



**APT Allgas Energy
Pty Limited**

Queensland Networks
Network Development Plan

Effective
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1 Executive Summary

APT Allgas undertakes Network Development activities to maximise the number of connections to its network and to maximise the gas load of those connections. This necessarily involves activities to retain existing customers and to manage orderly and prudent network expansion.

Network Development incorporates operational activities required to process connections, as well as programs designed to target specific market segments and key stakeholders.

APT Allgas has developed a Network Development Plan based on a detailed consideration of the most effective means of securing connection and load growth across each individual segment.

APT Allgas undertakes an annual process when the marketing budget for the coming year is finalised to assess the effectiveness of prior year programs and activities. This includes assessment of the effectiveness of individual programs. This process is intended to ensure that expenditure complies with the requirements of Section 91 of the National Gas Rules, namely that:

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

Demand for natural gas in Queensland is subject to a number of competitive threats. Given that residential demand in Queensland is for hot water and cooking, residential gas demand is very sensitive to government hot water policy and the competitive threats posed by solar and heat pump hot water. APT Allgas proposes to increase its Network Development expenditure over the coming AA period as a response to those competitive threats.

This Network Development Plan establishes strategies for each customer segment, sets out how expenditure has been assessed to ensure that it is prudent and compliant with Section 91 of the Natural Gas Rules and establishes the reasons for increased expenditure over the period from FY12 to FY16. Key themes of the Network Development Plan include:

- Achieving best practice in operational practices and customer service.
- Communicating with end-use consumers and key stakeholders through geographically targeted consumer publications, trade industry publications, and increasingly the website.
- Developing and supporting relationships with key stakeholders through participation in industry associations and trade shows.



- Cooperation with Government Departments to influence policy decisions to maximise network growth opportunities.
- Development of an expanded incentive program to encourage the changeover of electric to gas hot water, especially in homes already connected to the gas network, as a response to declining domestic consumption.
- Establishment of a new technology role to facilitate the development and deployment of new technologies, and thus reduce the reliance upon hot water, to support the volume of gas transported to domestic consumers.

The graphs in this section chart actual/forecast expenditure against QCA approved expenditure, and show past and forecast performance for customer connection numbers and average customer consumption, shown against proposed Network Development activities expenditure.

Figure ES-1 Network Development Expenditure, including step change proposals

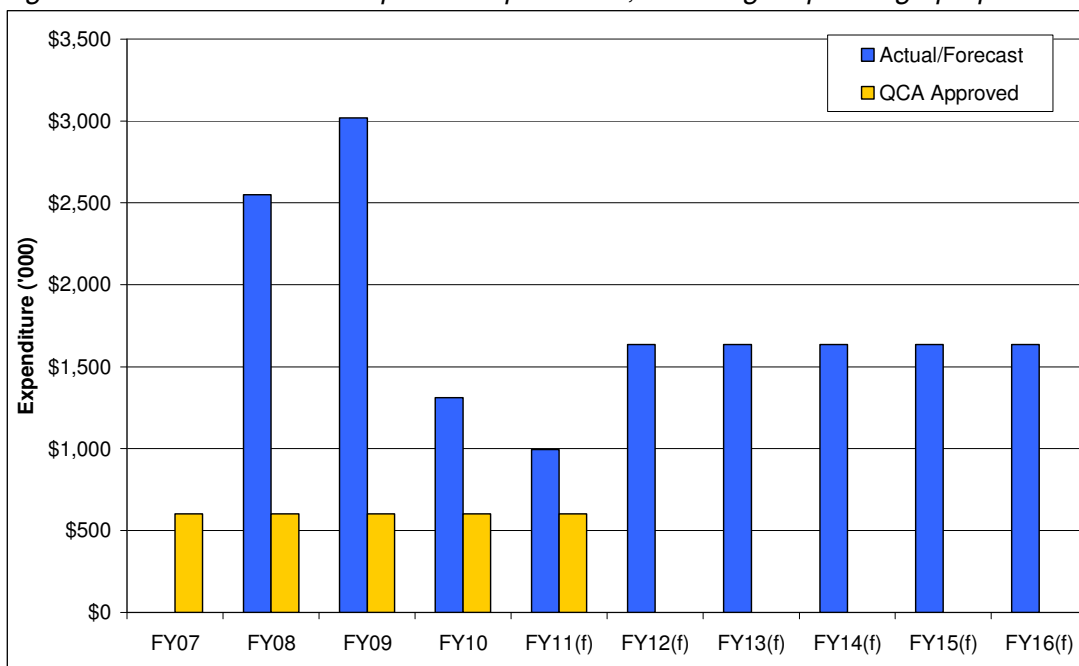


Table ES-1 below shows Network Development expenditure for the current and upcoming AA period, split by activity. Labour costs include all tasks required to coordinate and process new network connection work orders and maintain relationships with key customers and industry groups. This activity type is therefore essential to network operation and growth, and appropriately, demands a substantial share of Network Development expenditure.



Table ES-2 shows the proposed impact of step change submissions entitled Electricity to Gas Hot Water Changeover Program and Development and Deployment of New Technology.



Table ES-1 Baseline Network Development expenditure (\$'000)

	FY07	FY08	FY09	FY10	FY11 (f)	FY12 (f)	FY13 (f)	FY14 (f)	FY15 (f)	FY16 (f)
Baseline expenditure	\$0	\$2,550	\$3,020	\$1,310	\$996	\$996	\$996	\$996	\$996	\$996

Table ES-2 Impact of step change proposals on Network Development expenditure (\$'000)

	FY07	FY08	FY09	FY10	FY11 (f)	FY12 (f)	FY13 (f)	FY14 (f)	FY15 (f)	FY16 (f)
Baseline expenditure	\$0	\$2,550	\$3,020	\$1,310	\$996	\$996	\$996	\$996	\$996	\$996
Changeover	N/A	N/A	N/A	N/A	N/A	\$390	\$390	\$390	\$390	\$390
New Technology	N/A	N/A	N/A	N/A	N/A	\$250	\$250	\$250	\$250	\$250
TOTAL	N/A	\$2,550	\$3,020	\$1,310	\$996	\$1,636	\$1,636	\$1,636	\$1,636	\$1,636

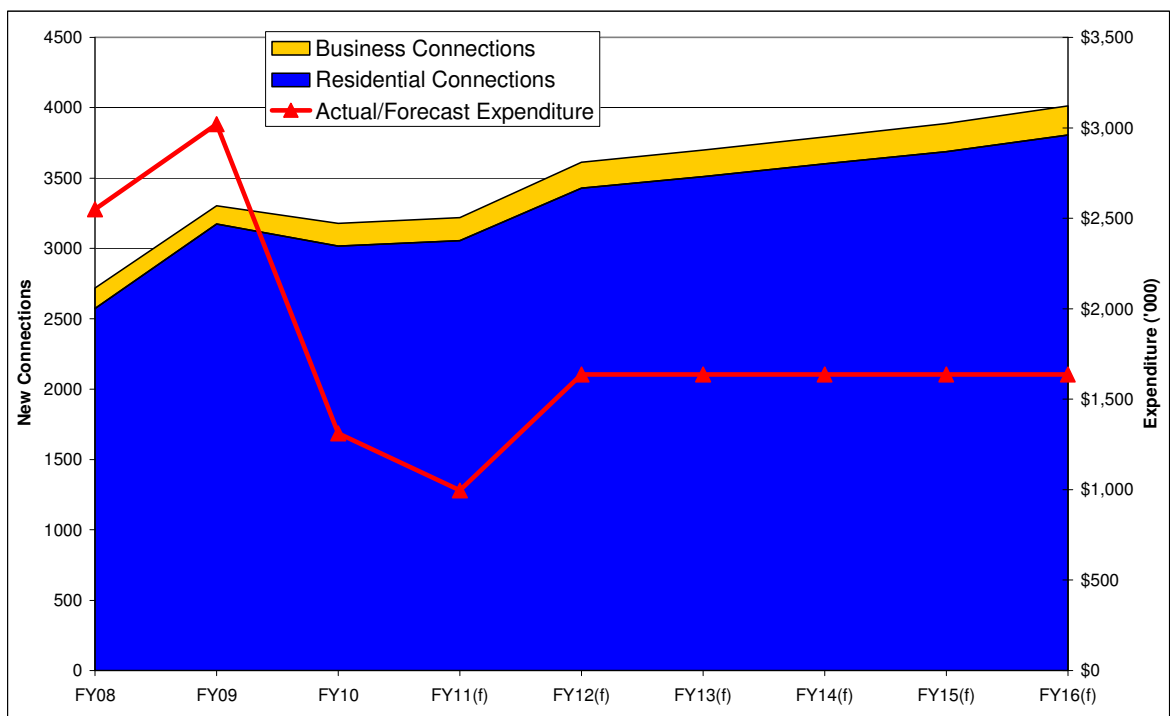
Note: forecast expenditure expressed in \$FY10



Figure ES-2 below demonstrates the **alignment** of the Network Development expenditure to the number of volume class customer connections.

Volume Class

Figure ES-2 New Volume Class customers vs total Network Development Expenditure





2 Introduction

2.1 *Defining our market – Demand Classes and audiences*

Volume Class

Volume Class customers generally consume less than 10TJ pa and include both Residential customers and Business customers.

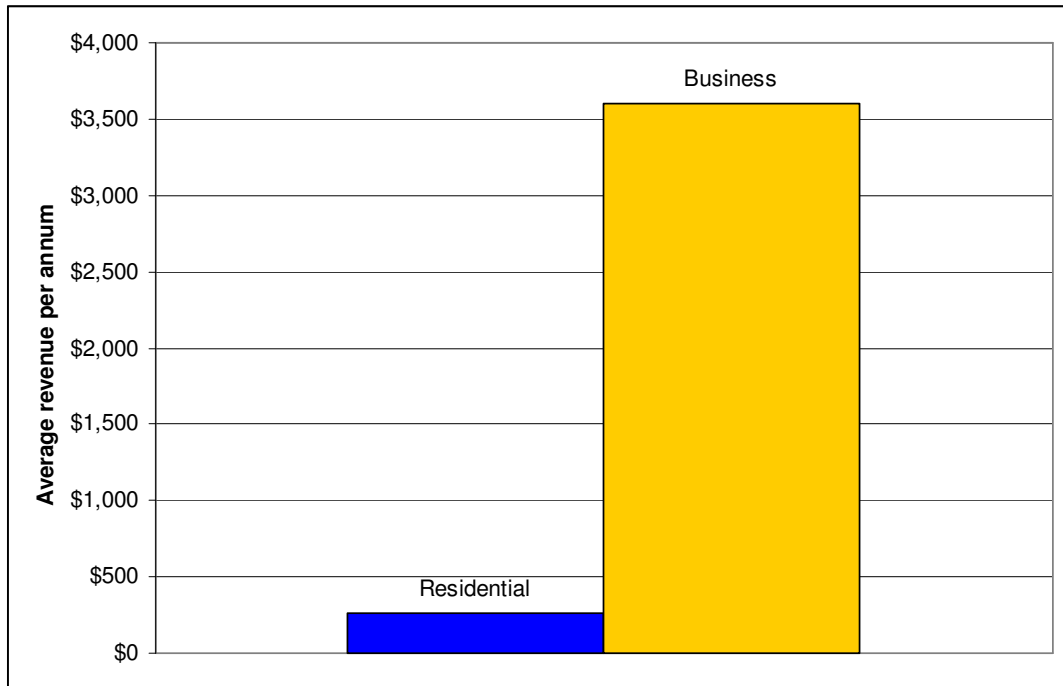
Residential customers are identified as customers with installed meter capacity of 10 cubic metres per hour or less, and include both houses and unit dwellings. All other Volume Class customers are classified as Business customers, and typically have an installed meter capacity of greater than 10 cubic metres per hour.

New customers for the Volume Class have further been categorised into Residential New Dwellings, Residential Existing Homes and Business customers. This split enables an analysis of individual market segment past performance, industry trends, behaviour patterns and attitudes, which aids in the development of marketing communication strategies.

Customer segmentation also enables an analysis of revenue for different customer types, which facilitates efficient allocation of resources. Figure 2-1 below shows average annual revenues per customer for Residential and Business customers. These revenues are reflected in the strategy for Network Development expenditure allocation, moving forward.



Figure 2-1 Average revenue per annum for Residential and Business customer segments



Volume Class Audiences

Achieving target connection numbers and average consumption in this complex market requires successfully influencing the attitudes and decisions of several audience segments. End users (both Residential and Business) are empowered to make decisions regarding fuel and appliance selection in their homes and businesses.

However, the decisions of end users are influenced by the recommendations, decision making and policies of 'influencer' audience segments operating within the market context. These include:

- Appliance installers.
- Builders.
- Residential and commercial developers.
- Engineering and hydraulic consultants.
- Government policy makers.



Demand Class

Demand Class customers consume 10TJ pa or more and are typically large industrial customers and commercial developers.

Demand Class Audiences

Decision makers in this Class are motivated by commercial factors such as efficiency of operation, cost of fuel and equipment running, etc. While corporate responsibility (including environmental impact) has a place in corporate strategies, these decisions are also affected by current and anticipated regulatory requirements.

The decision to switch to natural gas equipment is influenced by Federal and State initiatives such as:

- Climate change policy and legislation.
- Energy efficiency policy and legislation.
- Reporting of emissions requirements, regulations around types of emissions allowed, impact of water use regulations and costs.

Given the cost and efficiency driven decisions made by this audience, decision makers respond to solid commercial proposals, and incentives and rebates to change over from other fuels such as coal and LPG.

2.2 Defining our market – Competitors

While APT Allgas does not face competition within network areas from other natural gas asset owners, it operates within a fiercely competitive market context. Increased utilisation of the natural gas networks can only be achieved via increased natural gas appliance and equipment selection and specification. All such natural gas applications face competition from alternative fuel sources, which can be selected and specified in place of natural gas appliances and equipment, preventing network growth and maximum utilisation of the networks.

Therefore, our competitors consist of appliances and equipment that use fuels other than natural gas and that can be readily substituted for natural gas consuming appliances and equipment. For example:

- Competition for natural gas appliance selection for Residential water heating requirements includes electric, solar, heat pump and LPG hot water appliances. Natural gas hot water systems are the largest gas consuming appliances used in



the Queensland Residential customer market, consuming approximately 10 GJpa compared with only 2 GJpa for cooking appliances and 3 GJpa for indoor heating appliances. Therefore, it is critical that natural gas is able to compete effectively against solar and heat pump hot water appliances in this market.

- Competition for natural gas selection for cooking, space heating and clothes drying are equivalent electric appliances, including reverse cycle air conditioning.
- Competition for natural gas commercial cooking appliances is LPG commercial cooking appliances.
- Competition for power generation and steam raising in large Volume Business and Demand Class customers is primarily coal.

Network Development activities such as Sales Representation, Marketing and Promotion are necessary to enable APT Allgas to influence the selection and specification of natural gas appliances and overcome the inherent disadvantages that natural gas appliance selection and installation confronts in a competitive context.

2.3 Why Network Development activities are necessary

The purpose of all Network Development activity is to lower the cost of delivered natural gas to the customer by increasing utilisation of the natural gas networks and therefore spreading the largely fixed costs of operating a gas network across a larger customer base, both in terms of customer numbers and gas consumed per customer.

2.3.1 Compliance with National Gas Rules

Rule 91 of the National Gas Rules states:

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

This document addresses the key requirements of Rule 91 in detail, as summarised below.

"...a prudent service provider acting efficiently..."

The Network Development strategy has been designed to allocate resources and expenditure to achieve the greatest possible effect. This includes undertaking demographic profiling and market analysis to enable us to efficiently target the most responsive or influential audiences with appropriate and cost-effective activities; and



ensuring activities are measured and monitored wherever possible, to enable incremental improvements in Network Development programs.

“...in accordance with good and accepted industry practice...”

The APT Allgas expenditure is well within that of other network operators, such as Jemena, with \$6.75m per year approved for the coming AA period.¹

“...to achieve the lowest sustainable cost of delivering pipeline services...”

Network Development activities are necessary to increase utilisation of the APT Allgas natural gas network by increasing customer numbers and maximising average customer consumption. This ensures that the largely fixed cost of operating the network is spread over a greater activity level, therefore lowering the delivered unit cost of gas transportation to each customer.

2.3.2 Increase utilisation of natural gas networks

Marketing and promotion of natural gas is critical to achieving maximum utilisation of the APT Allgas natural gas networks. Activities that promote the benefits and applications of natural gas are necessary to increase consideration of natural gas in fuel and appliance selection. It is particularly important to engage in strategic activities that build relationships with repeat customer audience segments such as trade customers (appliance installers and builders), developers and building consultants, and that foster a robust and ongoing positive disposition towards natural gas, given that these audience segments are positioned to influence and make decisions regarding many fuel and appliance selections over the long term.

Natural gas marketing and promotion is necessary to overcome inherent disadvantages relative to alternative hot water technologies in the Residential market (particularly solar and heat pump hot water), including more difficult installation, longer lead times for installation, perceived higher carbon emissions, ineligibility for RECs and rebates, and the limited geographic footprint of the gas network.

Marketing and promotion are needed to overcome the inherent disadvantages that natural gas confronts in competition for Business customers relative to electricity and LPG, including more difficult installation, and in the case of electricity, a narrower range of potential applications.

¹ Australian Energy Regulator, 11/6/2010, *Final Decision – Public. Jemena Gas Networks, Access arrangement proposal for the NSW gas networks*, p274



2.3.3 Maximise efficiency of expenditure

Increased utilisation of the natural gas networks results in greater economies of scale. Operating the natural gas networks involves largely fixed cost activities. A network must be maintained to the same standard, engaging the same operational expenditure, regardless of whether it is utilised by two customers or twenty. However, this fixed expenditure is more efficiently applied when spread over twenty customers than two.

2.3.4 Lower costs to customers

Increasing utilisation of the natural gas networks results in lower costs to end users.

Given the fixed cost nature of operating a gas network, increased network utilisation via greater numbers of network connections and larger volume of gas used at each connection enables the costs associated with operating the network to be spread across a greater volume of gas hauled, resulting in lower transportation costs per GJ. This ultimately results in lower costs delivered to natural gas customers, which in turn improves the competitiveness of natural gas relative to the competitors listed in Section 2.2, which then contributes to achieving an increase in customer numbers and volumes hauled, increasing utilisation of the network.

2.4 *Network Development Activities*

Network Development activities are required to maximise utilisation of the APT Allgas natural gas networks, and to facilitate prudent expansion of the networks. The strategy for Network Development activities specifically addresses market opportunities and challenges for customer segments in the Volume and Demand classes. The strategy follows a comprehensive approach that includes operational practices such as connection processing, sales and representation, and marketing programs. It is designed to maximise return on expenditure by making efficient and effective use of APT Allgas' resources and exploiting the inherent advantages of natural gas relative to other fuels.

Network Development activities include:

- Sales representation and consulting/customer liaison.
- Achieving best practice in customer service, including service delivery with regards to processing and implementing gas connections.
- Marketing and promotion activities. This includes development and maintenance of communication channels such as website activity. Given the limited geographic footprint of the APT Allgas network and the challenge this presents with regards to traditional mass marketing, effective use of web communications is important to provide information to the target audiences.



- Participation in industry forums, including organisation memberships and partnerships, as well as representation to Government and other policy making industry bodies.
- Performance based programs, particularly targeting appliance installers. Appropriate incentives are provided to installers upon confirmation of appliance installation.

Customer service is a mandatory activity, without which network growth would not occur. Customer service consists of processing and implementing gas connections, which includes cost estimation for connections, economic evaluations, processing connection orders, conducting site visits, coordinating meter and inlet installation with customers, ensuring appropriate interactions with retailers and retailmarket systems. Similarly, representation to customers and other industry participants is an essential activity that facilitates new gas connections. As such, Network Development expenditure is weighted heavily towards resourcing operational support, connection processing and personnel. Marketing programs are a necessary and important element of the Network Development strategy, but historically reflect a comparatively small share of total Network Development expenditure as set out below.

2.5 Network Development expenditure in the current period

Table ES-1 in the Executive Summary shows the Network Development expenditure for the current AA period.

Labour costs for typical Network Development activities were incurred in FY07, but were not categorised as Network Development at the time and are not shown in the chart.

During FY08-FY09, connection processing, network representation, marketing and commercial activities were all run and categorised as a single activity. Labour figures for FY10 exclude commercial activities, which were not categorised as Network Development during that year.

During the current period, but particularly between FY07 and FY09, Labour costs associated with Network Development far exceeded expenditure on Market Development programs. Given that many labour-related activities included in Network Development are mandatory activities associated with coordinating and processing customer connections, this is to be expected.

Network Development expenditure during the current AA period exceeded approved QCA benchmarks. The Queensland Government implemented a policy change in March 2006 banning the installation of traditional electric hot water systems in new homes, which increased natural gas network connections to new homes. This increase necessarily drew budget resources to mandatory Network Development



activities such as labour activities required for connection processing and away from specific Market Development programs.



3 Volume Class – Residential

3.1 *Customer segments*

3.1.1 Home owners

This audience segment consists of people in both the New Dwelling market and the Existing Dwelling market. The drivers and behaviours regarding fuel and appliance selection are different for people making decisions for a new home or for an existing home. These drivers and behaviours are covered below.

3.1.1.1 *Home owners – Drivers and customer behaviour*

Natural gas in the Residential market is not purchased on the merits of the fuel itself. Rather, appliance selection drives the penetration of natural gas into this market. Factors affecting appliance selection differ between appliances. For example, drivers in the selection of hot water system include Government policy, cost and lead times for installation,² whereas the selection of a cooking appliance is more likely to be a lifestyle choice, driven by personal preference.

Energy efficiency and upfront capital cost are the main factors when choosing whitegoods. The Australian Bureau of Statistics Report, *Environmental impact on household energy use* (2006) states that:

“Energy conservation in the home sometimes requires significant changes in behaviour. People generally understand that there are personal financial benefits from conserving energy in the home, but these benefits are sometimes outweighed by a desire to maintain quality of life and to save money in the short term. First home buyers, for example, often do not have the resources to invest in more expensive, energy efficient appliances, insulation or quality window coverings. Second and third home-buyers, however, are usually in a better position to consider more options when selecting or replacing major appliances and for house design ... In 2005, 43% of households said they considered cost to be the main factor when buying a new white good, 44% nominated the energy star rating as a main consideration, and only 11% of households stated an environmental factor as their main consideration.”²

These behavioural drivers are particularly important when competing in the hot water appliance market, given the impact of Government rebates on the affordability of solar and heat pump hot water, as detailed in Section 3.3.2.2.

² Australian Bureau of Statistics, 2006, *4102.0 Australian Social Trends 2006 Environmental impact of household energy use*, p7



Other behavioural drivers apply when replacing existing appliances in the Existing Dwelling market.

George Wilkenfeld & Associates, in their *Regulation Impact Statement: for Consideration. Phasing Out Greenhouse-Intensive Water Heaters in Australian Homes*, contend that householders typically replace their existing hot water system only when the appliance is no longer functioning.³ They also report that the most influential factors in selecting a replacement hot water system when an existing unit fails are initial capital cost and speed of replacement.⁴

A significant proportion of home owners defer hot water system choice to the recommendation of an external influencer such as a plumber or hot water specialist, hence the emphasis on these ‘influencer’ customer segments in the APT Allgas Network Development strategy. In the case of a hot water system failure, 61% of home owners will make a plumber or hot water specialist their first point of contact.⁵

3.1.2 Developers

This audience segment consists of both residential land developers (many of which are also builders) and commercial property developers. Residential land developers in particular are influential at several stages of fuel and appliance selection, as they negotiate natural gas reticulation in residential housing estates, and are responsible for establishing covenants on lot development. Residential land developers that offer house and land packages also influence appliance selection via the appliance types that are offered as standard inclusions in homes.

³ Wilkenfeld and Associates, 2009, *Regulation Impact Statement: for Consultation. Phasing Out Greenhouse-Intensive Water Heaters in Australian Homes*, p7:

“Hot water system replacements generally occur in a crisis situation where the system suffers a catastrophic failure.”

⁴ Wilkenfeld and Associates, 2009, *Regulation Impact Statement: for Consultation. Phasing Out Greenhouse-Intensive Water Heaters in Australian Homes*, pp7, 41, 114:

Running costs are less a factor than initial capital cost (purchase and installation) (p41), and that “...the cheapest capital option is often preferred” (p7).

“Speed of replacement has historically been a factor reinforcing the tendency to replace electric with electric” (p114). It is logical to assume that speed of replacement will continue to be a factor when choosing an alternative to electric hot water.

⁵ Wilkenfeld and Associates, 2009, *Regulation Impact Statement: for Consultation. Phasing Out Greenhouse-Intensive Water Heaters in Australian Homes*, p22. 61% of home owners call a plumber or hot water specialist for an emergency hot water replacement, and 20% of home owners defer to the recommendation of an external influencer when choosing a water heater.



3.1.2.1 *Developers – Drivers and customer behaviour*

Similar to Business customers (both in Volume and Demand Classes), Developers are driven primarily by commercial considerations – achieving the greatest possible return on investment. For this reason, messages to this audience focus on the cost benefits of reticulating natural gas into an estate or specifying it into a commercial development, and on the potential to use natural gas availability as a selling point to tenants and property buyers.

Developers also operate in a market and industry context, responding to public demand and Government policy. In particular, customer trends and demand for specific appliances and housing features drives Developers to meet customer needs by offering in-demand products and features. This market context (both from Government and the public) is increasingly shaped by regulatory requirements regarding energy efficiency and environmental impact. For example, the Sustainable Building Code introduced in March 2006 bans the installation of electric hot water systems in new homes, which has had an impact on decisions made by Land Developers (especially those offering house and land packages). Similarly, the emergence of the Green Building Council, Green Star Ratings for commercial developments, etc, is an indication of the trend towards environmentally sustainable commercial development.

3.1.3 Trade influencers

This audience segment consists of:

- Builders: influential in selection of appliances in new homes and in existing home renovations.
- Appliance installers (plumbers and gasfitters): influential in selection of hot water systems in existing home renovations, voluntary replacement of hot water systems and replacement of failed hot water systems; plumbers and gasfitters are also often the primary contact for natural gas appliance and equipment installations for Business customers.
- Consultants: Engineers and Hydraulic Consultants are responsible for planning and specifying services in commercial developments, including fuel selection, reticulating bulk hot water in residential high-rises and mixed use buildings, etc. This can extend to the selection of technologies that drive natural gas demand such as cogeneration and gas fired air conditioning.



3.1.3.1 Trade influencers – Drivers and customer behaviour

Builders and Appliance Installers

Considering the competitive environment in which trade operators such as appliance installers and builders operate, particularly given the current low growth of housing starts in Queensland,⁶ cost is a key factor in selecting which appliances to recommend or specify. The Australian Bureau of Statistics report *Attitudes of residential builders to energy issues and usage* (2003) states that:

“A study by BIS Shrapnel, **Attitudes of Residential Builders to Energy Issues and Usage in Australia, 2001-02** [emphasis in original], demonstrates that most builders are sympathetic to the concept of the 'clean, green' home, but are deterred by perceived higher building and installation costs...”

The cost of choosing to recommend or specify natural gas appliances does not include the purchase cost of the appliance alone. Ease of installation has an impact on labour costs, which are factored into the total cost of selecting one appliance over another.

In the case of appliance installers, easier installation shortens installation time, which means more customers can be serviced. In the case of builders, specifying natural gas appliances means that an additional contractor (a gasfitter) must be employed, or that the plumber contracted to the builder must have a gasfitting licence. The process to organise a natural gas connection to a new home also incurs additional labour costs in terms of administration.

Addressing these key concerns of cost and ease of installation is central to the specific Network Development strategy targeting increased natural gas appliance specification by these trade customers.

Appliance installers are not all qualified to install gas appliances. There is a clear disincentive for appliance installers that are not gasfitters to recommend gas appliances. For this reason, Network Development activities also seek to encourage appliance installers to qualify as gasfitters.

Engineers and Consultants

Hydraulic Engineers coordinate and approve the services design in buildings. They ensure that the electricity, gas, plumbing etc are planned and installed in such a way that the building is designed well in terms of functionality, aesthetics, efficiency, safety etc; and that the design meets all relevant standards and regulations.

⁶ HIA Economics Group, July 2010, *Long term dwelling start forecast*



Hydraulic Engineers and Consultants are key decision makers in the design and development of multi-dwelling projects, housing estates and commercial developments.

Given the complexity of designing services in a project, this audience requires that APT Allgas not only provide detailed and correct information regarding technical specifications and policies, but that an APT Allgas representative is available for close consultation and to provide advice on projects.

3.1.4 Government

This audience includes representatives at all levels of Government – Federal, State and Local – specifically, Departments and representatives involved in creating policies relevant to the energy industry.

Recent Government policy initiatives have focused on greater appliance and building energy efficiency, and reduction in greenhouse gas emissions.

3.2 *Historical Market Development Activities*

The following chart shows historical promotional activities for the Volume Class, for the Residential market.

Quarter	FY09				FY10				FY11			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Residential												
Consumer advertising			■	■				■	■			
Direct mail	■	■			■			■				
Point of sale	■	■				■						
Trade advertising		■	■	■				■	■	■		
Incentive programs								■				
Sales representation events	■	■	■		■	■		■	■			
Online			■									

FY07 and FY08 have not been included in this chart, as Network Development activities during this period did not include spend on specific marketing programs, as noted in Table ES-1. Rather, Market Development consisted of focused sales representation to Developers and Builders, by APT Allgas Business Development Representatives (BDRs).



3.3 Customer numbers

3.3.1 Past and forecast performance

Table 3-1 below shows past and forecast new network connections on the APT Allgas network. These figures are an indicator of network growth.

Table 3-1 Volume Class historical figures and forecast

	FY07	FY08	FY09	FY10	FY11 (f)	FY12 (f)	FY13 (f)	FY14 (f)	FY15 (f)	FY16 (f)	AA Total
Number New Connections - Residential	N/A	N/A	3,174	3,017	3,057	3,428	3,512	3,600	3,690	3,807	27,285

While new residential customers did connect to the APT Allgas network in FY07 and FY08, the available data does not give robust figures for this period.



3.3.2 Market challenges and opportunities – New Dwellings

3.3.2.1 Opportunities

Environmental concerns and natural gas credentials

The inherent low carbon emission properties of natural gas, and its identification by Government and industry as a viable and low cost “transition” fuel as we move to a carbon conscious society and economy, means that natural gas operates within a “green space” shared by environmentally friendly fuels and technologies. Whilst not renewable, natural gas is considered to be a relatively “clean” fuel compared to some other fuels, such as coal.

Sustainable Housing Code – for new homes

In March 2006, the Queensland Government Sustainable Housing Code⁷ came into effect, banning installation of electric hot water systems in new dwellings and effectively removing a major competitor in this market segment (electric resistance hot water). This contributed to an increase of natural gas appliance penetration in **new dwellings** from approximately 60% to approximately 90% in new estates where natural gas reticulation has been installed.

Population growth in gas reticulated areas

Between 2001-2006, 52,579 people migrated to the Brisbane area from other Australian states.⁸ Migrants from “gas states” such as South Australia (3,356 between 2001-2006)⁸ and Victoria (11,108 between 2001-2006)⁸ expect widespread natural gas availability, increasing demand for new natural gas connections.

The Queensland Government expects the South East Queensland (SEQ) population to grow to 3,363,775 by 2016 – a 29.8% increase from 2006 (2,590,348).⁹

Over the long term (2009-2031), population growth will be accommodated in:

- New housing estates in SEQ’s Western Corridor.

⁷ Department of Infrastructure & Planning Qld, 20/9/2010, www.dip.qld.gov.au/sustainable-housing/electric-hot-water-system-replacement

⁸ Australian Bureau of Statistics, Census of Population and Housing, unpublished data; as referenced by Brisbane City Council, *Brisbane Community Profiles*, viewed 10/8/10, <<http://profile.id.com.au/Default.aspx?id=327&pg=300&gid=10&type=enum>>

⁹ Dept Infrastructure & Planning, Forecasting Unit, Qld Government, 2008, *Population Projections Queensland 2008 Edition*, Medium Series.



- Maximising penetration in new residential estates.¹⁰
- Infill in existing areas, linked with urban renewal projects. Urban Renewal involves the renewal of existing areas for residential and commercial infill, and often includes provision for development of new medium and high density housing.

Some identified growth and infill areas in APT Allgas network areas include Coomera and areas surrounding “transport nodes” on the Gold Coast.¹¹ Having said that, identified growth and infill areas Cleveland, Capalaba and Victoria Point represent missed opportunities, as these suburbs are situated slightly beyond the edges of the APT Allgas network.

Urban Renewal Brisbane identifies Brisbane’s Eastern Corridor as a renewal/growth area for the next 5 years, specifically precincts in Buranda, Stones Corner and Coorparoo,¹² as shown in Figure 3-1 below.

¹⁰ Dept Infrastructure & Planning, Qld Government, July 2009, *South East Queensland Regional Plan 2009-2031*, p9.

¹¹ Dept Infrastructure & Planning, Qld Government, July 2009, *South East Queensland Regional Plan 2009-2031*, p20.

¹² Dept Infrastructure & Planning, Qld Government, July 2009, *South East Queensland Regional Plan 2009-2031*, p30.



Figure 3-1 APT Allgas network, with identified growth and infill areas



3.3.2.2 Challenges

Natural gas in the Residential market is not purchased on the merits of the fuel itself. Rather, appliance selection drives the penetration of natural gas into this market. Factors affecting appliance selection differ between appliances. For example, drivers in the selection of hot water system include Government policy, cost and lead times for installation,¹³ whereas the selection of a cooking appliance is more likely to be a lifestyle choice, driven by personal preference.

Therefore, natural gas connection numbers are dependent upon factors that influence the selection of natural gas appliances, typically hot water systems and cooking appliances, but also (to a lesser extent) space heaters, outdoor heaters,

¹³ Wilkenfeld and Associates, 2009, *Regulation Impact Statement: for Consultation. Phasing Out Greenhouse-Intensive Water Heaters in Australian Homes*, pp7, 41, 114 (see Attachment 1):

- Running costs are less a factor than initial capital cost (purchase and installation) (p41), and that "...the cheapest capital option is often preferred" (p7).

"Speed of replacement has historically been a factor reinforcing the tendency to replace electric with electric" (p114). It is logical to assume that speed of replacement will continue to be a factor when choosing an alternative to electric hot water.

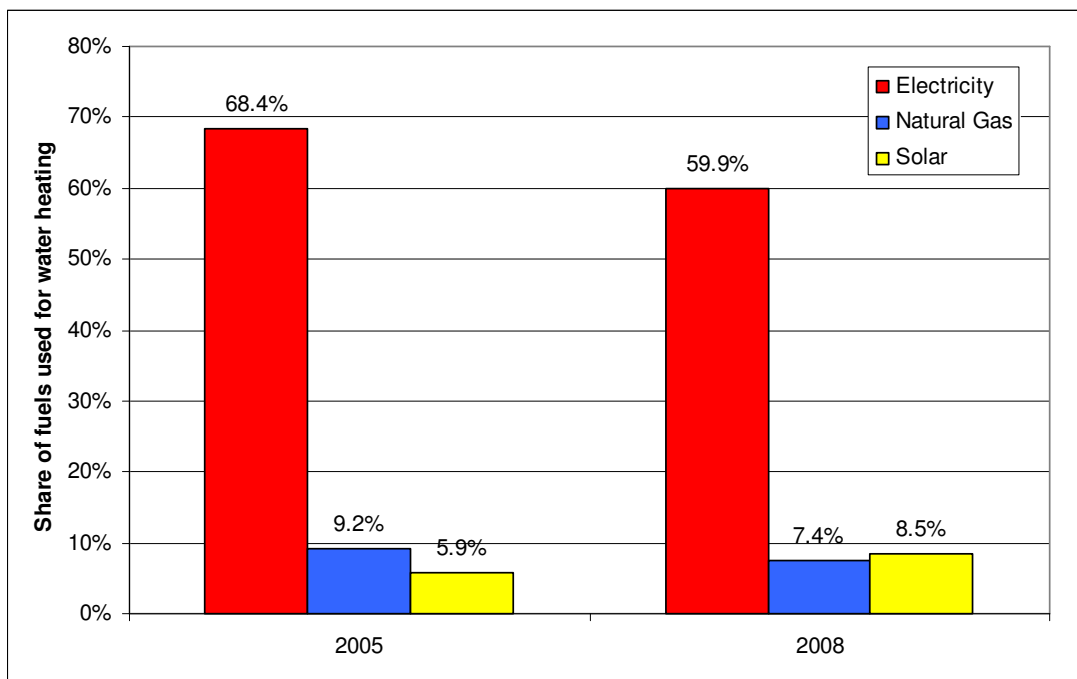


pool and spa heaters, and clothes dryers, over appliances powered by electricity, solar or heat pump technologies.

Competition from solar hot water appliances

Historical trends show a decline in use of electricity for water heating in Queensland. However, while gas was the clear 2nd preference earlier this decade,¹⁴ solar has overtaken natural gas in recent years, as seen in Figure 3-2 below.¹⁵

Figure 3-2 Fuel used for water heating in Qld



While gas models (LPG and natural gas) currently enjoy a minor share of existing hot water systems nationally (15%), national sales figures of new units in recent times show a clear shift towards renewable technologies such as solar and heat pump - 27% of new sales, more than 3 times that of gas models.¹⁶ This statistic indicates that both natural gas and LPG market share is being significantly eroded,

¹⁴ Australian Bureau of Statistics, March 2008, *Environmental Issues: Energy Use and Conservation*

¹⁵ Australian Bureau of Statistics, March 2008, *Environmental Issues: Energy Use and Conservation*, p53.

¹⁶ Wilkenfeld and Associates, 2009, *Regulation Impact Statement: for Consultation. Phasing Out Greenhouse-Intensive Water Heaters in Australian Homes*, p21. Gas hot water market share (natural gas & LPG) was approximately 15% of existing stock in 2008, compared to 8% for solar. Gas hot water market share of new sales was 8% in 2008, compared to 27% for solar and heat pump.



relative to the growth of solar hot water. The use of gas for water heating in Queensland, proportionate to other fuels, is lower than these national figures.

Solar hot water systems enjoy high awareness and well established 'sustainable/green' market positioning, due to Government financial support and combined extensive advertising and promotion by a well-resourced sales and manufacturer sector.

The comparatively high cost to purchase and install a solar hot water system is mitigated by specific Government incentives and messages that reduce the initial capital cost of solar options into a more affordable range. There are no rebates or financial incentives available for choosing natural gas hot water.

Specific rebates and financial incentives for solar hot water purchase and installation include:

- RECs created by solar hot water lower the cost of purchase by up to \$1,222.¹⁷
- The Federal Hot Water Rebate reduces the cost of purchase by \$1,000 for solar hot water.¹⁸
- The Queensland Government Solar Hot Water Rebate offers a rebate of \$600 (or \$1000 for pensioners and low income earners) for installation of a solar hot water system.¹⁹

Competition from heat pump hot water appliances

Heat pump hot water systems are also eligible for the Government rebates and financial incentives listed above, including the Queensland Government Solar Hot Water Rebate, although amounts for some rebates and incentives differ.

Further to this, heat pump hot water systems are quick and easy to install, as they can be connected to the existing electricity supply. Similar to reverse cycle air conditioners, heat pump hot water systems also offer operating cost advantages over conventional storage systems due to the coefficient of performance associated with these units (1 kw electrical input produces 3-4 kw of heating).

¹⁷ Dux, www.hotwaterrebate.com.au, viewed 15/9/10. Range based on Dux models – solar electric boosted 250L to solar gas boosted 400L. Heat pump RECs price fell in between the range. Actual RECS values may be higher, as the manufacturer does not necessarily pass the full value on to the customer.

¹⁸ Federal Government Renewable Energy Bonus, www.climatechange.gov.au/government-programs-and-rebates/solar-hot-water

¹⁹ Queensland Government, September 2008, *Queensland Renewable Energy Plan Solar Hot Water Rebate fact sheet*



This is particularly important when an existing electric storage unit fails and the dwelling is not already connected to the natural gas network. A heat pump can be connected on the same day, whereas natural gas hot water selection imposes a time lag while natural gas is connected to the dwelling. This connection lead time can be up to 15 working days, during which time hot water is not available to the household.

Competition from electricity regarding other household appliances

Electricity is essential to support current standards of living, and is automatically connected to every new home. Electricity is able to be used for all of the appliances listed above and therefore constricts new opportunities for natural gas appliance selection, as natural gas market share is impacted by home owners choosing not to replace their existing electric appliances.

The selection of gas for cooking is a lifestyle choice for home owners based on personal preference – with electricity connected to every home, natural gas is not essential for cooking. Further to this, the development of more responsive electric induction cooktops present increased competition with regards to natural gas' primary benefit over electric technologies for cooking – responsive, controllable heat.

Given that electricity is already connected to every home, natural gas is not essential for the purpose of home heating.

Moreover, the high penetration of reverse cycle air conditioning means that consumers do not need to purchase an additional appliance to meet their home heating needs. Reverse cycle air conditioners also offer operating cost advantages over conventional heating due to the increased coefficient of performance of these units (1 kW of electric input produces up to 3-4 kW of heating output). This makes operating costs of these units competitive with gas.

Network connection lead time and processes

Selection of natural gas appliances in new homes requires an additional utilities service to be installed – a natural gas service and meter. This requires the builder to coordinate network connection lead times (15 working days as at 14/7/10) into the build schedule.

Selection of natural gas appliances also incurs the cost and coordination of an additional trade contractor. While solar hot water, heat pump hot water and electric cooking and heating require only an electrician and plumber, natural gas appliances must be installed by a licenced gasfitter.



3.3.3 Marketing strategy – New Dwellings

3.3.3.1 Sales representation and consulting

Dedicated Business Development Representatives (BDRs) are employed to build relationships with land developers and builders. BDRs negotiate contracts regarding natural gas reticulation of new estates and encourage specification of natural gas appliances as standard in house and land contracts. The BDRs also negotiate opportunities to promote natural gas appliance selection to potential end users (new home buyers) in new residential estates such as Point of Sale promotional displays (including brochures, wall posters, etc) in Land Sales Offices and display homes.

As detailed in Section 3.1.3.1, ease of appliance selection and installation is critical to achieving increased recommendation and specification of natural gas appliances by appliance installers and builders. As such, builder confusion about the natural gas network connection and meter installation process and legislative requirements are barriers to natural gas network connection. Clear communication, close consultation and the provision of educational materials and information to these customer segments is a key element of delivering a simple connection and installation process.

With regards to multi-dwelling and mixed purpose developments, BDRs play a critical role in building close working relationships with Hydraulic Engineers and Consultants. As detailed in Section 3.3.3.4, APT Allgas is a member of the Association of Hydraulic Services Consultants Australia (AHSCA). The key purpose of engaging in activities with the AHSCA, from attending and sponsoring members' meetings to exhibiting in trade shows, is to provide an opportunity to BDRs to build relationships, deliver information on technical requirements and policies, and to be available for questions and consultation.

Planned activities for the upcoming AA period include:

- Further developing relationships with key Developers, Consultants and Builders.
- Leveraging relationships to increase opportunities to market natural gas appliances in display homes and land sales offices, and to increase opportunities to co-promote natural gas estates.



3.3.3.2 *Achieving best practice in operational practices and customer service*

Improving efficiency

Migration to better processing systems for new connections and consolidation with national operational practices (with relevant staff training) is an improvement in network operation.

Simplifying the connection process

The complexity of natural gas connection processes is a competitive disadvantage for residential appliance selection, particularly with engaging the Trade influencer audience segment. In order to overcome this disadvantage, has implemented changes to simplify the connection process.

These changes include creating a financial model that can be applied during the course of the customer's initial phone call. Previously, no standardised cost templates have been available, necessitating a site visit by an assessor to determine the cost of a new connection. This process added up to five days to the connection process and represented an additional cost for APT Allgas, as a contractor was employed to perform site assessments. A standardised financial model that can be applied during the course of the initial phone call removes the need for site visits to determine connection costs in many cases, and eliminates associated delays. This improvement represents a much simpler, more convenient and time effective process for the customer, which reduces the impact of the barrier to connection presented by the complex and time consuming process to connect to the natural gas network.

Planned activities for the upcoming AA period include:

- Identify further opportunities to increase efficiency and further refine the connection process into an increasingly 'customer friendly' format.

3.3.3.3 *Marketing and promotion*

Marketing and promotion is required to promote the advantages of natural gas and natural gas appliance applications to relevant audiences, and to support Sales Representation activities.

The Marketing strategy is designed to promote directly to the end user, while providing tangible and relevant support and information to trade influencers, in line with their needs and drivers.

Past marketing activities have included:



Advertising in consumer publications

Advertisements were booked in local newspapers, promoting the benefits of natural gas appliances. Publications were chosen by overlapping distribution areas with the network geographic footprint, then analysing data from the Australian Bureau of Statistics (ABS) on the population demographics of suburbs within the delivery area for each newspaper. Titles were chosen to target populations with attributes that made them likely prospects for natural gas selection.

In the case of the new home market, the life stage of the population was a factor in title selection. For example, family households made up of “couples without children” were of particular interest, as they are likely to consist of a mix of young couples (who may soon build a new, larger home to accommodate a growing family, or enter the residential market as first home buyers in an affordable new housing estate) and “empty nesters” (who may be in the market to downsize to a smaller, custom built home).

Publications were chosen to deliver the benefits message to both new home prospects and existing home natural gas connection prospects. Demographic data relevant to selecting suburbs and publication titles targeting existing home natural gas prospects is discussed in Section 3.3.5.2.

Advertising and editorial in trade industry publications

The ABS report *Attitudes of residential builders to energy issues and usage* (2003) states that:

“Builders identified trade magazines as their main source of information on energy efficient products and developments, followed by trade representatives.”

Advertising and editorial were submitted to trade industry publications such as the Master Plumber Journal and Master Builder Magazine. These advertisements promoted benefits of natural gas appliance selection and specification that are specifically relevant to trade audiences and deliver to their needs and drivers.

For example, natural gas connection processes and hot water system installation, while complex compared to installation of electric boosted solar or heat pump hot water systems, are not inherently difficult. Advertising messages were designed to combat the perception that the processes associated with natural gas appliance selection are prohibitively complicated and difficult.

Further to this, editorial content submitted by APT Allgas delivered useful, relevant and easy to comprehend information regarding selection of natural gas appliances and network connection processes. Providing such information dispels confusion around the network connection process, thus delivering on the advertising promise of ‘easy to connect’.



Exhibition in trade shows and home shows

The Master Plumber's Association of Queensland (MPAQ) annual trade shows have become progressively more successful and in 2009, APT Allgas' stall at the MPAQ Trade Show received approximately 200 visitors, all of which were plumbers operating in South-East Queensland.

Exhibition at home shows delivers messages regarding the benefits of natural gas appliances to home owners and prospective new home builders, and competes directly with alternatives to natural gas applications such as solar and heat pump hot water and electric cooking, that exhibit at these same events. The events target genuine prospects for home building and renovations, which include prospective new natural gas customers.

Printed materials

Marketing activities included the development of brochures, point of sale materials, technical manuals and 'how to' flyers for distribution to end users and trade audiences, and for use as support materials for Sales representation activities.

Planned marketing activities for the upcoming AA period include:

- Continued advertising in geographically targeted consumer publications and trade industry publications.
- Continued participation in trade shows.
- Materials developed as support for Sales representation activities, and for distribution to end users and trade audiences as required.
- Increased participation in residential estate promotional activities and opportunities, in cooperation with Land Developers.

3.3.3.4 *Industry participation, including organisation memberships and partnerships, as well as representation to Government and other policy making industry bodies*

Past activities include:

Leveraging membership and relationships with industry organisations

Industry organisations relevant to the new home segment include the Urban Developers Industry Association (UDIA), Master Builders Association of Queensland (MBA), Association of Hydraulic Services Consultants Australia (AHSCA) and Master Plumber's Association of Queensland (MPAQ).



Membership of these associations creates opportunities to speak to other members and deliver promotional and educational materials and activities. For example, membership of the UDIA provides opportunities to attend and sponsor Major Developer Luncheons, where BDRs are able to liaise with and address Land and Commercial Developers, and identify opportunities to reticulate new projects and developments.

Similarly, APT Allgas' relationship with MPAQ has resulted in opportunities to submit editorial to the Master Plumber Journal, and to include promotional material in MPAQ member mailouts, delivering educational materials with implied endorsement from the member organisation.

Access to key industry and market information

Membership to these organisations creates access to valuable information on industry trends that assists with planning Network Development activities and identifying market opportunities. The UDIA, MBA, MPAQ and Housing Industry Association (HIA) all host educational events that deliver information relevant to natural gas network growth planning such as analyses of economic indicators, housing start data, population growth and urban development plans, legislative changes, etc. Many of these associations also deliver regular emailed industry updates to members, such as the HIA Quarterly State Outlook, which identifies housing trends and has contributed to forecast customer numbers as delivered in the APT Allgas Load & Demand Forecast for the upcoming AA period.

Planned activities for the upcoming AA period include:

- Developing closer relationships with industry associations to create opportunities for cooperative activities, including increased touch points with members and opportunities to deliver educational and promotional messages.
- Cooperation with Government Departments at all levels to influence policy decisions and maximise network growth opportunities arising from new laws and policies.

3.3.4 Market challenges and opportunities – Existing Dwellings

3.3.4.1 *Opportunities*

Environmental concerns and natural gas credentials

Home owners are increasingly motivated by both Government and an emergent 'green' culture to achieve sustainable living practices, including carbon emission reduction. Replacing electric hot water with a 5-star natural gas hot water system contributes to lower household carbon emissions, and replacing other electric



appliances with natural gas appliances (clothes dryers, cooking, heating) reduces household reliance on coal-fired electricity.

Queensland Government Sustainable Housing Laws – for existing homes

Queensland Government Sustainable Housing Laws are part of the Queensland’s Climate Change Strategy, which include the Sustainable Housing Code 2006. These new laws came into effect on January 1 2010, and extend the ban on installation of electric hot water systems in new homes to apply to existing homes under the following circumstances:

The installation of electric resistance hot water systems is banned in existing Class 1 buildings (houses and townhouses), where a natural gas network connection and meter can be installed on the property boundary at no cost to the home owner from the natural gas distributor.

In such cases, when an electric resistance hot water system is replaced, it must be replaced with a “greenhouse efficient” hot water system. This includes 5-star natural gas, 5-star LPG, solar or heat pump hot water systems.

The Emergency Hot Water Replacement File Note²⁰ details the analysis into the impact of new legislation on connections arising from replacement of failed electric hot water systems.

While the report forecasts a 0% share of the market for **replacement of failed** electric hot water systems, the new laws do represent an opportunity for increased market share of **voluntary replacement** of existing electric hot water systems, given that replacement electric resistance hot water systems have been removed as a competitor for affected properties.

Increased investment in home renovation

The HIA forecasts a gradual recovery in home renovations expenditure in Queensland, quoting a forecast growth of 4% in FY11 and 5% in FY12.²¹ This represents opportunities for APT Allgas to grow new connections in the Existing Home segment by strategically targeting home owners, as well as influencers such as plumbers, gasfitters and renovation builders. Given this increased opportunity and following an analysis of network connection trends, APT Allgas has forecast a 5% growth in connection numbers per year in the **Existing Home** segment over the upcoming AA period.

²⁰ APT Allgas, 16/3/2010, *Emergency Hot Water Replacement File Note* (see Attachment 1)

²¹ HIA Economics Group, March 2010, *Queensland State Outlook, March Quarter 2010*, pA-24



Mains Renewal Program

The APT Allgas mains renewal program is an essential asset maintenance activity, upgrading older (low pressure) mains. The insertion of new medium and high pressure pipes in existing areas presents an opportunity for new connections to existing homes on line of main. While some low pressure pipes on the network are unable to provide adequate pressure for continuous flow hot water systems, medium and high pressure pipes do provide adequate pressure. This makes it possible to promote the benefits of a natural gas continuous flow hot water system to a specifically targeted audience.

3.3.4.2 Challenges

Limited availability of natural gas networks

Unlike electricity and LPG (and therefore, appliances reliant on these fuels), natural gas is not widely available, due to the limited geographic footprint of the APT Allgas natural gas network.

As such, natural gas has a smaller potential residential market relative to solar and heat pump hot water and electric cooking and heating.

Limited availability also represents a challenge with regards to marketing and promotion. Broadcast communication channels (such as radio, television and major press titles) are delivered to a large population, including a significant proportion of consumers that are outside the APT Allgas network areas. These communication channels are widely consumed by end users and **could be** effectively used to increase awareness of the benefits of natural gas applications (and therefore demand for natural gas connections). **However**, given the wastage of delivering messages to an audience that is largely outside of the APT Allgas target audience, these channels do not represent an efficient use of marketing and promotion expenditure.

This limits the selection of communication channels that can be used for natural gas marketing and promotion.

Existing electric appliances

Electricity is essential to support current standards of living, and is automatically connected to every new home. Electricity is able to be used for all household applications for which natural gas competes and therefore constrains opportunities for natural gas appliance selection, as natural gas market share is impacted by home owners choosing not to replace their existing electric appliances.

Further to this, home owners have an incentive to replace like for like when replacing a failed electric appliance or upgrading an old electric appliance. When



replacing an electric appliance with another electric appliance, the home owner must investigate alternative brands, model types, etc. Consideration of an alternative fuel, such as natural gas, requires the same decision making process (appliance brand and model), but also requires a second decision making process, whereby the home owner must investigate the pros and cons of electricity vs gas vs solar, etc. This entails additional time and effort, which is a disincentive to investigating the option of replacement appliances powered by alternative fuels.

Limited capacity to position natural gas in the 'green' market

A 5-star natural gas hot water system (storage or instantaneous) produces approximately one third of the carbon emissions of a resistance hot water system run on coal fired electricity.²² However, natural gas is a non-renewable fossil fuel that does produce carbon emissions. As such, and despite the fact that natural gas is a low-carbon emission fuel with a strong position as a transitional fuel in the passage to a cost effective low carbon economy, there are legal concerns about producing advertising and promotional messages that describe natural gas and natural gas appliances as “environmentally friendly” or “green”. Given that natural gas is not a renewable fuel, advertising materials need to adequately reflect that natural gas is a low carbon emission fuel, if not specifically "green".

Further to this, natural gas faces strong competition from other fuels and technologies operating in this “green” marketing space. For example, solar and wind generated energy produce low carbon emissions, and a gas boosted solar hot water system produces approximately one quarter of the emissions of a resistance hot water system run on coal fired electricity.

Network connection lead times and processes

The average lead time for a natural gas service and meter connection is currently 15 working days (as at 14/7/10). Solar hot water, heat pump hot water, and electric cooking and heating appliances all require use of electricity, which is already connected to homes. These appliances do not require installation of an additional utilities service, and as such, no additional connection lead time is required for installation of these appliances.

Selection of natural gas appliances also requires that the customer coordinate the service connection to the natural gas network and installation of the natural gas meter – an additional process that is not required for selection of competitor appliances.

²² Queensland Government Department of Infrastructure and Planning, June 2008, *Improving sustainable housing in Queensland Discussion paper*, p27



Network connection costs

Where the expense incurred by APT Allgas to install a new network connection and meter is not financially viable (i.e., will not result in a viable return on investment as per National Gas Rules regarding achieving lowest sustainable cost of network operation), the shortfall is passed on to the customer as a quoted cost to connect. This adds to the cost of natural gas appliance selection for the customer and is therefore a competitive disadvantage for natural gas, relative to electricity, which is connected to all homes.

Ineligibility for Government rebates and financial incentives

The comparatively high cost to purchase and install a solar hot water system is mitigated by specific Government incentives and messages that reduce the initial capital cost of solar options into a more affordable range. There are no rebates or financial incentives available for choosing natural gas hot water.

Specific rebates and financial incentives for solar hot water purchase and installation include:

- RECs created by solar hot water lower the cost of purchase by up to \$1,222.²³
- The Federal Hot Water Rebate reduces the cost of purchase by \$1,000 for solar hot water.²⁴
- The Queensland Government Solar Hot Water Rebate offers a rebate of \$600 (or \$1000 for pensioners and low income earners) for installation of a solar hot water system.²⁵

Heat pump hot water systems are also eligible for the Government rebates and financial incentives listed above, including the Queensland Government Solar Hot Water Rebate, although amounts for some rebates and incentives differ.

²³ Dux, www.hotwaterrebate.com.au, viewed 15/9/10. Range based on Dux models – solar electric boosted 250L to solar gas boosted 400L. Heat pump RECs price fell in between the range. Actual RECS values may be higher, as the manufacturer does not necessarily pass the full value on to the customer.

²⁴ Federal Government Renewable Energy Bonus, www.climatechange.gov.au/government-programs-and-rebates/solar-hot-water

²⁵ Queensland Government, September 2008, *Queensland Renewable Energy Plan Solar Hot Water Rebate fact sheet*



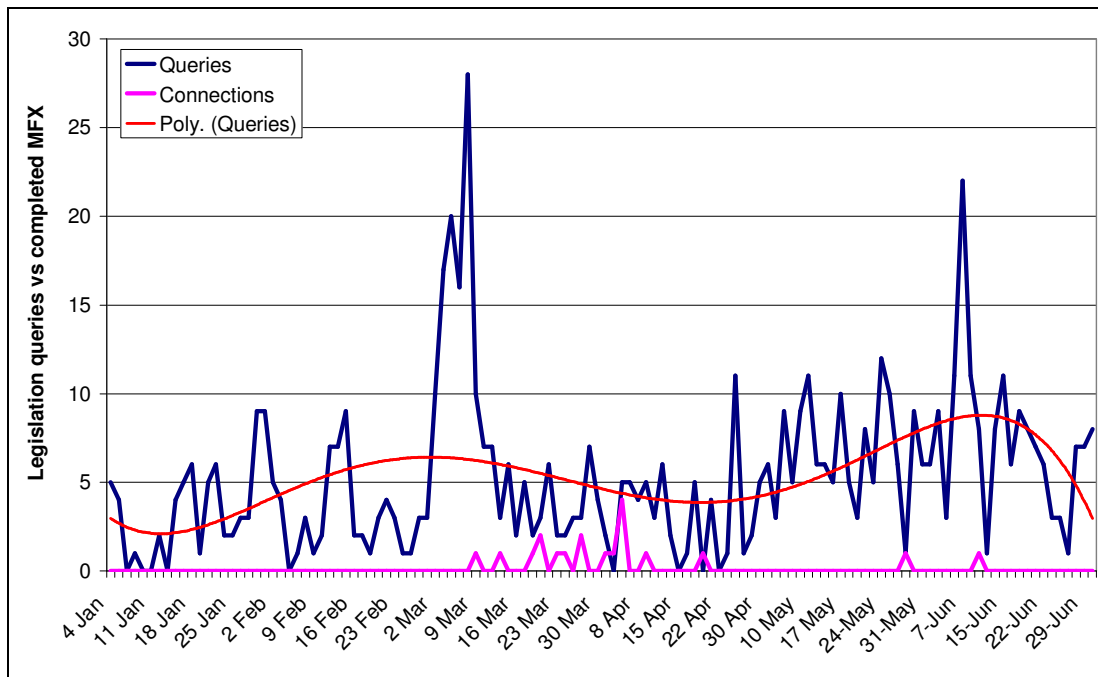
3.3.5 Marketing Strategy – Existing Dwellings

3.3.5.1 Achieving best practice in operational practices and customer service

While the Customer Service Team (including processing of all new network connections) is structured to operate at optimal efficiency, additional staff are required from time to time to manage increased workloads, which entails a temporary increase in expenditure.

For example, in March 2010, the Queensland Government Department of Infrastructure & Planning conducted a letterbox drop to approximately 400,000 homes in all natural gas reticulated suburbs in Queensland, advising home owners of the new Sustainable Housing Laws, and featuring the ‘Natural Gas Hotline’. In the first week of the letterbox drop, the daily number of queries regarding the new laws increased significantly, as shown in Figure 3-3 below. A contractor was appointed to the Customer Service Team on a temporary basis to manage the expected increase in queries.

Figure 3-3 Queries regarding sustainable housing laws, with trend line



Planned activities for the upcoming AA period include:

- Monitor industry and Government policy requirements and customer trends, and continue to refine customer service processes to ensure that current customer needs and expectations are met.



3.3.5.2 Marketing and promotion

Past marketing activities

Past marketing activities for New Dwellings (see Section 3.3.3.3) also target audiences for Existing Dwellings, with the exception of advertising and promotional materials and activities used in new residential estates.

Past activities for existing homes have also included:

Direct mail to homes affected by the mains renewal program

The TNS Australia report, *Reaching Consumers in the Information Age: How Australian consumers prefer organisations to communicate with them*, found that consumers in all surveyed demographics preferred personalised mail for receiving advertising and promotional information from utility providers.²⁶

This direct mail campaign targeted homes on line of mains that had recently been upgraded and promoted the benefits of natural gas hot water. Given the investment of time, effort and upfront cost associated with the decision to replace an existing hot water system, this campaign included materials designed to extend the effectiveness of the campaign message – a fridge magnet and adhesive sticker for the existing hot water system – to ensure that the message would be visible to the home owner when their electric hot water system needed replacing, even several months after the campaign launch.

Multi-tiered campaign leveraging the new Sustainable Housing Laws for existing homes

This campaign consisted of newspaper advertising in local (geographically specific) press and direct mail to specifically targeted addresses. The campaign was designed to coordinate with Queensland Government promotional activities.

- Newspaper advertising: As detailed in Section 3.3.3.3, local newspaper titles were chosen for the purpose of achieving new customer connections using analysis of suburb demographics (within natural gas reticulated areas). Factors influencing audience targeting for the existing home segment were home ownership vs rental properties and household type (houses and townhouses vs units). Family type was also considered, but as a relevant factor for maximising average consumption per household.
- Direct mail: APT Allgas worked in cooperation with the Queensland Government Department of Infrastructure & Planning to determine a list of properties located

²⁶ TNS. *Reaching Consumers in the Information Age: How Australian consumers prefer organizations to communicate with them*, p30

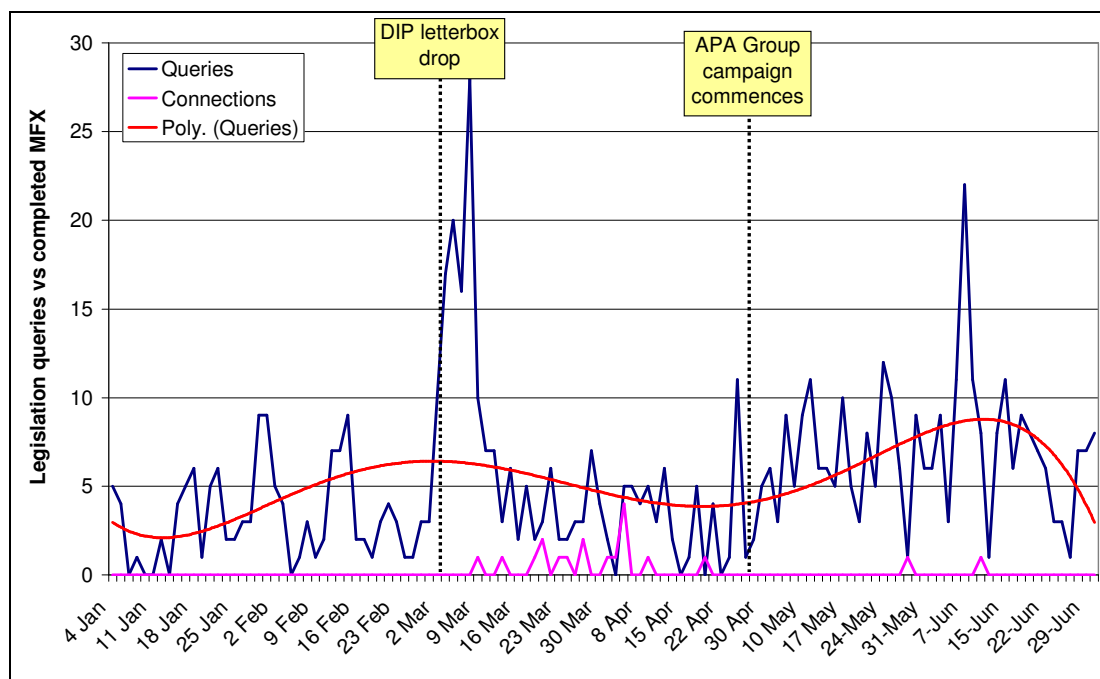


within 5m of a natural gas main. Demographic data for suburbs as detailed above was applied to the list of addresses falling within the APT Allgas network areas, to determine which suburb populations included prospects most likely to be impacted by legislation, and most likely to be empowered to make a decision on appliance selection and replacement. The APT Allgas mailout regarding the new laws targeted 6,796 of these addresses on the APT Allgas network.

The campaign, which commenced on 28/4/10, resulted in an average of 6.77 daily queries (28/4/10 to 30/6/10) regarding the new laws on the APT Allgas network, compared with an average of only 4.44 daily queries prior to the APT Allgas campaign. It is worth noting that the lower daily average of 4.44 queries includes the spike in queries resulting from the Queensland Government 400,000 property letterbox drop during the week commencing 3/3/10.

Campaign activities are shown against legislation queries in Figure 3-4 below.

Figure 3-4 Electric hot water replacement legislation queries, against campaign activities



Queries regarding the new laws resulted in 19 new network connections in the six months from 1/1/10 to 30/6/10.

Planned marketing activities for the upcoming AA period include:

- Continued advertising in geographically targeted consumer publications and trade industry publications.



- Continued participation in trade shows.
- Further direct mail targeting of homes on line of main.

3.3.5.3 *Industry participation, including organisation memberships and partnerships, as well as representation to Government and other policy making industry bodies*

Past activities include:

- Leveraging membership and relationships with industry organisations such as MPAQ, in order to create opportunities to speak to members and deliver promotional and educational materials and activities.
- Membership to organisations such as the HIA creates access to valuable information on renovation trends that assists with planning Network Development activities and identifying market opportunities.

Planned activities for the upcoming AA period include:

- Developing closer relationships with industry associations to create opportunities for cooperative activities, including increased touch points with members and opportunities to deliver educational and promotional messages.
- Cooperation with Government Departments at all levels to influence policy decisions and maximise network growth opportunities arising from new laws and policies.

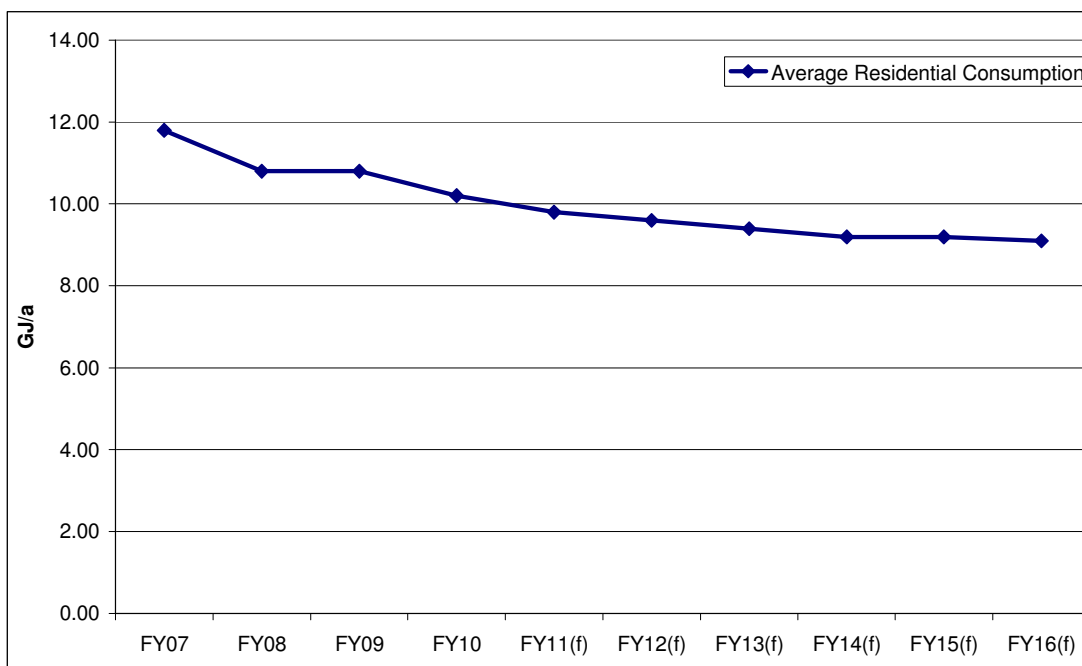


3.4 Consumption

3.4.1 Past and forecast performance

Figure 3-5 below shows average Residential consumption past performance and forecast.

Figure 3-5 Average residential customer consumption



3.4.2 Market challenges and opportunities – New Dwellings

Declining average consumption in new dwellings can be attributed to the following factors, discussed in detail in the APT Allgas Load & Demand Forecast document:

- Selection of energy efficient appliances.
- Development and take-up of new technologies such as 6-star efficiency hot water and reverse cycle air conditioning.
- Hot water conservation, including consumer behaviors affected by drought awareness and uptake of water saving appliances and devices.
- Government policies affecting sustainable living, including 5 and 6 star housing standards.



- Government rebates for solar hot water, which incentivise selection of gas boosted solar hot water systems, reducing gas consumption in new gas connected homes compared to new homes using natural gas instantaneous or storage hot water systems.

Challenges and opportunities for mitigating declining consumption in new dwellings is related to maximising gas usage in new dwellings by encouraging selection of natural gas continuous flow or storage hot water systems where a natural gas connection is being installed for cooking or heating appliances.

As such, the challenges for maximising gas usage in new dwellings are identical to challenges affecting new appliance selection as detailed in Section 3.3.2.2.

Opportunities for maximising gas usage in new dwellings are also related to new appliance selection for hot water systems.

3.4.3 Marketing strategy – New Dwellings

The marketing strategy for maximising average consumption in New Dwellings is to ‘hero’ natural gas hot water systems when promoting the benefits of natural gas applications and appliances in order to affect natural gas appliance selections in new homes, as detailed in Section 3.3.3.

3.4.4 Market challenges and opportunities – Existing Dwellings

3.4.4.1 *Opportunities*

New technologies

One of the reasons for the declining average consumption is the increased penetration of reverse cycle air conditioning used for heating, which displaces existing gas space heaters.

APT Allgas is participating in a project to grow the opportunity for selection of gas powered air conditioning. Take up of this new technology will not only mitigate the decline in consumption caused by displacement of natural gas space heaters, it will also add a new consumption load to new connections.

APT Allgas also proposes to create a new role to coordinate the development and deployment of new gas technologies (see Appendix B).

Gas is currently utilised for limited residential applications, primarily water heating, cooking, and space heating. The Business Case for the Development and Deployment of New Technology argues for the employment of an additional dedicated resource, whose sole objective is to investigate new technological



improvements to gas fuelled equipment and to facilitate the introduction of these appliances into the Queensland market.

Potential new applications include gas-fired air-conditioning, gas-fired combined absorption chilling/heating/hot water, natural gas for vehicles, embedded generation, small scale cogeneration, micro-cogeneration, and fuel cells.

This additional expenditure would be required for the upcoming AA period, and is detailed in Table 3-2 below (see Appendix B for further details)

Table 3-2 Development and Deployment of New Technology proposed expenditure

\$K (Real 2009/10) - Development and Deployment of New Technology						
	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Senior Engineer	150	150	150	150	150	750
Demonstration Trials	100	100	100	100	100	500
Total	250	250	250	250	250	1250

Given the long-term outlook of this function, increases in revenue would not be expected until the AA period commencing FY17.

Maximising consumption from existing customers

There are currently approximately 18,700 Residential properties connected to the APT Allgas network that are not using natural gas hot water systems (although these include units in multi-dwelling buildings that share a meter for bulk hot water). Competitive disadvantages associated with installing a new gas connection, such as lead time and connection cost, do not apply to customers already using natural gas for cooking or heating only.

These customers are not utilising their natural gas network connection to full capacity. Maximising network utilisation by these customers is an important contribution to increasing average customer consumption across the networks and consequently achieving the economies of scale that will reduce costs for all customers connected to the network.

The addition of natural gas hot water systems to cooking and heating appliances already in use at these properties will significantly increase gas consumption by these customers. Opportunities exist to facilitate replacement of existing electric hot water systems at these properties with natural gas hot water systems:



- Queensland Government Sustainable Housing Laws regarding replacement of electric hot water systems in existing homes – homes with an existing natural gas service and meter are automatically captured by this legislation.
- The APT Allgas mains renewal program will allow existing customers on previously low pressure mains to install a continuous flow natural gas hot water system.

APT Allgas propose an Electricity to Natural Gas Hot Water Changeover Program to target these customers (see Appendix A).

Increasing utilisation of the network by all existing customers can also be achieved by introducing new natural gas applications into the residential market. To this end, APT Allgas have proposed to employ a role specifically to facilitate the development and introduction of new natural gas technologies, as detailed in Section 3.4.4.1 New Technologies, above.

3.4.5 Marketing Strategy – Existing Dwellings

3.4.5.1 *Marketing and promotion*

Past activities for existing homes, specifically targeting selection of natural gas hot water systems include:

Direct mail to homes affected by the mains renewal program (2009).

This campaign targeted addresses along line of mains that had recently been upgraded from low to medium or high pressure. The letterbox drop did not exclude existing customers on line of main, as some of these could reasonably be expected to not be using their natural gas network connection for water heating, given the insufficient pressure provided by older gas mains at time of connection.

Multi-tiered campaign leveraging the new Sustainable Housing Laws for existing homes

This campaign included newspaper advertising in local press and direct mail to specifically targeted addresses regarding the Queensland Government's new Sustainable Housing Laws regarding replacement of electric hot water systems, and is detailed in Section 3.3.5.2 above. Again, existing customers were not excluded from direct mail address selection or the messages delivered in this campaign, as some existing customers are not using their natural gas connection for water heating.



Performance based cash promotion to appliance installers

A cash incentive was offered to plumbers for organising a new natural gas network connection that included a natural gas storage or instantaneous hot water system between 17/5/10 and 25/6/10. 57 new connections were made to the APT Allgas network in connection with this promotion, including new and existing dwellings. The majority of claims were for connection to new homes, and for this reason, future performance based promotions will be modified to encourage greater uptake across the Existing Home market.

Planned marketing activities for the upcoming AA period include:

- Continued advertising in geographically targeted consumer publications and trade industry publications.
- Continued participation in trade shows.
- Targeted communications to trade audience particularly influential for this market segment (plumbers) addressing the new legislation regarding replacement of electric hot water systems, and promoting the benefits of natural gas appliances.
- Further direct mail targeting of homes on line of main.
- Performance based cash incentives for trade customers. Going forward, this will be a key activity to maximise utilisation of the existing network, and as such, funds have been allocated from the Marketing and Promotion budget for each year in the next AA period. While this allocation is sufficient to conduct a base level promotional program, our ideal position would be to expand this program to incentivise more connections. A submission has been made for additional budget for an expanded program, and is discussed in the Electricity to Gas Hot Water Changeover Program step change document attached (Appendix A).

3.4.5.2 *Industry participation, including organisation memberships and partnerships, as well as representation to Government and other policy making industry bodies*

Past activities include:

- Leveraging membership and relationships with industry organisations such as MPAQ, in order to create opportunities to speak to members and deliver promotional and educational materials and activities.
- Membership to organisations such as the HIA creates access to valuable information on renovation trends that assists with planning Network Development activities and identifying market opportunities.



Planned activities for the upcoming AA period include:

- Developing closer relationships with industry associations to create opportunities for cooperative activities, including increased touch points with members and opportunities to deliver educational and promotional messages.
- Cooperation and consultation with Government Departments at all levels to influence policy decisions and maximise network growth opportunities arising from new laws and policies.



4 Volume Class – Business

4.1 *Customer segments*

4.1.1.1 *Business customers – Drivers and customer behaviour*

Similar to the Demand Class, Volume Class Business customers are motivated by commercial factors such as efficiency of operation, cost of fuel and equipment running, etc.

Natural gas enjoys a competitive advantage in that the fuel supply is reliable, whereas service interruption is not uncommon on electricity grids, and is a risk when using LPG bottles. Service interruption, regardless of business type, is a costly event, and reduction of risk is a factor in fuel selection.

In businesses where LPG is the strongest competitor to natural gas (e.g., hospitality), the lower running cost of natural gas is a significant driver, although the initial cost to connect to the natural gas network and convert or replace existing appliances and equipment is a barrier to connection.

Given the cost and efficiency driven decisions made by this audience, decision makers respond to solid commercial proposals.

The initial cost to connect to the natural gas network, replace existing equipment or convert existing equipment from LPG or coal can be a significant barrier to connection. For this reason, this audience responds particularly well to financial incentives that reduce the cost for the customer to change over from coal and LPG to natural.

4.1.1.2 *Developers – Drivers and customer behaviour*

Developers of commercial projects are motivated by the same commercial drivers as Land Developers in the Residential segment, as detailed in Section 3.1.2.1 – achieving the greatest possible return on investment (achieving cost efficiencies and attracting tenants and property buyers), while operating in the context of a regulated industry.

4.1.1.3 *Influencers – Drivers and customer behaviour*

Drivers for specification of natural gas appliances and equipment for commercial customers are the same as drivers for specification of natural gas appliances for residential customers, as detailed in Section 3.1.3.1.

4.2 *Historical Market Development Activities*

The following chart shows historical promotional activities for the Volume Class, for the Business market.

Quarter	FY09				FY10				FY11			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Direct mail												
Incentive programs												
Sales representation events												
Online												

Network Development activity in FY07 and FY08 consisted of sales representation, particularly focusing on cold calling and by BDRs to targeted businesses and industries.



4.3 *Customer numbers*

4.3.1 Past and forecast performance

	FY07	FY08	FY09	FY10	FY11 (f)	FY12 (f)	FY13 (f)	FY14 (f)	FY15 (f)	FY16 (f)	AA Total
Number New Connections - Business	N/A	N/A	129	161	164	183	188	193	198	204	1,420



4.3.2 Market challenges and opportunities – Business

4.3.2.1 Opportunities

Financial viability of business customers

Business customers represent a greater revenue opportunity than Residential customers, and as such, in the coming AA period, Network Development expenditure and activities will reflect a commensurate allocation to developing this customer segment within the Volume Class.

Cost advantage of natural gas

Substituting natural gas for electricity and coal generated energy in industrial and commercial applications can reduce a business' environmental impact, and increase energy efficiency – both of which have cost implications in an increasingly carbon driven economy.

Natural gas is currently less expensive than LPG, which is a significant point of difference given the large volumes required by Business customers.

Planned Federal Government Carbon Pollution Reduction Scheme (CPRS)

The cost advantage of natural gas will present greater opportunities as a CPRS style of program moves closer to becoming a reality and Business customers prepare to become compliant. Given the uncertainty around the timing and form that a carbon pricing or carbon trading policy will take, the potential impact of this impending policy change has not been factored into network performance forecasts. However, it is important to monitor Government activity and developing policy moving forward.

New technologies

Given the innovation in the Business sector, emerging technologies in both the commercial and light industrial sector are monitored for opportunities for natural gas fuel selection.

Cogeneration and trigeneration

Cogeneration and trigeneration present an opportunity to increase consumption from existing customers and for new customers.



Green Star building rating system

Green Star ratings for (typically commercial) buildings are administered by the Green Building Council, a non-Government organisation established to develop sustainable building design and practices in the Australian construction industry.

Green Star building ratings are awarded on the basis of sustainable building criteria (construction and ongoing operation/functionality), which includes use of fuels and energy services.

The Green Building Council provides tools and advice for Developers to market Green Star rated projects to prospective tenants and property buyers.

4.3.2.2 Challenges

Limited availability of natural gas networks

While natural gas is less expensive than LPG, it is not widely available, due to limited network coverage. As such, natural gas has a smaller potential customer market relative to LPG equipment and appliances.

Fragmented audience segments

Compared to the Residential audience segments which share common channels for message communication, reaching potential business customers presents an additional marketing communication challenge, in that business audiences are spread across a variety of industries.

This results in a lack of common channels such as industry publications, events and organisations that enable us to comprehensively communicate to Business customers as a collective group.

This is a significant challenge for marketing and promotion and requires a different strategy regarding communication channels and utilisation of the roles played by network development tools such as marketing, promotion, sales representation, industry support and resourcing, etc.

4.3.3 Marketing Strategy – Business

Given the challenge presented by the fragmented audience within this customer segment, as mentioned in Section 4.3.2.2 above, the strategy for promoting natural gas applications to potential Business customers entails a greater reliance on sales representation and on targeting influencer audiences rather than traditional marketing targeting end users.



4.3.3.1 *Sales representation and consulting*

Sales representation in this market segment has in the past consisted of building and maintaining relationships with existing repeat customers such as Commercial Developers and Hydraulic Consultants, to ensure continued specification of natural gas equipment in new projects.

In 2010 and into the upcoming AA period, Sales representation will also focus on identifying opportunities for converting small businesses from LPG or electricity to natural gas equipment.

- Prospective small businesses will be segmented into industries, and each industry will be targeted in turn. Businesses within each industry and on line of a natural gas main will be identified using public data sources cross referenced with APT Allgas network maps and approached by the relevant BDR.
- Grouping businesses into industry types for targeting creates efficiencies in the use of employee time and resources, as BDRs are able to identify common needs and drivers for each industry, and then develop strategic messages for each industry. This strategy can then be applied and delivered to several prospective customers in succession before moving on to the next industry group.

4.3.3.2 *Achieving best practice in operational practices and customer service*

The Network Development function has progressed towards a more effective and efficient organisational structure, incrementally since entered the Queensland natural gas distribution market in 2006. This has included consolidating staff into Customer Service (including new connection processing), Sales Representation and Marketing teams servicing all customer segments.

4.3.3.3 *Marketing and promotion*

Past marketing activities have included producing materials to support Sales representation activities.

Planned activities for FY11 and into the coming AA period will continue to support Sales representation activities, including production of materials and coordination of relationship building events.

In line with an increased focus on Business customers (given the greater revenue from this segment), activities will also include an investigation into effective advertising and promotions opportunities, to complement and expand upon the sales representation focused strategy.



Planned activities for FY11 and into the coming AA period will also include promotion of an incentive program for LPG to natural gas conversions, where financially viable.

4.3.3.4 Industry participation, including organisation memberships and partnerships, as well as representation to Government and other policy making industry bodies

APT Allgas are currently members of the AHSCA, and participate in sponsorship opportunities and trade shows targeting members. The membership has enabled to address members to deliver promotional and educational material regarding APT Allgas technical policies and information. This activity has greatly improved relationships with these influential decision makers and will continue into the coming AA period.



4.4 Consumption

4.4.1 Past and forecast performance

Table 4-1 below shows average Business consumption (for new connections) past performance and forecast.

Table 4-1 Average new business consumption

	FY07	FY08	FY09	FY10	FY11 (f)	FY12 (f)	FY13 (f)	FY14 (f)	FY15 (f)	FY16 (f)	AA Total
Av Consumption New Bus: (GJpa)	N/A	N/A	433.5	425.146	424.02	421.69	419.84	418.04	416.31	414.60	N/A

While new residential customers did connect to the APT Allgas network in FY07 and FY08, the available data does not give robust figures for this period.



4.4.2 Market challenges and opportunities – Business

4.4.2.1 *Opportunities*

Several opportunities exist to increase consumption by existing customers:

- Some natural gas customers use a complementary fuel for other equipment, providing opportunities for conversion.
- As new technologies utilising natural gas are developed, opportunities will arise to introduce new natural gas applications to existing customers.
- Cogeneration and tri-generation present opportunities to expand the use of natural gas by existing customers such as schools and light industry.

4.4.3 Marketing Strategy – Business

BDRs will continue to monitor existing customers for opportunities as listed in Section 4.4.2.1 above.



5 Demand Class

5.1.1 Past and forecast performance

Most variation in total customer numbers in the Demand class is due to fluctuations in consumption from existing customers, causing them to migrate between the lower range of Demand class and the upper range of Volume class.

We can reasonably expect to attract between 0 and 2 new Demand class customers each year, which contributes to customer number variations.

Each new connection is assumed to have an MHQ of 10 GJ/h, MDQ of 100 GJ/d and consume 15,000 GJpa.

5.1.2 Market challenges and opportunities

The scope to influence decision makers in this class is extremely limited.

Natural gas fuel pricing does not compete well against coal in this class at present, although any carbon pricing scheme introduced by the Federal Government is likely to work in favour of natural gas competitive pricing relative to coal.

5.1.3 Network Development strategy

Network Development strategy for the Demand class is largely reactive, focusing on delivering a quick and effective commercial connection offer to prospective customers when opportunities arise, in order to facilitate prompt network connection and service delivery to meet the customer's requirements.



6 Marketing Activities and Expenditure

6.1 Summary

Figure 6-1: and Figure 6-2 below show the current expenditure split between Network Development activities for FY11 and the planned expenditure split for the full upcoming AA Period, including costs included in the Electricity to Gas Hot Water Changeover Program and the Development and Deployment of New Technology proposals.

Figure 6-1: FY11 Network Development activities expenditure split

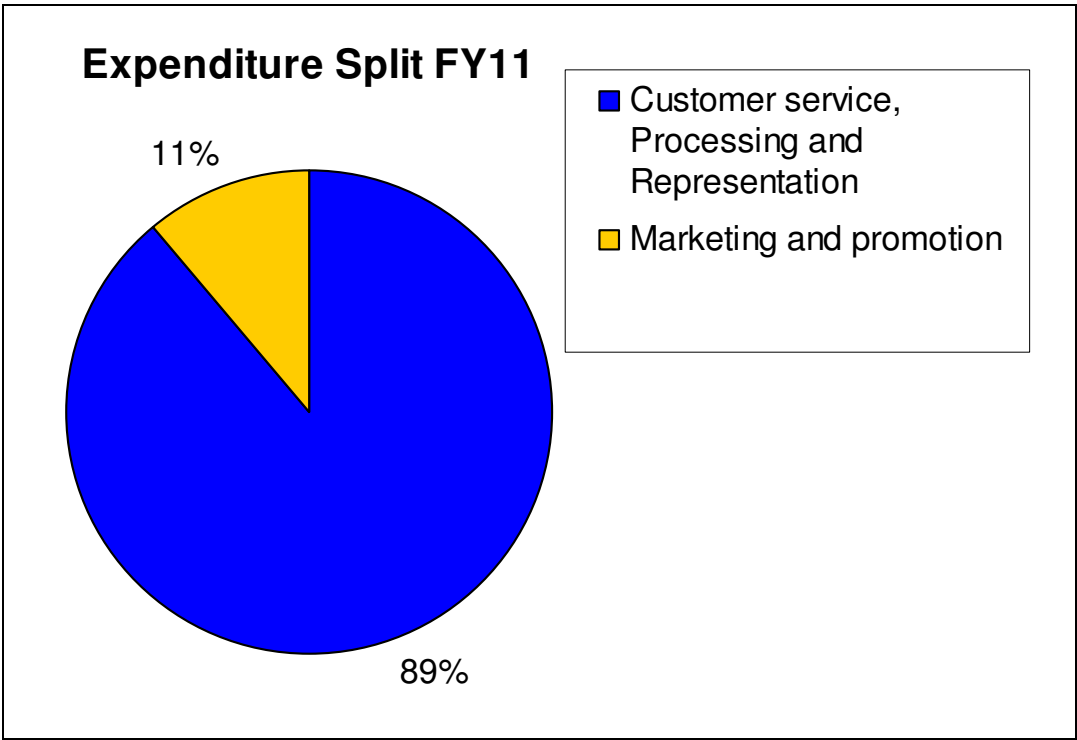
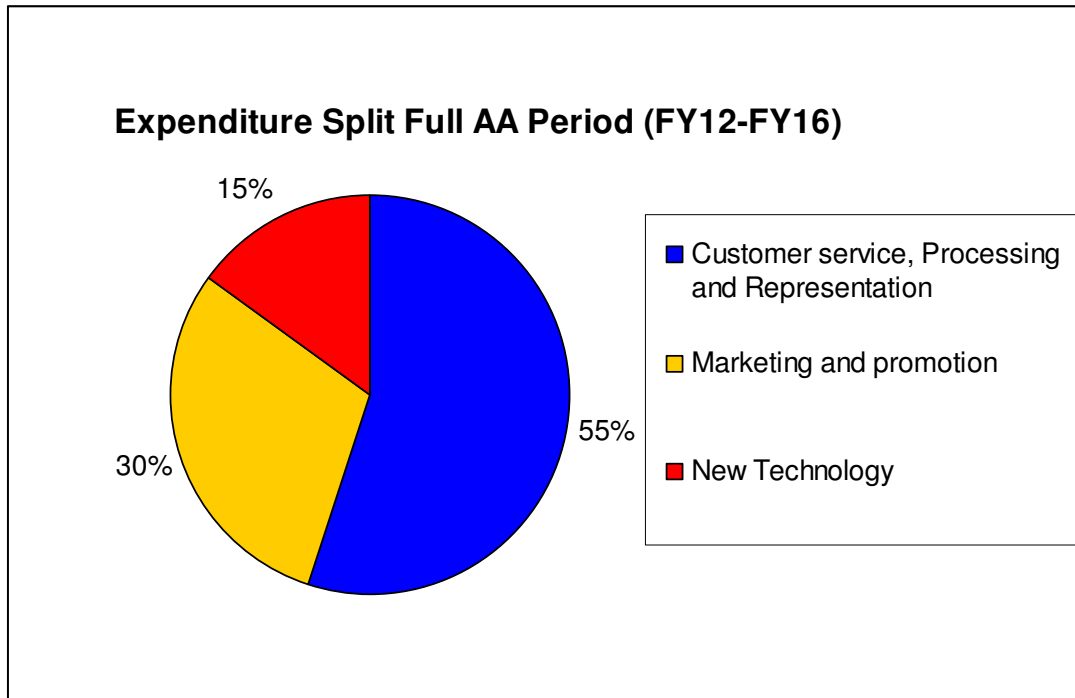




Figure 6-2 FY12-FY16 Network Development activities expenditure split



Customer service and processing includes operation of the Natural Gas Hotline and all tasks required to coordinate and process new network connection work orders. This activity type is therefore essential to network operation and growth. It is crucial to achieve industry best practice in this activity, including delivery of a positive customer service experience, and optimising efficiency of operations. As such, this activity appropriately demands a substantial share of Network Development expenditure.

6.2 Activity details

As shown in the charts above, and in sections 3.2 and 4.2, Network Development to date has focused heavily on labour costs, including mandatory activities necessary to facilitate new network connections. As the AA period has progressed, specific marketing programs have been implemented, broadening APT Allgas' communication to and impact on the market.



Table 6-1 below shows planned activities for FY11, as an indication of typical Network Development activities to be undertaken in the coming AA period.

In addition to these activities APT Allgas proposes to implement an **Electricity to Gas Hot Water Changeover Program (see Appendix A)**, and to employ a dedicated resource focusing on **Development and Deployment of New Technology (see Appendix B)**, in the coming AA period. These additional activities reflect the evolution of the Network Development strategy to date, and are representative of further steps to grow the market for natural gas applications and to maximise network utilisation; specifically in order to drive lower costs of delivered natural gas to customers over the long term.

Table 6-1 Activity details for FY11 (rounded)

Activity	Description
Labour costs, including salaries, vehicle costs, superannuation etc.	<ul style="list-style-type: none"> ○ Customer service and new connection processing, Business development, Marketing and promotions. Given that these activities are essential to network operation and growth, labour costs will continue to represent a substantial proportion of the total Network Development spend.
End user communications (for both Residential and Business customers)	<ul style="list-style-type: none"> ○ Newspaper and magazine advertising and direct mail campaigns. ○ Development of printed materials for distribution as point of sale and at events. ○ Subsidised conversion from LPG to natural gas equipment and appliances for Business customers, where financially viable.
Trade communications	<ul style="list-style-type: none"> ○ Industry magazine advertising and direct mail campaigns. ○ Development of educational and promotional printed materials. ○ Trade shows and event sponsorships.
Miscellaneous	<ul style="list-style-type: none"> ○ Promotional items. ○ Subscriptions and industry association memberships.
Incentive programs	<ul style="list-style-type: none"> ○ Home owner cash incentive targeting existing customers with low gas consumption. ○ Appliance installer cash incentive to reward specification of natural gas appliances.



A Opex Business Case: Electricity to Gas Hot Water Changeover Program

A.1 *Outline*

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A.2 *Project Overview*

Average residential consumption in Queensland is significantly below that of other states. This is due to a variety of factors, the most significant being Queensland’s sub-tropical climate and the associated low demand for space heating.

Average residential consumption has been falling for several years now, largely due to the decline in (hot) water consumption, and the move to reverse cycle air conditioners for space heating and cooling. The effect of this is that network utilisation has declined in recent years, and is likely to stay low in the foreseeable future.

It is planned to mitigate this trend of falling average residential gas consumption and grow the demand for gas through additional marketing, such as the proposed



implementation of an Existing Home Electricity to Gas Hot Water Changeover Program.

The forecast cost of this activity over the next AA period is \$1.95 million.

Increased demand for gas will allow the fixed costs of operating the network to be spread across a higher gas throughput and a greater number of connections, resulting in lower customer tariffs.

A.3 Background

Network Marketing is undertaken to optimise the utilisation of the APT Allgas distribution networks by:

- Maximising the number and average volume of prudent network connections.
- Retaining the number, and increasing the average volume, of existing customer connections.

This activity is intended to achieve APT Allgas' long term objectives of:

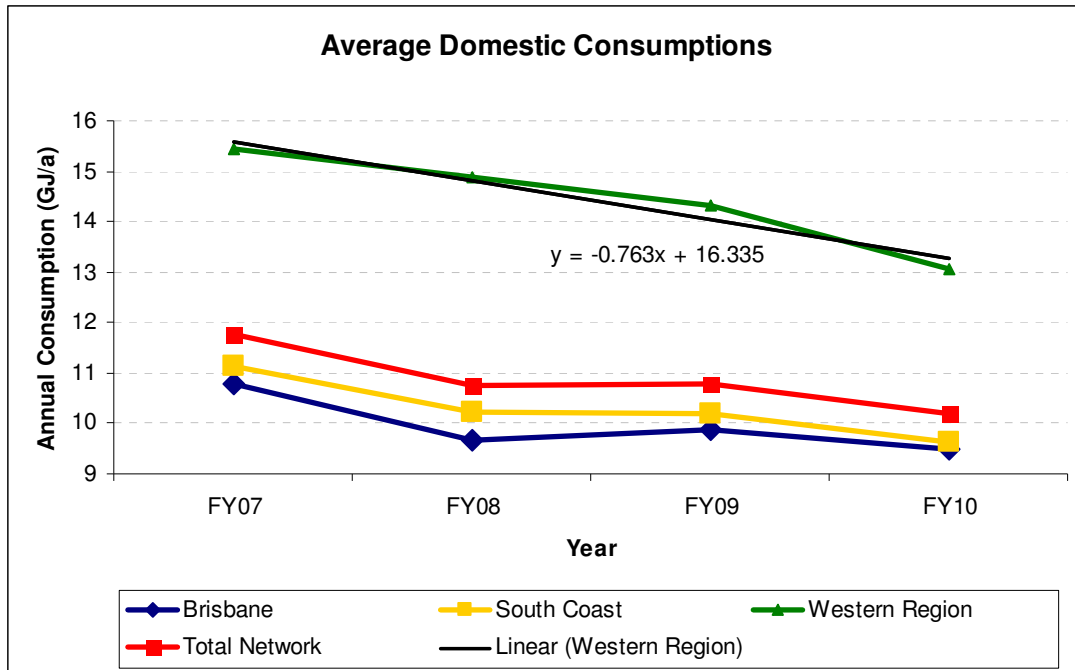
- Prudent expansion of its network.
- Maximising gas volumes hauled and therefore revenues.
- Improving the price competitive position of natural gas against alternative fuels.
- Building and maintaining the long term sustainable position for natural gas.

Queensland has always had significantly lower average residential gas consumption than southern states. Typically, average Queensland residential gas consumption is around 10.8 GJpa, compared to 18 GJpa. or higher in the southern states. This is largely attributable to two factors, namely Queensland's milder climate, which results in a reduced requirement for residential space heating, and higher ground temperatures resulting in reduced consumption to achieve equivalent volumes of hot water.

Analysis indicates a declining trend in residential natural gas consumption has developed, as per Figure 6-3 below. This trend has been associated with changing demographics, reduced water consumption (especially lower gas fuelled hot water consumption as a result of drought), the trend for households to use whitegoods which load cold water and use electricity to heat the water in the machines, improved appliance efficiency, and a move to electrically powered reverse cycle air conditioners, in preference to gas fuelled space heaters.



Figure 6-3 Volume Class average customer consumption, Residential customer segment



In recent years average Queensland residential gas consumption has fallen to 10.2 GJpa in FY10, compared with previous recent averages closer to 12GJpa or more, depending on geographical location. This trend is partially attributable to reduced consumption of hot water and partially due to reduced levels of space heating as consumers change to reverse cycle air conditioning in preference to gas space heating. Now that the drought is over, the reduction in hot water consumption is expected to only partially change, as consumers, who are now more attuned to water conservation, generally continue to adhere to responsible water use practises. However, that part of the trend attributable to reduced levels of space heating is expected to continue as consumers continue to change to reverse cycle air conditioning. This is particularly noticeable in the Western Region (Toowoomba and Oakey), where drought measures are still in place, due to ongoing water scarcity issues.

Gas is currently utilised in limited residential applications, predominantly water heating, cooking, and space heating.

Gas consumption for water heating has reduced due to a number of factors. Perhaps the most significant of these is the recent drought, during which South East Queensland residents were encouraged, as part of universal water conservation measures, to take 4 minutes showers. Consumers were also encouraged to install water efficient plumbing fittings, for example showerheads. While this cut the overall water consumption, it also significantly cut hot water consumption and therefore gas



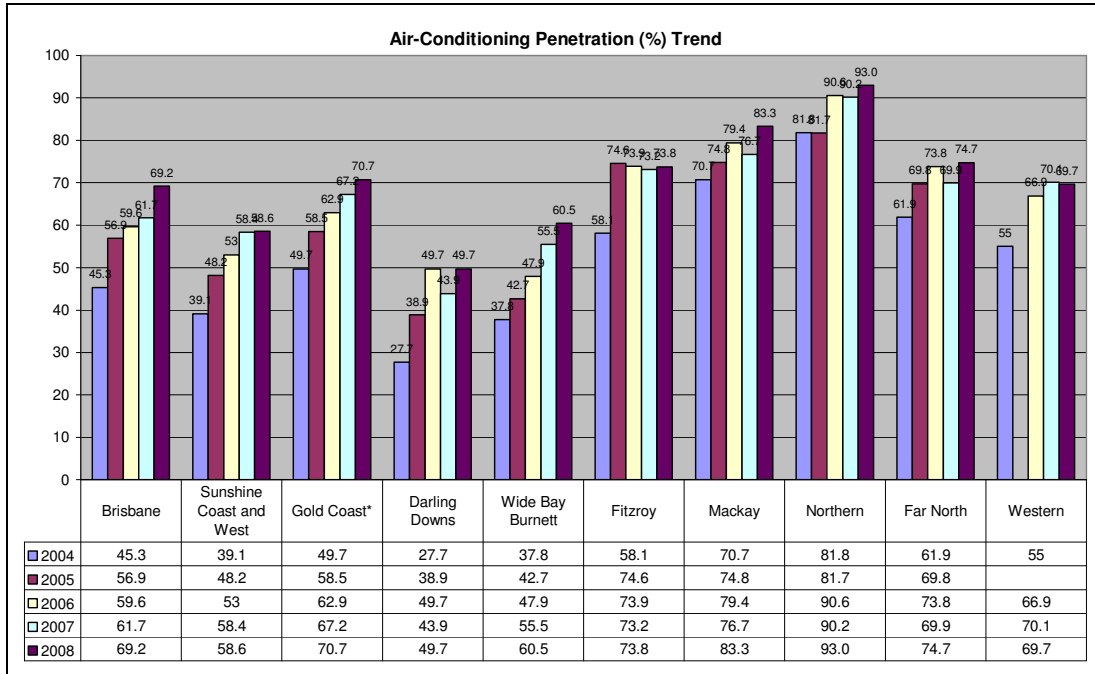
consumption for the majority of households with gas hot water. While restrictions have now been eased somewhat, the mindset for shorter showers has now been 'permanently' established.

In addition to this, Queenslanders were encouraged, through Queensland Government initiatives, to purchase new water efficient whitegoods such as washing machines and dishwashers. Not only do these new appliances use less water, but it is common for these new appliances to be connected to cold water only, relying on internal electrical elements to heat any water used. Most also wash just as effectively in cold water as hot, again reducing the usage of gas.

Gas consumption for cooking overall is a small proportion of total gas load. Not only is the total volume used fairly small, but the demand for gas resulting from cooking is very peaky. This means that from a network operator's point of view, residential gas cooking is a relatively undesirable load, making it difficult to achieve high utilisations of network capabilities.

In Queensland, the volume of gas attributable to space heating is substantially less than that in southern states. Similarly, gas consumption for space heating is now becoming the exception rather than the norm for the majority of the APT Allgas franchise distribution area. The only exception to this is the Western Region (Toowoomba and Oakey), where the cooler climate encourages use of space heating. The Queensland demographic is very dynamic, as population movement from southern states continues. This changing demographic, the Queensland climate, and improved technology results in an increased demand for reverse cycle air conditioning. Its ability to cool during the hot and humid summer months, and with Co-efficients of Performance (COPs) of just under 4, also to economically heat during the short winter months, has proven to be more attractive to consumers than gas space heating, with its ability to heat only. Gas, therefore, has lost market share to reverse cycle air conditioners, as per below.

Figure 6-4 Reverse Cycle Air Conditioning market penetration by geographic market



By comparison with the negative outlook for gas, electricity consumption by residential consumers continues to increase due to installation of air conditioning, increased load from new washing machines and dishwashers, and greater numbers of electric appliances such as computers, plasma televisions and portable kitchen appliances.

The final outcome of these trends is unknown, but it is expected that the water saving mindset of consumers will also continue, albeit partially relaxed, and the installation of reverse cycle air conditioners will continue – all likely to result in continued downward pressure on average gas usage in Queensland homes.

This situation will eventually result in increased residential tariffs as gas distributors and retailers endeavour to recover the costs of supplying low volumes of gas to consumers using a distribution network with low utilisation. Higher tariffs will lead to further reductions in consumption as the unit price of available energy from gas continues to increase at a faster rate than alternative energy sources, thereby reducing the competitiveness of gas. This cycle, if not addressed, could ultimately continue to such an extent that in the extreme, gas could become an uneconomic fuel for both new and existing residential consumer connections. If this occurs, there will be no role for natural gas as a fuel in residential applications.



A.4 Key Assumptions/Drivers

The key assumptions and drivers for the recommended project are:

- Average Queensland residential gas consumption is traditionally lower than in southern states.
- This traditionally lower level has further reduced during the last decade due to a number factors.
- If residential gas consumption continues at this lower level, the delivered cost of natural gas to residential consumers will rise, leading to further reductions in numbers of residential gas consumers.
- Increased average residential volumes will assist retailers and distributors to achieve cost effective delivery of gas to residential consumers.
- APT Allgas has experience of successful performance based electricity to gas hot water changeover campaigns, which targeted existing home volume growth, by utilising incentives to influence appliance replacement decisions.
- Increased demand for gas will allow the fixed costs of operating the network to be spread across a higher gas throughput and a greater number of connections, resulting in lower customer tariffs.

A.5 Costs & Timing

The cost of establishing the Electricity to Gas Hot Water Changeover Program is set out below. All costs are expressed in \$2009/10 real.

Table 6-2 Opex Expenditure: Electricity to Gas Hot Water Changeover Program

\$K (Real 2009/10) – Electricity to Gas Hot Water Changeover Program						
	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Performance Based Incentives	210	210	210	210	210	1050
Targeted Marketing	140	140	140	140	140	700
Memberships	40	40	40	40	40	200
Total	390	390	390	390	390	1950



Industry memberships listed in the table above include the Energy Networks Association at approximately \$30,000, of which APT Allgas is the only Australian natural gas network not currently a member, and the Energy Users Association at approximately \$10,000, which includes large energy customers in the Demand Class.

A.6 *Options Considered*

It is planned to mitigate this trend of falling average residential gas consumption in Queensland and grow the demand for gas through the implementation of an Existing Home Electricity to Gas Hot Water Changeover Program.

It is planned to carry out this project in addition to the establishment of a New Technology Group, which has been documented separately and justified independently on the basis of providing a positive net present value (NPV). Both the New Technology Group and the Electricity to Gas Hot Water Changeover Program are stand-alone projects and are considered necessary in order to meet the risks associated with declining residential gas consumption. Both projects are justified independently. No other options were considered.

Increased demand for gas will allow the fixed costs of operating the network to be spread across a higher gas throughput and a greater number of connections, resulting in lower customer tariffs. In this way, all customers will benefit from the planned expenditure.

The Existing Home Electricity to Gas Hot Water Changeover Program is detailed below. This program is designed to be consistent with the Queensland Government's new Sustainable Housing Laws, which require that existing electric hot water services in some properties be replaced with 5-star gas, solar or heat pump appliances when they are replaced. The amount of incentive payable has been determined based upon experience of the level required to be effective.

A.6.1 Existing Home Electricity to Gas Hot Water Changeover Program

APT Allgas intends to implement a performance based Electricity to Gas Hot Water Changeover Program to increase the gas load on existing low volume residential connections and secure the connection of existing homes on line of main.²⁷ The program will run for the next five years, and potentially longer.

The planned Electricity to Gas Hot Water Changeover Program will consist of:

²⁷ In the case of securing the connection of existing homes on line of main, the program will align with Queensland Government policy, effective 1 January 2010, which bans the installation of replacement standard electric hot water systems.



- A financial incentive to plumbers to affect a change in consumer behaviour and encourage the replacement of electric hot water systems with instantaneous gas hot water.
- Investment in temporary storage electric hot water heaters for installation on the same day in existing homes connecting to gas.
- Targeted promotion of natural gas availability in areas passed by the gas network.

The program will be modelled on the successful trial programme conducted in Queensland in 2010, plus previous programmes in other states, based on electricity to gas hot water changeover campaigns. These programmes targeted new and existing home volume growth, by utilising incentives to influence appliance replacement decisions – recognising that competition comes also from solar and heat pump hot water units.

Financial incentives of up to \$500 to plumbers, to carry out electricity to gas hot water changeovers is considered the minimum level necessary to materially impact market behaviour – not forgetting also, the growing and already strong competitor activity from solar and heat pump hot water. The value of the incentive has been determined based on the success and information gathered through previous performance based incentive campaigns undertaken by APT Allgas.

The electricity to gas hot water changeover incentive is designed to offset barriers preventing electric to gas changeover, which include:

- Higher capital cost of a gas hot water service – gas hot water services are generally more expensive than solar or electric heat pump replacement once RECs and government rebates are taken into consideration.
- Increased installation times associated with a changeover to gas – a changeover to gas usually involves the relocation of hot and cold water services to an external location and may require piping upgrades from low pressure to mains pressure. This results in increased installation cost and time delays.
- Lower running costs and extensive promotion of solar hot water.

The incentive would not be payable for the installation of gas boosted solar hot water systems.

An associated activity will be targeted promotion of natural gas availability in areas passed by the gas network.²⁸

²⁸ Generic media advertising is of low value in Brisbane given the relatively low proportion of homes that have gas available.



A.7 Risk Assessment

The risk assessment has been undertaken by a Network Marketing Manager who analyses and identifies current and potential future network risks (and residual risks) in terms of the consequences and the likelihood of the risk. This is carried out using established evaluation criteria to produce an estimated level of risk and to rank and prioritise the risk based on established risk management and control criteria.

Based on the available information, there is an identified need to respond to the current trend of falling average residential gas consumption in Queensland.

If the recommended Existing Home Electricity to Gas Hot Water Changeover Program is not implemented, the current trend of falling average residential consumption will continue unabated, resulting in rising tariffs, lower demand and ultimately no role for gas in residential applications.

The risk associated with the falling average residential consumption in Queensland has been assessed as "Extreme".

Given the very clear evidence of the low average residential gas consumption, and the unlikely event that the current trend of declining average residential gas consumption will be fully reversed, and given the understanding of the reasons for the occurrence of this phenomenon, it can be seen that action is required to find new ways of increasing average residential gas consumption. This can best be achieved through the implementation of an Existing home Electricity to Gas Hot Water Changeover Program in Queensland. If this does not occur, the role of gas in residential applications could decline to the point where it is no longer economically viable to compete against alternative fuels.

The risk assessment for this Business Case, is based on the APA Risk Management Policy as follows.



HAZARD NUMBER	HAZARD DESCRIPTION	HAZARD TREATMENT	HAZARD CLASSIFICATION	CONSEQUENCE						Total	Priority
				Health & Safety	Financial Impact	Environment	Compliance & Legal	Reputation			
1	Missed Revenue from Failure to Adopt New Technology	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Minor High 10	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain None Low 0	10	2	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Insignificant High 5	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain None Low 0			5
2	Residential Consumers Churn to Alternative Fuels Because Gas Uneconomical	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Likely Minor High 8	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain Minor High 10	18	2	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Unlikely None Low 0	Unlikely Minor Low 4	Unlikely None Low 0	Unlikely None Low 12	Unlikely None Low 0			16
3	Increase C&I Tariffs to Compensate Falling Residential Revenue	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Minor High 10	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain Minor High 10	20	2	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Unlikely None Low 0	Unlikely Minor Low 4	Unlikely None Low 0	Unlikely None Low 12	Unlikely None Low 0			16
4	C&I Consumers Churn to Alternative Fuels Because Gas Uneconomical	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Major Extreme 20	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain Catastrophic Extreme 25	45	1	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Unlikely None Low 0	Unlikely Minor Low 4	Unlikely None Low 0	Unlikely None Low 12	Unlikely None Low 0			16
5	Value of Allgas Business Reduced	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Catastrophic Extreme 25	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain Catastrophic Extreme 25	50	1	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Unlikely None Low 0	Unlikely Minor Low 4	Unlikely None Low 0	Unlikely None Low 12	Unlikely None Low 0			16

Priority	Priority Description
1	Any project where the Risk Level of at least one risk area falls into Extreme must be included in Priority 1. These projects should be regarded as non-discretionary.
2	Any project where the Risk Level of at least one risk area falls into High must be included in Priority 2. These projects could expose APA to business damage.
3	Any project where the Risk Level of at least one risk area falls into Moderate must be included in Priority 3. These projects could affect reliability of assets, operating efficiency or compliance.
4	Any project where the Risk Level of at least one risk area falls into Low must be included in Priority 4. These projects could affect overall APA risk reduction and operating efficiency.

This project has been assessed as Extreme risk and has been assigned a Priority of 1. This is a chronic risk that its impact is experienced over the passage of time.

A.8 Justification

Unless positive action can be taken to increase the role of natural gas in residential applications, there is a very real risk to the APT Allgas networks business. Positive



action requires the implementation of an additional Network Marketing program to facilitate the changeover of electric storage to gas hot water units.

The basis for determining the costs of the planned Electricity to Gas Hot Water Changeover Program and the incremental revenue estimated to result are as follows:

- An estimated life of an electric hot water system life of 10-15 years.²⁹
- The estimated number of electric hot water systems in gas connected properties on the APT Allgas network that require replacement each year.
- The number of electric hot water systems not connected to gas in properties located near to the APT Allgas network that require replacement each year.
- The assumption that, under the program, approximately 5% of the electric hot water systems replacements will be considered and planned replacements (as opposed to emergency failure replacements) that will convert to natural gas. Current Queensland Government legislation requires that 5-star gas, solar or heat pump appliances be installed when a hot water service needs replacement, if on a reticulated gas network and if the customer can be connected to the network without a cost of connection required to be paid. Solar and heat pump appliances have higher capital costs, though this disadvantage has been offset through the provision of Renewable Energy Certificates (RECs).

In Queensland, APT Allgas has around 81,000 residential gas connections, as at the end of FY10. The APT Allgas network also passes approximately 145,000 homes that are potentially connectable to gas.

In the absence of active additional marketing activities in this **emergency** replacement market, to combat the current financial advantages of purchasing a solar or heat pump unit, a nil success rate is expected.

Greater success is expected in the considered and planned **replacement** market (5%), that success will also be substantially influenced in a positive way, by the additional marketing expenditure proposed.

The solar and heat pump competitors are well resourced and have conducted aggressive marketing campaigns, supported by the provision of RECS and government funded rebates. This additional expenditure is necessary to offset the effects of that aggressive competition.

²⁹ Anecdotal information suggests older appliances had a useful life of 10 years, relative to 15 for newer appliances. An electric hot water system life of 15 years is considered to be a conservative assumption as a shorter appliance life would mean a greater number of hot water service failures and therefore greater potential for additional gas appliance installations.



Table 6-3 provides a cost breakdown and a summary of the forecast additional volume and revenue growth, respectively, attributable to the proposed Electricity to Gas Hot Water Changeover Program.

Table 6-3: Existing Home Electricity to Gas Hot Water Changeover Program Expenditure by Type

\$'000s (Real 2009/10)				
Program	Performance Based Incentives	Targeted Marketing	Memberships	Total
Electricity to Gas Changeover Hot Water Program	210	140	40	390

The planned program has been developed so that an incentive is only paid when an appliance is installed, and therefore when future revenue is locked-in. The amount of incentive has been established so that the NPV of that connection remains positive taking the incentive into account. For example, a home already connected to the network, which then changes out an electric hot water appliance with a gas one can support an incentive of up to \$500 and still achieve a positive NPV.

The expenditure is in response to a fundamental change in the business environment arising from external factors, and would be incurred by a prudent service provider in accordance with the National Gas Rules, Rule 91(1). In addition, this project seeks to ensure that tariff increases in future access determinations are maintained at realistic levels, to ensure cost effective gas distribution to end consumers.

A.9 Step Change Not in Base Year Costs

APT Allgas confirms that the additional \$1.95M in operating expenditure over the period associated with this proposal is not included in the base year costs for FY09.

A.10 Project Delivery

APT Allgas confirms that internal resources will be used to undertake this project.

A.11 Consequences of Not Proceeding

If this project is not undertaken, APT Allgas will potentially be in a situation where the cost of supplying residential consumers with natural gas comprehensively exceeds that of alternative fuels. If this occurs it will lead to further decline of the residential market for APT Allgas, such that natural gas eventually has no role in domestic applications in Queensland.





B Opex Business Case: Development and Deployment of New Technology

B.1 Outline

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B.2 Project Overview

Average residential consumption in Queensland is significantly below that of other states. This is due to a variety of factors, the most significant being Queensland's sub-tropical climate and the associated low demand for space heating. In addition, average residential consumption has been dropping for several years now, largely due to the decline in (hot) water consumption, and the move to reverse cycle air conditioners for space heating and cooling. The effect of this is that network utilisation has declined in recent years, and is likely to stay low in the foreseeable future.

In order to mitigate this situation, it is planned to establish a New Technology role to facilitate the deployment of evolving gas technologies into the Queensland market.



B.3 Background

Queensland has always had significantly lower average residential gas consumption than southern states. Typically, average Queensland residential gas consumption is around 10.8 GJpa, compared to 18 GJpa or higher in the southern states. This is largely attributable to two factors, namely Queensland's milder climate resulting in a reduced requirement for residential space heating, and higher ground temperatures resulting in reduced consumption to achieve equivalent volumes of hot water.

Analysis indicates a declining trend in residential natural gas consumption over recent years. This trend has been associated with changing demographic in Queensland, reduced water consumption (especially gas fuelled hot water consumption), the trend for households to use whitegoods which load cold water and use electricity to heat the water in the machines, improved appliance efficiency, and a move to electrically powered reverse cycle air conditioners, in preference to gas fuelled space heaters.

This falling trend is partially attributable to reduced consumption of hot water and partially due to reduced levels of space heating as consumers change to reverse cycle air conditioning in preference to gas space heating. However, although the drought is mostly over in South East Queensland, apart from the Western Region (Toowoomba and Oakey), that part of the trend attributable to reduced levels of space heating is expected to continue as consumers continue to change to reverse cycle air conditioning. This is particularly noticeable in the Western Region.

The final outcome of these trends is unknown, but it is expected that the water saving mindset in consumers will continue, albeit partially relaxed, and the installation of reverse cycle air conditioners will continue, with the result that average residential gas consumption in Queensland, will remain under pressure for the foreseeable future.

This situation will result in increased residential tariffs as gas distributors and retailers endeavour to recover the true cost of supplying low volumes of gas to consumers using a distribution network with low utilisation. Higher tariffs will lead to further reductions in consumption as the unit price of available energy from gas continues to increase at a faster rate than alternative energy sources, thereby reducing the competitiveness of gas. In its extreme, this cycle could continue at an ever increasing rate until the point where gas could become an uneconomic fuel for both new and existing residential consumer connections. If this occurs, there will be no role for natural gas as a fuel in residential applications.

Gas is currently utilised in limited residential applications, predominantly water heating, cooking, and space heating.

Gas consumption for water heating has reduced due to a number of factors. Perhaps the most significant of these is the recent drought, during which South East Queensland residents were encouraged, as part of universal water conservation



measures, to take 4 minute showers. Consumers were also encouraged to install water efficient plumbing fittings, for example showerheads. While this cut the overall water consumption, it also significantly cut hot water consumption and therefore gas consumption for the majority of households with gas hot water. While restrictions have now been eased somewhat, the mindset for shorter showers has now been established.

In addition to this, Queenslanders were encouraged, through Queensland Government initiatives, to purchase new water efficient whitegoods such as washing machines and dishwashers. Not only do these new appliances use less water, but it is common for these new appliances to be connected to cold water only, relying on internal electrical elements to heat any water used. Most also wash just as effectively in cold water as hot, again reducing the usage of gas.

Gas consumption for cooking overall is a small proportion of total gas load. Not only is the total volume used fairly small, but the demand for gas resulting from cooking is very peaky. This means that from a network operator's point of view, residential gas cooking is a relatively undesirable load, making it difficult to achieve high utilisations of network capabilities.

In Queensland, the volume of gas attributable to space heating is substantially less than that in southern states. Similarly, gas consumption for space heating is now becoming the exception rather than the norm for the majority of APT Allgas franchise distribution area. The only exception to this is the Western Region, where the cooler climate encourages use of space heating. The Queensland demographic is very dynamic, as population movement from southern states continues. This changing demographic, the Queensland climate, and improved technology resulted in an increased demand for reverse cycle air conditioning. Its ability to cool during the hot and humid summer months, and with Co-efficients of Performance (COPs) of just under 4 also economically heat during the short winter months, has proven to be more attractive to consumers than gas space heating, with its ability to heat only. Gas, therefore, has lost market share to reverse cycle air-conditioners.

By comparison with the negative outlook for gas, electricity consumption by residential consumers continues to increase due to installation of air conditioning, increased load from new washing machines and dishwashers, and greater numbers of electric appliances such as computers, plasma televisions and portable kitchen appliances.

Further, gas consumption is extremely dependent upon Government policies which impact upon the selection of hot water appliances. In recent times governments have been active in this area, establishing more stringent obligations with respect to type of water heater based on their level of greenhouse gas emissions. Whilst Government policy has generally been favourable to gas (natural and LPG) with it being established as one of three compliant types, along with heat pump and solar, the introduction of rebates and Renewable Energy Certificates (RECS) for heat pump and solar appliances has been however, detrimental for natural gas.



Adverse Government hot water policy could have a significant negative impact on the APT Allgas Queensland network, given that gas utilisation for hot water comprises around 80% of the total Queensland domestic utilisation of natural gas. For example, a Government mandate that all gas fuelled hot water units had to be of the gas boosted solar type would likely render the connection of new home to be uneconomic without the payment of a contribution. As such, given the financial support that Government continues to provide to solar and heat pumps appliances, it is extremely important that APT Allgas develops alternative applications for natural gas such that the gas network continues to be viable, in the face of falling average residential usage.

In order to reverse the declining role of natural gas it is important that new and evolving technologies which utilise gas be introduced into the Queensland market as soon as possible. Currently, potential technologies include:

- Gas-fired air-conditioning.
- Gas-fired combined absorption chilling/heating/hot water.
- Natural gas for vehicles.
- Embedded generation.
- Small scale cogeneration.
- Micro-cogeneration.
- Fuel cells.

Because these technologies increase the volume of gas used, while flattening the demand curve, they have the potential to lead to better utilisation of the gas distribution network, and reduce the high level of investment required to upgrade electricity infrastructure to meet peak electricity demand.

This Business Case argues for the employment of additional dedicated resource, whose sole objective is to investigate new technological improvements to gas fuelled equipment and facilitate the introduction of these appliances into the Queensland market. To achieve this, it is envisioned that the following activities will be required:

- Monitor the development of new and improved gas related technology.
- Prioritise these technologies based on suitability for the Queensland market.
- Facilitate approvals by statutory authorities for the of these technologies in Queensland.



- Coordinate field trials of demonstration units.
- Work with Government to promote use of the new technologies, including provision of relevant subsidies.
- Co-ordinate introduction of new technologies by relevant suppliers to the Queensland market.
- Ensure the availability of resources (through training if necessary) to install and maintain these appliances.

It is not planned that this resource would become involved in the technical research or product development. Rather the additional resource is required to co-ordinate the introduction of the new technologies into the Queensland market. APT Allgas believes that this type of work could best be carried out by a senior engineer with appropriate commercial experience.

B.4 Key Assumptions/Drivers

The key assumptions and drivers for the recommended project are:

- Average Queensland residential gas consumption is traditionally lower than in southern states.
- This traditionally lower level has been further reduced during the last decade due to a number of factors.
- If the level continues at this lower level the cost benefit of supplying gas to residential consumers will be compromised, leading to further reductions in numbers of residential gas consumers.
- Traditional gas fuelled equipment currently used in residential applications will be inadequate to reverse this trend.
- New uses for gas in a residential context are required to increase average residential consumptions of gas. This is best achieved using new technologies.
- Increased average residential volumes will assist retailers and distributors to achieve cost effective delivery of gas to residential consumers.

B.5 Costs & Timing

The cost of establishing the New Technology role is set out below. It is proposed to coordinate this activity with an equivalent activity for Envestra's Queensland network. All costs are expressed in \$2009/10 real.



Table 2: Opex Expenditure Required for Development & Deployment of Evolving Technology

\$K (Real 2009/10) - Development and Deployment of New Technology						
	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Senior Engineer	150	150	150	150	150	750
Demonstration Trials	100	100	100	100	100	500
Total	250	250	250	250	250	1250

Senior engineer costs above include salary, on-costs and administrative support.

B.6 Options Considered

B.6.1 Employment of dedicated resources

Cost estimate: \$1.250M over 5 years.

No other options have been considered.

B.7 Risk Assessment

Given the very clear evidence of the low average residential gas consumption, and the unlikely event that the current trend of declining average residential gas consumption will be fully reversed, and given the understanding of the reasons for the occurrence of this phenomenon, it can be seen that action is required to find new ways of increasing average residential gas consumption. This can best be achieved through the introduction of new technology onto the Queensland market. If this does not occur, the role of gas in residential applications will decline to the point where it is no longer economically viable to compete against alternative fuels.

The risk assessment for this Business Case, is based on the APA Risk Management Policy as follows.



HAZARD NUMBER	HAZARD DESCRIPTION	HAZARD TREATMENT	HAZARD CLASSIFICATION	CONSEQUENCE						Total	Priority
				Health & Safety	Financial Impact	Environment	Compliance & Legal	Reputation			
1	Missed Revenue from Failure to Adopt New Technology	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Minor High 10	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain None Low 0	10	High 2	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Insignificant High 5	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain None Low 0			5
2	Residential Consumers Churn to Alternative Fuels Because Gas Uneconomical	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Likely Minor High 8	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain Minor High 10	18	High 2	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Unlikely None Low 0	Unlikely Minor Low 4	Unlikely None Low 0	Unlikely None Low 12	Unlikely None Low 0			16
3	Increase C&I Tariffs to Compensate Falling Residential Revenue	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Minor High 10	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain Minor High 10	20	High 2	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Unlikely None Low 0	Unlikely Minor Low 4	Unlikely None Low 0	Unlikely None Low 12	Unlikely None Low 0			16
4	C&I Consumers Churn to Alternative Fuels Because Gas Uneconomical	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Major Extreme 20	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain Catastrophic Extreme 25	45	Extreme 1	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Unlikely None Low 0	Unlikely Minor Low 4	Unlikely None Low 0	Unlikely None Low 12	Unlikely None Low 0			16
5	Value of Allgas Business Reduced	Risk Untreated	Likelihood Consequence Risk Level Risk Score	Almost Certain None Low 0	Almost Certain Catastrophic Extreme 25	Almost Certain None Low 0	Almost Certain None Low 0	Almost Certain Catastrophic Extreme 25	50	Extreme 1	
		Risk Treated	Likelihood Consequence Risk Level Risk Score	Unlikely None Low 0	Unlikely Minor Low 4	Unlikely None Low 0	Unlikely None Low 12	Unlikely None Low 0			16

Priority	Priority Description
1	Any project where the Risk Level of at least one risk area falls into Extreme must be included in Priority 1. These projects should be regarded as non-discretionary.
2	Any project where the Risk Level of at least one risk area falls into High must be included in Priority 2. These projects could expose APA to business damage.
3	Any project where the Risk Level of at least one risk area falls into Moderate must be included in Priority 3. These projects could affect reliability of assets, operating efficiency or compliance.
4	Any project where the Risk Level of at least one risk area falls into Low must be included in Priority 4. These projects could affect overall APA risk reduction and operating efficiency.

This project has been assessed as Extreme risk and has been assigned a Priority of 1. Whilst Extreme, this is a chronic risk, that is its impact is experienced over the passage of time.

B.8 Justification

Unless positive action can be taken to increase the role of natural gas in residential applications, there is a very real risk to the APT Allgas networks business. Positive action requires the implementation of new innovative technologies, some of which



are currently available overseas, but not yet in Australia, and others are under ongoing development.

With a 15 year life of a typical appliance, the average residential (potential) consumer is required to make a replacement decision affecting each time. This equates to 6% of all existing residential gas demand being at risk in any given year. In Queensland, this is equivalent to approximately \$0.5M of revenue being at risk each year on the APT Allgas distribution network. The expenditure to counteract this is approximately 50% of the annual at-risk amount. Further, the proposed expenditure represents less than 0.5% of total revenue. Given the threat to the volumes transported by the APT Allgas networks business, this represents a realistic level of expenditure on development activity.

In the UK, OFGEM has allowed similar expenditure to be incurred by both gas and electricity distributors in recent price reviews under its Innovation Funding Incentive for Sustainable Development.

The expenditure is in response to a fundamental change in the business environment arising from external factors, and would be incurred by a prudent service provider in accordance with the National Gas Rules, Rule 91(1). In addition, this project seeks to ensure that tariff increases in future access determinations are maintained at realistic levels, cost effective to end consumers.

B.9 Step Change Not in Base Year Costs

APT Allgas confirms that the additional \$1.250M in operating expenditure associated with this proposal is not included in the base year costs for FY10.

B.10 Project Delivery

APT Allgas confirms that internal resources will be used to undertake this project.

B.11 Consequences of Not Proceeding

If this project is not undertaken, APT Allgas will potentially be in a situation where the cost of supplying residential consumers with natural gas comprehensively exceeds that of alternative fuels. If this occurs it will lead to further decline of the residential market for APT Allgas, to the point where it ceases to be economic to connect customers to the network.