NATIONAL APPLIANCE AND EQUIPMENT ENERGY EFFICIENCY PROGRAM

Minimum Energy Performance Standards

PACKAGED AIR COMPRESSORS

The March 2001 plan by the National Appliance and Equipment Energy Efficiency Committee to improve product energy efficiency

AN AUSTRALIAN AND NEW ZEALAND MINERALS AND ENERGY COUNCIL INITIATIVE FORMING PART OF THE NATIONAL GREENHOUSE STRATEGY

Minimum Energy Performance Standards: Packaged Air Compressors

OVERVIEW

The National Appliance and Equipment Energy Efficiency Committee (NAEEEC) is collecting information for consideration by the Australian and New Zealand Minerals and Energy Council (ANZMEC) about the appropriateness of minimum energy performance standards (MEPS) or a range of voluntary measures, for improving the efficiency of evaporative air conditioners.

MEPS are a government regulatory program stipulated in state and territory law that excludes from the market, products that do not meet the minimum energy performance levels. NAEEEC is a Commonwealth, State and Territory (and New Zealand) group of energy efficiency officials and regulators that implement the program. ANZMEC comprises the Minister of State from each Australian jurisdiction and New Zealand responsible for energy matters.

This summary report rejects nationally consistent mandatory standards for packaged air compressors on the basis that it would fail to meet the prerequisite cost benefit requirements for national law making. NAEEEC however seeks community and stakeholder comment on proposals to improve the energy efficiency of these products to ensure that the best-available products are promoted and sold in the Australian marketplace.

PUBLIC COMMENTS INVITED

NAEEEC seeks comment on the proposals contained in this plan from any interested person or organisation. Please address you comments in writing to:

AUSTRALIAN Greenhouse Office

Energy Efficiency Team
Australian Greenhouse Office
GPO Box 621
Canberra ACT 2601

Facsimile: (02) 6274 1884
Email: energy.efficiency@greenhouse.gov.au

Comments received by 1 July 2001 will help NAEEEC to advise ANZMEC of stakeholder views on the approach being proposed for commercial water heaters and also to shape any future voluntary program.

On 24 April 2001, the Sustainable Energy Development Authority and the Australian Greenhouse office will host a forum to discuss the development of a voluntary program at the Novotel Hotel in Homebush, NSW. Persons interested in attending should contact Renata Byrce by email rbryce@seda.nsw.gov.au (This forum is free of charge).

SEDA is also holding a technical training seminar on Energy Efficiency for Compressed Air Systems in the morning for half a day. Please email Renata if you are interested in attending this technical training session (cost $275 incl. GST).

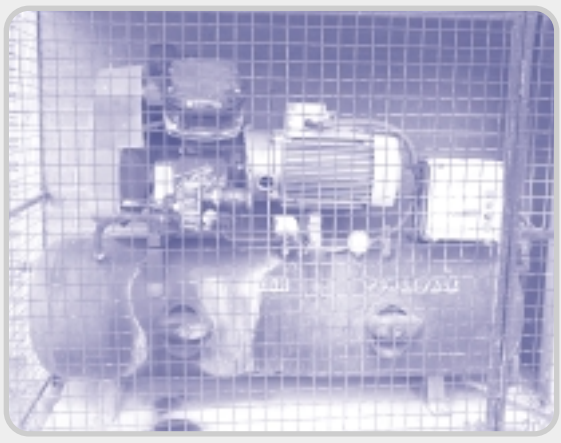
INTRODUCTION

Program goals

Energy consumed by equipment and appliances is a major source of greenhouse emissions. Codes and performance standards programs are amongst the most effective and widely used measures throughout the world to reduce greenhouse emissions attributable to this source. In 2000 for example, 25 of the 29 OECD countries had such programs and, within our region, New Zealand announced plans to institute a similar program in the near future.

The Australian Appliance and Equipment Energy Efficiency Program provides an important stimulus for the development of world-class energy efficient products. Benefits can flow through to the general community in the form of monetary savings from lower operating costs and increased employment levels resulting from Australian industry's ability to exploit potential export markets.

Under the 1998 National Greenhouse Strategy, responsibility for this program rests with ANZMEC. It is committed to improving this national program and has authorised NAEEEC to develop and publish plans for those products targeted for MEPS. These plans represent a transparent way for government agencies to explore community and stakeholder support (for both mandatory and voluntary measures) to reduce greenhouse gas emissions produced by these types of equipment.



1999 Expansion

In 1999, ANZMEC accepted proposals from NAEEEC to include in its program any items of industrial or commercial equipment identified as a significant contributor to the growth in energy demand or greenhouse gas emissions. Each product proposed for MEPS will be subject to both a feasibility assessment and public consultation before any final decision is made. These assessments will include technical and economic cost-benefit analyses as well as consideration of all supervisory measures available (voluntary, mandatory or a combination of both) to ensure that the most appropriate energy efficiency regime for that specific product is chosen.

The NAEEEC work program contains a list of all products scheduled for consideration and is available at the Australian Greenhouse Office website.

This packaged air compressor plan plays an important role in the ANZMEC process, communicating the potential levels and timetable for regulatory and voluntary initiatives in general terms. It also demonstrates the extent to which Governments want all stakeholders to participate in the development of policies to meet the challenge of reducing the climatic affects of energy intensive products.

PACKAGED AIR COMPRESSORS

Commercial products encompassed by the term packaged air compressors include reciprocating single-acting air compressors and rotary screw compressors with an input power up to 20 kW.

These products cover all domestic and the majority of commercial applications, although it excludes many industrial uses. Domestic use can be characterised as intermittent and may total less than a few hundred hours per year. Commercial applications range from intermittent use (for example pneumatic tools) to seasonal (recreation services) to continuous (medical uses).

Total annual sales of air compressors (< 20kW) are approximately 100,000 units, with a stock of around 1,000,000 units. Around 90% of all these units are electrically driven of which 63% are single phase and 37% are three-phase. Petrol engine units make up about 9% of the market and diesel the remainder.

There are at least 17 suppliers of commercial air compressors in Australia, some of which manufacture components or complete compressors, while others import packaged units. In 1999, just over 6,000 air compressors were imported and most of these units petrol or diesel driven.

A more detailed description of these products can be found in a report commissioned by NAEEEC held at www.greenhouse.gov.au/energyefficiency/

WHY ARE PACKAGED AIR COMPRESSORS BEING CONSIDERED FOR MEPS?

The main reason for considering MEPS for packaged air compressors is that greenhouse gas emissions resulting from the current installed stock in Australia are significant, estimated to be 4,100 kt CO_2-e per annum. More than 90% of emissions are estimated to be attributable to compressors in the range between 2.25 kW and 20 kW.

NAEEEC does not consider the development of MEPS for packaged air compressors to be cost-effective for the following reasons:

- The majority of the potential savings accrue from the improvement in the design, operation and maintenance of the *whole compressed air system* and the associated downstream uses, which are not amenable to influence through MEPS.
- The most significant barrier to improved efficiency appears to be the supply of information to the purchaser.
- NAEEEC proposes to implement MEPS for electric motors in 2001, which will go some way towards improving the performance of air compressors.
- MEPS have not been introduced for air compressors elsewhere in the world.

ELEMENTS OF THE VOLUNTARY PROGRAM

NAEEEC notes that the Australian Motor Systems Challenge Program managed by the Commonwealth Department of Industry, Science and Resources will have some impact on compressors that are assembled in Australia. NAEEEC wishes to explore with the compressor industry a more specific best practice program focussing on system design, operation and control information (which could be similar to the US Compressed Air Challenge). The first stage could include the promotion of leak reduction programs.

In parallel, NAEEEC would like to enlist the support of stakeholder organisations in the improvement and use of ISO1217 as the accepted methodology for measuring air compressor efficiency. NAEEEC believes that there is a role for industry and government jointly to provide information to consumers on the performance of air compressors.

NAEEEC would also consider supporting any industry calls for a voluntary efficiency endorsement program (including labelling) that helps identify and endorse the better products on the market.