Final Report for Western Australian Independent Gas Pipelines Access Regulator

Review of the Specification and Costing for the Network Management Information System Proposed by AlintaGas Networks Pty Ltd

Prepared by Evans & Peck

November 2002

EXECUTIVE SUMMARY

Evans & Peck was engaged by O*ff*GAR, to assist in examining the functional specification and estimated costs proposed by AlintaGas Networks Pty Ltd (AGN) for their Network Management Information System (NMIS), to determine if they are requisite for the gas distribution network business seeking to implement Full Retail Contestability (FRC).

Areas reviewed included the proposed NMIS system implementation, tender/bidding processes, the software functional specification, the estimated capital costs, the estimated operational costs, the technical architecture and the suppliers to implement and support the system.

The proposed solution will be implemented through upgrading and expanding the existing customer information system, CIS Open View (supplied by Severn Trent Systems of the UK) and currently used by AlintaGas Sales (AGS) to support their existing meter reading and billing of customers. The upgrade will enable CIS OV to support the functionality essential to enable FRC and will include establishing a second "company" within CIS OV, which will enable the NMIS operation (and data held) by AGN to be totally separate from AGS and equally, CIS OV operation by AGS (and data held) to be totally separate from AGN.

Because the NMIS implementation strategy is based upon upgrading an existing software application, this will minimise costs and achieve economies of scale compared to purchasing an entirely new application. Furthermore the estimated expenditure has been calculated such that AGN only seeks approval for NMIS related capital and operational costs and adequate "ring fencing" is in place to avoid or minimise benefits being derived by associated companies.

The proposed NMIS solution will support either several or many thousands of gas consumers and users and it is therefore appropriate for forecast services needed over time.

The functionality of NMIS is appropriate for FRC and its interfaces to other organisations participating in the market (and their systems) such as retailers and the market administrator, will be via the Internet. It may be possible to use an intranet in place of the Internet, to exchange information with NMIS, however this needs further analysis to determine if AGN's associated companies may receive particular benefits compared to other companies when using this approach.

AGN have sought approval for estimated Capital Costs of $10M to implement NMIS for FRC and sought a non-binding acknowledgement that estimated Non Capital Costs of $1.1M for FRC are likely to meet the requirement of the *National Third Party Access Code for Natural Gas Pipeline Systems* (the Code).

As such Evans & Peck conclude the following:

1. The NMIS specification which AGN intends to commission is prudent and requisite for FRC for the Mid-West and South-West Gas Distribution Systems and meets the requirements of section 8.16 of the Code.

2. The new capital expenditure will enable the upgrading of the existing CIS OV used by AGS, to enable it to provide NMIS functionality for FRC. Because of the upgrading of software that AGS will continue to use (CIS OV), this will provide a small benefit to AGS. However because this is the lowest cost approach to implement NMIS, the benefits all retailers will receive outweighs the initial small benefit AGN's associated companies will receive.

3. The tendering/bidding processes undertaken by AGN is efficient and satisfies section 8.16 of the Code and will deliver outcomes consistent with sections 8.16(a) and 8.17 of the Code.

4. The resources AGN has estimated to operate and maintain the new NMIS are consistent with the resources needed, after taking into account the resources required for maintaining and operating existing systems. Therefore the estimates AGN has prepared for FRC Non Capital Costs are prudent and likely to satisfy section 8.37 of the Code.

Table of Contents

1. INTRODUCTION

1.1. BACKGROUND TO REPORT

With the introduction of Full Retail Contestability (FRC) in the Western Australian gas market, costs will be incurred by participants in the gas industry in establishing new systems to allow participants to operate effectively. Participants likely to incur such costs will be distribution businesses, retailers and other organisations.

Under the *National Third Party Access Code for Natural Gas Pipeline Systems* (**the Code**) organisations providing services using "Covered Pipelines" are able to apply to the Western Australian Independent Gas Pipelines Access Regulator for approval of certain estimated costs that will be incurred to enable full retail contestability (**FRC**).

AlintaGas Networks Pty Ltd (**AGN**), the owner and operator of the Mid-West and South-West Gas Distribution Systems (**GDS**) (**"Covered Pipeline"**), has made application to the Regulator for approval of estimated capital costs associated with the development, acquisition and implementation of a Network Management Information System (**NMIS**) needed to support FRC in the retail market. It has also sought the Regulator's non-binding acknowledgement that costs associated with the operations and maintenance of the NMIS are likely to satisfy section 8.37 of the Code.

1.2. SCOPE OF REPORT

Evans & Peck was engaged by O*ff*GAR, to assist in examining the functional specification and estimated costs proposed by AGN for the NMIS and the processes used in estimating these costs, to determine if they are requisite for the gas distribution network business seeking to implement FRC.

The review conducted by Evans & Peck examined AGN's proposed new NMIS in the following four areas:

- Tender/Bidding Processes used
- Functional Specification
- Estimated Capital Costs
- Estimated Operational Costs

2. EVANS & PECK APPROACH TO ASSIGNMENT

2.1. INFORMATION GATHERING

The approach used by Evans & Peck in examining the four areas was to review information contained in documentation made available by O*ff*GAR and AGN and information gathered through interviews with AGN staff, their NMIS project consultant and the Systems Integrator AGN selected to build the NMIS. Information made available was assumed to be correct but was validated where possible against comparative measures of processes and costs that would reasonably be used or incurred in establishing new complex IT systems in a commercially competitive manner. As such, primary sources of data and underlying detailed spreadsheets calculating costs or work effort were not examined item by item, but were assumed to be valid and correctly summarised in the reports made available.

Selected items within the AGN master project plan were viewed electronically to determine how AGN staff time was allocated and costed, but it was not possible in the time available to verify staff time allocated against each of the tasks as being reasonable. As a result, it was the overall effort and costs for major activities that was assessed and not the detailed breakdown. (an extract of the project plan is contained in Attachment 13 A and 13 B).

2.2. CONFIDENTIAL INFORMATION

Some of the information made available by AGN is commercial “in confidence” and not available for publication. The Confidential Attachment, whilst having been made available to the Regulator, is not included with publicly accessible copies of this report.

3. REQUIREMENTS OF THE CODE

3.1. SECTIONS OF THE CODE RELEVANT TO THE REVIEW

To put this report in context, the relevant sections of the Code are stated below. This is not a complete listing of all of the provisions in the Code that may be relevant, but serves to highlight the key issues to be considered in preparing this report.

The Code currently applies to five pipelines in Western Australia, which are referred to as "Covered Pipelines", one of which is the gas distribution network operated by AGN called the Mid-West and South-West Gas Distribution systems. Other pipeline systems operated by AGN, such as Albany and Kalgoorlie pipeline networks, are not regulated by the Code.

Key sections of the Code relevant to this review are presented below.

3.2. NEW FACILITIES INVESTMENT

"**Section 8.16 of the Code**

The amount by which the Capital Base may be increased is the amount of the actual capital cost incurred (New Facilities Investment) provided that:

(a) 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 delivering Services; and

(b) one of the following conditions is satisfied:

  (i) the Anticipated Incremental Revenue generated by the New Facility exceeds the New Facilities Investment; or

  (ii) the Service Provider and/or Users satisfy the Relevant Regulator that the New Facility has system-wide benefits that, in the Relevant Regulator's opinion, justify the approval of a higher Reference Tariff for all Users; or

  (iii) the New Facility is necessary to maintain the safety, integrity or Contracted Capacity of Services."

"**Section 8.17 of the Code**

For the purposes of administering section 8.16(a), the Regulator must consider:

(a) whether the New Facility exhibits economies of scale or scope and the increments in which Capacity can be added; and

(b) whether the lowest sustainable cost of delivering Services over a reasonable time frame may require the installation of a New Facility with Capacity sufficient to meet forecast sales of Services over that time frame."

Comments on 8.16 and 8.17

These sections describe how the "Capital Base" may be increased by the actual capital cost incurred for "New Facilities Investment" and the costs must not exceed what would be incurred by a prudent service provider acting efficiently and in

accordance with good industry practices. The cost of new facilities which increase the capital base may, for example, justify approval of a higher "Reference Tariff", if the new facilities provide system-wide benefits, or may be necessary to maintain the safety and integrity of services.

3.3. FORECAST CAPITAL EXPENDITURE

"**Section 8.21 of the Code**

If the Relevant Regulator agrees to Reference Tariffs being determined on the basis of forecast New Facilities Investment, this need not (at the discretion of the Relevant Regulator) imply that such New Facilities Investment will meet the requirements of Section 8.16 when the Relevant Regulator considers revisions to an Access Arrangement submitted by a Service Provider. However, the Relevant Regulator may, at its discretion, agree (on written application by the Service Provider) at the time at which the New Facilities Investment takes place that it meets the requirements of section 8.16, the effect of which is to bind the Relevant Regulator's decision when the Relevant Regulator considers revisions to an Access Arrangement submitted by the Service Provider. For the purposes of public consultation, any such application must be treated as if it were a proposed revision to the Access Arrangement submitted under section 2.28."

Comment on 8.21

This section, *inter alia*, enables the Regulator to agree at the time at which the New Facilities Investment takes place that it meets the requirements of section 8.16, the effect of which is to bind the Regulator's decision when he considers revisions to an Access Arrangement submitted by the Service Provider (i.e. AGN).

3.4. NON CAPITAL COSTS

"**Section 8.37 of the Code**

A reference tariff may provide for the recovery of all Non Capital Costs (or forecast Non Capital Costs, as relevant) except for any such costs that would not be incurred by a prudent Service Provider, acting efficiently, in accordance with accepted and good industry practice, and to achieve the lowest sustainable cost of delivering the Reference Service."

Comment on 8.37

This section states that a "Reference Tariff" may provide for the recovery of non capital costs which a Service Provider prudently incurs. Therefore ongoing operational costs incurred as a result of building new facilities (a one-off cost which increases the "Capital Base"), may possibly be recovered if such costs would be incurred by a prudent Service Provider acting in accordance with accepted and good industry practise to achieve the lowest sustainable cost of delivering the Reference Service.

4. AGN TENDER/BIDDING PROCESSES

4.1. CODE REQUIREMENTS

The National Third Party Access Code for Natural Gas Pipeline Systems requires, New Facilities Investment to comply with the provisions of Section 8.16 and 8.17 of the Code (refer Chapter 3 of this report).

O*ff*GAR requested Evans & Peck to address whether the tendering/bidding process undertaken and to be undertaken by AGN for committing capital expenditure on the NMIS is efficient and satisfies the requirements of Sections 8.16 and 8.17 of the Code. (See Confidential Attachment 3 for O*ffGAR*, Terms of Reference)

4.2. AGN DOCUMENTS REVIEWED

The tendering/bidding processes undertaken by AGN for committing capital expenditure on the NMIS were reviewed by Evans & Peck by reference to the following documents made available by AGN:

- Advertisement in the Weekend Australian Newspaper of 12 January, 2002 (page 39) calling for proposals to build the NMIS;
- AlintaGas, Network Management Information System, Request for Proposal dated January 2002;
- AlintaGas Regulatory Affairs document, titled "Scoring Criteria for Evaluation of Proposals", document reference 162 P1 NMIS RfP Scoring Criteria vii.doc, dated 24 Jan 02;
- AlintaGas Regulatory Affairs document, titled "Alinta Gas Networks, Network Management Information System – Evaluation of Proposals, document reference 162 P3 NMIS Evaluation Report v14 final.doc, dated 6 May 02;
- Electronic document, reference 162 xl NMIS RfP Evaluation All v19final, being a suite of Microsoft Excel spreadsheets used for the valuation of proposals and including:
  - Life Cycle Costs;
  - Summary of Comparative Prices;
  - Details of Individual Tender Prices;
  - Consolidated Scoring Schedules, for each bidder;

- Correspondence from 5 March 2002 to 3 May 2002, mainly in email format, constituting clarification questions from AGN and responses from Logica and STS;

- AlintaGas, Network Management Information System, Overview of the Selection process:

  Author: Justin Scotchbrook
  Date Prepared: 6 August 2002
  Version: 1.0

4.3. THE TENDER PROCESS

AGN adopted a competitive tender process for the selection of a proponent to commission the NMIS. This is demonstrated by:

- publicly advertising, on 12 January 2002, in a national newspaper, an invitation for "competent vendors to propose for providing products and services to support its network management information systems needs";

- issuing to 27 interested organisations Request For Proposal documents with a proposal closing date of 1 February 2002. This date was subsequently extended to 11 February 2002;

- advising potential proponents, in the RFP document, of the evaluation criteria to be adopted in assessing the proposals received;

- establishing an evaluation panel comprising three AlintaGas managers and one consultant to assess the proposals received; and

- determining the method and the criteria by which the proposals would be evaluated prior to any of the proposal being examined.

4.4. THE EVALUATION PROCESS

The evaluation methodology followed by the evaluation panel, as described in the Evaluation Report, included:

- evaluation panel members individually scoring the seven compliant proposals received against the pre-determined evaluation criteria, prior to determining consolidated scores in committee;

Note: Evans & Peck has been provided with the final consolidated scores in Microsoft Excel spreadsheet format. However the original individual scoring records were not retained and/or provided. Evans & Peck is, therefore, unable to

comment on the spread and consistency of the scoring by individual panel members and how these scores relate to the consolidated scores arrived at in committee.

- several proponents being requested to clarify some of their responses. The evaluation panel evaluated such clarification collectively and adjusted the scores as they considered appropriate;
- critiques of each of the proposals received were prepared and are included in the Evaluation Report. These critiques addressed the scoring criteria, viz:
  - Services proposed;
  - Supply systems infrastructure;
  - Systems operation;
  - Timescales;
  - Costs;
  - Description of Application Systems proposed; and
  - Respondent's Credentials.
- determining the one-off and recurring costs of each proposal, including any extra costs that AlintaGas would have to pay direct to other service providers.

4.5. THE RESULT OF THE EVALUATION

Of the seven compliant proposals received one proposed to act as a subcontractor to other proponents who would provide the other products and services to meet AGN's total requirements.

Three proposals (from the six remaining head contractor proponents) were rejected by the evaluation panel because they scored considerably lower than the three leading proponents.

The cheapest of the three leading proponents (ranked second in collective scoring) was perceived by the evaluation panel to be deficient in:

- being based upon a substantial underestimate of the work involved and carrying the risk of price rising;
- lacking experience in building systems for deregulated energy markets with the consequent risk of late delivery; and

- having a limited number of experienced specialist consultants and systems development staff available in Australia.

This proposal was therefore also rejected and the remaining two proponents were short listed to make detailed presentations to the evaluation panel.

The evaluation panel's subsequent recommendation to engage Logica as prime contractor with Severn Trent Systems as a subcontractor is fully documented with supporting details in the Evaluation Report.

4.6. CONCLUSION

Evans & Peck is of the opinion that the tender/bidding processes adopted and implemented by AGN were competitive so as to deliver outcomes whereby costs identified by AGN in the tendering process for the NMIS specification may be deemed consistent with sections 8.16(a) and 8.17 of the Code.

5. AGN PROPOSED NMIS SOLUTION

5.1. HIGH LEVEL ARCHITECTURE

AlintaGas Sales (AGS) currently operates a Customer Information System (CIS), supplied by Severn Trent Systems (STS) of Birmingham in the UK, called CIS Open Vision (CIS OV) to support existing retail tariff customer service and billing requirements. As a result of the tender process described above, AGN propose building the new NMIS by upgrading the CIS OV to support FRC requirements. The FRC upgrade is a standard upgrade from STS to allow network data collection and charging. For example, the existing CIS OV collects meter data and presents one bill per customer with typically one line item, that being the gas consumption and costs for the billing period for the retail customer. One bill is generated each billing period for each of the 450,000 existing retail customers.

However, network charging requires a different approach to billing. Each user of the network, such as the gas retailer, will receive one bill containing a line item for each customer the retailer provides gas to. Therefore if there are two gas retailers, two bills are generated, each bill potentially containing hundreds of thousands of line items. Furthermore, the network billing system must calculate the daily quantity of gas carried by the network for each retailer. The FRC upgrade to the CIS OV provides this capability together with the other functionalities needed for contestability, such as to allow customers to change retailers and so forth.

To maintain "ring fencing" a second "company" can be established within CIS OV, such that AGS and AGN will, whilst sharing a single software "instance" of CIS OV, be independent in terms of data and user access. Access restriction between retail and network will be maintained by using Oracle Roles. Each customer address record will occur twice in the Oracle data-base, once in the retail data set and once in the network data set. Oracle Roles will prevent a retail CIS OV user accessing network data, and network CIS OV users accessing retail data in the database.

Transaction volumes of the NMIS are expected to be:

Sub Networks	22
Retailers	10
Non Interval Meters	500,000
Interval Meters	500
New delivery points	300 daily
Change retailer register	1000 daily
Annual growth	5%

More details of the proposed architecture are contained in Attachment 1 Part 3.

5.2. INTERNET VERSES INTRANET

A high level schematic of NMIS and its interfaces is shown below. The interfaces shown will be implemented using the Internet. Each retailer and the Retail Market Administrator will therefore use a standard protocol and format for exchanging information with AGN.

Information exchange between NMIS external systems and the market hub over the internet will use File Transfer Protocol (FTP) and the Internet Protocol (IP). IP can operate over either public networks, such as the Internet and over privately operated and restricted intranets. Intranets can also be built using Virtual Private Networks (VPN) using public data carriage services such as Digital Subscriber Lines (DSL) and other broadband services which the telcos provide. NMIS can therefore use either the Internet or intranets for information exchange and AGN has indicated it hopes to use its existing intranet for AGS to access NMIS.

If AGN allows AGS to use an intranet (to communicate with AGN) and for other retailers and external organisations to instead rely upon the public Internet, this may create certain differences in access and performance which would arise if the public Internet failed, whilst the private intranet continues to operate. Intranets are generally built upon private telecommunications facilities and are less prone to failure compared to public accessible information exchange systems.

Internet based interfaces (to exchange information with private business applications such as NMIS) can be prone to failure, such as through cables being damaged by road excavation or through the public data switches being overloaded by high traffic volumes generated by other Internet uses.

Using a VPN is one method for improving the performance of Internet based systems by reducing the interference that other Internet users may otherwise generate.

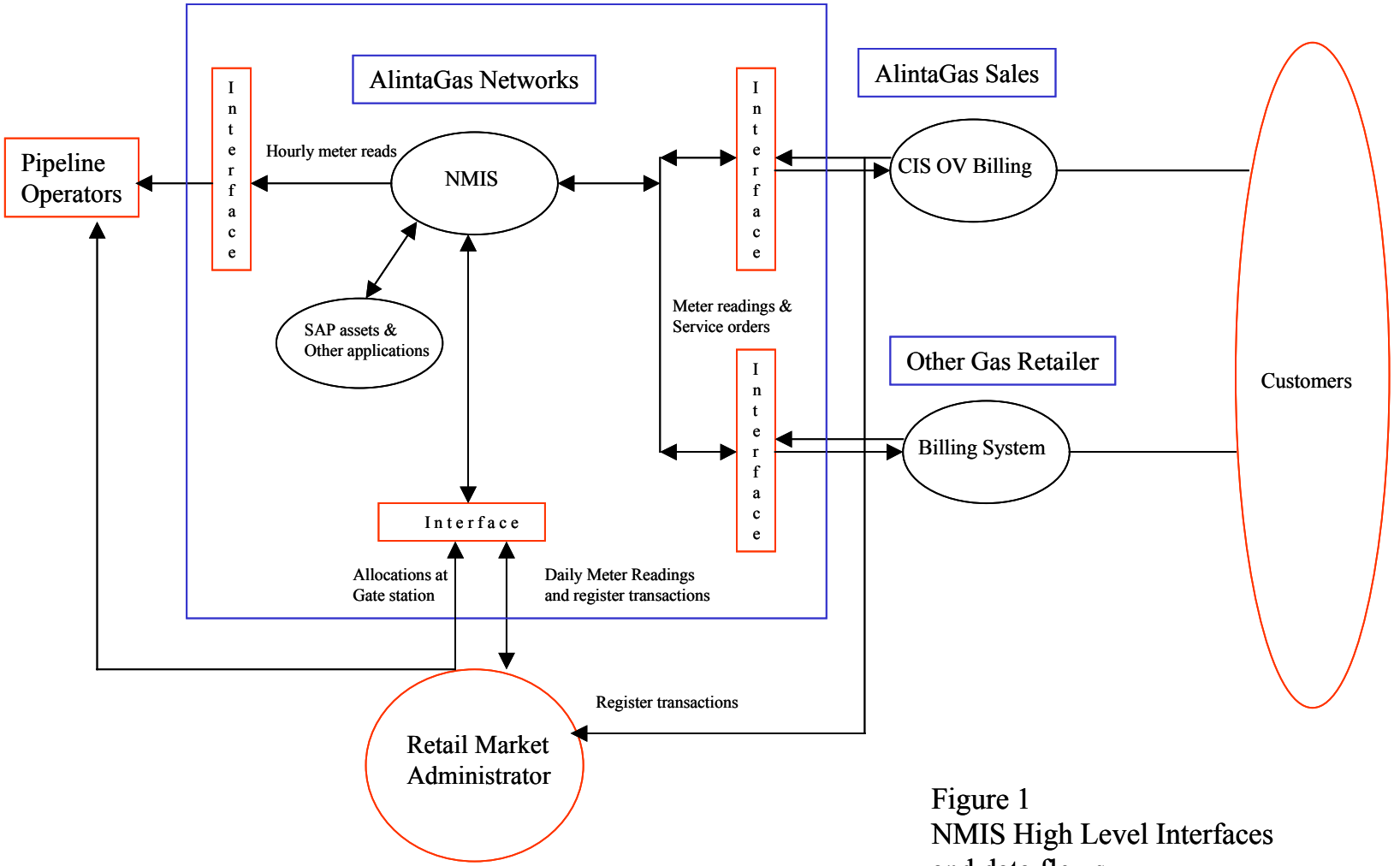

Figure 1
NMIS High Level Interfaces
and data flows

5.3. NMIS FUNCTIONAL SPECIFICATION

A detailed User Requirements Specification required for contestability has been prepared by Logica and was amended through negotiation with AGN.

The requirements of the specification can be summarised under the following headings:

- Non-Interval Meter Reading Processes
- Interval Meter Reading Process
- Send Consumption Data to Retail Market Administrator
- Transfer to Retailer of Last Resort (ROLR) (if a retailer goes out of business the ROLR continues to supply gas.)
- Route Maintenance (meter reading logistics)
- Meter Reading KPI Processes (key performance indicators of meter reading activity)
- Shippers and User Maintenance (gas shippers and change and new consumer information)
- Invoicing and Tariff Processes
  - Invoicing, calculate consumption, service orders, user charges, standing charge, demand charge, usage charge, post accruals to finance ledger, produce invoice, view, adjust, manage tariffs, charges, reference charges, user specific charges, other charges, receive payments
- Change of User Process (change retailer for a gas customer)
- Change Standing Data Process
  - Delivery point information may change - for example, the SAP system generates service orders for end consumers, for work order management, which may result in a change of the meter type
- Data Take Up Activities
- Generate Data Maintenance Processes
- DPI Discovery Process (gas delivery point information)

- Line of Main Discovery Process (gas retailer can investigate AGN gas delivery capacity)
- Service Order Process
  - Raise service order, change meter, change pressure, upgrade meter, relight pilot, alter position, test, remove regulator, remove meter, squeeze off, turn on, turn off read meter, investigation, request meter reader to read
- New Connection Service Order Process
  - check line of main, gas capacity in GNIS, assign delivery point data
- Transaction Processing (check transaction processing from market gateways)
- External Gateways
  - Market Internet XML interface, manual input such as email requests, market wide data that the Retail Market Administrator may request on participants information, interface control

Certain assumptions have been included by Logica in the above functional specification. For example, if a retailer leaves the market all delivery points are assumed to be transferred to another retailer and each delivery point has only one shipper. NMIS manages delivery point work orders, (others such as network work orders are managed by SAP), delivery points are not assigned by the network operator, addresses are standardised, and the market rules when in place, will be largely in accordance with the process specifications proposed for NMIS. Network balancing rules such as injection and extraction of gas by shippers and retailers and the unallocated gas (leakage in the network) has not been fully defined. The changes negotiated with Logica by AGN relate to detailed amendments to the above functions rather than additional components.

5.4. BENEFITS TO ASSOCIATED COMPANIES

AGN operates other gas pipelines in Albany and Kalgoorlie. However the functional specification described above by Logica for the NMIS proposed for AGN provides no identifiable functions which would appear to enable the other AGN pipelines to derive benefit. The NMIS functionality specified is largely involved with managing meter reading for multiple retailers, managing gas consumers as they change retailers and for management of the network. Therefore, whilst the existing CIS OV and NMIS have similar data requirements, the data is used for different purposes. The CIS OV uses data to primarily manage the end customer and collect revenue, whereas the NMIS uses the data to primarily manage the network.

Meter reading management will move from the CIS OV operated by AGS to NMIS within AGN. Therefore, meter reading in Albany and Kalgoorlie will be managed by NMIS, however, these networks comprise approximately only 5,000 customers or about 1% of the total supplied by AGN. Therefore, whilst of slight benefit to AGS, it would be unreasonable for AGS to separately manage meter reading for such a small customer base and would duplicate a function undertaken by NMIS for AGN.

Existing systems that AGS use, such as the CIS OV, can most likely provide all the functionality that would be needed for the other AGN networks and as such the NMIS would not appear to provide any additional benefits to AGS.

The NMIS project requires an upgrade of the CIS OV from version 3 to version 5 and for the Oracle data-base to be upgraded from version 7 to version 8. These software upgrades will benefit AGS, however, it is not possible to install the FRC functionality without the upgrade. Purchasing entirely new software, that is, duplicating the software for AGN would be far more costly as compared to the upgrade in which case it is prudent to upgrade the software even though this provides a minor benefit to AGS in related areas.

Once operational, and assuming all communications with associated and external organisations use the same information exchange mechanism, that being the Internet, the savings in upgrading, instead of duplicating CIS OV, lowers the total cost of NMIS, which benefits all retailers and outweighs the slight initial benefit to AGS.

5.5. SUITABILITY OF NMIS PROPOSED SOLUTION

The solution proposed by AGN to implement NMIS, in terms of upgrading existing CIS OV software, the functionality it provides and the supporting technical architecture it will use, is appropriate to meet the needs of FRC.

6. RING FENCING

6.1. POLICY

AGN and associated companies use a "Ring Fencing Policy and Procedures" document which describes how " ring fencing" to meet the requirements of the Code is maintained.

The "Ring Fencing, Policy and Procedures" was briefly viewed on the AGN intranet, that is, online. A hard copy was not made available. Section 5.2 of this document viewed online stated "Costs of a common nature……must be allocated in accordance with cost allocation methodologies".

Based upon the information viewed online and also received through interviews, the ring fencing processes used for separation of costs incurred by NMIS from other AGN costs, is described below.

6.2. RING FENCING METHODOLOGY FOR ISB COSTS

The methodology as described by the head of the Information Systems Branch (ISB) for ring fencing of costs in relation to allocation of the capital and operational costs associated with the provision of information systems and services is discussed below.

The Information Services Branch (ISB) as part of a corporate function, has structured its operations and allocations of costs into three functions, these being:

- *Facilities Management.* This is largely outsourced to Amcon Solutions Group (ASG) who provide services such as help desk, data-base administration, hardware support and so on.

- *Application Management and Support.* Includes applications such SAP, GIS, CIS OV, Internet Service Provider (ISP), web site, desk top products (Excel, Word, Power Point etc), and the proposed NMIS.

- *Telecommunications.* This includes costs associated with data networks, telephony services (PABX), Internet charges, 1300 call charges and other telco charges for example.

The proportion of costs which a business such as AGN is allocated for its use of the ISB Applications Management and Support is determined by the number of users for a particular application. For example, if there are 100 SAP users in total and 10 of these work in AGN, then 10% of all SAP capital and operation costs are allocated to AGN. With the proposed NMIS all users will be from AGN, in which case all NMIS costs will be allocated to AGN.

Cost for Facilities Management and Telecommunications will be allocated to AGN by actual usage and not the user proportions.

In addition to AGN, there are other business units which are allocated costs from the ISB, these include AGS and Enterprise Support Function (ESF). ESF is the corporate business unit which comprises HR, IT and finance functions for example.

Staff also use time sheets to enable the SAP financial management application to capture staff effort expended for new projects and for existing applications.

Physically AGN staff occupy a separate floor from AGS at their combined offices at No 1 William Street, Perth. Apart from a few senior staff, electronic security locks prevent staff accessing areas outside their business unit. In addition to the physical separation and as mentioned earlier, software controls using Oracle Roles prevent NMIS data being accessed by AGS staff (and vice versa).

6.3. RING FENCING SUMMARY

In summary, ring fencing is maintained by both physical separation of staff, restricting access to data and for shared facilities, such in the ISB, costs are allocated by the use of applications and through time sheet recording and allocation of staff time to each business unit. Therefore whilst ISB is part of ESF and incurs costs for associated companies such as AGN and AGS, the costs are allocated in proportion to the services each associated company derives from the ISB.

NMIS is an application which will be used exclusively by AGN in which case all costs which the ISB incurs in implementing and supporting NMIS will be allocated to AGN and these costs are included in the amounts for which AGN is seeking approval from O*ff*GAR. Other costs AGN incur such as for using SAP or for the ISB supporting non NMIS applications, are not in the amounts for which AGN is seeking approval.

7. ALLOCATION OF CAPITAL AND OPERATIONAL COSTS

7.1. AGN ESTIMATED CAPITAL COSTS

7.1.1. Systems Integrator Costs, Logica

Logica has submitted a fixed price to deliver the NMIS in accordance with a functional list that has been agreed with AGN (details contained in Confidential Attachment Part 1). Because Logica is taking on the Systems Integration risk (See Attachment 1 Part 3 for details) the fixed price will include a contingency allowance to cover the unplanned tasks that can arise in delivering the fully functioning and tested NMIS application. Typically the contingency within a fixed price bid can be up to 33% for complex implementations requiring a high degree of customisation. However, because the Logica solution uses largely "off the shelf" components that need configuration rather than customisation, a lower contingency figure would be expected. The interfaces into the associated applications such as SAP and the retail market system (not yet built) are perhaps the areas of greatest uncertainty.

Logica's costs increased almost $1M after tender close, the increase resulting from detailed changes to the functionality of NMIS and despite hardware being removed and now being supplied by AGN instead. Other small changes to software components also occurred such as for different Internet software gateways than were originally proposed.

The original AGN NMIS specification used for calling tenders was high level and it is to be expected that subsequent more detailed statements of requirements from AGN, would identify functional gaps which Logica must rectify thus incurring additional costs.

7.1.2. Internal costs, AGN, AGS, ISB

Internal costs such as for direct purchase of hardware and software by AGN, instead of Logica supplying these items, is now planned. Direct purchase of such items by AGN can be prudent to avoid "mark up" by third party vendors and is warranted if sufficient purchasing power enables better pricing for AGN than possible through the Systems Integrator. Direct purchase can also simplify ongoing maintenance and support arrangements compared to the "hand over" needed if initial contracts were with the Systems Integrator and not the end user, AGN.

Internal costs such as staff costs for AGN, AGS and ISB labour is also included where those staff are directly engaged in implementing NMIS. IT projects often fail through lack of input from those with the required business process knowledge. The planned effort by internal staff to

contribute to the NMIS project, such as staff currently using the CIS OV, is warranted and overall the internal costs estimates are reasonable (details contained in the Confidential Attachment Part 2).

Infrastructure costs such as for purchase of servers seem high although the range of prices for hardware varies dramatically depending upon the specification. On the basis that high quality hardware is needed and the hardware components are small compared to the overall project costs, the infrastructure estimates, although at the high end, are nonetheless reasonable.

7.1.3. Facilities Management Costs

The supplier of outsourced IT services, ASG, currently maintains ISB hardware and software infrastructure such as operating systems and data-bases. Expanding their role to include support of NMIS infrastructure components is necessary and the proposed costs reasonable.

7.1.4. Total Project Cost

Costs for AGN and AGS staff and direct hardware and software purchases increase the project cost to reach a total of $9,942,200 compared to an earlier estimate of $8,699,200 (which AGN used to calculate the total in their application for approval). This is an increase of $1.24M. The increase is attributable largely to functionality changes resulting from a more detailed specification subsequently being developed. When combined with the finance costs to allow for a return on investment to AGN, the total estimated project cost has increased from $10M to $11.24M, over a period of a few months.

It is of concern that the total estimated project cost has increased by $1.24M in this relatively short period of time. This concern is further compounded because AGN supplied spreadsheets, issued within days of each other, which show slightly differing total project cost estimates.

Whilst the total cost estimate has changed over time, the content and high level breakdown still appear reasonable and AGN now advise the current estimate (inclusive of a return on investment) is the total cost for which AGN intends to implement a fully functional NMIS, to meet the requirements for FRC.

7.2. AGN ESTIMATED OPERATIONAL COSTS

Overall operational costs appear reasonable, although they are now estimated at approximately $1.15M per annum compared to $1.1M originally estimated amount and for which AGN Board approval was sought.

This increase in estimated costs in a short time period is of concern should estimates continue to rise in view of the long timeframe of the overall project.

8. EVANS & PECK ANALYSIS

8.1. PROJECT RISKS

As mentioned earlier it was observed the total budget AGN estimated to implement NMIS has changed over time which would imply a fixed budget had not originally been set. However whilst this is of concern, documents which would support good project management methods were sighted. These include viewing a Logica prepared "Project Plan and Quality Plan" which addresses risks, assumptions and scope and an AlintaGas FRC, Business Integration Change Programme, Quality Plan (See Part 15 of the Confidential Attachment).

AGN have stated their current estimate is the fixed budget for which the project is to be delivered. Assuming AGN and Logica use these documents, (even though they do not directly address how to manage to a fixed budget) the processes described should assist in ensuring good practices are followed, which will help in ensuring that AGN and Logica achieve the outcomes they desire.

Evans & Peck were also advised that Logica's contract contains substantial punitive conditions for failure to deliver, which will assist in ensuring the project is delivered successfully.

However because the current estimated total budget has already changed from the original estimate for which the Regulator's approval was sought, ongoing revision to the "fixed" budget and hence over expenditure in implementing NMIS is a project risk. This could arise, for example, through AGN under estimating the effort AGN, AGS or ISB need to contribute to the project, or through Logica seeking extra time (or money) which also increases the internal costs to AGN for staff and contractor resources.

8.2. EVANS & PECK FINDINGS

The tendering and bidding processes used by AGN in seeking proposals and awarding a contract for the supply of NMIS have followed good industry practise.

The NMIS implementation will provide facilities needed to maintain integrity of the system when multiple gas suppliers and retailers use the network. NMIS also provides system wide benefits in that it essential for implementation of FRC.

The estimated costs for which approval is sought, of $10M for capital and $1.1M for operational costs, indicate prudent expenditure is planned and that these costs are being efficiently incurred.

The estimated expenditure has been calculated such that AGN only seeks approval for NMIS related capital and operational costs. Adequate "ring fencing" is in place to avoid or minimise benefits being derived by associated companies.

The NMIS implementation strategy is based upon upgrading an existing software application which will thus minimise costs and achieve economies of scale compared to purchasing an entirely new application.

The effort needed to implement NMIS is largely independent of the scale of implementation in that manual based processes would be inadequate for the provision of the functionalities required for FRC and therefore the software based, NMIS solution, which supports either several or many thousand gas consumers and users, is appropriate for forecast services needed over time.

As such, implementing NMIS in phases over time would be more costly overall, as compared to the approach proposed by AGN which is in accordance with good industry practise.

ATTACHMENT 1

1 INTERVIEWS

Evans & Peck thank the following people for providing their valuable input and time to assist in preparing this report.

Robert Pullella, *Off*GAR

Ursula Kretzer O*ff*GAR

Justin Scotchbrook, AlintaGas

Peter Weston, AlintaGas

Ian Thurston, AlintaGas Consultant

Sara Edwards, Logica

Robert Grummet, Logica

2 DOCUMENT INDEX

The following documents were received from O*ff*GAR and AGN. Copies are contained in the Confidential Attachment.

Attachment Number Title

1 Summary of Logica Submission 8th February 2002.

2 Summary of AGN Costings

3 Request for Quotation. O*ff*GAR RFQ 01/03 14th August 2002.

4 AlintaGas Networks Management Information System, Request for Proposal, January 2002.

5 AlintaGas, Logica Technical Infrastructure Plan, Draft 24 September 2002.

6 AlintaGas Networks Management Information System Overview of the Selection Process, 6th August 2002.

7 AlintaGas Networks Management Information System Evaluation of Proposals Report May 2002.

8 AlintaGas, RFP, Network Management Information System, Scoring Criteria for Evaluating Proposals 6th August 2002.

9 User Requirements Specification. AlintaGas NMIS Logica Draft 7, 5th August 2002.

10 NMIS Gap Analysis 0.9.xls Logica Pty 19/09/02

11 AlintaGas NMIS Main Data Flows

12 AlintaGas Scope of FRC Affected Network Processes

13 AlintaGas FRC Project Master Plan (A "Work and Cost Summary", B "Time Line Summary")

14 AlintaGas, Extract from Board Submission 29th August 2002.

15 AlintaGas, FRC Business Integration Change Programme, Quality Plan, 3rd September 2002

3 NMIS HIGH LEVEL ARCHITECTURE

Logica has been selected as the Systems Integrator to implement this solution, with STS as a sub contractor to Logica to provide the FRC upgrade to CIS OV. As Systems Integrator Logica will be responsible for making the entire system function correctly. This includes hardware and software components Logica and its subcontractors provide, and components supplied by others such as AGN. The Systems Integrator is responsible for ensuring interfaces between applications work correctly, such as between NMIS and SAP.

SAP is the Enterprise Resource Planning (ERP) software application which AGN uses to run its management accounts, general ledger, HR/payroll, materials management and service order requests processes.

The Systems Integrator is also responsible for ensuring software operates correctly on the hardware chosen. For example, the server chosen may be from a manufacturer on which the CIS OV has not previously been installed. It is the Systems Integrator's responsibility to ensure all the components integrate successfully. Therefore whilst hardware may be supplied by others, in this case AGN, the Systems Integrator specifies what hardware is needed, and if it proves to have inadequate performance and needs additional memory or processing power, for example, the Systems Integrator takes responsibility and incurs the costs in getting the hardware upgraded. The Systems Integrator, therefore, delivers a fully functioning system to meet a set of predetermined performance measures, such as transaction processing speed, and specific functions to meet business rules. For example, a business rule could be that a gas customer can only change from one retailer to another on the day the customer's meter is read.

Logica will therefore also implement other components to provide the full functionality required by NMIS. The other components and a short description of their functionality is given below.

- eXACT from Excelergy to provide the communications capabilities via standard Internet based protocols to external organisations such as retailers and the Retail Market Administrator System. (For further details on eXACT see http://www.excelergy.com/products/exact_wholesale.asp) eXACT supports the XML programming language used in the Internet to present pages of information and to capture information. eXACT is an example of the web based development tools which allow pages to be easily built for the Internet without having to use the low level and cumbersome language such as Hyper Text Markup Language (HTML) or its newer extension XML. eXACT will allow an interface to be built using the Internet infrastructure, thus the avoiding the need to build proprietary infrastructure for industry participants.

- Logica's Transaction Manager. A Transaction Manager determines where electronic transactions are to be sent when received from an external system (such as from the Market Administrator) and enables the transactions to be monitored as they are processed through the system. When multiple systems are interconnected, as will occur with NMIS, and thousands of transactions are to be processed each day

(such as meter readings), a Transaction Manager allows transactions to be processed in parallel in several systems. If errors occur or delays in processing arise, the Transaction Manager is able to automatically restore and restart the transaction processing that was interrupted. This dramatically simplifies system administration when, for example an application fails through a server hardware fault. The Transaction Manager keeps a record of where transactions were up to before the fault so that they can quickly be re-established.

- Logica's middleware components using J2EE standards compliant Message Oriented Middleware and using Sonic MQ and Oracle Workflow as a workflow engine for automation of the business processes. Message Oriented Middleware means that the middleware communicates between several applications using discrete messages as compared to using a communications channel which once established continues indefinitely. Middleware is a software component that allows interconnection of differing applications. Middleware forces a standard to be used for electronic records and communications such that when an application is interfaced to the middleware, it can potentially communicate to any other application also connected to the middleware. The advantage of this is that an application requires only a single interface to be built to the middleware, and the middleware allows the application to then talk to many other applications (such as SAP financials) thus decreasing the effort needed for interfacing. Other functions of the middleware include business processing such as business rules. For example, the middleware can enforce business process management (BPM). The effect of this could be, for example, that transactions cannot commence unless the data is correct (e.g. negative gas consumption could be a disallowed value) or an application cannot start until some other application (business process) has completed. For example, activities such as notifying a retailer a customer has changed to another retailer may not be allowed to occur until the meter is read and the other retailer confirms that sufficient gas capacity is available for the new customer, could be a business process the middleware enforces. Therefore middleware, which has BPM capability, can enforce business logic between several different applications which is needed to occur when NMIS interfaces with other systems operated by gas retailers and the market administrator.

Other aspects of the implementation will include FRC enhancements to AGN's existing ESRI geographic information system, and enhancements to the SAP Asset Management System.

Furthermore, Logica will use a number of components derived from the NSW Gas Retail Market System.

Infrastructure components such as the data-base and up to six servers to run the applications and data-base will be supplied by AGN and supported by AGN's existing outsourced IT support supplier Amcon Solutions Group (ASG). Six servers originally proposed are:

- eXACT Gateway and data-base server (2)

- Logica Middleware, transactions and CATS, Oracle Workflow, Sonic MQ, (2)
- Test and Development, Raid 5 discs (2)

Logica's implementation includes being the Systems Integrator and taking responsibility for delivering a fully functioning system. Tasks undertaken as Systems Integrator will include testing, training, project management and quality assurance using CORTEX. CORTEX is Logica's project management and systems development methodology. Software development such as customisation and unit testing will be on Logica's premises and system testing will be undertaken on AGN facilities.

As Systems Integrator, Logica will take responsibility for the complete operation of the NMIS and the interfaces into other systems such as the SAP and the Geographic Network Information System (GNIS) interfaces.

4 GLOSSARY

FRC	Full Retail Contestability
the Code	*National Third Party Access Code for Natural Gas Pipeline Systems*
AGN	AlintaGas Networks Pty Ltd
GDS	Gas Distribution Systems
NMIS	Network Management Information System
O*ff*GAR	Office of Gas Access Regulation
RFP	Request For Proposal
AGS	AlintaGas Sales
CIS	Customer Information System
STS	Severn Trent Systems
CIS OV	CIS Open Vision
SI	Systems Integrator
ERP	Enterprise Resource Planning
SAP	Germany developed ERP software application
HTML	Hyper Text Markup Language
XML	Extensible Markup Language
BPM	Business Process Management
ASG	Amcon Solutions Group
FTP	File Transfer Protocol
DSL	Digital Subscriber Lines
IP	Internet Protocol
IT	Information Technology
VPN	Virtual Private Network
GNIS	Geographic Network Information System
ROLR	Retailer of Last Resort
DPI	Delivery Point Information
ISB	Information Systems Branch
PABX	Private Automatic Building Exchange
ESF	Enterprise Support Function