



**JIM SNOW – DIRECTOR,
OAKLEY GREENWOOD**

B.E. (Chemical) Honours, FIChemE,
FIEAust

Graduate
Australian Administrative Staff College
Mt Eliza, Melbourne

PRIOR PROFESSIONAL HISTORY

- 2008 – Director, Oakley Greenwood**
- 2006 - 2008 Senior Advisor, CRA International**
- 2005 - 2006 Energy Developments Ltd, Executive GM Development**
- 2001 - 2004 Charles River Associates, Asia Pacific/Vice President**
- 1993 - 2001 Energetics, CEO Consulting/CFO/General Manager**
- 1991 - 1992 Hunter Electricity (Newcastle), CEO**
- 1990 - 1991 Energetics Pty Ltd (Newcastle), Marketing Director**
- 1978 - 1990 AGL, Manager Sales and Marketing (1886-90) / Manager Regulation 1990/ Manager Commercial and Industrial Sales (1983-86) / Project Engineer (1980-83) / Works Engineer (1978-80)**

Jim has spent over 20 years consulting to water and energy companies in Australia, South East Asia, the Middle East and the US. He has extensive expertise in regulatory matters (particularly networks), modelling and pricing; business restructuring and improvement; greenhouse emissions matters and demand side management; government policy on energy and water matters; business development, market entry, business cases and plans and energy marketing; project development and implementation; training.

Jim Snow spent 12 years in the Natural Gas Industry (AGL) holding several senior executive positions involved with the technical end use of energy, regulations and tariffs, contract pricing, wholesale gas procurement, analysis of energy projects investment, strategy, mergers and acquisitions and the promotion and marketing of energy.

Jim has senior executive experience running a major Development and Construction business for listed entity Energy Developments Ltd. This encompassed power station developments, production and trading of greenhouse gas credits and certificates, and CNG and LNG facility developments in Australia.

Jim has also been the CEO of a major electrical power systems contracting company specializing in the design and construction of sub-transmission and low voltage overhead power-lines and electrical contracting. He has also had many years' experience in project and process engineering, including design, tendering, procurement, process control, commissioning and training.

EDUCATION

- B.E. (Chemical) Honours, FIChemE, FIEAust
- Graduate Australian Administrative Staff College, Mt Eliza, Melbourne

OVERVIEW

- Design and review of electricity and gas markets in Australia and Internationally;
- Extensive regulatory work and detailed economic analysis, and leadership of teams of regulatory economists and specialists – gas, water and electricity transmission and distribution networks;
- A range of key CEO, EGM and GM roles in various energy related businesses and practices, and several Board Directorships in Australia and in Asia;
- Preparation of numerous Board submissions and investment proposals;
- Development and implementation of numerous detailed business cases and plans, and business strategies for primarily energy companies;
- Project development activities and the management of major construction activities for electricity networks, gas pipelines, power stations, CNG facilities and LNG facilities;
- Operational experience in commercial, financial and regulatory modelling;
- Operational experience with contract negotiation, formation and management (extensively trained in this area);
- Market entry and restructuring strategies and projects for Retail businesses.
- Consulting and development experience with demand side management and AMI;
- Jim develops and resents many professional papers each year on various regulatory and industry matters – current papers can be found on the Oakley Greenwood website www.oakleygreenwood.com.au

REPRESENTATIVE ASSIGNMENTS

- ▭ Advising EnergyAustralia (now Ausgrid) on various electricity pricing issues related to time of use, demand response and pricing strategy including assessing pricing options and peak demand reduction incentive scheme options for their management and Board, for submission to national and jurisdictional regulators (AER, IPART) and other stakeholders;
- ▭ Facilitation of major industry issue workshops and working groups for AEMO (previously for NEMMCO and VENCORP) and for the Energy Networks Association including a recent workshop on consumer issues related to AMI and price increases with 10 network owners, 10 retailer groups, 10 national and jurisdictional regulatory and policy groups and 10 consumer representative groups;
- ▭ Policy and modelling work for AEMC and NSW OEH related to energy efficiency measures and peak demand reduction options and impacts;
- ▭ Advised on AMI issues in Victoria – key work examining cost benefits of these technologies in the supply chain
- ▭ Advised the Malaysian Government working group (MyPower) on the potential governance and restructuring options for the Malaysian electricity supply industry;
- ▭ Advised on the NSW Solar Bonus Scheme including developing (and reporting) detailed supply and demand constraint modelling and forecasting;
- ▭ On-going advisory roles in the procurement of major long term, bankable gas supply agreements and gas transmission haulage contracts for new power stations in Australia for several parties over the last 3 years - circa 600 MW to 1,500 MW of power and \$3 to \$7billion of gas;
- ▭ Advised Unitywater on its first regulatory submission to the Queensland Competition Authority. Unitywater has recently been formed from the water and waste water assets of Moreton Bay and Sunshine Coast Councils and is both a network operator and retailer.
 - Water and wastewater – Jim has undertaken several key studies of the value chain in the water industry, operations, pricing and management of inputs (Hunter Water, GCCC, and Brisbane Water);
- ▭ Jim completed the development of a pricing and cost allocation model for CBD electricity network owner Energex (Brisbane, Queensland) that is more flexible, provides more analysis tools, and is more attuned to the new National Electricity Rules and Regulatory procedures – this has been used extensively for network regulatory determination modelling;

- Jim recently led detailed work with both EnergyAustralia and Integral Energy (electricity network owners for Sydney, Australia) on the development and verification of their underlying peak demand and energy forecasts and how these relate to pricing and regulatory issues, as well as supplied a number of submission documents for their Regulatory (AER) reviews;
- Jim provided the outlines for the electricity dynamic pricing trials work that is now being undertaken by EnergyAustralia and Integral Energy in NSW and has undertaken detailed reviews of these trials in the past 12 months, and provided analysis and advice on progressing this work;
 - Jim has worked closely over many years with the authors and implementers of the recent dynamic pricing trials work undertaken in California (particularly Dr Ahmed Faruqui) and has presented joint papers and peer reviewed work in this area;
 - Jim worked extensively with Southpower (now Orion Energy) in Christchurch on the development and implementation of their network dynamic pricing products. This was ground breaking work internationally (completed in 1993/95) and it has seen the total reversal in the network system load factor trends. This was diminishing quickly and over a 15 year peak demand has grown less than 10% whilst energy consumption has been very strong lifting load factors back to very high levels.
 - Jim provide Southpower with the underlying marginal cost analysis and benchmarks that have been consistently used over that 18 year period to analyse network investments and demand reduction strategies, and set prices (still used today);
- Jim developed a key paper for Integral Energy on the impacts of air conditioning on their network and estimates of inherent subsidies and deadweight loss, as part of the IPART Determination of Revenues for DNSP's in NSW for 2004. The paper (Integral Energy – CRA Air Conditioning Impact Report – publicly available) has been recognised nationally and internationally as a benchmark on this rapidly developing issue;
- Restructuring of the Saudi Arabia Electricity Company (over 3 years), which had some 22GW of generation plant servicing a country of some 20 million people, and had some 30,000 staff. Jim was the strategic architect and lead industry adviser on the formation of the new regulatory body, generation, transmission, desalination JV, energy trading, distribution and shared services businesses;
- Jim was a key author of a top end review of the Victorian Gas Market (market carriage market design) for VENCORP and the local market Participants;

- Jim has previously undertaken reviews for VENCORP of the gas market design, and modelling and valuation of LNG storage in Victoria including recommendations on the approach that should be taken for its economic use – model now in use in the gas market;
- Other major gas assignments include
 - Wrote numerous submissions over an 18 month period to the NSW IPART review of the AGL Gas Undertaking (Revenue Determination process) for major energy users (CUB, NSW Health, CSR – public reports) and for a major competitor/new entrant (EnergyAustralia) that was highly successful in establishing large user pricing economics and assisting new market entry;
 - Development of several new gas businesses for electricity groups in Australia and New Zealand (e.g. EnergyAustralia) – full business plans and follow on implementation work;
 - Acted for a major Queensland Industry on the potential purchase of 20 PJ of gas from either Timor Sea or PNG;
 - Examined the role of gas-fired generation in Australia and the subsequent opportunities that arise in the market for new developments and market entry;
- Has advised on the barriers and opportunities for Demand Side Response and embedded generation involvement in the Australian energy market including recommendations on related policy issues for several state government bodies, independent entities, market participants and Regulators (numerous projects spanning 20 years).
- Jim has undertaken several business strategy projects for very large retailers advising on the most efficient way to organise and implement customer service in retail operations and to develop new services and offerings in the market;
 - This has included detailed work over an 18 month period with EnergyAustralia to completely review and redesign their operational processes, business systems and sales strategy within the competitive energy market and develop a working financial model for the business based on a value creation process. The recommendations from this work were implemented and the business went from making large losses to full profitability, and is now benchmarked as one of the lowest cost to serve retail businesses in Australia;
 - Strategic advice to a leading regional retailer (Ergon Energy) on business development and stakeholder management over a 5 year period;

- Jim also worked through (facilitated) with the Ergon Energy organisation the pricing strategy that was taken to the Regulator for both the network and retail components and for the treatment of Customer Service Obligations (cross subsidies) and capital contributions policies;
- Jim has worked on several projects for Integral Energy on key retail matters associated with their overall retail strategy, product developments and tariff development;
- Jim worked extensively with Energex in the early days of the market opening in Queensland on strategy and product development,
- Jim advised on the setting of retail costs and margin benchmarks for the first Retail pricing regulatory review (in Victoria) and the options developed now form the basis for this type of regulation across the NEM;
- ▢ Renewable Generation, CNG, LNG and Remote Power Station developments in Australia.
 - Jim was instrumental in the development and construction of remote power stations fuelled off coal seam methane gas which receive major environmental (green) credits in Australia (e.g. Emerald plant);
 - He also pioneered the long distance trucking of CNG to fuel remote power stations (Yulara) and was heavily involved in the development of LNG supply, storage and dispensing facilities for transport and power use across Australia;
 - Led a major market review of renewable energy and gas fired electricity generation of the Asia Pacific region for a major US Utility with detailed work on the opportunities in China;
- ▢ Jim is a Fellow of the IChemE (past Fellow of IEAust) and was the Chairman of the IEAust College of Chemical Engineers for some 6 years after holding numerous positions on its Board. He has represented Australian Chemical Engineering in the UK (Presented to Duke of Edinburgh), Honk Kong, Taiwan, New Zealand, Singapore and the US.