Response to

Productivity Commission Draft Report -

Inquiry Into The Economic And Environmental Potential Offered By Energy Efficiency

Prepared by

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The following submission has been prepared by the Moreland Energy Foundation in response to the Productivity Commission Draft Report on Energy Efficiency.

Established by the Moreland City Council, Moreland Energy Foundation Ltd is the first independent, locally based organisation devoted entirely to reducing community greenhouse emissions. The organisation has extensive practical experience in implementing energy efficiency programs across household, business and community sectors.

Sincerely

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Introduction

The Commonwealth Government Energy While Paper released last year announced the establishment of a Productivity Commission inquiry to "provide further information on the potential benefits of, and policies to achieve, improved energy efficiency." (page 105). It then went onto outline energy efficiency as a key area of government action, listing a number of initiatives to increase commercial and residential energy efficiency. It then went on to note:

"To provide further information on energy efficiency and possible policy responses the government will also establish a Productivity Commission inquiry to examine the potential economic and environmental benefits from improving energy efficiency. The inquiry will report in the second half of 2005, and examine the full range of options to improve energy efficiency. The government will consult with the states and territories on its terms of reference." (page 110 – 111)

Around the same time, the National Framework for Energy Efficiency was in development. The Ministerial Council for Energy signed off on a package of measures in August 2004. Stakeholders were informed that the MCE was very supportive of driving energy efficiency. However, a proposal to implement an energy efficiency target and white certificate trading scheme had not been adopted. Instead, this was to be referred to a Productivity Commission Inquiry for assessment.

Terms of reference were released in August 2004, with a far more limited purpose for the Inquiry than originally intended in the White Paper. MEFL provided input into the Inquiry, with the hope that the momentum which energy efficiency had gained would be given more impetus by the Inquiry. However, these hopes went unrealised with the release of the Draft Report.

Summary

The Moreland Energy Foundation Ltd (MEFL) is disappointed in the results of the Inquiry as demonstrated by the Draft Report. An over-riding concern for MEFL is the overall approach which has been used in considering energy efficiency. Part of this is due to the terms of reference, part of it due to particular submissions having a stronger influence on the Commission than other evidence warrants and part of it is they way the Commission has decided to understand the terms of reference, review material and construe evidence.

By analysing using a distorted set of terms of reference and a narrowly defined market approach, the conclusion is reached that the energy efficiency gap is smaller than expected and the benefits for individuals are smaller than claimed. However, our work time and again demonstrates that there is much wastage of energy (through both not taking up energy efficiency and not practicing energy conservation) and that where measures are implemented, the benefits can exceed all expectations. While we cannot expect that the Productivity Commission becomes a convert, our submission aims to highlight inadequacies with the report, with the hope that the Final Report will be significantly different and the momentum for energy efficiency can once again gather pace.

Terms of reference

The terms of reference are a problem in a number of respects. Firstly, environmental benefits of energy efficiency are given a marginal role, only to be considered when the measure is cost effective. The Inquiry received many submissions which express concern for the social and environmental impact of our current energy use, encourage the consideration of factors such as environmental precaution and sustainable development and advocating for the adoption of energy efficient policies and regulation. However, these concerns have been dismissed as being external (and thus irrelevant) to the scope of the Report. By silencing the opinions of the publicly respected institutions who made such calls, the Productivy Commission threatens its reputation for impartiality.

Secondly, they limit the scope of the investigation to the environmental and economic benefit from measures which are cost effective for individuals. This was never the intention of the Inquiry when reported in the Energy White Paper. The draft report defines "cost effective for individuals"as "from the point of view of the person or firm making the improvement, the improvement would not increase the total cost of producing current output (and may in fact reduce total cost)". Not only does the measure have to meet limited financial criteria, it has to be cost effective from the individual's perspective. The Productivity Commission does not provide any guidance as to acceptable rates of return which should be used in calculating cost effectiveness, but then criticises a raft of analyses which have been undertaken.

One of the key failings of the Productivity Commission has been to respond to the fact that those individuals who use cost effectiveness in their decision making (which we would argue is generally not the household sector) traditionally use very different criteria to assess cost effectiveness when
making an energy investment as opposed to other financial decisions. This means that the test energy efficiency needs to pass is much tougher than the test for making financial investments in superannuation or the stock market. With the impact of such decisions on the environment, as well as the fact that the individual who

makes an energy decision is not necessarily the one stuck with the implications (since ownership of homes, equipment and plant is often transitory), the Commission should have found in favour of setting a payback rate which gives energy efficiency equity with other areas of business investment.

Of course if you are looking for the most cost effective measure from an individual's perspective, it must be conservation which costs nothing. But this is not seen to be within the scope of the inquiry and nor is it given any real consideration.

Thirdly, by drawing a narrow definition for energy efficiency, many energy savings measures which are cost effective have not been considered in the report. The draft report defines energy conservation as being giving up something of value in order to save energy. However, the point behind energy conservation is that many of the current uses of energy have no value, they are simply wasted resources. For instance, lighting, heating and cooling spaces which do not have people using them has no value. Addressing the situation requires an individual to take action – turning off a light switch for instance. It is interesting that the behaviour of individuals negating the results of energy efficiency through the rebound effect is given credence, but the behaviour of individuals reducing wastage through energy conservation is not.

4. Commission assumptions

The Productivity Commission has taken a limited scope and limited it even further through the perspective taken. MEFL notes that the Commission uses the following assumptions in coming to its findings:

Market failure viewed narrowly. The PC concludes that the only market failures occurring are in information and split incentives. However, market failure is when the market fails to serve the public good. There are other market failures which the PC has not recognised. For instance, the environmental impacts of growing energy consumption and the impact this has and will grow to have on the economy and society. The out of control growth of peak demand, which will require billions of dollars of infrastructure investment to respond to if energy efficiency and demand management are not comprehensively implemented.

Narrow view of instances where market failure should be responded to. The PC argues that market failures should only be addressed when the benefits exceed the costs. By not attempting to quantify the cost of global warming, it appears that the benefits of government intervention are often lower than the costs. It is ironic that the PC has done what it criticises managers of a range of Government programs of doing – of not recognising the costs and building them into the analysis. Therefore only the cheapest form of government intervention, the provision of information, arises as a market failure where the cost benefit analysis works in favour of intervention.

Consumer sovereignty given precedence over the prevention of externalities. The ability of individuals in the market place to buy low quality, high energy consuming appliances and to use energy in a wasteful fashion is seen to take precedence over the reduction of greenhouse gases which are causing global warming and which are currently having a negative impact on human health, safety, the economy and the global society. Although there is really little evidence presented that consumers are suffering from limited choice due to energy efficiency programs, even if they

were this should be well counter balanced by the costs for society from climate change.

Narrow approach to defining "cost effective for individuals". The PC never puts forward what method of calculating cost effectiveness they would support, although they are critical of the approach taken by government programs undertaking regulatory impact statements. The focus tends to be on direct financial costs (with a substantial discount rate) and benefits of energy efficiency and totally ignoring social and environmental costs. Programs which are regarded as being integral to Australia's response to climate change are dismissed as "may meet other social or environmental goals".

Extremely limited role for Government. According to the Productivity Commission, the role for Government is to intervene to address market failures but only when they produce net benefits for the community. MEFL would argue that this is not a perception widely held within the community. Government has an important role in guiding culture and establishing a sense of how the community should function. For this reason, Government has an important role to play in working to rectify barriers caused by organisational limitations or behavioural norms. What Government actually does (whether it be an interventionist or an educational role) depends on the nature of the barrier.

In terms of business, the draft report argues that Government should strive to provide a competitive environment, as opposed to intervention to overcome organisational limitations and behavioural norms. However, when the impact of these limitations and norms has a direct impact on the environment, the economy, human health and well being, it would be widely considered by the public that the Government should intervene. Hence the wide appeal of a range of Government interventions to limit smoking in public, to ensure safety standards in construction of buildings and automobiles, to prevent individuals getting drunk and driving their cars. With the wide number of benefits which can be achieved through energy efficiency, it is well in the public interest for Government to provide leadership on the way business uses energy.

There can be little argument that Government should be the key driver of responding to climate change. A key focus of Australian Governments in their response has been to target energy efficiency. For instance, the Victorian Government's "Greenhouse Challenge for Energy Position Paper" states up front that one of its primary objectives is to reduce emissions and to facilitate a transition to a carbon constrained future. The tendency of the Productivity Commission to review Government energy efficiency programs as being lacking in terms of cost effectiveness but possibly justifiable in terms of environmental or social goals misses the point that their main objective is emission reduction.

Another key role for Government is to put in place measures which increase take up of innovative energy efficiency technology, thereby increasing their cost effectiveness over time. This occurs in a variety of ways, such as regulating for energy efficiency standards for new homes which results in higher take up of measures such as double glazed windows. Another example is when Governments invest in sustainable energy measures themselves, demonstrating leadership to the community as well as enabling greater testing of emerging technologies. Local Governments provide a good example of this, investing in state of the art energy efficiency measures for their commercial buildings and reaping savings on their energy bills as well as helping to get new measures into the community.

Rebound effect escalated beyond proportion. Throughout the draft report the rebound effect is noted as a phenomenon which further weakens the results of energy efficiency programs. In our experience the rebound effect in relation to energy efficiency is overblown. It is the case that with some household types, in particular low income households, energy efficiency measures directed at heating and cooling may not result in large energy reductions because the household may actually get the benefit of their energy through comfort. Energy efficiency programs understand this and build in expectations to their program design. However, the idea that people save money on energy because of energy efficiency and then spend more money on energy through investing in more energy using appliances is just not real. Energy savings could be spent in a range of ways, many of which have no negative impacts on energy consumption at all. Many of the households MEFL works with use energy bill savings to invest in Green Power, reducing their household emissions to zero.

5. The Energy Efficiency Gap

The two issues in this chapter which MEFL would like to respond to are around the NFEE and the issue of "natural" improvements in energy efficiency.

Regarding the latter, we do not accept the argument that there is a natural development towards energy efficiency over time. The case of standby energy clearly demonstrates this. Recent research undertaken by Energy Consult on appliances stocked in Melbourne retailers demonstrated that the proportion of appliances with active standby consumption is increasing, particularly within the category of greater than 20 watts.[1] Overall standby energy consumption is increasing, not only because people have more appliances but also because some appliances are changing their design from a dial to a switch, which means that someone needs to physically turn the appliance off when it has completed its function. So, modernising the design is leading to decreased energy efficiency. Standby energy is responsible for around 13% of household energy use, putting Australia internationally at the high end of standby in proportion to overall energy use.[2], Yet standby energy is energy used for no practical outcome; hence there are good arguments for intervention to reduce standby.

Regarding the NFEE, the Productivity Commission criticise the process because the initial energy savings identified were considered by some to be optimistic. The energy savings were then crunched downwards, which appears to give the PC some reason to think that the savings were not correctly calculated in the first place. Indeed, what the PC has missed is the nature of the political process involved with getting the NFEE in place. There was nothing wrong with the first set of estimates, except some of the industry stakeholders were kicking up a stink about them. In order to silence the critics and enable the process to move forward, the most conservative estimates were used. On the other side of the debate were many credible people who felt that the initial estimates were more conservative than they needed to be, but those in favour of NFEE had to accept the pragmatic position taken in order to see something happen.

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[1] Paul Ryan, Energy Consult Pty Ltd, "Appliance Standby Power Consumption Store Survey Interim Results", (presentation) April 2005

[2] Lebot & Meier, Global Implications of Standby Power Use, page 7.82

6. Residential Sector

Energy Efficiency has been increasing in the residential sector since at least the early 1970's. Nevertheless, householders have not implemented all potential energy efficiency improvements that may be cost effective for them…

MEFL supports the proposition that energy efficiency has been increasing in the residential sector. A key reason for this has been Government programs which have driven energy efficiency. For instance, the success of the MEPS program means that the worst performing new refrigerator is 70% more energy efficient now than the best model in 1985, at the commencement of the scheme.

While energy efficiency within different appliances and, more recently, the building envelope of new homes, has increased, energy consumption continues to increase at around 2% per annum. This is due to the growth in high energy consuming products which are now available, such as halogen lighting which is being incorrectly used for task and ambient lighting purposes, and air conditioning which has in recent years become viewed in the residential sector as essential rather luxury. Because of these trends, the pursuit of energy efficiency alone will not lead to the reduction in greenhouse gas emissions which are required to stabilise temperature increase. Energy behaviour (including conservation) and consuming trends also need to be the focus of policy makers.

6.1 Cost effective household energy programs

Given the status of cost effectiveness in this Inquiry, MEFL considers it important to focus on this issue in respect of the residential sector. The first point to make is the residential sector does not make decisions along business lines. There are a whole range of factors which influence householder decisions including cultural, social, time of life, how they want to be perceived, income levels etc. A cost benefit analysis, whilst an important tool for policy makers and business, is rarely used in the average home.

So, when the Commission queries why householders do not choose to adopt energy efficiency improvements which are cost effective for them, those of us who work with householders on a daily basis are not surprised by this. Nor are we surprised that householders adopt measures which might not past a cost effectiveness test, but where they consider the measure to be cost effective for them – or do it anyway.

While we generally agree with the reasons for not adopting cost effective energy efficiency as outlined in the draft report, our on ground experience with sellers makes us differ in terms of the asymmetric information explanation. We find that sellers very often don't know anything about the energy qualities of their product/s or that they are insincere. For instance, low voltage halogen lighting has been pushed by the electrical industry, with the claim that it is energy efficient. The confusion between voltage and wattage has been experienced at high levels within the building industry. Another widely made claim within the heating and cooling industry is that the bigger the system, the more efficient it is as it doesn't have to work as hard. This is simply untrue, leading to households over capitalising on major appliances which are not cheap to run. Householders who understand energy efficiency are constantly in debate with sellers who try to tell them things which are simply untrue.

The draft report on page 150 states that MEFL did not provide evidence that emission reduction activities by householders were cost effective for them. Note that we were contacted subsequently and recommended that the Commission download a pamphlet from the Environment Victorian website which provides details of the payback of certain measures. None of these are used in the draft report.

Our original submission also notes that our own research indicated financial cost as a barrier to uptake of household energy efficiency. Re the latter point, financial cost acting as a barrier is not necessarily an indication that energy efficiency is not cost effective. It is related to households juggling a range of needs in terms of their budgets, which means that they will invest in energy efficiency measures over time. One of the benefits of getting direct assistance from an organisation like MEFL is that we can assist them to come up with a strategic plan for implementing energy efficiency, by pointing out where the greatest opportunities lie.

See attachment 1 for an analysis of the cost effectiveness of some commonly implemented energy efficiency improvements. You will see that some which still do not get take up in all homes pay for themselves within months of implementation. Others take longer to pay back but provide significant advantages for the householder, such as protection from climatic extremes (in the case of insulation) and the benefit of installing an appliance with a significantly long life, which heats water with minimal energy consumption most of the year around (in the case of solar hot water).

Governments provide subsidies and advisory services to householders to encourage them to adopt energy efficiency improvements. These policies appear to have a small, but positive, impact on energy efficiency. However, subsidising people to take actions that are already cost effective for them is difficult to justify, unless the real policy goal is to reduce 'negative externalities' – such as pollution – rather than to increase energy efficiency per se

As stated up front, MEFL is unashamedly in support of pursuing energy efficiency and conservation as a means of reducing greenhouse gas emissions and this is a position supported by the Victorian State Government. This means that we see the policy goal of getting uptake in currently available energy efficient technologies by whichever means is most effective. With the wide variety of ways in which energy is used this can only be achieved by using a mixed bag of policy approaches.

Offering incentives, even for actions which are cost effective, provides an important message to members of the community that the Government endorses the action and that risk is minimal. As more people undertake the action (such as installing low flow shower heads) and promote the benefits to their friends and family, more uptake is generated. While free riders are often given a lot of attention, there are no doubt many people who undertake the action but forgo the incentive for reasons of their own. By promoting the action through an incentive scheme the Government is facilitating getting the action taken up, which is the key problem as identified by the Productivity Commission (that people don't adopt energy efficiency, even when it is cost effective).

Information is required as a matter of course but how that information is packaged and delivered will make a difference to its uptake. For instance, information provided at the point in time when the decision will be made is much better than something put up on an unknown website. Much work needs to be done to market

energy efficiency as a desirable concept and to advise where information on energy efficiency can be found.

MEPS have the potential to remove cost effective products from the market, force consumers to forgo product features, reduce competition. These disadvantages need to be given consideration in future MEPS regulatory impact assessments.

The Productivity Commission's regard for MEPS is astounding in consideration of the credibility this system has developed over the years it has operated. The concerns the PC has articulated about MEPS seem entirely without basis. For instance, the "forgo product features" example is entirely hypothetical – and extremely unlikely. With the low cost of appliances generally today, the idea that some consumers are disadvantaged because energy guzzling, so called "cost effective" products are no longer available is drawing a long bow. While MEPS has led to products being withdrawn from the market, these are not desirable products. In fact, MEPS significantly improves product quality, while at the same time reducing appliance running costs. In terms of reducing competition, MEPS provides a level playing field for manufacturers and is implemented over a timeframe which enables them to respond.

In terms of low income households, the reality is that these households generally do not buy new appliances, instead relying on the market for second hand appliances. Overtime they get the benefits from MEPS as, for instance, higher income households replace a fridge they bought in the 1990's with a newer model, making a fridge available which was manufactured under the MEPS program. Some low income households can access funding through the Department of Human Services for the purchase of major appliances which will have been subjected to MEPS. Finally, as the benefits of energy efficient appliances become more broadly understood we are now seeing programs to target low income households with new energy efficient appliances. Just recently, Good Shepherd Youth and Family Service and Origin Energy launched an initiative to offer no interest loans for energy efficient fridges, washing machines and clothes driers.

See attachment 2 for a comparison of the up front cost of two different appliance types. Note that there isn't a direct line relationship between the up front cost and how energy efficient it is. Even for the washing machines which tend to get more expensive when they are front loaders, the householder would save on energy, water bills, reduce use of laundry detergent and have longer lasting clothes.

Governments have introduced mandatory energy-performance ratings and standards for residential buildings…Case study results indicate that simulation procedures have major deficiencies …building standards have the potential of restricting consumer choice

The analysis contained in this part of the draft report shows how badly an Inquiry can be affected when the views of one individual are taken as being more valid than the many respected people who have worked on building energy rating programs. MEFL understands that Tony Isaacs has put together a comprehensive response to the evidence of Dr Williamson. We fully support the report that he has compiled as coming from a person very well regarded in the industry. We note that he has shown that Williamson's case studies demonstrate how well the simulations are actually describing reality.

We also note that the PC has bent it's own rules, by allowing the inclusion of energy conservation which is the practice described by Williamson of the householders achieving low energy bills. We ask for consistency, either allow energy conservation to be reviewed as part of the report or drop this evidence as being irrelevant.

MEFL submits that mandatory energy ratings programs are considered by consumers to be cost effective. When the scheme was mooted in Victoria a couple of years back, the industry were suggesting that complying would add thousands of dollars to the upfront cost. This eventually fell away, until the industry leader Henley claimed that the costs were not able to be separately identified. Even with the controversy stemming from elements of the building industry which did not want to stop churning out uncomfortable homes, public support for the scheme was extremely high. This continues to be the case. A great benefit of the program is that, by building in the cost of energy efficiency measures such as insulation, slab construction and double glazed windows into the construction costs, new home buyers are able to pay for these costs using a low interest mortgage. Prior to the mandatory building standards new home owners would buy a home which would subsequently turn out to be unliveable and then need to pay for costly retrofit measures or major appliances on credit or higher interest loans. Hardly cost effective.

In terms of whether choice has been taken away, this is simply not the case. The rating scheme operates on consumers (or builders) making choices about how to generate the requisite points. The only choice which is removed is whether to build a home which performs reasonably well for the climatic conditions it has to face. Given that houses last for many more years than the original owner will live in it, it is in the public interest that houses are built to high standards. This is particularly the case under the climate change scenario, where we are moving to a more carbon constrained future and having to deal with more extreme temperatures and weather conditions.

MEFL is very supportive of Victoria's mandatory building standards and we actively advocate for the extension of the standards to major alterations, which is the vast majority of home building works. We understand that a weakness of the scheme is that it does not consider major wired in appliances and we want to see this rectified in future. We would also welcome more resources going into monitoring the performance of the buildings post construction (which would of course increase the costs of the program, but would be justified in terms of the knowledge we would gain). While we see the need to build upon and improve the program over time, we in no way support the sceptical approach taken by the Commission.

Industrial and commercial sectors

Australia's access to low cost, reliable energy is a source of competitive advantage for Australia. However, Australia's historic energy efficiency performance has been weak in comparison with other OECD countries.
- Productivity Commission, Terms of Reference

Projected domestic energy growth and the increasing global response to reduce greenhouse emissions will greatly amplify existing market failure in Australia.

> Demand for energy in Australia is projected to increase by 50% by 2020, and the energy industry has estimated that at least $37 billion in energy investments will be required by 2020 to meet the nation's energy needs
>
> Energy production and use contributed 68% of Australia's greenhouse gas emissions in 2002, and is expected to be 72% by 2020
> *- Australian Government, 2004: Securing Australia's Energy Future*

In addition to overall demand, the increase in peak load is beginning to have a dramatic impact on supply capacity and security. Growth in this area is primarily driven by domestic and commercial air conditioning use. It is assumed that infrastructure costs driven by energy demand will be passed on to users.

Australian business will inevitably be required to contribute to the significant emission reductions required to mitigate the economic, environmental and health impacts of climate change. In order to remain competitive in a global market there will be increasing pressure to actively respond through a least cost, greatest benefit approach.

Energy efficiency is considered a key opportunity to reduce the energy intensity of business activity whilst providing cost neutrality or saving with combined environmental benefit. While energy efficiency is one component of a transition toward sustainable energy it is the most immediate and cost effective measure to take.

> The Australian Government places a high priority on achieving the benefits of energy efficiency through Energy Efficiency Opportunities. Legislation will be enacted during 2005.
> www.industry.gov.au

Where the impacts of a company's energy use have wider implications, governments have a responsibility to provide regulation to ensure overall social benefit. Emission reduction policy and regulation to limit climate change will increasingly focus on industrial and commercial sectors due to the scale of their emissions. Failure of government to facilitate the implementation of programs that assist business transforming to low emissions industry will have a negative impact on future economy and the broader community capacity to respond to increasing climate change.

Energy is a minor component of expenditure in the commercial sector. In the industrial sector, energy consumption is generally a more important issue for firms, but the importance of energy varies across industrial sub-sectors.

Information gaps, "split incentives" and their organisational and behavioural characteristics may prevent some firms from undertaking cost-effective energy efficiency improvements.

Agreed. We note that the draft report quotes evidence from the Australian Industry Greenhouse Network and Origin Energy, that the energy efficiency gap can be explained by rational behaviour. While these claims are made, no evidence or incidences are provided to back this up. However, other evidence has been provided indicating that firms don't act because middle management "can't be bothered".[3]

The energy services industry could provide a market solution to some of the barriers faced by firms. However, provision of government assistance to the energy services industry is not seen as warranted by the Productivity Commission.

The draft report notes that the energy services industry is relatively new in Australia. A key issue for this industry is that they **do not act as an industry** with the capacity to equalise the supply side dominated market which Australia currently has. Given that it is in the interests of all Australians to see more demand side solutions implemented, government assistance is warranted. The other reason why government assistance is necessary is to decrease the risk to business of engaging the energy services industry, through proper accreditation processes, involving professional development. MEFL has been concerned for some time that some energy auditors in particular do not push the envelope when it comes to looking for potential energy savings. The other concern which we expressed in our first submission to the Productivity Commission is that need to provide independent analysis of the claims made of new energy efficiency products, to ensure that they live up to expectation.

Finally, government programs which aim to reduce business greenhouse emissions and are well resourced to do so can result in development of the energy services industry. The draft report notes the Mandatory Energy Efficiency Opportunities Assessment program as one example which we would support. The now defunct Energy Efficiency Best Practice program is another good example of a program which took a whole of business approach (meeting the concerns of a number of submission regarding energy auditors) and came up with findings which are still being used on the ground.

Voluntary agreements between governments and firms can lead to privately cost-effective energy efficiency improvements, so long as the voluntary nature of the agreements is not compromised by incentive or coercive elements.

The draft report provides a positive review of the Greenhouse Challenge program and voluntary programs in general. While the abatement commitments are noted in a table, the outcomes of the program are not reported or analysed and as a result, there is no cost benefit analysis undertaken. We find it inconsistent that the Productivity Commission could put so much effort into taking apart other Government programs, but could leave Greenhouse Challenge – a key commitment of the Federal Government – untouched.

[3] P165 Energy Efficiency Draft Report, Productivity Commission 2005, quoting Exergy

We also disagree that voluntary agreements are compromised by incentive or coercive elements. MEFL works almost entirely within the voluntary agreement paradigm, generating interest in our programs and providing assistance to participants. Well targeted incentives provide the basis for participants to make it a priority and to undertake action, rather than wasting our time by signing up and not doing anything. Our primary concern with the voluntary agreement model is that a lot of resources can be invested and the results can be minimal. It would have been interesting to see a proper analysis of Greenhouse Challenge from this perspective.

General information provision can increase the uptake of cost-effective energy efficiency improvements, but the usefulness of such programs for firms is limited

Our experience indicates that firms prefer targeted information to general information and that there is a real scarcity of this for the business sector. Business also suffers from the same problem as householders, that intermediaries which help shape their energy decisions have different interests and therefore can provide the wrong advice.

Provision of incentives for firms to undertake energy audits and research, development and innovation may be warranted if it generates spillover benefits from information diffusion. Provision of direct subsidies to firms to undertake privately cost-effective energy efficiency improvements is not warranted.

We agree with the first point. Re the second point, we see the need to look at the policy outcomes to be achieved and the nature of the subsidy on a case by case basis. For instance, as part of our approach in working with small businesses we have subsidized some energy efficiency measures which could be argued as cost effective in the long run, but where the upfront costs are a major barrier or where the incentive was used to convince the business of the benefits to be made by undertaking further investment.

The mandatory energy audit and disclosure approach for large energy users – which is currently being implemented by the Australian Government – is not warranted on private cost-effectiveness grounds.

This statement demonstrates how the narrowness of the terms of reference have hampered the Productivity Commission in doing a useful analysis. Firstly, this program was never intended to achieve cost effectiveness for participating companies, although it could be assumed that many measures undertaken as a result of participation will be cost effective. In terms of cost effectiveness for Government, it makes sense to focus resources on the 250 companies which use the lions share (60%) of business energy, rather than running diffuse programs.

While the Productivity Commission again reinforces it's view that government should not intervene to overcome organisational barriers, it should be understood that this view is not shared widely, and not by the Australian Government in this instance.

> The initiative, Energy Efficiency Opportunities, is aimed at large energy using businesses. It has the potential to improve the competitiveness and sustainability of individual firms through energy management, while also delivering many significant economic, environmental and investment benefits for Australia….

The Australian Government places a high priority on achieving the benefits of energy efficiency through Energy Efficiency Opportunities. Legislation will be enacted during 2005.
www.industry.gov.au

Mandatory energy performance standards currently in place for some commercial and industrial appliances and equipment have the same potential costs as the corresponding regulations affecting households. Greater attention should be paid to those costs in future regulatory impact assessments.

As discussed above in relation to household MEPS, we do not support the Productivity Commission's view of potential costs, which are derived from very little research and stand in contrast to the regulatory impact statement process which is required (and signed off on by the Productivity Commission).

Mandatory energy efficiency standards for commercial buildings which are currently being introduced into the Building Code of Australia are unlikely to result in a significant net benefit, and may result in a net cost. A reassessment of the costs of this policy and benefits of other policy options is warranted.

Commercial building standards are essential to ensure that long term investment in building stock does not jeopardise the viability of future generations. Poorly designed buildings will still be in place in decades to come, costing tenants unnecessarily high energy costs and burdening society with liabilities in a constrained carbon budget. Private cost effectiveness is not the objective behind commercial building standards and therefore there is no need to reassess the costs of the policy.

Government as energy users

We note that the chapter on Government as energy users is broadly supportive of the role for Government in providing leadership on energy efficiency, when it comes to their own operations. There is still some concern about it not being cost effective, if Government pursuit of targets leads to decisions where the implementation of processes which would cut staff time but increase energy costs are not pursued. It is our experience that a target based reduction regime does not lead to this happening and that agencies will get on with business to the detriment of the target, rather than halt progress. In Victoria agencies are able to put forward a case for "agency specific circumstances", which if upheld are taken into account in measuring their progress. This need to show cause why they should increase energy consumption is a progressive measure, which leads to agency managers to consider different energy options instead of just going with something which is going to have a negative impact on energy consumption.

Overall targeted reductions and energy intensity benchmarks are both valid ways to progress energy efficiency, with each approach making better sense in certain circumstances. One of the advantages of a target over energy intensity is that it can be easier to implement in circumstances where pinning down intensity is overly complex or would require excessive resources to measure and monitor.

The PC supports Governments disseminating information on energy efficiency to agencies. We would argue that the information dissemination role is critical, but that often this is not enough. There is an important role for Government to build capacity within agencies to reduce energy consumption. This includes developing tools for

agencies to use to analyse their own energy use, providing training and skills development in available energy efficient technology and techniques for energy management, as well as programs which appeal to people and get them involved, such as leadership initiatives and competitions. MEFL's success in getting uptake in energy efficiency is built on sound principles of getting behaviour change and action, and information is only one of a number of principles which exist.

MEFL remains concerned about the review of Government programs under the narrow terms of reference of the inquiry, in particular the narrow definition of cost effectiveness and the exclusion of conservation. Firstly, some agencies may find that it can make significant energy reductions through undertaking measures which have longer payback periods than just undertaking the easy and cheapest options. This will deliver ongoing savings to Government, reduce emissions and could provide demonstration potential if the measures are innovative. Secondly, managing agency energy consumption through energy management regimes is necessary to get rid of energy wastage, which is simply wasted tax payers money. Lighting, heating and cooling buildings when they are empty, not implementing close down procedures at schools when everyone is on holidays, and propping external doors open to the weather are all examples of how government agencies currently waste energy.

We also disagree with the conclusion of the Commission that hypothecated funds within Government are not justified. For instance, Moreland Council established an Energy Management Fund in 2001, following the achievement of a significant financial return from a street lighting tender. The initial projects which were earmarked by the fund had an average payback period of 1.7 years and a return on investment of 58%. Identifying such cost effective projects was important in getting support for the establishment of the fund and changing internal processes and cultures which (as with most organisations) lock in the old, inefficient ways of using energy. By having the capacity to return savings to the fund, capital is available for more energy efficiency retrofits in future. This guarantees the Council will continue to focus on energy efficiency to meet it's long term target of emission reduction and is not in a position of arguing about whether to fund roads or whether to respond to climate change in its budgeting process.

Coordinating Government Programs

Regarding building standards, the two examples of differentiation from the national standards provided were at a State Government level (noting Victoria specifically) and a local government level. One of the key reasons why states are moving ahead of the Commonwealth on building standards is that the national standards have not responded adequately to energy efficiency. Unless the national standard is going to replicate the best practice state, rather than the lowest common denominator, the practical reality is that some states will jump ahead of the others. This can then lead the other states to follow suit. So, while in theory it makes sense to have national uniformity in building standards, if these are uniformly bad we would much prefer to see some states getting it right.

Regarding Local Governments, they have their own powers under planning laws which the building industry must comply with. While it should not be possible for local governments to dilute building standards, there can be good reasons for them to be beefed up. For instance, some leading Local Governments in Victoria are implementing approaches which provide builders with an impetus to integrate a

range of sustainability measures in building projects. Once local governments have made this work, the State Government will no doubt respond by adopting some of the practices which have been trialed at a local level. This is an important process in working towards best practice in our built environment.

In terms of reporting requirements, we do not support using the Greenhouse Challenge as a means of achieving this. While signatories to the Challenge should be reporting to the AGO on what they have achieved in meeting their targets, this program is a voluntary one and so should not be relied upon as the means by which industry and business reports on emissions and energy use. The National Pollutant Inventory should be expanded to include all major greenhouse gases.

Regarding coordination with other policies, it would be obvious by now that a key frustration of MEFL is that this Inquiry has not properly acknowledged that energy efficiency is being driven as a leading component of greenhouse gas emission reduction. The result of having a national Government which refuses to sign the Kyoto Protocol is that emission reduction is stepped around at a national level, which is not at all the case at the State level.

We also note that the Commission notes that all states other than WA use regulatory impact statements in forming policy around energy efficiency. It is unfortunate that the Commission has seen fit to question the validity of most of those undertaken for programs which have come under the microscope in this Inquiry. What is the point of doing them if policy makers are going to be taken to task regardless?

Regarding the NFEE, we do not agree that there is insufficient clarity on the rationale for, and the objectives of, government intervention. The discussion paper released at the commencement of the NFEE process states that:
"Around the world, governments and business are increasingly targeting energy efficiency as a means of increasing business competitiveness, saving the community money and harnessing cost-effective greenhouse gas emission reduction opportunities. Similarly in Australia, commonwealth and state energy ministers through the Ministerial Council on Energy, have called for a National Framework for Energy Efficiency…..The Ministerial Council has placed a high priority on developing policies and programs that could assist in improving energy efficiency in Australia".

Rather than the rationale and objectives of government intervention being unclear, it appears that the choices of areas to focus on may not be to everyone's liking. However, the list of areas chosen are pretty typical of the areas to target in the pursuit of energy efficiency. From where we sit there are absolutely no surprises in terms of the initiatives they have resolved to focus efforts on in the first stage.

The one area which gets a direct mention is the advertisement of energy ratings for buildings on lease or sale. This is aiming to address a key barrier in getting the market to respond to energy efficiency, that it is often invisible and therefore not easily taken into account. The rental market is highly problematic in this way, as tenants don't know how much energy their building requires until they have signed the lease and moved in. Public disclosure is a low level government intervention which will help to stimulate understanding about the way buildings drive energy costs.

National Energy Efficiency Target

As was discussed at meetings with the PC, MEFL has not taken a position on a NEET and was interested to see what the Inquiry resolved in terms of such a scheme. We

are in favour of targets in general, starting with the establishment of an emission reduction target based on scientific evidence of what is required to stabilise climate change and then setting in place targets for different emission reduction approaches. While we have not advocated for a white certificate trading scheme, we are aware that one reason for considering such as approach is that emission trading does not tend to result in energy efficiency. It may be that white certificate schemes overseas may prove to unlock the benefits of energy efficiency and approaches be developed to minimise transaction costs. We will reserve judgement on this issue until more information is available on the European experience.

Role of energy market reform

MEFL has been supportive of Victorian Government initiatives to mandate a roll out of interval meters. Our preference is for meters that increase the capacity for the consumer to manage their energy use, through the information it provides and the ability to receive direct information from retailers to stimulate a demand response. We are encouraged by the results of the Statewide Pricing Pilot in California which demonstrated that "deployment of residential critical peak pricing rates as default rate with opt out options could reduce California's peak load by 1500 to over 3000MW".[4] In addition, "sending dynamic prices to residential customers led to average peak savings of 14% and bill savings of $60 per year".[5] So, through innovative metering and tariff structures, peak energy consumption was curtailed and households saved money at the same time. This could only be achieved by using state of the art metering technology.

While we believe that there is an imperative to impact upon the steep peaks in demand which have resulted from increased use of air conditioning, and a social obligation to get rid of the cross subsidy which low or no air conditioner users provide to high central air conditioning users, we do not see cost reflective pricing as being **the** solution for energy efficiency. Hence we see the need for a mix of policies and programs in order to meet an energy efficiency objective.

The Productivity Commission appears to have the view that the regulation of prices is one reason why cost reflective pricing does not occur. However, as different customer classes in the retail market in Victoria have become contestible, they have been able to access cheaper prices for electricity. Our view is that regulation of prices is not the problem, it is how the prices are regulated which needs to be addressed. For instance, the recent Victorian Distribution Price Review did not address the need to pursue demand management instead of system augmentation. Retailers generate profit by selling more units of electricity. These structural issues need to be addressed.

We note that the NSW government responded to the Inquiry by recommending prepayment meters as an energy management and budgeting tool. With regards budgeting tools, there are already payment options which allow the household to budget, such as Easy Way. There is no need to install a meter to achieve this outcome. Regarding prepayment meters as an energy management tool, we do not consider putting householder on an arrangement where the electricity cuts off when the money runs out as the appropriate way of achieving this. What will result is disadvantage to low income households; those with higher discretionary income will

[4] Statewide Pricing Pilot 2003-04 presentation, unnamed, p 4
[5] as above

simply recharge the meter. Prepayment meters are not a demand management tool, rather they are a credit management tool and as such should not be considered in this Inquiry.

Attachment 1 Examples of Cost-Effective Energy Efficiency

Lighting

Here are two examples of payback on an energy efficient option in comparison to an energy inefficient lighting option. These examples can apply in a variety of contexts. The (comparative new purchase) is the return to a consumer based of the difference between two new products, the (retrofit) payback is a return to a consumer based on removing existing inefficient technologies and replacing them with an efficient technology.

Type	Wattage	Annual energy (kWh)*	Annual running cost AUD#	Annual savings AUD#	Purchase Cost AUD##	Payback years (comparative new purchase)	Payback years (retrofit)
Incandescent	75	164	23	-	0.50	-	-
CFL**	17	37	5	18	5.00	0.25	0.28

Type	Wattage	Annual energy (kWh)*	Annual running cost AUD#	Annual savings AUD#	Purchase Cost AUD##	Payback years (comparative new purchase)	Payback years (retrofit)
Halogen MR16	50	110	15	-	4.20	-	-
CM/ MR16 Halogen***	20	44	6	9	10.95	0.75	1.21

Assumptions used in calculating payback

* *Annual energy usage based on 6 hours of operation 365 days per year.*

** *Based on comparative lumen output and colour spectrum. Does not include the reduced materials to the consumer of longer comparative life of CFLs which is typically 6 times the life of an incandescent.*

*** *Ceramic metal halides MR16 are visually identical to standard MR16 halogen globes. They output the same amount of lumens but with a lower wattage.*

\# *Annual costs based on $0.14/kWh*

\## *Based on average retail price across 3 larger retail outlets*

Showerheads

This table shows two examples of payback on energy efficient showerheads in comparison to an energy inefficient showerhead which is most commonly used in Australian homes. The (comparative new purchase) is the return to a consumer based of the difference between two new products, the (retrofit) payback is a return to a consumer based on removing existing inefficient technologies and replacing them with an efficient technology. It does not include the added cost savings from reduced water bills.

Type	Flow rate Litres/min	Annual energy (MJ)	Annual running Cost AUD#	Annual savings AUD#	Purchase Cost AUD##	Payback years (comparative new purchase)	Payback years (retrofit)
Standard	15	2875	230	-	10	-	-
A	9	1750	140	90	15	0.06	0.16
AAA	6	1188	95	135	45	0.26	0.33

Assumptions used in calculating payback

* *Annual energy usage based on 3 x 10 minutes showers per day 365 days per year using an average efficiency (3 Star) gas storage hot water system, the most common variety in metropolitan areas with access to reticulated natural gas.*

\# *Annual costs based on $0.08/MJ*

\## *based on rrp in larger retail outlets*

Ceiling Insulation

Here are three examples of payback on installing ceiling insulation in households with different heating systems. The payback has been calculated based on installing ceiling insulation where there was no insulation previously, and where the existing insulation meets outdated building standards but can be 'topped' up to reach an energy efficient standard.

Heating Type*	Existing insulation	Annual running costs AUD#	Installed insulation	Cost of insulation AUD**	Annual savings AUD#	Payback years^
Gas central	Nil	496 – 960	R3.5	1026	198 – 384	5.1 – 2.6
Gas central	R2	310 – 600	R1.5	571	124 – 240	4.6 – 2.3
Gas space	Nil	288 – 320	R3.5	1026	115 – 128	8.9 – 8
Gas space	R2	180 – 200	R1.5	571	72 – 80	7.9 – 7.1
Electric portable	Nil	640 – 960	R3.5	1026	256 – 384	4 – 2.6
Electric portable	R2	400 – 600	R1.5	571	160 - 360	3.5 – 1.5

Assumptions used in calculating payback

* *based on a average efficiency (2 Star) gas central heating over 150m^2 over 8 hours to 21^{o}C. An average efficiency (5 star) gas space heater over 60m over 8 hours to 21^{o}C. A single 2400 watt electric column radiant or convective heater in a single room – the range indicates variable thermostat settings and hours of use.*

\# B*ased on $0.15/kWh and $0.96/MJ*

^ B*ased on assumption of a 40% reduction in running costs (SEAV, 2005)*

** B*ased on average price of installed insulation from 5 different insulation specialists quoting on average price of blown cellulose, fibreglass batts and polyester batts. Prices may vary in different regions of Australia.*

Solar Hot Water

This table shows examples of payback for residents purchasing solar hot water. Where residents currently have electric hot water system we have also calculated the payback when replacing with 5 star gas lt compares the payback on both electric and gas boosted solar hot water systems when replacing a faulty system or purchasing a new system. . The payback is calculated on the difference between the present retail values of the two systems. System purchase costs do not include any government rebates or installation costs.

Existing water heating type*	Annual running costs AUD#	Replacement water heating type	Cost of standard replacement AUD**	Cost of EE improved / solar replacement AUD**	Replacement cost difference	Annual savings AUD##	Payback years
Off peak electric storage	616	Electric boosted solar[9]	939	3813	2874	339	8.4
Off peak electric storage	616	5 star gas	939	1259	320	252	1.2
Day rate electric	1128	Electric boosted solar[9]	1064	3813	2749	620	4.4
Day rate electric	1128	5 star gas	1064	1259	195	764	0.25
2 star gas	434	Gas boosted solar[9]	999	4879	3880	238	16.3
5 star gas	364	Gas boosted solar[9]	1259	4879	3620	163	22.2

Assumptions used in calculating payback

* *Based on mandatory energy standard level 160 Lt Off Peak electric and a <80Lt day-rate electric system. A 2 star 160 Lt. gas storage, and a 5 star instantaneous gas system.*

\# *Based on $0.14/kWh (peak), $0.076/kWh (off peak) and $0.085/MJ. 3 x 10 minutes shower/day(12lt/min)365 day/ year. No baths. Warm water wash 7/week in an average efficiency top loader*

\## *Based on a maximum peak sun hours of 6.9 in summer and 2.4 peak sun hours in winter, or an annual average of 4.6 which is the solar gain for Melbourne. This equates to a solar contribution of 65% average across the year.*

** *Based on average retail price of a medium quality system from three major hot water suppliers/installers*

[9] *Based on a family sized 270 – 300 Lt storage capacity close coupled systems*

Attachment 2

Star Rating	Appliance	Comments	Good Guys (Preston) 9471 0477	Kmart (Burwood) 9802 2011	Retravision (Clayton) 9544 3969	Harvey Norman (Maribyrnong) 9318 2700	Kleenmaid (Camberwell) 9882 9777
	Fridges (2 door fridge/freezer 400-500L)						
4.5	LG GR R466JTA	old model; not stocked	-	-	-	-	-
4.5	LG GR R491JTA	old model; not stocked	-	-	-	-	-
4.5	LG GR S462 (462L)	new model; LG only avail from Harvey Norman	-	-	-	$1,499	-
4.5	LG GR S552 (435L)	new model	-	-	-	$999	-
4	Westinghouse (420L)		-	-	$1,090	-	-
4	Simpson (390L)		-	-	$900	-	-
3	Fisher Paykel E442B	3 colour models	c$1419	-	-	$1,299	-
3	Fisher Paykel E406B	3 colour models	$1,220	-	-	$1,549	-
	Washing machines						
4.5	Kleenmaid KFL1600 (FL)	only available from Kleenmaid direct	-	-	-	-	2499
4.5	Asko W640 (FL) 5.5kg	old model; not stocked	-	-	-	-	-
4	Asko W610 (FL) 6kg	new Asko model	-	-	$1,599	-	-
4.5	Asko W6511 (FL) 6kg	new Asko model	-	-	$2,249	$2,249	-
4.5	Asko W6021 (FL) 6kg	new Asko model	c.$1500	-	$1,799	$1,699	-
1	Mistral MTLW7 (TL) 7kg	only available from Kmart	-	$549	-	-	-
?	Mistral MTLW5 (FL) 5kg	only available from Kmart	-	$599	-	-	-
4.5	Kleenmaid KFL 850 (FL) 6.5kg						1799