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Submission to the House of Representatives Standing Committee on Environment and Heritage Inquiry into Sustainable Cities 2025

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Introduction

The ROUNDTABLE welcomes the opportunity to make a submission to the House of Representatives Standing Committee on Environment and Heritage Inquiry into Sustainable Cities 2025.

The ROUNDTABLE Submission focuses on issues of sustainable energy and water use, and particularly on Renewable Energy and Energy Efficiency rather than on all issues raised by the Inquiry.

The ROUNDTABLE

The ROUNDTABLE is a federation of Australia's renewable and sustainable energy industry associations, comprising a breadth of members from research and development, education, through to electricity generation. As a federation of associations the ROUNDTABLE is a peak association in Australia. It has been formed to co-ordinate and focus the effort of those sectors in their dealings with governments, parliaments, the public, other industry sectors and the international community.

Attachment 6 provides a list of ROUNDTABLE participants.

Summary of recommendations and conclusions

Australia has historically enjoyed a competitive energy cost advantage which has been underpinned by access to abundant reserves of coal. Australia also has access to world-class renewable resources that can continue to support its relative energy cost advantage in a carbon-constrained world. Currently, approximately 10% of Australia's energy supply is from renewable energy. The support for existing and new renewable energy technologies is essential to capitalise on Austrlaia's abundant renewable energy resources and to consequently build more sustainable cities.

Provided with the correct policy framework the sustainable energy industry is poised to be able to meet customers' energy needs in a manner that reduces greenhouse emissions while simultaneously increase economic activity, jobs and investment. The Allens Consulting Group report released earlier this year found that by implementing policy measures to support renewable energy and energy efficiency would lead to an improvement in economic efficiency rather than imposing an economic cost[1].

The ROUNDTABLE recommends the following policy initiatives and measures to support the development of sustainable cities by 2025:

1. Expand the Mandated Renewable Energy Target (MRET) to a level that is meaningful and supports the development of existing and new renewable energy technologies and develop an industry that can deliver longer-term cost effective emission reductions.

2. The Government to assist in developing electricity market arrangements that deliver a level playing field for existing and new renewable and sustainable energy. This should include arrangements whereby electricity distributor pricing and regulations are conducive to the implementation of sustainable energy options.

3. Expansion of funding support for research, development, demonstration and commercialisation of existing and new greenhouse abatement technologies as outlined in Attachment 7 - *Renewable and Sustainable Energy Technology Development: securing intellectual property, stabilising emissions and creating export opportunities.*

4. Implement mandatory minimum standards and appropriate price signals for energy, water and waste.

5. Develop and implement a mandated greenhouse emission intensity that complements the MRET that places a requirement on electricity retailers so that the greenhouse emission intensity of electricity sold progressively reduces.

6. The government to facilitate coordinate and ensure engagement of all sustainable cities stakeholders in an open and transparent partnership to help develop and deliver the various recommendations made in this submission.

7. Ensure all building rating tools achieve minimum and verifiable minimum performance standards in the various categories of sustainability in the built environment and specifically that:

[1] Allen Consulting Group, Council of Australian Government Energy Market Review, Report on the cost effectiveness of introducing greenhouse intensity benchmarks

a. ABGR is used for energy and greenhouse
b. There are minimum standards for energy, greenhouse, water and waste
c. That a minimum 4.5 star ABGR rating be required for recognition as a green building
d. Outcomes are performance based
e. Ongoing, open and transparent consultation with all stakeholders involved in sustainability

8. Implement a mandated minimum five stars ABGR energy and greenhouse performance standard for new buildings. Ratings should reward renewable generation such as solar photovoltaic (PV) systems and solar water heating by additional star or star+ ratings. Rating schemes should also be complemented by a transition to mandated minimum energy performance standards for existing residential and non-residential buildings.

9. Implement a nationally mandated zero building emissions standard for all buildings by 2025 with an appropriate transition path.

10. The annual sustainability rating of the performance of the existing building stock for commercial buildings and the publication of the ratings and rating of all residential buildings on sale.

11. Specific industry development support for:

    a. Solar PV and solar water heaters that address current market and pricing barriers to these technologies.
    b. Energy services industry including the establishment of cogeneration and energy efficiency targets.
    c. Water and waste management industries including demonstration case studies
    d. Research into quantifying productivity improvements and other social benefits achieved through sustainable buildings and cities
    e. Transmissions and network access arrangements for renewable power projects

12. The Government to show leadership by ensuring that it provides funding for and implements cost-effective energy efficiency projects for all its departments and agencies.

2. Ensure equitable access to and efficient use of energy, including renewable energy sources.

Increasing levels of greenhouse gas emissions from human activity is an important global issue, as recognised by the Australian Government's acceptance of the United Nations Framework Convention on Climate Change (UNFCCC). The Minister for the environment, Dr David Kemp, has expressed the requirement for a global reduction in greenhouse emissions of between 50 and 60 per cent by the end of this century[2]. Moreover, the increasing proportion of the population that are living in cities means that it is crucial that the development of cities results in a declining greenhouse emission intensity.

The contemporary 'green agenda' challenge for cities is to avoid adverse global environmental impacts from greenhouse gas emissions. This must be an important consideration for the Committee, who are in a key position to contribute to the prevention of adverse impacts. This contribution also comes as a just response to heightened community concern.

The largest source of greenhouse gas emissions in Australia is energy supply. The 2001 National Greenhouse Gas Inventory, released in September 2003, cites that stationary energy sector emissions in 2001 totaled 260 Mt, 48 per cent of net national emissions. Electricity generation emissions alone, which account for 35 per cent of total emissions, have increased by 52.3 Mt (40.5 per cent) from 1990 to 2001. This highlights the requirement that the emission intensity of electricity supply must be reduced significantly.

The city-scape includes places of residence, economic activity and production which make up urban energy needs. The commercial building, residential building and industrial sectors each have potential for increased energy performance by means of improved energy efficiency and low-emission intensive generation. In particular, residential and commercial buildings account for significant energy consumption[3] and their numbers are rapidly growing each year.

2.1 How might we implement a shift from the existing large-scale energy generation and distribution infrastructure towards an alternative model?

A positive shift in the configuration of energy supply is a critical step in the reduction of greenhouse gas emissions. This will require a transfer from the current scenario of centralised generation and high-emissions to an alternative model that incorporates low emission distributed generation and high energy performance (energy efficiency). Actions required for the implementation of this model are as follows:

1. For optimum economic efficiency, internalise the cost of carbon into economic decision making
2. Remove current market distortions that result in skewed, unfavourable price signals for the formation of a sustainable distributed energy supply
3. Directly reward the recognised benefits of distributed generation and remove impediments to its further development

[2] In an address to the House of Representatives on 20 August 2002

[3] According to the United States Department of Energy's Center for Sustainable Development, buildings consume 40% of the world's total energy. (Page 14 of the Discussion Paper)

4. Build local industries of existing and new low emission renewable generation and energy services that deliver high energy performance.
5. Ensure that energy efficiency compliments renewable energy in projects so as to optimise the cost effectiveness of sustainable projects.

These actions are discussed below.

1. Create a Low-Carbon Efficient Economy

Energy consumption levels are growing. Projections by the National Electricity Market Management Company's (NEMMCO) Statement of Opportunities 2003 show that over the next 10 years, electricity consumption is expected to grow by 27 per cent. Significant investment decisions will be required to meet our growing energy needs and will determine the configuration of our energy supply. It is thus imperative that a carbon emissions cost is incorporated into these future investment decisions. The optimum economically efficient outcome is one where investment and consumption decisions incorporate the cost of carbon throughout the whole energy supply chain.

An international emissions trading scheme is generally seen as the most cost effective long term method in achieving this outcome. However, it is also recognised that transition schemes such as mandatory greenhouse benchmarks will be effective in the short to medium term and not incur a material impact on electricity prices[4].

Greenhouse intensity benchmark schemes are imperative in introducing greenhouse abatement into decision making that result in lower greenhouse intensity of supply and economic solutions necessary to deliver deeper greenhouse cuts that are required in the future. Furthermore, benchmark schemes produce societal benefits by avoiding further investment in additional high emission intensity assets.

Greenhouse intensity schemes are complimented by mandated measures such as the Mandated Renewable Energy Target (MRET) for industry development in addition to development of mandated minimum energy performance standards (both are discussed below).

2. Repair Current Market Distortions

Electricity consumers must be provided with efficient prices signals so as to make informed energy decisions.

Current energy prices do not reflect the true cost of production and transmission. As such, prices do not provide a favourable signal for distributed technologies. Also, incorrect low price signals result in decisions on energy being a low priority for end use customers.

A particularly important issue is that end use customers do not receive price signals for their use of power at peak times; these prices are smeared across all energy customers. Peak power needs determine the total required network and generation capacity. The negligible peak price signal has facilitated a rapidly growing uptake in air conditioners that further increase peak demand, where customers typically pay less than 5% of the true cost of supplying the peak power. Peak demand times have recently become summer days from midday to late afternoon.

[4] Allen Consulting Group, Council of Australian Government Energy Market Review, Report on the cost effectiveness of introducing greenhouse intensity benchmarks

In addition, off peak electricity prices are government subsidised in regional and rural areas which means that solar water heaters and other energy efficient appliances become less cost effective.

A peak demand component could be charged to air conditioner customers. This move would require electronic interval metering to be installed with purchases of air conditioners.

Reward benefits, Remove Impediments: In the current energy market, impediments exist to the uptake of renewable energy generation and energy efficiency measures. In addition, distributed generation and energy efficiency provide both network and societal benefits that are as yet largely unrewarded.

Peak Demand: Distributed generation and energy efficiency avoid network costs over time by reducing energy consumption during times of peak demand. No economic reward is attributed to this benefit. Concurrently, energy use during these times is not accurately priced. As mentioned above, customers typically pay less than 5% of the true cost of supplying the peak power while, for example, customers that install solar electricity systems typically only receive 43 per cent of the value that they create.

The ROUNDTABLE recommends that customers be made more aware of their electricity consumption through more informative billing processes. Electricity bills should recognise the source of the electricity and the greenhouse gas emissions associated with energy consumption at the household level. Customers should also be charged for peak demand or rebates issued for customers installing distributed power systems and/or energy efficiency measures.

Connection Barriers: Difficulties also exist in negotiating access and connection arrangements for installation of grid-connected, distributed generators. The requirements of distributors and retailers for connection vary, and can be costly, complex and protracted. For example, customers purchasing a PV system are required to install a separate meter. This serves no technical or safety role and merely adds to the cost and delays in installing the system. This is further discussed in Attachment 2.

The ROUNDTABLE recommends that national access guidelines for distributed generation should be developed in order to address connection impediments to ensure fair network access and cost reflective network pricing including time and location sensitive signals.

Regulatory Climate: The manner in which electricity businesses are currently regulated means that they have little incentive to support or promote alternative energy supply options.

The ROUNDTABLE advises the following policy approaches to be supported and implemented by Government in order to address impediments within the regulatory framework:

(i) Electricity distributors are not financially penalised for undertaking existing and new renewable and sustainable energy options rather than conventional network augmentation. The regulatory arrangements should provide incentives for distributors to consider alternative supply options;

(ii) in areas of impending network congestion, standing pricing offers be made available to demand side management and distributed generation alternatives[5]; and

(iii) Electricity distributors be required to develop strategies and implement pricing approaches that encourage energy efficiency and implementation of greenhouse abatement activities.

(iv) Government should ensure that corresponding financial support is provided to existing and new renewable and sustainable energy technologies (eg. PV, solar water heating, hydro, wind and biomass) where these technologies are disadvantaged by current energy market pricing that fails to provide locational and time of use pricing.

3. Build Local Industry

Building industry capacity and capability would lead to the continued falling of installed costs. The development of local industry with increasing employment and exports would result. The development of the renewable energy industry and energy services industry are discussed below. See Attachment 1 for further detail about these industries.

While industry development is explained in two separate categories below, it is important to note that in terms of economic efficiency, renewable generation and energy efficiency are inextricably linked. Reducing energy consumption with energy efficient measures in buildings, for example, also reduces the investment required in renewable generation. In addition, there is increasing evidence that social awareness of energy issues and energy efficient practice is heightened by involvement with the installation of renewable energy systems. This may be in a residence or at school for example.

Renewable energy industry: Renewable energy is a significant means in meeting greenhouse constraints. Approximately 10% of Australia's energy supply is currently from renewable sources. Moreover, with growing global installed renewable capacity, costs are falling significantly. This trend is expected to continue resulting in competitive costs of renewable energy in the next decade. Australia is well placed to benefit from this growth with its world class renewable resource base including wind, hydro, biomass and solar. Developing the existing and new renewable energy industry provides significant new investment and jobs.

Renewable energy enjoys strong community support as shown by the results of a recent Newspoll survey; 83 per cent of persons were prepared to pay extra for electricity if an additional 10 per cent of it comes from renewable sources.

The Mandated Renewable Energy Target (MRET) has been an important initiative in developing the existing and new renewable industry to date. The ROUNDTABLE advocates an expansion and extension of the 9,500 GWh target in order to deliver the critical mass required to reduce costs and to meet the $4 billion renewable energy sales target under the Renewable Energy Action Agenda. The ROUNDTABLE's detailed position on MRET is included in our submission to the MRET review. In addition to maximising existing and new renewable energy, there are some requirements for support of technologies with high potential (eg solar PV, inland wind) within MRET to better reflect the technology in order to develop its market.

[5] This approach is currently under consideration by the Independent Pricing and Regulatory Tribunal (IPART) in NSW

Additional measures and support will be required to facilitate the development of the renewable energy industry in a cost effective manner. Such measures can include the streamlining of planning and network augmentation processes that currently constrain the development of wind energy. The ROUNDTABLE also believes that additional support is required for technologies (eg. solar PV and solar water heaters (SHW)) to address current market and pricing barriers to these technologies. Areas where industry development support would prove effective are:

- Development of an extensive solar PV program for schools. This program would help to build community support for renewable energy and can become an important promotional and demonstration initiative;
- Expansion of the developer component of the PV Rebate Program which is currently funded by the Australian Greenhouse Office to support grid connected PV in new residential developments. This is again an important promotion and demonstration program that builds community support and commitment for renewable energy.
- Development of feed-in tariffs. Feed in tariffs are market mechanisms where the price of the renewable energy received by the generator is set higher than the conventional electricity price to reflect the additional cost in generation (although in a perfect market this 'additional' cost would be compared with the true cost of existing supply sources).. In most instances, the network provider is required to connect the generator and the increased cost is passed through to retailers to be on-sold through premium electricity products such as Green Power. Feed-in systems have been successful in Europe especially in Germany, Spain and Denmark where 80% of wind power production occurred in 2000 (Hvelplund, 2001) - particularly where feed-in tariffs have been partnered with low-interest loans to offset the initial upfront investment costs in the renewable generation technology. Feed-in systems allow the price to be set at varying levels for different technologies and locations and therefore allows Governments to provide the incentives to increase the demand in specific technologies to the critical mass required to establish manufacturing facilities, thereby reducing costs.

- Temporary tax incentives help renewable energy and energy efficient products to gain market share because of high production costs, consumers lack of familiarity with the products and entrenched competition that outsources part of the production cost to the public sector for payment of externalities by consolidated revenue. For example, lower taxation on lead free petrol helped to shift consumer demand to the point where leaded petrol was phased out. Tax credits for sustainable energy projects would encourage their development through providing appropriate financial incentives. For example, an accelerated depreciation allowance of 125% on sustainable energy assets in the year of investment, subject to a prequalification of eligible equipment and projects, would provide a significant stimulus for developing new projects of this type. As the technology achieves greater market share, costs decline and the tax incentive can be phased out.

- Increased R&D funding to develop next generation renewable energy and energy efficient technologies (see attachment 7).

Protecting renewable fuel sources is also an important issue for developing sustainable cities, such as addressing the need for solar access rights in the uptake of solar PV systems, water rights, improving access to transmission networks and streamlining the approval process for wind projects.

Energy Services Industry: It is well recognised that energy efficiency will be an important and cost-effective contributor to reducing greenhouse emissions in Australia[6].

The energy services industry is comprised of suppliers of energy services and products rather than the supply of energy itself. The industry focuses on customers' energy needs including lighting, heating, cooling and energy management solutions for the life-cycle of a facility. Cogeneration is also an example of an energy efficient solution to meet a customer's energy needs.

To deliver an increase in energy performance and its associated benefits it is imperative that an energy services industry is supported and developed to build industry capacity and capability. The ROUNDTABLE recommends Government support for a number of activities such as:

- Development of standards and accreditation
- Provision of training
- Development of effective rating tools
- Development of toolkits for various end-user sectors such as; local government, process industries, community facilities, retail buildings, commercial buildings etc.
- Development of information and eduction material
- Support for promotion and marketing to end use customers
- Support for the funding of cogeneration feasibility studies, energy audits which are linked to implementation and energy performance contract facilitators.

The ROUNDTABLE also believes that Government should establish targets for cogeneration and energy efficiency. Cogeneration could achieve a 10 per cent market share of electricity generation by 2010. Energy efficiency can reduce greenhouse gas emissions by 50 per cent of projected increases by 2040.

In addition to the provision of funds for industry development, the Government has an important leadership role in implementing energy efficiency initiatives within its own facilities. This approach enables industry development through the Governments' own operations and sets an important market standard.

The Government and its agencies (including hospitals, schools, police stations and community facilities) should:

- ensure that any new tenancy meets a minimum five star energy performance (on a base building and tenancy basis);
- Establish a funding facility so that capital is provided to government departments and agencies where a minimum return of 10 per cent on investment is demonstrated[7]. An alternative approach that could also be adopted is to allow the first ten years of expected energy savings to be brought forward and used to fund the expenditure on energy efficiency equipment. In measuring the return on investment, or cost savings, a greenhouse cost[8] should also be included as part of the assessment.

[6] National Framework on Energy Efficiency Working Group (E2G2), $32b in investment over the next 12 years would deliver GDP $34m and 11,000 new jobs

[7] Can also access private sector funding where returns are guaranteed such as under an energy performance contract

[8] Equivalent to penalty under the greenhouse intensity scheme

The ROUNDTABLE strongly advocates the eventual implementation of mandated minimum energy performance standards across the broader economy, including for existing buildings and facilities.

2.2 How can the uptake of renewable energy for residential and commercial properties be promoted?

Customers are seldom aware of the adverse environmental impact of their energy consumption and supply choices. Customers are also seldom aware of the benefits from energy efficiency and renewable energy options. This needs to be rectified through improved disclosure and labelling and continually reinforced through promotional and communication material. Mandated minimum performance standards for residential and commercial buildings and greenhouse emission abatement targets would inevitably involve customers in energy decisions and issues.

Two recommendations are made in the section above regarding solar demonstration on schools and property developments. In addition, the promotion of the implementation of energy efficiency in Government facilities as mentioned above provides an important message to outreach to the community.

An improved understanding and appreciation of the environmental benefits of renewable energy would also result in increased sales of Green Power. Government has an important role to play in expanding Green Power by ensuring that it increases the level of purchase for its facilities. In addition, the Green Power premium that customers are pay (on a voluntary basis) should be tax deductible.

Improved electricity labeling is required. Electricity labeling involves disclosing information directly to consumers in a standardised form. This may entail disclosing greenhouse gas emissions and/or fuel mix information directly on consumer electricity bills. At present, consumers cannot derive information about their electricity from the product since in many states retailers deliver their electricity through the same electricity grid. By providing consumers with information that they could not otherwise easily access, electricity labeling gives consumers more power to make choices in the electricity market by making them aware of the greenhouse impact of their energy purchasing decisions. This effectively supports competition in the retail market. While retailers can be expected to supply environmental performance information if consumers prefer it, it is less likely that this information would be presented in a way that facilitates easy comparison between products. A standardised electricity label ensures that consumers will receive the environmental information they want, and in a format they can comprehend and use.

2.3 What are the impediments to utilising renewable energy sources in residential, commercial and industrial areas and how might these be addressed?

Impediments to further uptake of renewable energy generation are explained in Section 2.1, ‘Reward benefits, and remove impediments’, above.

2.4 Should renewable energy generation be promoted at the single dwelling level or across city regions?

Renewable energy should be promoted across both sectors. Different renewable energy resources also usually lend themselves to different scales of applications.

Rooftop PV and SWH applications represent a significant market sector. There are nearly 8 million dwellings in Australia, a significant proportion of which have rooftops that can support a solar energy system. Importantly, over 140,000 new homes are built each year.

There are also considerable opportunities to incorporate renewable energy into the broader urban environment through applications such as Building Integrated solar electricity where the electricity generation system is included as part of the building fabric. There are a number of examples of such systems, including the University of Melbourne, CSIRO, Newcastle, and Kogorah Town Square, NSW.

There are also a number of renewable bioenergy applications where waste can be used to generate electricity. There are a number of renewable projects that use landfill gas and sewage gas. In addition a number of municipal waste projects utilising a number of technologies are also under development. Some recent examples of waste to energy projects include Cronulla cogeneration facility, NSW, Suntown landfill gas project, Gold Coast and Brooklyn landfill gas project, Victoria.

Community wind energy projects also have a potential to increase the sustainability of energy supply to cities. Internationally community co-operatives assist in the development of wind projects and improve community acceptance of wind farms.

Potential for hydro-electric developments also abound in many of Australia's cities. Current water storages and sewage systems can be adapted to harness the potential energy stored in water with sufficient head via hydro turbines.

Government support for Research and Development and for local manufacture of existing and new innovative distributed technologies in Australia would provide further renewable solutions for integration within cities at both levels.

2.5 Are there economic, and hence social, implications of a city increasing its use of green power and developing new complexes which are predominantly self-sufficient in terms of energy generation?

Economic and social advantages include increased energy security, reductions in peak demand and reductions in the need to increase network capacity (which requires an estimated $10b in additional investment by 2010).

2.6 Should higher efficiency standards be mandated for all new dwellings, appliances and business operations?

Mandated minimum energy performance standards for appliances and for new residential buildings (currently being introduced in Victoria) have been demonstrated to deliver net economic benefits.

Minimum energy performance standards for equipment and appliances, are already being implemented, and are expected to deliver greenhouse savings in excess of 11.6 million tonnes per annum at a negative cost of $30/tonne. The value of energy savings more than offset the costs.

The Victorian Government's mandated minimum "five star" energy efficiency requirement for new residential houses has also identified a significant emission reduction with a net economic contribution to the Victorian economy.

Importantly the National Framework on Energy Efficiency Working Group E2G2 has estimated that, over the next 12 years an additional $32 billion of national investment in energy efficiency projects (with simple payback periods of better than 4.5 years) could occur if market barriers are addressed. As energy efficiency delivers savings in energy costs and greenhouse gas emissions at a profit, not a cost, this will provide an increase in GDP of $3.4 billion and create more than 11,000 new jobs.

In the case of energy efficiency, the ROUNDTABLE believes that mandated minimum energy performance standards should be introduced which compliment existing standards. Additional measures that should be undertaken are:

- implement a nationally mandated zero building emissions standard for all buildings by 2025
- further expansion and extension of minimum standards for equipment and appliances;
- mandated minimum energy performance standards (five star on an Australian Building Greenhouse Rating basis) for new non-residential buildings (base build and tenancy); and
- mandated requirement that all existing non-residential buildings be progressively rated[9] and that existing buildings be required to meet a mandated minimum energy performance standard of four stars[10]. Building owners can be provided with a number of options to comply; they can implement energy efficiency measures, purchase green power or purchase abatement certificates. Consideration should also be given to imposing a requirement that non-residential buildings be subject to an energy audit every five years and that the owners be required to implement any energy efficiency investments that provide a payback of less than five years.
- Mandated requirement that all existing residential homes be rated for their energy efficiency prior to sale and that they be required to meet at least a three star energy efficiency rating. Like the case for non-residential buildings, owners are to be provided with options to meet the minimum standard.

It is important to recognise that energy costs are not an important driver for most customers and that many cost-effective energy efficiency investments fail to take place. The intent of the above mandated regulatory requirements is to effectively internalise a greenhouse cost and ensure that cost-effective investments actually do take place. Not undertaking cost-effective energy efficiency means that other sectors of the electricity industry need to invest in generation and network infrastructure at typically much longer pay-backs. This reduces net income for Australia with subsequent adverse impacts on employment.

2.7 How can residential and commercial developments incorporate renewable energy generation into planning and construction?

Technically there are many ways in which renewable energy systems can be incorporated into as part of the building fabric. These have been discussed in response to question 1.4.

On a commercial basis however the benefits are seldom understood and considerable more effort needs to be undertaken to promote renewable energy options to architects, designers and planners.

[9] Using Australian Building Greenhouse Ratings.
[10] With an appropriate transition period.

Minimum performance standards and regulatory requirements to install renewable energy systems on new homes have been shown to be effective policy approaches.

3. Establish an integrated sustainable water and stormwater management system addressing capture, consumption, treatment and re-use opportunities.

Questions for Consideration

- ***Should cities of the future be looking to develop more localised small scale systems of urban water management?***

  Urban water management has two distinct sections - rainfall and waste water and it is clear there are easier options with the storage, transport and use of rainfall across the entire urban sector. There are serious health issues if waste water is not treated properly and this leads down the path of a minimum unit being at the municipal scale rather than the household or block level. Existing infrastructure issues must also be considered and adapted to ensure efficient use (eg. Utilising energy potential of current water storages and careful consideration of more efficient infrastructure designs for new investment)

  Rainwater and grey water reuse can be addressed at the local level.
  .

- ***What scale of residential water management systems is most efficient and sustainable?***

  In the inner city areas the sustainable options are all about the capture and reuse of rainwater, as technology is developed there may be options to use waste water perhaps at the block level but simple water balance equations dictate that only part of this water would be used in heavily built up areas. In outer suburbs where block sizes are larger, it is possible to recycle at a household level and indeed many outer urban properties do this already.

  Water efficiency measures, as with energy efficient measures, can and should be addressed at the household level.

- ***How do we transform existing developed city areas into more sustainable water management systems?***

  The transformation will take place as urban renewal takes place. There will be opportunities to manage storm water more effectively and there will be opportunities to “mine” the existing sewer networks for water for parks and gardens during the dry months. There also exists potential to install mini and micro hydro systems in existing sewer networks. Buildings will be converted during refurbishment but it is possible that many other buildings will be running old systems for the foreseeable future unless clear price signals are implemented. Financial incentives that address market barriers should also be implemented. Mandatory Minimum Performance Standards will also enhance the take up of sustainable systems in existing buildings.

- ***How do we encourage areas to abandon existing waste water systems, which may discharge to the ocean or other waterways, in favour of alternative waste water treatment methods?***

  The rising cost of irrigation water will start to drive a reappraisal of this current waste of water resource. Market demand will drive these changes in the longer term - the major cost

driver will be the capital investment to clean water to suitable re usage standards and this will involve the recycling of nutrients and the capture and re use of organic matter - thus closing the embodied water loop. Again, as with renewable energy and energy efficiency technologies and practices, price signals and financial incentives will help address these issues.

- ***What incentives or market based instruments might be appropriate for residential and commercial enterprises to encourage responsible water consumption and re-use?***

  Financial Incentives for equipment such as shower roses, dual flush toilets and rainwater capture and re-usage will help drive the uptake of these types of technologies. Price signals in the form of moving water pricing up to the cost of desalinisation and introducing a carbon credit scheme along with an embodied water trading scheme on a national level would ensure long term market transformations.

  Consideration to be given to implementation of a national water trading scheme based on the National Electricity Markets.

- ***Are more standards and guidelines needed for new development to minimise waste and storm water and to maximise capture and re-use opportunities?***

  Standards and guidelines need to be applied after a proper water audit has been carried out according to the processes identified by the International Council of Scientific Unions (ICSU). The need for the water audit is that the existing system has developed a range of ecosystems that are dependent on waste water flows from the current system - large scale system change will affect these systems some of which are now internationally registered under the RAMSAR convention.

4. Manage and minimise domestic and industrial waste.

Questions for Consideration

1. **How does a sustainable city bring about attitudinal change and encourage its inhabitants to accept responsibility for waste minimization and management?**

Australia does not have nor is it likely to have in the immediate future a sustainable large city without the significant intervention of government in the short term. However, there are a number of cities in Murray Darling basin that could be converted into sustainable cities within their regions. The very process of converting an existing city / region into a sustainable city would drive the attitudinal change for waste minimisation and management. To a large degree Australian city residents are already financially responsible for their own waste minimisation and management via their local government system. However with the current wrong market price signals there are few drivers for attitudinal change.

2 ***What type of industry are appropriately located within cities, and how do sustainable cities respond to production processes and waste treatments that exist to meet city consumption pattern but occur outside of city limits?***

A sustainable city would include tertiary manufacturing with all raw materials (for food or manufacture) processed close to their source of production. Some industries such as viticulture already do this but sections of other agricultural production still transport raw materials such as animals to primary processing plants close to major cities. By having primary processing plants close to or in major coastal cites the recycling of the waste streams becomes expensive and inefficient.

Despite the large amount of work that has gone into the 'living Murray' documents it is apparent that Australia has not yet adopted the concept of embodied water and energy transfers. These transfers must be recognized before any Australian cites move towards even partial sustainability.

Many integrated renewable energy systems can have multiple benefits of reducing greenhouse gas emissions while helping to solve environmental issues such as desalinisation (eg. biomass energy crops, wind/solar osmosis and pumping).

3. ***What strategies are appropriate to encourage eco-efficiency and the reduction of domestic waste?***

A major step in the reduction of domestic waste would be to change the disposal pricing signals and planning requirements. At the moment Australia has, by world standards, some of the cheapest landfill rate in the world. Legislating a requirement that potential landfill sites be rehabilitated as a condition of licence would help incorporate true cost pricing for landfill. Legislation could also include tipping fees at existing licensed landfills and the states could charge 'landfill levies' as a method of moving landfill disposal fees to levels that would drive more efficient reduction of domestic waste.

4. ***What strategies are appropriate to encourage eco-efficiency and the reduction of industrial waste?***

Correct price signals are essential for encouraging eco-efficiency. Including the full cost of externalities in waste management will provide the correct price signals and will enable

overall societal benefits to be captured, including rudecution, reprocessing and energy generation. Further research is required to demonstrate and quantify societal benefits.

5. ***Are there economic impacts for a sustainable city in dictating higher environmental standards and waste treatments?***

If the issues surrounding embodied water and energy were recognised then these areas would be able to export sustainability credits into the large cities and help to develop a synthetic type of sustainable coastal city.

6. ***What is the role of industry in ensuring sustainable cities, and what incentives or standards are appropriate to achieve this?***

As with energy and greenhouse issues, effective strategies will include industry development, incentives to address market barriers and correct price signals. The incentives will be in the form of new emerging markets with potential to deliver profits, the and pricing signals for continued use of outmoded systems. With these signals the industry will look at changes and profits in the smaller more sustainable advanced rural cities.

Government sponsored industry development activities are a well proven mechanism that encourages industry in the desired directions. This strategy also develops industry delivery capacity. In the case of Sustainable cities, integration of a range of stakeholders with different interests is an essential first step. Government is well situated to help manage and facilitate this process by bringing together the various stakeholders in an open and transparent forum on an ongoing basis.

7. ***How can Industry be encouraged to be more socially and environmentally responsible, and to work in partnership with local communities.***

Correct price signals and financial benefits and mandatory reporting requirements for public corporations. Government can create market driven demand for environmental responsibility by insisting on minimum standards for government contractors.

6. Incorporate eco-efficiency principles into new buildings and housing

Questions for Consideration

- ***How can green construction and refurbishment techniques be integrated into standard building practices?***

  The uptake of eco-efficiency suffers the same market barriers as energy efficiency faces and solutions follow a similar pattern.

  Developing an effective and performance based rating system that holds developers and designers accountable for the performance of new and refurbished buildings is an essential set in developing green construction practices. In this regard the recently released NABERS rating scheme holds promise. Government must ensure that the development process ensures and facilitates engagement of the sustainable industries and stakeholders in an open and transparent partnership to help develop and deliver the various recommendations made in this submission

  Demonstration case studies are also effective mechanisms for leading change.

  Government leadership in specifying minimum standards for eco-efficiency will create demand for eco-efficiency in commercial buildings. Government can stimulate this demand through specifying minimum performance standards for buildings and moving to gross leases that incorporate sustainability.

  Finally a more to life cycle costing for buildings is also essential and in particular addressing the split incentives issue of owner and tenants is essential for any green or eco-efficient building process to succeed.

- ***How can eco-efficiency innovations be promoted to achieve a market value in both commercial and residential buildings?***

  The following programs will develop eco-efficiency and develop market values for commercial buildings:

  1. Research and quantification of the various benefits of green buildings is critical in addressing the cost effectiveness of such a process. In particular small improvements in productivity of employees in green buildings will reduce payback periods for such investments to commercially realistic terms.

  2. The annual mandatory NABERS rating of building performance and the publication of the data would ensure that tenants make informed decisions and also will provide public recognition and reward for high performance buildings.

  3. Implement mandatory minimum standards and appropriate price signals for energy, water and waste.

  4. Expansion of the Minimum Energy Performance Standards (MEPS) program both within the energy and greenhouse area and expanded to water and waste management.

5. Ensure all building rating tools achieve minimum and verifiable minimum performance standards in the various categories of sustainability in the built environment and specifically that:

    a. ABGR is used for energy and greenhouse
    b. Incentives the private sector to sign ABGR style Commitment Agreements to rate and upgrade the NABERS building rating.
    c. There are minimum standards for energy, greenhouse, water and waste
    d. That a minimum 4.5 star ABGR rating be required for recognition as a green building
    e. Outcomes are performance based

The following programs will develop eco-efficiency and develop market values for residential buildings:

1. Expanding the Victorian Minimum 5 Star ABGR Performance standards for new residential buildings nationally
2. Set Minimum 5 Star NABERS Performance standards for the resale of all residential buildings nationally

- ***What are the impediments to eco-efficiency principles being taken up across new housing developments and commercial areas?***

Impediments to eco-efficiency are similar to those facing renewable energy and energy efficiency. Price signals are distorted, least cost procurement practices result in buildings not being fully optimised, split incentives between building owners and operators inhibit life cycle costing and information failures limit the cost effective implementation of opportunities. Impediments and barriers include:

- The lack of focus end-users place on the benefits of greater energy efficiency (caused by the asymmetric information about the benefits [i.e. long-run cost savings]); ‘
- Split incentives: where the agent who pays for the saving measure does not benefit from some or all of the savings;
- Energy efficiency being seen as a non-core business activity;
- Inappropriately high perceptions of risk
- Lack of access to capital
- The fact that energy often represents a small component of a business’s costs.
- Procurement practices which are based on lowest initial cost rather than lowest life cycle cost;
- A lack of incentive to improve energy efficiency sometimes exists; the provision of energy has not been efficient and regulated energy prices have not accurately reflected the negative externalities and true costs associated with their production and use; the high cost associated with technology development; and, the high transaction costs of individuals seeking out efficient appliances, plant and equipment.
- Lack of information (access to appropriate expertise, equipment, services), high transaction costs and complexity of decision criteria
- Subsidies and government policies that undermine competitiveness and skew investment decisions.
- Distortions in energy markets including impediments to demand side bids, inadequate metering and time of use price signals and investment demand side options and difficulties in aggregating multiple low value sites

- ***What type of incentives or standards for new developments might be appropriate to encourage more sustainable residential complexes?***

  Mandated minimum performance standards should be introduced which compliment existing standards. This will require the development and market acceptance of rating tools that measure sustainable residential buildings. This would then allow a mandated requirement that all existing residential homes be rated for their sustainability prior to sale and that they be required to meet minimum standards. Like the case for non-residential buildings, owners are to be provided with options to meet the minimum standard.

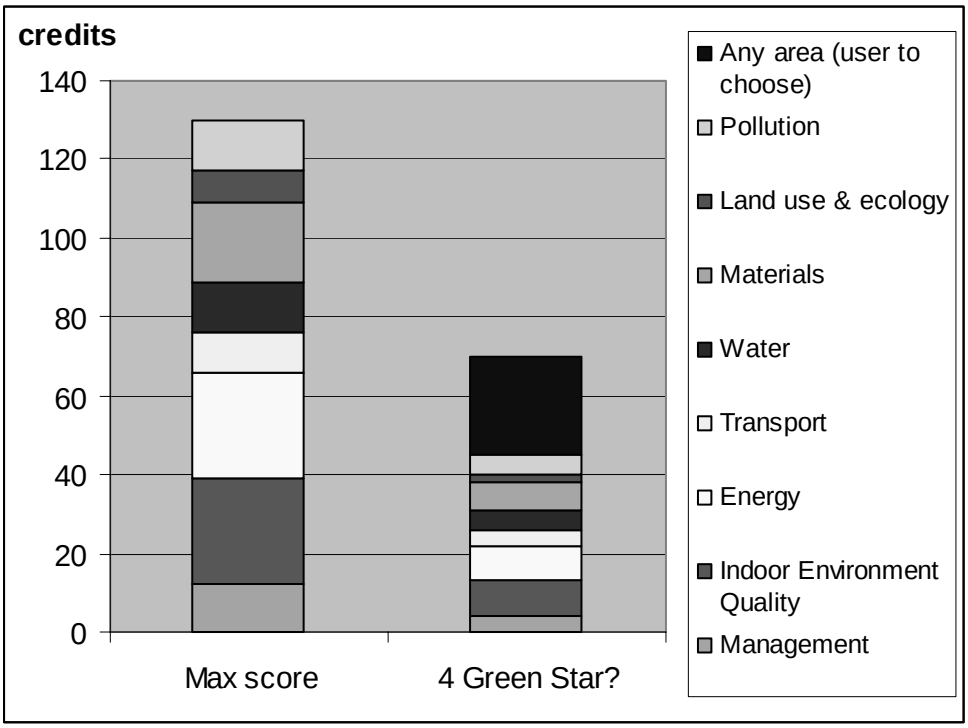
- ***Are existing building standards and product labelling sufficient to enable informed consumer choices and to ensure that the use of eco-efficiency materials and designs and are maximised***?

  The existing ABGR has provided a performance based measurement tool that has provided a consistent National measurement tool adjusted for climatic conditions. It has gained considerable recognition and many organizations are now measuring their energy and greenhouse performance with this tool. NABERS offers a similar performance based tool for rating the broader sustainability of buildings.

  The Green Building Council of Australia "green star" tool in its current format on the other hand has the potential to undermine progress on green buildings as it is not performance based, has no make good or verification components and has no minimum performance standards for each category. For the energy performance category this should be 4.5 stars Australian Building Greenhouse Rating (ABGR) to qualify for the four stars Australian Best Practice rating.

  Figure 1 shows an example for minimum performance in each area for a four star rating.

Figure 1 – Four Green Star with minimum performance standards



Source: Alan Pears, Sustainable Solutions

In order to ensure the credibility of any green building rating tool, verifiable, minimum performance standards must be included for each category of the rating tool. Also, as “green star” is a design rating, a "make good" provision be included so as to ensure that a proponent is under an obligation to deliver performance against that design. It is therefore recommended that “green star” be modified as follows:

- That 6 star World Best Practice and 5 star Australian Excellence under “green star” include a minimum ABGR 5 star performance.
- That 4 star Australian Best Practice under “green star” include a minimum ABGR 4.5 star performance.
- That green star incorporate a performance verification protocol that ensures building performance is verified and that in the case of a failure to make good, the rating should be re-assessed and if necessary, withdrawn. An ABGR Commitment Agreement is a suitable process to ensure design performance is actually delivered.
- As buildings can quickly go “out of tune” increasing energy consumption considerably, performance in the energy/greenhouse element of the GBCA rating be undertaken annually as is required with the ABGR.
- That the GBCA establish a broad and ongoing formal consultation process between the GBCA Technical Committee and various green and sustainable energy industry associations be established to achieve engagement with stakeholders, address the above issues and ensure continuous improvement of green star.
- That the GBCA provide public access to all submissions by making them available on the GBCA web site to promote engagement and ongoing consultation.
- That “green star” remain in the pilot phase until these issues have been publicly addressed and resolved.
- That the GBCA establish a formal consultative process for other rating tools under development (such as the fitout rating tool) for the development, pilot and ongoing improvement phases.

Refer to the attached submissions by the ROUNDTABLE to the GBCA on “green star”.

ATTACHMENTS

Attachment 1

Growth and opportunities provided by sustainable energy

The sustainable energy industry comprises renewable energy, energy efficiency and gas-fired generation. The sustainable energy industry is estimated to be growing at approximately 25 per cent per annum according to a survey undertaken by Mark Ellis and Associates[11] (MEA).

The MEA survey found that direct sales for the industry in the 2001/2 financial year were estimated to be $3.8 billion. When adjusted using Australian Bureau of Statistics multipliers the total economic contribution increased to between $6.8 and $9.6 billion. The sustainable energy industry directly employed an estimated 17,000 full-time people and was responsible for a total employment contribution of between 37,300 and 57,900 full-time employees. Approximately 21 per cent of the surveyed companies made sales overseas. The survey did not include the contribution of gas fired generation and cogeneration.

Sustainable energy is poised to be able to meet the challenge of reducing greenhouse emissions in a manner that will simultaneously increase economic activity, jobs and investment. The Allens Consulting Group report commissioned by the Sustainable Energy Development Authority (SEDA)[12] found that implementing policy measures to support renewable energy and energy efficiency would lead to an improvement in economic efficiency rather than imposing an economic cost. The measures were projected to boost competitiveness and output in NSW (which is forecast to rise by 0.17 per cent, equivalent to more than $500 million per annum). In addition it would provide more than 1000 additional jobs in NSW (4100 nationally).

The impacts and opportunities for the different components of the sustainable energy industry are considered separately:

Renewable Energy

The global market for renewable energy has seen tremendous growth over the last five years and is forecast to continue to grow significantly. For example, global wind power capacity has quadrupled over the past five years, growing from 7600 MW at the end of 1997 to more than 31,000 MW at the end of 2002. This represents an annual growth rate of more than 30 per cent per annum with $US7 billion of wind projects being built in 2002 alone.

The solar photovoltaic (PV) industry has seen similar growth. The market for solar PV has grown by around 35 per cent annually for the last five years to a $US3.5 billion market in 2001. The solar water heater industry is also growing significantly, particularly in Europe and China. As an example, sales in Europe have increased by 40 per cent over the last few years with sales growth expected at over 20 per cent per annum into the future.

These increases in capacity have lead to direct reductions in costs. Both wind energy and PV installed costs have reduced by some five per cent per annum and this will continue as installed capacity continues to grow[13].

[11] Australian Sustainable Energy Survey (December 2002) – Estimating the contribution of the sustainable energy industry to the Australian Economy, Mark Ellis and Associates.
[12] Allen Consulting Group - Sustainable Energy Jobs Report (January 2003)
[13] THE ROUNDTABLE Supplementary submission to the MRET Review Panel includes a detailed analysis of experience curves for wind energy and PV.

The substantial growth in the renewable energy industry to date has occurred in countries that have developed and implemented specific strategies to promote renewable energy. These have been matched in most cases by ambitious targets to increase the market share for renewable energy.

The benefits of such an approach are widely accepted and for this reason an increasing number of countries are implementing strong proactive policies and targets for renewable energy.

The Mandated Renewable Energy Target (MRET) is an important industry development initiative that is supporting the growth of the renewable energy industry in Australia. Unfortunately the level of MRET at 9500 GWh is not sufficient to deliver the industry development objectives of the measure. The reasons for this are demonstrated and articulated in the ROUNDTABLE's submission to the MRET Review.

Importantly a number of state governments also believe that MRET should be increased for example the Victorian government's submission to the MRET review also supports this view and recommends that MRET be extended to 19,000 GWh by 2010.

The Victorian Government has also announced a number of policy initiatives including increase the share of renewables from 4% to 10% by 2010 as well as to install 1000 MW of wind energy projects in Victoria by 2006.

If Australia is to have a share of this emerging industry then it must support the growth of a domestic industry. A strong domestic market is essential to build a viable and sustainable local industry that can obtain, through exports, a sizeable share of this substantial global market.

Energy Efficiency

The report by the Allen Consulting Group "Sustainable Energy Industry Report" (January 2003) for SEDA, identifies the following energy efficiency sectors:

Commercial – industrial energy efficiency. Improving the energy usage practices in industry, the efficiency of appliances used by industry and the energy efficiency of buildings can enhance sustainability through reduced greenhouse gas emissions and avoided economic costs. In general, Australia currently lags behind world's best practice in this field and currently has limited capacity in terms of manufacturing of related equipment and in the provision of energy efficiency services.

Industry – small cogeneration. Thermal efficiency can be raised from an average of around 30 per cent for the traditional gas power stations up to around 85 per cent in smaller scale of cogeneration facilities. The greenhouse gas savings and economic savings can be commensurate with the energy efficiency gains. The application of these technologies is limited to specific industrial sites, although it is considered that the potential market for the technology could rise from about 5 per cent of stationary energy needs currently supplied to about 10 per cent. A supportive policy environment is needed in order to offset identified market and regulatory failures.

Demand management (DM) drivers. Traditionally growing energy needs have been met with a supply side response with 'build and generate' options. In contrast, demand management (DM) approaches involve investments that lead to reduced or changed patterns of energy demand. Studies about DM in Australia and overseas consistently indicate average commercial rates of return on DM investments of over 20 per cent. DM has the potential to drive material efficiencies in the Victorian economy.

Some significant demand-side actions, such as minimum energy performance standards for equipment and appliances, are already being implemented, and are expected to accelerate savings over the coming decade. These will deliver greenhouse savings in excess of 11.6 million tonnes per annum at a negative cost of $30/tonne. The value of energy savings more than offset the costs!

The Victorian Government's mandated minimum "five star" energy efficiency requirement for new residential houses has also identified a significant emission reduction with a net economic contribution to the Victorian economy.

Importantly the National Framework on Energy Efficiency Working Group E2G2 has estimated that, over the next 12 years an additional $32 billion of national investment in energy efficiency projects (with simple payback periods of better than 4.5 years) could occur if market barriers are addressed. As energy efficiency delivers savings in energy costs and greenhouse gas emissions at a profit, not a cost, this will provide an increase in GDP of $3.4 billion and create more than 11,000 new jobs.

Improvements in end-use energy efficiency is one of the most cost-effective ways to reduce greenhouse gas emissions, energy costs, and broader environmental impacts of energy supply and use. And because it generally involves the substitution of services and manufactured goods for energy, it also increases net employment. Policies to stimulate energy efficiency and the development of an energy services industry should therefore be a key part of the policy response to deliver sustainable cities.

Attachment 2

Metering for PV systems

Currently, connection and metering requirements for domestic PV systems (<10 kW in size) vary. No standard or best practice approach exists for a connection agreement or for metering requirements from electricity retailers and distribution network service providers (DNSP). As a result, the connection process and requirements for the customer can be complex, protracted and expensive – creating a barrier to further uptake of PV systems.

A key issue is the typical requirement for customers purchasing a PV system to also install a separate meter or to have a single meter that can accurately measure imports and exports. There are no technical or safety reasons to have a separate metre. The stated reason for this requirement is that typical meters are not calibrated to run backwards therefore when a customer is exporting power to the grid (this typically occurs during the day when the home may be unoccupied) the level of exported power is not properly metered.

The characteristics of a typical grid connected domestic PV system installed in NSW are as follows:
Size: 1 kW[14]
Annual electricity generation: 1400 kWh
Annual electricity consumption is significantly more than this – over 6000 kWh pa
Amount of electricity exported (typically during the day when the house is unoccupied) : 400 kWh[15]

If remuneration for the PV system exports is paid at current electricity retail prices of $0.12c/kWh (there are cases in Australia where the amount is less), the amount paid for exports is $48 per annum. Advice from BCSE members indicates that the cost of installing a separate meter can be as high as $500. The most complex system required is two separate unidirectional digital meters that measure imports and exports.

It is counterintuitive that a net cost is imposed on a customer who is alleviating a demand constraint. In contrast, no such requirement is placed on customers to install separate meters when they install air-conditioners that significantly add to system peaks and create an increased need for network investment.

Additionally, while PV systems take less than half of one day to install, BCSE members have advised that connection and metering arrangements between the system owner, retailer and distributor have delayed operation of the installed system by over 3 months. Further delays have occurred when the system owner has chosen to change retailers for more competitive arrangements, which has resulted in protracted contract delays and conflicting retailer and distributor requirements.

[14] This is typical of the size of systems that have been installed to date and represents the size of system that can obtain the maximum rebate under the Commonwealth's PV Rebate Program (PVRP).

[15] This figure is for a typical NSW household, which is a family with both adults working (Australian Bureau of Statistics, 2001Census Data). The level of power exported could be much lower if the house is occupied during the day.

Attachment 3

Renewable and Sustainable Energy ROUNDTABLE submissions to the GBC

11th July 2003

Executive Director
Green Building Council Australia
PO Box N413
Grosvenor Place, NSW 1220

Attention: Maria Atkinson

Re: Proposed Environmental Rating Tool and Weighting Survey

Dear Ms Atkinson,

I write on behalf of the Renewable and Sustainable Energy ROUNDTABLE (ROUNDTABLE) to raise a number of issues regarding the Green Building Council of Australia's (GBCA) the proposed Environmental Rating Tool for commercial buildings and also the weighting survey.

The ROUNDTABLE is a federation of Australia's renewable and sustainable energy industry associations, comprising a breadth of members from research and development, education, through to electricity generation.

Several ROUNDTABLE members have highlighted difficulties in completing the weighting survey for GBCA's Environmental Rating Tool. The strength of our members lies in issues surrounding energy and greenhouse gas emissions, and it is in relation to these issues that the weighting survey has highlighted significant problems with the proposed rating tool, specifically the failure to address minimum energy efficiency and greenhouse performance and ensure annual performance verification

ROUNDTABLE's main points regarding the GBCA's weighting survey and proposed Environmental Rating Tool are as follows:

1. Components of the Environmental Rating Tool should have an ascribed minimum performance level (particularly energy and greenhouse performance)
2. Greenhouse and energy performance must be given considerable weight in assessing the environmental impact of a building.
3. The methodology used for the Australian Building Greenhouse Rating (ABGR) scheme should be incorporated into an environmental rating tool for buildings.

4. Buildings should be reassessed annually to maintain a given rating.

1. Components of the Environmental Rating Tool should have an ascribed minimum performance level (particularly energy and greenhouse performance)

The ROUNDTABLE is concerned that the proposed Environmental Rating Tool allows greenhouse and energy performance obligations to be offset by high performance in any number of other environmental criteria. The ROUNDTABLE does not dispute the importance of each component of the GBCA's weighting process, however, we recommend that each component be ascribed a minimum level of environmental performance. Specifically the Roundtable recommends minimum 4, 4.5 and 5 star performance respectively for the 3 proposed categories of green buildings.

2. Greenhouse and energy performance must be given considerable weight in assessing the environmental impact of a building.

Given the overwhelming acknowledgement by the scientific community that global warming is directly attributed to human induced greenhouse gas emissions, the greenhouse component of any environmental rating tool must be given considerable weight. Electricity supply contributes 55% of Australia's total annual greenhouse gas emissions. To ensure the uptake of low emission technologies and energy efficiency it would be prudent to adopt greenhouse gas emissions as the unit of measurement for energy and greenhouse performance.

3. The methodology used for the Australian Building Greenhouse Rating (ABGR) scheme should be incorporated into an environmental rating tool for buildings.

ROUNDTABLE would also like to bring to your attention the Australian Building Greenhouse Rating (ABGR) scheme. The ABGR provides accredited assessments of the greenhouse intensity of office buildings by awarding a star rating on a scale of one to five. The scheme provides a national approach to benchmarking the greenhouse performance of buildings. The ROUNDTABLE recommends that the methodology used in the ABGR scheme be incorporated into GBCA's Environmental Rating Tool as the measure of energy and greenhouse performance.

4. Buildings should be reassessed annually to maintain a given rating.

Without adequate maintenance, buildings have a tendency to become less energy efficient. To encourage a true rating of environmental performance over time, and to ensure that new buildings achieve their designed operating specifications, ROUNDTABLE recommends that a building must be assessed periodically to maintain it's environmental rating.

The ROUNDTABLE's membership list is enclosed. Please note that reference to the ROUNDTABLE observers is for information only and should not be construed or implied as an indorsement of this letter by any observer organisation or it's representative.

Thank you for the opportunity to comment on the weighting survey for GBCA's Environmental Rating Tool. If you have any further queries please contact the ROUNDTABLE secretary, Mr Alex Beckitt, on (03) 6230 5042 or email Alex.Beckitt@hydro.com.au .

Yours sincerely

The Hon Peter Rae AO
Chairman
The Renewable and Sustainable Energy ROUNDTABLE

Attachment 6
Renewable and Sustainable Energy ROUNDTABLE Members

The participants of the Renewabel and Sustainable Energy ROUNDTABLE are as follows:

Alternative Technology Association (ATA)
Australasian Energy Performance Contracting Association (AEPCA)
Australian and New Zealand Solar Energy Society (ANZSES)
Australian Business Council for Sustainable Energy (BCSE)
Australian Greenhouse Office (AGO)*
Australian Institute of Energy (AIE)
Australian Wind Energy Association (AusWEA)
Bioenergy Australia
Centre for Alternative Design and Dissemination of Energy Technologies (CADDET)
CSIRO Division of Energy Technology*
South Australian Department of Business Manufacturing and Trade (DBMT)*
Commonwealth Department of Industry, Tourism and Resources (DITR)*
Environment Business Australia (EBA)
Queensland Environment Protection Agency (EPA)*
New Zealand Wind Energy Association (NZWEA)
Northern Territory Centre for Energy Research (NTCER)
Renewable Energy Generators of Australia (REGA)
Renewable Energy Technology and Innovation and Network Australia (RETINA)
Sustainable Energy Authority of Victoria (SEAV)*
Sustainable Energy Development Authority (SEDA)
Sustainable Energy Development Office (SEDO)*
Western Australia Sustainable Energy Association (WA SEA)*

* ROUNDTABLE Observers: Reference to ROUNDTABLE observers is for information only and should not be construed or implied as endorsement of any of the content of this product from any observer organisation or its representative. The views and opinions contained in the ROUNDTABLE policy proposals do not reflect those of any Government or government organisation, and may not be used for endorsement purposes.