

Stephen Drew BSc(Hons) MChemE

Stephen trained as a chemical engineer in the UK and has over 27 years of experience in the energy sector in New Zealand. Various roles and positions have helped Stephen become a specialist in energy efficiency, especially in the practical implementation of industrial projects.

Stephen started his career in New Zealand in the geothermal energy sector and soon established himself as a pioneer in the direct-use of geothermal heat. He managed the Rotorua Geothermal Task Force team in the mid-80's and significantly reduced draw-off through the installation of more efficient heating and control equipment.

Stephen then became noted for his work using pinch analysis, both in New Zealand and on industrial sites in the United States and Australia. Studies were undertaken in dairy, meat, fertiliser and pulp and paper.

While most of Stephen's experience has been within industry, he did spend time with Electricorp Marketing and ECNZ, managing their industrial programmes. On behalf of ECNZ, Stephen provided the energy efficiency evidence at Resource Consent Hearings.

During the first period of market change, Stephen helped EA Technology (UK) provide technical services to ECNZ and to network companies for the testing of switch-gear and cables. In 1998 EA Technology were on-hand to prepare the peer review of the failed Auckland cables which resulted in several security of supply studies for network companies.

In this role with EA Technology, Stephen worked closely with many New Zealand industrial companies, research groups and universities in the transfer of new and innovative electro-technologies to improve energy efficiency and New Zealand's international competitiveness.

Stephen's continuing interest is the implementation of practical demand-side participation or demand response programmes for the electricity industry. Again, some pioneering work was done using the Demand Exchange™ trading platform in 2001 and 2003 when wholesale electricity prices were high.

For the last four years, Stephen managed the contractor team as part of the Energy Reduction Project for Fonterra and became involved with the pilot, building the team, the roll-out to the largest 10 sites and then with common themes to support all of the 23 Fonterra manufacturing sites in New Zealand. This is possibly the most ambitious industrial energy efficiency project ever to be undertaken in New Zealand. Stephen has first-hand experience in investing in a portfolio of capital projects to make sustainable fuel and electricity savings. Fonterra's successful achievements in meeting a 10% energy reduction target, two years earlier than planned, have been recognised with two consecutive EnergyWise awards and an IPENZ engineering excellence award in November 2006.

Stephen's specific experiences in the energy sector have been:

- Director of Strata Energy Limited and responsible for new strategies in reducing emissions and sustainable engineering, 2007.
- Chief Executive Officer of Demand Response Limited and responsible for the compressed air systems pilot project for the Electricity Commission, 2005-2006.
- Chief Executive Officer of Demand Response Limited and responsible for the Fonterra Energy Reduction Project, 2002-2006.
- Visiting Industry Professional to Massey University, 2005.
- Director of Demand Response Limited and as a start-up transferred the Demand Exchange™ trading platform from the United States, 2001.
- Director of Hamer Technology Limited to distribute services to the high voltage industry in asset condition monitoring, 1998-2001.
- Director of Transfer-Tech Limited to commercialise new technology with EA Technology (UK), 1996-2001.
- Manager of the industry programmes in the Energy Services Group at ECNZ, 1991-1996.
- Senior Consultant with Linnhoff March DMR, 1988-1991.
- Manager of the Rotorua Geothermal Task Force Team for the Ministry of Energy, 1983-1988.
- Scientist with DSIR, specialising in geothermal energy, 1979-1983.

Through these many roles and positions, Stephen has learnt that there are four key elements to implementing industrial energy efficiency which will need to be put in place before sustainable solutions will be achieved:

- 1) **Leadership** – clear technical strategic direction at an engineering level provides the project management,
- 2) **Discipline** – energy monitoring and targeting, bench-marking and best practice principles are the glue that makes continuous improvement and long-term savings possible,
- 3) **Training** – up-skilling the workforce with the tools to save energy and to reduce emissions, then the transfer of this experience to others are the keys to locking-in savings,
- 4) **Team-work** – focussed multi-sector and multi-disciplinary teams make a difference and provide the platform to change the culture about reducing carbon emissions.

A presentation titled “*Less Talking and More Walking down the Energy Efficiency Road – the journey has begun*” was presented at the Sustainability Engineering and Science conference in Auckland in February 2007. A sporting analogy used these four human elements of leadership, discipline, training and team-work to describe how New Zealand needs to lift the game and learn to become a winner in energy efficiency.