AGL Energy Limited
ABN: 74 115 061 375

Level 22, 101 Miller St
North Sydney NSW 2060

Locked Bag 1837
St Leonards NSW 2065

T: 02 9921 2999
F: 02 9921 2552
www.agl.com.au

Energy in action.®

AGL

James Cox
Chief Executive Officer
Independent Pricing and Regulatory Tribunal
PO Box 290,
QVB Post Office
NSW 1230

6 March 2012

Dear Mr Cox,

Carbon Component of Default Prices from 1 July 2012

The *Clean Energy Act 2011* and its accompanying legislative package, that includes a carbon pricing scheme commencing from 1 July 2012, received royal assent on 18 November 2011. The Voluntary Transitional Pricing Arrangement (VTPA) for AGL Retail Energy Ltd (1 July 2010 to 30 June 2013) allows the default prices to be varied by an amount that reflects costs relating to the introduction of, or participation in, the scheme. Under clause 4.10, AGL is to advise IPART of the calculation of the *Carbon Component* no later than 2 months before the price increase and provide sufficient information to demonstrate how the Carbon Component has been calculated and that it is reasonable.

To enable the variation of the default prices from 1 July 2012, AGL proposes a methodology for estimating the carbon costs using the latest published National Greenhouse Accounts Factors (July 2011). The calculation of the Carbon Component is outlined in Annexure 1. The impact on customers' annual gas bill is presented in Annexure 2.

If you have any queries, please do not hesitate to contact me on (03) 8633 6207 or at elizabeth.molyneux@agl.com.au.

Yours sincerely,

Elizabeth Molyneux
Head of Regulated Pricing

Annexure 1

Carbon Component of Default Gas Prices for 2012/13

Introduction

The *Clean Energy Act 2011* and its accompanying legislative package, that includes a carbon pricing scheme commencing from 1 July 2012, received royal assent on 18 November 2011. Under clause 3.1(b) of 2010-13 Voluntary Transitional Pricing Arrangements (VTPA) for AGL Retail Energy Ltd, on or from the commencement of a *Carbon Pollution Reduction Scheme*, the default prices will be comprised of:

R + N + C

where R refers to the Retail Component;

N refers to the Network Component; and

C refers to the Carbon Component.

In clause 6.1 (b) of the VTPA, *Carbon Pollution Reduction Scheme* is defined as "a mandatory scheme enacted or a carbon tax imposed by the Commonwealth of Australia after 1 July 2010 for the purpose of reducing greenhouse gas emissions, including but not limited to an emissions trading scheme". The original *Carbon Pollution Reduction Scheme* (CPRS) was a cap-and-trade emissions trading scheme proposed by the Commonwealth Government in 2008. The legislation to implement the scheme from 2011 was rejected in the Australian Parliament twice, in August and December 2009. The legislation was reintroduced into Parliament (with amendments) in 2010 but on 27 April 2010 the former Prime Minister announced that the implementation of the CPRS would be deferred.[1]

The Government used much of the content of the CPRS legislation as the basis for developing an alternative policy to reduce greenhouse gas emissions in the Australian economy. The result was the development of the Clean Energy Legislative Package which consists of 18 bills. The *Clean Energy Act 2011* provides the legislative framework for a carbon pricing mechanism to be commenced on 1 July 2012.

Consequently, AGL considers that the commencement of the *Clean Energy Act 2011* enables a Carbon Component to be included in default prices from 1 July 2012.

Carbon Component

Under the *Clean Energy Act 2011*, the activities which produce greenhouse gas emissions along the natural gas supply chain will incur a cost. In the gas industry, greenhouse gas emissions can be considered as occurring at two stages along the supply chain:

- Upstream – resulting from direct and indirect emissions from production and transmission; and
- Downstream – resulting from fuel combustion by end users.

The cost impact of greenhouse gas emissions associated with these two stages of the supply chain will form the main portion of the Carbon Component. In addition, AGL will incur a range of significant costs as a result of the introduction of the *Clean Energy Act*

[1] Commonwealth Government of Australia, Carbon Pollution Reduction Scheme. Website accessed 27 February 2011 (http://www.climatechange.gov.au/cprs/)

2011 including IT system changes, project management, contract management, bad debts and compliance costs. AGL proposes that these incremental operating costs as well as an allowance to maintain the percentage retail margin be included as part of the Carbon Component.

AGL notes that there will also be liability for greenhouse gas emissions incurred by the distribution (network) system. The related carbon costs will be incorporated into Jemena's network charges and passed through as the Network Component (N).

Upstream carbon cost

Methodology

Many of AGL's suppliers of wholesale gas and transmission services will incur additional costs from 1 July 2012 under a carbon pricing mechanism. AGL has sought to obtain estimates of these costs from its suppliers, but, to date, information has not been forthcoming, and because of the scheme design, may not be fully known for some time. In the absence of transparency around the upstream carbon costs and AGL's requirement to advise IPART of the calculation of the Carbon Component by 1 May 2012, AGL has developed a methodology for estimating the impact of the carbon pricing mechanism on the delivered cost of natural gas.

In order to calculate the impact on the cost of delivered natural gas in NSW, AGL has reviewed publicly available data on the greenhouse gas emissions intensity of the natural gas supply chain. Sources of greenhouse gas emissions associated with the production and transmission of natural gas primarily are comprised of fuel combustion (i.e. emissions from fuel used for production and fuel used for compressors in the transmission network) and fugitive emissions (i.e. venting or flaring of gas in production).

The Department of Climate Change and Energy Efficiency (DCCEE) has been publishing a series of greenhouse gas emission factors, National Greenhouse Accounts (NGA) Factors, to allow for the estimation of upstream greenhouse gas emissions associated with natural gas usage i.e. Scope 3 emission factors. The NGA Factors are estimated using the Australian Greenhouse Emissions Information System (AGEIS) and are determined in conjunction with the reporting of Australia's National Greenhouse Accounts.[2] The latest publication of the NGA Factors was dated July 2011.

AGL understands that while Scope 3 emission factors relate to the emissions attributable to extraction, production and transport of the fuel, the factors do not include leakage from the distribution system.[3] These factors are based on emissions data reported by relevant parties under the *National Greenhouse and Energy Reporting (NGER) Act 2007*.

Scope 3 emission factors for natural gas usage in the NGA Factors (July 2011) are also referenced as part of the Commonwealth Government's Clean Energy Legislative package. The *Clean Energy Act 2011* established the Jobs and Competitiveness Program which is designed to protect the competitiveness of selected industries where they are exposed to competition from industries in countries that do not have comparable climate change policies. The details of the Jobs and Competitiveness Program are established in the *Clean Energy Amendment Regulation 2012 (No.1)* including the annual issue of free carbon units in relation to emissions-intensive, trade-exposed (EITE) activities as defined under the Program. Eligible activities under the Program that use natural gas as a feedstock can apply for free carbon units to be issued by the Commonwealth Government to offset the

[2] Department of Climate Change and Energy Efficiency, National Greenhouse Accounts Factors – July 2011. Website accessed 28 February 2012: http://www.climatechange.gov.au/publications/greenhouse-acctg/national-greenhouse-factors.aspx

[3] AGL contacted the DCCEE and was able to gain a more detailed understanding of the modelling approach used to develop the Scope 3 emission factors. The DCCEE confirmed that greenhouse gas emissions resulting from the leakage of gas in low-pressure pipeline networks are excluded from the Scope 3 emission factors.

cost impact on natural gas of the carbon pricing mechanism. Subclause 907 (12) defines the natural gas feedstock allocation factor ($NGAF^{i}_{t}$) as relating to "the effect of the carbon cost on the cost of natural gas". The *Explanatory Statement* for the *Clean Energy Amendment Regulation 2012 (No.1)* describes that the natural gas allocation factor is "determined with reference to the factors from the National Greenhouse Accounts".[4] Subclause 907 (13) sets out the natural gas allocation factors for each State on a 'metropolitan' and 'non-metropolitan' basis, and these factors are equivalent to the Scope 3 emission factors for natural gas in the NGA Factors (July 2011).

AGL is satisfied that this factor represents the most appropriate publicly available estimate of upstream emissions for natural gas supplied to a small customer in NSW. Accordingly, AGL proposes that the scope 3 emission factors (published in Table 37 in Appendix 4, NGA Factors, July 2011) be applied to estimate the upstream carbon costs of delivered natural gas. The relevant NGA Factors are provided in Table 1 below:

Table 1 – Scope 3 emission factors, Table 37: Scope 3 emission factors – gaseous fuels, NGA Factors (July 2011)

State or Territory	Natural Gas EF for scope 3	Natural Gas EF for scope 3
	Metro	Non-metro
	kg CO_2e/GJ	kg CO_2e/GJ
New South Wales and ACT	14.2	15.0

In the NGA Factors (July 2011), the scope 3 emission factor is 14.2 kg CO_2e/GJ for the NSW metro region and 15.0 kg CO_2e /GJ for non-metro region. Jemena Networks provides distribution services to tariff customers in two regions – coastal and country. If Jemena's coastal region is aligned with the metro region and the country with non-metro, a load weighted average NGA factor of 14.60 kg CO_2e/GJ is obtained (see Table 2 below).

Table 2 –Weighted-average Scope 3 emission factor for NSW

	NGA Factor kg CO_2e/GJ	Consumption 2011-12 GJ
Metro	14.2	5,395,954
Non-metro	15.0	5,281,287
Weighted average/total	**14.6**	**10,677,241**

[4] Commonwealth of Australia, *Clean Energy Amendment Regulation 2012 (No.1), Explanatory Statement* sets out in limited detail the process for determining the natural gas allocation factors (p 109).

Upstream carbon cost

Subclause 100 (1) of the *Clean Energy Act 2011* establishes that the cost of a carbon unit for surrender is $23 per unit for 2012/13. Each unit is equivalent to one tonne of carbon dioxide equivalent (CO_2e). Using the weighted-average Scope 3 emission factor for the Jemena network the upstream carbon cost in 2012/13 will be $0.34/GJ (excluding GST) i.e. 14.6 x 23/1000.

Downstream (fuel combustion) carbon cost

Methodology

Under the *Clean Energy Act 2011*, liability is imposed on a natural gas supplier for the potential greenhouse gas emissions embodied in the natural gas it supplies[5]. For a supplier to be liable, the following tests must be satisfied:

- the natural gas supplier supplies an amount of natural gas to another person;
- it may reasonably be expected that the natural gas is for the use of the other person;
- the natural gas is withdrawn from a natural gas supply pipeline for the purpose of the use; and
- the other person did not quote an obligation transfer number (OTN) (that is accepted by the supplier) in respect of the supply.

AGL is of the view that the supply by AGL of natural gas to small customers in NSW will clearly satisfy these tests. In that case, a gas retailer's carbon unit liability per GJ will be based on the amount of gas consumed by a customer.

The amount of greenhouse gas emitted by end users has been established in the *National Greenhouse and Energy Reporting (Measurement) Determination 2008* in Part 2 of Schedule 1. These measurements are also referred to in the NGA Factors (July 2011). Table 3 below shows the emission factors of CO_2 equivalents from greenhouse gas components of natural gas as set out in Table 2 on page 14 of the NGA Factors.

Table 3 – Emission factors for the consumption of natural gas, NGA Factors (July 2011)

Fuel combusted	**Energy content factor (GJ/m^3 unless otherwise indicated)**	**Emission factor kg CO_2e/GJ (relevant oxidation factors incorporated)**		
		CO_2	**CH_4**	**N_2O**
Natural gas distributed in a pipeline	39.3×10^{-3}	51.2	0.1	0.03

Downstream (fuel combustion) carbon cost

The emission factors in Table 3 total 51.33 kg/GJ. Given a carbon price of $23 per unit for 2012/13, the downstream carbon cost will be $1.18/GJ (excluding GST).

[5] Commonwealth of Australia, *Clean Energy Act 2011*, section 33.

Total direct carbon costs

The total direct carbon costs comprises of the upstream and downstream carbon costs. Based on the NGA Factors and a carbon price of $23/tonne, the total carbon cost for 2012/13 will be $1.52/GJ (excluding GST).

Table 4 – Total direct carbon costs (excluding GST)

	NGA Factor kg CO_2e/GJ	Carbon cost $/GJ
Upstream emission	14.60	$0.34
Downstream emission	51.33	$1.18
Total direct carbon costs	**65.93**	**$1.52**

Retail cost allowance

The introduction of carbon pricing will increase operating costs and reduce the retail margin in percentage terms if there is no adjustment to the incremental costs.

Carbon related retail operating costs

In implementing the requirements of the *Clean Energy Act 2011*, AGL will incur a range of project and ongoing costs. These costs include the following:

- IT system enhancements including project management costs, amortised over three years;
- bad debts, credit management and collection activities;
- personnel costs in wholesale carbon trading; and
- compliance costs such as greenhouse reporting and assurance

AGL estimates that these carbon related retail operating costs, after allocating to the NSW gas retail market, amounts to $0.13/GJ.

Retail margin adjustment

AGL proposes that an uplift adjustment of 8.0% be added to the direct carbon costs and incremental retail operating costs to compensate for the reduction in percentage retail margin. This adjustment is consistent with the recommended reasonable range for retail margin of 7.3% to 8.3% in the *Gas – Final Report, Review of regulated prices and charges for gas 2010-13, June 2010*.

Proposed Carbon Component

In summary, the Carbon Component comprises of the direct carbon costs from upstream and downstream emissions, additional carbon related operating costs and an adjustment for retail margin. AGL proposes a Carbon Component in 2012/13 of $1.78/GJ (excluding GST) as outlined in Table 5 below. This component will be added to the usage rate only.

Table 5 – Proposed Carbon Component (excluding GST)

	Carbon cost $/GJ
Total direct carbon costs	$1.52
Carbon related retail opex	$0.13
Retail margin adjustment – 8%	$0.13
Carbon Component	**$1.78**

Annexure 2

Customer impact

The proposed Carbon Component of $1.78/GJ (excuding GST) outlined in Annexure 1 will increase the annual bill to an average residential customer using 23 GJ a year by $45 in 2012/13 (including GST) or 6.3% pa before any other changes such as network price increases. Due to the declining block tariff structure, the percentage increase will be higher as natural gas usage increases.

The table below shows the annual increase on customers' bill arising from the introduction of the carbon pricing scheme at various levels of natural gas usage (based on a flat consumption profile):

Table 6 – Bill impact due to Carbon Component

	Usage GJ/year	Bill based on 2011/12 prices ($ pa incl GST)	Carbon Component ($ pa incl GST)	% increase
Residential	5	310	$9.8	3.2%
	23	716	$45.0	6.3%
	40	995	$78.3	7.9%
Business	184	3,645	$360	9.9%