

RESUME

Name: (Edwin) Denis Cooke

Position: Managing Director, Denis Cooke & Associates Pty Limited: www.decoa.com.au

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Qualifications: Bachelor of Science (Engineering) BSc(Eng) Electrical Power UNSW 1971
Master of Engineering Science MEngSc Electrical Power UNSW 1978
Master of Business Administration MBA Macquarie University 1982

Institutions: Fellow of Institution of Engineers Australia, Chartered Professional Engineer
Registered on National Professional Engineers Register
Registered APEC Engineer
Member Australian Institute of Company Directors
Member firm of Consult Australia
Currently Vice Chair Sydney Branch Australian Institute of Energy

Background:

Denis has more than thirty years experience as a consultant. Currently he is principal of a consulting firm providing a range of services to many clients including electrical engineering for industry, project management services, energy and greenhouse studies, consulting services and general management. He is highly experienced as an engineer, manager and management consultant.

His project management experience includes on-site project management of large complex construction works, participating in and leading multi-disciplinary design teams, undertaking the complete smaller project on a turn-key basis, and following through with implementation advice after providing recommendations from project reviews

He has a wealth of business planning experience including strategic analysis of environment, competitors, resource and financial assessment, business objectives and complete business plans for Australian industry and government. He has participated in industry lobby groups with representations made to government.

He has carried out many feasibility studies mostly of a technical nature including a recommended position, the alternatives, financial evaluation, implementation and any necessary organisational change.

Denis has a wide depth of experience in energy management and greenhouse challenge programs. For two years in the 1980s he successfully directed a group energy management program for James Hardie Industries Ltd which saved the group over \$2 million per year and won the National Energy Management Award. He has been active in consulting in greenhouse issues. Recent work includes authorship of a Greenhouse Workbook for the Minerals Industry in Australia and specialist advice to the Australian Greenhouse Office and Department of Climate Change on greenhouse gas abatement projects and the National Carbon Offset Standard. He is an accredited auditor for National Greenhouse and Energy Reporting.

Denis' major strengths are:

- Adaptive with people, works with people to achieve the best results for a project, diplomatic in approach,
- Excellent presentation skills,
- Innovative and creative thinker in seeking alternative approaches and solutions,
- Persistence and patience in seeing a task successfully through to completion to satisfaction of client, to time and to budget,
- Successful and experienced engineer, manager and consultant,
- Technically competent across a wide range of engineering disciplines, recognition within the energy industry by IEAust, ACEA, AGO and DPIE.
- Computer literate, excellent working knowledge of PCs and computer systems, familiar with wordprocessors, spreadsheets, databases, time line and project management software, Internet use and electronic document production.

Brief Outline of Experience and Some Career Highlights:

Power and Water Industry:

Three months (Executive Contract) for NT Power and Water Authority as Executive Director Engineering & Technical - responsible for all technical aspects of the Authority's charter to deliver electricity, water and waste water across the Northern Territory. Detailed evaluation and management of many issues including: organisational structure, power and water system demand, power and water systems planning, air inlet cooling projects, power system operations and reliability, Y2K management, asset management, deregulated environment, project management, greenhouse challenge and standards. PAWA employs about 800 staff across the NT. 98 report to this position.

Management/Business Consulting:

Strategic planning, business plans and management studies for industry and government departments: Typical projects- Strategic Plan for Bathurst City Council on Automation of Water Supply Systems, Strategic Planning Study of Information Systems for John Hunter Hospital, Newcastle, Business Plans for Roads and Traffic Authority - a number of units, Staff Resources and CAD Systems Review for Public Works Department, Work Study for Westpac Banking Corporation, Review of Commonwealth Government subsidised Energy Management Programs, Marketing Study and Pricing Policies for Importing Company, Business Plan for New Business within large Electrical Utility and others, Diagnostic Business Audit and Marketing Plan for small electrical manufacturing business.

Engineering Consultancy Contract:

Twelve months contract with SMEC Australia Pty Ltd establishing a power and energy group of engineers. Projects covered were diverse and included power delivery systems, cogeneration, renewable energy systems, energy and related auditing.

Industrial:

Five years in manufacturing industry. Experience included training at all levels of the manufacturing processes and working on design, testing and development of electrical products. Broad exposure to many industrial processes, their operations, efficiencies and energy requirements through consulting work over 15 years.

Electrical Power Industry:

Two years consulting to Electricity Commission of NSW in following areas: metering, protection, control, communications and substation design. Two years on design and construction overseas (UK and Canada) in high technology industries of Atomic Power, Petrochemical, and Oil and Gas.

Heavy Industry and Mining Industry:

Detailed energy efficiency studies for many coal and metalliferous mines throughout Australia. Wide appreciation of mining operations (power needs and potential efficiency improvements).

Construction:

Two years in Gove, NT as Site Manager responsible for major electrical projects - High Voltage Distribution for Bauxite Treatment Plant, High Voltage and Low Voltage Distribution for Town, Street Lighting, Cathodic Protection for wharves. Also included were civil engineering projects on a sub-contract basis. Construction supervision of many Industrial, Mining and Public Works Department projects.

Building Services Experience:

Eight years with the Public Works Department, five years as group supervising engineer (electrical) responsible for a wide range of public owned and managed buildings mostly in the Sydney CBD.

Electrical Engineering Consulting:

Twenty years as Principal of own consulting engineering firm providing electrical engineering services design documentation and construction supervision to a wide range of clients: Design, documentation and construction supervision of power supply upgrades for mining industry, high and low voltage power supplies for industry (line augmentation/diversion, switchboard design, cabling system design and final commissioning). Project management on a turn-key basis of specialised power supply requirements for automatic fin welding equipment and other power studies and construction projects.

Energy Studies Consulting, Greenhouse Challenge Strategic Programs and Compliance Auditing

Energy Management Program at *James Hardie Industries* which resulted in annual savings of more than \$2 million for the group. The success of this program was recognised in 1983 when it won the 1983 national Energy Management Award in the Industry Category. Activities in this role included:

- Analysis of measures to reduce energy costs at major JHIL locations.
- Energy audits, fuel substitution studies, project identification with reports and financial proposals, preparation and implementation of Energy Management Plans.
- Direction of Energy Management Committees through Group.
- Regular reports and recommendations on the program, its future together with divisional performance.

- Enhancement of Computer Monitoring System to oversee program performance.
- Established a Group Energy Policy.
- Published newsletters to inform employees.
- Attendance at conferences both as a visitor and speaker to publicise the JHIL energy program and to put the industry case for fair and reasonable fuel pricing policies.
- National Energy Management Award on behalf of James Hardie Industries from the Minister.
- Received good publicity in "The Australian" and "Australian Business".
- Lobbied State Governments on fuel pricing policies with some success.
- Negotiated with Victorian Electricity Supply Authorities to gain concession at times of power restrictions.
- Co-operated with Federal Government to provide advice and assistance in the production of an energy conservation film.
- Assisted Federal Government in its Aid Policy by entertaining important overseas visitors.
- Involvement in alternative energy technologies - solar energy system research for drip irrigation project.

Energy Studies for a large number of industrial firms. More details are available under credentials of Denis Cooke & Associates Pty Limited if required.

Greenhouse Challenge Workbook for Minerals Industry, develop greenhouse response strategies for major companies to address the crucial advantages available through participation in this program.

Greenhouse Challenge, Greenhouse Friendly and Generator Efficiency Standards independent verification. Auditor under NSW Greenhouse Gas Abatement Scheme - independent verification of a number of Scheme participants as requested by IPART (Scheme Administrator).

Earlier Career Highlights:

Design Engineer/Group Leader (*Public Works Department*) identification of project weaknesses with subsequent design changes. Recommended for Executive Development Program: this was a program set up to identify top calibre staff for future management positions. The process used was a demanding program spread over three days during which applicants were tested for skills and attributes including intelligence (verbal, spatial, and mathematical), interaction with people, managerial ability, investigative ability and others. The top five percent were placed on the development program. Promotion in preference to many other staff with seniority.

Successfully managed a most difficult area of PWD activities relating to rented office accommodation for government ministers and departments. This work required the ability to respond rapidly to changing needs - contrary to "traditional" public service approach.

Design Engineer (**Atomic Power Constructions**) significant design changes to reactor safety systems. (Identification of weaknesses with existing systems - suggested changes).

Site Manager: (**T A Mellen Pty Ltd**) successful management of large complex construction project, turning it around from loss making to being profitable. Company's reputation enhanced to the extent that the second stage was awarded on a negotiated basis.

Technical Officer: (**McDonald Constructions Pty Ltd**) successful management of a group of draftsmen undertaking design work for Electricity Commission. Results were rewarded. Thirteen pay increases over a three year period.

Cadet Engineer: (**Kirby Refrigeration Units Pty Ltd**) design improvements to manufacturing methods; design of automated testing facilities for electrical induction motors (testing which previously took several days could be accomplished in several hours)

Technical Papers/Conference Presentations:

Energy Benchmarking and Energy Performance Measurements for Business (2005) Greenhouse Challenge Conference - Canberra

Triple Bottom Line Reporting to track your Economic, Social and Environmental Gains (1999)

How to Run a Profitable Greenhouse Gas Reduction Strategy (1998)

Scoping Study on Management and Abatement of Greenhouse Gas Emissions for ACA (with CSIRO) (1998)

Australia's Greenhouse Challenge Program (1997) at WEEC, Atlanta, Ga, USA.

Energy Use Benchmarks for Open Cut Coal Mines (with C Randall) (1995)

Integrating Energy Management Into Your Environmental Management System (1995)

Compressed Air Systems and Energy Savings (1994)

Energy Efficiency of Two City Buildings (1994)

The Principles of Energy Management (1992)

Group Industrial Energy Management (1992)

Implementation of Energy Management in Industrial Plants (1992)

James Hardie Industries Energy Management Program - Success How We are achieving It. (1984)

EXAMPLES OF CONSULTANCY ASSIGNMENTS:

BUSINESS CONSULTING:

Power and Water Authority, NT: Executive Director, Technical & Engineering (Chief Engineer). Engaged on a three month contract in this position to provide strategic leadership and advise the authority on all technical and managerial aspects of updating the authority's engineering work methods and engineering practices to comply with National Competition Policy. This work involved a complete reappraisal of the existing structure, asset management, maintenance, risk management, project management, quality assurance, system planning, system operations, system augmentation, system control. The NT Power and Water Authority is responsible for the provision of all power and water services throughout the Territory including Aboriginal Essential Services. The Authority employs 800 people and 98 staff report to the Chief Engineer.

Large Utility, NSW: Business Development

Working with the Utility to develop a new commercial business to provide a complete range of services to a specific industrial sector in Energy Management, Benchmarking, Efficiency Measurement, Project Identification, Implementation and Management. The Utility wanted to offer a suite of comprehensive services to major customers in the deregulated Electricity Supply market.

Large Teaching Hospital, NSW : Strategic Plan

Leader of the study team. Strategic Planning Study of Information Systems for John Hunter Hospital, Newcastle. Assessment of needs of all departments, evaluation of existing computer hardware, proposed configuration, existing software, suitability of existing systems to meet needs, evaluation of alternative systems and a report with recommendations on options to meet needs and budget. (The John Hunter Hospital is a 500 bed teaching hospital located at Newcastle NSW).

Major Australian Power Systems Company, Qld: Marketing and Technical Advice

Review of in-house technical competencies to provide turn-key engineering solutions for renewable energy (combined heat and power) installations in the sugar industry. Review of market for identified viable product range, brainstorming and presentations and assistance with tender preparation for specific projects.

Large Network Utility, Australia, Marketing Study

Study of larger privately owned electrical infrastructure around Australia to identify opportunities for an organisation such as Transgrid to purchase, maintain and lease back assets or provide maintenance services for those assets.

NT Utilities Commission, NT: Technical Review of proposed Access Code

Review of proposed access code for compliance with NECA.

Government Agency, NSW : Business Plans

Preparation of business plans for major sections of this Agency which consisted of groups of engineers arranged by discipline to provide engineering services to the central body. Each separate section was required to produce a business plan which defined the role of the section, identified measures for improved productivity and efficiency, set objectives to be achieved, established a financial structure for income and costs, and established a performance reporting system. The annual turnover of the sections was about \$225 million. Critical review and evaluation of internal components, preparation of the final plan for marketing, financial systems and business opportunities. For a specialised Service Unit which provided impact testing of motor safety equipment an initial business plan followed up with revisions and performance evaluation against original targets. Updated Business Plan for same Business Unit to accommodate changed financial performance criteria and to determine financial and operational plans for new facilities.

Government Agency, NSW : Computerised Skills Register

Design and development of a Computerised Staff Skills Register using the 4th generation programming language, Oracle. The developed database contained records for over 800 people and allowed comprehensive interrogation over the entire system.

Small Engineering Firm, NSW

Diagnostic business audit covering all aspects of the business including product assessment, market, product development, testing, opportunities, financial development. Study part funded by AusIndustry. Produced a Quality Assurance manual.

Siegling Australia Pty Ltd, NSW : Computerised Pricing Manual

Design and development of a Computerised Product Pricing Manual using the 4th generation programming language, Informix. The developed pricing manual allows for many thousand imported items with the ability to adjust prices in response to exchange rate movements. A comprehensive series of reports is available across the product range.

Westpac Banking Corporation : Work Study

Mr Cooke conducted a Work Study into Processing Procedures of merchant paper at Consumer Finance Centre, Sydney. Recommendations were made about processing methods, data capture methods, staffing, system management and cost benefits achievable.

NSW Public Works Department, M & E Section : Zero Base Staffing Review

Review of operation of the section in consultation with senior management to determine zero base staff levels in line with providing government with a required level of service whilst ensuring that the government's policy of giving specified percentages of work to the private sector was met. Report and formal presentation to senior government officials.

NSW Public Works Department, Water & Sewerage Branch: Review of Use of Cadd

Review of use of Computer Aided Design and Drafting in the Water & Sewerage Branch of the NSW Public Works Department to determine how a greater use could be made of the existing facilities and the computer design capabilities with measures of the effects on staffing, training and project costs. Recommendations were made on the most cost effective approach to be taken.

Cradle Runways (Australia) Pty Ltd : Business Prospectus

Review of past and present operations and future potential of this company, preparation of a prospectus offering the company for sale to selected buyers.

Clinical Waste Australia Pty Ltd: Optimisation Use of Waste Incinerators

A technical and managerial study of existing operations of this key resource for Clinical Waste, existing efficiencies, potential efficiencies, production processes, benchmarking, strategic considerations for the future, and possible waste heat recovery projects. The study was part funded through AusIndustry.

Hardie Trading : Marketing Study

A review of the market in Australia for specialised imported electrical equipment with estimates of market size, competition, pricing structures, potential for product substitution and a recommended strategy to introduce and achieve product sales and sales growth.

Overall Forge Pty Ltd: Furnace Operations Review

A detailed review of furnace operations at Silverwater, NSW looking at efficiencies, production processes, efficiency improvements, energy usage, benchmarking, technical operational problems. Recommendations on operational improvements and requirements to allow move to Albury, NSW.

ENERGY MANAGEMENT PROJECTS:

Directly responsible for the Group Energy Management Program during 1983-84 at James Hardie Industries Ltd (JHIL) which resulted in annual savings of more than \$2 million for the group from 1985 onwards. The success of this program was recognised in 1983 when it won the 1983 national Energy Management Award in the Industry Category.

CONSULTING WORK FOR ENERGY AUTHORITY OF NSW:

- Review of Government Energy Savings Fund,
- Investigation and assistance to government departments and authorities to identify suitable projects for funding under the Energy Savings Fund.
- Review of Energy Management Plans for selected government departments and authorities for compliance with government policy and overview of achievements. Plans included some hospitals, authorities, departments, and water pumping authorities.
- Identification of suitable projects for articles for the early editions of Energy Focus, assistance with technical details for publication.
- Participation and presentation of Seminar on Controlling Energy Costs.
- Participation in planning process and activities in the Western Sydney Energy Wise campaign.

OTHER ENERGY RELATED PROJECTS:

Ecolab Australia Pty Ltd: Field measurements and reports on cost savings resulting from the use of low temperature dishwashing equipment when compared with conventional high temperature dish washers.

Renison Goldfields Pine Creek Goldmine: Advice on appropriate power generation strategies and running costs.

Melesco Manufacturing Pty Ltd: Electricity costs, estimated usage for new machinery and plant expansion and options to manage and control costs.

Oakey Abattoir: Feasibility of using wood waste as a fuel for boiler services.

Affinity Metals: Brief energy audit of non ferrous metal smelting processes with fuel substitution options, analysis of electric induction melting process, and gas fired rotary furnaces.

APM Containers, Smithfield (formerly James Hardie Containers). Design of fully comprehensive computerised energy management and control system to control electricity demand and energy, gas demand and energy, steam system, office air conditioning and monitor a number of plant functions. System capable of producing performance indicators for the different fuel types in relation to production and individual equipment. Overview of final installation to ensure compliance with original design.

APM Containers, Townsville, Qld (formerly James Hardie Containers). Advice on appropriate energy strategy and control systems for new plant - in relation to office building (orientation and shading, solar hot water systems, insulation) in relation to industrial process - appropriate control systems and fuel types, expected energy consumption figures.

Hardie Trading, NSW. Potential for use of small size steam turbines to 100 MW within Australia for use in co-generation schemes and an appropriate marketing strategy.

Detailed Energy Audits and Energy Programs for many organisations and firms including:

Kosciusko Thredbo Pty Ltd, Thredbo, NSW; Alliance Packaging, Revesby, NSW; Waverley Municipal Council, Waverley, NSW; James N Kirby Pty Ltd, Milperra, NSW; Sydney Opera House, Sydney, NSW; NSW Department of Education, Sydney Metropolitan area to Blue mountains; Australian Newsprint Mills Ltd, Albury, NSW; Bathurst City Council, Bathurst, NSW.

Energy Studies of office buildings for Department of Motor Transport, Department of Main Roads, Art Gallery, and Mitchell Library with identification of economic projects to reduce energy costs, i.e. fuel substitution, computer control systems.

Detailed Energy Studies with strategic implications, energy benchmarking throughout the mining industry in Australia. Mines completed include mines operated by major companies such as Shell Australia, CRA, BHP.

GREENHOUSE CHALLENGE WORKBOOK FOR THE MINERALS INDUSTRY

Key consultant involved with writing and production of workbook for the minerals industry to assist that industry in joining a program which will provide a response from Australia to international pressures about the global warming issue.

Delivery of highly rated workshops on the workbook across Australia.

GREENHOUSE PROJECTS AND AUDITING

Development of Greenhouse Challenge Cooperative Agreements for Cyprus Australia Coal (6 mines - open cut and underground), Peabody Resources Ltd (3 mines - all open cut including one greenfields mine), Centennial Coal Company (6 underground mines) and many other smaller mines.

Greenhouse response strategies for Shell Coal Australia and Peabody Resources Ltd.

Technical advice to Australian Greenhouse Office on proposed GGAP projects in the mining and oil/gas industries.

Independent review of Greenhouse Challenge Program for major participants including North Ltd, Shell Coal, and Pacific Coal. Independent review of Greenhouse and Energy Efficiency for PT Adaro Indonesia for compliance with international best practice as required by the IMF when considering additional funds for expansion plans.

Independent verification of Greenhouse Challenge, Greenhouse Friendly and Generator Efficiency Standards projects for Australian Government and /or specific clients as required by those programs. Auditing standards to AUS 110 standard and relevant ISO standards.

ENGINEERING PROJECTS:

Pine Creek Gold Mine, NT: Design of high voltage power supply extension and grinding mill drive system.

Melesco Manufacturing Pty Ltd, NSW: Design, documentation, calling tenders, construction supervision of electrical services for a major plant extension including high voltage reticulation, substations, distribution works.

Melesco Manufacturing Pty Ltd, NSW: Design, documentation, calling tenders, construction supervision of electrical services for second plant extension works for installation of Induction Bending Machine - including high voltage reticulation, substations, distribution works, machine control systems.

Hoover (Australia) Pty Ltd, NSW: Design, documentation, calling tenders, construction supervision of electrical services for a new high capacity main switchboard.

Returned and Services League (Australia), NSW: Design, documentation, calling tenders, construction supervision, programming, and management of electrical services upgrade associated with a fire safety order for Hyde Park Inn.

Numerous Buildings: Design, documentation, construction supervision of building services, including building control systems for air conditioning, fire and security services.

Transfield Power Technologies: Specialist electrical engineering design, documentation, and construction supervision of works associated with the relocation of unique induction bending machine.

Client list includes:

- AJ Bush & Sons (Manufactures) Pty Ltd
- Alliance Packaging
- APM Containers Ltd.
- Austcor Packaging Pty Ltd
- Australian Co-operative Foods Ltd.
- Australian Greenhouse Office
- Australian Wool Testing Authority Ltd.
- Australian Newsprint Mills Ltd.
- Bathurst City Council
- BHP Australia Coal Pty Ltd.
- Bulga Coal Management Ltd.
- Callide Coalfields (now AngloCoal Australia)
- Capricornia Coal Management Pty Ltd.
- Centennial Coal Company Ltd.
- Clinical Waste Australia Pty Ltd.
- Coal and Allied Pty Ltd
- Cochlear Pty Ltd
- Comsteel ANI Group
- CSIRO Australia
- Curragh Queensland Mining Ltd.
- Cyprus Australia Pty Ltd.
- Department of Primary Industries and Energy
- Department of Defence
- Department of Energy
- Devro Pty Limited
- Dubbo City Council
- Email Ltd.
- Energy Australia
- Evans Deakin Industries Ltd.
- Film Australia
- Howick Coal
- Hunter Water Corporation
- ICAL Ltd.
- James N. Kirby Pty. Ltd.
- James Hardie Industries Ltd.
- Kosciusko Thredbo Pty Ltd.
- Melesco Manufacturing Pty. Ltd.
- Minerals Council of Australia
- Muswellbrook Coal Company Ltd
- Ness Corporation Pty Ltd
- Normandy Mining (now Newmont Australia)
- North Ltd
- NSW Energy Authority
- NSW Office of Environment & Heritage
- Orion Energy
- Pacific Coal Pty Ltd
- Pacific Power
- Power and Water Authority NT
- Peabody Pacific Coal Pty Ltd.
- PT Adaro Indonesia
- Public Works Department
- Renison Goldfield Consolidated Ltd.
- Returned & Services League Australia
- Roads and Traffic Authority
- Romar Engineering Pty Ltd
- Siegling Australia Pty Ltd.
- Sydney Opera House Trust
- Tappat Engineering Pty Ltd.
- Transfield Power Technologies
- Transgrid
- UBS Warburg Ltd
- Uncle Bens Australia
- Wambo Coal Pty Ltd
- Waverley Council
- Weir Minerals Pty Ltd
- Westpac Banking Corporation
- Whitehaven Coal Mining Pty Ltd