

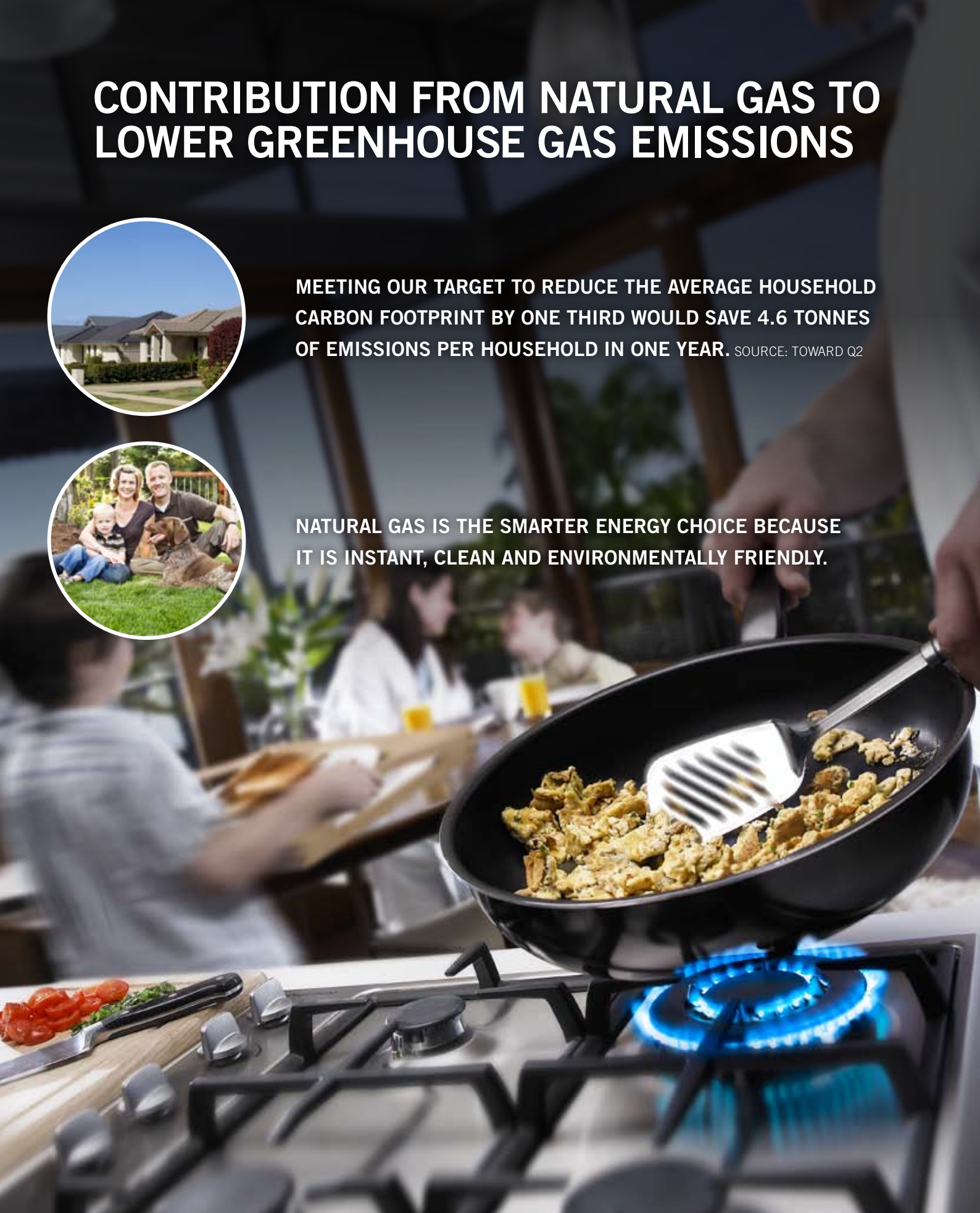
CONTRIBUTION FROM NATURAL GAS TO LOWER GREENHOUSE GAS EMISSIONS



MEETING OUR TARGET TO REDUCE THE AVERAGE HOUSEHOLD CARBON FOOTPRINT BY ONE THIRD WOULD SAVE 4.6 TONNES OF EMISSIONS PER HOUSEHOLD IN ONE YEAR. SOURCE: TOWARD Q2



NATURAL GAS IS THE SMARTER ENERGY CHOICE BECAUSE IT IS INSTANT, CLEAN AND ENVIRONMENTALLY FRIENDLY.





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CONTRIBUTION FROM NATURAL GAS TO LOWER GREENHOUSE GAS EMISSIONS

APA welcomes the opportunity to outline the role that the natural gas industry can play in Queensland in relation to carbon emissions reduction and the benefits of carbon reduction to climate change. With the support of the Queensland Government, APA believes that the following five initiatives could play a substantial role in assisting the Queensland Government to achieve its stated greenhouse gas reduction objectives.

1 > RESIDENTIAL: Converting existing homes from electric hot water to natural gas resulting in 70 – 80 % lower carbon emissions per household from hot water systems, resulting in potential savings of an estimated 246,000 tonnes CO_{2-e} pa;

2 > INDUSTRIAL: Transition current industrial coal fired facilities to gas fired alternative resulting in potential savings of an estimated 80,000 tonnes CO_{2-e} pa;

3 > COMMERCIAL: Actively promote “Green Buildings” with an emphasis on replacing electric powered chillers (air conditioning) and heating, with gas fired alternatives;

4 > TRANSPORT: Facilitate growth in “back to base” natural gas vehicle fleets;

5 > GAS FIRED ELECTRICITY GENERATION: Facilitate the transition to increased gas fired energy generation, including gas fired embedded generation applications. As a guide, a 30 mega watt generator reduces emissions by 15,000 tonnes of CO_{2-e} and has the potential to reduce the Queensland Government’s capital investment in electricity transmission and distribution infrastructure.

APA welcomes the opportunity of working with the Queensland Government and looks forward to further opportunities to be involved in future consultation with the Queensland Government, regulators and other stakeholders in refining and delivering the policy objectives related to ClimateSmart 2050 and Towards Q2.

INTRODUCTION



APA GROUP

APA transports gas from every major gas source to every major gas market in Australia, delivering more than 50% of the nation's domestic gas use annually.

APA Group, comprised of Australian Pipeline Trust and APT Investment Trust, is the major ASX-listed energy transmission company in Australia with interests in almost 12,000 km of natural gas pipeline infrastructure across Australia. In Queensland APA owns over 2,300 km of gas distribution networks in south east Queensland, the Roma to Brisbane Pipeline which delivers gas from gas fields to South East Queensland coal seam gas processing plants, gas fired power stations, gas storage facilities and two high voltage direct current electricity interconnector systems.

The APA Queensland Gas Network supplies seventy-five thousand customers and includes over 2,300 km of distribution mains located in Brisbane, the Gold Coast, northern New South Wales, Toowoomba and Oakey. APA also provides management and operation services to the gas distribution and transmission Company Envestra which owns 19,100 km of natural gas distribution networks around Australia (including networks for the Brisbane's northern suburbs, Ipswich and five regional Queensland centres).

BACKGROUND

NATURAL GAS UTILISATION

Natural gas is one of the cleanest fossil fuels available. Natural gas is under-utilised in the Queensland residential and commercial sectors. However, with appropriate support from the Queensland Government and industry, there is potential for substantial annual growth in both gas customer numbers as well as average consumption. This growth in natural gas consumption will displace higher polluting energy sources such as coal fired electricity thus reducing Queensland's overall emission levels.

Queensland relies on natural gas for only 11.5 per cent of its primary energy needs. This is low compared to other major states, with the exception of NSW. There are environmental implications that result from this. The larger the dependency on coal and oil (as opposed to natural gas), the higher the States per capita contribution to Greenhouse Gas emissions.

NATURAL GAS CONSUMPTION BY STATE

STATE	PJ	% AUSTRALIAN CONSUMPTION	% OF STATE PRIMARY ENERGY USE
Western Australia	411.2	34.7	54.1
Victoria	277.6	23.4	19.1
NSW/ACT	156.4	13.2	10.2
Queensland	152.5	12.9	11.5
South Australia	139.5	11.8	41.8

Source: ESAA and ABARE

In Queensland there are almost two million electricity consumers and only 140,000 gas customers, predominantly located in South East Queensland. Not only are the gas customer numbers lower, the average Queensland annual consumption per customer is half that of NSW and South Australia and only one quarter that of ACT and Victoria.

This is demonstrated in the table below. Whilst this is primarily due to climate, the penetration of gas appliances, including hot water, is much lower in Queensland than in other states. In South East Queensland there are approximately 420,000 homes on line of main (ie gas is available in the street) and of these 145,000 are connected to the gas network.

RESIDENTIAL GAS USAGE BY STATE

STATE	AVERAGE RESIDENTIAL CONSUMPTION (GJ pa)
Western Australia	23.0
Victoria	59.2
NSW	23.7
South Australia	24.0
ACT	48.0
Queensland	12.6

Source: Gas Distributors

Historically, gas has not been the fuel of choice for Queenslanders mainly because:

- > the relatively low cost of coal fired electricity;
- > the limited gas network coverage; and
- > the climate, which meant gas was not sought as a heating fuel.

This meant that Queensland's gas utilities were not able to economically expand, as the low levels of demand did not underpin the high fixed costs associated with utility network expansion. Consequently, the high costs and low demand have

resulted in relatively higher gas prices for consumers compared to other states.

As noted above, in percentage terms, the growth in the use of gas has started to improve however, it is worthy to note that even with the Sustainable Building Code, in absolute terms, there were only 5,750 new gas domestic connections in Queensland in 2007/08 and this result remains well down on other states despite Queensland's strong population growth. In comparison Victoria had approximately 30,000 new connections and Western Australia approximately 20,000.

GROWTH IN RESIDENTIAL CONNECTIONS

STATE	GROWTH IN CUSTOMER NUMBERS 2007/8
Western Australia	20,000
Victoria	30,000
New South Wales	30,000
South Australia	8,300 ¹
Queensland	5,750

Source: Gas Distributors

¹ South Australian data is 2006/7 data





THE BENEFITS OF NATURAL GAS

Benefits of natural gas include:

- > gas is more environmentally friendly than other fossil fuel types, such as coal, thus gas has a lower greenhouse gas footprint than coal fired electricity;
- > gas reserves in Queensland have been increasing in recent years as coal seam gas projects are being developed;
- > gas is economically viable. The costs of gas production and transport are known with reasonable certainty. Any natural monopoly elements of the gas supply chain are subject to government regulation;
- > gas production and distribution uses proven technologies;
- > gas is a reliable fuel that very rarely has unplanned supply interruptions for end users. Unlike electricity, gas can be stored in pipes, thus allowing some flexibility in managing any short term load fluctuations;
- > gas is recognised as being preferred by consumers for cooking and water heating. Residents recently arrived in Queensland from interstate, have the expectation that gas supply will be available;
- > the gas network in south east Queensland with appropriate Queensland Government support and regulatory environment is capable of significant expansion to cater for increased utilisation;
- > the ability of gas networks to cater for fluctuating loads means that it can replace large electricity loads at peak times (eg. cooking, heating). This delays or removes the need for increased Queensland Government investment in electricity infrastructure (transmission and distribution).

INITIATIVES FOR REDUCING CARBON EMISSIONS



INITIATIVE 1 – RESIDENTIAL

Meeting our target to reduce the average household carbon footprint by one third would save 4.6 tonnes of emissions per household in one year. If every household reached the target, the saving would be 10.1 million tonnes in 2020. That's more than all the residential emissions produced on the Gold Coast in one year.

Source: Towards Q2

There are three basic opportunities that relate to reduction of carbon emissions by Queensland's residents. These are:

1. converting hot water, heating and cooking from electricity to gas;
2. increasing penetration from 32% to 70% of lots currently adjacent to the existing gas infrastructure (additional 149,000 connections);
3. the Queensland Government providing financial support to extend the availability of gas to growth areas identified in the Queensland Government's South East Queensland Regional Plan 2005 – 2026.

The three major applications for residential gas customers are hot water, heating and cooking.



HOT WATER

Gas hot water systems can be of the storage tank type or continuous flow type. Continuous flow hot water systems have no storage losses. In Queensland, the average gas hot water consumption is approximately 10 GJ pa. Gas hot water systems are efficient and result in 70 - 80% lower greenhouse emissions than standard electricity systems.

Government policy encourages the use of other hot water technologies as well as gas. These include electric heat pumps and solar.

APA supports the use of solar for hot water and believes that solar with gas boosting is preferable to electric boosting. For most consumers, cost is a significant factor when looking to purchase hot water technology. If natural gas is available in the area, it is likely to be a more economical choice for the majority of customers.

Utilisation of natural gas for hot water loads also greatly reduces the electricity infrastructure requirements especially the peak load requirement which is a significant issue for electricity generation, transmission and distribution.

APA has some reservations about the promotion of electric heat pumps for hot water use. While they are more efficient than standard electric hot water systems, as an electric appliance they will exacerbate electricity peak demand problems within the south east Queensland electricity network.

Gas distributors have confidence that if there is a level playing field in terms of Government rebates, gas hot water systems will be preferred by customers due to their superior performance and recovery rates for the task at hand.

INITIATIVES FOR REDUCING CARBON EMISSIONS CONT.

Whilst recognising that natural gas reduces carbon emissions by 70 – 80%, the financial incentives that consumers can receive under State and Federal Government schemes for alternatives to electric hot water do not highlight the benefit of converting from electric hot water to gas hot water.

The following table illustrates that gas offers comparable carbon emissions reduction benefits to electric boosted solar and heat pumps. However these alternatives to gas hot water receive up to 8 times the financial incentives available to gas hot water.

GOVERNMENT FINANCIAL SUPPORT FOR HOT WATER SYSTEMS

	MT CO _{2-E}	FINANCIAL INCENTIVES	BREAKDOWN OF FINANCIAL INCENTIVES
Electric	4.1	\$0	
Gas	1.2	\$300	Queensland Government \$300
Heat Pump	1.1	\$2,300	REC's ² incentive \$1,300 Federal Government \$1,000
Solar/Electric Boosted	1.1	\$2,600	REC's incentive \$1,600 Federal Government \$1,000
Solar/Gas Boosted	0.4	\$2,600	REC's incentive \$1,600 Federal Government \$1,000

² Renewable Energy Certificate

Increased penetration of gas for hot water and cooking will result in reduced Queensland Government capital investment in the Energex and Ergon Energy networks for connection of new customers. The Queensland Government estimates that a \$2,200 investment in infrastructure is required per 1kw of peak load. Each new electric system has 3.5kw of demand which requires \$7,700 of capital expenditure.

(Source: Review of the Queensland Government climate change strategy).

RECOMMENDATION

Rebates and REC eligibility should be restructured so that parity is achieved between competing technologies relative to their contribution to the climate change challenge (equivalent rebate \$ for each ton of emissions reduced).



COOKERS

It is not widely appreciated that the peak usage of cook tops and ovens is one of the largest peak loads on electricity distribution systems. This peak load exceeds air conditioning and hot water systems. Therefore, the substitution of electric with gas cookers will have a significant impact in reducing the evening electric peak load. Whilst cooking is a relatively smaller load compared to hot water, (3 GJ pa), it is a significant consumer of energy in households.

The Residential Gas Installation Rebate scheme provides for the payment of \$300 to a home owner when a gas hot water system replaces an electric hot water system. If an electric hot water system is replaced with one of these alternatives then a further \$200 is available where an electric cooker is replaced with a gas cooker. In addition to the parity proposed in the above recommendation for gas hot water systems it would be beneficial if the restriction that links the availability for a rebate for replacement of an electric cooker to the replacement of an electric hot water system was removed. That is eligibility for the rebate for gas cookers would be independent of replacement of electric hot water systems.

RECOMMENDATION

Gas cookers and BBQs be included in the Residential Gas Installation Rebate scheme as an individual purchase, not as addition to hot water systems.

REBATE ELIGIBILITY

Currently the rebates under the Residential Gas Installation Rebate scheme are paid by gas retailers over an extended period. APA believes that customers will have more incentive if the rebate is available immediately, at the time of purchase as is the case with the Water Wise rebate scheme for water saving household appliances.

RECOMMENDATION

The rebates to be paid in a lump sum, at or soon after purchase.



INCREASING PENETRATION – OF HOUSES ON LINE OF MAIN

The following initiative outlines an opportunity to increase penetration which has the opportunity to deliver major benefits such as:

- > reduction of cost per customer (as fixed network costs are shared across a larger number of customers) resulting in improved economies of scale;
- > additional greenhouse gas abatement;
- > the opportunity to reduce Queensland Government capital expenditure on electricity infrastructure and better utilise existing gas network capital.

A significant number of electricity hot water customers are not on off peak (controllable load) tariffs. A government program to switch these customers from electric hot water to gas would have benefits through:

- > greenhouse gas abatement;
- > reduction in public capital spending for electricity infrastructure.

RECOMMENDATION

The Queensland Government support a program to encourage customers with hot water on electricity Tariff 11 (general use tariff) to convert to natural gas, if it is available in their street.

Until economies of scale are attained in the Queensland gas market retailers and consumers will remain generally uninterested in using gas.

Assistance sought includes:

- > *funding to support T11 transition programs;*
- > *assistance to educate consumers and industry participants;*
- > *possible sponsorship of a “mobile energy efficient advisory centre”;*
- > *sponsorship of Green Suburb initiatives, possibly part of existing gas network renewal program.*

All participants in the gas market need to explore, develop and implement tools and information sources so that end users are aware and can easily identify if gas is currently available for their household.

NETWORK EXPANSION

HOUSING CONSTRUCTION PROJECTS REMOTE FROM GAS INFRASTRUCTURE

The Queensland Government has identified 17 new areas to fast track to be developer ready to address the housing affordability crisis in Queensland. Under the current regulatory regime it is not viable for the distribution network to be expanded so as to provide natural gas reticulation into these new estates.

RECOMMENDATIONS

When future housing development sites are considered the availability of gas infrastructure should be a factor in selection.

The Queensland Government require, where practicable, common trenching of utility services – gas, electricity, water and cable – to and within, the new housing sites.

REGIONAL TOWNS AND CITIES

There needs to be the establishment and expansion of gas networks in regional towns and cities similar to the Victorian Government's Natural Gas Extension Program that allocated \$70 million of State funds to regional expansion of the gas network in Victoria.

There is considerable growth potential in the Western growth corridor, Caboolture area, Townsville and the Sunshine Coast. Such expansion will facilitate further industrial and commercial development in regional centres. Many other regional cities, including the Gold Coast and Logan, have immature gas networks and have only been developed in recent years, however without government assistance in growth strategies these have been slow to develop. A potential project that would benefit from government support is extending the South East Queensland gas distribution network off the proposed North Coast Pipeline development. This would allow connections to be established in new development areas in the Sunshine Coast growth corridor adjacent the Bruce Highway.

RECOMMENDATION

The Queensland Government should consider schemes similar to the Victorian \$70 million Natural Gas Extension Program fund. Such a scheme could be developed to underpin network extensions to communities in South East Queensland which are currently remote from the gas network.

ENERGY EFFICIENT APPLIANCES

Currently electricity and gas appliances have energy star ratings to enable customers to select high efficiency models. If all appliances; gas, electric, wood etc were all rated on the same scale, then customers would be able to more readily see the absolute, rather than relative environmental benefits of an appliance. For example under existing arrangements, a consumer will not understand that a 3 star gas appliance may produce less Greenhouse Gases than a 5 star electricity appliance, when the whole fuel cycle is considered.

RECOMMENDATION

The Queensland Government raise this issue with the Federal Department of the Environment, Water, Heritage and the Arts with a view to amending the Energy Rating Label scheme to reflect the absolute environmental benefits.

SECTION ONE

INITIATIVES FOR REDUCING CARBON EMISSIONS

CONT.

INITIATIVE 2 – INDUSTRIAL



RETIRING COAL BURNING PLANT IN INDUSTRY AND HOSPITALS

A significant reduction in greenhouse gas emissions and improved urban air quality would result if all direct use of coal by large users was phased out. Queensland stands out in the eastern states as the last State to still have major coal burning in its capital city. These include inefficient boilers in hospitals and manufacturing plants. Coal fired boiler plants typically use large amounts of town water for steam condensing purposes, this water use is significantly reduced in gas fired installations.

XXXX CASTLEMAINE PERKINS

- > Castlemaine Perkins replaced coal fired boilers with natural gas high efficiency steam boilers in 2008.
- > New gas fired system will improve efficiency and provide benefits around energy consumption and emissions.
- > Converting from coal provides operational benefits as well as being in the best interests of the community and the environment.
- > Gas fired boilers have added advantages around minimising electricity and water use as well as steam and carbon emissions.
- > Gas boiler consume 100Kw less electricity than coal boilers.

Our preliminary analysis suggests that sites within the greater Brisbane area consume in the order of 100,000 tones of coal and therefore generating 200,000 tones of CO_{2-e}. Replacing this coal plant with gas fired plant has the potential to reduce CO_{2-e} emissions by approximately 80,000 mt per annum. Additional benefits from the use of natural gas include reduced air pollution and the removal of the need for both on-site coal storage and landfill disposal of ash and clinker from coal boilers.

RECOMMENDATION

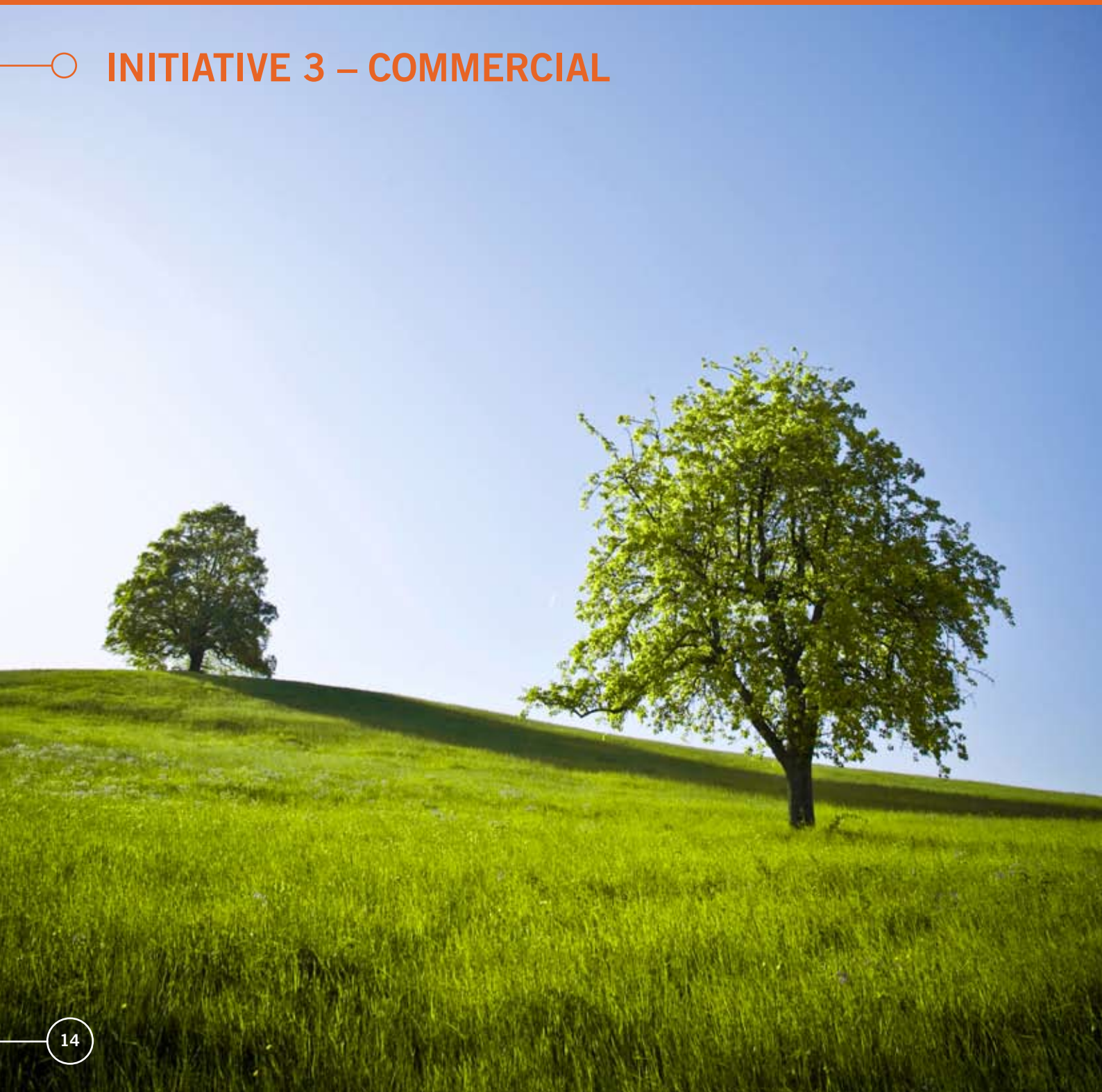
The Queensland Government require the phasing out of coal burning industrial plants in the greater Brisbane area by 2012. The Queensland Government utilize the \$55 million Queensland Smart Energy Savings fund to provide financial support to businesses that convert from coal fired to gas fired boilers.

SECTION ONE

INITIATIVES FOR REDUCING CARBON EMISSIONS

CONT.

INITIATIVE 3 – COMMERCIAL



GREEN BUILDINGS – NEW CONSTRUCTION

The recently completed Green Square Complex North Tower is an excellent example of how the changing building regulations can assist in the reduction of carbon emissions.

Now housing staff from the Queensland Government's Crime and Misconduct Commission, the Green Square complex is recognised as one of the world's most environmentally friendly office developments. The complex has its own gas-driven power plant which was built using recycled timber and steel. This will save 1.7 million litres of water a year.

While most office developments emit more than 100kg of carbon dioxide annually per square metre, the North Tower is said to create just 29kg. Andrew McNamara, Minister for Sustainability and Climate Change, has said "This is the way we need to go and we have to keep raising the standard of new buildings."

Whilst this is the first completed office development in Queensland to achieve a six-star rating from the Green Building Council of Australia, it provides a blueprint for future new commercial developments. This development has the capacity to achieve an annual energy saving that is equivalent to the amount of energy needed to power approximately 80 homes.

Source: <http://www.futuregov.net>

GREEN BUILDINGS – RETROFITTING EXISTING COMMERCIAL CONSTRUCTIONS

Tried and proven embedded generation technologies include Cogeneration and Trigenation. Cogeneration is the use of a gas engine or turbine to produce electricity, with the waste heat being used for heating applications. Trigenation is fundamentally the same process as Cogeneration, the only difference is that waste heat is channeled into an absorption chiller, which cools water for air conditioning applications.

OTHER COMMERCIAL APPLICATIONS

Cooking, heating and hot water are also standard applications in commercial premises, although requiring more specialised equipment than residential applications. Businesses tend to strongly focus on the effectiveness and running costs of their equipment. As natural gas penetration increases, then the gas costs will fall, encouraging even greater adoption by commercial sites.

RECOMMENDATION

The Queensland Government continues to support green building initiatives by implementing policies that ensure that Queensland Government owned and tenanted buildings have high "green star" ratings.

INITIATIVES FOR REDUCING CARBON EMISSIONS

CONT.



INITIATIVE 4 – TRANSPORT

NATURAL GAS FOR VEHICLES

One of the more attractive opportunities to reduce CO₂ vehicle emissions is the conversion of large vehicles to natural gas. Ideally, these vehicles will have a daily “back to base” route such as buses, delivery vehicles, council truck fleets and garbage trucks etc. These vehicles are suited as natural gas vehicles (NGV) as the refueling depot can be established at a central location.

Brisbane City Council has already embarked on a significant conversion of their bus fleet, however to date there has been limited focus on converting other ‘back to base’ fleets to NGV.

Extending this conversion program could result in an approximate 10% saving in greenhouse gas emissions (Source: Australian Government, Department of Climate Change, National Greenhouse and Energy Reporting (Measurement) Determination).

RECOMMENDATION

The Queensland Government to investigate the opportunity to convert “back to base” fleets to natural gas.



INITIATIVE 5 – GAS FIRED ELECTRICITY GENERATION

EMBEDDED GENERATION

Embedded Generation refers to small scale electricity generation located at or near the end user load, rather than at a remote power station. Tried and proven embedded generation technologies include Cogeneration and Trigenation.

Cogeneration and Trigenation have widespread commercial and industrial application in the southern states and internationally. Due to the warm climate in Queensland, there are fewer commercial applications that have the large winter space heating loads which are conducive to cogeneration. As a result commercial cogeneration installations in Queensland have traditionally been limited mostly to institutional energy users e.g. hospitals. There are potential financial savings for industrial applications that utilise large amounts of heat in the manufacturing process. However the long term commitment required has been a barrier to widespread implementation.

By fully utilising the waste heat created by the power generation process, the efficiency of the Cogeneration and Trigenation systems can exceed 80%. Combining this fact with the use of clean burning natural gas as the fuel source means carbon emissions are slashed in installations adopting these technologies.

As a result the use of gas fired embedded generation in new or renovated multi storey commercial / residential / institutional developments is a cost effective method to generate “green stars” for the building.

Embedded generation has ancillary financial and community benefits. The water use per unit of electricity generated is negligible compared to centralised coal fired plants. Electricity networks can also benefit, as the reduced demand on power during peak times can reduce or eliminate the requirement for costly network upgrades. Historically, it has been difficult to realise these electricity network benefits, as electricity distributors are required to look at shorter timeframes when assessing network projects and funding.

RECOMMENDATION

The Queensland Government, with the support of electricity distributors, develops a support package for the developers of embedded generation projects that places a “per installed kilowatt” dollar value on the reduction of load on the electricity network consistent with the operational life of the embedded generation project.

SECTION TWO



REGULATION OF GAS NETWORKS



Queensland now has full retail competition (FRC) for gas and electricity in most regions. Competition will create a greater awareness of energy, although it is likely that the contribution from optimum fuel and appliance choice will result in greater savings in costs for consumers and environmental benefits.

It needs to be emphasised that **APA is a transporter of natural gas**. It does not sell any gas itself and it does not receive a major financial advantage from increased use of gas through its existing distribution infrastructure. That is because, under the current

contracting environment pricing is driven by capacity reservations rather than throughput and under the current regulatory environment, networks and pipeline owners received a regulated return, based on the value of the assets (and not how much gas flows through the assets). However, if more energy is transported, this results in a lower per unit cost for customers.

To illustrate this point, the table below shows the relative network charges in 2007/8 for residential and business customers in each state.

NETWORK COSTS (\$/GJ)	RESIDENTIAL	BUSINESS (SME)
NSW	\$9.94	\$4.76
Vic	\$4.71	\$2.80
SA	\$12.14	\$8.12
Qld	\$19.68	\$10.32

Source: Published network tariffs and average load assumptions

This shows that Queensland has the highest network charges of all the states on a per GJ basis. This is not because the networks make higher returns in Queensland, but rather a function of Queensland having a similar unit cost to other states, but recovering this cost over a much smaller gas load. An important benefit from increased gas consumption will be that Queensland businesses will become more competitive as gas customer numbers and gas consumption increases and the tariffs consequently reduce.

Network owners do have some incentives to extend and expand their networks, however, this extension and expansion must meet prudence tests from the Regulator.

RECOMMENDATION

The Queensland Government to encourage appropriate amendments to the regulatory approach in order to encourage sustainable development, while still adhering to sound economic principles.

ADVANCED GAS TECHNOLOGIES

GAS AIR CONDITIONING

As with some other advanced gas technologies, gas air conditioning is a proven technology, but the higher capital cost has resulted in lower penetration in Australia. In countries such as Japan, where electricity prices are relatively high, gas air conditioning is widely used in homes and commercial buildings.

An analysis of the cost of gas versus electricity air conditioning in the various states shows the following:

GAS AIR CONDITIONING COMPARED TO ELECTRIC

STATE	\$ SAVINGS (GAS OVER ELECTRIC)	CO2 REDUCTION
Victoria	45%	42%
South Australia	29%	30%
NSW	20%	32%
Queensland	-10%	31%

Source: Origin Energy Retail

This shows that based on current energy tariffs, it is more expensive for Queensland customers to use gas air conditioning, despite greenhouse gas reductions exceeding 30%. However, if Queensland decides to participate in the National Smart Meter Rollout for electricity, then it will result in removal of existing cross subsidies and electricity air conditioning costs are expected to rise significantly. This will improve the competitiveness of gas and has the potential to result in a greater penetration of gas air conditioning units.

The electricity peak demand is typically in summer and it is largely driven by air conditioning loads. By contrast the peak demand for gas is in winter. Therefore an initiative to encourage the development of residential gas fired air conditioning would contribute to a reduction in public investment in electricity transmission and distribution infrastructure.

The Queensland Government estimates that a 3 kilowatt electric air conditioning system imposes an additional \$9,000 in investment in electricity infrastructure. Investment in Queensland Government owned electricity distribution and transmission infrastructure accounts for two thirds of this additional investment.

RECOMMENDATION

The Queensland Government support the installation of gas air conditioning for residential applications via an installation subsidy that recognises the benefits of reduced investment in electricity transmission and distribution infrastructure.

FUEL CELLS

New, solid oxide natural gas fuel cells are being developed that will run on hydrogen gas and therefore have zero greenhouse emissions. An interim step currently includes using natural gas as the fuel source, instead of hydrogen. Fuel cells are relatively expensive, but are already sold commercially. However the next generation Fuel cells will be more efficient and easier to handle and couple together.

RECOMMENDATION

The Government should consider the use of a demonstration Fuel cell for cogeneration in one of its buildings.

CONCLUSION

In conclusion, APA Group welcomes the opportunity to work with the Queensland Government and looks forward to further discussions on the role the natural gas industry can play in Queensland in relation to carbon emissions reduction.



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DELIVERING AUSTRALIA'S ENERGY

APA Group

