



# The Ecoefficiency Group Pty Ltd

## Capability Statement

### Overview

The Ecoefficiency Group was established in February 2013 by former members of The Working Group for Cleaner Production (The University of Queensland). Our group helps business, industry, and government implement practices that provide a stable platform for growth with minimal environmental impact. We are passionate about educating others and embedding sustainable practice within every level of business.

Our aim is to help industry profit from better environmental management. We help businesses identify and implement environmentally sustainable practices both for individual production processes and across supply chains.

We support industry in their use of environmental management tools including environmental auditing, cleaner production /eco-efficiency, life cycle assessment, public reports and sustainability assessment.

We support government agencies and industry associations in their promotion of environmental sustainability to industry, through the development of high quality information resources and self-assessment tools.

The Ecoefficiency Group understands that businesses are at varying stages of their sustainability journey. We also understand that to make lasting change, staff need to be engaged and encouraged to participate.

Our clients receive tailored environmental solutions. We thrive on seeing their incremental changes build to integrated strategies and financial results.

### Our Services

#### Resource Efficiency

- Energy, water and waste audits and management plans
- Certified Measurement and Verification of energy and water projects
- Water Stewardship Alliance Credentialed Specialists
- Energy metering and control systems
- Carbon footprints and inventories
- Carbon neutral certification applications
- Project Management
- Evaluation of technologies

#### Sustainability Strategies

- Sustainability and Corporate Social Responsibility Reporting
- Staff engagement programs
- Building Green Teams
- Social Responsibility Reconciliation Action Plans (RAPs)
- Business Backing Biodiversity (BBB)
- Community Projects
- Life Cycle Assessments
- Green Procurement

#### Training and Education

- Online training modules
- Business coaching
- Face to face workshops
- Webinars
- Manuals and factsheets
- Case studies
- Videos and animations
- Sustainability tools



## Our Team

The Ecoefficiency Group team has combined experience of almost 40 years working with industry and government to manage and reduce impacts on the environment.



### Penny Prasad, Director

Penny is a Chemical Engineer (Hons) with over 23 years of experience working with manufacturing industries. In 2013, Penny was awarded a Glencore Xtrata Energy Leaders Scholarship and has completed a Master of Energy Studies with the International Energy Centre. She is a Certified Measurement and Verification Professional with the Association of Energy Engineers and Efficiency Valuation Organization. She is also a current Water Stewardship Alliance Specialist. She spent 9 years employed in food manufacturing with CSR Sugar Ltd and National Foods Ltd working in various operational roles including Quality Manager, Team Leader and Production Manager. She was a consultant/researcher with the Working Group for Cleaner Production (WGCP) for 12 years during which time she worked on eco-efficiency projects for various industries including metal fabrication, poultry growing, dairy processing and meat processing. She has experience in, water management plans, energy assessments, industry carbon footprint/inventories, life cycle assessment and public reporting. Penny spent four years as coordinator of the Dairy Manufacturers Sustainability Council on behalf of Dairy Innovation Australia Ltd and Dairy Australia.



### Jane Gaffel, Director

Jane is a Chartered Environmental Engineer (RPEQ) with over 20 years of experience in the environmental industry in ecoefficiency assessments, energy auditing, water management plans, carbon footprints and public reporting. She is also a Certified Measurement and Verification Professional through the Association of Energy Engineers and Efficiency Valuation Organization. She is also a current Water Stewardship Alliance Specialist. Jane's past roles include 5 years as consultant/researcher with the WGCP working with sectors including food manufacturing, foundries and metal finishing. Previous to this she worked in consulting (stormwater management strategies and modelling; hydrology and hydraulics; remediation of contaminated land sites) and local government (environmental training and management of infrastructure placement including site assessment and approval applications).



### Nicole Price, Director

Nicole Price has a Bachelor of Education (Biology) and a Diploma in Applied Science (Wilderness Reserves and Wildlife) and 30 years' experience working in environmental management. She is a current Water Stewardship Alliance Specialist. For the last 16 years she has been working on a variety of industry eco-efficiency projects. Projects have including undertaking eco-efficiency assessment and benchmarking, developing engaging resource and training material including audio visuals, manuals, factsheets and case-studies, literature reviews and excel-based and on-line sustainability tools. Nicole has worked with sectors including food processing and retail, tourism, farmers, foundries and boat building. Her past experience includes working at the University of Queensland (in research assistant, academic and technical roles), for local government (Water Demand Management) and with State Government in Natural Resource Management roles.



### Dr Marguerite Renouf, Associate

Marguerite trained originally as an industrial chemist, and worked in industry for seven years. She subsequently pursued a career in industrial environmental management, in consulting and research roles. Her long-standing interest has been in eco-efficiency, and has worked with UQ's WGCP since its establishment in 1996, and was its director between 2009 and 2012. Marguerite currently pursues research activities in life cycle assessment (LCA) for evaluating the sustainability of production systems and informing practice change. Her most significant contribution has been the development of high-quality information resources and tools to support industry efforts in eco-efficiency, including manuals and customised LCA tools for industry.



### Uncle Bill Buchanan, Associate

Uncle Bill Buchanan is an experienced Indigenous business facilitator, strategic policy advisor, program manager and cultural competence/cultural safety trainer. He has over 30years practical experience in these key roles and appreciates the complexities of working across government, community, industry and private sectors with respect to governance, productivity and corporate social responsibilities. Uncle Bill is an accredited complexity management practitioner with significant experience in developing and integrating Reconciliation Action Plans (RAPs) for Australian based organisations and companies. He is well versed in change management strategies to support RAPs including communication strategies, training, governance and policy frameworks.



Penny Prasad, Jane Gaffel and Nicole Price are Alliance for Water Stewardship Credentialed Specialists



Jane Gaffel and Penny Prasad are Certified Measurement and Verification Professionals with the Association of Energy Engineers and Efficiency Valuation Organization



## Projects

Our team has worked on the following projects, mostly during our previous incarnation with the Working Group for Cleaner Production:

### Current:

**Clean Growth Choices for Queensland Communities in Transition – DES (2018-ongoing)** TEG is involved in a consortium with the University of Southern Queensland, James Cook University and CSIRO to deliver the Clean Growth Choices for Communities in Transition. The program aims to assist regional areas in Queensland to develop specific roadmaps to help them transition to a low carbon future. The main role for TEG is to highlight positive stories, generate interest through social media and website development and provide practical examples of transition through case studies and webinars.

**Carbon Management of an Architectural Firm (2020 – ongoing)** TEG is currently involved in developing a carbon footprint and emissions reduction plan for a Brisbane Architectural Firm. We are also setting up a system to easily record and report on carbon emissions.

### Long term projects/partnerships:

**ecoBiz coaching (2014 – ongoing)** - The Ecoefficiency Group (Penny Prasad, Jane Gaffel and Nicole Price) are currently sustainability coaches with the Chamber of Commerce and Industry Queensland ecoBiz program ([www.cciqecobiz.com.au](http://www.cciqecobiz.com.au)). We were initially involved in program design and currently involved with business coaching, webinars, workshops, and development of ecoBiz resource materials, including the industry excel based benchmark tool. We have been consultants to the ecoBiz program since it was outsourced to CCIQ in 2014 and were involved in the program prior to CCIQ to develop resources, tools and case studies. We have literally undertaken over 1000 business assessments since 2014.

**Green Office, Green Lab and Environmental Responsibilities Training (2010 - ongoing)** - we are partnering with the University of Queensland to deliver staff development training for their Green Office and Green Lab programs. We were also involved with the design of both programs.

### Past projects:

**Australian Meat Processing Corporation Webinar Series (2020)** – TEG researched and delivered a webinar on National and State energy grants and programs available to the meat processing industry.

**Updating the Ecoefficiency Manual for the Dairy Processing Industry - Dairy Australia (2018 – 2019)** TEG developed the Ecoefficiency Manual for the Dairy Processing Industry as the Working Group for Cleaner Production in 2004. This project was an update to the manual to provide the industry with the latest information on developments within Water, Waste, Energy, Chemical use, Yield Optimisation fields that are applicable to the dairy industry. TEG is also provided webinars to the Dairy Industry as a means of disseminating this information.

**Queensland University of Technology Sustainability Action Plan development (2019)** TEG assisted Facility Management Department of QUT to develop their Sustainability Action Plan. The plan brings their past sustainability achievements, current actions, and future proposed actions into one document. The document will be made public to demonstrate QUT's commitment to ongoing action and allow accountability to its stakeholders.

**Common Ground – Embedded Network Evaluation and business case development for the affordable housing market (2018)** – TEG reviewed the current electricity network at the multi-storey complex and looked at the business case for business as usual, going to an embedded network or outsourcing an embedded network. TEG identified savings for Common Ground and tenants of between \$5,000 and \$17,000 per annum.

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**Australian Meat Processor Corporation (AMPC) Gap Analysis for Energy, Water and Wastewater R&D and R&D Roadmap development for SMEs – AMPC (2018)** – this project involves a literature review of existing AMPC and Meat and Livestock (MLA) research applicable to energy, water and waste efficiency for meat processors. A gap analysis will be undertaken to identify information gaps particularly in relation to SME processors within these three metrics. Site visits to 4 SME processors will be undertaken to discuss their sustainability journey and the barriers and drivers for SMEs in relation to sustainability. An R&D roadmap for SME processors will be developed to allow the industry to identify priority R&D requirements.

**AMPC Electrocoagulation Evaluation (2018)** – In 2018, TEG partnered with Inovin to evaluate the use of Electrocoagulation as a wastewater treatment method at the Alexander Downs Kurri Kurri meat processing site. TEG were tasked with managing the project and undertaking the literature review of electrocoagulation for the meat processing industry.

**Queensland UnitingCare Measurement & Verification – QUC (2018)** – TEG undertook the measurement and verification of over 20 energy and water projects undertaken by Queensland Uniting Care. The International Performance Measurement and Verification Protocol was applied where applicable.

**Queensland Department of State Development (2017)** - literature review and 8 case studies on Sustainable Advanced Manufacturing. This work was part of the Queensland Government Advanced Manufacturing 10 yr Roadmap.

**Management, containment and reuse options for water runoff in red meat processing facilities – AMPC (2016/17)** - this project investigated current stormwater runoff management and reuse in red meat processing facilities in Australia. A review of 5 technologies were undertaken that were applicable to the industry and a framework for good practise and opportunities for stormwater management was produced.

**Investigating water and wastewater reuse and recycling opportunities using the HACCP risk management framework - AMPC (2016/17)** - this project included a survey and review of current status of water recycling and reuse in red meat processing. The risk-based Hazard Analysis Critical Control Point (HACCP) framework was used to develop a guideline and template for water recycling and reuse opportunities for the industry.

**Wastewater Management and Biogas Manuals for the red meat processing industry, AMPC (2016/17)** - updating of extension material on wastewater management and biogas for the red meat processing industry. This involves updating the manuals and providing an on-line training package which includes 8 x 10 minutes videos, factsheets, checklists and quizzes.

**Level 2 AS3598 Energy Audits (2017)** - level 2 energy audits were undertaken for a Cairns Community Housing Organisation and three Brisbane based community organisations.

**Energy Assessment for two schools – Enviro Projects - (2016)** - energy assessments of two school were undertaken investigating energy consumption patterns using ENOPE AuziMax energy data and investigating and suggesting opportunities for energy reduction.

**Cleantech case studies - Sunshine Coast Council (2016)** – TEG produced 6 Cleantech case studies demonstrating the technical, environmental and cost benefits of installing Clean technologies in Sunshine Coast organisations. These included a local college, university, airport and several businesses.

**Building water auditing, The University of Queensland (2016)** –These water audits of buildings at The University of Queensland involved a thorough assessment of water use in the building and proposing and costing options to reduce water use and access alternative water sources.

**Hazardous Air Pollutant Review of Priority Facilities (2014-2016)** - TEG worked in partnership with air quality specialists Katestone to identify, evaluate and implement international best practice measures to reduce emissions of hazardous air pollutants from priority industrial facilities on behalf of New South Wales EPA. The project included an assessment of the relative risk to the environment posed by air pollutants and identify options for appropriate regulatory response.

**Energy transition strategy for Noosa Council (2015)** - a carbon footprint and strategy for switching to renewable energy for the Noosa Council. Completed as part of a Master of Energy Studies (Penny Prasad).

**Energy, water and waste efficiency for dairy processors (2015)** - developed and delivered workshop on energy, water and waste efficiency for NSW dairy processors on behalf of Dairy Innovation Australia Ltd.

**Environmental short-courses for red meat processing industry (2015)** - on behalf of the Australian Meat Processing Corporation. We have developed and presented environmental short-courses for abattoir staff on water efficiency, solid waste, biogas and CALs and wastewater efficiency.

**Greening the food value chain – fruit and vegetable processing (2014)** - commissioned by the United Nations Development Organisation (UNIDO), The Ecoefficiency Group prepared a research report that identifies best environmental practice in the manufacturing value chain of fruit and vegetable processing. The guide serves as a point of orientation for policy makers, investors and industry stakeholders in the food and beverages sectors and sub-sectors in the promotion of Green Industry policies and practices.

**Level 2 AS3598 Energy Assessments of five foundries (2013/14)** - level 2 AS3598 Energy Assessments were undertaken for 5 Queensland foundries as part of the Australian Foundry Industry, Energy Efficiency Information Grants program.

**Water use and waste water treatment in red meat processing – a literature review (2013)** commissioned by QMI Solutions for the Queensland Government, this project was a literature review of the latest research, technologies, report and resources on the topic of water conservation and wastewater treatment in red meat processing. The report is as a summary document and guide for meat processing operators to give an indication of the latest developments and where to look for more information.

**Greening the food value chain – red meat processing (2013)** - commissioned by the United National Development Organisation (UNIDO), The Ecoefficiency Group prepared a research report that showcases best environmental practice in the manufacturing value chain of red meat processing. The guide serves as a point of orientation for policy makers, investors and industry stakeholders in the food and beverages sectors and sub-sectors in the promotion of Green Industry policies and practices.

**Measurement of scope 3 emissions related to business travel (2013)** - the work included a gap analysis, data collection and analysis of accuracy of current Scope 3 carbon emissions for the University of Queensland.

**The University of Queensland Green Labs Program (2011-2013)** - development of a Green Labs program for The University of Queensland. This program will assist university laboratories to become more environmentally aware by providing guidelines developed to reduce energy and water use and waste generation and improve purchasing choices.

**Streamlined LCA web tool for sugarcane (2011-2012)** - assisted in the development of a CanelCA Ecoefficiency Calculator to compare progressive practices against conventional practices for Wet Tropics, Central and Southern regions, using published descriptions of practice change. The results show that many progressive practices, such as those currently described by the ABCD framework, can lead to improved environmental efficiency across all impact categories. However, others may come with some environmental trade-offs.

**Carbon Footprint and Level 2 AS3598 Energy Assessment (2012)** – undertaken for the Patrick Port facility, Brisbane.

**Carbon Neutral Certification application (2012)** - a life cycle assessment (greenhouse emissions) was undertaken for the product, EasyOven, to be included in an application to Low Carbon Australia for gaining carbon neutral certification.

**Validation and Update of the EarthCheck Carbon Calculator Benchmarking software (2008, 2010, 2012)** - this work was undertaken on behalf of EC3 Global. It involved the initial collation and then subsequent review of fuel energy content and greenhouse gas emission factors for Scope 1, 2 and 3 emission for activities occurring typically in the tourism industry. Both national and international emission factors were obtained for entry into the EarthCheck Carbon Calculator. Compilation of a series of fact sheets on voluntary carbon offsetting for the Australian tourism industry.

**Eco-efficiency Workshops (2010)** - involved the development and presentation of eco-efficiency workshops to the food industry within the Brisbane City Council Region in line with BCCs Zero Waste Policy. The workshops were held in conjunction with Brisbane City Council and the Queensland Department of Employment, Economic Development and Innovation.

**EarthCheck Case studies and fact sheets (2009-2010)** - involved the development of case studies of Earthcheck-accredited tourism operators that have undertaken environmental initiatives. Ten case studies were developed. The case studies show how the operators have achieved their current level of environmental and social performance, and where possible include the financial payback periods and environmental benefits derived from their efforts. Useful information gleaned from the development of the case studies was also documented into 12 facts sheets for use by other operators to assist them implement similar improvements in their businesses.

**Sustainable Regions (2009)** - A pilot project undertaken in conjunction with EC3 Global to assist tourism operators in four regions around Queensland develop sustainable practices to support the promotion of Queensland as a sustainable destination. Tools were developed to assist individual tourism operators to examine energy, water and resource use, and waste and carbon emissions, and develop strategies to reduce their environmental footprint. The tools included a guide to assist companies undertake site audits, extensive lists of potential eco-efficiency opportunities, and guidance for undertaking a cost/benefit analysis of identified opportunities.

**Eco-efficiency in food processing and foundry industry project (2008-2010)** - involved updating previously-developed eco-efficiency resources for food processing, foundry industries and general manufacturing. A self-assessment checklist of eco-efficiency opportunities, aligned to the ecoBiz program, was also developed. To promote implementation, industry workshops were held, and a website set up as an eco-efficiency information portal for Queensland manufacturers [www.ecoefficiency.com.au](http://www.ecoefficiency.com.au)

**Dairy Manufacturers Sustainability Council Co-ordination (DMSC) (2006-2010)** - co-ordination of the Australian DMSC. This involved organising twice yearly forums on emerging environmental topics of interest to the industry. The DMSC brings members together allowing them to workshop solutions to problems facing manufacturers.

**Dairy Manufacturers Water Recycling Guidelines (2009)** - co-authored the Australian Dairy Manufacturers Water Recycling Guidelines in partnership with Dairy Innovation Australia. The guidelines outline a risk management framework (HACCP) and provide technical guidance to encourage the use of recycled water that is “fit for purpose”.

**Dairy Australia Greenhouse Gas Inventory (2008)** - a greenhouse gas inventory of the Australian Dairy Industry was compiled to assist Dairy Australia in their discussions with the government during the development stages of the Carbon Pollution Reduction Scheme.

**Dairy Australia 2004/2005 State of the Environment and 2007/08 Sustainability Report (2005 & 2008)** - these projects were undertaken for Dairy Australia to benchmark the Australian Dairy industry performance and develop a public report to showcase sustainability initiatives. The project involved gathering resource consumption and waste production data from Australian dairy manufacturers and assessing the performance of the industry in relation to specific key performance indicators.

**Small business eco-efficiency resources – shops, café and office (2007)** - development of fact sheets for the shops, cafés and offices on water, energy and waste reduction for the Queensland government. These resources form part of the small business edition of the Queensland government's ecoBiz tool.

**Development of checklists and review of Water Efficiency Management Plans (WEMPS) (2007)** - the project involved partnering with Brisbane Water to develop checklists used for the review of WEMPs and reviewed submissions of approximately 40 Category 4 users (>10ML/yr). WEMPS were also developed for a number of large manufacturing companies including Norco, Coca Cola and Australian Food Corporation.

**Water efficiency industry guidelines for Queensland Water Commission (2005-2006)** - documentation describing water efficiency case studies and eco-efficiency opportunities for laundries, food processing, food service and metal finishing for posting on QWC website. Development of template Water Efficiency Management Plans for the same industries.

**Development of an environmental risk assessment and EMS for Tyco Water (Carole Park) (2005)** - Development and implementation of an ISO 14001 accredited environmental management system at Tyco Water. This project included a gap analysis, the development of an action plan and the development and implementation of policies and procedures to enable Tyco Water Wacol to become an ISO 14001 accredited organisation by March 2006. Site-wide environmental training was also undertaken together with the development of an environmental induction video.

**Ecoefficiency for the Queensland Marine Industry (2004-2006)** - This project was undertaken for QLD Department of State Development, Trade and Innovation and the QLD Environmental Protection Agency. The project involved visiting 30 individual companies and compiling technical information on CP opportunities for boats builders and marinas in the form of 21 fact sheets which were distributed through the Qld Boat Industry Association.

**Ecoefficiency for the Australian Dairy Industry (2003-2004)** - This project was undertaken on behalf of Dairy Australia. It involved the production of an Ecoefficiency manual specific to Australian dairy processors. The project also included eco-efficiency assessments for individual processors, water audits and benchmarking studies.

**Ecoefficiency for the Queensland Food Industry (2003-2004)** - This project was undertaken for the Australian Industry Group, QLD Department of State Development, Trade and Innovation, QLD Environmental Protection Agency, Agriculture, Fisheries Forestry – Australia (AFFA), Australian Water Association (AWA) and Brisbane Water to promote EcoEfficiency to Queensland's food processing industry. The project involved assessments of individual companies, including evaluation of opportunities and production of an Ecoefficiency Toolkit including a reference manual, self-assessment guide and calculators.

**Evaluation of Water Management Plans for Brisbane Water Users (2002-2003)** - Water Management Plans were evaluated and reviewed for the largest users of water in Brisbane on behalf of Brisbane Water.

**Ecoefficiency Manual for the Queensland Meat Industry (2001–2002)** - The QLD Department of State Development, the EPA and Meat and Livestock Australia (MLA) funded this project to promote Ecoefficiency to Queensland's meat processing industry. The project involved the compilation of technical information on CP opportunities and the consolidation of this information into a reference manual and self-assessment tools.



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