AUSTRALIA ON ITS OWN!!

WHAT CAN BE LOST
BY NOT PARTICIPATING
IN IEA PROGRAMMES

AUSTRALIAN GAS COOLING TASK FORCE MEETING

SYDNEY 16 July 2002

presented by

PAUL McGREGOR

Chairman, **CADDET NSW State Team**

& Director, **McGregor & Associates**

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IEA OECD heat pump programme

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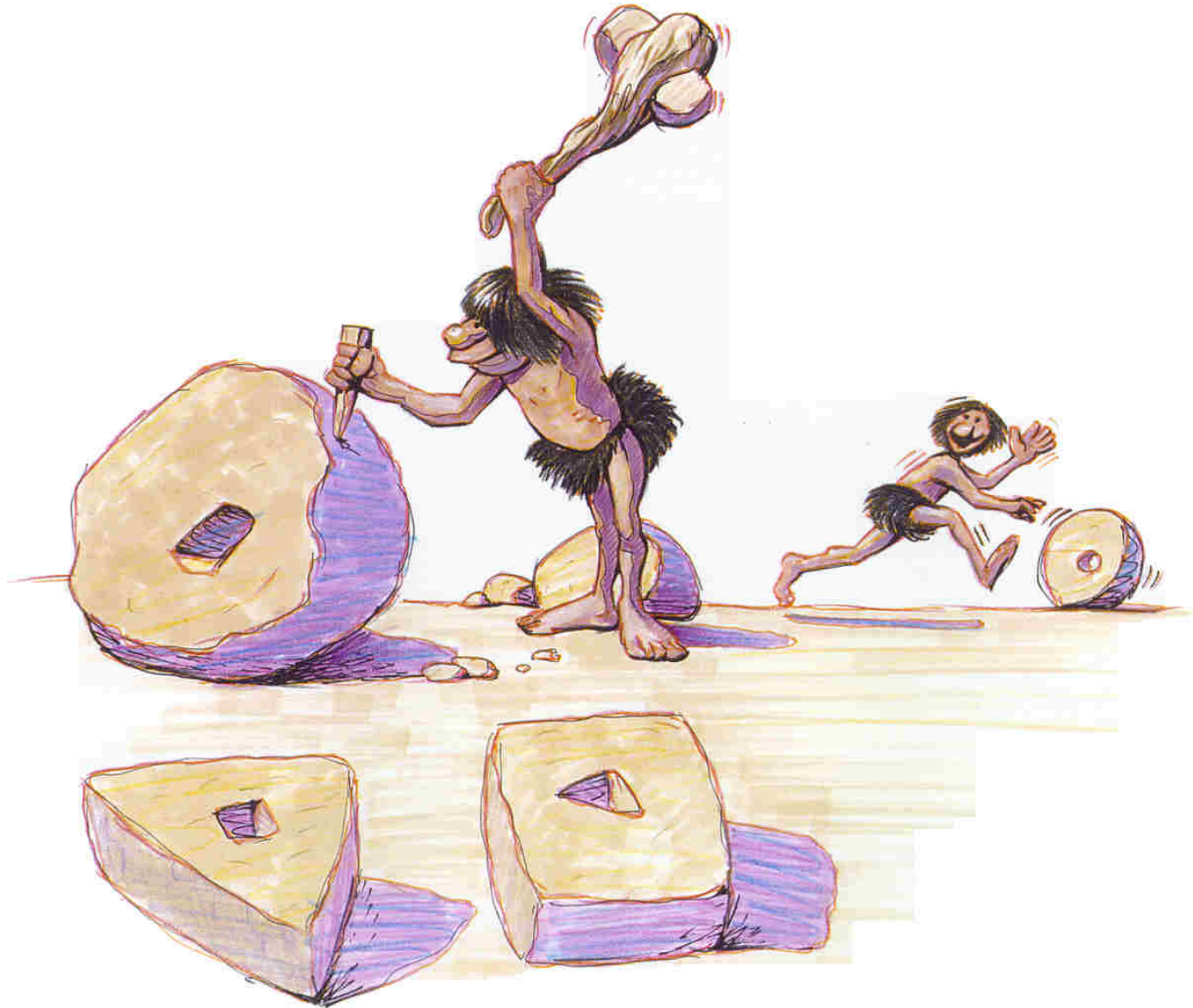

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WHY DO WE ALWAYS WANT TO REINVENT THE WHEEL?

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OR

IN THIS CASE

THROW AWAY THE

WHEEL!!

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- INDUSTRY ASSOCIATIONS
- PROFESSIONAL INSTITUTES
- SUPPLIERS
- FRIENDS & ASSOCIATES
- JOURNALS
- CONFERENCES

+

- CADDET and the HPP

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ARE

VALUABLE

RESOURCES

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- *Are international energy information sharing networks*
- *Part of the International Energy Agency's (IEA) activities set up within the framework of the Organisation for Economic Cooperation & Development (OECD)*

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- **CADDET** facilitates the sharing of expertise in **energy efficiency** & **renewable energy** applications

- **CADDET publications** promote energy saving technologies to the world

- ***The EE + RE Registers (now called InfoStore) – are databases of over 1500 international demonstration projects***

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- The CADDET EE + RE Newsletters (InfoPoint) features articles on energy efficiency projects, together with information on more general energy matters, legislation and government policy in participating countries.
- Subscription is FREE
- These will no longer be available

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WITH CADDET

ARE THERE MANY

BENEFITS TO

AUSTRALIA??

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RESULT 112

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AU 92.002/3C.F02

Light tunnel in building

Light tunnel for natural daylighting of Australian school

Summary

The Park Ridge Primary School in Victoria, Australia has been constructed to an innovative design which optimizes energy efficiency, with particular attention to natural daylighting of all spaces. Daylight is admitted to rooms via east-west aligned skylights which direct the light onto acrylic baffles from where it is reflected onto the white-painted ceilings. From there it is reflected down onto the work plane.

This system gives regular, even light and provides up to 70% of the school's light requirements. A lighting control system has been installed for supplementary lighting, when needed. The design could be readily adapted to other types of single storey, non-residential buildings.

Highlights

- Energy-efficient school building
- Savings of up to 70% in lighting costs
- Applicable in single storey non-residential buildings
- Zero payback period on new buildings

Interior of classroom showing light tunnel and baffles to reflect daylight.

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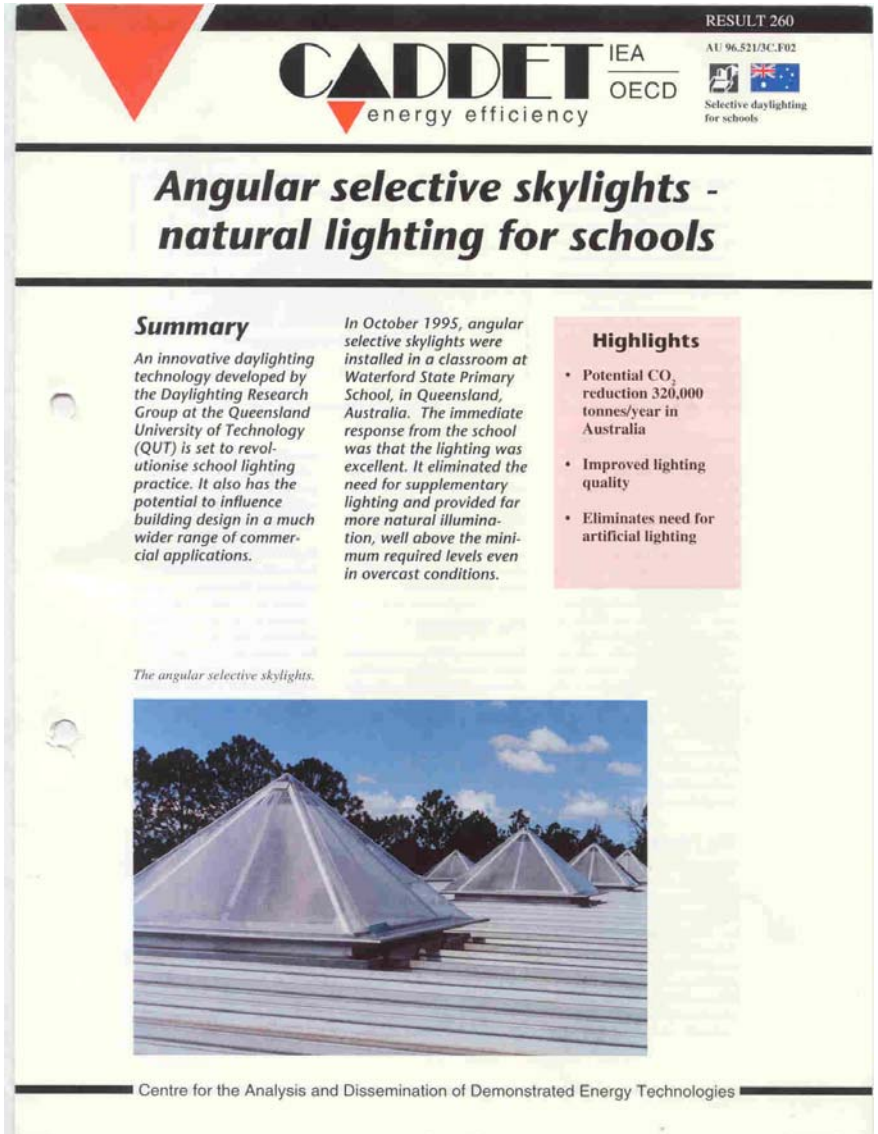

RESULT 260

CADDET energy efficiency IEA OECD

AU 96.521/3C.F02

Selective daylighting for schools

Angular selective skylights - natural lighting for schools

Summary

An innovative daylighting technology developed by the Daylighting Research Group at the Queensland University of Technology (QUT) is set to revolutionise school lighting practice. It also has the potential to influence building design in a much wider range of commercial applications.

In October 1995, angular selective skylights were installed in a classroom at Waterford State Primary School, in Queensland, Australia. The immediate response from the school was that the lighting was excellent. It eliminated the need for supplementary lighting and provided far more natural illumination, well above the minimum required levels even in overcast conditions.

Highlights

- Potential CO_2 reduction 320,000 tonnes/year in Australia
- Improved lighting quality
- Eliminates need for artificial lighting

The angular selective skylights.

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SKYDOME INDUSTRIES USED THIS CADDET RESULT AS A MARKETING AID – THEY OBTAINED COPIES OF THE PLATES FROM CADDET!!

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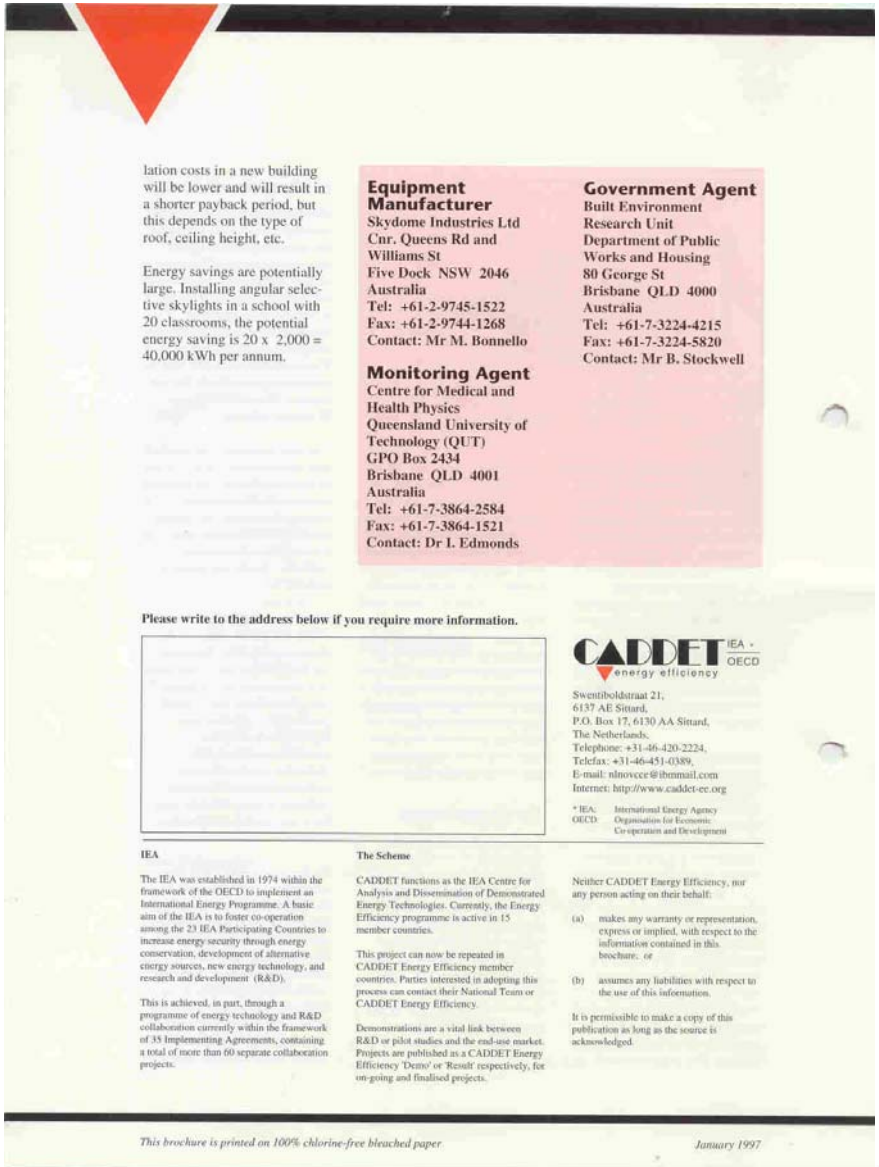

lation costs in a new building will be lower and will result in a shorter payback period, but this depends on the type of roof, ceiling height, etc.

Energy savings are potentially large. Installing angular selective skylights in a school with 20 classrooms, the potential energy saving is 20 x 2,000 = 40,000 kWh per annum.

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* IEA: International Energy Agency
OECD: Organisation for Economic Co-operation and Development

IEA

The IEA was established in 1974 within the framework of the OECD to implement an International Energy Programme. A basic aim of the IEA is to foster co-operation among the 23 IEA Participating Countries to increase energy security through energy conservation, development of alternative energy sources, new energy technology, and research and development (R&D).

This is achieved, in part, through a programme of energy technology and R&D collaboration currently within the framework of 35 Implementing Agreements, containing a total of more than 60 separate collaboration projects.

The Scheme

CADDET functions as the IEA Centre for Analysis and Dissemination of Demonstrated Energy Technologies. Currently, the Energy Efficiency programme is active in 15 member countries.

This project can now be repeated in CADDET Energy Efficiency member countries. Parties interested in adopting this process can contact their National Team or CADDET Energy Efficiency.

Demonstrations are a vital link between R&D or pilot studies and the end-use market. Projects are published as a CADDET Energy Efficiency 'Demo' or 'Result' respectively, for on-going and finalised projects.

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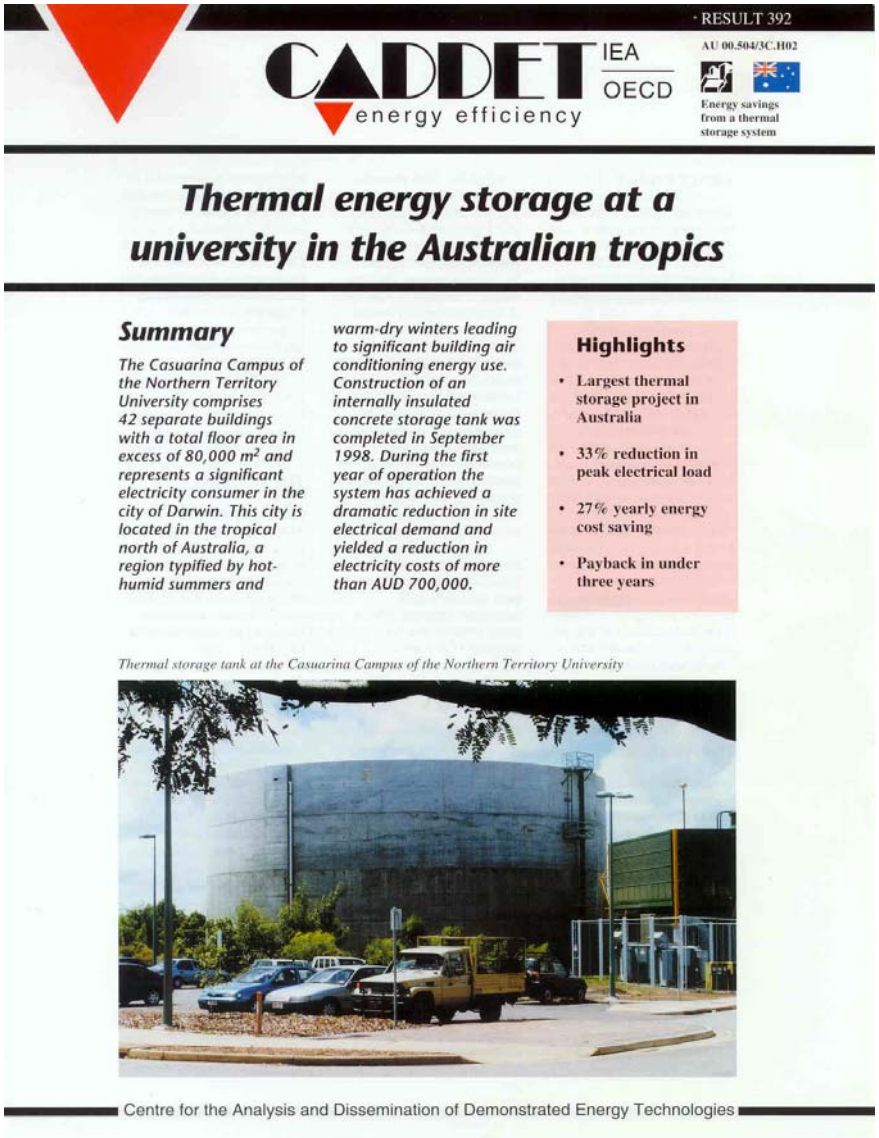

· RESULT 392

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AU 00.504/3C.H02

Energy savings from a thermal storage system

Thermal energy storage at a university in the Australian tropics

Summary

The Casuarina Campus of the Northern Territory University comprises 42 separate buildings with a total floor area in excess of 80,000 m² and represents a significant electricity consumer in the city of Darwin. This city is located in the tropical north of Australia, a region typified by hot-humid summers and warm-dry winters leading to significant building air conditioning energy use. Construction of an internally insulated concrete storage tank was completed in September 1998. During the first year of operation the system has achieved a dramatic reduction in site electrical demand and yielded a reduction in electricity costs of more than AUD 700,000.

Highlights

- Largest thermal storage project in Australia
- 33% reduction in peak electrical load
- 27% yearly energy cost saving
- Payback in under three years

Thermal storage tank at the Casuarina Campus of the Northern Territory University

Centre for the Analysis and Dissemination of Demonstrated Energy Technologies

THE CONSULTANT WHO DID THIS PROJECT HAS RECEIVED A DIRECT INQUIRY FROM AN OVERSEAS COUNTRY TO SUBMIT A PROPOSAL AS A RESULT OF THIS CADDET RESULT SHEET!!

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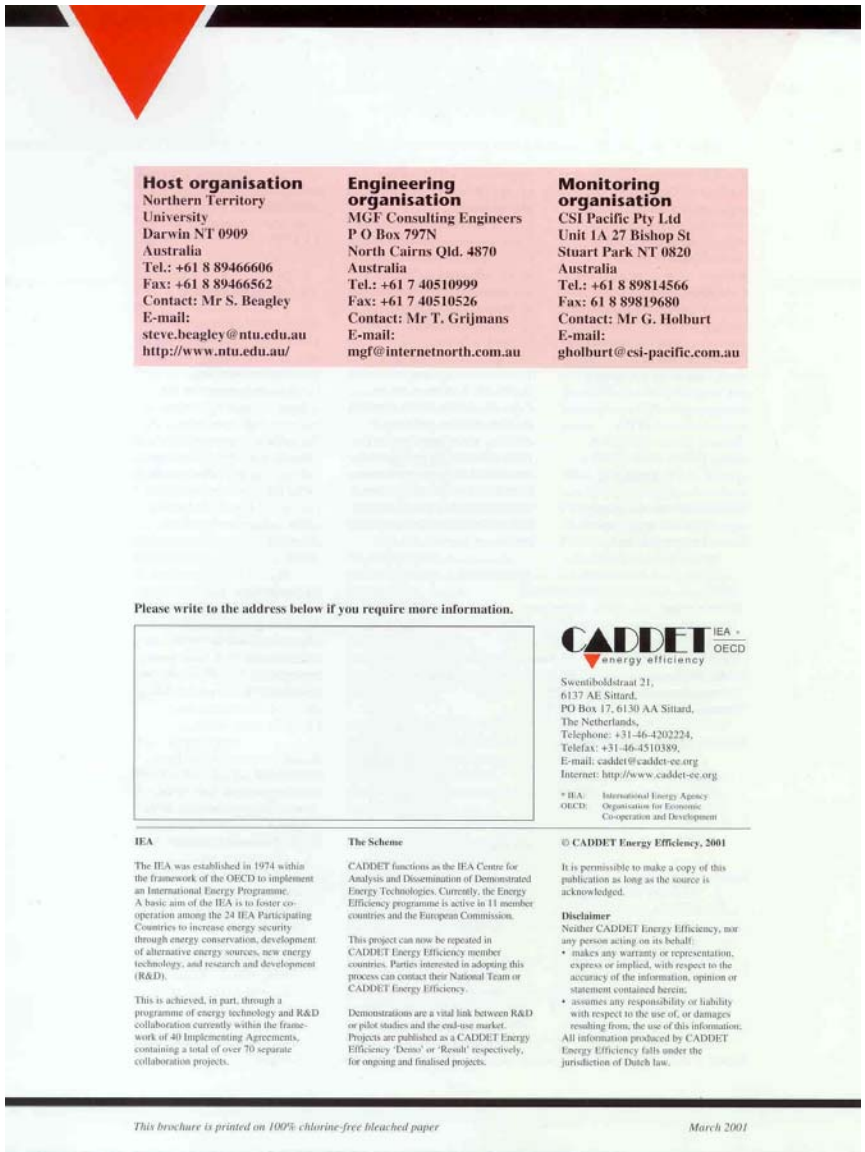

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* IEA: International Energy Agency
OECD: Organisation for Economic Co-operation and Development

IEA

The IEA was established in 1974 within the framework of the OECD to implement an International Energy Programme. A basic aim of the IEA is to foster co-operation among the 24 IEA Participating Countries to increase energy security through energy conservation, development of alternative energy sources, new energy technology, and research and development (R&D).

This is achieved, in part, through a programme of energy technology and R&D collaboration currently within the framework of 40 Implementing Agreements, containing a total of over 70 separate collaboration projects.

The Scheme

CADDET functions as the IEA Centre for Analysis and Dissemination of Demonstrated Energy Technologies. Currently, the Energy Efficiency programme is active in 11 member countries and the European Commission.

This project can now be repeated in CADDET Energy Efficiency member countries. Parties interested in adopting this process can contact their National Team or CADDET Energy Efficiency.

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Greenhouse gas technology information exchange

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GREENTIE

Greenhouse gas technology information exchange

- An intergovernmental information centre on greenhouse gas mitigating technologies
- Operates a worldwide technology database
- Established by the IEA and the OECD

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GREENTIE

The **GREENTIE DIRECTORY** provides access to information on suppliers of technologies, services, research, data and literature pertinent to greenhouse gas mitigation.

www.greentie.org

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WHAT ARE THE COSTS

TO AUSTRALIA??

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The **investment** per annum for CADDET in Australia is currently:

A$185,000 for membership in the three programmes

A$200,000 for Auroa Energy's management (CADDET Australia)

A$60,000 for ANT meetings and related costs

A$30,000 for DITR international travel and costs (EETIC ExCo meetings etc)

A$125,000 for DITR salaries

A A$600,000 **Total Investment**

HEAT PUMP PROGRAMME

The new contribution levels are

€ 10,000 / A$ 18,000 (small countries),

€ 15,000 / A$ 27,000 (medium) and

€ 40,000 / A$ 72,000 (large).

Australia would possibly be able to argue for a *small country* contribution.

HPP ANNEXES

The optional cost of HPP Annexes depends on how many countries participate

For instance, participants of

Annex 26 (Advanced Supermarket Refrigeration/Heat Recovery) contribute US$ 10,000 (A$ 18,500).

For Annex 27 (CO_2 Technologies) it is US$ 9,000 (A$16,500).

Absorption Machines for Heating and Cooling in Future Energy Systems

Introduction

This project, which was concluded in June 1999, aimed to analyse the reasons behind the still limited implementation of absorption technology in heating and cooling. Participants in this project contributed by gathering relevant national information and by participating in two workshops. Its objectives were to gain a better understanding of market opportunities for absorption machines (machines using either absorption or adsorption technology), improve understanding of the technology, and disseminate information.

Objectives

The objectives of the project were:

- To study the present industrial and non-industrial applications of absorption technology for heating and cooling
- To list and evaluate ongoing national research programmes concerning absorption technology
- To identify new systems and new cycles utilised since 1990 (Annex 14)
- To identify technical, economical, environmental and political obstacles for introducing absorption technology
- To find ways to overcome the obstacles
- To clarify environmental and political issues that strengthen or weaken absorption technology in relation to competing technologies.

- Can Still Use the International Web sites

CADDET's Renewable Energy site @
www.caddet-re.org

CADDET's Energy Efficiency site @
www.caddet-ee.org

GREENTIE DIRECTORY site @
www.greentie.org

HEAT PUMP PROGRAMME site @
www.heatpumpcentre.org

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