COMMENTS ON DRAFT REPORT INTO THE ECONOMIC AND ENVIRONMENTAL POTENTIAL OF ENERGY EFFICIENCY

Introduction

The Sustainable Energy Development Office welcomes the opportunity to respond to the Productivity Commission's draft report for its inquiry into the Economic and Environmental Benefits of Energy Efficiency. This document is not a comprehensive critique of the draft report but is intended to provide some views to the Productivity Commission for consideration in preparing the final report.

Concerns are held about the approach taken by the Commission in preparing the draft report, specifically in the areas of methodology employed, sources of information and the findings based on this approach.

The draft report is critical of a number of policy measures developed across all tiers of government aimed at improving energy efficiency and makes recommendations for the suspension of a number these programs. However, the approach used by the Commission is at variance with the normal basis for policy development used by the Western Australian Government and governments in general. The report largely ignores price externalities, one of the key drivers of energy efficiency policy development and the underlying basis of sustainability.

The Commission has recognised that policy is developed for other reasons than net private benefit. The commission also states the "examination of measures that generate net public benefits... is beyond the scope of this inquiry". However, this is inconsistent with recommendations in the draft report for the suspension of energy efficiency policy measures that have been developed on the basis of net public benefit.

Independent analysis of the costs and benefits of energy efficiency would have been beneficial. The draft report appears to discount the only empirical studies undertaken to quantify the economic potential of energy efficiency, that of the National Framework for Energy Efficiency. While modelling provides an indication of potential outcomes, the absence of data contrary to that predicted for the NFEE should suggest a weighting towards these figures.

Methodology

The Western Australian Government's position on the scope of the inquiry was made clear in its submission on the issues paper. The Productivity Commission is urged to reconsider the limited definition of cost-benefit applied to this inquiry. There also appear to be some inconsistencies (deviations from the methodology) in the approach used, the use of supporting evidence and some assumptions and definitions of energy efficiency that differ from established norms which would benefit from further explanation.

Economic Parameters

The Commission has only considered costs and benefits that accrue to individual producers and consumers in contrast with the broader net public benefit used in other studies undertaken by the Commission. This definition ignores price externalities including the environmental benefits of energy efficiency, at odds with the title of the Inquiry.

It is worth noting the context in which policy interventions to improve energy efficiency have been developed in Australia. The international scientific community is overwhelmingly in accord that human induced climate change is real, measurable and poses significant environmental and economic threats to the global community. Energy consumption is the single largest contributor to human induced greenhouse gas emissions in Australia.

Internalising the environmental costs associated with energy use, such as through emissions trading or a carbon tax as identified by the Commission, may be a more direct mechanism for reducing greenhouse gas emissions. However, to date there has been resistance to implement such mechanisms at a national level. In considering imposing such a requirement on the Australian economy, preparing industry through a gradual introduction of supporting measures may reduce the potential `shock' the introduction of a carbon constraint may have.

Most Government energy efficiency policy, including the National Framework for Energy Efficiency (NFEE), is developed on the basis of net public benefit, which has been deemed outside the scope of this inquiry. Consequently, the recommendations and findings for the suspension of energy efficiency policy developed on this basis would appear to be in conflict with the scope of the inquiry as ultimately determined by the Commission.

Notwithstanding this, in developing the NFEE, the sectoral analysis of the economic potential for energy efficiency was determined using net private benefit and a conservatively achievable level of uptake. Energy savings were identified in net private benefit terms and the policy evaluation captured the broader public benefits. Similar approaches have been used overseas with studies finding the achievable potential for energy efficiency in the United Stated in net private benefit terms to be 24% for electricity and 8% for gas (Nadel et. al. 2004[i]).

Many of the Commission's findings stem from a view that energy efficiency only appears privately cost effective because discount rates used in regulatory impact statements are lower than those used in the private sector. The draft report cites reports that effective discount rates as high as 30% are used in the community to assess investment in energy efficient appliances. The Commission argues that perceptions of high risk in the private sector may increase the discount rate. However, it could be argued that the poor comprehension of energy efficiency in the market contributes to this perception. It is debatable whether an inflated discount rate on the basis of perceived rather than actual risk should be recognised in the economic analysis of policy evaluation.

The Commonwealth Department of Finance and Administration recommends a discount rate of 8% where project specific discount rates are not available[ii]. Similarly, the Western Australian Department of Treasury and Finance does not recommend loading the discount rate to account for perceived risk "as there will generally be no objective basis for determining the magnitude of the risk premium"[iii]. Moreover, the use of high discount rates has been legally tested and rejected by the US

Department of Energy, supported by the US Federal Court of Appeals, as a sound basis on which to evaluate minimum standards (Nadel, 2004).

Supporting Evidence

There are a number of areas in the report where the findings do not appear to be supported by evidence. In some instances the report appears to give opinions or views expressed by external parties equal or greater credence than empirical measurement. Different interpretations could be reasonably made of some evidence cited in the report and some references used contain misleading interpretations of evidence.

The Commission appears to have discounted research conducted to support the National Framework for Energy Efficiency (NFEE). This is particularly the case in relation to the energy efficiency gap. The report claims that the energy efficiency gap is overstated and cites two sources to support this position. However, it is noted that neither source provides evidence to support the assertion. It would appear that one submission actually refers to the technical gap as opposed to the economic gap used to develop the NFEE.

Minimum Energy Performance Standards (MEPS) have been one of the most successful Government programs for addressing the economic and environmental impact of appliance energy consumption. The Commission concluded that competition impacts had not been adequately considered with their introduction. However, no evidence has been presented that competition has actually suffered as a result of MEPS. In fact it could equally be, surmised from the submissions that the existing Regulatory Impact Statement (RIS) process adequately addresses competition concerns. We recognise the role of the Productivity Commission in the RIS process through the Office of Regulation Review.

The Productivity Commission presents evidence of improvements in product efficiency in the absence of MEPS in the United States[iv]. However, it is understood that other studies suggest that most of the significant improvements in appliance energy efficiency occurred in years that standards were actually introduced (as might be expected as industry prepares for such requirements) and that efficiency gains were negligible in years without changes in standards (Nadel, 2004[v]).

The application of minimum energy performance standards in buildings is a key component of Governments' efforts to reduce the economic and environmental impact of poor building design. The Commission cites criticism of mandatory building standards as evidence for their withdrawal. It is the case that the occupants of a building have a significant impact on building energy consumption. However, it is also the case that the extent to which temperature conditioning (a significant energy consuming item) in a building can be managed is determined by the intrinsic energy efficiency of the building envelope. That a building occupant may be willing to tolerate lower levels of comfort is not considered evidence for the failure of current building energy efficiency requirements or of the software tools used to validate them.

Consistency in Approach

As previously acknowledged, the choice of cost benefit analysis will influence the economic and environmental potential of energy efficiency. However, once a set of criteria is chosen, consistency in its application is critical. There are a number of

areas where the report appears to diverge from the stated approach and methodology. The report could benefit from a more consistent application of the stated methodology.

As a case in point, when considering building energy efficiency standards in the Australian Building Code (page 196), the Commission states "The estimate of net benefits... appears to be overstated because it does not include costs incurred by governments administering the regulatory regime". The RIS for the building standards included a cost-benefit analysis consistent with the definition adopted by the Commission. Under this assessment, energy efficiency in buildings still delivers a positive benefit.

The draft report is critical of house and commercial building energy rating programs and in particular with the potential disparity between modelled and actual energy use. Most labelling or standards have a number of underlying assumptions that allow comparative assessment between products that are similar in design but have aspects that allow differentiation. Vehicle energy ratings for example, are based on a number of assumptions in the areas of maintenance, operational regime, mileage and driving style. House energy rating tools model the expected energy consumption to maintain comfort levels in the building.

The draft report notes the disparity between actual and estimated vehicle energy consumption. Similar assumptions are used in rating the intrinsic energy efficiency of buildings. However, the report's treatment of essentially similar rating schemes (house energy ratings versus vehicle fuel energy ratings) is quite different.

In the draft report the Productivity Commission appears to withdraw support provided in a previous review of reform of building regulation. In this review, the Productivity Commission noted that there was market failure in the building sector relating to environmental price externalities in the cost of energy. The Commission further noted that split incentives between the developer and owners or tenants would blunt the price signals if those environmental costs were internalised to the price of energy. The Commission broadly supported consistency in application of mandatory building standards. This support was contingent on a rigorous assessment of the need for regulation, a comparison with alternative measures and a net benefit test. No evidence is presented to suggest that these conditions have not been met.

Assumptions and Definitions

There are some assumptions in the draft report that may not accurately reflect the current technical state of energy efficiency. Also some of the definitions used by the Commission differ from established understanding of terms. These assumptions and definitions may have impacted on the findings in relation to some energy efficiency policy.

In the section on minimum standards, the Commission appears to have assumed that design features must be foregone to meet minimum standards. Energy efficiency is often a practical feature of good design. No evidence has been put forward by the Commission that features have been dropped as a result of minimum design standards. Nor is evidence presented of whitegoods features that are available in countries without MEPS but not in Australia. The refrigerator example on page 125 is an extreme example, not considered representative of the impact of mandatory standards.

In relation to minimum standards for buildings, the analytical basis of building energy ratings appears to have been misconstrued. House ratings seek to provide a comparative basis for consumers to choose between products, no different from other energy performance labels. It is worth noting that the approach taken to determine the heating and cooling requirement for building energy rating software is based on decades of research and applied internationally. Industry uses this approach universally to size air conditioning systems in new buildings. The new Australian benchmark energy rating software, Accurate, applies Australian parameters to the same algorithms used in energy rating software internationally.

Building energy rating software is one of several options available to demonstrate compliance with energy efficiency standards, for example the deemed to comply provisions and expert opinion. The BCA's structure, in theory, allows for a range of possible solutions to a performance requirement and provides flexibility in building construction. This allows consumers and developers to determine the "best fit" for their particular circumstances.

The Productivity Commission's definition of energy conservation does not appear to align with the more traditional way in which this term is applied. The movie theatre example in the executive summary is a case in point. This action could be more appropriately described as the geographic transference of a heat load rather than an energy conservation measure.

Policy Development for Energy Efficiency

Policy addressing energy efficiency has been developed on a far broader set of principles than net-private benefit. The definition of economic efficiency used as the basis for the report does not account for the many externalities associated with energy consumption. Without a consistent national approach to internalise these costs less direct measures are justified.

Conclusion

In conclusion, it is considered that the draft report findings and recommendations for the suspension of energy efficiency policy are not adequately supported by the body of the document. Moreover, the scope of the inquiry does not provide a sufficient foundation to evaluate policy developed on the basis of net public benefit.

To improve the relevance and applicability of the draft report, it is recommended that the Productivity Commission:

- Re-evaluate its findings using net public benefit analysis.
- Correct the inconsistencies in the report where it makes recommendations on policy measures established on a public benefit basis or on the basis of the opinions of external parties.

[i] Nadel S. Shipley A Neal Elliot R. (2004) "The Technical , Economic and Achievable Potential for Energy-Efficiency in the U.S. - a Meta-Analysis of Recent Studies" In The Proceedings of the 2004 ACEEE Summer Study on Energy Efficiency in Buildings", American Council for an Energy Efficient Economy, Washington

[ii] Department of Finance (1991) Handbook of Cost-Benefit Analysis, Australian Government Publishing Service, Canberra

[iii] Department of Treasury and Finance (2001) Costing and Pricing of Government Outputs: Guidelines for Use by Agencies, Fourth Ed, Department of Treasury and Finance, Perth

[iv] Sutherland R, (2003) "The High Costs of Federal Energy Efficiency Standards for Residential Appliances" In Policy Analysis No 504, Cato Institute, Washington

[v] Nadel S, (2004) "Critique of the Cato Institute Study `The High Costs of Federal Energy Efficiency Standards for Residential Appliances by Ronald Sutherland" American Council for an Energy Efficient Economy, Washington