queensland Competition Authority. 5th June 2007.

- determine whether the options proposed by APT Allgas and the costs are prudent given the size of its Queensland network and in comparison to the systems used and costs incurred in other States. In this regard, compatibility with any network systems owned by the service providers in other States is not a justification unless it results in lower costs to the service providers in Queensland than would be the case for it as a stand alone operation.;

- identify the extent to which costs are incremental. Incremental costs are those costs that;

    - can be specifically attributed to the introduction of FRC; and

    - have not previously been allowed for in the capital and/or operating expenditure included in the Authority's Final Decisions in May 2006 on the service providers' revised access arrangement (including any expansion/ replacement of related systems previously approved);

- identify any efficiencies/synergies from the new systems (e.g., the service providers' overall operating costs may be lower than previously allowed by the Authority due to the new system) and replacement of old systems (e.g. old systems may no longer need to be enhanced/maintained, or old systems could be sold or redeployed in other areas of the service providers' operations);

- identify the level of prudent and efficient incremental FRC costs (for both capital and operating expenditure), having considered all the matters above, and using a 'bottom up' costing approach for significant cost components; and

- consider whether the proposed allocation of FRC costs between customer groups and the manner of recovery (e.g. fixed or variable charge adjustments) is reasonable.

The consultant should also refer to the Code, in particular the principles contained in section 8.

## 1.3 Access Arrangement

The Gas Pipelines Access (Queensland) Act 1998 and the National Third Party Access Code for Natural Gas Pipeline Systems (the Code) provide for the QCA to approve access arrangements for the Allgas gas distribution network. The current Access Arrangement[5] covers the regulatory period of 1 July 2006 to 30 June 2011.

## 1.4 Report structure

This report has been structured to present the following:

Section 2: Presents the methodology PB has used to perform the review and the assumptions and principles upon which the recommendations are based.

[5] QCA. Final Decision: Revised Access Arrangement for Gas Distribution Networks: Allgas Energy: May 2006

Section 3: Discusses the impact of FRC on the Allgas business systems and processes and reviews the solution options analysis performed by Allgas.

Section 4: Presents the review of the Allgas FRC cost submission relating to the capital expenditure on IT systems (Capex).

Section 5: Presents the review of the Allgas FRC cost submission relating to the operating expenditure on IT systems (Opex).

Section 6: Presents the review of the Allgas FRC cost submission relating to the Capex and Opex for interval metering.

Section 7: Presents the discussion for the Tariff application of the FRC expenditure included in the Allgas Submission.

## 1.5 Report confidentiality

This report contains detailed cost information that was provided to PB by Allgas on a confidential basis. The report should not be made public without the approval of Allgas to disclose the detailed information.

# 2. REVIEW METHODOLOGY

## 2.1 Review principles

The main task of this review is to assess the Allgas Submission and supporting documents in order to establish whether the FRC costs are prudent, efficient and incremental. The review must ensure that, in response to supporting a new FRC requirement, costs do not support an existing pre-FRC distributor requirement for which an allowance has already been made in the current Access Arrangement.

The Gas Code[6], Section 8.16 allows for increasing the capital base by an amount when:

> *"…that amount does not exceed the amount that would be invested by a prudent Service Provider acting efficiently, in accordance with accepted good industry practice, and to achieve the lowest sustainable cost of providing Services;…"*

Local factors that are taken into consideration include:

- the timing of the various decisions, and timetables set by the Queensland Government;
- the evolving nature of the FRC model; and
- the specific systems and business environment faced by Allgas.

Incremental expenditure is assessed on the basis that costs should only be included in the Submission if they are incurred as a direct consequence of the new FRC requirements. If expenditure relates to the provision of a service which also meets existing pre-FRC distributor requirements, then the costs must be apportioned accordingly where possible and practical. PB will assess the Submission to ensure that proposed IT costs relate only to specific FRC requirements and to determine how much, if any, of the proposed IT FRC costs relate to non-FRC, business-as-usual requirements.

### 2.1.1 Economic neutrality

The FRC cost recovery should result in Allgas not being better or worse off due to the introduction of FRC than it would otherwise have been, had FRC not been introduced in Queensland.

## 2.2 Cost analysis

This report has utilised two cost analysis methods in order to provide its observations and make recommendations.

[6] National Third Party Access Code for Natural Gas Pipeline Systems.

### 2.2.1 Top-down analysis

This approach involves the analysis of Allgas' cost estimates by individual program, component and sub-component. These items should be compared to available and comparable reference projects. The focus of this analysis is on the higher cost items and any exceptions that are presented.

### 2.2.2 Bottom-up analysis

This approach has involved meeting with, and asking questions of Allgas staff to understand the main cost activities in some detail including the labour rates and person-days for each sub-component of the project. Observations of actual operations were not within the scope of this review, and hence staff descriptions of activities and sources of cost have been used rather than actual practice. Of particular interest was information about how FRC activities are structured, and what staff and material resources are going into delivering a particular service.

Based on our knowledge and experience in this area, PB has reviewed the costs to assess whether the costs are prudent and efficient. PB has also ensured, where possible, that the proposed costs have not been recovered through another process and any cost savings resulting from the implementation of FRC are carried through this process.

Where adequate benchmarking comparisons or industry standards were not available to assess the Submission costs, PB has relied on its professional experience with similar system implementations within Queensland and other Australian and international projects, to assess the overall validity of expenditure for inclusion in the Allgas FRC cost recovery amount. This approach is intended to provide the QCA with additional input into its decision making process.

It is important to consider that the total cost of system implementations vary immensely, even where two businesses operate in the same market, have similar numbers of customers and even implement the same system. The two main sources of cost variation are:

- Starting position. A business with an experienced and well resourced IT department with modern project methodologies and mechanisms will be able to implement new systems and upgrade existing solutions more efficiently than other businesses. They may require less involvement of expensive external contractors.

- Size of implementation. The number of systems, the amount of customisation, number and complexity of interfaces and number of customers or data entities required to be supported in the system will all affect total cost.

For these reasons it is sometimes difficult to compare similar system implementations, increasing the importance of reviewing the unique characteristics of each system implementation when determining appropriate expenditure.

## 2.3 Submission dollar values

PB has assumed that the dollar values included in the Submission are included at present value (1 July 2007), and that dollar values for future regulatory years have not been inflated.

All dollar values presented in this report should be assumed to be at present value (1 July 2007).

## 2.4 Timing of review events

- 5th June 2007 – Allgas provides original Submission to QCA.
- 24th and 25th August 2007 – Review meetings held in Brisbane.
- 28th November 2007 – Allgas provide final responses to PB questions and revised costs following the review meetings.
- 29th January 2008 – Allgas provides additional information and revised costs in response to additional PB questions.

## 2.5 Review meeting

In addition to the Allgas Submission, meetings were held on the 24th and 25th August 2007 at Allgas and QCA offices in Brisbane. The attendees were:

- Mr Moston Neck – QCA
- Mr Sean Greenup – QCA
- Mr John Dyer – Consultant, PB
- Mr Neil Wembridge – Consultant, PB
- Mr Robert Petersen – Allgas FRC Program Director
- Paul Wheldon - Allgas
- CaryAnn Mallet - Allgas
- Operations manager - Allgas
- John Jamieson - Allgas
- Dave Cripps - LogicaCMG

The purpose of the meetings was to seek further information in order to provide more detailed justification from Allgas for the FRC costs sought in the Submission. Following this meeting, additional questions and requests for information were submitted to Allgas, and its responses included in the review.

PB has relied upon the information provided by Allgas, and not conducted an audit of the costs or other information provided.

# 3. BACKGROUND TO THE ALLGAS SUBMISSION

## 3.1 Impact of FRC introduction

A more detailed list of the impacts of FRC introduction on the systems and processes of Allgas' gas distribution business is provided in Appendix A. Some of the main impacts are highlighted below.

### 3.1.1 Allgas IT solution

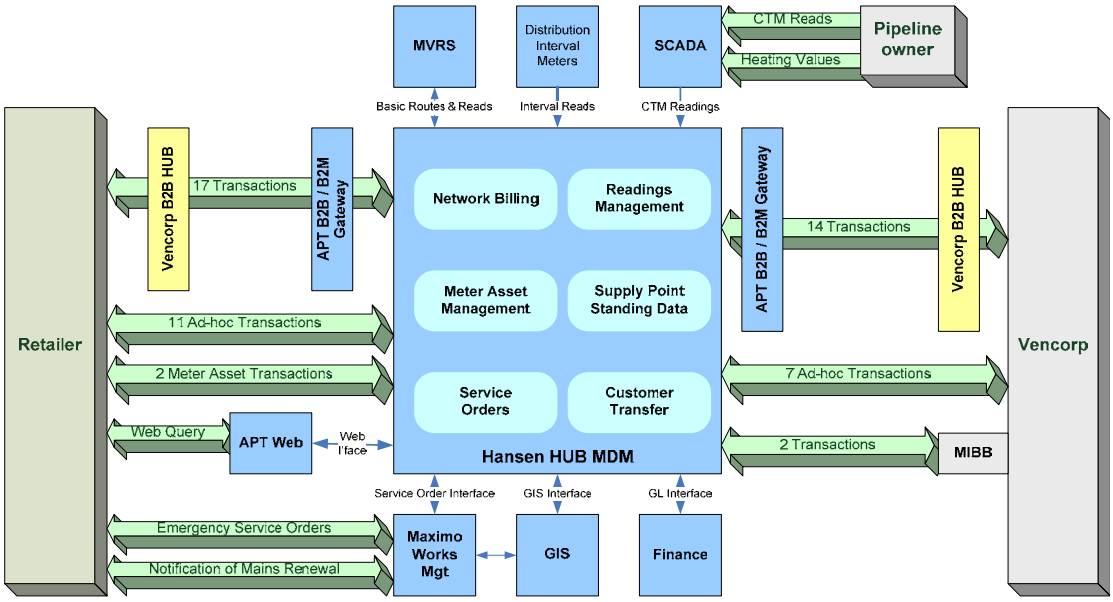
The APA Group purchased the Allgas gas distribution network from Energex in November 2006. The business was sold as "FRC non-compliant" meaning that the IT systems and processes did not support operation in an FRC environment.

The main legacy IT system being used was ACIS, and could be used to support the business in a non-FRC environment in the short term under a transitional services agreement with Energex.

Allgas initiated the project to replace the inherited legacy IT systems with its own systems to support its existing business and which would also meet the upcoming requirements of the FRC environment.

Allgas has outlined its current (post-FRC) IT systems solution in Figure 3.1.

**Figure 3.1 Allgas IT systems solution (post-FRC)**




The main system components of Figure 3.1 are as follows:

- Hansen HUB MDM (Meter Data Management) – This system stores the majority of meter and network related data and also interfaces with the market for the sending and receiving of industry messages.

- Maximo works management – This system provides the traditional work scheduling and resource management associated with the gas distribution network operator role.

- GIS – This system provides work planning and mapping functionality for the gas distribution network.

- Finance – Provides the financial support required.

- MVRS – Provides meter reading support.

- Distribution Interval Meters & SCADA – Provides interval meter reading support.

### 3.1.2 Impact of FRC on business systems

The introduction of FRC does infer that a distribution business develops new system and process solutions which enables it to operate effectively. IT systems development costs include functional design, technical design, programming development, systems configuration and various testing activities. In addition, the existing data will need to be transferred to the new systems, a process known as conversion or migration. For each new or modified business system, there is also potential cost associated with the interfaces, manual or automatic, to existing company systems which may or may not have been impacted.

Broadly speaking the new or additional system requirements that Allgas faces as a result of the introduction of FRC are:

- New or changed data fields (e.g. MIRN).

- XML based Business to Business (BTB) market messaging with other industry participants.

- Support of multiple retailers including billing.

- FRC telemetry and interval metering to a larger number of customers.

- Systems support of new service level agreements for industry processes.

The majority of the new FRC related requirements are met with the implementation of the Hansen system which provides the functionality to support multiple retailer relationships and XML based market messaging.

## 3.2 Vendor evaluation/system design process

In order to facilitate the evaluation of the various solutions to meet existing distributor requirements and the new FRC requirements, while ensuring prudent and efficient expenditure Allgas has:

- Utilised formal tendering for the main FRC system and informal tendering for the other components;

- Attempted to optimise the mix of in-house and external resources;

- Leveraged work performed in other jurisdictions by seeking an “off-the-shelf” solution;

- Attempted to minimise customisation
- Attempted to minimise the number of staff working on the project

As part of Allgas assessing the available solutions, there is a demonstrated emphasis on minimising the cost of solutions but not at the detriment of customer service, quality or ability of Allgas to perform its functions as a Distributor.

### 3.2.1 Available solutions

Allgas advised that 8 vendors were considered to provide the core FRC system. PB has reviewed the vendor list and considers that Allgas has approached an appropriate range of vendors to provide the core FRC systems.

From these 8 potential suppliers a short list of four vendors was developed[7]. One of these vendors withdrew from the process, and one was deemed too expensive leaving two shortlisted vendors who had responded to the RFQ (Request for Quotation). The submissions from these vendors were reviewed and compared on cost, functionality and resource availability within tight time-frames. The vendor selected by Allgas following this process was Hansen Technologies.

Allgas submits that a typical systems evaluation process for this scale of project should take anywhere between 3 to 6 months to plan and execute. PB agrees that this is a typical time-frame for a systems evaluation. Allgas were able to complete the process in approximately one month, ready for the system build to start in January 2007. Testing was scheduled to begin in April in order to achieve the go-live date of 1 July 2007.

PB notes that Allgas considered the main solution options available to them to provide an FRC solution. Given the starting position of not having a viable existing solution to enhance, building a new system from scratch would not be possible given the project timeframes and lack of internal resources. This left the remaining option of purchasing a pre-existing solution. Although, outsourcing the entire function to a third party is an option in some circumstances, this usually only applies to common services such as call centre services and given the specific nature of the QLD FRC solution requirements this option would not have been available to Allgas.

PB agrees with the analysis performed by Allgas and the summary comments regarding the costs and benefits of the various solution options provided in the Submission. PB is satisfied that, given the timeframe constraints, Allgas undertook a comprehensive competitive tender process in order to identify the most prudent and efficient solution.

### 3.2.2 Project timeframe and prior experience

The timetable for the evaluation, design and implementation of the Allgas FRC solution was compressed. A duration of 12-18 months for a project of this size would be considered typical. The compressed nature of the project will undoubtedly have had an impact on Allgas' need to effectively manage the various stages of the implementation.

[7] P.13 of the original Allgas Submission. 5 June 2007.

Allgas did not have comprehensive experience of similar system implementations within its organisation. They were also not in a position to utilise a pool of skilled IT resource to facilitate the project. Under these circumstances, a company must seek the necessary expertise from external providers. System wide implementations of this nature in such compressed timeframes can prove to be complex and resource intensive projects. These factors have been considered when assessing the decisions made by Allgas as they relate to the Submission.

### 3.2.3 Manual vs. automated interfaces

In order to understand the type of interface required between the major system components it is necessary to consider the data requirements, frequency and expected volumes. This also provides an indication of the amount of effort and likely cost to develop the proposed solution.

Previously, many internal business processes were handled manually by Allgas staff. The extent of automatic system interfaces were kept to a minimum for a number of reasons including data volumes, the shared nature of the systems involved and the fact that there was no prescribed market messaging requirement between Allgas and the only other market participant (Origin Energy Retail).

In terms of keeping system development costs to a minimum, manual interfaces were considered as part of the Allgas solution analysis. The interface requirements are characterised by the following issues:

- External market messaging requires a level of data item and data flow accuracy that can only be reasonably achieved by automated messaging interfaces.
- Internal interfaces would be impacted by the need to ensure data synchronicity between internal systems and the remainder of the market.
- Certain market transactions such as acknowledgements and information requests are covered by service level agreements which include tight turnaround timeframes best achieved by automating the solution.

The expected volume of market messages combined with stringent FRC communications protocols rules out the use of manual interfaces between the main Allgas system (Hansen Hub – MDM) and the other market participants.

### 3.2.4 Outcome

The main IT system components implemented by Allgas are widely used by gas and electricity distribution businesses. The architecture adopted by Allgas to enable FRC is very similar to the architecture used by other distribution businesses.

It is the opinion of PB, for the reasons outlined in the sections above, that Allgas has selected a prudent overall solution design to meet the requirements imposed by the introduction of FRC in QLD. Specifically we consider that:

- Allgas has considered the correct range of solution options
- Allgas are sensibly automating processes and interfaces where manual processing would not work well

- Allgas carefully selected a solution that could be implemented in the available time

### 3.2.5 Role of LogicaCMG as FRC Partner

LogicaCMG provided the following services to Allgas as part of the FRC project:

- Support of the software vendor evaluation and selection process including appropriate due diligence.
- Provide consulting staff experienced in system implementation projects and in FRC related system projects including project manager, business analysts and testers.
- LogicaCMG's own system implementation methodologies including project governance, business process mapping, change management, communications and training plan.
- Provision of appropriate testing program including testing consultants and support of Allgas staff during the testing phases.

## 3.3 Submission versions

The following sections 4, 5 and 6 which review the Capex, Opex and Interval Metering expenditure, consider all the information provided by Allgas in the original submission, at the meeting, and in response to PB questions. Only the latest version of the Submission costs received from Allgas in January 2008 is considered as these costs supersede any previous versions. The costs provided to PB in January 2008 are in the same format and at a similar level of detail as the earlier versions of the costs. The main difference between the earlier versions of the costs and the January 2008 version is that the January 2008 version contains fewer forecast costs and more actual costs. Other differences result from some minor reclassification of costs.

# 4. CAPITAL EXPENDITURE REVIEW

Allgas has made the following application, detailed in Table 4-1, in respect of the Capex required to support the introduction of FRC.

**Table 4-1 Allgas FRC Submission – Capex**

| Capex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| **Original Allgas Submission (June 2007)** | | | |
| Hansen System | 2,966,000 | 576,000 | 3,542,000 |
| Partial Integration costs | 486,000 | 245,000 | 731,000 |
| GIS | 0 | 1,908,000 | 1,908,000 |
| Interval Meter System | 606,000 | 606,000 | 1,212,000 |
| Project Establishment | 1,160,000 | 0 | 1,160,000 |
| **Total** | **5,218,000** | **3,335,000** | **8,553,000** |
| | | | |
| **Revised Allgas Submission (January 2008)** | | | |
| 1. Hansen Technologies | 1,511,461 | 2,003,000 | 3,514,461 |
| 2. Interval Meters | 527,374 | 300,967 | 828,341 |
| 3. Internal & other costs | 1,187,712 | 127,850 | 1,315,562 |
| 4. Integration costs APT | 232,898 | 1,056,972 | 1,289,870 |
| 5. GIS | 0 | 1,908,000 | 1,908,000 |
| 6. PABX | 84,464 | 6,480 | 90,944 |
| 7. Additional items | 0 | 69,120 | 69,120 |
| Contingency | 0 | 487,659 | 487,659 |
| Overheads | 662,202 | 487,659 | 1,149,861 |
| **Total** | **4,206,111** | **6,447,707** | **10,653,818** |

The four main drivers of new system requirements resulting from the introduction of FRC are:

i. Support of new data items – e.g. MIRN. Allgas will need to ensure its business systems and processes are able to store and process new data associated with operating in an FRC environment.

ii. Support for market messaging for all industry business processes involving the distributor role. The three main types of FRC market participant, retailer, distributor and market operator (Vencorp) will be communicating via defined electronic market messages. Allgas will need to ensure its systems and processes are able to comply with the requirements associated with the market messaging functionality.

iii. The need for automated interfaces between internal systems. The quantity of data being passed between various internal systems and the need for data accuracy implies that Allgas are required to automate internal interfaces as opposed to using manual processing of transactions.

iv. The need to introduce multi-retailer functionality. In the FRC market, Allgas will be acting as a Distributor to more than one Retailer and hence all processes and systems will need to support this functionality e.g. Multi-retailer billing, retailer to MIRN allocation, change of supplier processes.

Allgas has provided a description and further breakdown of the main cost components. These are reviewed in the following sections.

## 4.1 Access Arrangement

The current Access Arrangement[8] provided for Allgas to perform necessary system upgrades in order to support its day-to-day business over the period of the Access Arrangement.

In addition to this a supporting report[9] made reference to the fact that Energex intended to upgrade its IT solution to use the PEACE software across its businesses including Allgas. The Allgas component of this allowance was $4.2 million (2006 $). This allowance was made under the assumptions that Allgas would have to upgrade its IT systems at some point, particularly in response to the introduction of FRC.

Allgas note in its Submission that:

> "Accordingly, APT Allgas understands that this expenditure was intended for a new ring-fencing compliant billing system rather than FRC related costs."

Irrespective of the reasons for upgrading the IT systems, the allowance of $4.2 million in the current Allgas Access Arrangement was intended to cover the costs of upgrading its main IT systems. The upgrade of the main IT systems has now been completed by Allgas

A common representation by distribution businesses when upgrading a systems solution to be FRC compliant is to refer to the entire solution as an FRC system. A more correct definition of the resulting upgraded solution is a meter and customer information management system that has FRC compliant functionality installed. In the case of the Allgas FRC project, the main customer data and billing systems have been replaced with a new solution which is also able to provide the new functionality required by FRC.

Most distributors consider upgrading their IT solution every 5-10 years. The introduction of FRC can be a trigger for a company to upgrade their entire system solution. This upgrade could simply involve making changes to an existing solution or may involve replacing entire systems. It may not always be prudent or efficient to upgrade existing systems to comply with FRC requirements in which case the only alternative is to buy a new system that has FRC functionality built-in or one which can be easily customised to provide the necessary functionality.

A gas distributor needs to be able to store meter data, update meter details and perform a meter exchange in its internal IT systems in a non-FRC environment. With the introduction of FRC, a distributor still needs a system to support the same requirements plus a set of new FRC related requirements. This additional systems functionality related expenditure associated with supporting the FRC requirements needs to be separated from the existing non-FRC systems functionality related expenditure.

Allgas previously used the ACIS system which was shared with Energex. As a result of Energex making the decision to replace its legacy system ACIS with the Peace system, the Access Arrangement made an allowance for a portion of the

[8] QCA. Final Decision: Revised Access Arrangement for Gas Distribution Networks: Allgas Energy: May 2006.
[9] ECG. Allgas Energy Pty Ltd Capital and Operating Expenditure Review for Queensland Competition Authority. 19 April 2006.

Peace implementation cost for Allgas. Following the APT purchase of Allgas, and the removal of Peace as an option, a new solution was required. This requirement coincided with the introduction of FRC and hence Allgas were in a position to buy a new IT solution to cover both the pre-FRC operations and the new FRC requirements. As a result of the introduction of FRC, Allgas has not had to separately buy a new ring-fencing billing system, since the Hansen solution provides this functionality as well as providing the new FRC related functionality.

The Submission from Allgas does not explain how the Capex on the new solution is incremental to the expenditure proposed and allowed in the current Access Arrangement. That is, Allgas has not estimated the incremental cost of introducing FRC had Allgas proceeded with the implementation of Peace. Since the new systems also provide functionality which is used for the non-FRC distribution business operations, including appropriate ring-fencing, PB would have expected an apportionment or identification of how much of the resultant Capex should be apportioned to FRC and how much should be apportioned to non-FRC functions due to that being covered by the existing Access Arrangement.

The implication of Allgas not providing the split of the new systems Capex costs between FRC and existing operations is that PB must suggest a method. PB considers that, had Peace been implemented as planned, much of the functionality required for FRC would have been available to Allgas and consequently a much smaller FRC project would be required. PB considers that the only reasonable approach is to reduce the expenditure claimed by Allgas in relation to FRC by the amount already included in the Access Arrangement for the replacement of the core system. This approach will avoid customers paying for the same system twice; once through existing tariffs and again through the FRC pass-through charges.

PB recommends that the amount of $4.2 million previously allowed for in the Access Arrangement (to implement Peace) be allocated to the total cost of replacing the core system and providing for FRC. We consider that the costs proposed by Allgas in its FRC pass-through application include both the cost of replacing the core system and providing for FRC.

In the Access Arrangement the $4.2 million expenditure proposed for a ring-fencing compliant system was planned for 2006/07. PB recommends that the expenditure planned for a ring-fencing compliant system should be offset against other capital expenditure in this year.

The remaining Capex covered in this section of the report has been reviewed so as to determine whether the costs are prudent and efficient.

## 4.2 Hansen Technologies

A breakdown of the cost components of the line item "1. Hansen Technologies" is included in Table 4-2.

### Table 4-2 Hansen Technologies

| Hansen Technologies $ | 2006/07 Actual | 2007/08 Forecast | Total Cost |
|---|---|---|---|
| Fixed deployment costs | 935,000 | 265,000 | 1,200,000 |
| Allowance deployment costs | 360,000 | 540,000 | 900,000 |
| Optional deployment costs | 147,000 | 500,000 | 647,000 |
| Travel allowance | 50,000 | 5,000 | 55,000 |
| Change requests | 19,461 | 30,000 | 49,461 |
| Modification allowance recommended by Hansen | 0 | 400,000 | 400,000 |
| Hansen related | | | |
| Production hardware | 0 | 84,000 | 84,000 |
| Disaster recovery hardware | 0 | 84,000 | 84,000 |
| Disaster recovery software | 0 | 95,000 | 95,000 |
| **Total** | **1,511,461** | **2,003,000** | **3,514,461** |

### 4.2.1 Total Hansen solution cost

In reviewing the total cost as part of a 'top-down' approach, it is difficult to benchmark against other distribution businesses due to the specific and custom nature of these implementations. PB has experience with a number of system implementations and note that comparable systems are typically in the broad range of $3 million to $6 million including license costs. The vendor system cost is largely dependant on the level of customisation required. Where the implementation requires re-design of existing system functionality or complicated interface related changes, costs will escalate to the upper end of the range provided. Where the purchaser is able to adapt internal business processes to work with existing system functionality and utilise simple interfaces keeping customisation to a minimum, total vendor system cost should be limited to the lower end of the range provided.

The total Hansen system cost is in the lower end of the range provided. This indicates that, at a total system level, the cost of implementing the main FRC system is likely to be efficient. Excluding some specific items discussed below, PB considers that Allgas has pursued an appropriate level of customisation and interface development for its system implementation. They appear to have avoided the need for expensive re-design of the product and have only automated interfaces with other existing systems where it is cost-effective to do so.

Whilst PB considers that the cost of the overall solution is likely to be efficient, a breakdown of the expenditure items included in the Hansen Technologies cost component has been provided by Allgas. These have been reviewed on an item-by-item basis to ensure that there are no obvious inefficiencies in the cost elements.

### 4.2.2 Fixed deployment costs

The fixed deployment costs of $1.2 million cover Hansen Technologies supplied resources for the following activities:

- Project management and business analysts comprising of four resources (Project management, Business Analyst, Business Architect, Migration Architect) for a period of 8 months ($670k)
- The configuration of the HUB system and Gateway ($300k)
- Documentation and Training ($35k)
- Pre and Post implementation support/handover ($195k)

These costs were part of the fixed price contract agreed between Allgas and Hansen Technologies. The detailed labour rates and hours behind the above totals would not be available to Allgas. As such, PB is unable to comment on the individual Hansen labour hours and rates utilised to generate the above costs.

The $670k portion of the costs implies an average daily rate of $1,047 for the resources supplied by Hansen (assuming 160 days of effort per resource). Vendor resource costs for ad-hoc work are typically much higher than the amount ($1,047) quoted. Junior testing and business analyst staff are typically provided at around $1,000 - $1,200 per day with more senior project manger level staff at around $1,800 to $2,000 per day. An average cost for vendor supplied resource taking into account the various types of resource a systems implementation project utilises would be around $1,500 per day. This level of pricing is consistent with that included in the Hansen RFQ provided by Allgas. Vendor supplied resources are typically supplied at much higher rates than individual contractor resources, roughly in the order of 50% to 100% higher. Since the amounts associated with these resources were included as part of the fixed price portion of the contract agreed with Allgas, there would be an expectation for them to be discounted as part of the overall system sale.

In summary vendor resources supplied on an ad-hoc basis would typically incur an average daily cost of $1,500. Vendor resources supplied as part of a large fixed price contract would typically be discounted below this rate. As the cost of the vendor supplied resource covered by the fixed price portion of the Hansen contract is discounted below typical rates, PB recommends these costs should be included in the Allgas cost recovery amount.

Modern billing/metering systems such as the Hansen system utilise configuration as a benefit of a flexible and user-friendly solution. The ability to configure the system as opposed to program (hard code) the system offers the end user several advantages including flexibility to customise the solution to their preferred methods of operation and the ability to adapt easily to changing business requirements without having to necessarily involve the vendor. Using the daily rate calculated above ($1,047), $300k equates to around 287 days of vendor supplied resource effort. The customisation effort would include the Hub system and the gateway solution which processes market messages. In the absence of any benchmarks for configuration effort in similar projects, PB is relying on professional experience with projects of this nature in determining that it is appropriate and should be included in the Allgas FRC cost recovery amount.

The documentation and training effort associated with a major system implementation of this nature will involve a number of training sessions for Allgas

staff and the updating of system procedures and documentation with the customisation and configuration changes required. Using the resource rate of $1,047 calculated above, the total cost of $35,000 equates to around 33 days of effort for a single resource. Training sessions for systems of this nature can take one day for specific system components to one week in duration for complete system administration courses. Given the above, PB recommends the costs should be included in the FRC cost recovery amount.

Using the rate calculated above, $195,000 for pre and post implementation support would equate to approximately 186 days of effort for a single resource. This resource is usually required to support Allgas (and LogicaCMG) project and testing teams during the implementation phase. Given the project length of approximately eight months from inception to go-live, and allowance for post-implementation support of one month this equates to approximately 180 days. PB recommends the inclusion of this cost in the Allgas FRC cost recovery amount.

### 4.2.3 Allowance deployment costs

In addition to the above fixed costs, the contracting arrangement between Allgas and Hansen allowed for variable cost components for the following activities on a time and expenses basis:

- HUB customisation for the Queensland market ($200.5k)
- HUB customisation for Allgas ($175.5k)
- Systems, integration and User Acceptance Testing (UAT) ($324k)
- Data conversion and migration ($200k)

These costs were not known with any degree of certainty by Hansen at the outset of the project and hence were included as budget estimates within the contract. The latest Allgas Submission has actual 2006/07 costs for this component at $360,000 leaving $540,000 of the original budget as forecast 2007/08 costs, split as follows:

- HUB customisation for the Queensland market ($135k)
- HUB customisation for Allgas ($135k)
- Systems, integration and User Acceptance Testing (UAT) ($270k)

Allgas indicate that the entire budget has been used and that these costs represent scheduled contract payments.

The total of $900,000 for costs relating to customisation of the product, testing and data conversion/migration seems appropriate when compared to other system implementations PB has reviewed or been associated with. Using the vendor supplied resource cost ($1,047 per day) calculated in section 4.2.2, the total of $900,000 equates to around 860 days of effort. Hansen is required to supply a number of specialist resources in order to fulfil the functions described above.

The customisation function involves, at a minimum, system designers and, programmers to re-design and re-program the solution to meet Allgas business requirements. The data conversion and migration effort, at a high level, involves

Hansen technical resources understanding the existing Allgas data and then converting it to the required format for the Hansen system so that the data can be loaded. The Hansen testing function would involve at least three levels of testing. The systems level involves testing of the re-designed Hansen system in isolation of the integrated solution. The integration level involves testing the re-designed Hansen system with the other systems that form the Allgas solution. The vendor supported user acceptance testing includes Allgas employees testing the solution typically with the business processes that will be used once the solution is in live operation.

It is difficult to benchmark the costs and effort involved in these types of functions because they are inherently unique to each installation. The overall costs relating to these functions are determined mainly by the amount of customisation required, the volume and cleanliness of data being migrated and the complexity of business operations and processes being supported by the system. Given the tight deadlines, and compressed nature of the implementation, 860 days of vendor resource effort at an average rate of $1,047 covering customisation, migration and testing, appears appropriate for this project.

PB is satisfied that these costs are a necessary part of the systems implementation. PB recommends including this expenditure in the FRC cost recovery amount.

### 4.2.4 Optional deployment costs

The work items covered by this component were originally included in the Hansen proposal to Allgas as “optional” costs. These work items were only optional to the extent that Allgas could select another supplier other than Hansen to undertake the work. The work packages themselves were considered necessary to successfully implement FRC enabling systems. These optional costs cover the following activities:

- Maximo Interface ($500k)
- Market Trial Delivery ($125k)
- Market Trial Support ($22k)

The original estimate for the Maximo interface from the Hansen side was $86k. Following further investigation from Allgas, this estimated value has been increased to $500k as a result of the complexity and effort involved in developing the interface. Allgas has indicated that they are still investigating whether this upgrade should occur on a cost/benefit basis.

There is no certainty that Allgas will undertake a project to provide a Maximo interface. Further, there is no certainty that the cost of the interface will be $500k. Due to this uncertainty PB does not recommend that the forecast expenditure be included in the FRC cost recovery amount.

The expenditure proposed for the April 2007 market trial delivery ($125k) and market trial support ($22k) includes costs for the Hansen support staff. The market trial involves complex testing of the Allgas systems and processes to support FRC market messaging functionality. This process is resource intensive as it includes preparing the processes, test scripts, sample test data and performing the trial. Given the level of resource utilisation indicated by the costs, PB recommends including the expenditure in the FRC cost recovery amount.

### 4.2.5 Travel allowance

The proposed travel allowance for Hansen employees is $50,000 for 2006/07 and a further $5,000 for 2007/08. Hansen is a Melbourne based company and a number of its staff would have needed to travel to Queensland a number of times over the duration of the project. Travel costs would have included flights, accommodation and other living allowances. This is a minor, but necessary cost item that equates to less than 0.5% of the total proposed capital expenditure. PB recommends that the total of $55,000 should be included in the FRC cost recovery amount.

### 4.2.6 Change requests

Allgas identified three additional items of work that were not originally included in the Hansen budget scope. These three additional items of work were identified prior to the FRC commencement date but after the initial scope of Hansen's work was agreed. The costs associated with these three change requests were included in the Submission. Change requests 1 and 3 had already been completed at the time of the original Submission and hence the actual costs were known and incurred in the 2006/07 period. The costs associated with change request 2, have been allocated to the 2007/08 period.

PB would expect a certain amount of additional cost, outside of the contracted amount, to be incurred by Allgas in tailoring the solution to meet the requirements of the market. Not all necessary customisation will have been accurately specified to the vendor, and hence would not be included in the scope of the fixed price portion of the contract.

The total cost of customisation in the allowance deployment costs identified by Hansen in the original budget estimation was $376,000. An additional $49,461 of change request effort equates to approximately 13% of the original customisation budget. The amount of additional change request effort and cost incurred during a project will depend on a number of factors including how well initial budgets were estimated and scope was defined, the amount of contingency included and the extent of business requirements change over the course of the implementation. Given the short time available to Allgas to scope its business requirements we consider an increase in the customisation budget is acceptable and that an increase of 13% is not significant or excessive.

Change requests would involve the use of a number of Hansen resources including project manager, designer/testing and programmer level resource. Using an assumed average vendor supplied resource cost of $1,500 per day, the $49,461 allows for approximately 33 resource days. Benchmark information for the typical pre go-live change request effort in systems implementations could not be sourced however based on PB's experience with similar projects these costs appear reasonable.

PB recommends these cost items should be included in the Allgas FRC cost recovery amount.

### 4.2.7 Modification allowance

Allgas has included $400,000 as a modification allowance for ongoing, post go-live changes required for the Hub system. This estimate has been based on the previous experience of Hansen, the software supplier.

Given that FRC warrants a more complex IT systems solution, an increase in the allowance for systems modification can be expected. Given that the new systems coincide with new market rules and hence business processes, it is usual for systems to require modification following the initial implementation. Post-implementation modifications are usually required once lessons are learned about how the systems actually operate within the context of the new FRC market.

Change requests can be categorised in large, medium and small. Large change requests typically require development of major new system functionality or comprehensive re-design of existing core components. They will involve detailed design, lengthy programming and significant testing resource. Small change requests will only require a minor amount of programming and testing resource. The amount of post go-live modification will depend upon a number of factors including the correct interpretation of requirements by the system vendor, the quality and quantity of pre go-live testing performed and the changing nature of business requirements.

PB has estimated the effort required to make these systems changes based on experience[10] with similar billing and customer management system implementations. In the period following go-live, PB would expect approximately 2 large change requests would be required using around 50 days of resource each, around 10 medium change requests using 10 days of resource each and around 50 small change requests each using around 2 days of Hansen resource. This equates to an expectation of 300 resource days. Using an assumed average daily cost for a Hansen resource of $1,500, the total cost of $400,000 allows for approximately 266 days of resource.

Based on the above analysis, PB recommends the estimate of $400,000 is included as part of the Allgas FRC cost recovery amount.

### 4.2.8 Hansen related costs (hosting and disaster recovery)

These items relate to the Hansen costs incurred in hosting the solution on behalf of Allgas. The amounts quoted allow for the hardware costs to run the systems and the hardware and software costs to provide the disaster recovery solution. These include:

- Production server and storage
- Warm site Disaster Recovery Plan including backup site
- Hardware maintenance and support costs
- Software costs including Unix, Websphere, Oracle, QAS and Microsoft Server 2000.
- Outsourced managed environment facility
- Network connectivity and charges
- Support staff.

[10] PB consultant experience includes a number of system implementations for energy utilities in Australia, NZ and the UK.

These costs are incurred as a result of Allgas opting for a hosted solution for the Hansen systems for production and disaster recovery. Typical costs for the production environment would range from $100,000 to $150,000 depending on specific technical requirements, with a similar amount required to provide a complete disaster recovery facility. Based on these observations PB recommends the total cost ($263,000) should be included in the FRC cost recovery amount.

### 4.2.9 License fee

There is a license cost of $600,000 which has been included in the review of the Opex component of the Allgas Submission in section 5.1.4.

### 4.2.10 PB recommendation

PB recommends a total of $3,014,461 for the cost component identified as Hansen Technologies in the Allgas Submission. This includes the reduction of $500,000, as identified in Table 4-3.

**Table 4-3 PB recommendation: Hansen Technologies**

| Hansen Technologies | $ |
|---|---|
| **Allgas Submission** | **3,514,461** |
| less cost for Hansen – Maximo interface | - 500,000 |
| **PB recommendation** | **3,014,461** |

## 4.3 Interval meters

| Capex ($) | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| 2. Interval Meters | 527,374 | 300,967 | 828,341 |

A discussion of these costs is included in Section 6 of this report.

## 4.4 Internal and other costs

A breakdown of the cost components of the line item “3. Internal and other costs” is included in Table 4-4.

**Table 4-4 Internal and other costs**

| Internal and other costs $ | 2006/07 Actual | 2007/08 Forecast | Total Cost |
|---|---|---|---|
| ESCROW agreement for Hansen code | | 2,850 | 2,850 |
| Travel | 151,697 | 25,000 | 176,697 |
| Vendor evaluation, system design | 125,000 | | 125,000 |
| Network billing meters | 911,014.70 | 100,000 | 1,011,015 |
| **Total** | **1,187,712** | **127,850** | **1,315,562** |

### 4.4.1 ESCROW agreement for Hansen code

The ESCROW agreement ensures that Allgas has access to the code of the Hansen system should the Hansen company experience financial (or other) difficulty and therefore become unable to provide support for the IT system. PB considers that the minor amount paid by Allgas is prudent and should be included in the FRC cost recovery amount.

### 4.4.2 Travel

Internal travel costs are incurred by Allgas staff and direct hire contractors. Over the course of the project, flights, hotels and other travel related costs are incurred. The total of approximately $177k is more than the original Allgas forecast of $40k. No reasons were given to explain the difference between the original forecast and the revised cost however we note that many of the Allgas resources allocated to this project were not located in Brisbane. The 2006/07 costs represent an average travel allowance of around $3,000 per week. This would cover, flights and hotels for around 4 to 5 individuals, and appears consistent with the level of resources required on the Allgas project. PB recommends these costs should be included in the FRC cost recovery amount.

### 4.4.3 Vendor evaluation, system design

The process used for vendor evaluation and system design is covered in Section 3.2. The cost of $125,000 represents around 100 days of effort of project manager/project director level resources. PB estimates that the evaluation and design phase would involve between 50 to 150 days of effort for a systems implementation project of this scale. PB recommends these costs should be included in the FRC cost recovery amount.

### 4.4.4 Network billing meters

Allgas has modified, or will shortly modify, the metering on 205 shopping centres, high-rise buildings and other multi-tenanted premises. This involves the installation of network meters at the inlets to these premises to provide a clear point of delineation between the distribution network and the embedded networks within these premises. Expenditure on this metering at 1 July 2007 was $911,015 with a forecast $100,000 to complete the project.

In most gas and electricity networks the networks are constructed so that the point of delineation between the distribution and embedded networks is already metered. While the cost of upgrading metering at the inlet points is a common result of the introduction of FRC, the cost of installing metering points is not commonly included in FRC cost pass-through applications. For example, the 2007 application by Envestra to pass through the costs of enabling FRC did not include a cost component to meter embedded networks.

It is essential, in an FRC environment, that a distributor can accurately measure gas consumed at any premises and correctly allocate the consumption to the appropriate retailer. Embedded premises without a clear inlet metering point are complex, may not meet market requirements and are a cause of high processing costs and disputes. PB considers that the installation of meters at the inlet points of these premises is a necessary requirement for a distributor operating in an FRC environment.

The Allgas cost of installing these meters equates to $4,932 per meter. In NSW, the average cost of installing a new meter for industrial and commercial customers was forecast by AGLGN to be $3,153[11]. The Allgas cost is 56% higher than the NSW cost however there are significant differences in the installation of a meter on a new site and the installation of a meter on an existing site. The NSW cost is the cost of installing a meter at a new site as the site is developed. During the development process the builder or developer will arrange a metering site with the gas distributor. The pipework will then be installed to terminate at the metering site and the meter installed at that site. In contrast, installing an inlet meter on an existing site will involve identification of a suitable meter location, negotiation with property owners and managers, modification to pipework and, in some cases, some construction of a chamber or compound for the meter. These additional activities required to install a meter in an existing site account for the difference in cost between the NSW cost and the Allgas cost. PB therefore considers that the average cost per meter proposed by Allgas is reasonable and recommends these costs should be included in the FRC cost recovery amount.

## 4.5 Integration costs to APT

A breakdown of the cost components of the Submission line item "4. Integration costs to APT" is included in Table 4-5.

### Table 4-5 Integration costs to APT

| Integration costs to APT<br>$ | *Budget estimate* | 2006/07 Actual | 2007/08 Forecast | Total Cost |
|---|---|---|---|---|
| Integration costs- servers | *42,130* | | | |
| Integration costs laptops, desktops etc | *101,790* | | | |
| Integration costs for additional FRC staff | *50,000* | | | |
| ARC FM GIS system | *62,130* | | | |
| Maximo system | *165,695* | 86,842 | *55,196* | 142,038 |
| Maximo Hansen interface estimate | *170,000* | | 500,000 | 500,000 |
| Maximo project manager | *20,000* | | | |
| CITRIX | *11,465* | | | |
| Server Virtualisation (allows scaling) | *50,000* | | | |
| Integration SOE install setup | *50,000* | | | |
| Integration End user training | *11,465* | | | |
| Sub-total | *734,675* | 86,842 | 555,196 | 642,038 |
| Remaining budget | | 146,056 | 501,777 | 647,833 |
| **Total** | ***734,675*** | **232,898** | **1,056,973** | **1,289,871** |

Total actual costs for the 2006/07 period incurred against all of the above sub-items were $232,898. This included the actual cost of $86,842 for the Maximo system customisation. Allgas explain that a breakdown of costs incurred against the other sub-items in this category was not available, only the total amount incurred of $232,898.

Allgas explain that in order to forecast the remaining costs in the categories for the 2007/08 period they have subtracted the $232,898 from the original budget estimate total of $734,675, which leaves $501,777. Again, a breakdown of the forecast costs for the period was not available. Whilst PB was not able to

[11] ECG Review of AGLN Gas Access Arrangement for IPART, 2004. I&C meter cost of $2,829 escalated to $2007.

validate the specific low level costs, we are able to comment on the validity of the component totals provided.

Within this forecast amount for the 2007/08 period of $501,777, a specific cost has been attributed to the Maximo system of $55,196. The grand total of $1,289,871 for the entire cost category appears to include both the $55,196 value and the $501,777 value, hence appears to have been double–counted. PB recommends that this amount of $55,196 should be deducted from the total.

In addition to the original budget estimate of $734,675 and the double-counted value of $55,196, Allgas have also included an additional $500,000 for the Maximo Hansen interface estimate to arrive at the total for the cost category of $1,289,871.

### 4.5.1 Integration costs for servers, laptops, desktops

The first two items forecast expenditure totalling ($143,920) to allow for the new system to be deployed to existing staff at the Allgas offices in Mansfield. PB understands that a certain amount of expenditure is required to provide existing staff with access to the new systems based on the number of staff and the technical requirements necessitating upgrades. Both the server and laptop/desktop integration costs incurred by Allgas in support of the new systems for existing FRC staff would have ranged between $100,000 and $150,000 based on the assumptions of $3,500 to $4,000 for each desktop/laptop for around 20 existing staff, and server costs of around $30,000 to $60,000 depending on specific technical and integration requirements. As such PB recommends that the full amount of the budget should be included in the Allgas FRC cost recovery amount.

The remaining $50,000 applies to providing the necessary equipment to the new staff, hired as a result of the increased workloads resulting from the introduction of FRC. There are 11.5 new FTE, which implies a per-FTE cost of approximately $4,350. This value appears high with hardware integration costs per FTE estimated at around $4,000, but within an acceptable range for the provision of IT hardware equipment including other technical integration requirements such as cabling and standard software licences. PB recommends these costs should be included in the FRC cost recovery amount.

### 4.5.2 ArcFM GIS system

System and business process upgrades to the existing GIS system are usually required when implementing a new IT solution such as the Hub system. Changes to core system data items such as metering related or retailer identifiers, and changes to the business processes which cover the GIS interacting with the new system will result in additional expenditure. The level of cost ($62,130) indicates only a moderate level of change was required. An assumed vendor effort of 40 days of resource at $1,500 per day, would allow for 15 days of design, 15 days of programming and 10 days of testing, which should be considered a moderate level of effort.

Specific details of the changes performed and resource rates were not ascertained during the review. PB agrees with Allgas in that modification of the GIS system is required in such a systems project and given the moderate level of effort indicated by the expenditure, PB recommends these costs should be included in the FRC cost recovery amount.

### 4.5.3 Maximo system

The use of Maximo as an asset management system in the Allgas solution is an appropriate selection to complement the use of the Hansen system. The Maximo system provides additional asset management functionality not provided by the Hansen system, which is necessary for the management of the Allgas gas distribution network.

The use of Maximo was also impacted by the fact that the system was used elsewhere in the APT organisation, and hence existing knowledge of the system could be leveraged when implementing and operating the software.

Changes to Allgas business requirements will give rise to changes with the way the Maximo system functionality is used by Allgas and the way data is entered, manipulated, stored and extracted. Given PB's understanding of the importance of the Maximo asset management system and involvement of the Maximo system functionality in many of the Allgas business processes and stored data items, a large amount of effort will be required to update the system. Without full analysis of the exact system changes and associated costs which was not possible as part of the review scope, PB are only able to estimate the appropriate amount of effort based on experience with similar implementations.

The costs of $142,038 indicate a effort of around 95 days of vendor supplied resource using an assumed rate $1,500 per day. The 95 days of effort would provide for example, 30 days of design, 35 days of programming and 30 days of testing effort. This level of effort is associated with a significant change to an existing system, in line with PB's understanding of the Maximo business processes and data items impacted by the FRC project. Given the above, PB recommends the Maximo system costs should be included in the FRC cost recovery amount.

### 4.5.4 Maximo Hansen Interface estimate

In addition to the $500,000 proposed by Allgas in the Hansen Technologies category, Allgas has allowed for an additional $170,000 for integration of the Maximo Hansen interface.

The costs associated with the Maximo Hansen interface were discussed in Section 4.2.4. As there is considerable uncertainty whether this interface will proceed, PB recommends that the Authority does not allow this amount as part of the FRC cost recovery amount.

## 4.6 New GIS system

| Capex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| 5. GIS | 0 | 1,908,000 | 1,908,000 |

In assessing the FRC costs PB is required to determine whether proposed costs are incremental, i.e. can be specifically attributed to the introduction of FRC. PB does not consider the introduction of FRC warranted the purchase of a new GIS system. The business and system requirements for a GIS system are not materially impacted by the introduction of FRC. PB accepts that a business may incur costs associated with minimal modification of the existing GIS system relating to the change in data requirements that may result from the introduction of FRC.

Allgas have implemented the necessary systems to facilitate FRC and this has not involved replacing the GIS system. There is no clear link between the proposed GIS upgrade/replacement proposed for 2007/08 and FRC. PB recommends that no expenditure be allowed in the FRC cost recovery for the GIS upgrade as the proposed expenditure does not appear to be related to the introduction of FRC. PB believes that the appropriate mechanism is for Allgas to seek recovery at the next regulatory reset rather than as a cost pass-through if and when they choose to upgrade to a different GIS system.

## 4.7 PABX

| Capex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| 6. PABX | 84,464 | 6,480 | 90,944 |

These costs relate to the enhancement of the PABX (Private Automatic Branch Exchange) telephone network functionality. These costs are invariably incurred when implementing a new customer or contact management systems as the PABX needs to match any changes in the way in which queries are handled or routed internally. Each system interfaces with the PABX differently and as such, expenditure is required to account for these changes in addition to costs relating to business process changes.

A detailed component level of PABX changes including effort and costs was not provided as part of the review. PB is only able to comment on the validity of the overall cost of the enhancements. PB estimates that an external technical resource would cost $1,000 per day and therefore if the entire cost was technical labour this would involve approximately 30 days of design, 30 days of technical implementation and programming and 30 days of testing. This excludes the cost of any new hardware or software that may be required. Based on PB's experience with similar implementations these costs are typically in the range of $50,000 to $100,000, depending on the complexity of PABX functionality required. The level of cost and effort indicated ($90,944), whilst near the top end of PB's range, is appropriate to the size and scale of project and hence PB recommends these costs should be included in the FRC cost recovery amount.

## 4.8 Additional items

| Capex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| 7. Additional items | 0 | 69,120 | 69,120 |

According to the Submission, the above costs relate to additional UAT (User Acceptance Testing) not foreseen in the original cost application. This cost has been estimated by Allgas at 48 days of additional Hansen testing resource at $1,200 per day, with a 20% allowance for overhead and contingency. The contingency component of this charge is further discussed in section 4.9.

Allgas explain the additional UAT requirements have arisen from delays caused by unforeseen diversion of resources away from planned activities. Given the size of the system implementation project and amount of business process change involved with the introduction of market messaging and FRC, Allgas are expected to perform comprehensive UAT. The unforeseen additional costs associated with this effort are only a minor fraction of the overall systems costs, and should be considered a common occurrence in projects of this nature. The vendor supplied testing resource daily rate applied to this effort is appropriate based on the assertions made in section 4.2.2 above.

PB recommends this expenditure should be included in the Allgas FRC cost recovery amount.

## 4.9 Capex contingency

| Capex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| Contingency | 0 | 487,659 | 487,659 |

Allgas have allowed for a 20% contingency of approximately $488k on the capital expenditure cost components in its FRC submission. The 20% contingency has been applied to the sum of the following 2007/08 totals:

- "1. Hansen Technologies" = $2,003,000
- "2. Interval Meters" = $300,967
- "3. Internal and other costs" = $127,850
- "6. PABX" = $6,480

The Capex amounts for "4. Integration costs", "5. GIS" and "7. Additional Items" already include a 20% contingency.

IT project contingency is commonly used to allow for unforeseen expenditure items, project delays, changes in system requirements, all of which are common occurrences in projects such as the one Allgas are undertaking. The amount of contingency should be affected by the following factors:

- Total cost of project
- Scope uncertainty
- Experience of internal and external staff (vendors)
- Availability of resources
- Duration of the project.

A project with high risk contingency factors on all of the above may use a contingency factor in the order of 20% of the total capital cost. A company undertaking a project with lower risk factors could typically use a 5% contingency.

The current Allgas FRC project is characterised by the following points:

- The project go-live was 1 July 2007. All costs occurring in the 2006/07 period are based on actual costs and hence no contingency is required.
- The majority of the remaining Hansen costs are fixed price and part of a payment schedule hence no contingency is required. An allowance of $400,000 for modifications could be considered a contingency for modifications that may or may not be required.
- The latest cost Submission was made on 29/01/2008, and hence all forecast costs should be very accurate at this stage of the project.

Given the above points, the level of risk associated with the unknowns or uncertainty should be relatively low and as such the level of contingency should be minimal.

As the system implementation progresses, the level of contingency required will reduce as forecast costs become actual costs. Allgas is well advanced in the implementation of the systems required for FRC. This report is being prepared at a time when nearly all of the cost is known and, as more time passes, the amount of cost uncertainty reduces.

In summary, PB considers that there is no evidence that any contingency for the remainder of the project Capex is required. Further, if there is some unexpected expenditure that arises during the latter part of the systems implementation then Allgas will have an opportunity to identify that expenditure in response to the draft decision issued by the QCA. Given this, PB recommends that no contingency be allowed for in the FRC cost recovery amount.

The exclusion of contingency results in the total amount of $487,659 being deducted from the recommended cost recovery amount for the 2007/08 period. This only accounts for part of the contingency included in the Submission for the following components:

- "1. Hansen Technologies"
- "2. Interval Meters"
- "3. Internal and other costs"
- "6. PABX"

The contingency built in to the remaining component should also be deducted as follows:

- "4. Integration costs". Total costs as per Submission were $1,056,972. The PB recommended amount for this item is $386,972. Reduction of the 20% contingency of $64,495 results in a final total of $322,477.
- "5. GIS". As per section 4.6, no allowance for this item has been recommended so no further reductions are required.
- "7. Additional Items". Total costs as per Submission were $69,120. The PB recommended amount for this item is $69,120. Reduction of the 20% contingency of $11,520, results in a final total of $57,600.

## 4.10 Overheads

| Capex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| Overheads | 662,202 | 487,659 | 1,149,861 |

The above amount results from a 20% allocation of corporate overheads on Capex. Included in the overhead assumption are:

- Legal and regulatory costs
- Rental space costs for the project

- Telecoms and IT costs
- Management time costs
- Contract management costs

The specific values included in the Submission for overheads are calculated by applying the 20% allocation on the following component totals for the relevant period:

- "1. Hansen Technologies"
- "2. Interval Meters"
- "3. Internal and other costs"
- "6. PABX"

The remaining Capex components, namely "4. Integration costs", "5. GIS" and "7. Additional Items", already include the 20% overhead assumption. The 20% overhead on these three cost components equates to additional $544,498 of overhead bringing the total overhead to be recovered to $1,694,359.

Legal and regulatory costs are usually included in a cost recovery Submission as a separate line item from the overhead allocation. Allgas indicated that exclusion of the legal and regulatory costs from the overhead allocation would result in an effective overhead rate of around 15%.

The allocation of overheads based on a percentage of the capital cost of a project is a typical method of spreading overhead cost over a project. PB has reviewed the costs of a number of electricity, gas and water distribution businesses. In distribution businesses, overheads are typically applied at rates between 5% and 20%. Overhead rates at the lower end of this scale generally apply to large capital expenditure projects where a significant part of the cost is the supply of materials or subcontracted services. Higher overhead rates generally apply in projects that incorporate a large proportion of labour. Overhead rates in excess of 20% are unusual.

In the case of this FRC cost pass-through, the overheads that should be recovered are only the incremental overheads that result from the FRC project. Some of the items included by Allgas in overhead, such as management time and regulatory staff, are items that are not incremental as a result of the introduction of FRC. That is, the cost of these activities is to some extent already included in the pre-FRC cost base.

Allgas has not provided a breakdown of the incremental overhead costs of the FRC project however, the allocation of overhead at the top end of the expected range and the inclusion of items that should already be in the existing costs base indicates that the costs submitted by Allgas are likely to be in excess of the incremental efficient overhead costs.

PB has estimated the incremental overhead costs on the following basis:

- Legal costs required to review and enter into contracts with Hansen, Logica and other suppliers. Total cost of $250,000 based on five contracts at an average cost of $50,000.

- Regulatory costs based on a contract regulatory person to assist existing staff. $200,000 based on 100 days at $2,000 per day.

- Rental space in Brisbane for a team of 30 people. Total cost of $200,000 based on 30 people at an average of 25 square meters per person at $300 per square meter per annum for 8 months plus an additional $50,000 for move in/out and "make good" costs.

- Telecoms. $10,000 based on $50 per person per month for each of 25 additional FTEs involved with the project for a period of 8 months.

- IT to provide desktop, licences, access to servers and network for a project team of 30 people for a period of 8 months. Total cost of $150,000 based on $5,000 per person for a period of 8 months.

The total incremental overhead estimated by PB is therefore $810,000. Of this, $92,963 is recovered from the PB recommended sums for "4. Integration costs" and "7. Additional items". PB recommends that the balance of overhead, $717,037 ($810,000 less $92,963), should be included in the Allgas FRC cost recovery amount. In the recommended Capex table, PB has included the full amount proposed by Allgas for 2006/07 and reduced the amount for 2007/08.

## 4.11 PB recommendation: Capex

Table 4-6 summarises the PB recommended Capex.

### Table 4-6 PB recommended Capex

| Capex $ | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| **PB Recommendation** | | | | | | |
| 1. Hansen Technologies | 1,511,461 | *1,503,000* | 0 | 0 | 0 | *3,014,461* |
| 2. Interval Meters | 527,374 | 300,967 | 0 | 0 | 0 | 828,341 |
| 3. Internal & other costs | 1,187,712 | 127,850 | 0 | 0 | 0 | 1,315,562 |
| 4. Integration costs APT | 232,898 | *267,281* | 0 | 0 | 0 | *500,179* |
| 5. GIS | 0 | *0* | 0 | 0 | 0 | 0 |
| 6. PABX | 84,464 | 6,480 | 0 | 0 | 0 | 90,944 |
| 7. Additional items | 0 | *57,600* | 0 | 0 | 0 | *57,600* |
| Contingency | 0 | *0* | 0 | 0 | 0 | *0* |
| Overheads | 662,202 | *54,835* | 0 | 0 | 0 | *717,037* |
| Total | 4,206,111 | *2,318,013* | 0 | 0 | 0 | *6,524,124* |
| 2005 Access Arrangement | *-4,200,000* | *0* | 0 | 0 | 0 | *-4,200,000* |
| **Total** | ***6,111*** | ***2,318,013*** | **0** | **0** | **0** | ***2,324,124*** |

*Note: numbers in red italics are those impacted by PB recommendations*

The deductions made are as follows:

- A reduction of $4.2 million from the total Capex in the 2006/07 period to allow for expenditure relating to amounts previously included in the 2005 Access Arrangement.

- A reduction of $1.908 million in the 2007/08 period from "5. GIS", for the upgrade of the GIS system.

- A reduction of $1 million from the 2007/08 regulatory period consisting of $0.5 million from "1. Hansen Technologies" and $0.5 million from "4. Integration costs APT", for the Maximo to Hansen Hub system interface.

- A reduction of $55,196 from the 2007/08 period from "4. Integration costs to APT", for double counting of the Maximo system costs.

- A reduction of $170,000 from the 2007/08 period from "4. Integration costs to APT" for an additional amount budgeted for the Maximo interface.

- A reduction of $487,659 from the 2007/08 period for contingency.

- A reduction of $64,495 from the 2007/08 period for contingency included in the "4. Integration costs to APT" item.

- A reduction of $11,520 from the 2007/08 period for contingency included in the "7. Additional Items" amount.

- A reduction of $432,824 from the 2007/08 period from Overheads.

In summary, PB considers that capital expenditure of $2,324,124 is prudent, efficient and incremental, and should be included in the FRC cost recovery amount.

### 4.12 Capex depreciation period

The nature of the capital expenditure recommended by PB is interval meters, interval meter communication systems and IT systems. Allgas is proposing to depreciate these assets over a period of 1.5 years. Unless there are exceptional circumstances we do not consider that assets should be depreciated over a period that does not reflect the economic life of the assets. We have found no evidence of exceptional circumstances in the Allgas submission or further information that would justify a depreciation period of 1.5 years and therefore recommend that the Authority does not accept the depreciation period proposed by Allgas.

Of the total capital expenditure of $2,324,124 recommended by PB, the major cost component is the Network Billing Meters discussed in section 4.4.4. The cost of these Network Billing Meters is $1,011,015. The meters are primarily long life network assets and PB considers that these assets should be recovered over a period appropriate for this type of asset. At the 2006 Access Arrangement, Allgas proposed a life of 30 years for Commercial/Industrial meters. We consider this to be an appropriate period over which to depreciate these assets.

The remainder of the recommended PB capital expenditure consists of meter telemetry systems and IT systems. Both of these asset types have much shorter lives than traditional network assets.

Telemetry systems are an area of rapid technology change. Wireless technology is rapidly developing in many areas as data communications to mobile devices such as mobile phone and laptop computers becomes more common. The economic life of modern electronic communications devices is typically five years or less. The system chosen by Allgas is a modern electronic communication system and therefore PB considers that it is appropriate to depreciate these assets over five years.

IT systems are generally accepted as being short lived assets compared with the typical gas distribution network assets. Factors that contribute to the rapid obsolescence include:

- Vendors release new versions with significant additional functionality
- Vendors increase the price of support for old software versions or decline to support old versions to encourage the sale of new software
- IT hardware evolves so that old software becomes incompatible with latest hardware or operating systems

Entire IT systems are typically replaced every five to ten years. Smaller IT components such as desktop computers are generally allocated a useful life of 5 years. Larger systems that involve significant implementation effort such as enterprise systems are more commonly allocated a useful life of 10 years. Economic lives of major IT systems for tax depreciation purposes are typically set between 7 to 10 years. PB considers that major IT systems should have an economic life of at least 7 years.

PB recognises that the allocation of asset lives to groups of assets is not an exact science; rather there are a range of lives that are likely to be acceptable. In the case of IT systems, the generally accepted range is between 5 and 10 years.

In the Access Arrangement information[12], Allgas indicated that IT assets were depreciated by Allgas over 5 years. PB considers that IT assets should be depreciated over their economic life and further considers that the economic life of major IT systems is at least 7 years. We therefore recommend a depreciation period for major IT assets of 7 years. However, we also recognise that there is a range of depreciation periods that have regulatory precedent and consider that, provided the depreciation period is within the 5 to 10 year range, it is acceptable to depreciate assets over any period within this range.

In summary the depreciation periods proposed by PB are:

| Asset category | PB recommended Capex ($) | Depreciation period (years) |
|---|---|---|
| Network Billing Meters | 1,011,015 | 30 |
| Interval Meters | 828,341 | 5 |
| IT systems | 484,768 | 7 |
| Total capital expenditure | 2,324,124 | |
| Weighted average depreciation period | | 8.7 |

[12] Allgas Energy Pty Ltd, Access Arrangement Information for the Queensland Network, 7 June 2006.

# 5. OPERATING EXPENDITURE REVIEW

Table 5-1 details the breakdown of Opex as included in the Allgas Submission:

**Table 5-1 Operating Expenditure**

| Opex $ | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| LogicaCMG | 1,067,530 | 288,964 | 0 | 0 | 0 | 1,356,494 |
| Interval Meters | 0 | 247,116 | 264,453 | 264,626 | 264,359 | 1,040,554 |
| Ombudsman Scheme | 0 | 115,000 | 115,000 | 115,000 | 115,000 | 460,000 |
| Hansen Software Licensing | 300,000 | 151,000 | 153,000 | 154,000 | 157,000 | 915,000 |
| 3rd party software licensing | 95,000 | 58,000 | 58,000 | 58,000 | 58,000 | 327,000 |
| Escrow Ag't. (Hansen code) | 0 | 1,850 | 1,850 | 1,850 | 1,850 | 7,400 |
| Hosting | 144,000 | 415,000 | 415,000 | 415,000 | 415,000 | 1,804,000 |
| Additional FRC staff | 193,359 | 1,138,500 | 1,237,500 | 1,336,500 | 1,435,500 | 5,341,359 |
| Brennan IT support & mgmt | 0 | 29,000 | 58,000 | 58,000 | 58,000 | 203,000 |
| Director, proj. mgr, bus anal. | 485,000 | 247,290 | 0 | 0 | 0 | 732,290 |
| Project establishment | 486,000 | 0 | 0 | 0 | 0 | 486,000 |
| Retesting FRC system AGL | 0 | 184,320 | 0 | 0 | 0 | 184,320 |
| Testing new entrant retailers | 0 | 0 | 60,826 | 60,826 | 60,826 | 182,478 |
| Promotion and training | 0 | 250,000 | 100,000 | 100,000 | 100,000 | 550,000 |
| Increased call centre staff | 0 | 144,000 | 144,000 | 144,000 | 144,000 | 576,000 |
| DME & Vencorp post FRC committee | 0 | 26,800 | 26,800 | 26,800 | 26,800 | 107,200 |
| **Total** | **2,770,889** | **3,296,840** | **2,634,429** | **2,734,602** | **2,836,335** | **14,273,095** |

## 5.1 Opex cost components

A discussion of each of the cost components listed in Table 5-1 is provided below.

### 5.1.1 LogicaCMG

Typically, system integrator (SI) costs on a project of this nature would be recognised as capital expenditure. SI costs are usually one-off costs relating to the successful implementation of the system and business processes into the organisation. Once the systems are implemented and working, the role of the SI diminishes and hence expenditure decreases and usually stops soon after go-live. As Opex is defined as ongoing costs of running a business it is unusual that Allgas have included the LogicaCMG costs as Opex in its Submission.

PB can see no reason for these costs to be classified as Opex and considers that it is more appropriate for these costs to be classified as Capex. We therefore recommend that the LogicaCMG costs should be re-categorised as Capex. Further, as discussed in section 4.12 we consider these costs should be depreciated over a period of five years.

Allgas have presented the following breakdown of the LogicaCMG costs in its Submission:

| LogicaCMG Opex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| Project Manager | | 50,000 | |
| Project Administrator | | | |
| Senior Business Consultant | | 30,000 | |

| LogicaCMG Opex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| FRC Experts | | | |
| Solutions Architect | | | |
| Test Manager | | 158,964 | |
| Senior Test Analyst | | | |
| Test Analysts | | | |
| Project Management | | | |
| Release Support - Test & Release Mgr | | 50,000 | |
| Release Support – Regression Testing | | | |
| Release Support - Progression Testing | | | |
| **Total** | **1,067,530** | **288,964** | **1,356,494** |

Allgas initially budgeted a total amount of $1,477,000 for the LogicaCMG costs which were incurred on a time and expenses basis. No further breakdown of the actual 2006/07 costs ($1,067,530) has been provided as part of the Submission. Allgas did include a breakdown of the daily fee rates per LogicaCMG role as follows:

| Role | Estimated effort (days) | FTE | Daily Rate $ | Total $ |
|---|---|---|---|---|
| Project Manager | 120 | 1 | 1850 | 222,000 |
| Project Administrator | 60 | 1 | 500 | 30,000 |
| Senior Business Consultant | 80 | 1 | 2100 | 168,000 |
| FRC Experts | 80 | 2 | 1800 | 288,000 |
| Solutions Architect | 30 | 1 | 1800 | 54,000 |
| Test Manager | 120 | 1 | 1500 | 180,000 |
| Senior Test Analyst | 100 | 1 | 1200 | 120,000 |
| Test Analyst | 80 | 4 | 900 | 288,000 |
| **Total** | | | | **1,350,000** |

The role for which LogicaCMG was employed was as a systems integrator (SI) which included business consultancy, process mapping, end-to-end business process testing and SI support on an as-needed basis. LogicaCMG were also used as a testing resource as part of the Factory Acceptance Testing (FAT), Integration Testing, User Acceptance Testing (UAT) and Market Trials.

The forecast 2007/08 costs ($288,964) are comprised of the following components:

- Project Manager - $50,000
- Senior business consultant - $30,000
- Test Manager - $158,964
- Release support - $50,000

According to the Submission, these forecast costs relate to the testing of Release 1.5 and Release 2 of the Hansen Hub system.

In PB's opinion, Allgas did not possess the experience and internal resources necessary to complete the required project required for 1st July. This implies that seeking the support of an external SI in order to achieve the desired outcome is an efficient decision. The Submission does not explain whether LogicaCMG was selected to assist Allgas as part of the IT vendor selection process or as part of a separate Systems Integrator (SI) competitive tender process. The Submission explains that Allgas reviewed forecast rates and was satisfied that they were

typical of industry standards, no details of this review or the industry standards were provided in the Submission.

The specialist nature of utility billing and network management systems requires resources with unique skills. Typical direct employee rates for specialist IT resources are located at the top end of the salaries included in the Hays remuneration commentary included in Appendix B. Systems integrators will typically on-bill customers at a labour multiplier of 3-4 times the salary paid to the resource to cover their own costs and revenue margins. Whilst there are no benchmark guidelines for daily rates for SI supplied resource, the above premise can be used to generate typical market costs. For example:

> A directly employed senior test analyst would command approximately $100,000 per annum. Given there are roughly 250 working days per annum, this equates to $400 per day. Using our labour multiplier range of 3 – 4 times daily rates, typical SI costs for a senior test analyst would be $1,200 to $1,600 per day.

In PB's opinion the LogicaCMG SI consultancy charges for the various roles indicated above are in line with market rates

LogicaCMG resources are also used in the testing of the systems with new entrant retailers. The estimated cost is $78,000 comprising of two resources as follows:

- Manager, 1.5 days per week for 9 weeks - $27,500
- Senior analyst and tester, 4 days per week for 9 weeks - $50,500

This indicates a daily rate of $2,037 per day for the manager and $1,400 per day for the senior analyst and tester. These SI resource rates also align using a labour multiplier of 3-4 on market salaries included in the Hays remuneration report included in Appendix B.

Included in the LogicaCMG proposal were costs expected as part of a warranty period as follows:

| Role | Estimated effort (days) | FTE | Daily Rate $ | Total $ |
|---|---|---|---|---|
| Project Manager | 20 | 1 | 1850 | 37,000 |
| Release support – test manager | 20 | 1 | 1500 | 30,000 |
| Release support – regression testing | 20 | 1 | 1200 | 24,000 |
| Release support – progression testing | 20 | 2 | 900 | 36,000 |
| Total | | | | 127,000 |

As a result of the extent of LogicaCMG involvement in the testing of the new IT solution for Allgas, it is prudent for LogicaCMG to be involved with post go-live updates to the systems. There are two main types of testing involved with the warranty period. Regression testing checks the system components not directly impacted by updates still function correctly. Progression testing checks the components directly affected by the updates also function correctly. The effort allocated to each resource aligns with the system updates indicated and project activities to be performed. PB recommends that all of the LogicaCMG costs related to the warranty period are included in the FRC cost recovery amount.

### 5.1.2 Interval Meters

These costs are discussed in more detail in section 6 of the report.

### 5.1.3 Ombudsman Scheme

An annual value of $115,000 has been included in the Submission for each year from the 2007/08 period. PB understands that gas distributors in Queensland have an obligation to join the ombudsman scheme and this obligation is related to the introduction of FRC.

In its 2007 FRC cost recovery submission, Envestra proposed a cost of $93,000 for ombudsman annual fees and management costs and an additional $5,000 for an ombudsman joining fee in 2007/08. While these costs are not material, the costs proposed by Allgas are approximately 24% higher than the costs proposed by Envestra and there is no apparent reason for Allgas to have a higher cost than Envestra for the same function. PB therefore recommends that an amount of $93,000 be included in Opex with an additional amount of $5,000 in 2007/08.

### 5.1.4 Hansen Software Licensing

| Opex $ | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| Hansen Software Licensing | 300,000 | 151,000 | 153,000 | 154,000 | 157,000 | 915,000 |

The above license costs are comprised of the following:

- A one-off cost for 75,000 license points @ $5 per TOU meter and $2 per basic meter.
- A per annum cost of 75,000 license points @ $1 per TOU meter and $0.40 per basic meter.
- Support fee - $10k per month

Licensing arrangements with system vendors such as Hansen are typically based around the number of customers or meters being supported within the system. Licensing costs are vendor system specific and difficult to benchmark as these are typically not available publicly. The software licensing cost is a cost of ownership of a particular vendors system. The cost of software licensing should be considered when evaluating the lifecycle cost of the IT system. As described in section 3.2, the overall process for selection of the core IT system was a competitive process albeit carried out over a compressed timeframe. PB considers that the process resulted in the selection of a system at a competitive price and therefore regards the total system cost, including the licensing to be an efficient cost. As licensing is a necessary part of system ownership and the cost is considered to be efficient, PB recommends that these costs are included in the FRC cost recovery amount.

### 5.1.5 3rd party software licensing

| Opex $ | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| 3rd party software licensing | 95,000 | 58,000 | 58,000 | 58,000 | 58,000 | 327,000 |

Allgas has not provided any detail of the 3rd party software that is required to be licensed in order to enable FRC. The cost for the Hansen license is not included

in the 3rd party software licensing category and the cost of licences for other systems such as MVRS, SCADA and Maximo should not have increased as a result of FRC.

As the purpose of the expenditure proposed for 3rd party software licences is not clear, PB does not recommend that this amount is included in the FRC cost recovery amount.

### 5.1.6 Escrow Agreement (Hansen code)

These are typical costs relating to the provision of software code from a system vendor. The agreement secures the source code of the Hub system provided by Hansen in the event it is required by Allgas. The total amount proposed by Allgas is not material. PB recommends that these costs are included in the FRC cost recovery amount.

### 5.1.7 Hosting

| Opex $ | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| Hosting | 144,000 | 415,000 | 415,000 | 415,000 | 415,000 | 1,804,000 |

Allgas evaluated both of the possible alternatives for operating the Hub system, in-house or outsourced. In-house operation of such a system requires a team of skilled resource which Allgas did not have. In-house support of the system would have required Allgas to build a new team, which would have been difficult given the timeframes under which they were operating and the availability of resources in the market.

The hosting option essentially involves a licensed application where the server environment is hosted by a third party (or the vendor) with connectivity provided between the hosted data centre and the utility's network. The ongoing costs for a hosted solution will typically be offset by the cost savings involved with not having to provide the server environment, maintenance and support internally. Ongoing hosting costs include the following price components:

- Fixed charges: Consisting of the costs associated with assembling the necessary hosted facility.
- Variable charges: Consisting of charges for actual usage including storage space, number of reports produced or number of system restores and communications charges.
- License and Software Maintenance: Including annual maintenance fees

External hosting of applications, particularly by companies with limited IT resources, is a commonly used business approach and is generally considered good business practice.

Two potential hosting options were considered, one from LogicaCMG and one from Hansen. The Hansen solution was ultimately selected based on the offering being at a lesser cost. The benefit of having the system vendor provide the hosting solution is experience and familiarity with the product. This contract has been secured for three years.

PB considers that it is prudent to have the Hub system externally hosted and that costs are efficient as Allgas had obtained competing quotes from the market for the service. PB recommends that these costs are included in the FRC cost recovery amount.

### 5.1.8 Additional FRC staff

| Opex $ | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| Additional FRC staff | 193,359 | 1,138,500 | 1,237,500 | 1,336,500 | 1,435,500 | 5,341,359 |

PB met with Allgas in August 2007. At this time Allgas had recruited a number of additional FTEs to manage the transactions that result from FRC. Allgas explained the activities of its staff before FRC and the activities that would be undertaken by each of its staff after FRC implementation. Allgas staff also explained where they considered that additional staff would be required. At this time the Allgas forecast was for a total of 7.5 additional FTEs. Subsequent to the August 2007 meeting, Allgas has revised the forecast of the additional number of FTEs from 7.5 to 11.5 and has proportionally increased the cost estimate.

The Allgas defined “FRC team” consists of 21.5 FTEs in total, where 10 FTEs are existing employees. Only costs relating to the new 11.5 FTEs at an average cost of $99,000 per annum are included in the Submission costs. In addition, Allgas is proposing an extra FTE on top of the 11.5, for each year starting from the 2008/09 period. This increases the costs by $99,000 per annum per FTE.

The additional resource costs for the 11.5 extra FTEs for the 2007/08 period are spread among the following:

- Manager – 0.5 FTE
- Market Services Manager – 1 FTE
- Inquiries and exceptions manager – 1.5 FTE
- Complaints – 1 FTE
- Hub administration – 1 FTE
- Meter data management – 2 FTEs
- New connections – 1 FTE
- Transfers and Market requests – 1 FTE
- Business Improvement manager – 0.5 FTE
- Support officers – 1 FTE
- FRC projects – 1 FTE

The additional Allgas staff are required to deal with the new workflows and exceptions management resulting from the new FRC requirements. Allgas has provided the following assumptions in support of increased workloads:

- An assumption of 7,500 customer transfers per year (approximately 10% of customers)

- 38,375 service orders per year (8 market messages per service order)
- 5 network billing messages per month, excluding disputes
- 6,500 weekly meter data transactions

A proportion of the effort required to resource the above work items will have existed in a pre-FRC environment. The introduction of market messaging will have the effect of creating new business process steps and potential exception points which require increased resource levels. Given Allgas' approach to only automate interfaces and processes where prudent and efficient, the reduced effort that can be expected with automating interfaces must be replaced by increased FTE resource.

As indicated above, the Allgas estimated additional resource requirement increased from 7.5 to 11.5 over the course of the review. Detailed workload information was not provided as justification of the extra 4 FTEs.

PB has had direct experience with the introduction of FRC in Victoria and other jurisdictions. In each jurisdiction where FRC has been implemented there has been a period during which a significant increase in operational resources is required followed by a period where fewer resources are required. The increase in resourcing coincides with the introduction of FRC which generally coincides with the introduction of new systems and business processes. During this initial period other market participants with whom a network business is required to interact are also learning to use new systems and processes. After a period of time the systems and processes are refined through minor changes to IT systems and through the learning and experience of employees in the distribution business and other market participants.

Allgas has commented that the volumes of customer transfers are due to increase over the forecast period due to the removal of current constraints in the electricity wholesale market. PB agrees that the advent of dual fuel offerings is likely to result in the number of customer transfers increasing over the regulatory period however the level of churn experienced since the introduction of FRC in Queensland has been relatively modest. In addition, as current resources become more familiar with the new FRC processes and systems, increases in productivity should more than offset any anticipated increases in workloads.

Our benchmark analysis in section 7 indicates that the number of FTEs requested by Allgas is significantly higher than other businesses (on a per 100,000 customer basis). At the time of our meeting with Allgas in August 2007, Allgas had recruited a number of FTEs but had not employed all the forecast 7.5 FTEs. We consider that, had Allgas employed the additional 7.5 FTEs, they would have had sufficient additional resources to manage the forecast workload. We anticipate that the workload will decrease as systems are developed and experience gained. While the estimation of future resources is difficult in this environment, we consider that it is reasonable to expect the overall level of effort should reduce by 25% after the first year of operation in an FRC environment. This order of reduction is consistent with our experience with the introduction of FRC in Victoria.

PB therefore recommends that the cost associated with 7.5 additional FTEs should be allowed for the first full year of FRC operation and, in subsequent years, that the cost should be reduced by 25%.

Allgas has forecast the costs of an FTE at $99,000 per annum. This rate is comparable to the rate forecast by Envestra in their FRC cost pass-through application ($100,000 per FTE per annum) and is consistent with PB's understanding of the market rates for experienced staff in Queensland.

In summary, PB recommends that operational costs relating to additional FRC staff of $193,359 for 2006/07, $742,500 for 2007/08 and $556,875 for each subsequent year of the review period be included in the FRC cost recovery amount.

### 5.1.9 Brennan IT support & management

The Submission includes a forecast ongoing allowance of $29,000 in 2007/08 and $58,000 in the following three periods, 2008/09, 2009/10 and 2010/11. Brennan IT provides both ongoing support and some support during the project development phase. The costs associated with the project development phase are reviewed in the following section 5.1.10.

The ongoing support provided by Brennan IT is a resource to support the Allgas FRC IT environment including the FRC computers and help desk. The other IT support resources utilised by Allgas are system or solution specific whereas Brennan provide generic support and management of the new FRC environment, IT help desk and computers. Allgas have limited internal resources to manage its IT environments and hence PB agrees that the decision to utilise external consultancy to provide this function is reasonable. The proposed costs are less than the salary for an appropriately skilled FTE would be, and therefore PB recommends that these costs be included in the FRC cost recovery amount.

### 5.1.10 Director, project manager and business analysts

The project director, project manager and business analysts are associated with the development of enduring assets; specifically, the IT systems, telemetry systems and processes that enable FRC. It is common for this type of expense to be capitalised as the nature of the activities performed by these resources contribute to the total project and the total project is a capital project. PB considers it unusual that Allgas has categorised this expenditure as Opex rather than Capex however, we also recognise that accounting rules provide a degree of discretion in the allocation of this type of project cost.

PB considers that these costs would generally be classified as Capex and as such would usually be depreciated over a period of five years. However, as there is a degree of discretion in the allocation of this type of cost we make no firm recommendation as to their classification.

| Opex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| Director, proj. mgr, bus anal. | 485,000 | 247,290 | 732,290 |

The resources dedicated to implementing the FRC project were as follows:

- FRC Program Director
- FRC Strategy Manager
- FRC Change Management Manager
- FRC Business Analysts

The above resources where charged with the responsibility of planning and resolving issues and determining solutions for FRC matters.

The 2006/07 actual costs were derived as follows:

- Program director – full time from 31 October 2006. $1,978 / day. Total to 1 July 2007 of $308,817.68.
- Change management manager – full time from 1 May 2007. $768/day. Total to 1 July 2007 of $31,488.
- Ad hoc advice from external consultant – 3 days at $1,500 per day. Total to 1 July 2007 of $4,500.
- Internal FRC IT Manager – 112 days at $792 / day. Total to 1 July 2007 of $88,708.
- Brennan IT – 30 days @ $1,728 per day. Total to 1 July 2007 of $51,840.

Given the limited availability of internal IT resource, it is reasonable to expect Allgas to support a project of this nature with external resources. PB accepts the rates and resource amounts used during the period and recommends that these costs are included in the FRC cost recovery amount.

The forecast for 2007/08 is derived as follows:

- Project Director 5 months. $207,690 based on daily rate of $1,978 per day.
- IT manager 5 months - $39,600 based on daily rate of $792 per day.

Allgas report the YTD costs are currently $171,833.31 and indicate the forecast can be reduced to $200,000. This equates to approximately four months of effort of the identified resources in the 2007/08 period. Given that additional system functionality was being delivered in this period and that additional testing was required PB believes it is prudent to secure the key resources for this extra period following go-live to ensure the success of the project.

PB therefore recommends that an amount of $685,000 be included in the FRC cost recovery amount. Of this $485,000 is in 2006/07 and the remaining $200,000 in 2007/08. The expenditure for 2007/08 consists or YTD expenditure of $171,833 and forecast expenditure of $28,167 for the Project Director and IT Manager to be retained until the project has been successfully implemented.

### 5.1.11 Project establishment

| Opex $ | 2006/07 | 2007/08 | Total Cost |
|---|---|---|---|
| Project establishment | 486,000 | 0 | 486,000 |

Allgas indicate in its response to PB's questions (18/10/07), that the line item for Project establishment costs included costs which have already been included in other line items. As such, PB assumes the inclusion of this item is an error and recommends that these costs are not included in the FRC cost recovery amount.

### 5.1.12 Retesting FRC system AGL

There is an additional cost of $184,320 occurring in the 2007/08 period relating to expenditure on systems testing with retailer AGL Energy. AGL Energy has installed a new FRC system and wishes to perform system testing with Allgas of around 10 weeks duration. Allgas require the assistance of both Hansen and LogicaCMG in these market trials.

LogicaCMG costs for the testing are as follows:

- Project manager, 1.5 days per week for 9 weeks, $27,500 (approximately $2,037 per day)
- Testing manager, 4 days per week for 9 weeks, $50,500 (approximately $1,400 per day)

The individual Hansen and Allgas costs for this item have not been provided. PB estimates that Allgas would incur similar costs for the Hansen resources as the LogicaCMG costs, and a smaller cost for the Allgas staff involved with the testing. Using these estimates for Hansen and Allgas resources and the actual LogicaCMG cost, the amount included in the Submission appears reasonable. PB recommends these costs should be included in the FRC cost recovery amount.

### 5.1.13 Testing new entrant retailers

Allgas has assumed that one new entrant retailer will enter the market each year from 2008/09 onwards, and that they will incur costs of $60,826 each time they are required to test its systems with the new entrant.

This value appears to have been roughly estimated based on the costs incurred for the testing performed with AGL Energy. The market business processes to be tested should remain roughly the same, whilst the data used in the testing would need to be updated for each new retailer. A detailed explanation of the sources of the effort and costs underlying the $60,826 were not provided during the review. The extent of effort required to test with new entrants might vary greatly however it is unlikely that the extent of testing required will be as extensive as that required for AGL Energy as the impact of a systems failure associated with reduced testing with other retailers will not be as great as the impact of a failure associated with the dominant retailer.

Allgas staff should have developed the necessary skill set and experience with the new processes and systems to be able to assist a new retailer with the market testing by the time this event occurs. Whilst additional effort is undoubtedly required, PB believes that the extra effort should be covered using existing resources given the short duration and prescribed nature of the market testing.

PB recommends these costs should not be included in the FRC cost recovery amount.

### 5.1.14 Promotion and training

Allgas state in its Submission that these costs relate to:

"…promotion and training of FRC procedures and processes to customers, market participants and other industry stakeholders to ensure clear understanding of issues and processes that will assist people to connect to natural gas…"

The costs are $250,000 in the 2007/08 period and then $100,000 from 2008/09 onwards.

PB are not aware of any FRC related obligation or requirement for this expenditure and recommend these costs not be included in the FRC cost recovery amount.

### 5.1.15 Increased call centre staff

Allgas has revised the estimated number of staff required in its contact centre and its new connection team to manage a projected increase in calls. The cost of these 3 additional staff has been estimated at $144,000 per annum including overheads, indicating a cost of $48,000 per FTE. There was no supporting justification for the revised estimate of FRC related workload.

PB notes that 3 operators working 200 days per year answering one call each 5 minutes would answer approximately 54,000 calls per year. This equates to nearly 80% of all customers contacting the call centre each year as a result of FRC. It is most unlikely that the proportion of customers calling Allgas as a result of the introduction of FRC will be anything near to 80% over the four year period, let alone over one year. We therefore recommend that these costs are not included in the FRC cost recovery amount.

### 5.1.16 DME & Vencorp post FRC committee

The costs of $26,800 per annum relate to post FRC consultative committee meetings. The Department of Mines & Energy (DME) is tasked with chairing a committee on monitoring FRC performance involving a contracted cost of $19,800. The Market Operator (Vencorp) is tasked with chairing a committee on market rule changes involving a cost to Allgas of $7,000. PB considers these minor costs to be appropriate given the nature of the FRC related activity and recommends these costs should be included in the FRC cost recovery amount.

## 5.2 PB recommendation: Opex

In summary, Table 5-2 below shows the Allgas Submission for Opex and the amount which PB recommends to be included in the Allgas FRC cost recovery amount.

### Table 5-2 PB recommended Opex

| Opex $ | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| **Allgas Submission** | | | | | | |
| LogicaCMG | 1,067,530 | 288,964 | 0 | 0 | 0 | 1,356,494 |
| Interval Meters | 0 | 247,116 | 264,453 | 264,626 | 264,359 | 1,040,554 |
| Ombudsman Scheme | 0 | 115,000 | 115,000 | 115,000 | 115,000 | 460,000 |
| Hansen Software Licensing | 300,000 | 151,000 | 153,000 | 154,000 | 157,000 | 915,000 |
| 3rd party software licensing | 95,000 | 58,000 | 58,000 | 58,000 | 58,000 | 327,000 |
| Escrow Ag't. (Hansen code) | 0 | 1,850 | 1,850 | 1,850 | 1,850 | 7,400 |
| Hosting | 144,000 | 415,000 | 415,000 | 415,000 | 415,000 | 1,804,000 |
| Additional FRC staff | 193,359 | 1,138,500 | 1,237,500 | 1,336,500 | 1,435,500 | 5,341,359 |
| Brennan IT support & mgmt | 0 | 29,000 | 58,000 | 58,000 | 58,000 | 203,000 |
| Director, proj. mgr, bus anal. | 485,000 | 247,290 | 0 | 0 | 0 | 732,290 |
| Project establishment | 486,000 | 0 | 0 | 0 | 0 | 486,000 |
| Retesting FRC system AGL | 0 | 184,320 | 0 | 0 | 0 | 184,320 |
| Testing new entrant retailers | 0 | 0 | 60,826 | 60,826 | 60,826 | 182,478 |
| Promotion and training | 0 | 250,000 | 100,000 | 100,000 | 100,000 | 550,000 |
| Increased call centre staff | 0 | 144,000 | 144,000 | 144,000 | 144,000 | 576,000 |
| DME & Vencorp post FRC committee | 0 | 26,800 | 26,800 | 26,800 | 26,800 | 107,200 |
| **Total** | **2,770,889** | **3,296,840** | **2,634,429** | **2,734,602** | **2,836,335** | **14,273,095** |
| | | | | | | |
| **PB Recommendation** | | | | | | |
| LogicaCMG[13] | 1,067,530 | 288,964 | 0 | 0 | 0 | 1,356,494 |
| Interval Meters | 0 | *196,005* | *197,618* | *197,790* | *197,523* | *788,936* |
| Ombudsman Scheme | 0 | *98,000* | *93,000* | *93,000* | *93,000* | *377,000* |
| Hansen Software Licensing | 300,000 | 151,000 | 153,000 | 154,000 | 157,000 | 915,000 |
| 3rd party software licensing | *0* | *0* | *0* | *0* | *0* | 0 |
| Escrow Ag't. (Hansen code) | 0 | 1,850 | 1,850 | 1,850 | 1,850 | 7,400 |
| Hosting | 144,000 | 415,000 | 415,000 | 415,000 | 415,000 | 1,804,000 |
| Additional FRC staff | 193,359 | *742,500* | *556,875* | *556,875* | *556,875* | *2,606,484* |
| Brennan IT support & mgmt | 0 | 29,000 | 58,000 | 58,000 | 58,000 | 203,000 |
| Director, proj. mgr, bus anal. | 485,000 | *200,000* | 0 | 0 | 0 | *685,000* |
| Project establishment | *0* | 0 | 0 | 0 | 0 | *0* |
| Retesting FRC system AGL | 0 | 184,320 | 0 | 0 | 0 | 184,320 |
| Testing new entrant retailers | 0 | 0 | *0* | *0* | *0* | *0* |
| Promotion and training | 0 | *0* | *0* | *0* | *0* | *0* |
| Increased call centre staff | 0 | *0* | *0* | *0* | *0* | *0* |
| DME & Vencorp post FRC committee | 0 | 26,800 | 26,800 | 26,800 | 26,800 | 107,200 |
| **Total** | ***2,189,889*** | ***2,333,439*** | ***1,502,143*** | ***1,503,315*** | ***1,506,048*** | ***9,034,834*** |

The deductions made are as follows:

- A reduction of $486,000 from 2006/07 for "Project Establishment" costs.
- A reduction of $17,000 in 2007/08, and $22,000 in each of the 2008/09, 2009/10 and 2010/11 periods from "Ombudsman scheme" costs.

[13] PB recommends that this cost is treated as Capex

- A reduction of $95,000 in 2006/07 and $58,000 in each subsequent year for "3rd party software licensing".

- A reduction of $396,000 in 2007/08, $670,625 in 2008/09, $779,625 in 2009/10 and $878,625 in 2010/11 for "Additional FRC staff".

- A reduction of $250,000 from the 2007/08 period, and $100,000 from each of the 2008/09, 2009/10 and 20010/11 periods for "Promotion and training".

- A reduction of $47,290 from the forecast "Director, project manager and business analysts" costs in 2007/08.

- A reduction of $60,826 from each of the 2008/09, 2009/10 and 2010/11 periods for "Testing new entrant retailers".

- A reduction of $144,000 from each of the periods 2007/08, 2008/09, 2009/10 and 2010/11 for "increased call centre staff" costs.

- A reduction across the "Interval meters" costs. Covered in Section 6.

In summary, PB considers that total Opex of $9.034 million is prudent, efficient and incremental, and should be approved by the Authority for FRC cost pass-through.

# 6. INTERVAL METERING EXPENDITURE REVIEW

## 6.1 Background

Allgas has proposed capital expenditure to remotely read interval meters for all large customers >100TJ by 1 July 2007 and all other large customers >10TJ within two years. This involves installation of meter data loggers, interval meter correctors, and interval meter data collection system, and modifications to the SCADA system. Operating expenditure has been proposed to maintain the telemetry equipment and to process data from interval meters.

The Capex and Opex proposed by Allgas is shown in Table 6-1 below. Allgas propose this expenditure to meet the requirements of the sites that require interval metering, including some expenditure for spares to support the interval metering equipment over the next five years.

**Table 6-1 Allgas Submission interval metering costs**

| $ (Dec 2006) | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| **Allgas Submission - FRC Interval metering** | | | | | | |
| Capex | 527,374 | 300,967 | 0 | 0 | 0 | 828,341 |
| Opex | 0 | 247,116 | 264,453 | 264,626 | 264,359 | 1,040,554 |
| Total | 527,374 | 548,083 | 264,453 | 264,626 | 264,359 | 1,868,895 |

## 6.2 Current obligations

Allgas had a system that remotely read meters for its large customers >100TJ. This system was used to collect data from the installed interval meters for the large customers and from the sub-gate sites. The data collected was provided to the retailers.

## 6.3 FRC Obligations

There are significant changes to obligations under FRC. These affect systems and processes and will result in additional effort for Allgas

Allgas is obliged to install interval metering equipment on all customers who consume more than 10 TJ per annum within 2 years of market start. This will result in the installation of meter communications equipment at 84 customer sites where consumption is >10 TJ per annum.

Allgas is obliged to collect the interval data from these meters and to provide customer interval meter data along with gate station interval data to the market operator.

## 6.4 Impact of FRC

The introduction of FRC requires Allgas to provide remote meter reading facilities to all customer meters >10TJ per annum and to sub-gate sites. Further, a meter data collection system is required along with changes to the SCADA system.

This requires the installation of data loggers at 84 sites and correctors at 38 sites. In addition to the meters there are a number of changes required to the SCADA system, the SCADA communication system and the introduction of an interval meter data collection system.

The operational impact from these new and changed systems is the requirement to maintain the additional field hardware (interval meter data loggers, associated communications devices and correctors) and to operate the meter reading systems to ensure that meter data is collected in a timely manner.

## 6.5 Interval metering Capex review

Capital expenditure proposed by Allgas relating to interval metering is shown below.

| Interval metering capital expenditure $ | 2006/07 Actual | 2007/08 Forecast | Total Cost |
|---|---|---|---|
| Interval meter data loggers | | 300,967 | 300,967 |
| Interval meter correctors | 351,878 | | 351,878 |
| SCADA system works | 122,696 | | 122,696 |
| Interval meter data collection | 27,800 | | 27,800 |
| Project management costs | 25,000 | | 25,000 |
| **Total** | **527,374** | **300,967** | **828,341** |

Interval Meter Data Loggers

Allgas considered three options to collect interval meter data; manual reading of meters, expanding its current remote meter reading system and replacing the system. The existing data logging system was not performing well and was unreliable and consequently was unsuitable for use in an FRC environment. A process was undertaken to identify alternative gas interval meter reading systems and a shortlist of four possible suppliers was developed. From this shortlist Allgas chose a system based on technology, capability and price.

PB considers that it was appropriate to replace the existing meter telemetry system and to select a metering equipment supplier using the methodology applied by Allgas.

The forecast cost of interval meter data loggers on each of the >10 TJ per annum customers is $2,833 per site. In NSW PB estimates the capital cost of interval meter data loggers to be in the range $1,400 to $3,300 and in a recent FRC cost pass-through proposal Envestra proposed a cost of $2,500 per site. The system selected by Allgas is a different solution to the system selected by Envestra and therefore we would expect a different capital cost. While the Allgas capital cost is 13% higher than the equivalent Envestra cost, this is more than offset by Allgas's lower telecommunications operating costs. PB considers that the cost proposed by Allgas is comparable to that of Envestra and in the NSW range and therefore recommends that these costs should be included in the FRC cost recovery amount.

In addition to the cost of installing the interval meter data loggers at 84 sites, Allgas has proposed a minor amount for spare units ($14,165), additional sites over the next five years (10 sites totalling $28,330) and operating spares ($20,500). Each of these minor amounts are not material however they are consistent with expected requirements over the next 5 years and PB therefore recommends that these should also be included in the FRC cost recovery amount.

Interval Meter Correctors

Correctors are required on larger meters. Allgas has installed correctors on 31 sites > 100 TJ per annum and at 7 sub-gate sites. In addition, Allgas has capitalised the cost of spares required to maintain the units for the next 5 years. The installation of new correctors was necessary as the existing telemetry system on these very large customer sites was deemed unsuitable for FRC due to poor performance and unreliability. The cost per site for correctors installed by Allgas was $7,742.

Allgas entered into a contract with a supplier to supply and install the interval metering systems including the correctors. The contract resulted in an actual cost per unit installed of $7,742. This cost compares favourably with the cost of $9,450 proposed by Envestra in the 2007 FRC cost pass-through application.

In addition to the cost of installing correctors at very large customer sites and at sub-gate sites, Allgas has proposed expenditure of $57,689 for spares. This comprises five spare units totalling $38,709 and spare parts of $18,980. The cost of the supply and installation of the correctors and the proposed expenditure on spares compare favourably with costs proposed by Envestra for similar installations and are consistent with PB's understanding of the cost of installing this type of equipment. PB recommends that these should also be included in the FRC cost recovery amount

SCADA System Works

SCADA system works were completed using a two stage process. Stage 1 comprised a minor SCADA upgrade/relocation and an upgrade to City Gate and Heating Value calculations. Stage 2 included an upgrade to the SCADA communications system, development of procedures and the purchase of computer hardware. The total cost of the two stages was $122,696. The SCADA system is a specialised system that has a critical role in the operation of a distribution network. Modifications to the system require specialised knowledge and must be undertaken in a way that minimise any risk of system failure as the failure of a SCADA system can have large consequences. The costs of the works proposed by Allgas are not large given the specialist resources and comprehensive testing usually undertaken before SCADA modifications are implemented.

PB has reviewed the components of expenditure, the largest of which is $40,000 to upgrade the SCADA communications system. Expenditure of $40,000 to upgrade the communications system is not material in the context of the total proposed capital expenditure. The costs of the communications system upgrade and the cost of the other components of SCADA system works are consistent with PB's expectations for a project of this nature and therefore PB recommends that these costs should be included in the FRC cost recovery amount.

Interval Meter Data Collection System

Allgas has proposed expenditure of $27,800 to provide a system to collect interval data. It is common for utilities to spend several hundred thousand dollars on system to collect interval meter data. The cost proposed by Allgas is not material and, in PB's experience is modest in comparison to the expenditure of many other energy distributors. For example, a Victorian gas distributor sought

to recover costs of over 167,000 in 2002 for Gas Meter Reading Readiness[14]. PB recommends that the cost of the interval meter data collection system should be included in the FRC cost recovery amount.

Project Management

Allgas has spent $25,000 on project management associated with the installation of interval meter reading equipment and systems. Project management typically contributes 10% of the capital cost of a project. The amount proposed by Allgas equates to less than 5% of the capital cost (to 1 July 2007). PB therefore recommends that the cost of the interval meter system project management should be included in the FRC cost recovery amount.

## 6.6 Interval metering Opex review

Operational expenditure proposed by Allgas relating to interval metering is shown below.

| Opex $ | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|
| Telephone costs | 11,405 | 11,578 | 11,750 | 11,923 | 46,656 |
| Battery changeout | | 1,440 | 1,440 | 1,000 | 3,880 |
| Field technician | 108,127 | 108,127 | 108,127 | 108,127 | 432,507 |
| Administration | 41,184 | 56,909 | 56,909 | 56,909 | 211,910 |
| GasNet Administration / Support / Processing | 86,400 | 86,400 | 86,400 | 86,400 | 345,600 |
| **Total** | **247,116** | **264,453** | **264,626** | **264,359** | **1,040,553** |

Telephone Costs

The system used by Allgas to read interval meters utilises a commercial mobile phone system to provide communications between the meter and the Allgas office. The costs forecast by Allgas equate to $2 per week per meter and are consistent with mobile phone communication costs experienced by other utilities utilising mobile phone systems. Allgas has proposed a small increase in these costs each year to account for new customers expected to have interval meters installed. PB recommends that the telephone costs associated with interval meter reading should be included in the FRC cost recovery amount as they are consistent with mobile phone communication costs experienced by other utilities utilising mobile phone systems.

Battery Changeout

Allgas propose minor expenditure to replace batteries at the meter sites. It is highly probable that some batteries will require replacement over the forecast period and PB recommends that the minor cost of battery replacement proposed by Allgas should be included in the FRC cost recovery amount.

Field Technician

Allgas proposed expenditure of $108,127 per annum to secure a technician to maintain the interval metering telemetry systems. In a meeting with Allgas, PB questioned the basis of the estimate and Allgas agreed to review the forecast for

[14] Essential Services Commission, Gas Full Retail Competition Final Determinations, August 2002

this category of expenditure. Allgas has now advised that the forecast cost of a technician to maintain telemetry system is $90,000 per annum.

PB notes that this equates to an annual cost per meter of $737[15]. This is a significant amount for annual maintenance. The cost of providing and maintaining on-site data and communication equipment in NSW is $950 per site per annum. Allgas' cost of maintaining equipment (without the cost of providing equipment) is $737 per site per annum. The maintenance cost proposed by Allgas appears high compared to the NSW cost. Allgas has based its cost on the cost of employing a full-time technician for maintain these systems arguing that it is unlikely that Allgas would be able to secure a part time resource for this work. PB considers that it would not be prudent to employ a full time technician to maintain a small number of sites as it is likely that, if a full time technician were employed, that other useful work would also be undertaken by the technician and therefore the cost should be shared between the meter telemetry systems and the other work.

PB considers that an upper limit on the maintenance cost for telemetry systems would be the NSW cost of telemetry provision i.e. $950 per customer per year. The lower limit would be 10% of the installed capital cost, a figure commonly used for maintenance of electronic equipment i.e. $250 per customer per year. There are relatively low volumes of this type of equipment in Queensland and low experience levels and so we would not expect telemetry maintenance costs to be at the lower end of this range. PB considers a reasonable estimate of the maintenance cost of telemetry systems would be a point half way between the upper and lower limits i.e. $600 per customer per year.

PB recommends that the telemetry maintenance cost be allowed at $600 per customer per year giving a total of $73,200 per year.

Administration

Allgas propose administration costs of 2 hours per day at a cost of $41,184 in 2007/08 and $56,909 in subsequent years. PB anticipates that some administration will be required for the metering systems and that 2 hours per day is a reasonable allowance. However, if administration costs are $50 per hour, then the annual cost should be $25,000 per annum[16]. PB considers that the amount proposed for administration is high and recommends that administration costs of $25,000 per annum be included in the cost recovery amount.

GasNet Administration / Support / Processing

Allgas propose annual costs of $86,400 for GasNet to administer, support and process interval meter data. This equates to approximately $708 per meter per year. The Alinta Gas Network NSW charge for the provision of interval meter reading is $510 per customer per year. It can be expected that, as Allgas has a much smaller number of interval meters than Alinta in NSW, that its charge per customer will be higher than the NSW charge. The cost of administering, supporting and processing interval meter data is quite sensitive to meter volumes and experience. For example, the initial cost of reading and processing meter data for contestable electricity meters was in the order of $600 per year. Over time, with greater numbers of meters combined with the effects of competition

[15] Assuming 122 sites comprising 84 >10 TJ sites, 31>100 TJ sites and 7 sub-gate sites.
[16] Based on 250 working days per year.

and improvements in technology, PB understands that the annual charge for these contestable services has reduced below $200 per meter.

PB considers that the annual costs proposed by Allgas is reasonable given the volume of meters and therefore recommends that GasNet administration, support and processing costs of $86,400 per annum be included in the operating cost recovery amount.

In summary, the operational costs that PB considers should be included in the cost recovery amount are shown below.

| Opex $ | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|
| Telephone costs | 11,405 | 11,578 | 11,750 | 11,923 | 46,656 |
| Battery changeout | | 1,440 | 1,440 | 1,000 | 3,880 |
| Field technician | *73,200* | *73,200* | *73,200* | *73,200* | *292,800* |
| Administration | *25,000* | *25,000* | *25,000* | *25,000* | *100,000* |
| GasNet Administration / Support / Processing | 86,400 | 86,400 | 86,400 | 86,400 | 345,600 |
| **Total** | ***196,005*** | ***197,618*** | ***197,790*** | ***197,523*** | ***788,936*** |

## 6.7 PB recommendation: Interval metering

In summary, the costs that PB considers prudent and efficient incremental interval metering costs are:

**Table 6-2 PB recommended interval metering costs**

| $m (Dec 2006) | 2006/07 | 2007/08 | 2008/09 | 2009/10 | 2010/11 | Total Cost |
|---|---|---|---|---|---|---|
| Capex | 527,374 | 300,967 | | | | 828,341 |
| Opex | | 196,005 | 197,618 | 197,790 | 197,523 | 788,936 |
| **Total** | 527,374 | 496,972 | 197,618 | 197,790 | 197,523 | 1,617,277 |

# 7. FRC PROJECT BENCHMARKS

An additional tool available to assess the prudent nature of the costs included in the Allgas submission is comparison with like projects. There are few projects that have a similar scope of works and a similar scale to the project to implement FRC systems for gas in Queensland. We have selected projects where the scope is similar. This includes the gas FRC implementations undertaken by Envestra in Queensland, Victoria and South Australian.

The benchmarks for Capex, Opex and FTEs are shown in table Table 7-1 below. These benchmarks suggest that:

- The total Capex, Opex and FTEs proposed by Allgas are higher than the Envestra gas FRC implementation
- The PB recommended Capex per customer for Allgas is lower than two of the three reference FRC implementations
- The PB recommended Opex per customer is higher than the other gas FRC implementations
- The FTEs recommended by PB is similar to two of the three reference implementations but still at the upper end of the range.

**Table 7-1 FRC project benchmarks**

| Comparator | Allgas | | | | Envestra QLD [c] | | Envestra VIC [d] | | Envestra SA [e] | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Allgas proposed | PB Recommend | Allgas per customer | PB Recommend per customer | | Per customer | | Per customer | | Per customer |
| Number of customers | 68,212 | | | | 76,175 | | 498,098 | | 371,262 | |
| Total FRC Capex | $12.7m[a] | $4.4m [b] | $186 | $64 | $8.6 | $113 | $20.4m | $41 | $28.0m | $75 |
| Total FRC Opex per annum | $2.5m [a] | $1.5m [b] | $35.7 | $22.4 | $1.1m | $14.4 | $4.3m [d] | $9 | $5.0m | $13 |
| Number of FRC FTEs | 11.5 | 7.5 | 16.9 [f] | 11.0 [f] | | 9.2 [f] | 26 | 5.2 [f] | 41.5 | 11.2 [f] |

[a] *PB has reclassified LogicaGMC and Director, proj. mgr, bus. anal. from Opex to Capex for this analysis. This reclassification results in an increase in capital expenditure of $2.1m and an equivalent reduction in operational expenditure.*

[b] *PB has reclassified the recommended PB expenditure for LogicaGMC and Director, proj. mgr, bus. anal. from Opex to Capex for this analysis. This reclassification results in an increase in capital expenditure of $2.0m and an equivalent reduction in operational expenditure.*

[c] *Based on PBs recommended expenditure in the Review dated September 2007*

[d] *ESC allowed expenditure ($ 2003)*

[e] *ESCOSA allowed expenditure ($ 2004)*

[f] *Per 100,000 customers*

Benchmarks are only useful where there is an understanding of the factors that contribute to the differences between costs. For example, a benchmark for a particular business that is higher or lower than the average may not indicate that the business is efficient or inefficient but rather may signify some difference in the operating environment for that business.

The environment in which Allgas has implemented FRC is unique (as is the environment in most system implementations). We consider there to be several significant factors that will affect Allgas' FRC costs are:

- the number of customers;
- the staff, systems and processes that were in place prior to the commencement of FRC; and
- the approach that Allgas has taken to IT systems operations.

The number of customers affects Capex, Opex and FTE comparisons. Generally, it would be expected that a business with a smaller number of customers would be at the top end of the range for each of the Capex, Opex and FTE indicators as a proportion of all costs is fixed and efficiencies generally increase with larger numbers of customers. For example, if two billing FTEs are required to support a customer base of 100,000, you would not necessarily require two further billing FTEs for a customer base of 200,000. Similarly, you would not need to double the amount of office space required for a distributor's offices, whose customer base is twice the size of another. Allgas has the smallest number of customers in the reference group and consequently we would expect Allgas to be at the top end of the range for these comparisons.

A business that has recently implemented modern IT systems that can readily be reconfigured to accommodate FRC processes will have a much lower cost of implementation than a business that has very old systems (or no systems). A business with newer systems will have lower implementation Capex and is likely to have lower operating costs. Allgas started from a very low base and therefore we would expect its Capex to be higher than the reference group. If raw Capex is considered i.e. Capex before deducting the Capex allowed in the last Access Arrangement, then Allgas does have a higher Capex (given the relative size of the implementation) than the reference group. Similarly Allgas started with relatively unsophisticated systems and processes and we consider this is likely to contribute to higher Opex and FTEs than the reference group.

The final significant factor that affects Allgas benchmarks is the approach taken to IT systems operations. Most other FRC implementations involve new systems and extensive modifications to existing systems. When the new and modified systems have been implemented they are operated and maintained in-house. Allgas has elected to take a modern approach to operating and maintaining the IT systems and has the systems externally hosted. This results in an increase in Opex (as the payment for hosting the systems is Opex) and a reduction in Capex (as the facilities required to host the systems are not owned). We consider that this factor contributes to the higher than reference group Opex benchmark and also, to some extent, explains the relatively lower Capex benchmark[17].

In summary, we consider that the benchmarks for Allgas highlight a probable inefficiency in Opex if the Allgas proposal was accepted unmodified and that the

[17] Using the PB Recommended per customer benchmark.

benchmarks using the PB recommended expenditure are within an acceptable range given Allgas' FRC implementation environment.

# 8. TARIFF APPLICATION

Part of the scope of this review involves PB considering whether the proposed allocation of FRC costs between customer groups and the manner of recovery (e.g., fixed or variable charge adjustments) is reasonable. Our view has been formed without undertaking an analysis of the financial impact on customers.

PB understands that Allgas has some customers that are not covered by the current Access Arrangement. This report does not discuss the allocation of FRC costs to those customers.

Allgas has indicated that it intends to recover all costs associated with FRC through approved pass-through tariffs.

## 8.1 Tariff principles

The general principles that should apply to tariffs are contained in the Gas Code[18] and are extracted below.

***General Principles***

*8.1 A Reference Tariff and Reference Tariff Policy should be designed with a view to achieving the following objectives:*

*(a) providing the Service Provider with the opportunity to earn a stream of revenue that recovers the efficient costs of delivering the Reference Service over the expected life of the assets used in delivering that Service;*

*(b) replicating the outcome of a competitive market;*

*(c) ensuring the safe and reliable operation of the Pipeline;*

*(d) not distorting investment decisions in Pipeline transportation systems or in upstream and downstream industries;*

*(e) efficiency in the level and structure of the Reference Tariff; and*

*(f) providing an incentive to the Service Provider to reduce costs and to develop the market for Reference and other Services.*

## 8.2 FRC systems & processes

There are a number of activities associated with FRC which must be enabled or initiated by Allgas.

- Allocating and maintaining MIRNs
- Providing MIRN discovery
- Processing customer transfers

[18] *National Third Party Access Code For Natural Gas Pipeline Systems 1997*

- Reading daily read meters
- Special reading meters
- Transferring meter readings to retailers
- Receiving and responding to service orders from Retailers
- Billing retailers for network charges

In establishing the systems and processes required for a network to participate in an FRC market it is necessary for a distributor to make fundamental changes to the way many network functions are carried out. Some functions, such as allocating and maintaining MIRNs, and receiving and responding to service orders delivered via the market system, are required even if no customer transfers to another retailer. The cost of developing, maintaining and operating these systems is a significant proportion of a distributors total FRC cost.

Allgas is planning to implement an integrated set of systems and processes that will require minimal additional intervention to perform the activities that are directly attributable to a customer transferring to another retailer. There is very little incremental cost to Allgas to undertake an activity such as transferring a customer. Most of Allgas' FRC costs are IT systems, support for those systems and the cost of staff required to process the volume of transactions that arise from operating the systems. Due to the design of the systems these costs are largely fixed. The costs will vary with the total number of customers but will not vary greatly with the number of customers that transfer to other retailers.

Our analysis of FRC activities concludes that the majority of the cost of FRC is fixed, and while some component is variable, such as processing churn transactions, this is a small proportion of the overall cost of FRC. We estimate that, over the period considered from 2006/07 to 2010/11, approximately 5% of the cost (excluding telemetry) is variable[19].

## 8.3 Cost allocation options

Allgas has proposed the introduction of new charges to recover the cost of introducing FRC. These charges are to be levied in addition to the existing tariffs for use of the gas distribution system. There are several ways these tariffs could be constructed to recover the costs of FRC as listed in the following points:

- Costs could be recovered on a "per transaction basis". Allgas would levy a charge for each FRC related transaction, such as a customer transfer.
- A fixed charge could be levied on each customer.
- A variable charge could be levied based on gas consumption.
- Large customers could be levied based on Maximum Daily Quantity (MDQ).
- Or, any combination of the above.

[19] Where the cost will vary in relation to the volume of FRC transactions (primarily churn and billing transactions)

### 8.3.1 Per transaction

Charging on a "per transaction" basis appears desirable as it meets the principle of replicating a competitive market and appears simple and transparent. There are two significant issues that mitigate against charging on this basis.

Firstly, the collection of transaction types and volumes, and billing retailers based on these transactions is likely to require significant IT system enhancements and will be expensive. Secondly, the nature of the systems to be implemented, which fundamentally changes many of the basic business processes, makes the allocation of costs to particular transactions problematic. For example, it raises the question of whether a meter reading for a customer who has not transferred to another retailer should have the same transaction cost as a meter reading for a customer who has transferred to another retailer. As the cost of charging on a "per transaction" is likely to be significant, the selection of transactions to be charged is not straightforward, and there are viable alternative methods of charging for FRC. PB does not recommend a per transaction tariff method be adopted.

### 8.3.2 Fixed charges

Where costs can be directly attributed to a customer, or group of customers, then the principle of replicating the outcome of a competitive market is best met by allocating the costs to those customers.

The costs of FRC are difficult to attribute to any specific group of customers as, to a great extent, they take the form of market enabling costs. The primary costs of FRC are the costs of the IT systems, the costs of operating those systems and the cost of processing transactions through those systems. The cost of maintaining a MIRN in the systems, processing a transfer, undertaking a special meter read or billing a retailer is the same whether the customer is small or large. Given this, one method of allocating costs would be to distribute the IT and processing costs evenly across all customers.

Allocating costs in the form of a fixed charge, evenly across all customers would result in a relatively large increase in cost for very small customers (in proportion to their total gas supply charge) and a negligible increase in cost for large customers.

One area of cost that can be directly attributed to a group of customers is the cost of telemetry. Very large customers (>10 TJ per annum) are required, by the market rules, to have meters and telemetry so that the market can be efficiently settled. As the costs of telemetry can be directly attributed to these large customers, the Gas Code Tariff principles are met by allocating the costs to this group of customers.

### 8.3.3 Variable charges based on consumption

While all customers should receive some benefit from FRC, some customers will receive a greater benefit than others. The primary benefit of FRC is competitive retail pricing which will either reduce the price or constrain the rate of any increase in the price of gas. Those customers that consume the most gas will therefore receive a greater benefit than those that consume little.

Large customers (>1 TJ per annum) are already contestable and therefore can argue that they receive little, or no, benefit from the introduction of FRC. This

group of customers should receive some limited benefit from the introduction of FRC through increases in the level of competition brought about by an increase in the number of retailers and through improvements in the availability of data relating to their consumption through the introduction of telemetry.

Allocating costs based on consumption alone would involve the introduction of a $ per GJ charge. The result of such a charge would be that larger customers would pay the bulk of the cost of FRC. This method of allocation might result in these larger customers paying more for the costs of FRC than the benefit they receive.

The benefit of allocating some of the cost of FRC on the basis of consumption is that the cost is allocated to those customers that receive the greatest benefit. The group of customers that receive the greatest benefit are the group that are more likely to accept the cost of FRC.

### 8.3.4 Charges based on MDQ

Charging customers on the basis of MDQ will result in customers contributing to the cost of FRC based on their size. If Allgas has a small number of very large customers, charging on the basis of MDQ would result in a small number of customers paying a significant proportion of the cost of FRC. Very large (Tariff D) customers are already contestable and will receive some, but not significant, benefit from the introduction of FRC. Much of the cost of FRC is the systems and processes to handle large volumes of transactions such as service orders and MIRN allocations. A large customer is likely to generate a similar number of these transactions as a small customer (with the exception of daily meter data). As Tariff D customers are already contestable and will gain little from the introduction of FRC, the use of this charging methodology is likely to result in a few large customers paying a significant proportion of the fixed costs of FRC. PB does not recommend the charge based on MDQ tariff method be adopted.

## 8.4 Tariff structure summary & recommendations

A number of potential methods of allocating the costs of FRC to customers have been identified. None of the methods used alone results in cost allocation that is both cost-reflective and recognises the benefits that various classes of customers will receive from FRC. It is therefore concluded that an appropriate tariff structure will necessarily contain elements of each of the identified forms of charging.

PB observes that:

- Allgas' cost of systems and processes required for FRC are largely fixed.
- All customers have the potential to receive some benefit from FRC.
- Those customers that have larger consumption (and are not already contestable) are likely to have a greater benefit from the introduction of FRC than smaller customers.
- Very large customers are already contestable and therefore will gain little from the introduction of FRC.
- No customer, large or small, is likely to willingly agree to additional charges to cover the cost of FRC.

PB therefore considers that an appropriate tariff structure would:

- Recover some cost from all customers regardless of size.
- Recognise that some customers receive greater benefit from the introduction of FRC than other customers and therefore these customers could make a greater contribution to the cost.
- Recognise that very large customers are already contestable and do not greatly benefit from the introduction of FRC.

Allgas has proposed a tariff structure that recovers all FRC cost using fixed charges as shown below.

| | | | | |
|---|---|---|---|---|
| Tariff V customers | $119.02 | $141.83 | $25.77 | $24.84 |
| Tariff D customers | $6,899 | $7,495 | $3,160 | $3,160 |

Allgas has not provided an explanation of the allocation of costs between the two categories of customer. However, Allgas has noted that the largest customers already have retail competition and therefore they do not intend to subsidise the cost of FRC to small customers by allocating a greater proportion of cost to large customers.

The tariff structure proposed by Allgas recovers the cost of FRC using fixed charges. As noted above, the costs of FRC are largely fixed and therefore the methodology proposed by Allgas is consistent with the nature of the costs. PB has a preference to recover costs using both a fixed and variable component (as described below). However, the approach proposed by Allgas appears acceptable.

PB recommends that the Authority requests Allgas to provide the basis of the allocation of costs between Tariff V and Tariff D customers, and provided this basis is sound, the Authority should accept the form of tariff proposed by Allgas.

## 8.5 PB preferred tariff structure

PB considers that the size of the fixed and variable charges should be determined based on an analysis of the impact of the charges on various customers. This analysis can only be undertaken after a conclusion has been reached on the total size of the costs to be recovered. Determining the proportions of fixed and variable charges will necessarily require a level of judgement.

Before determining the proportion of fixed and variable charges, it is recommended that a number of scenarios are considered with varying proportions of fixed and variable charge. One such scenario could consider distributing capital costs on a fixed basis and operating costs on a variable basis. Another consideration should be the extent to which existing tariffs are cost reflective. For example, if the existing tariffs for small customers do not fully recover the costs attributable to these customers then a larger proportion of fixed charges could be considered.

One issue with this approach is the impact of the variable cost allocation on customers that are already contestable. Some of these customers are on the demand tariff (Tariff D) and others are on the volume tariff (Tariff V). PB

considers that all customers should contribute to the cost of FRC systems regardless of size. However, we also recognise that these customers already enjoy the benefits of competition and therefore have little to gain from FRC. As discussed earlier, a variable cost based on consumption will result in these customers bearing much of the cost of FRC. Under the tariff structure proposed by Allgas the largest of these customers (Tariff D customers) will contribute to the costs of FRC by paying for telemetry.

In selecting the value of fixed and variable charges to apply to Tariff V customers, it will be necessary to ensure that those customers that are large customers, but smaller than Tariff D, do not contribute more to the cost of FRC than Tariff D customers. This could be achieved either through the selection of a variable tariff component that results in charges for the largest Tariff V customers no greater than the proposed fixed charge to Tariff D customers, or through increasing the fixed charge to Tariff D customers to recover more than the telemetry costs.

## APPENDIX A – System Impacts of FRC Introduction

**INTERNAL SYSTEMS:**

These are in-house systems (i.e., business processes, information technology) that would need to be either modified or introduced for all FRC related activities and communications with external parties.

- DATA TRANSLATION FOR ALL INTERFACES. The existing data of distributors and retailers would need a process to allow it to be translated into and from formats used to interface and transmit to third parties.

- DATABASE ENHANCEMENTS. A number of existing databases, e.g. customer information, installation information, would need to be enhanced specifically for the duties to be performed by the distributors and the retailer respectively. For example, the distributors may have physical installation specific data of the customer and the retailer would need to know the billing address as well as the installation address.

- ADJUSTMENTS TO METERING INSTALLATION DATABASE. All relevant metering data to establish unique site installation would need to be added to the database and may include such information as gate supply point, alternative supply, etc.

- ADJUSTMENTS TO DISASTER RECOVERY SYSTEMS. A disaster recovery system that on recovery would allow the respective distributors and retailers to continue their businesses as normal as if no “disaster” has occurred. Consideration of external parties is unlikely to currently be part of such plans.

- CALL CENTRE AND CUSTOMER SUPPORT MODIFICATIONS. Both the distributors and the retailers may run their individual call centres and the modifications to these centres and the staff training required would be tailored to their customer requests.

- AGGREGATION OF CONSUMPTION DATA. This is the reconciliation processes from the metering data received through to processing the data to provide information for billing, wholesale reconciliation, etc.

- MANAGING CUSTOMER TRANSFER. The processes that the distributor would need to notify previous and new retailers of any customer churns and the ability of retailers to ensure proper billing and final reconciliation are accurately completed in a timely manner.

**B2B:**

The introduction of FRC will be reliant on effective B2B transactions, both from a commercial and regulatory perspective. A B2B transaction is defined as any transaction that occurs between two or more businesses. The interface may be manual (i.e. paper based) or electronic. Costs associated with development of any B2B transaction via any B2B interface, should be noted for the following sub-activities.

- BUILD/OPERATE B2B FAULTS & OUTAGES. A process that either interacts with or provides details on current faults and outages affecting a particular business.

- BUILD/OPERATE B2B METER DATA INTERFACES. A process that either sends or receives meter reading data between businesses.

- BUILD/OPERATE B2B PLANNED WORKS. A process that either interacts with or provides details on planned outages due to maintenance or other factors.

- BUILD/OPERATE B2B CUSTOMER RELATED INTERFACES. A process that either interacts with or provides end-user customer details between two businesses.

- BUILD/OPERATE B2B BILLING INTERFACES. A process that either interacts with or provides billing (invoices) between businesses.

- BUILD/OPERATE B2B CONNECTIONS. A process that either interacts with or provides customer connections or disconnection requests.

- BUILD/OPERATE B2B MISCELLANEOUS INTERFACES. Any business to business interaction not covered by any of the above.

**METERING AND DATA:**

Metering and Data encompasses the measurement and control processes that lie between the point of measurement and the reconciliation processes required for market settlement under FRC.

- MIRN ALLOCATION AND SITE IDENTIFICATION. Allocation and identification of all installations including collation of all required site information for uploading into the Registry

- UPLOAD MIRN DATA INTO REGISTRY. Prior to commencement of FRC, the Registry will require population with MIRNs. Maintenance of MIRN data on an ongoing basis, once loaded, is also required.

- TRANSFER COSTS FOR TRANSFERRING METER DATA TO OTHER PARTIES. Prior to commencement of FRC, existing meter database(s) information will need transferring to Responsible (and interested) Parties.

- MANAGE METERING INSTALLATION REQUESTS FROM ALL PARTIES. As metering is changed, due to tariff change, regulatory requirements or maintenance, all parties will require an involvement. This will likely require linkage arrangements from metering database(s) via B2B.

**CONTRACTUAL AND POLICY:**

Contractual and Policy encompasses the activities of formalising the entry into FRC, the modification (or establishment) of System Use Agreements (if any) or other Contractual arrangements between parties.

- MODIFICATION OF SYSTEM USE AGREEMENTS TO ACCOUNT FOR FRC. Existing System Use agreements, where they are required, will need to be modified (or in all probability, created) for defining responsibilities between Distributors and Retailers under FRC.

- DEVELOP CONTRACTUAL ARRANGEMENTS WITH PARTIES AS REQUIRED. Contractual arrangements with new parties are likely under FRC. These would likely be meter leasing, meter services, data services, connection services agreements with parties outside the traditional host areas.

- MODIFICATION OF END-USE SERVICE AGREEMENTS TO ACCOUNT FOR FRC. End-Use service agreements will currently only likely recognise the embedded nature of customers. There will be a need in some cases to review and reform these agreements to align with FRC requirements.

**BILLING:**

Billing encompasses the retail (and inter-party) invoicing system alterations required to accommodate FRC. From a Distributor perspective it encompasses the requirements of the FRC environment to include multiple Retailer invoicing.

- ADJUSTMENTS TO BILLING SYSTEMS. Billing systems will require adjustments to accommodate, MIRN linkage to account information and similar. Distributors will need to adjust any billing system to track conveyance costs and reconcile to correct Retailers at MIRN and Gate levels.

- MANAGE MULTI-CLIENT BILLING. Multi-Client billing management will encompass Distributors correctly identifying and managing multiple Retailers on their Gas Network.

- MANAGE CREDIT AND COLLECTIONS. Distributors will need to manage credit collection. At Distributor level Retailer credit management will be required (in particular with any new niche market Retail operations)

- MANAGE BILL DISPUTES AT MIRN LEVEL. Management of disputes at DPI level will be dependent on any System Use arrangements, but is likely to involve setting up procedures to co-ordinate resolution of disputes where both parties are involved.

- PROFILING. The sub-activities involved under this heading are the creation, maintenance and management of deemed or residual Gate profiles, and the reconciliation of data derived from them for account generation (where required).

- RECONCILIATION OF NON INTERVAL METERING LOSSES. Reconciliation of non-interval metering losses relates to any procedures required to correctly assign Gas Network losses to Retailer consumption data derived from FRC related metering data resulting from profiling activities. It should assign correct loss information to the appropriate deemed profile, if any.

- CALCULATION OF NON INTERVAL METERING LOSS INFORMATION. Calculation by Gas Distributors of the necessary loss factors that non interval data requires to achieve required accuracy of reconciliation data creation for use by the aggregation processes involved with Internal Systems.

**FRC COMPLIANCE**

FRC Compliance encompasses those activities related to the high-level or strategic management of the FRC implementation processes.

- PROJECT MANAGEMENT. The high-level project management activities associated with controlling, directing and monitoring the implementation of FRC related activities. The included activities will be those that are not

captured as part of individual project costs, but rather represent the company-wide project management of the FRC implementation.

- CHANGE MANAGEMENT. Change management is a term that has widely varied understandings. For the purposes of the FRC Cost Recovery Project, change management is deemed to relate to those activities performed at a corporate or strategic level to review the required change, implement change procedures and monitor change progress. As with project management, change management should not capture the operational or low-level activities associated with the individual FRC projects, but rather represent the company-wide change management of the FRC implementation.

- GOVERNANCE. Corporate governance activities associated with the implementation of FRC. By definition, governance refers to the activities of the company directors with relation to strategy, performance, conformance and accountability. For the purposes of this study we wish to capture these activities and costs as they relate to the implementation of FRC.

- BUSINESS RULES AND MARKET CODE COMPLIANCE. Costs associated with the participation (where required) and attendance (where required) in the determination, review and integration of business rules. Also included is the establishment of business compliance with market codes related to FRC implementation.

**APPENDIX B – Information Technology Sector Commentary**

**- Hays Information Technology – 2007 remuneration review**

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