

Report on the findings of the Gilmore Group Workshop:

Executive Summary

“Evaluation of the findings of the Productivity Commission Inquiry into Energy Efficiency with specific focus on the Building Industry”

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Workshop funded by:

Insulation Council of Australia and New Zealand

Australian Glass and Glazing Association

Australian Business Council for Sustainable Energy

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1 Executive Summary

1.1 Productivity Commission Draft Report into Energy Efficiency

The Productivity Commission released the draft report of its Inquiry into Energy Efficiency on 21 April 2005 after receiving 85 submissions from interested parties in government, industry, community groups and individuals. The report was highly critical of existing and proposed building regulations aimed at reducing the energy use of buildings through improvement of the thermal efficiency of their building fabric. It has called for a halt in the implementation of new building regulations till the existing regulations have been evaluated to ensure that these regulations do save energy. Its analysis suggests that existing regulation is likely to offer little improvement to energy efficiency, that the costs are underestimated and benefits overstated, and that there is little evidence of market failure sufficient to justify government intervention. Its alternative prescription is essentially an increase in the price of energy to reflect the real costs incurred in its production and 'light handed' regulation combined with the provision of targeted information to ensure that markets work efficiently. The Commission believe that competitive pressure in the market will provide a natural improvement to energy efficiency without the need for regulation and that overlooking this natural improvement is part of the reason why the energy savings provided by regulation has been overstated.

1.2 Expert Workshop

The draft report was released to provide an opportunity for further public consultation and comment. The Insulation Council of Australia and New Zealand, the Australian Glass and Glazing Association and the Business Council for Sustainable Energy joined together to sponsor an expert workshop to evaluate the implications of the draft report with a specific focus on the building industry. The Australian Conservation Foundation was also invited to participate in the workshop. The workshop met on 30 and 31 May 2005. The experts assembled have a wide range of expertise in economics, energy efficiency, engineering, architecture and public policy development. For a full list of participant see Appendix A.

1.3 Workshop findings

The Workshop found that the Commission's recommendations to halt further regulatory development were not justified. The Terms of Reference - which only allowed the Commission to only look at energy efficiency improvements which are cost-effective for individual producers and consumers - hamstrung the Inquiry and gave it a perspective that was not useful in helping government develop viable energy efficiency policy. The Commission's narrow interpretation of market failure and private cost effectiveness but not social benefit virtually eliminated the consideration of many effective policy options. Further, the usefulness of simulation techniques as an effective instrument to reduce the energy use of buildings was brought into question based on the evidence of a few submissions, despite international precedent for the use of simulation and many submissions to the contrary. In arguing for light handed regulation and targeted information provision the Commission ignores the fact that such approaches have been tried in Australia for over 25 years and yet greenhouse gas emissions from buildings have continued to grow at a rate which is inconsistent with an effective response to climate change or societal net benefit.

1.3.1 Terms of Reference

In criticising the focus on private cost effectiveness the workshop does not believe that energy efficiency improvements cannot be justified on the basis of cost effectiveness. Rather this narrow focus does not allow the Commission to examine existing and proposed policies on the terms in which they were developed. Building regulations and the policy program for the National Framework for Energy Efficiency (NFEE) were justified on the basis of their net social benefit i.e. measures which produce overall benefits to individuals, provide economic growth, a reduction in peak loads on energy utilities and environmental benefit in terms of reduced pollution and greenhouse gas emissions. The Victorian government analysis of its five star housing regulations showed that the cost benefit ratio for individuals of 4 star was better than for 5 star. However, economic modelling showed that a 5 star standard produced twice as much economic growth. Because the social

benefits of 5 star outweighed the benefits of 4 star, and 5 star was still positive for individuals, the government chose to implement 5 star. If the government had the same narrow focus as the Inquiry it would have rejected 5 star because it has a lesser benefit for individuals. The workshop believes that because the justification for all these policies is not maximising private cost effectiveness but is instead net social benefit the terms of reference should mean that the Commission is unable to consider these policies at all.

1.3.2 Market failure

The terms of reference also mean that the Commission have a narrow view of the extent to which the market is failing to deliver energy efficiency. The Commission believe that it is rational behaviour to select a very inefficient appliance or house if one values other features such as capital cost more highly and that these choices are not a basis for government intervention. The nature of the failure in this case is that in order to deliver adequate reductions in greenhouse gas emissions of the scale required to fulfil greenhouse policy obligations government intervention is needed to steer such 'privately rational' choices to more 'socially rational' energy efficient options. The consideration of such issues is beyond the Inquiry's scope. It should be noted, however, that the workshop did not consider this example to be privately rational. The only basis on which a very inefficient choice could lead to the individual being better off would be if the house was rarely heated or cooled or the appliance was rarely used. This may sometimes be the case but over the life of a house or appliance it is likely that the intensity of use will not remain at this low level and individuals will be significantly worse off as a result.

A number of submissions to the Inquiry and previous policy evaluations have provided quite detailed examples of low cost solutions to improved energy efficiency which is clearly beneficial for the individual. However, the Commission argues that these case studies show examples where the opportunity for energy saving is greatest and that the benefits were so clear that in many cases these improvements would have been implemented without government intervention. While it dismisses these examples as unrepresentative case studies, it seems quite happy to accept other limited and statistically unrepresentative case studies which it believes cast doubt over the benefits of energy efficiency.

The workshop found that there may well be many cases where energy efficiency improvements have greater potential than shown in the case studies due to the entrenched nature of market failure. In general the workshop believes that the Commission has failed to appreciate how much of the infrastructure and institutions needed to facilitate energy efficiency simply does not exist due to path dependency. The low price of energy and the lack of government emphasis on energy efficient building until recent times have meant that developing skills and provision of information in this field has not been seen as important. Government policy intervention is needed to transform markets to develop a cultural and institutional framework that facilitates energy efficiency rather than the current conditions where energy efficiency is virtually ignored. Indeed, many market intermediaries have vested interests in encouraging energy waste, for example by encouraging installation of over-sized equipment.

1.3.3 Discount rates

The Commission believes that the benefits of energy efficiency policy are overstated because discount rates used for evaluation were under 10% when there are many examples where private discount rates are found to be two or three times higher. Again the workshop found this is a legacy of the terms of reference and is not the appropriate way to assess measures with social benefit. Furthermore, the use of such 'implied' discount rates is not consistent with government policy as shown in the Department of Finance Handbook for Cost Benefit Analysis which recommends application of the Capital Asset Pricing Model (CAPM) which would lead to the use of discount rates in the order of 8% (though even this may be considered high). The research suggesting the high discount rates for individuals is predicated on the basis that if the decision was taken in a fully informed and rational manner, the only way to explain the outcomes is to assume that a high discount rate has been applied. However, where there is market failure e.g. lack of information or bounded rationality, this higher discount rate becomes a proxy for the extent of this market failure. High discount rates may also be appropriate where risk is considered to be high, but investment in energy efficiency is often considered less risky than market investment alternative because the energy is saved independent of market cycles or changes to the cost of capital. Finally it is important

to note that even if an inappropriately high discount rate of 30% were applied to the NFEE modelling significant economic growth benefits would still be shown.

1.3.4 Regulation based on simulated building energy loads

It is clear however, that the Commission does believe energy savings are risky because they call into question whether the use of thermal performance simulation in regulations will actually lead to reduced energy consumption.

Simulation is used throughout the world as the basis of demonstrating compliance with building regulation. Its use has been supported by many submissions to the Commission. Some submissions questioned whether energy savings would be delivered because the final actual energy consumption of buildings will not match the simulation prediction. The Commission's findings 7.2 and 7.3 state that the ranking of building energy consumption does not match the ranking given by simulation and that there are many other determinants of energy use that are not included in simulation. On the basis of these findings it reasons that simulation (of house energy efficiency) could distort the market to favour solutions that are less cost effective. The workshop entirely rejected this analysis.

There is enormous diversity in the way in which households use energy for heating and cooling. Consequently, a one star house that is heated and cooled for a few hours a day could easily use less energy than a 5 star house heated and cooled for most of the day. The intention of simulation is to ensure that over a broad range of potential use the 5 star house would use less energy than it otherwise would have. It is likely that those who do not use heating and cooling frequently will not derive significant financial benefit from the application of the energy efficient housing regulations; however, their houses will be more comfortable. The Commission fails to appreciate that it is rare for the one house or household to have low demand for heating and cooling over the life of the house or household. As houses are bought or sold or as household circumstances change e.g. the birth of children, the need for heating and cooling will also change. Further, energy use for heating and cooling in homes is closely tied to occupancy i.e. if one is away from home no heating or cooling is required. Those households with the highest occupancy rates will generally have fewer household members in full time employment. Consequently, an energy efficient house will minimise heating and cooling bills at the very time when demand is higher and income is lower.

With respect to the application of simulation to commercial buildings it is true that poor commissioning and maintenance of systems can lower the energy savings obtained. However, even those submissions which note this still consider that simulation is a fundamental part of any strategy to reduce building energy use. However, it is important that actual system performance be checked after occupancy to ensure that systems are working efficiently and are properly maintained — cost effective regulation should ensure this. Just as there are requirements for fire systems to be checked the workshop believes that similar post occupancy requirements for energy systems would help to ensure that the level of performance the building was designed to achieve is actually delivered.

The Commission calls for 'ex-post' evaluation of current regulations to be undertaken to test the efficacy of these regulations. The workshop found that such testing would be invaluable but do not see this as a requirement to justify the regulation, but rather as an instrument to ensure that the regulations are improved to maximise their effectiveness.

1.3.5 Alternative policy prescription

The Commission argues that market forces will drive firms to further improve energy efficiency and that as a result there will be a natural improvement in energy efficiency over time. After calling for a halt to further regulatory implementation it suggests that further cost effective energy efficiency will be delivered through increases to energy pricing to better reflect the cost of production, targeted information and other light handed regulatory approaches. To address these issues in the way the Commission proposes requires governments to reverse their traditional policy emphasis on low energy prices, and would require substantial justification, analysis and detailed policy development, little of which is provided in the Draft Report

However, the Commission has dismissed unreasonably the extensive evidence that shows firms and households are not implementing cost effective opportunities to invest in energy efficiency. These investments are impeded by a range of market and organisational failures not related to energy pricing — although lack of cost reflective energy prices also contribute to less than optimal outcomes. A range of cost-effective policies has been demonstrated, domestically and

internationally, to improve energy efficiency outcomes. By overcoming market failures and improving outcomes for the large majority of consumers and firms, these policies deliver significant net economic benefits.

In addition, cost effective intervention to improve energy efficiency also can deliver additional social benefits through helping to manage the risk of future climate change. Policies to address climate change now have a time imperative as delay may cause irreversible changes to our climate that bring substantial economic, social and environmental cost.

1.3.6 Conclusion

The Productivity Commission's Draft Report fails to make any contribution to the development energy efficiency policy for the built environment in Australia. Its 'do nothing but put up the price of energy and provide more information' conclusion fails to recognise the political difficulty such a policy would face and no options are provided to address the problems higher cost energy would cause for the poor and the competitive position of businesses. It dismisses evidence of market failure and of cost effective policy alternatives with economic theory rather than a through evaluation of the feasibility of its alternatives and an investigation into the appropriate policy responses that would be needed to overcome the barriers to implementation. The Commission gives no consideration to the gap between how quickly we may be improving efficiency under current policies and what rate of improvement is needed to adequately address the broader policy needs of greenhouse gas emission reduction.

Building regulations and policies to improve energy efficiency in the built environment developed through NFREE were developed on the basis of net social benefit. It is already understood that such policies will not benefit all firms and individuals – but will provide an overall net benefit while providing private benefit for most. The Commission's narrow terms of reference should put such policies beyond its consideration.

Further, the implementation of proposed regulations would bring the national consistency industry has argued for. Failure to act would simply see state and local governments continue to increase the stringency and breadth of local regulations because current national regulation is inadequate.

The Commission has not evaluated the cost to industry that further delay would impose. Materials suppliers have already invested in new plant and builders and designers have already begun to modify houses to comply with new regulations. Rather than simply stop further regulatory implementation the Commission should have investigated what alternative policies may be available to government to help industry deal with the difficulties it has found with these regulations such as improved training and subsidies.

Australia needs to act without delay to improve the energy efficiency of its built environment as part of an overall coordinated approach to the challenge of climate change, management of supply-side infrastructure investment, health and equity. This means that the effectiveness of regulation needs to be monitored so that policy outcomes are seen to be delivered and the regulations improved to maximise their impact. The evidence does not justify further delay and the imperative of climate change means this is no longer an option.