

**Discussion Paper
Comments from CSR Limited**

1. Introduction

CSR Limited has been operating in Australia for 152 years. The company is a leading diversified manufacturing company with operations throughout Australia, New Zealand, China and South East Asia. In 2007 revenues were \$3.1b with capital expenditure of \$256m. The company essentially operates within four divisions. These comprise aluminium smelting, though our shareholding in the Tomago aluminium smelter, Sugar, Building Products and Property Development.

CSR is headquartered in Sydney and has a number of substantial operations in NSW. Of particular relevance to this scheme are the Bradford™ Glass Wool Insulation factory and the Viridian™ flat glass making factory at Ingleburn. In 2008, Viridian™ will install one of only seven glass coaters in the world to produce Climate Smart Glass. The company also manufactures, bricks, which provide excellent thermal mass in buildings, roof tiles, Gyprock™ plasterboard and Cemintel™ cement sheeting.

CSR is investing in a \$50m green fields Bradford Gold™ Insulation facility in Brisbane. This follows the expansion at our Ingleburn site in New South Wales in 2006. Glass fibre insulation can be used to obtain very high levels of thermal insulation without loss of performance during the life of a dwelling. In addition we manufacture aluminium foil and high temperature rockwool insulation in Victoria.

We also own Edmonds ventilation and combined with our insulation and coated glass business are able to offer climate control solutions to our customers, reducing energy consumed in the built environment. Edmonds ventilation provides ventilation systems which include devices to remove heat from roof spaces.

The company is actively involved in climate change issues. Through CSR Sugar we produce electricity through cogeneration based on biomass and fuel ethanol. The company is the sixth largest generator of RECS under MRET.

We welcome this initiative from the Government of New South Wales to address the need for energy efficiency in the residential sector and believe that CSR can play a significant role in bringing solutions to improved thermal performance of the built environment.

2. White Certificate Schemes and Greenhouse Policy

CSR has supported the introduction of an Australian Emissions Trading Scheme, providing that Trade Exposed Energy Intensive Industries can be held competitive with their overseas counterparts, who have not imposed a similar price on carbon. While some would argue that a price on carbon should be a sufficient measure on

its own, we argue that market failure requires other policies to kick start the downward trajectory of CO₂e emissions.

The second area of policy, which has been covered by the Federal Government, is an extension to the MRET scheme to advance the introduction of renewable energy ahead of longer term technologies such as clean coal and geo thermal energy. CSR's sugar division was able to invest \$160m in North Queensland to produce steam and power from biomass on the back of the original MRET program. An extension to this program would enable further investments to proceed in our mills.

The third policy platform is the one addressed by NEET and that is to conserve energy by improvements to the thermal performance of the building fabric. Consumers are not as strongly driven by the return criteria typically used in making business decisions. The homeowner looks for a low initial purchase price, rather than the return on investment criteria mostly used by business. They are motivated by comfort and appearance. A decision to install energy saving insulation or double glazing in a new house will be traded off against decisions to have granite bench tops or other features which appear to have more apparent benefit. Building codes are one measure used to deal with new homes and renovations.

In the case of energy efficient retrofits, decision making is more complex and involves a different decision cycle by the consumer. Appointments need to be made, trades engaged and booked for the task to be completed for a product that can't really be seen. This requires commitment by the consumer to overcome inertia. It is easy to opt out or purchase other discretionary items, even where the consumer has information. Our experience shows that Government support for products/processes and behaviours in reducing energy used in the home does make an impact and can be a driver of change, although on its own it is not a sufficient measure.

More difficult is the tenant/landlord asymmetry whereby the landlord does not want to invest the capital where the perceived benefit lies with the tenant. If the tenant is unhappy they move on. A landlord is even less likely to retrofit a rental property in a tight rental market where tenants are queuing to lease property. It is well documented however, that there is less turnover and superior health outcomes for houses which have good thermal protection. It is this area of market failure that schemes such as the proposed NEET Scheme are extremely valuable.

3. National Energy Efficiency Scheme Desirable

CSR notes the NSW Government Action Plan for Energy Efficiency. CSR supports the initiative to introduce policy to deal with residential energy efficiency and would encourage the government to extend the scheme to cover commercial property – a segment where landlord/tenant asymmetry is manifested in the construction, even today, of low thermal efficiency buildings, which are usually lowest built cost.



We also note that the NSW Government is working in partnership with the Australian Government and the States and Territories on MEPS and a range of other initiatives. CSR would strongly encourage the Government to go further. A national scheme for energy efficiency is required. We strongly urge the NSW Government to work with its colleagues on the Ministerial Council for Energy to introduce a scheme which is both regional and national. National in the sense that energy retailers only need to establish one set of back office systems and a national scheme for accrediting parties. This leads to efficiency, common standards and approach, but with the scheme adapted to local conditions through the climate zones used in the AccuRate model.

Under such a scheme retailers will have an obligation to meet a NSW target, but certificates would be created under a federal system and processed through a common set of back office programs. National retailers can determine a national retailing approach consistent with one set of policies, but localise campaigns as appropriate. A national approach to approved mitigation measures would be part of such a program. Furthermore a national scheme could attract funding from the proceeds of auctioning of emissions trading certificates, whereas a patchwork quilt of state schemes may find it more difficult to attract an equitable level of federal funds.

As a starting point we understand the Government has examined the Victorian VEET scheme and we would encourage the creation of fungible certificates which can be traded through the machinery established for this purpose. Thus NSW could adopt a tradeable scheme creating a larger pool of certificates and a more liquid market. **CSR recommends that gas is included in the NSW scheme.** Almost 20% of homes in Sydney use gas for heating.

4. Specific Comments on the Consultation Paper

Residential buildings account for about 28% of all electricity consumption in Australia. Any improvement of energy conservation would greatly benefit Australia's emissions profile, particularly where that power is sourced from coal.

As noted earlier CSR has interests in both insulation and glass. There has been considerable focus on getting insulation into ceilings (39% of homes in Australia remain uninsulated) as a retrofit and new houses through the BCA. From an energy perspective Australia's windows are the worst in the developed world. In general, the standard Australian 3mm windows typically represent 8% of the total house envelope, but account for 87% of the heat gain and 49% of the heat loss in an otherwise well insulated house.

According to a study undertaken in Victoria by the Glass and Glazing Association of Australia in 2006, homes with standard glazing in windows require 60% more energy to heat and cool than do homes with energy efficient glazing. The study was based on an already insulated home and used AccuRate as the analysis tool.



The results show that based on second generation NatHERS assumptions, an improvement of 2 to 3 stars can be expected along with emissions reductions of 4 tonnes pa in the case of a large (237 m²) house. In a report prepared by Horne et al, (2005) on behalf of the Australian Greenhouse Office they demonstrated that well insulated homes whether in Australia, North America or the UK cannot generally attain more than 6.5 stars unless they have high performance windows. Performance windows are the standard in California – the cost of single glazing is higher than double glazing as single glazing is regarded as a “special”. The reverse is somewhat true here. Our company, Viridian™ has confidence in the future of performance glass and is backing it with significant investment. We would like the NSW Government to consider it thoroughly as a substantial GHG and energy saving measure in the proposed NEET scheme. We would be pleased to assist in constructing the economic and thermal efficiency case for NSW and the respective climate zones.

Only 5% of residential buildings constructed in Australia use energy efficient windows and doors. Yet in high rise double glazing and coated windows are standard treatment. The poor take-up rate of efficient windows is increasing the stock of housing which although code compliant, perpetuate a sizeable and avoidable loss of energy. Windows must be seen as integral to insulating the building envelope. Conventional single glazed windows are simply “holes” in an insulated wall.

In NSW 56% of houses have cooling and 86% of these use air conditioning. Furthermore 78% of houses have heating and 57% of these use electricity. Sydney has a mixed climate which embraces both heating and cooling and therefore leads to coated window treatments which reduce long wave length (warming) rays, but still allow short wave length light into a building. Double glazing with these products reduces heat transmission much further. Savings for coated double glazing in Sydney are such that the star rating of a building assessed under AccuRate was increased by 1.76 stars relative to standard clear glass. This represents an energy saving of over 25% allowing for average occupancy behaviour.

CSR is investing \$130m in one of only seven glass coaters in the world and is further investing \$100m in facilities to produce double glazing products in Australia. We would be pleased to provide government with more detailed analysis of savings should this be required.

The NSW Government clearly recognises the market failures and shows foresight in helping its citizens cope with the increased cost of energy once emissions trading commences.

Low Income Households

Often Government housing has a low standard of insulation (often a form of insulation where the product compacts over time and loses thermal efficiency), poor draught proofing and standard window treatment. It is easy to target government housing and for the government to undertake retrofit programs.

The difficulty with those on low incomes is readily identifying them.

Consideration should be given to energy efficiency measures for the aged, who are living independently. Provision is made to meet their physical needs, but not their comfort needs. Health and comfort are linked. This has been recognised by the New Zealand Government when introducing their landlord subsidy program.

Key Objectives

The commercial sector is a significant inefficient user of energy and we agree that the scheme should include the commercial sector. The scheme should be based on the ABGR requirements.

Design Principles

UNEP has studied the impact of various policies and its report can be found at http://www.unepsbci.org/docs/openfile.asp?ID=AD127DD49740BC5D&fileName=SBCI_CEU_Policy_Tool_Report.pdf. In dealing with energy efficiency it suggests the most successful outcomes are regulated building standards, grants and financial incentives for retrofit and after incentives expire, then a form of regulated upgrades.

Pre-approved measures are an efficient way to proceed. However Government must be open to the prospect of new measures being added to the scheme should technology or product costings change over time. Clear and transparent methodologies are required.

Coverage

CSR is encouraged that the Government is looking further than the residential sector, and including the commercial sector. The issues associated with the commercial sector are primarily the asymmetry issue between tenant and landlord described earlier, but the residential sector faces the same issue. Allowing retailers to find energy saving solutions in the commercial sector will be beneficial to the overall program.

While it is more difficult to develop proxy models, there is a good case for energy audits of commercial buildings. We recommend that NSW show a lead to a National Policy by doing the ground work for the commercial sector.

Furthermore the scheme should embrace glazing retrofits and “top up” for insulation in residential properties. Certain forms of insulation are prone to settlement and loss of performance (R factor) and some houses were installed to old standards, which are insufficient in a carbon constrained economy.



BASIX needs to include the additionality of higher R values or glazing. This will encourage inclusion in new homes which can be delivered at lower cost than retrofits.

Credit for rockwool used in internal walls should be allowed credits under the additionality provisions of AccuRate.

The role of retailers

The strong relationship retailers have with their customers provides a potential channel to market, that typical installers of insulation, performance glass, draught proofing etc don't have. This can only help improve the uptake of energy efficiency measures in the covered sectors.

Targets

Given the difficulties associated with low income housing, the Government could consider a double bonus for savings for the disadvantaged. This rewards the extra effort that retailers need to undertake. In a tradeable white certificate scheme this could add real value as a social measure.

Energy Efficiency Measures

Given that only 5% of homes have double glazing or performance based window systems and that there is very little retrofit activity, then almost all installations of performance glass will be additional. Advertising and normal channels to market have only achieved 60% of houses being insulated so clearly other measures are needed to drive uptake further.

Pre-approved measures

Pre-approved measures are an efficient way to proceed. However Government must be open to the prospect of new measures being added to the scheme should technology or product costings change over time. Clear and transparent methodologies are required in developing the protocols.

CSR through the Viridian™ glass business would argue there is a strong case for performance windows. The consultation process or the time frame for consultation on inclusion in the list of pre-approved measures is not described in the paper. Persons other than energy retailers must have access to this process, given they are the likely subject matter experts. If other parties with an interest in energy efficiency are able to present a case for pre-approved measures it can help reduce the issues associated with retailer exclusivity over such measures. Other non retail parties may be less inclined to seek exclusivity. Nevertheless the task is large and innovation is required. Exclusivity should be restricted to product

application or innovation rather than soft technology e.g. marketing or financial products.

Deeming values should be consistent with the climate zones used to determine 5 star housing requirements. They should also be consistent with other jurisdictions to the extent that is not altered by climate zoning. CSR strongly supports consistency across jurisdictions. Commonality makes the scheme simpler, less costly to run and more likely to achieve long term success. We encourage the Government to err on the side of common measures.

Lifetime Effect

The average life of a dwelling is 70 years. Typically windows have an expected life of at least 40 years and a deeming factor of 40 for both windows and insulation would be appropriate. The building fabric credits in the UK, USA and NZ are all set at 40. The \$value assigned i.e. the GHG figures x carbon price - should be at least 50% of the cost to install, to ensure take up if the market barriers described earlier, are to be overcome. Very few home owners are rational economists as perhaps the Productivity Commission and Professor Garnaut would have us believe.

Exemptions for TEEI's

CSR supports the proposed exemptions for TEEI's. However exemption by sector is misleading and this is where Federal Government policy may end up with shortcomings. An example is the glass sector where emissions intensity of the sector is quite low, whereas emissions for flat glass making are multiples of those of the sector. It will be to the disadvantage of certain TEEI's if a sectoral approach is used, just because of the way accounts are kept. Decisions must be taken at a facility level. Should the Federal Government fail to do that, the NSW Government should consider not adopting the Federal approach. This will disadvantage many of the TEEI's based in NSW and often in rural areas.

Martin Jones
General Manager
Government Relations
14/07/2008

