



REFRIGERATED WAREHOUSE & TRANSPORT ASSOCIATION OF AUSTRALIA LTD

cold running

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CLIMATE CHANGE, CARBON TRADING AND THE COLD STORAGE INDUSTRY

Professor Ross Garnaut recently released his report on emissions trading, and the federal government Green Paper on the same topic has just appeared. The federal opposition is mounting a campaign to slow the introduction of an emissions trading system (ETS) while others are urging the government to stick to the 2010 timeline and implement the ETS widely and quickly. Current consensus is not on “whether”, but “when” an ETS should be implemented.

Therefore, whether or not you are a “believer” in climate change, business operators must face the realities that an ETS will bring to business, whether or not the system is introduced in 2010 as appears likely.

The cold storage industry will be impacted by an ETS is several ways, and now is the time to consider and evaluate the potential exposure to the effects of an ETS, and how best to minimize these and gain maximum competitive advantage in the process.

An ETS works on the basis that the right to emit CO₂, or CO₂ equivalent emissions,

must be paid for at a market driven price. Different emission sources will be treated in different ways by the system, depending on a range of considerations. However, in practical terms any activity that directly or indirectly causes such emissions will become more expensive on introduction of an ETS. This encourages the industry to emit less, and give a competitive advantage to those that do.

The cold storage industry will feel the pinch primarily in three key areas:

- 1) Increased cost of electrical power
- 2) Increased cost of fuels (diesel, petrol, gas)
- 3) Increased cost of synthetic refrigerants (R22, R404a, etc)

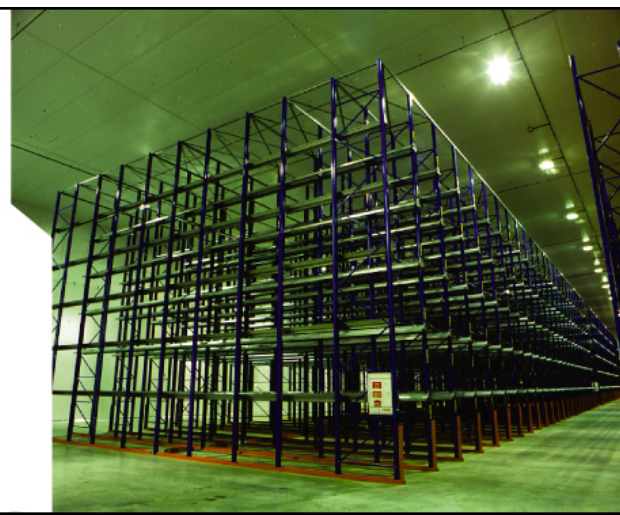
The extent to which these prices rise depend in turn on the amount of emissions caused by the activity. Power costs will increase more in Victoria, where brown coal is widely used, than in New South Wales, where gas is more widely used, for example. Refrigerants such as R404a, widely used in cold storage, will become

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CLIMATE CHANGE, CARBON TRADING AND THE COLD STORAGE INDUSTRY (Cont)

substantially more expensive (possibly more than \$150/kg, depending on carbon costs), whilst environmentally friendly gases like ammonia will not be impacted at all.

In view of the above, cold storage operators would be well advised to review their options both in relation to minimizing power consumption, and minimizing the consumption of synthetic refrigerants (R22, R404a, R134a, R507, etc). Such carbon-footprint reducing actions to consider include:

- 1) Review energy savings potential on existing refrigeration plant. Most existing refrigeration systems have been built to a capital cost budget, often without much attention to power consumption. High energy consumption during part-load periods are often the result.
- 2) Review refrigerant leakage rates on systems using R22, R404a, R507 or similar fluorocarbon refrigerants. Older systems with high leakage rates (>10% per annum) should be replaced as soon as possible to avoid substantial running costs when the ETS starts.
- 3) Future-proof any new refrigeration systems using natural refrigerants (such as Ammonia and Carbon Dioxide, possibly in conjunction with a secondary refrigerant such as Glycol) as these will not be impacted by an ETS. Natural refrigerants can offer significant energy savings over HFC systems, and ensure that the new systems offer highest efficiency under all operating conditions, from the heat of summer to cold winter conditions.

Energy savings can be found in many areas, which include:

- avoiding unloaded operation especially of large industrial screw compressors
- variable head pressure control to make good use of cooler ambient conditions
- heat recovery to displace electric heating elsewhere
- variable suction and interstage setpoint temperatures to

make use of greater night-time efficiencies

- improved staging control of compressors
- variable speed condenser fans to reduce fan motor power

Considering that power is fast becoming one of the largest operating costs of a cold storage facility, only 5-10% reduction in power consumption can amount to a significant savings. Experience has shown, however that many existing plants can offer annual savings figures in the order of 25%. With an ETS potentially adding 3-4c/kWh to consumption charges, such savings can make a big difference in the bottom line.

A good starting point is a careful review and observation of the site and plant operating characteristics. Often many issues can be identified within a few hours on site, but often more lengthy monitoring of the plant is needed to establish the extent of potential energy savings to investment grade accuracy.

Technology is available, at affordable costs, to minimize the carbon footprint of new and existing cold storage facilities. Invest in these now, and save a mint when the ETS comes our way.

(Dr Michael Bellstedt is the Director of Minus40 (www.minus40.com.au), a Sydney-based consulting firm specializing in refrigeration and thermal engineering. Minus40 has substantial expertise in identifying and scoping energy improvement projects on commercial and industrial refrigeration plant.)

Dr Michael Bellstedt will present his paper at the 2008 RWTA Conference.

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IMPRESSIONS ON MY VISIT TO CHINA

June 2008 Gabor Hilton

General

Within the last two decades, China has reinvented her economy and society in a fashion never seen before. With unfurling prosperity, relentless ambition and membership of the WTO, China's future is destined to be even more remarkable than her past. The effects of opening to the outside world have been dramatic and while the Communist still prevails, most Chinese value spending power more than political power. The 'iron rice bowl' system, under which the government took care of all peoples from cradle to grave, has been shattered into unrecognizable pieces.



In 1979, Deng Xiaoping opened the flame of reform, setting up coastal zones for economic development and promoting private enterprise. His famous saying 'it does not matter what colour the cat is as long as it catches mice', set the mood for a modernization policy based on 'socialism' with Chinese characteristics where "making money is glorious". Following Deng's death in 1997, Jiang Zemin presided over the radical restructuring of industry, rapid urbanization and the nation's integration into the world's political and economic scene.

The new leaders of the party planned to quadruple the 2002 GDP by 2020 and to manage the development to a 'well off' society. Affluence is clearly visible in the major cities.

20 years ago, there were hardly any cars amongst the bicycles crowding the streets. Today, the latest model European, American, Japanese and Korean cars are choking the wide tree lined boulevards in major cities.

Clean and luxurious air-conditioned shopping malls display abundant supplies of luxury and designer goods, fashion and furniture. Modern, well appointed apartment blocks and villas are appearing by the thousands everywhere. Solar panels are seen everywhere.

The older generation is still very frugal but as most young people cannot afford a car and live at home until married, they have more disposable income. They travel, buy designer brands (copies are sold only to foreigners) and have mobile phones and expensive watches. The younger generation is well dressed, happy and has faith in China's future under the Communist government.

Very little English is spoken except in the hotels and tourist areas. In tourist areas, most street signs are also in English (or "Chinglish" because of the awful grammar and spelling). As English is now compulsory from primary school to graduation, more of the young generation will speak it in the future.

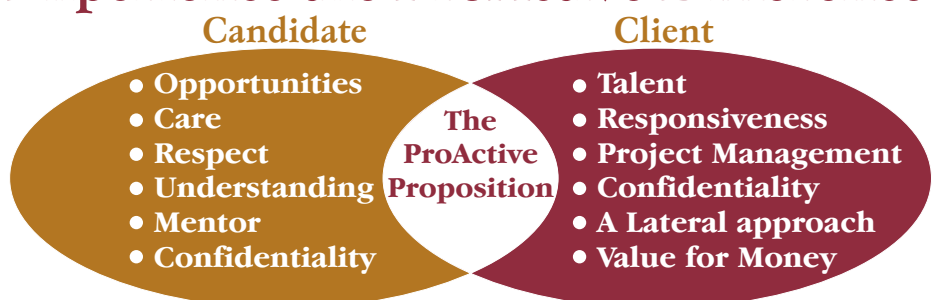
The media appears to be quite free and open and critical of government failings. CNN, BBC, CNBC and Bloomberg as well as foreign newspapers are freely available. The local newspapers appear to be censored and the news is filtered by the government.

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Some Statistics

Population 1.5 billion, 22 in 100 people in the world are Chinese.

Monthly income:

School Teacher RMB 4000 = AUS \$600

Police Man RMB 8000 = AUS \$1200

Single Pension RMB 2000 = AUS \$300

Petrol RMB 5.50 = AUS 88 cents

One Child Policy

There is still a one child policy for all but for non-ethnic Chinese (about 10% of population). If both parents are from one child families, they may have two children but the second child will not get government benefits (free school, medical care). Rural farmers may also have more than one child as well as people who lost their only child.

Travel

More and more Chinese are having holidays outside China. Chinese were able to visit Hong Kong and Macao as early as 1983. Thailand, Singapore, Malaysia and Philippines were accessible by 1992 followed by Australia and South Korea in 1988.

Travel to the USA was only allowed in 2007. As luxury goods in China attract 30% sales tax, more locals go abroad to shop tax free.

The average Chinese spends about US\$987 on shopping, Last year 40.95 million Chinese went abroad. This year's total expected to grow by 10% to 45 million, still only 0.067% of the population. Watch out when they get wealthier.



Electricity

Electricity charges are fixed by government and the increasing cost of oil, gas and coal are squeezing the power generator's profits. Coal is the primary source of energy for two-thirds of the electricity produced in China. Coal costs comprise 50-70% of the power generator's expenses. The average cost of coal at the port for delivery is 670 Yuan per ton (AUS\$106), up 21.8% since December and 34% since January 2007. Local production can't keep up with the much faster rise in demand, made worse as many smaller coalmines have been closed due to poor safety. The current cost of electricity is 0.0252 Yuan/kWh (0.39 cents AUS) China is building two average size coal fired power stations every week.

China is ramping up its nuclear power production, targeting a total of 60GW by 2020. Its current capacity is 9GW, less than 2% of its total installed capacity. It has to start construction of four new generators a year through to 2015 to meet this goal. China's electricity consumption is going up so fast that even with this expansion, nuclear power will only provide 5% of its electricity. China hopes to become an exporter of nuclear power plants.

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Economy

Since 1979, China has lifted over 300 million people out of poverty. By 2005 the country has attracted more than five hundred and fifty billion dollars in direct foreign investment. A colossal manufacturing infrastructure has been assembled on the Yangtze delta. The lives of millions of Chinese have improved beyond recognition and the effects are slowly trickling down across the country.

The economy is in uncharted waters. There is no turning back to the old Maoist certainties of the planned economy; but equally there is no chart to help the very small group of people, the seven or eight men and woman who constitute the core of Chinese leadership, to navigate more than a billion people into the future.

Corruption in the middle ranks of government means that the central government has to make the most extreme efforts in order to transmit sensible national policies to the local level and to tackle the root causes of recurring unrest.

China is fragile and difficult to govern. The Government knows that every so often, at regular intervals in its long history, China has suffered complete system collapse and the whole of its political economy and civil society has dissolved into chaos. If that happened again, it would be a catastrophe that would render the whole of the past 29 year's progress to be completely meaningless and, because of the size of China and the degree of integration with the global economy, it would be a disaster for the whole world.

Environment

In most areas not visible to the tourists, there is an almost complete degradation of the natural environment: seven out of the ten most polluted cities in the world are in China. In many places, the ground is black, the riverbeds are just smashed rocks and thorn bushes; deforestation and dense smog that hangs over most cities are unbelievable.

China has to feed nearly a quarter of the world's population on one seventh of the planet's arable land.

China's longest river (the Yangtze) is "cancerous" with pollution and is rapidly dying, threatening drinking water supplies in 186 cities along its banks, including Shanghai. Just 31 percent of the water is of first or second class quality, with 35 percent under the third class. If no measures are taken to curb pollution, it is possible the river will have 70 percent of its water below the third class in three to five years.

China is facing a serious water crisis -- 300 million people do not have access to drinkable water -- and the government has been spending heavily to clean major waterways like the Yellow, Huaihe and Yangtze rivers.

References: Chinese English language newspapers and book "Mr. China" by Tim Clissold and published in 2005 by Robinson Press, London.



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WATER SAVING REPORT

In early May 2008, Oxford Cold Storage completed the first stage of its Rain Water Harvesting project. The water is used to supplement the reticulated water supplied from the street mains which is evaporated in the refrigeration condensers.

Freezer 11 (31,000m² horizontal roof area) and Freezer 12 (16,400m² horizontal roof area) systems delivered huge savings of reticulated water over the months of May and June 2008. Compared with the same period in 2007, City West Water (CWW) meter readings dropped by 52% in May and 38% in June. Rainfall, as measured by the Bureau of Meteorology in Laverton during this period, was 54mm in May and 10.8mm in June.

The volume of water saved was 3.02million litres in May and 1.74million litres in June which equates to the capacity of almost five Olympic-size swimming pools over two months.

Plans are now in place to extend the rain water harvesting to Buildings 1 to 10. This will result in further significant reductions in the reticulated water usage consumption.

Every square metre of roof area yields 1 litre of water for each millimetre of rain. The volume of water that

can be harvested from the roof of buildings annually can be calculated by the formula:

Volume/year (Lt) = Horizontal plane roof surface area (m²) x average annual rainfall (mm)

A 10,000m² roof with Melbourne's average rainfall of 640mm will yield:

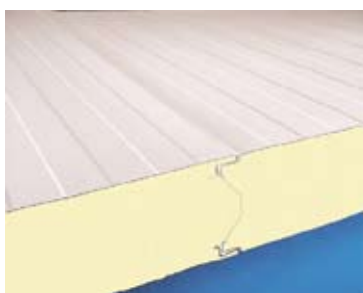
$10,000 \times 640 = 6,400,000\text{Lt}$ per annum

With the Victorian State Government's Water Map and the Energy and Resource Efficiency Plans (EREP), industry must have action plans to reduce their water and energy use. Unless the current drought breaks, Queensland style mandatory water quotas are possible.

The mains water pressure may also be reduced to decrease consumption, resulting in reduced flows into the condenser sumps and possible starving of condensers.

The cost of water is expected to double over the next five years and all cold store operators should investigate the possibility of rain water harvesting. Rain water harvesting will ensure your company's future water supply and help the environment.

Gabor Hilton



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AND THE WINNER IS . . .

SCF Containers is proud to announce that they have become a finalist in the Telstra Business Awards in SA in the Panasonic Australia Medium Business Award category.

The awards are well-recognised within the Australian Business community as a very prestigious recognition of success and business achievement. By becoming a finalist, SCF Containers has been acknowledged as a business success story and a leader in the field.

Entry into the Telstra Business Awards was a very in-depth process and there were a number of stages to go through before becoming a finalist. Applicants submitted a 6,000 word application outlining their business practices, values and strategic planning which was then judged to form the shortlist. Site visits were conducted where judges evaluated these businesses and business people in person with a number of thought-provoking questions before announcing the finalists.

'We are delighted at being selected as a finalist in these prestigious awards as it demonstrates our commitment to success and achievement in the marketplace and to our customers. It has been a long journey to get to this point and it is gratifying

to be able to benchmark ourselves against others and be recognised as a business leader' Lindsay Carthew, SCF Containers Director said.

'Passion, Commitment and Professionalism are the keys to our success. We began trading in 1991 as a one-person operation and have grown to a multi-million dollar business through continuous improvement, the passion and drive to succeed as well as ensuring that our market knowledge is sufficient to enable us to design and deliver innovative products to meet the industry's requirements'.

SCF Containers International is an independently owned and operated Australian container sale and leasing business with its Head Office in Adelaide, South Australia. Established in 1991, SCF manages assets worth over \$60 million in three Divisions – SCF Containers (rail freight), Simply Containers (portable storage) and Tank Containers Australia (liquid transport and storage). With its focus on design, quality and customer service, it is a leading supplier to the Australian transport industry and has offices in Adelaide, Darwin, Sydney, Melbourne, Brisbane and Perth.

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SUCCESSFUL PROJECT DELIVERY



Leading industrial refrigeration company Oomiak is near to completing one of its largest projects since start-up just over 2 years ago.

The project for Baiada Poultry – one of Australia’s largest and most successful companies in the poultry industry required Oomiak to provide all mechanical services, cooling, heating and air distribution systems for the company’s chicken hatchery in Tamworth, northern New South Wales—a flagship facility for the company.

The hatchery which is housed in an 8000 sqm facility features:

A cooling capacity of 3300kW

A heating capacity of 2900kW

7000m of pipe

900m of duct

Mark Holden, Oomiak’s Business Development Director, explained:

“The incubation and hatching of eggs is a precise and sensitive process designed to replicate the function of the ‘mother hen’. Any significant fluctuations in temperature and humidity can have an impact on the process and hence the quality of the chick.

In both design and implementation, Oomiak met every requirement for functionality, quality, reliability, redundancy and cost effectiveness, ensuring product integrity in line with the customer’s quality standards.”

Oomiak took on the challenge of designing a system which was environmentally responsible, cost effective and ensured product integrity. Specifically, challenges were to: protect from the egg-hatching process through to the production of day old chicks against any variance in storage conditions at all times ensure sufficient capacity to meet all aspects of the conditions, and configure available cooling, heating and air distribution capacity to minimise risk from individual component failure guarantee access to 24/7 service and parts supply to support the plant ensure compatibility with other critical risk management services and code compliance in all aspects of system design and

equipment select materials and refrigerants according to environmental responsibility.

Oomiak’s project approach, which is always backed by skill and creative thinking, was to focus on fully understanding the key aspects of the project and, importantly, what the customer wanted to achieve. This involved Oomiak sending engineers and designers to Europe to learn about the hatchery process.

Oomiak CEO Cate McGuire explained that “Oomiak’s approach to a project whether it is a cold storage facility or a hatchery sees us investing time with our customer to rapidly build knowledge and understanding of their needs and specific factors about the environment in which the project is to be delivered.

Such intelligence gathering forms the basis for shaping a solution that meets and, more often than not exceeds customers’ expectations”

Oomiak has delivered the project on time and within budget and has impressed Baiada.

“I am genuinely very happy with the progress of things at Country Road; the procurement side is obviously working well, the site staff are working in well with the other trades and the input of Mark Holden is great.” says Dean Kent, Group Engineer, Baiada Poultry.



OXFORD COLD STORAGE

Welcomed as Gold Club Member



Grow Me the Money is an initiative run by the Victorian Employers' Chamber of Commerce and Industry (VECCI) and the Environment Protection Authority Victoria (EPA), with funding from the Victorian State Government.

AB Oxford Cold Storage completed all the requirements for Grow Me the Money Gold Club membership. Members are recognised as Achieving Business Sustainability. They have implemented their Action Plan and demonstrated that applying sustainable actions in their business has achieved both financial and environmental savings.

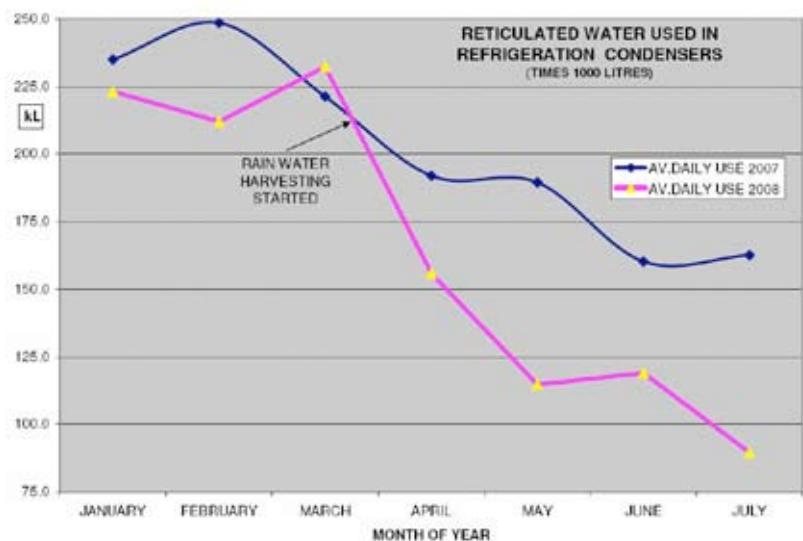
Over recent years, discussion of environmental issues in the media has dramatically affected consumers' expectations of the responsibilities of business towards the environment. As major users of natural resources, businesses are under mounting pressure to use resources responsibly. Our communities expect us to set a good example for environmentally sustainable commercial practices

Protecting the environment is an increasingly important consideration for people when making decisions about which products and services they buy.

Recently Oxford Cold Storage's engineers installed a rain harvesting system collecting water from roofs at its Hume Road facility. The rain water collected replaced reticulated water from the street mains and was used in the refrigeration condensers on site. Oxford's Directors are proud to announce that almost 6 million litres of water was saved during the months of May, June and July 2008, three months with well below average rainfall.

Oxford's employees were all involved with the project and in conjunction with our very successful shower head exchange program made a significant contribution to a sustainable future.

This project has set a benchmark for the refrigerated cold storage industry in Australia. It focused much needed attention to the challenges and viable possibilities in dealing with the emerging issues of greenhouse gas reduction, global warming and water shortages.



FRANK VALE AWARD VIC



The Victorian Nominees and their partners



Two of the judges - John Wilson and David Frost



2008 Frank Vale Award
Victorian Finalist
Connie Zupo - Swire Cold Storage



Victorian Chairman Gabor Hilton congratulates Connie

RWTA DIVISIONS

"The RWTA Ltd has a Division in each state of Australia. These State Divisions are run by an elected Committee, appointed by the members at their respective AGM, and each Division nominates a representative to the National Board of Directors.

All Divisions conduct regular business meetings, including breakfasts and luncheons, with guest speakers on a wide variety of topics and site visits, where possible.

The meetings are designed to provide a suitable forum for information exchange, update on issues and activities at the national level and enable participants the opportunity to network, an integral part of today's business environment.

In addition to business meetings, each Division conducts an annual golf day and a variety of mid-year and end-of-year social functions for members, their partners and guests. These sporting and social functions are strongly supported in all states".

CONTACTS

For information on the RWTA or your State Division please contact the following:

National Office

Executive Officer David Costelloe Ph: (03) 8620 2802

Victorian Division

Secretariat John Wilson M: 0412 250 978

Queensland Division

Secretariat David O'Brien M: 0419 723 7908

South Australian Division

Secretariat Tina Pasvouris Ph: (08) 8304 6000

Western Australian Division

Secretariat Sean Prosser Ph: (08) 9378 0500

Tasmanian Division

Secretariat Jeff Franklin Ph: (03) 6391 8655

New South Wales Division

Secretariat John Howell M: 0419 974 678

INFORMATION, PUBLICATIONS ETC.

The RWTA publishes and distributes a variety of industry relevant protocols, guidelines etc. For information on any of these publications, please contact your State Division Secretariat. For information on all RWTA publications and industry guidelines, please visit our website at www.rwta.com.au.



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