

AGL Response to the Independent Pricing and Regulatory Tribunal

Review of regulated retail tariffs and charges for electricity 2010-2013, Draft Methodology Paper Date: 23 September 2009

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Executive Summary

AGL is pleased that the Independent Pricing and Regulatory Tribunal *(IPART)* has sought to receive feedback from stakeholders on the draft methodologies underpinning the draft decision on the Wholesale Energy Purchase Cost allowance, Retail Operating Cost allowance and Customer Acquisition and Retention Cost allowance and Retail Margin. IPART has committed to a transparent process that permits comprehensive consultation from all stakeholders, and AGL is very appreciative of the efforts IPART has taken to achieve this. AGL looks forward to continuing this consultative process.

AGL acknowledges that the task of IPART is a challenging one – not only does IPART need to forecast the costs a Standard Retailer is likely to incur in operating in the market over the three year period of the price path, but it must do so in an environment of significant regulatory, structural and market change.

AGL believes that the key to providing stakeholders with as much certainty as possible in circumstances where there is likely to be significant change which may give rise to a change in the price path is to provide as much transparency of modelling assumptions and methodologies as possible. This will provide stakeholders with confidence that they understand how the analysis has been conducted and the results obtained, and more importantly, have sufficient information to make an assessment as to how the forecast allowances may change in certain circumstances.

AGL does have a number of concerns as to whether the proposed approach adequately addresses and account for the risks which will face Standard Retailers in the period of the price path. These concerns are articulated in the body of the submission, but in summary:

- AGL is very concerned that the suggested framework does not appear to address the
 risk that network tariffs on regulated customers will increase at a rate greater than the
 average increase in network revenue as permitted in the regulated price path.
 Retailers should not be expected to absorb costs attributable to increased network
 charges, and AGL is of the view that a direct and automatic pass through of any
 increase in network tariffs into each retail tariff should be expressly permitted in the
 terms of the determination;
- The methodology currently proposed by Frontier Economics, which is premised on an 'efficient frontier' analysis, potentially provides an acceptable basis for the forecast of wholesale energy costs. However, AGL is of the view that there needs to be additional allowances made for the actual costs incurred by Standard Retailers in prudently managing their risks in supplying a regulated load which are not adequately accounted for in the 'efficient frontier' analysis.
- AGL also disagrees that a 'point in time' determination of contract prices provides a sensible basis for assessing the costs incurred by a retailer. The purpose of the analysis in question is to identify the costs incurred by a Standard Retailer in supplying a regulated load, and a prudent retailer will layer in its hedges over time. The analysis suggested by Frontier Economics appears more focussed on attributing a theoretical value to a hedge portfolio, which pre-supposes the retailer in question has an option to 'sell out' its position, rather than an obligation to supply a regulated customer base.



- AGL notes that IPART has proposed a Weighted Average Capital Cost for a generation business for the purpose of calculating the Long Run Marginal Cost, and a WACC for a retail business for the purpose of calculating the Retail Operating Costs and the appropriate margin. What must be kept foremost in mind in determining the WACC is that the set of assumptions for each WACC calculation must form part of a cohesive view of the business being considered. Single assumptions cannot be considered in isolation, but must be considered in the context of all other assumptions and whether together they accurately reflect the circumstances of the business in question. AGL does not believe that either of the WACCs suggested by IPART do in fact properly reflect the set of circumstances which would determine the cost of capital for the businesses in question.
- In relation to the Retail Operating Cost, IPART's suggested approach of considering both actual costs and benchmarks does have merit. AGL looks forward to understanding further the benchmark approach to determining ROC benchmarks, and notes that several adjustments to existing benchmarks will need to be made to account for the relevant changes.
- AGL's views on whether the margin analysis proposed is appropriate will be reliant on the extent to which AGL is persuaded that the identified risks are adequately addressed in the WEC, the ROC and the terms of the determination (eg permitting pass through of network increases). AGL further notes that the actual margin earned by a standard retailer is dependent on an accurate forecast by IPART of customer consumption and customer numbers, which is used in converting operating cost per customer to operating cost per MWh and dollar per customer.
- AGL is not persuaded that the 'annual review' approach as suggested by IPART is the only practical or effective means of managing the risk presented to retailers (both Standard Retailers and those competing with the Standard Retailers) that the forecast regulated allowance will not reflect the actual costs of operating in the market. AGL would comment that:
 - Further detail needs to be provided to stakeholders as to the manner in which the calculation of the 'actual costs' will be undertaken, and the manner in which the comparison between that cost and the regulated allowance will be performed. This information should be provided and consulted on in the same way as other elements of the price determination;
 - AGL notes in this respect that IPART adopted a similar approach in the 2007 Determination, and concluded that in 2008/09 the actual energy purchase costs had not diverged by more than 10% from the modelled WEC. AGL would be very concerned if the methodology proposed in this Price Determination were the same as that employed in 2008/09.
 - AGL seeks to understand how IPART (and Frontier Economics) propose to adjust the assumptions, and the consultation process it believes would be appropriate, in the event the WEC is re-opened. There is a risk that in running the same model without appropriate adjustment, IPART and its consultants may 'lock in' the error – if the model is not producing modelled outputs reflective of market costs, then there should be some provision to analyse and adjust that model.
 - While annual reviews may be part of the way IPART manages forecast risk, at a time of price uncertainty and volatility which is likely to arise following the CPRS, an annual review process may be too long for a retailer to carry below cost tariffs. AGL therefore supports retailers reviewing prices under the



Australian Energy Market Commission *(AEMC)* Model 2^1 . An alternative approach is for retailers to be allowed to instigate an IPART review where there are reasonable grounds to do so.

¹ As detailed in the following report - AEMC: "Review of Energy Market Frameworks in light of Climate Change Policies - 2nd Interim Report", 30 June 2009.



Wholesale Cost Allowance

As noted in its response to the Issues Paper (dated 3 August 2009), AGL supports the approach established in the Terms of Reference whereby the Long Run Marginal Cost (*LRMC*) of supplying the regulated load is applied as a floor to the Wholesale Energy Cost (*WEC*). AGL is also largely supportive of the approach indicated in the methodology report for both the LRMC and the energy purchase costs (*EPC*).

AGL is very appreciative of the effort taken by IPART and Frontier to establish a transparent process in respect of the WEC analysis. As previously noted by AGL and other stakeholders, while there is support for the general approach to the calculation of the LRMC and the energy purchase costs, the confidence stakeholders can have in these calculations is dependent on the transparency of the various inputs and the modelling approaches.

To that end, AGL is strongly of the view that wherever possible, publicly available information sources should be used to supply inputs to the modelling and analysis. Therefore, AGL supports Frontier Economics' use of the public ACIL Tasman report on generation costs as a basis for its modelling.²

However, an important proviso is that IPART and its advisers need to ensure that any assumptions, implicit or explicit, that are used in the compilation of such public data sources are consistent with the specific purposes to which the data is being applied in the current tariff review. In any instance where there is a material variance between the public data sources' assumptions and the circumstances of this Review, AGL would seek an appropriate and transparent adjustment to the public data to ensure its applicability. This is primarily relevant to the appropriate estimates of capital costs used in LRMC calculations (see below).

Load Data used in WEC calculations

AGL again notes the importance of transparency of the load data used by Frontier and IPART in determining the LRMC and EPC being made available to all stakeholders. AGL is generally supportive of IPART's suggestion that the Net System Load Profile (*NSLP*) form the basis of forecast loads for the purposes of estimating the LRMC of the regulated customer load³ and in determining the EPC. NSLP data, as opposed to confidential load forecasts supplied by the Standard Retailers, has the benefits of being transparent, easily verifiable and readily understood by retailers and other stakeholders.

AGL understands that the Standard Retailers have been asked to supply IPART with particulars of their forecasts of regulated customer loads for the period of the determination, including forecasts of seasonal maximum demand under 10, 50 and 90 Probability of Exceedance *(POE)* conditions. If this Standard Retailer supplied load data is eventually used in the calculation of LRMC and/or the EPC, with no public release of this information, there are obvious adverse implications for process transparency.

² ACIL Tasman, Fuel Resource, New Entry and Generation Costs in the NEM, April 2009, available on the Australian Energy Market Operator's website, www.aemo.com.au

³ IPART, August 2009, p22



AGL understands that the Standard Retailers may have concerns for the potential commercial sensitivity of such forecasts, which would thus preclude their public release. However, in the interests of maintaining stakeholder confidence in the tariff review process, AGL would urge, at the very least, that key summary parameters of the Retailers' forecasts be made available to all stakeholders. AGL suggests, for instance, that IPART consider the release of the seasonal load factors⁴ for each regulated load that is used in the LRMC calculations. Load factor is a key driver of wholesale costs, and its availability will enable all stakeholders to conduct their own analysis and verifications of the outcomes of the Draft Determination.

AGL notes that Frontier has indicated that even if it uses the load provided by the Standard Retailers to calculate the LRMC, it will also calculate the LRMC with reference to the NSLP and publish the detail and data resulting from this calculation. AGL is very supportive of this proposal, and suggests that it should be extended to the calculation of the EPC also.

Long Run Marginal Cost

AGL supports the general approach to calculating the LRMC, outlined in Frontier Economics' modelling methodology report. That is, the LRMC value is to be based upon the least-cost estimate of constructing a full fleet of standalone generation, assuming no interconnection, to supply each relevant retailer's regulated load shape.

AGL's comments in respect of the WACC used in the LRMC calculation are detailed in a separate section (see below).

Modelling transparency

In order to gain confidence in the outputs of this analysis, AGL requests that further information about the details of the modelling assumptions and methodologies be made available to stakeholders.

Specifically, AGL requests that full details of the following be provided:

- The treatment of tax and depreciation; in particular the assumed tax implications of interest costs incurred during construction of the standalone generation (see below for more details); and
- The details of Frontier's calculation of the fixed cost component.

Tax treatment of interest during construction

As stated above, AGL concurs with Frontier Economics' intention to model the LRMC of the regulated load using a "standalone" approach⁵. That is, the system required to supply the regulated load will be a hypothetical complete new build, with the capital costs of the new plant to be included in the resultant LRMC.

The consequence of a standalone approach is that none of the hypothetical new build is part of any portfolio.⁶ Hence, interest costs incurred through funding such projects with debt cannot be used to offset income for taxation purposes until the new generation

⁴ Load factor is defined as the average load for a period, divided by the maximum load for that period, and is an indicator of the peakiness of a load.

⁵ Frontier Economics, Section 3.3.4, p20

⁶ AGL supports this approach given that, the theoretical nature of this modelling where it contemplates construction of a complete new generation fleet to meet the regulated customer load, any assignment of new build to any particular portfolio would be a highly arbitrary and a subjective modelling decision.



actually produces a net profit before tax. In other words, during the construction phase there is no income for this interest cost to offset.

Therefore the WACC must not assume any benefit from a tax shield prior to a positive taxable income.

ACIL Tasman notes⁷:

"As the Officer WACC formula includes the interest tax shield and imputation credits, there is potential for inaccuracies to exist as it is essentially a simplification. This is particularly so in the case of finite projects which have different amounts of depreciation and tax payable throughout the project life. A more accurate means of accounting for these elements can be achieved by incorporating them explicitly into the cash flows and using a Vanilla WACC."

The implication of this is that within ACIL Tasman's LRMC calculation the tax shield benefit of debt is implicitly assumed to have immediate cash flow impact when the interest is incurred rather than when benefit is utilised. This is correct when the project is part of a portfolio but not when the project is standalone, which is usually the case given the very nature of a project financing.

Given this, AGL supports ACIL Tasman's suggestion: the timing of the tax shield benefit should be modelled in each project's cash flow such that the assumption of standalone new build is correctly incorporated.

Treatment of IDC for Determination of Fixed Costs

It is not clear from the statements provided to date by IPART or Frontier Economics as to whether the derivation of the fixed costs of the standalone new-build generation required to estimate the LRMC includes Interest During Construction (IDC) in the upfront capital costs and therefore the determination of the fixed costs of new generation plant. Accordingly, AGL requests that full details of the methodology and assumptions used in calculating these fixed costs be provided to stakeholders.

AGL's position is that to be consistent with standard industry practice for project-financed standalone projects, the estimation of generation fixed costs (for use in the modelling of LRMC) should treat IDC (and prior to the production of a net profit before tax) as fully capitalised and thus subsequently included in the determination of the average cost of new plant.

IDC is a non-trivial component of the cost of a new plant. AGL has sought further advice and analysis of the ACIL Tasman capital cost estimates. AGL hopes to be in a position to provide the results of this analysis to IPART in the very near future. The ACIL Tasman LRMC calculation implicitly assumes a constant debt ratio throughout the project lifetime. AGL supports this assumption.

Reserve margin

Any LRMC calculation must include the cost of an appropriate reserve margin for the load concerned⁸. AGL notes that while Frontier Economics' methodology report specifically includes a reserve capacity requirement amongst the modelling parameters required for the WHIRLYGIG modelling of the LRMC⁹, it is unclear regarding the actual values that would be chosen for this variable (for the purposes of estimating LRMC), and also on any

⁷ ACIL Tasman, p7

⁸ Reserve is a critical component in ensuring reliability of supply, and hence its costs must be included in any LRMC calculation.

⁹ Frontier Economics, p11



proposed methodology that would be employed to estimate this reserve margin parameter.

Although Frontier Economics does provide a detailed discussion of the reserve margins required for system security¹⁰, these reserve margins cannot readily be applied to the estimation of a regulated load LRMC or to system 'systemic' security (as hedge MW requirements invariably exceed physical MW requirements given the nature of generator hedging strategies). As with the allocation of existing interconnection or generation capacity there is no sensible way of allocating system-wide reserve requirements to the regulated retailer loads.

This can be demonstrated by the fact that the NSW region actually has a negative minimum reserve margin (due to its significant interconnection with neighbouring regions)¹¹. Because the LRMC calculation assumes no interconnection, a negative reserve margin is obviously inappropriate in this context. Hence, there is a requirement to estimate a reserve margin appropriate for the LRMC calculation exercise.

Whilst the actual reserve values used in ensuring system reliability are inappropriate, AGL suggests that the general principles used in estimating actual minimum reserve values will provide a useful guide in modelling the appropriate reserve margin accompanying the construction of standalone generation to supply the regulated loads.

To that end, AGL notes the following:

- AEMO expresses minimum reserve levels relative to ten percent POE demand levels.¹²
- The National Electricity Rules indicate that AEMO will declare a Lack of Reserve (level 2) ... "when AEMO considers that the occurrence of the credible contingency event which has the potential for the most significant impact on the power system is likely to require involuntary load shedding. This would generally be the instantaneous loss of the largest generating unit on the power system. Alternatively, it might be the loss of any interconnection under abnormal conditions."¹³
- Amongst the public ACIL Tasman data (that would be used as inputs to Frontier Economics' LRMC calculation) is a listing of typical new entrant unit sizes.¹⁴

This would therefore imply that the hypothetical new build for the LRMC calculations must contain sufficient capacity such that the instantaneous loss of the largest modelled unit, under 10 POE conditions, would not lead to involuntary load shedding. In other words, the capacity of the modelled system must be no less than the maximum demand, under 10 POE conditions, *plus* the capacity of the largest modelled unit.

AGL understands that in the modelling undertaken for the 2007 Determination, Frontier used a reserve margin of 15% which is entirely consistent with international benchmarks for a reserve planning margin.

AGL recognises that the above approach utilising AEMO's methodology to determining minimum reserve requirements, if applied in Frontier's modelling of the reserve required for a subset of the system load, *may* result in an unrealistically high reserve margin. However, AGL believes that Frontier should calculate the LRMC using the reserve margin methodology applied by AEMO, and the actual reserve margin chosen should reflect this to

12 AEMO, p5-3

¹⁰ Frontier Economics, p16 and pp 40-41

¹¹ AEMO, Electricity Statement of Opportunities 2009, Section 5.2, Minimum Reserve Levels, p 5-3

¹³ National Electricity Rules, section 4.8.4(c)

¹⁴ ACIL Tasman, Table 32, p55



the extent possible, but in any case should be no less than the generally accepted international benchmark of 15% (particularly given the parallel requirement for 'systemic' security).

LRMC and the CPRS

AGL appreciates IPART will face a significant challenge in forecasting the cost of carbon post the introduction of the CPRS.

In terms of calculating the impact of the CPRS on the LRMC of energy, AGL supports an approach whereby the cost of carbon is effectively added on to the black LRMC. AGL notes that there is very limited scope for reducing emissions in the electricity generation sector in the first few years of the scheme. Based upon the existing generation fleet in the NEM, there is almost no fuel switching capability. Consequently, carbon prices will be largely passed through in higher wholesale prices until new, lower-intensity generation capacity is commissioned.

To assess the impact of the CPRS, AGL considers that a prudent approach is determine a system-wide LRMC with, and then without, a cost of carbon. The difference in the outputs of the two models will be the carbon pass-through amount. For this calculation, Frontier Economics would use the incremental approach for calculating LRMC – that is, the LRMC will be determined for the entire NEM system, using existing generation, and only adding new generation as required to meet incremental system demand.

This system-wide approach is consistent with the way in which Frontier proposes to determine the costs of retailers' compliance with the MRET scheme.

Given present uncertainty around the CPRS, including targets and access to alternative mechanisms, such as Certified Emission Reductions (CERs) for compliance, AGL supports the 'with carbon' LRMC modelling being performed using the Federal Treasury modelling results for the carbon price. AGL considers that ACIL Tasman's public report provides appropriate estimates of the emissions intensity of existing and new generation.

Energy Purchase Cost

As with other components of the retail tariff, AGL is of the view that in estimating the Energy Purchase Cost (*EPC*), IPART should adhere as closely as possible to public data, accepted principles and a transparent process.

AGL acknowledges the difficulty of the task faced by IPART in estimating the Energy Purchase Cost allowance, but notes that a widely accepted way of determining the EPC is by attempting to replicate what prudent retailers actually do to hedge their market risks. In this approach, prudent retailers will generally be considered to start hedging two to three years in advance, on a rolling basis, and will usually be exposed to the prevailing forward contract prices at that time.

AGL understands that Frontier Economics will be using a three-stage modelling approach to determine a forecast energy purchase cost for a Standard Retailer. AGL understands this process to be as follows:

- Frontier Economics, IPART and the Standard Retailers will agree the relevant forecast load which will form the basis of the analysis;
- Maximum demand values will be incorporated, corresponding to 10, 50 and 90 per cent POE scenarios;



- Frontier Economics will run a series of game-theoretical simulations to identify the full range of price outcomes at a determined number (30) of 'representative' demand points;
- These price outcomes are then sampled from to produce a full suite of demandprice times series, of half-hourly resolution;
- Frontier Economics will determine the contract prices to be used in running 'Strike', its proprietary 'efficient frontier' model. Two sets of contract prices will be used, providing two separate sets of results:
 - A 'modelled' approach (see below);
 - o Actual market data of forward contract prices.
- Frontier Economics then run their 'Strike' application to determine the 'most efficient mix of hedging products to meet a particular load profile' and the cost of that mix of hedging products. This would then enable IPART to select the mix of cost and risk that it deems appropriate for the Standard Retailers. In the 2007 determination, IPART elected to choose the 'most conservative' point on the efficient frontier (i.e. the left-most point, corresponding to the 'least risky' mix of hedges).¹⁵
- Frontier Economics appears to believe that in choosing the 'most conservative point' on the efficient frontier they are replicating the strategy that would be adopted by a 'conservative retailer'.
- A 'volatility allowance' is then apportioned, based on the residual risk of the selected portfolio, inferred from the distribution of outcomes of this portfolio.

AGL accepts that the approach suggested by Frontier potentially presents an acceptable methodology on which to conduct an analysis of the likely costs which may be incurred by a Standard Retailer over the period of the price path.

However, AGL remains concerned that this approach does not in fact seek to properly replicate the costs that would be incurred by a prudent Standard Retailer in fully managing its price and volume risks, and suggests an additional allowance must be permitted in addition to the cost identified in the 'efficient frontier' approach. More specifically, AGL notes that:

- The efficient frontier approach views 'risk' as purely a function of the *probability* of an event occurring. This is explored in further detail below, but in short, a prudent retailer must be focussed on managing the risk presented by those events which may have a very low probability, but would have an extremely detrimental impact on the viability of the retail business as an ongoing proposition. These risks are not represented on the efficient frontier;
- The volatility allowance only appears to account for events falling within a defined range of probability of occurring it ignores the essentially existential nature of low-probability 'outlier' events on the viability of a retail business. Hence, Standard Retailers' costs in managing the risk of such events are not included;
- Load/volume risk does not appear to be adequately accounted for;
- In adopting a 'mark to market' approach for selecting applicable contract prices, Frontier Economics is ignoring the very real cost incurred by retailers in managing its load in a prudent manner.

¹⁵ IPART, Promoting retail competition and investment in the NSW electricity industry, Regulated electricity retail tariffs and charges for small customers 2007 to 2010, June 2007, p77



Contract Price Data

AGL notes that Frontier Economics proposes to determine the EPC both with reference to a modelled forward price, and by using actual forward contract prices as determined by reference to market data.

AGL understands, and to some extent accepts, that where there is little or no liquidity in the forward market (for example, as is currently observed in the contract market beyond 1 July 2012) it may be necessary to 'model' contract prices. At this time, AGL is willing to accept, in general, the approach being suggested by Frontier Economics in respect of determining the contract price with reference to a premium on the modelled spot price. AGL does not accept that a 'point in time' approach as suggested is in any way relevant or rational in the circumstances (further detail provided below).

However, AGL is reserving its position on both the utility of modelled prices and the methodology being used to develop those prices, until:

- There is a detailed analysis of the correlation of modelled prices to those observed in the market; and
- There is a comprehensive explanation provided as to why any divergence that may occur between the modelled prices and observed market data has taken place and, furthermore, that this explanation is valid.

Deriving the modelled contract price

AGL understands the approach proposed by Frontier Economics to determine the contract price to be as follows:

- Frontier Economics will develop a number of demand and spot price scenarios;
- The average quarterly spot price for each quarter modelled (by reference to the entire range of spot price outcomes) will be identified;
- The forward flat contract price for that quarter will then be deemed to be the average spot price, with a 'contract price' premium, which is currently proposed to be five per cent;
- The modelled forward cap price will be average of the payouts on \$300/MWh strike caps, inferred from modelled spot prices, plus a five per cent premium.

AGL would welcome Frontier Economics' confirmation or correction on AGL's summary of the proposed methodology. AGL also looks forward to seeing the detail of the calculation of the spot price averages and resulting contract prices.

Point-in-time approach

Frontier Economics has suggested to IPART that in determining the wholesale costs incurred by a retailer, it is appropriate to assume the cost of the contract paid by the retailer is that which exists at a definitive point in time, rather than considering the cost that a retailer would have accrued in layering hedges over a two-year period, and therefore exposing itself to the fluctuations in contract price. Frontier Economics appears to believe this is appropriate on the basis that "a retailer should be marking their hedge book to market in making economic decisions".¹⁶

¹⁶ Frontier Economics, August 2009, p72



This analysis could only ever be considered in any way relevant if the transaction in question were the economic decision as to whether to supply a discrete, avoidable load. For example, a retailer deciding whether to enter into a sale arrangement with a large customer has the alternative of clearing any applicable through the wholesale market, and hence, the opportunity cost of doing so will govern the retailer's pricing decision. This is emphatically not the situation faced by a Standard Retailer, supplying regulated small-customer load.

Accordingly, the 'point in time' approach for selection of appropriate contract prices is at odds with the Terms of Reference which require that the efficient costs of a Standard Retailer be determined.

To elaborate, AGL asserts the notion that a retailer should be 'marking their hedge book to market' in making economic decisions regarding hedging for its regulated customer base is incorrect, for the following reasons:

• Risk management policies require the layering-in of hedges

Prudent retailers' risk management policies oblige them to "layer in" their hedges over time, leading up to the period of each contract. This has been recognised by regulators in other jurisdictions in representing retailers' wholesale energy costs (e.g. SA, VIC, ACT and QLD). Hence, retailers are exposed to the full range of contract price movements for a substantial time leading up to the period of the contract, and do not realistically have the alternative of referring to the output of a model when deciding whether to procure hedges.

• Standard Retailers have an obligation to supply

A retailer servicing a regulated mass market load does not have any "economic decision" to make – it is obliged to supply those customers. A Standard Retailer does not have the option of not supplying regulated customers, new move-ins and new premises within their supply area. Therefore, despite any mark-to-market valuation of the Standard Retailer's hedge book, it cannot choose, for example, to not supply its regulated customers in favour of clearing the hedge through some other means, such as through the wholesale market or by selling to other customers.

• Marketing campaign timings and lags in customer transfers preclude day-by-day "economic" decision implementation

Even when considering the situation of Tier 2 retailers, servicing customers on market contracts (for example, AGL's current position in the NSW electricity retail market), an assumption that the retailer will be able to implement "economic decisions" on a day-by-day basis without accepting the inertia of business decisions and in particular, the effects of region-wide marketing campaigns, with reference to the mark-to-market value of its hedge book, is highly unrealistic.

All retailers (Standard and Tier 2) undertake operational, marketing and campaign activity on an on-going basis and are not in a position to adjust their mass market offers and customer base instantaneously. Therefore it is simply not realistic to assume that these actions can be taken, or should be taken, on the purely "economic" basis of movements in the mark-to-market value of a portfolio of hedges.

The decision to campaign to acquire or retain customers occurs months in advance, and decisions and their lagged implications cannot simply be "turned off" just because the contract market may have moved on a particular day.

Furthermore, due to lags in the customer transfer process between retailers, there is typically a delay of one to three months from the time a customer signs a contract to that customer becoming the responsibility of a new retailer. Therefore,



"economic decision" making simply will not occur on the basis of day-by-day movements in the contract market – because retailers will not be aware of the exact obligation to customers.

• Transaction costs are ignored

The concept of making economic decisions, purely on the basis of a day-by-day mark to market valuation of a mass market hedge book, completely ignores the very significant transaction costs of acquiring (or disposing) of customers. All regulators explicitly acknowledge the highly material nature of customer acquisition costs, but these costs do not form any part of the analysis of the 'economic decision' as postulated by Frontier Economics.

• Contracts are hedges, not speculative instruments

The concept of retailers marking their wholesale books to market in making economic decisions ignores the fact that movements in the value of retailers' hedge portfolios will be balanced by movements in the value of retailers' expected customer load. (In other words, retailers' portfolios are hedges, not speculative instruments.) Hence, the mark to market value is irrelevant.

Therefore, AGL is of the view that in determining a retailer's wholesale cost of energy historical actual as well as future contract prices must be considered wherever possible.

Portfolio optimisation model and the risk allowance

AGL acknowledges the difficulty of estimating energy purchase costs several years in advance, and hence is appreciative of the detail that has been provided thus far to stakeholders, by IPART and Frontier Economics.

Definition of Risk

Frontier Economics' approach to portfolio optimisation models the costs of a large number of potential portfolios under a very wide range of scenarios. From this analysis, an "efficient frontier" is derived, and a portfolio is selected from a point on this frontier for the purposes of estimating the energy purchase costs.

So, for example, the diagram below illustrates the outcomes of such modelling. The grey dots represent the universe of possible portfolios, with their position on the chart indicating the relationship between their expected cost and their risk. All portfolios are located above the maroon efficient frontier; hence, the efficient frontier represents the lowest-cost portfolio for each level of risk.



Using the relationship thus defined by the efficient frontier, a portfolio can be selected for each value of "risk" which has the lowest cost. In the example above, the portfolio indicated by the arrow has the lowest cost, C, for the risk level R.

In the 2007 review IPART selected the notionally "most conservative" point on the efficient frontier (i.e. the left-most extremity of the efficient frontier, with the lowest level of "risk"). This point was used to estimate the energy purchase cost and a volatility allowance, which was deemed to be an allowance for the cost to retailers of holding sufficient working capital to withstand the cash flow variation implied by the "risk" of this "conservative" point. AGL notes that IPART plans to adopt a similar approach in the current review.¹⁷

Whilst AGL is pleased to note that this approach to portfolio compilation explicitly recognises the very real trade-off between cost and risk, it is concerned that this purely probabilistic concept of "risk" is insufficient to represent the true nature of the risks faced by retailers. In particular, AGL believes any volatility allowance determined on this basis alone will be inadequate.

Asymmetric risk

Hedging portfolios are likely to have non-symmetric returns, potentially characterised by the presence of long-tail events with highly disproportionate effect on retailers' returns.

In the case of electricity retailers, such long-tail events can have catastrophic implications for the viability of the company. This situation is illustrated by the diagram below, which represents the probability distribution of costs of a hypothetical hedge portfolio.

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¹⁷ IPART, p27

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The vast majority of outcomes from this portfolio fall within what might be regarded as "normal" range, and these are the outcomes for which IPART would allocate the volatility allowance.

However, due to the long-tail nature of returns on electricity portfolios, there is a small but very significant set of outcomes with an impact on the business that would be devastating. The set of events represented by the shaded area at the far right of the curve have a very low probability of occurring, but should they eventuate, they will threaten the viability of the retailer's business.

Because of the existential nature of such events, the risks cannot be represented purely on the basis of the *probability* of occurrence; measures such as standard deviation of the distribution of cash flow will not adequately recognise the risk that long-tail events pose to a retailer. In other words, "risk" is a combination of probability *and* consequence.

Prudent retailers have risk policies in place in recognition of this fact. These measures include the procurement of instruments such as weather hedges, which may be activated for circumstance that are more extreme than, say, a 10 percent POE event.

Frontier Economics and IPART's proposed methodology appears to take a purely probabilistic approach to measuring the risk of hedging portfolios. Because of this, AGL does not believe this methodology adequately incorporates the costs of measures that prudent retailers must take to manage the risks of long-tail events. Consequently, AGL seeks the incorporation of a specific allowance, in addition to the volatility allowance in the Energy Purchase Cost estimate.

The sections below provide further details of the additional allowances AGL suggests would be required to properly reflect these costs.

Transparency

In order for stakeholders to gain a more comprehensive understanding of the distribution of outcomes from the chosen strategies than can be obtained from reporting the standard



deviation alone, AGL requests that IPART make public the specific composition of the chosen hedge strategies.

Should this be precluded by confidentiality considerations, AGL requests that at the very least, IPART publish a comprehensive range of the chosen portfolios' modelled returns. AGL suggests the 50th, 95th, 99th and 99.5th percentiles of portfolio costs would be suitable for this exercise.

Additional Risk Allowances

Volatility Allowance

AGL recognises that Frontier Economics has acknowledged that there is a risk presented to the cash flow of a business through the volatility of the outturns of a hedged load against a market outcome.

However, it appears that the volatility allowance only permits the 'cost to carry' of holding working capital to cover any loss incurred until the time the retailer makes a corresponding profit. This suggests (in the absence of appropriate risk management measures) that a retailer's risk of losing is ultimately balanced by its 'risk' of gaining – in other words, a symmetric distribution of outcomes. As illustrated in the diagram above, AGL does not accept that retailers face a symmetric distribution of outcomes.

AGL requests that IPART make publicly available the full details of the calculation of any volatility allowance.

Churn / volume risk

IPART's Terms of Reference states^[1]:

"IPART's approach should result in prices that are based on efficient cost of supply small retail customers, including customers who revert from negotiated tariffs."

In this regard AGL notes IPART's recent presentation^[2] has identified significant customer movement to regulated tariffs, especially in relation to Energy Australia and Integral Energy.

Accordingly, Standard Retailers are not only exposed to churn out but also churn in. This makes the task of accurately forecasting the regulated load a retailer should hedge for very difficult. AGL is concerned that the efficient frontier approach inadequately allows for this volume risk.

AGL is of the view that the risk of customer churn is beyond the scope an efficient frontier is able to cover, as it is based on an optimum hedge portfolio for a pre-determined underlying load. When an unanticipated number of customers move in or out of the portfolio, a Standard Retailer faces the risk of no longer having an efficient hedge position.

To counter this risk, a prudent retailer may choose to enter into 'options contracts', whereby a retailer is effectively acquiring the right to buy or sell swaps/caps for a predetermined volume at a predetermined price. Costs associated with these financial instruments are clearly additional to what have been covered by Frontier Economics' efficient frontier, irrespective of which point on the frontier will be chosen. It is therefore important that the costs of managing this very real risk faced by a Standard Retailer be captured in a separate allowance.

^[1] Terms of Reference, p2

^[2] Roundtable Session August 2009, slide 2



Weather driven volume risk

Extreme weather events, resulting in prices at or close to VoLL, can result in significant costs to retailers. Extreme weather conditions have been observed in the NEM, most recently and notably in the summer of 2008/09.

AGL, as highlighted in the previous section, notes that the efficient frontier approach does not adequately cover the 'long tail events' arising from extreme weather events. Nor are extreme weather events covered by the volatility allowance, which can not by its nature support the asymmetric risk of extreme weather. In addition, annual reviews can not deal with such events as the outcomes of the review are forward looking.

A separate allowance should be made to account for these risks. Such an allowance could represent the cost of a retailer effectively insuring against such extreme weather events through the purchase of weather derivatives. These contracts require the retailer to pay an insurance premium, and the insurer only pays out on the contract where certain preconditions are met (eg: when there are a predefined number of week days above a certain temperature).

Energy Purchase Cost and the CPRS

AGL notes that Frontier intends to model a carbon inclusive energy purchase cost allowance, for the purposes of accounting for the cost of carbon which will be incurred by retailers post 1 July 2011.

AGL is happy to consider any methodology for the purpose of determining carbon costs provided that methodology makes provision for all associated costs and risks that will be incurred by a retailer. As stated by Frontier:

"Regardless of whether the additional costs to retailers resulting from the CPRS are modelled under a carbon inclusive or carbon exclusive approach, an important question is the treatment of the resulting carbon risk".

Given the uncertainties about what the carbon price will be in this new market, the risk of modelling the price incorrectly is high. While annual reviews should ensure that the cost arising from incorrect forecasts will be corrected within a 12 month period, it still leaves retailer's exposed for a considerable length of time. This will potentially have a significant impact on both retailers' financial viability and competition.

The Draft Methodology Report has not made it clear how the costs and risk of the CPRS will be accounted for, either in the Frontier modelling approach or in the risk allowance.

At the very least, AGL would expect an appropriate risk allowance embedded in the WEC and retailer instigated reviews (detailed further below).

AGL looks forward to seeing IPART's detailed assumptions and methodology it intends to use to model carbon costs and risks.

Mandatory Renewable Energy Target

Frontier Economics and IPART have proposed a methodology of calculating the value of Renewable Energy Certificates (*RECs*) by reference to the LRMC of renewable generation, which will be determined through a brownfields, system-wide analysis of LRMC¹⁸. AGL supports this approach, as AGL is of the view that this analysis (if properly applied) should

¹⁸ IPART, August 2009, Section 3.2.4, p 17



most closely reflect the cost to a Standard Retailer of acquiring RECs and complying with its obligations under the MRET scheme.

LRMC Analysis

AGL has some concerns with the proposed use of Concepts Economics' inputs in modelling the costs of renewable generation¹⁹. In particular, AGL believes Concept Economics' capital cost of wind generation is below true market costs.

AGL notes that the costs of renewable generation have altered considerably due to current economic conditions and global demand for renewable technologies. Capital cost trends for wind, after enjoying a period of decline through the 1990's into early 2000's, have since increased markedly. This increase in capital cost should be accounted for in Frontier Economics' modelling. AGL is of the view that the capital costs for wind outlined in Concept Economics' Report are too low.

In addition, AGL is concerned about the on-going use of Concept Economics' assumptions in light of the recent announcement that Concept Economics has gone into administration as there would appear to be minimal prospects of Concept Economics updating its assumptions for the proposed annual reviews.²⁰

Given the uncertainty as to Concept Economics' ongoing capacity to provided up to date costs on renewable generation, and the likely underestimates provided to date, AGL encourages IPART to investigate the establishment of an alternate and public source of renewable energy assumptions.

Regulatory Uncertainty

AGL notes in this respect that the recent changes to the RET scheme following the legislative change to expand the RET have led to a significant degree of uncertainty as to the overall targets, the liable industries, and therefore the overall supply and demand balance of RECs.

AGL notes that the regulations and policies which provide certainty on the RET obligations of participants have not been finalised, and may not be finalised before March 2010. The areas of uncertainty include:

- the final form of the 20% RET contains an additional component for the inclusion of eligible waste coal mine generation. AGL observes that in modelling the REC cost, this additional target and cost will need to be included;
- the electricity loads that are liable given the partial exemption for trade exposed industries from the expanded target;
- the appropriate Renewable Power Percentage *(RPP)* for each retailer. In determining the cost that will be incurred by a retailer in meeting its compliance obligations, IPART and Frontier Economics will also need to determine the relevant RPP value. The RPP value determines the volume of RECs a retailer has to acquire to satisfy its compliance obligations. So the cost incurred by a retailer is a function of the RPP value and the cost of the RECs; and
- the partial assistance offered to trade exposed industries for costs incurred above \$40/MWh for the original MRET component of the 20% RET.

¹⁹ Concept Economics, Review of Inputs to Cost Modelling of the NEM, Report for the Queensland Competition Authority, May 2009

²⁰ A notice placed on ASIC's website, dated 3 September 2009, advises of the appointment of an administrator for Concept Economics Pty Ltd, http://www2.search.asic.gov.au/cgi-bin/gns030c?acn=129_990_530&juris=9&hdtext=ACN&srchsrc=1



AGL looks forward to discussing these issues with IPART and Frontier Economics further.

LRMC for GGAS

AGL notes that whilst the proposed approach to determining the LRMC for compliance with the NSW Greenhouse Gas Reduction Scheme (GGAS) is appropriate, there are two uncertainties which will need to be addressed. Firstly, the duration of GGAS is explicitly linked to the timing of the introduction of the CPRS. The modelling will need to capture this substitute of carbon prices, currently anticipated to occur 1 July 2011.

Secondly, it is noted that expected legislative changes will from 1 July 2010 remove the eligibility of Category A generation, and prevent new sources of generation from creating certificates. AGL considers that assumptions for LRMC impacts from GGAS will need to reflect these changes important changes, in particular the bounded capacity of eligible generation to meet deliver compliance.

Other issues

Prudential requirements

IPART should have regard to other changes in the market that have occurred since the last price review. The most notable is the increase in prudential obligations caused by the change in the cost of debt.

AGL encourages IPART to talk to retailers on a confidential basis about the prudential cost increases they have borne in the past year, and the costs likely to be incurred for the period of the determination.

Allocation of WEC to specific tariffs

AGL notes that part of the process identified by IPART is allocating the WEC on the basis of peak, off-peak and shoulder rates. AGL would request further detail as to how IPART will approach this allocation, and an opportunity to comment on that approach.

Annual reviews

AGL acknowledges that IPART's task is a challenging one – not only does IPART need to forecast the costs a Standard Retailer is likely to incur in operating in the market over the three year period of the price path, but it must do so in an environment of significant regulatory, structural and market change.

IPART is proposing an approach whereby:

- It will make its determination on the basis that the current ownership structure is assumed to continue, and the most likely regulatory framework will exist, namely that the CPRS will be introduced while all other market conditions remain relatively constant.
- IPART will seek to make specific allowance for those risks identified under the existing market structure/conditions, either through the wholesale energy cost or in the margin allowance.
- The risk that market conditions will change and lead to a divergence between the regulated allowance and the actual costs incurred by the Standard Retailers, will be addressed through an annual 're-opening' process.



AGL agrees that it is appropriate for IPART to make its current determination on the basis that the market structure is as it currently exists, and that following the privatisation the existing level of competition in the market will be preserved – as noted in our response to the Issues Paper, this is the function of the ACCC and it will fulfil this function. As noted earlier in this submission, there are other assumptions that may be subject to change with a change to ownership structure, particularly around the appropriate WACC assumption.

Given the uncertainty in respect of the regulatory and structural environment, the key to providing stakeholders with as much certainty as possible in circumstances where there is likely to be significant change which may give rise to a change in the price path is to provide as much transparency of modelling assumptions and methodologies. This will provide stakeholders with confidence that they understand how the analysis has been conducted and the determination made, and more importantly, have sufficient information to make some assessment as to how those results are likely to change in certain circumstances.

AGL suggests that the most significant changes which are likely to impact on the price path over the period is the introduction of the CPRS, and welcomes the efforts being taken by IPART and Frontier Economics to demonstrate the assumed impact of the introduction of the CPRS through its 'with' and 'without' analysis on the LRMC and the embedded CPRS cost in the EPC.



Annual WEC Review

IPART has suggested that the most appropriate way of managing the risk that its forecast of WEC will diverge from the actual market outcomes is to provide an opportunity for an annual review of the WEC. In principle annual reviews can be an important part of forecast risk management. That is, where the modelled WEC proves to diverge from actual market outcomes, the WEC allowance can be corrected within a reasonable timeframe. This can work well as long as the revised modelled outcomes reflect actual market costs, and the divergence in the previous and revised WEC allowance is tolerable. AGL notes in this respect that:

- AGL requires further detail as to the manner in which IPART is proposing to calculate the 'actual purchase costs' for the purpose of comparing it with the forecast regulated WEC. AGL note that IPART conducted such a review in 2008/09, and concluded that the actual costs incurred by retailers did not exceed the modelled outcomes. This conclusion did not accord with AGL's observations and expectations, and AGL would be concerned if IPART and Frontier Economics were proposing to use the same methodology as that used in the 2007-10 annual review processes.
- AGL is particularly interested in understanding whether Frontier Economics is proposing a 'point in time' approach to determining the appropriate contract price in assessing the 'actual costs' incurred by the Standard Retailer over the relevant period for the purpose of the annual review. AGL would be very concerned if this were the case, for all of the reasons outlined above.
- As noted above, AGL is not persuaded that in the context of the introduction of a CPRS and the difficulties that will be faced in forecasting the AEU price, that an annual review process as suggested by IPART will sufficiently address the risk of a retailer incurring significant cost which it will not recover. This is discussed further below.
- AGL is reserving its views on the appropriate threshold in light of these concerns and requests further full information.

Retailer initiated changes and/or reviews

AGL remains concerned that at a time of extreme price uncertainty and volatility, an annual review period may not provide sufficient protection to retailers from the risk that it will incur significant losses due to inflexible retail prices within the twelve month period. As was observed in the period of the 2007-10 price path, an annual review may not operate to adequately protect the level of headroom available under the regulated tariffs, and competition may suffer to the detriment of the long term interests of the market.

This will become particularly relevant with the introduction of the CPRS. Given the uncertainty arising from the introduction of the CPRS it is important that there be some allowance for a review within the 12 month timeframe.

As stated in AGL's submission to IPART's Issues Paper, ideally a review of prices would be done by retailers, as suggested by the AEMC in its report²¹. AGL supports the AEMC's analysis of the risks presented to retailer with the introduction of the CPRS, and supports its proposed Model 2.

²¹ AEMC: "Review of Energy Market Frameworks in light of Climate Change Policies - 2nd Interim Report", 30 June 2009.



An alternative approach is for retailers to be allowed to instigate a review by IPART. AGL suggests such a model could be premised on set criteria/principles, which may include the following:

- A retailer can instigate a review outside of the annual review process if the retailer can establish with IPART that market prices have materially diverged from the allowable WEC;
- The details of the request by a retailer should be made public, and other stakeholders be given an opportunity to comment (either via a public forum or a brief consultation process); and
- IPART's response to this request should also be made public.

AGL does not believe such a process would invite 'vexatious' applications. It is important to note that there are natural disincentives for retailers to instigate a review of retail prices due to the following:

- the administrative costs associated with managing a review process are significant; and
- the costs and customer impact of changing tariffs more than once a year provide a very real deterrent.

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Network Costs

AGL remains very concerned by the risk presented to retailers by the current proposed framework whereby retailers are not automatically permitted to pass through in full the increase in network costs in each tariff.

AGL views this risk as one of the most significant issues facing standard retailers, and is concerned to note that IPART has not included this on its list of identified risks.

While AGL acknowledges that IPART's intention to ensure that the retail price determination adequately covers the network costs likely to be passed through to a standard retailer, the current framework proposed (and indeed the framework which existed under the previous price path) does not adequately address the risk that networks will increase the tarrifs applicable to regulated customers at a rate higher than permitted under the regulated price path, that is:

- Networks are permitted to 're-balance' between and within tariff classes, such that the network increases certain tariffs by more than the average, and other tariffs by less than the average. In this way, the network recovers a greater portion of its permitted revenue from one customer class, generally on the grounds of introducing a greater degree of cost-reflectivity; and
- In certain special circumstances, networks may obtain permission to increase their overall revenue by an amount greater than that permitted under the original price determination period.

Energy Australia Network increases - 2008/09

It must be remembered that the network risk did actually materialise in 2008/09, when the Energy Australia network tariffs increased by more than that allowed for in the initial network price path. TransGrid informed EnergyAustralia that there would be a large and previously unforeseen increase in TUOS charges in 2008/09 (this issue only affected the EnergyAustralia network patch). In effect, if the network's price-path had not been adjusted, EnergyAustralia network would have under-recovered by more than \$40 million of transmission costs across the remainder of its determination period.

AGL understands that while IPART approved the departure from the price limit formula to allow EnergyAustralia networks to remain whole, it did not allow a subsequent change to EnergyAustralia's retail tariffs. EnergyAustralia networks was permitted more than a 10% increase in its overall tariffs, significantly more than the original determination of just over 4%, EnergyAustralia retail was not permitted to pass the associated additional cost through to its regulated customers. As a result, EnergyAustralia retail's net margin for its regulated customers dropped to just over 3%, about 2% less than the margin allowed under the 2007 retail price determination.

Addressing the network risk

AGL is very firmly of the view that in order to adequately address this risk, IPART must permit the automatic pass-through of all network increases on all tarrifs – there should not



be any discretion to require retailers to absorb a loss attributable to a network increase, nor should the pass through be reliant on any sort of 're-opening' process.

AGL does not believe that a re-opening process would be practical in any event, as the extent to which the networks intend to rebalance is often not evident until June. This does not permit any time for a retailer to revert to IPART and for a 're-opening' process to be completed before the increases become effective on 1 July.

AGL looks forward to understanding in greater detail how IPART proposes to address this issue, and would welcome an opportunity to discuss this matter further.



Retail Cost Allowance

AGL notes that IPART have decided to undertake its own analysis of the Retail Operating Cost *(ROC)* allowance and Customer Acquisition and Retention Cost *(CARC)* allowance without the assistance of an external expert consultation. IPART will use both a bottom up cost approach and a benchmarking approach to ascertain a range of values and then exercise its judgement on an appropriate and efficient ROC and CARC allowance.

AGL supports in principle the overarching approach being adopted by IPART, subject to appropriate consideration of, and inclusion of costs associated with changes in operating environments in recent years and that are expected in the foreseeable future.

Retail Operating Cost Allowance

AGL supports the definition suggested by IPART in determining the retail cost allowance for a 'NSW Standard Retailer'. This definition, if applied sensibly, should ensure that the retail operating costs are such as to support new entry in so far as is possible within the Terms of Reference.

IPART has suggested a methodology whereby:

- Retail operating costs (excluding acquisition costs) are calculated with reference to both the actual costs provided to IPART by the Standard Retailers, and through a benchmarking exercise, with reference to other regulatory decisions and relevant information;
- Acquisition costs, including all marketing costs, are excluded from the ROC and considered separately, and calculated with reference to a distinction between direct acquisition and retention costs and transfer process costs. AGL notes that it would appear that IPART will only refer to the actual acquisition and marketing costs provided by the standard retailers, rather than to any benchmarking data. AGL is of the view that in so far as this data is available it should be considered.

Actual cost build up

While AGL understands IPART's interest in assessing the actual costs provided by the Standard Retailers, there do appear to be inherent risks associated with approach, and AGL agrees that it is necessary to compare this information with benchmarks.

AGL suggests that in determining the 'efficient' cost of a stand-alone retailer from the costs provided by the standard retailers, it will be necessary to consider the extent to which the costs provided by the standard retailers reflect those of a vertically integrated, government-owned retail business. AGL notes in this respect that Frontier, in its review of retail costs and retail margin for the 2007 Determination, found that "there is reason to believe that a stand-alone MMNE would face costs additional to those faced by stapled retailers/distributors", ²² however in determining that \$75 was an appropriate ROC allowance, IPART outlined that its "findings reflect the costs of a new market entrant that

²² Frontier Economics & SFG Consulting, Final report – Mass Market new entrant retail costs and retail margin – Prepared for IPART, March 2007, section 4.5.1



has achieved economies of scale but not all potential economies of scope, particularly those available through vertical integration"²³.

In the interests of promoting competition in NSW, AGL strongly recommends that IPART remove any economies of scope embedded in the Standard Retailers' costs, which have arisen due to vertical integration with a network business.

In order for IPART to undertake a robust consultative process, retailers must be able to see as much detail as possible to allow them to understand how the ROC was established. In particular, the methodologies for separating the retail operating costs from the network related costs must be detailed, in addition to the approach to consolidating the actual costs of the 3 standard retailers into a single ROC.

While AGL understands there is a level of confidentiality which presumably will need to be observed in discussing the internal retailer costs structures, AGL would welcome as much transparency as possible in providing this analysis to stakeholders.

Benchmarking data

In determining the appropriate ROC benchmark, it is necessary to:

- ensure that care be taken when utilising information disclosed by publicly listed businesses as it may be difficult to make comparisons due to varying reporting requirements, information disclosure requirements and general cost allocation techniques (e.g. international businesses);
- take into account any changes in operating environments (both internal and external) that have occurred since the benchmarking data was compiled;
- adjust benchmarks to take into account any jurisdictional differences in the regulatory or operating environment.

Set out below are some issues that AGL suggests will need to be considered in adjusting existing benchmark data:

- The implementation of the CPRS will necessitate a degree of increased operating cost, including pre-implementation set up costs and post implementation ongoing maintenance. AGL would be happy to discuss with IPART the sort of system and operational changes the introduction of the CPRS will entail;
- Administration costs associated with the introduction of, and obligations imposed on Retailers, by the Energy Savings Scheme;
- The roll-out of smart metering infrastructure will involve increased reporting and reconciliation requirements, and changes to systems and internal processes, including billing processes. This will include:
 - retailer's direct, indirect and incremental costs associated with the establishment of a minimal capability to provide the required smart meter service standards; and
 - the cost of any relevant pilot and trials undertaken in support of the jurisdictional directives on the smart-meter roll-out, in particular, where these trials relate to consumer response.
- Increased requirement for assistance programs for customers in financial hardship, especially in the current environment and increasing energy prices. Contact centre

²³ IPART, Final Report and Final Determination –Promoting retail competition and investment in the NSW electricity industry – Regulated electricity retail tariffs and charges for small customers 2007-2010, p.94



operations will require greater resourcing for dealing to customer assistance, in addition to the likeliness of increases in bad debts; and

• Adjustment to actual costs provided by stapled retailers to allow the removal of efficiencies gained as a result of being a stapled retailer. The use of benchmarking will assist in understanding the adjustment required.

Customer Acquisition and Retention Cost Allowance

IPART proposes to exclude all marketing costs from the ROC and include in the CARC from 2010 to minimise double counting and improve the transparency of these cost allowances. IPART then proposed the amortisation of the CARC allowance over a period to be determined following further analysis of actual data provided by the Standard retailers. In addition, IPART will split CARC into two broad categories, direct acquisition and retention costs *(DARC)* and Transfer process costs *(TPC)* – these categories are then split by costs related to new customers and those related to existing customers. The final CARC will be determined by:

- Amortising each of the four categories of CARC over the expected number of years a customer remains with a Standard retailer; and
- Constructing a composite CARC that reflects the proportion of each type of customer a Standard Retailer services.

AGL is concerned on a number of fronts regarding IPART'S proposed methodology as follows:

- The relocation of 'annual' marketing costs from ROC to CARC is likely to result in an insufficient annual cost recovery due to the effect of amortisation over the assumed life of a customer. This assumes that marketing is aimed towards a customer once only during its life, which is not necessarily the case, especially with regards to the retention of existing customers;
- The process of splitting CARC into DARC and TPC and then again by existing and new customer is likely to lead to unnecessary complexity in what should be a relatively straightforward calculation. AGL suggest confining the analysis to DARC and TPC; and
- AGL disagrees with the suggestion that the TPC for existing customers who revert to a standing contract with the standard retailer are negligible because the customer is an existing customer to the Standard retailer.

Conversion of Retail Operating Costs to MWh and \$/customer

An appropriate forecast of customer numbers and average consumption per customer is paramount to ensuring appropriate conversion of operating costs per to operating cost per MWh and dollar per customer.

In terms of the cost per MWh conversion, using an inappropriate forecast of average consumption can lead to significant conversion error, resulting in an under-recovery of retail operating costs and considerable reduction in the actual retailer margin.

In relation to the cost per customer, customer number forecasts will impact the allocation between fixed and variable costs. Customer number forecasts will change depending on the assumed churn rate. While the NSW market has seen a period of relatively low churn rates, AGL expects that churn has and will continue to increase following the 2009 tariff



increase which more closely reflected retailer's costs. Depending on cost reflectivity of IPART's 2010 determination, churn should continue to grow. This is even more likely post the sale of the NSW retail businesses.

It is important that retailers be consulted on both the average customer consumption and customer numbers that will be used by IPART.

Retail Margin Allowance

AGL's views on whether the margin analysis proposed is appropriate will be reliant on the extent to which AGL is persuaded that the identified risks are adequately addressed in the WEC, the ROC and the terms of the determination (eg permitting pass through of network increases).

We note that SFG are utilising three approaches to determine a range for the retail margin allowance – the bottom-up approach, the expected returns approach and benchmarking.

AGL generally supports a retail margin based on a percentage of total sales, however would support the SFG approach subject to the use of relevant industry data for benchmarking and an appropriate WACC. Irrespective of the approach, the level of margin must be sufficient to attract new entrant retailers and encourage retailers to support future investment in generation capacity.

There is growing evidence that an adequate level of retailer margin is an enabler of competition and provides the basis for future investment in generation capacity, with low retail margins a significant impediment to developing competition. That being said, the validity of a benchmark margin is dependent on the reasonableness of the benchmarks established for WEC, ROC and CARC. Any excess margin will be competed away through increased competition; therefore AGL considers it prudent of IPART to set the margin based on the upper limits of analysis and benchmark comparisons.

A key aspect when considering an appropriate margin is the extent to which some risks have been appropriately addressed in the benchmark costs allowed for wholesale and retail costs. IPART have outlined its preliminary view on addressing individual risks in Table 2.1 of the Draft Methodology Paper. AGL will be keen to understand the actual level of risk allowance included in the retail margin and those included in benchmark costs.

Weighted Average Cost of Capital

IPART have determined a pre-tax real WACC which it currently appears to be proposing in respect of a greenfields based LRMC of generation supplying the NSLP, and further pretax real WACC in respect of an electricity retail business which will be applied in considering the margin and customer acquisition cost. The WACCs determined by IPART and subsequently used by Frontier Economics *(Frontier)* and SFG Consulting *(SFG)* will have a direct impact upon the future cashflows of each standard retailer, and to an extent the level of competition through increased or decreased retailer activity. Frontier will use the generation WACC in setting the WEC, SFG will use the retail WACC to formulate an appropriate retail operating margin (ROM), and IPART will use the WACC when amortising Customer Acquisition and Retention Costs.

AGL is very supportive of the use of two different WACCs in the price determination. In considering the relevant WACC for any analysis, a purposive approach should be adopted. It is necessary to first identify the nature of the business in question so as to appropriately assess the weighted average cost of capital which would be available to that business in the particular market circumstances.

What must also be kept foremost in mind in determining the WACC is that the set of assumptions for each WACC calculation must form part of a cohesive view of the business being considered. Single assumptions cannot be considered in isolation, but must be considered in the context of the all other assumptions and whether together they accurately reflect the circumstances of the business in question. For example, ACIL Tasman in their 2009 report have looked at the WACC of a project-financed new entrant independent power producer (*IPP*) which is reflective of the overwhelming majority of privately owned plant in the NEM. On this basis, the appropriate WACC assumes a materially higher equity beta and a correspondingly higher required return on equity – which is again consistent with the power generation industry. If what was being considered were a large domestic retail business (more akin to AGL or other large domestic retail business) the gearing ratio should be considerably lower.

In short, it is not appropriate to select some inputs from a published set of WACC assumptions and not others – this could lead to unrealistically low or unrealistically high calculations of the WACC as it will not properly reflect the cost of capital available to the type of business being considered. AGL also has several concerns as to how the integrity of the LRMC analysis can be preserved if the WACC calculation is predicated on a set of assumptions formed by IPART in isolation from the other input assumptions developed by ACIL Tasman"²⁴

AGL also notes that the assumptions made in relation to the WACC for the stand alone retailer at this time may in fact need to change once the sale process proceeds and the nature of the operating business in question becomes clearer.

AGL makes the following specific comments in relation to the input parameters currently proposed by IPART.

²⁴ ACIL Tasman, Fuel resource, new entry and generation costs in the NEM, April 2009, pg. 5 - 8



Equity Beta

It appears from the information currently available, that IPART have used the same Equity Beta in the two WACC calculations, and have in fact used the same Equity Beta used by the AER in its determination in respect of the regulated monopoly network businesses²⁵.

AGL does not see any circumstances in which the Equity Beta for a generation business, particularly one being assessed on greenfields LRMC basis, and/or a stand-alone retail business could be considered to have the same Equity Beta as a regulated monopoly network business. Clearly, the volatility of expected returns from NEM market-facing businesses such as a generator or a standard retailer (that has been unstapled from a network business) is materially higher than that of a regulated network monopoly. ACIL Tasman for example in their annual LRMC Report have used an equity beta of 1.75 based on 60% gearing. ACIL Tasman's assumptions for generator costs have been used in various processes and it therefore seems inconsistent to utilise a different WACC. AGL finds it impossible to reconcile an equity beta for a merchant generator and a merchant retailer that is identical to a regulated network monopoly.

AGL considers an equity beta in the range of 1.4 to 1.75 (for gearing at a 50-60% range) to be the appropriate assessment in an analysis of the appropriate LRMC WACC. In respect of the appropriate WACC for a stand-alone retail business, AGL would note that IPART appear to have accepted a higher risk profile for a retail business, and AGL would therefore suggest a range of 1.4+ as the appropriate Equity Beta, with much lower gearing, which is examined below.

Gearing

The gearing assumption is intended to reflect the likely ratio of debt to equity in the financial structures operated by the business in question

LRMC WACC

AGL notes that the gearing ratio used by ACIL Tasman and IPART is one reflective of a new entrant, project financed independent power producer (IPP). AGL agrees that this is the most appropriate approach when considering the nature of the business in question for the purpose of greenfields LRMC analysis. AGL supports the range of assumptions used by IPART and ACIL Tasman of 50-60%. As articulated further below, however, a number of the other assumptions adopted by IPART in its generation calculation do not accord with those which would be true for a project financed new entrant IPP.

Retail business WACC

The gearing assumption of 40% for a retail business is considerably higher than would be tolerated by credit ratings agencies and the market in a retail business. As a BBB rated entity, AGL's own experience is that a gearing assumption of 20-30% is the maximum it can bear within credit rating agency (such as S&P)expectations and requirements. It should be assumed that in a stand-alone retail business such as that being considered in this analysis, the gearing ratio would be even lower.

AGL would welcome the opportunity to further understand IPART's rationale in attributing such a high gearing ratio to a retail business. Again, AGL notes that other assumptions made by IPART in its retail WACC do not accord with those which would be observed in a highly-geared business.

²⁵ Australian Energy Regulator, Electricity transmission and distribution network service providers Review of the weighted average cost of capital (WACC) parameters, Final Decision, May 2009



Gamma

The gamma assumption should reflect the level of discount that should be applied to the cost of capital attributable to the taxation benefits available to the business.

AGL accepts that in regulatory reviews of the WACC for regulated network monopolies, gamma is attributed with a non-zero value and in theory at least, there should be no discernable difference in the makeup of the shareholder registry of a listed monopoly business and that of a merchant business. On that basis, AGL does not have any evidence to argue that 0.4 is inconsistent with the findings of other such reviews.

AGL suggests that given the general observable trend in the Australian electricity sector for a level of reliance on foreign debt, the gamma factor of 0.4 on the high end of the appropriate assumption. Further, AGL notes in the context of the sale process, foreign capital will be an essential component of any bid, whether as a foreign entity acquiring an asset or foreign equity contributing to the balance sheets of local bidders.

Market Risk Premium

The Market Risk Premium (*MRP*) is intended to be a proxy for the level of market risk inherent in the general market at a point in time. AGL suggests that the MRP currently proposed by IPART is acceptable, although does note that this assumption is at the lower end of the range. IPART could consider using 6.5 per cent as its mid-range, which would be consistent with the ruling of the Australian Energy Regulator (AER) in May 2009²⁶, where a value of 6.5 per cent was determined. In particular, AGL draws the Tribunal's attention to the following statements made by the AER in its determination:

"[The] AER has now adopted a market risk premium of 6.5 per cent (whereas, the AER proposed a value of 6 per cent in its explanatory statement) in this final decision, which recognises the additional uncertainty on a forward looking basis associated with the global financial crisis." (p iii)

"Accordingly, the AER considers that a MRP of 6.5 per cent is reasonable, at this time, and is an estimate of a forward looking long term MRP commensurate with the conditions in the market for funds that are likely to prevail at the time of the reset determinations to which this review applies." (p47)

Debt Margin

The debt margin is a premium that a company pays when taking on debt to fund capital projects – in short it is the return lenders would expect to recover for providing the debt service. AGL considers itself to be well placed to comment on this, given its history of involvement in power project financings, and given the number of project financingss currently underway. AGL suggests the that there are a number of banks undertaking power project financing in the energy generation sector in 2009, and IPART may wish to consider approaching those banks to discuss the veracity of AGL's view.

²⁶ Australian Energy Regulator, Electricity transmission and distribution network service providers Review of the weighted average cost of capital (WACC) parameters, Final Decision, May 2009



LRMC WACC

AGL does not believe that a debt margin of 2.7% (or 270 basis points) for a project financed IPP can realistically be described as a 'mid-point'. AGL suggests that the high point suggested by IPART of 3.4% (or 340 bps) more accurately reflects the lowest bound of returns that a debt service provider would expect on such a project, with a high point of 400 bps..

AGL notes that IPART has commenced separately to this price review a consultation on estimating the debt margin for the weighted average cost of capital²⁷, with a final decision due to be released in January 2010²⁸. AGL expects that the findings from this process will be included in consideration of the WACC for this process.

Retail WACC

In terms of a retail business, corporate facilities being financed or refinanced in teh sector are currently being priced at 300pbs over swap, and accordingly AGL would suggest this as a sensible mid-point for a retailer's cost of debt capital.

Revised WACC

The following table incorporates AGL's suggested changes, as outlined above and compares the resultant WACC with that originally proposed by IPART. The outcome is significantly different, so much so that AGL believes further investigation and consultation by IPART is warranted.

WACC Parameter	Electricity Generation		Electricity Retail	
	IPART	Adjusted	IPART	Adjusted
Risk free rate	5.5%	5.5%	5.5%	5.5%
Inflation adjustment	2.7%	2.7%	2.7%	2.7%
Market risk premium	6.0%	6.0%	6.0%	6.0%
Debt margin	2.7%	3.4-4.0%	2.7%	3.0%
Debt funding	50%	50-60%	40%	30%
Gamma	0.4	0.4	0.4	0.4
Equity beta	1.0	1.4-1.75	1.0	1.4+
Cost of equity	11.5%	13.9-16.0	11.5%	14.0%+
Cost of debt	8.2%	8.9-9.5%	8.2%	8.2%
Tax rate	30%	30%	30%	30%
WACC (pre tax real)	8.2%	9.6-10.2%	8.7%	11.0%+

Table 1: IPART/Adjusted WACC parameter comparison – Electricity Retail and generation

²⁷ IPART, Estimating the debt margin for the weighted average cost of capital, Analysis and Policy Development – Discussion Paper, May 2009

²⁸ IPART Timetables, http://www.ipart.nsw.gov.au/timetables.asp#WACCDebt