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Emissions Reduction Fund Submissions
Department of the Environment
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Dear Sir

TERMS OF REFERENCE FOR THE EMISSIONS REDUCTION FUND

The Australian Industry Group welcomes the opportunity to make a submission on the Government's terms of reference for development of a Green Paper on its Emissions Reduction Fund (ERF). We look forward to continuing in-depth consultation as the Government elaborates further specifics of its proposals.

Ai Group is a peak industry association in Australia which along with its affiliates represents the interests of more than 60,000 businesses in an expanding range of sectors including: manufacturing; engineering; construction; automotive; food; transport; information technology; telecommunications; call centres; labour hire; printing; defence; mining equipment and supplies; airlines; and other industries. The businesses which we represent employ more than 1 million people.

Our member businesses are affected by climate policy in many different ways. Some are required to report energy use and greenhouse gas emissions under Commonwealth (and in some cases State) law. Some have been directly liable under carbon pricing approaches. Some participate in the energy sector or supply to it. All are impacted by policies that affect the supply and price of electricity and natural gas.

Principles and approach

Ai Group recognises that Australian governments of all complexions have committed to emissions reduction goals, including a near-term unconditional target to reduce emissions to 5% below 2000 levels by 2020. We have developed strong principles for sound climate policy over many years of engagement with our members on this issue. Those principles remain a clear guide in the context of the proposed ERF. The principles are reproduced in full at the **Attachment**, but at their highest level they are:

1. Australia should ensure that its emissions reduction effort is in line with the action and ambition of other major economies. This includes taking into account the extent to which major emerging economies are constraining their emissions and whether efforts by advanced economies are comparable to our own.
2. The competitiveness of Australia's trade-exposed industries cannot be eroded.
3. Australia should be able to meet its international emissions reduction commitments at least cost.
4. Climate policy must respect existing investments to avoid acute short medium term disruptions while supporting efficient long-term investment in the energy and other sectors
5. A central feature of policy should be supporting research and development of new approaches to emissions reduction and refinement of existing approaches.
6. Compliance costs and regulatory burdens should be kept to a minimum.

These principles and their implications should be kept in mind in designing the ERF, and will guide Ai Group in our contributions to and assessment of the policy.

Specific proposals

Detailed industry input on most aspects of the ERF will await the elaboration of more specific proposals by the Government. However, at this early stage Ai Group can offer some concrete suggestions for how the policy can best be implemented. These relate to the process for further development of the policy; establishing confidence in the availability and use of the public funding involved; managing risks through the use of international emissions credits; maintaining continuity for business with the Clean Technology Program; and complementary policy.

Development and review of the ERF

The current consultation and development process for the ERF is short for such an ambitious policy and does not appear to provide an opportunity for careful consideration of fundamental policy parameters and plausible outcomes. Climate policy is inextricably an economic problem and should be developed using open, independent and economically rigorous advice. Given the proposed abolition of the Climate Change Authority, Ai Group joins the Business Council of Australia in proposing that the Productivity Commission be given a referral to identify the design parameters for the ERF that can ensure targets are achieved at least cost and without impacting the competitiveness of trade exposed industry. This referral should allow for consideration of both domestic and international emissions reduction opportunities. Conducting such a review at the outset will help ensure the policy is developed on the soundest lines possible, and will help articulate principles for a long term approach conducive to investment.

Arrangements for the ongoing review of the ERF should also be clarified as soon as possible. The proposed 2015 review is unlikely to have the benefit of any substantial operational experience with the ERF. At the same time, clarity about post-2020 arrangements will become increasingly urgent.

Funding certainty and management

The ERF policy currently proposes to motivate very large emissions reductions across the Australian economy by offering a large commitment of public money, totalling $1.55 billion over the forward estimates and averaging $1 billion or more annually thereafter. Strong arrangements will be needed to ensure that these commitments are a credible basis for business investment, and that the money is spent appropriately.

Experience with budget commitments of all sorts by governments of all stripes shows that large initial announced commitments often fail to survive more than a few years in the face of the ordinary annual budget cycle. Announced sums are typically whittled away by savings measures and budget exigencies, before ultimately being claimed back or repurposed entirely. Signed contracts are generally not affected by such matters; if the Commonwealth commits to a particular project and the project proponents deliver, they are very unlikely to go unpaid. However, without action to reduce risks to future funding, the policy is unlikely to attract companies that will need to make a significant long-term effort to develop a proposal. Businesses will also lack the confidence to build a business model that requires repeat transactions, such as an aggregator of small projects or a service or technology provider.

To create confidence that the committed funding will remain available independent of the budget cycle, the Government should consider establishing the ERF as a formal fund with enabling legislation, comparable to the Building Australia Fund. Appropriations for the ERF should be included in the legislation, rather than being made through annual Budget bills; the legislation should set out a timetable for appropriations consistent with the funding schedule already announced, subject to any changes needed to implement the arrangements for international abatement proposed below. Monies should only be able to be withdrawn from the ERF by the independent operator of the scheme, presumably the Clean Energy Regulator, for purposes consistent with the aims of the scheme.

Use of international emissions credits

The Government has stated that the ERF will solely focus on domestic Australian abatement options. However, there has long been agreement that Australia faces relatively high domestic abatement costs, given the weighting of our economy towards inherently emissions-intensive activities and energy sources. Overseas abatement opportunities are available at lower cost and in great abundance, particularly in developing countries. The ability to make use of these opportunities is critical to ensuring Australia can minimise the cost of climate policy.

The opportunity is particularly stark at present, given that Certified Emission Reduction (CER) credits issued under the UN Clean Development Mechanism (CDM) are currently selling for around $0.70 per tonne. These units are produced by an offsets scheme comparable in some ways to the ERF, and are legally valid for use in meeting Australia's Kyoto Protocol commitments. Their low price is attributable both to very strong supply from projects in China and India, and to reduced demand from a European market that is on course to meet its emissions targets much more easily than anticipated. A high level review of the CDM in 2012 made a number of recommendations for improvement, but found the market to be of great value to global mitigation efforts and declared increasing demand to be the most important step. While low prices have greatly slowed new project development, the supply of CERs is extremely strong; around 10 billion are likely to have been issued by 2020.

International abatement options should be incorporated into the Government's climate policy mix for three broad reasons. The first is the long standing and widely shared principle of least cost abatement. Meeting Australia's emissions reduction ambitions in the cheapest way possible is simple common sense, leaving more resources free to be used for other national priorities or, potentially, allowing greater ambition. While considerations of timing and risk are important complications, suggesting an increasing role for domestic mitigation activities over time, there is no reason to simply cut Australia off from inexpensive and sound abatement options overseas.

The second reason is that there is a risk that the Emissions Reduction Fund does not deliver the abatement outcomes sought. As currently understood there is no equivalent to an emissions cap or other legal guarantee that the targets will be met. If domestic abatement proposals are not available in the necessary quantities; if the prices bid are too high; or if too many approved projects prove unable to deliver, the Government may fall short of its goals. That would lead to difficult choices about the maintenance of the targets, the budget allocation for the ERF or the use of alternative policy instruments with significant economic costs.

The third reason is the potential flagged by the Government for a future decision to deepen its emissions target below -5% if warranted by corresponding credible commitments and action by other major economies. The Government has suggested it will not decide on this until a review in 2015. Ramping up domestic abatement under the ERF from 2016 to meet a 2020 target would be very challenging, particularly considering the likelihood that local options are relatively high-cost and low-volume.

Incorporating use of international emissions credits into the Government's policy mix would manage these risks at low cost. We do not propose at this stage that international units be able to be bid into the ERF auction process; that would very likely result in no funding for domestic abatement options, even in energy efficiency and other relatively low-cost areas. There is value in abatement activity that reduces the long-term exposure of Australia and its industries to future carbon constraints. This is particularly so since the price and availability of emissions units beyond 2020 remains unsettled and dependent on specific agreements with national and international carbon schemes.

However, the Government could easily establish a reserve of international units outside the ERF auction process using a portion of the funding notionally budgeted for the ERF. To cover the full risk of a gap between the -5% target and Australia's business as usual (BAU) emissions would require between around 275 million and 450 million tonnes of abatement to 2020, depending on different estimates of BAU emissions. At current CER prices, that would require between $190 million and $315 million, out of an ERF budget of $1.55 billion over the forward estimates and up to around $5 billion to the end of 2019-20. The establishment of the reserve could be handled by the Government directly, but could perhaps better be delegated to the same independent entity that will manage the ERF, presumably the Clean Energy Regulator. The reserve should be established sooner rather than later – with CER prices so low, there is relatively little downside risk. It would then be available for use either to bridge any gap to the -5% target or, if domestic activities deliver the 5% goal, either to greatly reduce the cost of any future decision on deeper targets for 2020 or beyond.

Clean Technology Program

The existing Clean Technology Program (CTP) has helped many manufacturers reduce their own emissions, along with their exposure to carbon and energy prices. A large number of project applications had been finalised and were still under consideration when the recent election was held; these projects are currently in limbo, as CTP is to be closed to new entrants and wound down in favour of the ERF.

We suggest instead that the CTP be continued until the ERF is fully operational. Manufacturers remain exposed to carbon pricing and energy prices are set to remain high – or, in the case of natural gas, rise much further – even without carbon pricing. Businesses have invested considerable time and money in developing abatement projects under CTP, and in many cases there is a limited window to carry out the projects, which may involve substantial and infrequent investment in production upgrades. The loss of this effort and expenditure will make business even more wary of future abatement funding policies. It would be particularly unconstructive if the ERF takes some time to establish, whether due to practical or legislative delays.

Complementarity

Existing principles for complementary climate policy were developed in the context of a broad based national cap and trade scheme, with the aim of eliminating policies that did not lead to additional abatement or raised national abatement costs. The existing principles have helped drive a substantial streamlining of national and State policies, reducing costs to industry and the community. While in the absence of an economy wide price signal the existing principles lose their relevance, the risk of a tangle of overlapping, contradictory and inefficient policies remains very real. The Government should develop a new concept of complementarity in partnership with the States. This should involve complementarity with any national economy wide policy capable of achieving least cost abatement; consistency and coherency between narrower policies within and across jurisdictions; and a national registry of climate change policies.

Consultation questions

The Terms of Reference offer several questions for specific feedback.

The likely sources of low cost, large scale abatement to come forward under the Emissions Reduction Fund

Ai Group urges caution about domestic Australian abatement opportunities. While there are many possibilities in energy efficiency, the land sector and energy generation, there are many challenges as well.

Large energy users are already highly efficient and such opportunities as they have may involve large, lumpy investments with high abatement costs. Our experience providing energy audits and information to a wide range of businesses strongly suggests that SMEs and less intensive energy users may have many more opportunities to reduce energy use. However, the companies involved have fewer resources and lower motivation to focus on energy; transaction costs would have to be kept extremely low to attract sufficient businesses for substantial abatement. Aggregators and service providers will be needed.

Opportunities in the land sector may be exciting but also involve uncertainties and tradeoffs. The experience of biofuels and biomass policies in the United States and Europe suggests the potential for land use change in one region to lead to offsetting land use changes in other regions.

The ability of the energy sector to provide near-term abatement faces three constraints. Firstly, the abatement involved is likely to be relatively expensive, given depressed wholesale electricity prices and the high long-run marginal costs of all technology options for new generation. Secondly, given depressed electricity demand there is unlikely to be any pressing need for new generation capacity until the 2020s. And thirdly, options like withdrawing existing capacity may not lead to net emissions reductions given the likely response of other generators, and would alter the balance of the market in ways disadvantageous to energy users.

One source of abatement that should be given full consideration relates to investments already made by industry in response to carbon pricing. These include cogeneration plants, methane flaring, nitrogen oxide abatement, major efficiency upgrades and more. While these were rational investments under a carbon price, they are not necessarily commercially viable without one – particularly with natural gas prices rising sharply. Many of these projects involve substantial ongoing operating costs, and may be discontinued. The Government's approach to additionality in selecting projects for inclusion in the auction process should allow such existing but vulnerable projects to compete.

As we have argued above, international abatement options should be firmly part of the policy mix, if not necessarily included in the auction process.

How the Emissions Reduction Fund can facilitate the development of abatement projects, including through expanding the Carbon Farming Initiative and drawing on the National Greenhouse and Energy Reporting Scheme;

While NGER is a useful tool it has limits. It does not gather much of the information that might be relevant to abatement projects and compliance baselines, including the necessary production and financial data to derive emissions intensities outside electricity generation, embedded Scope 3 emissions information relevant to resource- and supply-chain efficiency projects, and flow or interrelationships between firms outside a corporate group. Adding any of this to NGER reporting is likely to impose further significant compliance costs; these costs are still too high with the current scope, and make a poor fit for sectors like construction and for smaller businesses. The option to 'opt in' to NGER is unlikely to be attractive to businesses below the current reporting thresholds.

With respect to the Carbon Farming Initiative, the approaches of deeming abatement and maintaining a 'positive list' of presumptively approved methodologies can do a lot to lower transaction costs and enable broader participation. However, we note that despite this, investment to date under the CFI has been modest. We also note the risks of deeming, which has at times led to distortions and waste in the national Renewable Energy Target and in State-based white certificate schemes. Deeming offers benefits when administered well and kept up to date, but a continuously evolving marketplace requires a very strong focus by regulators to ensure that public money is well spent. A combination of changed market conditions, incorrect behavioural assumptions and some gaming has meant that these schemes' initial estimates of abatement from technologies like heat pumps and standby power controllers have been seriously wrong.

The details of auction arrangements to deliver cost effective outcomes;

Abatement auctions are rational from the Government's point of view as a mechanism to limit costs. However they do present an additional level of risk and uncertainty for potential bidders, even compared to a traditional competitive grants program. Reducing these risks and the costs of engaging with the auctions will be crucial to attract bidders. In this context, the Government will also need to consider what information it provides on the program. The integrity of the reverse auction is critical to the Government's chances of achieving the abatement sought within the budget allocation allowed. The Government must 'price discriminate' and pay each bidder something like their own abatement costs plus a reasonable return, rather than paying the marginal price of abatement to all. To achieve this the Government may seek to closely manage information on the auctions, including the funding available, the volumes sought and the prices expected. However, it should be kept in mind that without some level of information on the funding opportunity, and without the potential for a healthy return, bidders may not be motivated in sufficient numbers.

Auctions should allow for multiple ways of structuring projects, including standardised activities with deemed abatement and individual projects with specific abatement estimates.

Some winning bids will fail to deliver, either because of changed market conditions, shortcomings in the original project design or inadequate execution. This will happen even with intense pre-bid scrutiny. Since the Government intends only to pay for abatement on delivery, such project failures would not involve significant direct costs to the public purse. However they would require additional abatement to be bought at a subsequent auction, which may face practical complications. While a qualification process will presumably be needed for entry to auction, the more onerous this is the less attractive participation becomes for all potential bidders, and prices bid at auction will rise to reflect these costs. To maximise participation Government may have to assume some or all of the costs of prequalification, including through paying to develop standardised methodologies and by covering the costs of preparing individual bids even if they are unsuccessful.

Rather than further constricting auction entry to eliminate failure, a better approach would be to manage project risk across an abatement portfolio. A crucial part of this strategy would be over-auctioning – that is, contracting with a wider range of bidders for a larger amount of abatement than actually targeted, consistent with expectations that a portion will fail to deliver. Similar approaches are used to manage budgetary and delivery risks in other areas of public spending. The expectation of nondelivery should be adjusted over time in light of experience, but initial figures could be drawn from the former Greenhouse Gas Abatement Program, which had similarities to the ERF, or from audits of State-based white certificate schemes.

The governance arrangements that will support the Emissions Reduction Fund, including the role of key institutions such as the Clean Energy Regulator;

As argued above, the independent administration and review of the ERF will be important to establish confidence among potential bidders. It is also important to keep in mind the experience of other major policies in this area, particularly the Renewable Energy Target, where frequent major changes have been made – many to deal with the unintended consequences of previous changes – resulting in shaken confidence and a shortfall in the investment expected.

The details of the monitoring, verification, compliance and payments arrangements for successful bidders at auction;

Appropriate arrangements for selected projects will depend heavily on the nature of the project. However, several factors should be kept in mind.

The time period over which payments will be made should be clarified; payments over the period to 2020 only may not match with the needs of investors in long-lived capital facilities and land use change.

The Government may need to monitor performance beyond the bidding entity, since abatement onsite could lead directly or indirectly to additional emissions offsite through market demand, re-use of replaced equipment or facilities, or land use change. However it is impractical for bidding companies to assume responsibility for such monitoring beyond their own operations, and the costs involved would add substantially to project risk and overall abatement costs. The Government should assume these responsibilities and costs directly as much as possible.

There is also the question of what to do if a project fails to deliver the abatement sought. While the Government has suggested it would only pay on delivery, we understand that others may suggest some sort of 'make good' requirement for project proponents to acquire abatement from others. We strongly urge against a make good requirement, as it would very likely raise the costs and risks of participation in the auctions to a level that would deter participation. Alternatives, like a make good using international abatement credits, are still likely to raise risks and compromise the auction process.

The design and operation of a mechanism applying to emissions above the business as usual baseline.

The Government faces many choices in developing a system of so-called 'compliance baselines'. Baselines could be absolute or involve some variation on emissions intensity; they could be a historic average, normalised for economic activity or forward-looking; they could apply at the activity, facility, corporate group or sectoral levels; they could be set once and for all, reviewed periodically or constantly updated. All of these choices impact the quality of the baselines, the administrative cost of developing and maintaining them, and the compliance costs to industry. All choices are likely to create winners and losers. The baselines established through the Emissions Intensive Trade Exposed activity definition process are potentially useful material for a limited set of sectors. However they involve an activity basis that is difficult and costly to agree; they use historical data that may not be a good fit for current operations in light of changed conditions; and as industry-wide averages they disadvantage some businesses. In general the EITE process highlights the time and effort required to develop compliance baselines.

A fundamental step for the Green Paper will be for the Government to articulate a clear purpose for the compliance baseline system. By definition no action is needed to keep emissions from exceeding 'business as usual' (BAU) levels, since BAU is the level of emissions that would be expected in the absence of policy action to reduce them. However, the real level of BAU is unknowable; instead we must rely on forecasts and projections, which inevitably vary from reality. In the ERF context BAU baselines could potentially impose penalties or create credits based not on business action but on forecasting error. It is unclear why compliance baselines are needed if their sole purpose is to keep emissions to BAU, unless the Government:

a) Uses a different definition of BAU;

b) Is concerned that emissions reductions paid for in one part of the economy may lead to increases in another part;

c) Wishes to limit the period for which it will pay for emissions reduction projects by incorporating them into an updated BAU; or

d) Wishes to move over time from BAU baselines to more challenging settings.

Any approach to baselines needs to deal with ordinary material fluctuations in demand and production; balance the demands of tailoring for individual circumstances and minimisation of administrative costs; and take account of a sufficient breadth of factors to allow businesses to manage their emissions flexibly, for instance increasing on-site emissions from electricity production while making a larger off-site emissions reduction through lower grid electricity demand. It also needs to address the situation of businesses that have taken early action in response to previous government policies, including carbon pricing, and which may potentially be disadvantaged against those who have not acted.

Ai Group looks forward to the chance to comment in greater detail on the ERF as its elements are further elaborated in the forthcoming Green Paper. For any questions about this submission, please contact Tennant Reed (03 9867 0145, tennant.reed@aigroup.asn.au).

Yours sincerely,

Innes Willox
Chief Executive

Ai Group Climate Policy Principles

The Australian Industry Group's key climate policy principles are, at their highest level, centred on the preservation of competitiveness; least cost abatement; energy security; fostering research, development and deployment of low-carbon technologies; and minimisation of compliance burdens. These top-level principles have more detailed implications, like the need for climate policy to avoid simply adding to general-purpose revenue.

Ai Group's National Executive has endorsed the following framework as a basis for assessing proposed climate policies. Bolded text is a principle, underlined text is an elaborated sub-principle, and subsequent text is explanatory.

1. Australia should ensure that its emissions reduction effort is in line with the action and ambition of other major economies.

This includes taking into account the extent to which major emerging economies are constraining their emissions and whether efforts by advanced economies are comparable to our own.

Australian climate policy should be flexible so that it can be adjusted in response to the actual level of emissions reduction action and ambition in major advanced and emerging economies.

For example, weaker action or ambition in these economies should lead to lighter burdens on Australian business. Conversely, policy should be able to strengthen if warranted.

Australia should develop and promote a credible basis for assessing and comparing the efforts of different countries. Regular reviews are needed.

2. The competitiveness of Australia's trade-exposed industries cannot be eroded.

a. Global action is fundamental to preserving Australian competitiveness and should be actively promoted in international forums. The starting point for maintaining competitiveness is global action. Even strong measures aimed at trade exposed industries cannot maintain Australian competitiveness over the long term without global action; eventually, the burdens of maintaining such policies while cutting national emissions would become insupportable. Governments should use every opportunity, including though the G20 to push for global action.

b. Neither Emissions Intensive Trade Exposed industries nor the broader trade exposed sector should be unfairly disadvantaged against overseas competitors while global action remains patchy. All major economies have pledged targets or actions, but while mostly significant, these are not yet sufficient to prevent serious competitive impacts from an Australian carbon constraint. Strong measures are needed to maintain the position of Australia's most vulnerable industries against unconstrained competitors. While different specific measures may be appropriate for the most emissions intensive industries and for the broader trade exposed sector, measures for the latter should be no less effective.

c. Policy should build Australia's long-term competitiveness, including in energy. Even under a globally consistent carbon constraint, long-term Australian competitiveness will be damaged unless we adapt effectively to a low carbon global economy. An important part of this will be ensuring a continuation of Australia's advantage in relatively cheap energy. Policy should support an efficient pathway to energy sources that will be globally competitive in the long term under a carbon constraint, whether that turns out to mean gas or coal with carbon capture, renewables, or even nuclear energy. Investments in infrastructure for the transmission and distribution of energy must modernise these systems to capture the benefits of decentralised generation, greater flexibility in fuel sources, and effective management of demand and supply.

3. Australia should be able to meet its international emissions reduction commitments at least cost.

a. Policy should cover the broadest practical base of emissions. The more emissions are covered by policy, the more widely abatement action and costs can be spread. While practical factors may narrow the base, this intensifies the abatement burden for covered sectors.

b. Policy should drive all credible and internationally recognised forms of abatement. Many forms of abatement are available: reductions using existing or future technology to improve carbon efficiency, sequester carbon in the landscape or change energy generation; behaviour change; and imported abatement. Minimising costs requires that all these options be open and that they compete for resources on a common basis. The economic cost to Australia of emissions reduction is only justified if it contributes to an international mitigation effort that reduces climate change. If we rely on abatement that is not recognised as meeting Australia's commitments, we must either undertake additional abatement at further expense, or risk undermining the international framework that justifies the cost of abatement.

c. Market mechanisms will generally be most efficient in locating and driving least cost abatement. While regulation or direct government funding can have a role in some circumstances, bureaucratic or political decision making are usually poor substitutes for the judgments of market actors responding to price in light of their own circumstances.

d. Complementary measures should be adopted only where they can achieve abatement at lower cost than market mechanisms, or enable markets to work more efficiently. Markets will not work in every instance,

and they can be made to work better – for instance through measures to address information gaps or agency problems. Such interventions should be chosen with care to ensure they actually minimise costs.

e. Any interim measures preceding a long-term climate policy should be consistent with longer-term policy directions, have acceptable start-up and phase-out costs and must achieve least cost abatement, including on a net present value basis, to ease the transition to longer term policy. There is a role for interim measures in the lead-up to a long-term mechanism, but these can easily turn out to be high-cost or more trouble than they are worth to bring in and phase out.

f. Distortions and perverse incentives should be minimised, especially those that discourage early movers. While climate policy is intended to correct a market failure, it can easily introduce failures and distortions of its own if not carefully designed. Abatement incentives can be positive or negative, but they must be allowed to operate, rather than being blunted, if abatement is to be least cost. Policy must also avoid creating incentives to defer or drop abatement investments that would most efficiently be made now.

g. Climate policy should not increase the state share of GDP, and any resulting revenue should either be returned to individuals and business, or used where necessary and cost-effective to address legitimate needs directly related to climate policy. Some plausible forms of climate policy would raise revenue for the Government, but simply increasing state revenue and general spending is likely to detract unnecessarily from growth, dynamism and overall welfare. Climate policy will entail important spending needs, such as assistance to households and severely affected industries to address equity concerns, assistance to trade-exposed industries to address competitiveness impacts, funding for research and development, and other matters directly related to climate policy. Any such spending should be efficiently designed to minimise the overall costs of mitigation, and any surplus should be returned to the economy – including through reductions in other taxes.

4. Climate policy must respect existing investments to avoid acute short-medium term disruptions while supporting efficient long-term investment in the energy and other sectors

a. A clear, predictable and well designed long-term policy is vital for business to make efficient long-term investment. Perfect certainty is unachievable, and the quality of policy is vital, but there is no doubt that substantial uncertainty over the timing and direction of climate policy is a serious barrier to investment in energy and other major industries across the economy.

b. Policy should provide a clear and supportive environment for new energy investment. The problems of policy uncertainty are especially serious in the energy sector. Forward looking investors need reasonable confidence about the regulatory environment that will apply over the life of their investment. That environment must be a supportive one, however, if investment is actually to result.

c. Any carbon pricing policy should balance price certainty and flexibility. Price flexibility allows savings if abatement costs are lower than projected, and a better match with changing economic conditions. However, too much volatility and price risk – on both the upside and downside – will harm investment.

d. Policy should smooth shocks in the energy sector, ensure that any generation exit is orderly and satisfy existing investors' legitimate expectations. Sudden shocks from climate policy may cause intense difficulties for some generators. This would mean risks to near-term energy security, impose serious loss on existing investors, increase the cost of transition and dissuade future investment. Policy should smooth shocks and satisfy investors' legitimate expectations. The impacts of structural adjustments in the energy sector on affected companies and communities must also be addressed.

5. A central feature of policy should be supporting research and development of new approaches to emissions reduction and refinement of existing approaches.

a. A market for low-carbon goods and services is necessary for broad-based innovation. The development of low-carbon products and technologies will be severely constrained unless innovators are confident that a low-carbon product will be more profitable than a high-carbon substitute. The existence of an actual market is a more plausible spur to innovation than the unpredictable availability of year-to-year grants or subsidies.

b. Additional support is needed to reflect spillover benefits from carbon innovation and the high costs of commercialising some new technologies. Even with a market reward, low-carbon R&D produces benefits for society at large that the researcher cannot capture. If R&D is not to face underinvestment, further assistance will be needed, whether through the tax system, grants, prizes or otherwise. Some promising technologies, including renewable energy technologies and carbon capture and storage, require significant support through demonstration and deployment phases if they are to achieve their potential.

6. Compliance costs and regulatory burdens should be kept to a minimum.

a. Policy should achieve maximal coverage with a minimum of parties directly involved or regulated. While all Australians and companies are responsible

for greenhouse emissions to some degree, administrative costs and burdens would be insupportable if more than a small fraction of emitters were directly regulated or liable under carbon policy.

b. Policy should rely on existing data and reporting systems wherever possible, with any new processes imposing the minimum additional burden necessary for good governance. While policy needs information to operate, a great deal is already collected and new requirements for additional or slightly different data can easily become very costly. Processes to judge difficult concepts like 'additionality' are especially likely to be expensive, time consuming and inflexible.

c. Policy should drive the elimination and avoidance of unnecessary, duplicative and unduly burdensome climate regulation. A vast array of largely uncoordinated climate policy already exists and the political incentive for more is constant. Much of this would be unnecessary or avoidable under a broad long-term policy.