



## Compressed Air Systems (CAS) Auditor Accreditation Scheme

### background.....

**Establishing the need for Action on Compressed Air** - The Compressed Air Systems (CAS) Auditor Accreditation Scheme aims to place increased focus on the efficient operation of compressed air systems in New Zealand industry. Consistent with overseas experience, pilot studies funded by the Electricity Commission and the Energy Efficiency and Conservation Authority (EECA) have identified significant potential for savings by compressed air users. The New Zealand studies also showed a need to raise awareness of the potential for energy savings, and confirmed support for such an initiative from larger users of compressed air and other participants in the compressed air industry.

**Who is running the Scheme?** - The CAS Auditor Accreditation Scheme is administered by the Energy Management Association of New Zealand (EMANZ)<sup>1</sup>, using standards developed by the Electricity Commission in conjunction with compressed air industry experts. EMANZ is dedicated to ensuring high standards of expertise in energy management and energy efficiency related services are available to industry, commerce and the public of New Zealand. EMANZ also currently runs the Accredited Energy Auditor Scheme.

**Who uses Compressed Air in New Zealand?** - The uses of compressed air are many and varied as indeed are the sectors using it. From the food processing sector to the automotive sector, from the printing and textile sectors to the plastics sectors - all are using compressed air in some way. An Electricity Commission study estimated that compressed air systems (CAS) consume 1,400 GWh of electricity every year in New Zealand. Industrial sites with CAS capacity of 75kW or more (an estimated 500 sites) consume around 75% of that electricity usage. The remaining 25% of CAS electricity is consumed by an estimated 6000 sites. A pilot project with Fonterra, Te Rapa demonstrated 32% of CAS energy savings were achievable on that site, by adopting a 'best practice CAS' approach to the plant management. Operational improvements alone achieved a 24% saving.

Overall, the Electricity Commission's *work* concluded that the "full realisable potential of energy savings as a result of a CAS best practice Programme across New Zealand is estimated at 240 - 250 GWh per year".<sup>2</sup>

That estimate is in close agreement with the findings of the subsequent *Potentials Study*<sup>3</sup> undertaken by KEMA on behalf of the Electricity Commission.

<sup>1</sup> [www.ema.org.nz](http://www.ema.org.nz)

<sup>2</sup> [www.electricitycommission.govt.nz/pdfs/opdev/elec-efficiency/industry/Fonterra-CAS-plot.pdf](http://www.electricitycommission.govt.nz/pdfs/opdev/elec-efficiency/industry/Fonterra-CAS-plot.pdf)

<sup>3</sup> [www.electricitycommission.govt.nz/pdfs/opdev/elec-efficiency/potential/Potentials-summary-Oct07.pdf](http://www.electricitycommission.govt.nz/pdfs/opdev/elec-efficiency/potential/Potentials-summary-Oct07.pdf)

**What are the benefits of a Compressed Air Audit?** - Compressed air is often considered industry's fourth "utility" (behind fuel, electricity and water) and is generally the most expensive industrial utility. New Zealand and international studies indicate that compressors offer high potential levels of savings (20 to 40% reduction in energy use). Inefficient and inappropriate use of compressed air cost businesses in wasted energy and money. A compressed air audit (using an Accredited CAS Auditor) can identify cost effective actions to deliver savings. Some actions might be as basic as 'repairing leaks' or 'reducing the system pressure' or eliminating 'inappropriate uses'. Others might relate to reducing pressure losses across the system or how the compressors (in a compressor bank) are integrated to best effect. Some actions will require minor maintenance expenditure whereas others will be more capital intensive.

## **Knowledge and experience....**

**Becoming an Accredited Compressed Air Systems Auditor** - In order to become an Accredited CAS Auditor it is necessary for applicants to satisfactorily complete a specific Compressed Air Systems Education Course, and also to satisfy the requirements for accreditation in relation to practical experience. Applicants will be assessed by EMANZ (in its role as the CAS Auditor Accreditation Scheme Administrator) to determine that they meet the education and experience requirements and are competent to undertake CAS audits according to [guidelines and standards](#)<sup>4</sup> maintained and published by the Electricity Commission.

**What are the Education Requirements?** - The education requirements for CAS Auditor Accreditation are met by successfully completing the Compressed Air Systems Education Course.

There may be some practical experience requirements for course entry, to ensure that applicants have sufficient background to get the most out of the course.

The CAS education course includes both theory and practical components.

**What are the Experience Requirements?** - For CAS Auditor Accreditation, an applicant must be able to demonstrate appropriate practical experience and good communication skills to the EMANZ Assessors. The experience typically will involve practical involvement with compressed air systems. With or without direct CAS experience, applicants must be able to demonstrate capabilities in a number of the following:

- operating, servicing or maintaining industrial equipment;
- familiarity with industrial process design and/or control;
- experience in industrial process auditing, analysis and reporting;
- business operation with a level of responsibility and autonomy;
- skills in quantifying, analysing, communicating and reporting on technical issues.

**Who is providing the Education?** - The Education Provider is the University of Waikato. The course will be delivered by tutors with excellent credentials (both academic and

<sup>4</sup> [www.electricitycommission.govt.nz/opdev/elec-efficiency/Industrial](http://www.electricitycommission.govt.nz/opdev/elec-efficiency/Industrial)

practical) and utilise comprehensive compressed air training facilities on the University campus.

**How long will the Accreditation Process take?** - The University of Waikato course is distance learning combined with a practical hands-on component. The full course covers one university semester - about 4 months, requiring a total commitment of around 70 to 110 hours study time and 32 hours practical learning conducted over two 2-day blocks. The first course starts in mid-July 2008. Following successful completion of the education course, applications for CAS Auditor Accreditation can be submitted to EMANZ. The processing of an application by EMANZ is expected to be completed within 3 weeks of receipt.

**How much will it cost?** - The attendance fees for the University of Waikato education course are \$422 + GST for 'graduate diploma' enrolments (that qualify for the Tertiary Education Commission subsidy) and \$1,937 + GST for 'continuing education' enrolments. These fees exclude any specific application fees, which (if applicable) will be detailed by the University at the time of registration.

The fee that EMANZ will subsequently charge for the assessment of an application to become an Accredited CAS Auditor is currently set at \$1,000 + GST.

Therefore, depending on whether an applicant enters through the 'graduate diploma' or 'continuing education' route, the current total cost of accreditation is either \$1,422 or \$2,937 (excluding GST and any specific application fees).

## **further information...**

**Where can I find out more?** - The scheme administrator is currently developing detailed requirements and a web-site focussed on the scheme. Until this site is functioning, enquiries about the scheme should be directed to Connie Crookshanks (Provisional Scheme Administrator) at 027 472 8038 or [connie@compressedairaudit.org.nz](mailto:connie@compressedairaudit.org.nz).