

**IN THE AUSTRALIAN COMPETITION TRIBUNAL
AGL ENERGY LIMITED**

1 of 2014

**RE: PROPOSED ACQUISITION OF MACQUARIE GENERATION (A CORPORATION
ESTABLISHED UNDER THE ENERGY SERVICES CORPORATIONS ACT 1995
(NSW))**

ANNEXURE CERTIFICATE

This is the annexure marked "DP1" annexed to the affidavit of **DANIEL ENOCH PRICE** dated
26 March 2014

Annexure DP 1

Filed on behalf of (name & role of party) AGL Energy Limited
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[Form approved 01/08/2011]

NAME:	DANNY PRICE
Profession:	Economist



Danny Price is the cofounder and Managing Director of Frontier Economics Pty Ltd. Danny has extensive experience in advising governments, regulators and private firms on energy reform, regulation, power trading and hedging, and asset sales and acquisitions. He has advised energy related clients in Australia and numerous other countries.

Danny's strength in advising clients lies in his:

- Detailed knowledge of the design and operation of energy markets, built up over 25 years consulting to the energy industry in Australia and internationally;
- Unique combination of detailed analytical skills with an understanding of the constraints imposed by the broader commercial, regulatory and policy environment in which clients operate; and
- Ability to provide frank and independent advice to clients.

Danny has worked closely with the NSW, Queensland, Western Australia and Tasmanian Governments designing and implementing their electricity reforms, the Australian Energy Market Commission (AEMC), the Australian Competition and Consumer Commission (ACCC) and all State regulators. He has advised most of the major electricity and gas businesses operating in Australia on commercial, regulatory and competition matters, and many multi-national energy companies.

Prior to founding Frontier Economics in 1999, Danny was the Managing Director of consultancy London Economics. Prior to being a consultant, Danny was a Principal Economist at the New South Wales Electricity Commission. In this role he was heavily involved in the design of the Australian National Electricity Market rules.

KEY ENERGY EXPERIENCE

The following provides an example of the range of energy work Danny has undertaken and clients he has worked for in the past.

Australian energy reform

- From June 2011 to March 2012, I led Frontier Economics' work for the Tasmanian Electricity Supply Industry Expert Panel (the Panel) on its investigation into the current position and future development of Tasmania's electricity industry. There were two key aspects to Frontier Economics' advice:
 - An assessment of the effectiveness of the wholesale electricity sector – Frontier Economics examined historic outcomes in the wholesale sector and undertook market modelling to assess the extent of market power in the Tasmanian wholesale electricity sector.
 - Advice on structural, regulatory and governance options to reform Tasmania's electricity industry and analysis of anticipated changes on the performance of the market. This included detailed modelling of the competition and financial effects of the alternative reform models.
- From December 2008 to December 2010 I led Frontier Economics' work with the NSW Government developing the contractual arrangements to facilitate the NSW Government's sale of electricity trading rights for its power stations. Among other things, this work has involved investigating the current value of the businesses, including each business's customer and hedging contract position, its fuel contracts, and its labour costs, the technical performance characteristics of each power station and fuel storage and delivery systems. I have forecast the cost and revenues of each business to form valuations, having regard to the value effects of a national greenhouse gas emissions trading scheme. As part of the preparation for the sale of the retailers and long term lease of the generators I led the team responsible for structuring an optimal suite of hedging contracts for all of the NSW Government's generators and retailers. This involved a detailed analysis of customer load characteristics, existing hedging contracts and customer contracts.
- From November 1999 to June 2002 I directed the Frontier Economics consulting team commissioned by the NSW Government to manage its ongoing electricity reform agenda, to complete remaining reforms and to manage their interests as a shareholder of the largest portfolio of electricity assets in the NEM. I acted as overall project director and key liaison person with offices of the NSW Minister for Energy, the NSW Treasurer and the Special Minister of State and was responsible for ensuring that all aspects of

this assignment were undertaken in accordance with Government policies. Deliverables included improving the design of NEM rules, as well as providing advice to the NSW Government on a wide range of regulatory and policy issues, including:

- *Managing the NSW Government's shareholding in the electricity industry:* I led the NSW Treasury team responsible for managing the NSW Government's shareholding in their electricity businesses. This role involved assessing the financial projections and plans of each business, recommending Board performance targets to the Treasurer and Special Minister for State as the shareholding Ministers, and monitoring and reporting on the Board's performance.
- *Implementation of full retail competition in New South Wales:* I advised the NSW Government on appropriate policy settings for a fully competitive electricity market and implementation of these policies, including the definition and drafting of all required regulatory and statutory instruments covering:
 - establishment of an appropriate customer protection framework
 - creation of dispute resolution processes through an Ombudsman
 - establishment of a Marketing Code of Conduct
 - creation of a 'default' level of service provision for customers electing not to switch
 - retailer of last resort arrangements
 - metering and load profiling arrangements
 - review of the responsibilities of the Independent Pricing and Regulatory Tribunal of NSW and
 - assisting in the development of parallel arrangements in gas
- Structural reforms of Government-owned businesses: I led other major reform projects including:
 - improving corporate governance arrangements within the Government owned electricity businesses
 - development and implementation of the Electricity Tariff Equalisation Fund (ETEF) to manage the exposure to the spot market of retailers supplying franchise customers
 - the amalgamation of the rural electricity distribution/retailing businesses and the corporatisation of Country Energy
 - the disaggregation and restructuring of Pacific Power's remaining businesses and assets, including the corporatisation of Eraring Energy and the Snowy Hydroelectric Scheme

- the review of international experience with generation and load auctions and the draft design of generation and capacity auctions for the NSW electricity businesses
- the sale of the State's interest in the NSW coal industry and
- the winding-up of the previous monopoly electricity business owned by the NSW Government (Pacific Power), including the rationalisation and sale of Pacific Power International and restructuring of subsidiary businesses such as Pacific Solar
- *Advice on NEM issues to the New South Wales Government:* I was the project director and key liaison person with offices of the Minister for Energy and the NSW Treasurer. In this role I provided high-level policy advice to Government on NEM market-related issues including the structure and operation of NEM institutions and governance, new investment in interconnects and configuration of market regions, network pricing arrangements and setting of network pricing levels, designing and implementing the replacement of NSW vesting contract arrangements, the development of statement of power system adequacy for NSW and
- *Implementation of greenhouse policy framework:* I directed the development, modelling and implementation of the world's first mandatory greenhouse gas reduction policy (GGAS)
- From December 1995 to December 1998, I was key adviser and member of the Executive Committee of the QERU, which was responsible for recommending and implementing major structural and regulatory reforms to the Queensland electricity sector, culminating in the entry of Queensland into the NEM. This work included financially restructuring the entire electricity sector, including establishing the vesting contract structure that governed billions of dollars of energy purchases/sales, establishing the new businesses, appointing new Boards and managers. This work also included restructuring fuel contracts for power stations and renegotiating power purchase agreements the Government had with private sector power companies. I also led the team that implemented the trial version of the NEM in Australia. Throughout the introduction of the Queensland Interim Market (QIM), I worked with major loads in Queensland and the retailers to smooth the movement in load to reduce price volatility in the trial period of the market systems.
- A key element of my work over the past 20 years has been providing strategic advice to numerous electricity market participants on optimal bidding and contracting strategies in the NEM and other electricity markets.

Examples of other energy sector market structure and reform projects

- **Philippines:** Advised the World Bank on the development of options to protect village electricity undertakings against volatile electricity prices.
- **NSW generators:** Detailed review of the NSW generators' behaviour in the interstate electricity market.
- **Industry Commission, NSW:** Game theoretical investigation, on behalf of the Industry Commission, of the possible market power of Pacific Power in a South East Australian electricity market.
- **South Australia:** Evaluation of market power issues and formation of submission for the Electricity Trust of South Australia as part of an Industry Commission Inquiry into electricity reforms in South Australia.
- **World Bank, Kenya:** Part of a team that undertook a significant project to advise on appropriate power sector reforms in Kenya for the World Bank.
- **Commonwealth Department of Primary Industries:** Advisor to the DPIE on the design of possible structures for a South East Australian electricity market (including the evaluation of the National Electricity Market Paper Trial).
- **New Zealand Government:** Advisor to the Wholesale Electricity Market Development Group (on development of a New Zealand wholesale electricity market).
- **New Zealand Electricity Commission:** advised Commission on the options and effects of a range of alternative reforms to address rising electricity prices.

Commercial investment, strategic and risk analysis

- **Gas contract renegotiation:** assisted a Western Australian gas retailer re-negotiate a major long term gas supply contract.
- **Retail pricing framework:** assisted a Western Australian gas retailer develop a retail pricing framework to maximise value of gas supply contract.
- **Acquisition of Queensland generator:** advised international buyer of a Queensland generator.
- **Power sector financier:** I have an ongoing role assisting a major Asian equity fund evaluate the performance of tier investments in Australia and assess the economics of potential acquisitions across Australia and Asia.
- **Valuing InterGen's portfolio of power assets for an international power company:** as part of a global consortium, advised an international bidder on the value of InterGen's portfolio of generation assets.
- **Advice on Renewable Asset Acquisition:** advised an overseas client regarding the acquisition of Australian wind assets.
- **Industry Information Memorandum:** prepared a broad-ranging and detailed public report providing an overview of the market design,

institutional, regulatory, governance and policy aspects of the electricity and gas markets in Australia.

- **Commercial Investment, Strategic and Risk Analysis:** provided ongoing strategic and forecasting assistance to an international bidder for a range of generation assets in the National Electricity Market.
- **Developing Risk Framework:** provided advice to an energy retailer on the development of a framework to measure the systematic risk associated with writing long-term wholesale contracts while offering shorter-term retail contracts.
- **Alternative gas uses:** advised a Western Australian retailer on how they could best use their gas – sell to others or use to generator - to maximise the value of their gas purchases.
- **Transaction Advice to an International Investor:** provided advice and support in reviewing vendor dataroom information.
- **Valuation of Forestry Carbon Offsets:** built a decision tool to enable a client to value carbon permits and account for policy risks.
- **Transaction Advice to an International Investor:** provided an analysis of future cashflows for a number of Australian electricity assets.
- **Singapore Electricity Acquisition:** assisted a major Hong Kong based utility with a Singapore electricity acquisition.
- **Valuing Wholesale Energy Contracts:** developed a framework for valuing wholesale energy contracts for a large retailer using Frontier Economics' suite of electricity models. Using this framework, modelled the least cost mix of long term contracts given the retailer's existing contract book and retail load.
- **Australian Generator: Greenhouse Project Forecasting Carbon Prices and Renewable Energy Prices:** provided advice to a NEM generator on the impact of the introduction of an Emissions Trading Scheme, including forecasting spot price and carbon price outcomes and assessing impacts on operating profits of particular plant.
- **Electricity Prices - China:** built a long-run cost model of generation to broadly examine electricity prices in China to 2030 for the purposes of investment decision-making.
- **Tariff Structures for Provision of Desalinated Water:** As part of a major public private partnership (PPP) process, advised a private consortium on demand risks associated with supply of desalinated water as part of a portfolio of options to balance supply and demand, the design of potential fixed and variable tariff mechanisms to maximise flexibility while adequately managing revenue risks, and potential commercial arrangements for the procurement of renewable energy to power a desalination plant (private consortium).
- **Climate Change: Corporate Strategy:** assisted in the development of Babcock and Brown's Climate Change Strategy and Implementation Plan that incorporated the identification of risk mitigation strategies in parallel with growth opportunities.

- **Wind farm development:** assisted landowner to review and negotiate the development and access rights of a wind farm development.
- **Strategic Advice:** advisor to Roaring 40's on commercial trading strategies, market risks and characteristics of the Tasmanian energy market to assist in its business development decisions.
- **Strategic Advice: Singaporean Generator:** provided business forecasts for a Singaporean electricity business with a focus on repowering options.
- **Uranquinty:** conducted a re-run of the analysis regarding the Uranquinty deal and updated a previously produced report.
- **Strategic Advice to a Singaporean Genco:** provided an analysis of Singaporean electricity market outcomes, particularly the interaction between existing gas supply contracts and future Liquefied Natural Gas (LNG) availability.

Market/Institutional design and implementation

- **Review of Tasmanian Energy Sector Consultancy Study:** On behalf of Hydro Tasmania, reviewed the PWC report prepared for the Tasmanian government on the structure of the Tasmanian energy sector and options for change.
- **Network and Market Design Advice:** Advising a market participant on specific network regulation issues and scope for regional boundary change under the National Electricity Rules.
- **Greenhouse Policy Roundtable:** led and facilitated a roundtable discussion with several multi-national energy and resource companies. The session focused on current energy policy issues that impact on the participants' commercial risks and strategic direction.
- **New Zealand Transmission Pricing Review:** advised the New Zealand Electricity Commission on the economics of transmission pricing, international experience and potential 'high-level' options for consideration as part of the Commission's Transmission Pricing Review.
- **Structural Adjustment and the Carbon Pollution Reduction Scheme (Proprietary and CGE Modelling):** used Frontier Economics' suite of power sector models in combination with Monash University's MMRF-GREEN model to evaluate the medium-run effects (to 2020) of the Australian Government's proposed CPRS-5 emissions-trading scheme. A comparison was made on the effects of the scheme on gross output and employment in sectors and regions with the prospects of the sectors and regions in a base case in which the Carbon Pollution Reduction Scheme (CPRS) is not introduced.
- **AEMC Market Power Consultation Paper:** drafted a report for the National Generators Forum responding to questions and issues raised in the Australian Energy Market Commission's Consultation Paper on generator market power in the National Electricity Market.

- ***Generator Impacts of Climate Change Policies:*** assessed the impacts of the Carbon Pollution Reduction Scheme (CPRS) and the enhanced renewable energy target (RET) on generator bidding, contracting and investment decisions in the National Electricity Market for the Australian Energy Market Commission (AEMC).
- ***Emissions Trading Scheme:*** advised the National Generator's Forum (NGF) on the potential impact of an emissions trading scheme on electricity generators, and the way transitional assistance could be used to mitigate these impacts. Frontier assisted the NGF in the preparation of its submission on generator compensation in response to the Commonwealth Government's Green Paper.
- ***Queensland Department of Mines and Energy - Effects of the Emissions Trading Scheme:*** provided an assessment of the expected future impact of various greenhouse policies in Queensland and the National Electricity Market (NEM), including the Queensland 13% Gas Scheme on dispatch patterns and likely revenues for Gladstone Power Station. Undertook modelling of:
 - the NEM to assess the impact of an Emissions Trading Scheme (ETS) on generator values and the impact of transitioning the Queensland Gas Scheme
 - the effects of an ETS on the value of Queensland Gas generators, and the impact of abolishing or transitioning the Queensland Gas Scheme, for the Queensland Department of Mines and Energy (DME).
- ***Emissions Trading and Permit Allocation Policy:*** retained by the Investor Group on Climate Change to advise on appropriate public principles underpinning the development of an emissions trading scheme in Australia, and the impact of alternative permit allocation methodologies on the public policy objectives of importance to the government.
- ***Modelling New Greenhouse Policy:*** advised an electricity retailer on the impact of a proposed State Government greenhouse policy. Frontier used WHIRLYGIG to model the impact of the proposed scheme on outcomes in the electricity market.
- ***Wholesale Prices in South Australia:*** Frontier assisted a major generator-retailer in preparing its response to an inquiry by the Australian Competition and Consumer Commission (ACCC) and the Australian Energy Regulator (AER) into the causes of price movements in South Australia in the summer of 2007-08.
- ***NSW Gas Continuity Scheme:*** provided advice to the New South Wales (NSW) Department of Water and Energy (DWE) on the arrangements for the Gas Continuity Scheme to be introduced in NSW in 2008. Assessed the proposal from the Gas Continuity Scheme Working Group and advised the DWE on elements of the design of the scheme.

- ***Australian Energy Market Commission Congestion Management:*** advised the Australian Energy Market Commission (AEMC) on matters relating to the Congestion Management Review (CMR) in the National Electricity Market (NEM), which was directed by the Ministerial Council on Energy (MCE). The intent of the CMR is to consider ways of addressing the physical and financial trading risks of material network congestion in the NEM. I was involved in all stages of the CMR, including:
 - understanding the nature of the physical and financial trading risks created by congestion
 - describing existing arrangements in the NEM for managing the trading risks created by congestion
 - estimating and assessing the materiality of congestion in the NEM, including by undertaking relevant market modelling
 - proposing and assessing options for improvements to the congestion management regime in light of the materiality of the problem
 - assistance with drafting the AEMC's CMR publications.
- ***Australian Energy Regulator Regulatory Test Guidelines:*** On behalf of the Australian Energy Regulator (AER), I was involved in a project that developed guidelines for the application of the Regulatory Test by network service providers, as required by a Rule change instituted by the Australian Energy Market Commission. Frontier Economics also advised the AER on appropriate revisions to the Regulatory Test following the Rule change.
- ***Papua New Guinea Electricity Sector Reform:*** advised an inter-departmental task force on the design of an electricity industry policy geared to meeting government objectives relating to reliability, affordability of supply and rural electrification. I advised on pricing mechanisms that would signal efficient entry, the design of third party access regulation and funding mechanisms for rural electrification. In addition, I advised the government of Papua New Guinea on the development of a policy framework for generation activities. The framework proposed various modifications to the existing single-buyer model, pricing mechanisms, regulatory principles relating to the third party access, and the development of mechanisms to fund universal service obligations.
- ***Southern Generators' Congestion Pricing Proposal, Macquarie Generation Proposed Snowy Region Boundary Change and Snowy Hydro Proposed Snowy Region Boundary Change:*** advised the Australian Energy Market Commission (AEMC) on a range of alternative proposals for managing transmission congestion in the vicinity of the Snowy region of the National Electricity Market (NEM). The Southern Generators' congestion pricing proposal was to partially impose a locational price on Snowy Hydro's Tumut output through the implementation of a constraint support pricing (CSP)/constraint support contract (CSC) mechanism, as well as by using positive inter-regional settlement residues (IRSRs) on the Snowy

to New South Wales interconnector to offset negative IRSRs on the Victoria to Snowy interconnector. The Macquarie Generation proposed regional boundary change involved replacing the Snowy region with two new pricing regions to better reflect the location of transmission constraints. Finally, the Snowy Hydro proposed regional boundary change involved abolishing the Snowy region altogether and extending the boundaries of the NSW and Victorian regions to meet at the key point of congestion in the area. Frontier undertook the plant build, dispatch and risk modelling for the assessment of all three proposals, as well as drafted the AEMC's modelling appendix and provided drafting assistance for the AEMC's Draft and Final Determinations.

- ***Meridian Energy - New Zealand Water Management Reform:*** undertook a discussion of best practice natural resource management focussing on water, involving research into international thinking and practical experience with water reform as it relates the power sector.

Policy, project and regulatory evaluation

- ***NEM rebidding:*** advised an energy business in relation to potential Federal Court proceedings.
- ***ACCC:*** Following the 2003 AGL/Loy Yang merger matter in the Federal Court the ACCC commissioned me to advise on approaches for considering the competition effects of horizontal and vertical mergers of participants in the NEM. I was an expert witness engaged by AGL's lawyers for the Federal Court on this matter.
- ***ACCC:*** I have advised the ACCC on an approach for considering the electricity competition benefits of transmission network investment in the NEM.
- ***Australian Energy Market Commission (AEMC):*** I have advised the AEMC on a range of matters over the years including the regulatory regime for setting transmission network revenues and pricing and for managing congestion on the national electricity grid. Other projects included undertaking a major review for the AEMC on the effects of the Federal Government proposed Carbon Pollution Reduction Scheme (CPRS) on the operation of the NEM and related markets. I have also advised the AEMC on likely future retail prices.
- ***National Electricity Market Generators Greenhouse Policy Advice - Public Policy Principles and Adjustment Assistance to Power Producers Following the Introduction of Emissions Trading:*** Frontier Economics advised National Electricity Market generators and industry groups on greenhouse policy options and implications, particularly in relation to emissions trading and renewable energy targets. Frontier Economics was retained by the National Generator's Forum to advise it on the public policy arguments that could be developed to support the allocation of transitional

assistance to power producers that suffered a shock to their asset values following the introduction of an Emissions Trading Scheme.

- ***National Emissions Trading Taskforce Permit Allocations:*** advised the National Emissions Trading Taskforce on the incentives created by different methods of permit allocations under the proposed emissions trading scheme.
- ***New South Wales Retail Price Determination:*** advised the NSW Independent Pricing and Regulatory Tribunal (IPART) on its review of regulated retail tariffs and charges for electricity for the 2007-10, 2010-13 and 2013-16 determination periods, as well as subsequent advice on the annual review of wholesale energy costs. This work required undertaking a detailed review of each retailers' customer loads by type, forming forecasts of future energy purchase costs having regard to the risks of doing so, and relating these costs to the margin each retailer should earn.
- ***Western Australian Office of Energy (OOE):*** advised the OOE on their Electricity Retail Market Review, including on the development of cost-reflective gas and electricity retail electricity tariffs in Western Australia. This work also involved undertaking a detailed review of customer load, future energy and retailer costs and margins.

Utility regulation and pricing

- ***DNISP incentives for embedded generation:*** Frontier prepared a report on the regulatory and commercial incentives for Distribution Network Service Providers to welcome or oppose the connection of embedded generators to their networks.
- ***Market Development Programme:*** Assisted the New Zealand Electricity Commission on its Market Development Programme (MDP). This project involved integrating three separate workstreams: transmission pricing, on which we also advised the NZEC, scarcity and locational price risk management.
- ***Judicial Review of QCA Tariff Decision:*** provided advice to Gilbert + Tobin and their client, AGL, in regard to the judicial review of the Queensland Competition Authority (QCA) decision on the Benchmark Retail Cost Index (BRCI) for electricity tariffs in 2008-09. I gave expert evidence on behalf of AGL before the Supreme Court of Queensland.
- ***Western Australia Gas Tariff Review:*** advised the Office of Energy on the determination of cost reflective gas tariffs for regulated customers in Western Australia. Frontier advised on the appropriateness of Alinta's proposed tariffs for the interim tariff increase that was put in place for 2008/09.
- ***Country Energy Regulated Retail Tariffs for Gas:*** provided advice to the Independent Pricing and Regulatory Tribunal (IPART) on the application by Country Energy to increase gas retail tariffs under the special provisions clause of the Voluntary Transitional Pricing Arrangements. I assessed the

evidence supporting an increase in wholesale prices and considered the impact of wholesale price increases on retail tariffs.

- ***Application of Real Options:*** advised VENCORP on how a real options analysis could be used to guide investment decisions in easements in advance of developing network augmentations.
- ***AGL Regulated Retail Tariffs for Gas:*** advised the Independent Pricing and Regulatory Tribunal (IPART) on the applications by AGL and ActewAGL to increase gas retail tariffs under the special provisions clause of the Voluntary Transitional Pricing Arrangements. I assessed the evidence supporting an increase in wholesale prices and considered the impact of wholesale price increases on retail tariffs.
- ***Gas Price Review:*** assisted AGL in a review of South Australian gas prices.
- ***Queensland Retail Price Determination:*** provided advice to Origin Energy on the determination of the Benchmark Retail Cost Index for setting regulated prices to small electricity customers in Queensland.
- ***New Zealand HVDC Charge:*** advised Meridian Energy on the economic implications of proposed approaches to setting the transmission tariff on relation to the high voltage direct current interconnector between the North and South Islands of New Zealand.
- ***Queensland Retail Price Determination:*** assisted AGL in estimating long run marginal cost for the Queensland retail price determination.

CAREER

1999-present	Managing Director, Frontier Economics
1992-1999	Senior Consultant, Managing Consultant, Director and then Managing Director of London Economics
1989-1992	Principal Economist, Economics Group, Pacific Power, Australia (formerly Electricity Commission of NSW)
1985-1989	Research/Policy Economist, Division of Rural & Resource Economics, NSW Agriculture & Fisheries, Australia

EDUCATION

1985	University of Sydney, Australia, B.Ag.Ec.
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