



Environment Business Australia
Submission to the Garnaut Review
On the Emissions Trading Scheme Paper

As with the previous submission from Environment Business Australia (EBA) this paper should be read in tandem with 'Targets for our future' and 'Wedges, levers and a zig zag'. These two papers have previously been submitted to the Garnaut Review and are also attached to this submission. EBA's submission on technology in response to the Garnaut Review's Issue paper 4. should also be read in conjunction with this submission.

There is nothing more difficult to handle, more doubtful of success, and more dangerous to carry through than initiating change. The innovator makes enemies of all those who prosper under the old order, and only lukewarm support is forthcoming from those who would prosper under the new. Their support is lukewarm partly from fear of their adversaries, who have the existing laws on their side and partly because men are generally incredulous never really trusting new things unless they have tested them by experience.

Niccolo Machiavelli, The Prince, 1514

We are all deeply dependent on the "ecosystem services" provided free by the natural world. These include the purification and retention of fresh water (and flood control); the formation and enrichment of soil; the detoxification and recirculation of waste; the pollination of crops; the production of lumber, fodder and biomass fuel; and the regulation of the atmosphere and climate. The monetary value of these ecosystem services has been costed at \$33 trillion a year, roughly the same as combined world GDP. If natural systems are mostly wiped out, we will need to replace these services artificially, which is a physical and economic impossibility.

Mark Lynas, author, Rising Tide, and Six Degrees

Introduction

In recent days and weeks Dr James Hansen of NASA's Goddard Institute and Sir Nicholas Stern have emphasised that previous reports on climate change have underestimated both the scale of climate change and the need for urgency in tackling it. The International Monetary Fund (IMF) has similarly issued an alarm call.

It is time for governments around the world to stop downplaying the risk of climate change. It is time to get people fired up about action – climate change is every bit as interesting as rocket science and landing on the moon. Saving the life systems on our own planet rather than landing somewhere else is many times more important.

Climate change is not a linear problem and while there may remain debate about where and when major tipping points lie it is clear that humanity would be better served if we could avoid them.

Pricing carbon through an emissions trading scheme is a first important step and should be seen as a catalyst to bringing a broad portfolio of solutions into the market. However, for these solutions to have sufficient impact requires them to be deployed in markets of scope and scale NOW not in 15 – 20 years' time.

The clarity and framework that a national emissions trading scheme provides will galvanise business to get on with what it does best, that is make investment decisions and allocate capital.

Environment Business Australia (EBA) therefore welcomes the Garnaut Review's interim report and the Emissions Trading Scheme draft paper. EBA congratulates the Review team for their work done to date.

The holistic and 'can do' approach of the initial Garnaut papers has opened the most important debate that Australia should have.

The Garnaut papers set the stage for Australia to take a key international role in tackling climate change, develop the next great technological era and build Australian competitiveness in the face of new markets where, increasingly, the cost of GHG emissions, waste and pollution will be a major driver to overhaul current production and consumption patterns (and their energy supply mix).

EBA therefore highlights the importance of NOT referring to polluting sources of energy as "cheap". Costs fall into different categories beyond labour, resources and transportation. Collateral damage to the economy is either paid for by the taxpayer, or society must adapt to lifestyle, health, security, food, amenity changes. These external costs should be factored into the cost of energy, production and consumption so that markets can determine the optimum course of action.

While some may argue that assertive climate change action causes concern for existing players in terms of equity and investor certainty, EBA believes that the Garnaut Review papers, and in particular the ETS paper, demonstrate how important is to retain resilience and flexibility in societal commons.

We should not underestimate the significance of climate change being compounded by peak oil, peak fish, peak rare metals, and peak soil. As an aside – but indicative of the insidious nature of environmental degradation - when did it become normal to read "do not eat fish more than once a week"? Not only are major fish stocks in decline, the levels of contamination because of river, coastal and ocean pollution is destroying a basic food staple. This has happened because it has been "easier" to ignore the warning signs.

It is time to level the playing field and provide greater market access opportunity for clean and efficient approaches – give the market timely and meaningful data and let the market go to work to pick the winners.

Clearly there will be losers as well as winners as there have been throughout history. The difference this time is the vast penetration into the entire supply chain of energy, materials, and systems that are having negative impacts. A major transformation needs to occur.

The upside is that throughout history transitions to more efficient technologies have each provided greater wealth – "the next great technological era" will do the same if it can be put in place in time to avoid irrevocable environmental degradation.

Carbon will be a central area of competitiveness – let's accept it and move proactively to seize opportunity and profit economically, environmentally and socially from change. Australia is well placed to seek out and develop 'leap frog' projects, not to undermine UNFCCC action but to forge new benchmarks in technology and services and to find new ways to bring these to market. After all, why wouldn't we want to have the most-advanced-technology economy?

Importantly, the more greenhouse gas abatement and climate change mitigation that occurs over the next twenty years the less onerous global adaptation will have to be. And, it is important to recognise that investments made now in energy, manufacturing, transportation infrastructure will have a 20-50 year footprint. Therefore the time for serious and rapid action is now – not just in creating the framework or architecture but in deploying clean technology and clean sources of energy.

Until this happens 'stallers' with deep pockets will continue to game the market – their gamble is that they will be able to leap-frog competition at the last second. The risk is that they leap too late and we all suffer the fate they have driven us to. And for those who may

still be sceptics, remember the naysayers who argued that neither tobacco nor asbestos were harmful. The difference is this time individual humans will not be the only ones to take the brunt, our vulnerability is at the global scale.

The action plan

Therefore, notwithstanding EBA's support for the initial Garnaut Review reports, it is critical that the 'skeleton' framework of climate change action architecture rapidly puts some flesh on its bones and moves toward action that will drive transition to;

- a) Abate greenhouse gas emissions
- b) Mitigate climate change that is unavoidably now locked in to the planetary system
- c) Adapt to those changes which cannot be mitigated against

Making the market work for society

The current pricing structure across most markets does not include negative externalities of waste, pollution, damage to health, and the insidious cost to GDP¹. This is probably the single most important issue to be addressed. Decades of artificially deflated prices for energy and water have skewed the market, to the extent that these low prices (and the perverse subsidies and preferential price contracts that embed collateral damage into national economies) have developed into the de facto selection criteria for markets which have become unable/unwilling to go beyond the day-to-day price of commodities and the short-term returns that companies and investment funds should generate. The context for our commodities has been ignored. And now addressing damage to our most fundamental asset, the environment, is seen as "costly" and "highly complex and difficult".

The cost, complexity and difficulty of maintaining civilisation if eco-system services break down, sea levels rise by metres, millions of environmental refugees need relocation, and food sources are threatened are the fundamental equity, security and economic issues that governments, business, scientists and communities need to be addressing.

Every available solution needs to be mobilised within a framework where cleantech approaches are woven into the economy and polluting approaches are winnowed out. Particular emphasis should be placed on energy efficiencies/demand side reduction of electricity use, renewable energy, and fuel switching to cleaner energy sources. There are immediate and near-term technologies and systems that need to be fast-tracked and complementary measures alongside the national emissions trading scheme will be needed at least in the short-term.

Longer term solutions should as carbon capture and storage (CCS), hydrogen, nuclear fusion should continue to be researched and trialled, but the urgency of the current situation means that neither Australia, nor any other country, can afford to stall action on a portfolio approach waiting for a 'perfect technological fix' to emerge.

The political aspect of action to tackle climate change must rise above a simple cost benefit analysis and implementation. Government must make the judgement call on non-financial benefits that would not occur without government intervention. It is worth considering that:

- No electricity market in the world has developed without government intervention and the clean energy market requires equal initial support
- Government created superannuation funds by legislation – the Independent Bank of Carbon and the Climate Bond concepts are similar public good, self-financing vehicles

¹ This has been recognised by China – Pan Yue, when Vice Minister of the State Environmental Protection Agency (SEPA) said that environmental degradation was costing China's GDP 3% per annum – he then went on to quantify that was the 'official' figure, but a more realistic figure was between 8% and 13% of GDP per annum. Importantly, his agency has recently been upgraded to a Ministry

Environment Business Australia recommendations

In summary:

- Government should consider implementing initial targets for GHG emissions reduction of 60% by 2050; 40% by 2020 and 20% by 2015 with the system being sufficiently flexible to increase targets if the need to do this is. EBA considers targets to be necessary to set timelines and milestones for business to comply with/exceed
- All major emitters and offset providers should be included from the outset – from an abatement or a mitigation² perspective (individual enterprises; industry sectors; aggregates such as household and commercial sectors; built environment; waste treatment; agriculture and forestry – and these suggestions are made because of the tremendous early emissions mitigation through efficiencies and offsets that can be achieved)
- Auction all permits with no upper price cap
- Market mechanisms are not sufficient for many of the steps proposed to reduce GHG emissions (e.g. demand side management), it is important to make full use of complementary measures such as the renewables energy target, feed in tariffs, energy efficiency goals and retrofit programs. These can be retired as the market for clean and efficient goods and services develops sufficiently and when our GHG reduction trajectory is in line with necessary outcomes.
- Identify and retire subsidies and preferential pricing contracts that have perverse outcomes

Public sector drivers

The private sector has clean technology and smart and patient capital available. However, the existing market failures require governments of all levels and across all portfolios to put in place an 'enabling framework' effectively using their policy levers to create more friendly markets for the identified technology wedges³. Some of the most important levers are:

- Regulation
- Fiscal incentives and penalties (noting the success of reinvestment tax concessions in the development of Silicon Valley)
- Market mechanisms
- Standards and benchmarks
- Trade policy
- Education and awareness raising
- Government bonds
- Government procurement and investment
- Technology trialling, demonstration and showcasing
- Assisting export showcasing of Australian technology – including assisting with creating an international 'Green Ebay' for technologies, financing, ideas
- Security and defence policy
- Capacity building in developing countries and helping develop technology centres of excellence
- Redeveloping natural energy cycle through forest and native vegetation plantation, and soil carbon replenishment

Further information on these approaches is laid out in EBA's paper 'Targets for our future' (attached).

The shortage of linking infrastructure (e.g. transmission lines), the development of regional/local distributed energy supply, and the shortage of skilled personnel are some of the key issues for Government consideration.

Stimulate release of shelved clean energy/cleantech IP

² Abatement – the immediate reduction in GHG emissions; mitigation – reducing, reversing or nullifying the impact of GHG emissions (EBA explanation)

³ Princeton University study on technology wedges capable of emissions reduction while maintaining economies

A further step Australia may be able to assist with is to lead governments around the world in creating a policy framework to ensure the release of IP of smart technologies bought and 'shelved' over the past 20 years. The emergence of the 'next great technological era' needs a bit of a push and a shove.

Market mechanisms not sufficient in early stages of abatement and mitigation

Whether it be existing technologies, near horizon technologies, or blue sky concepts, market forces will not be sufficient to drive the necessary transition to take up of low/zero carbon approaches. EBA's submission on technology in response to Garnaut Review Issues Paper 4, goes into this issue and should be read in tandem with this ETS submission.

Revenue for action

In addition to the revenue that would be generated by auctioning permits, EBA suggests that additional significant financing could be raised by creating a national '*Climate Bond*' and attracting major institutional investment. In addition the Climate Bond could include an awareness raising and empowering index fund for individual investors to contribute to transition⁴. Further revenue for action could be generated by deferring tax cuts and placing equivalent monies into superannuation funds with a mandated 10% of super funds to be invested in national interest infrastructure or offset programs. Investment allocation to be made by the Independent Bank of Carbon.

While the Garnaut Review ETS paper correctly refers to transaction costs of the new market, there will also be new commercial opportunities created and these should be acknowledged for the positive contribution they can make to the economy.

War Council to build capacity to act

Governments are best placed to help overcome the inherent shortages in skills, raw materials, and essential infrastructure and to address the international economic, security, environmental, health implications of climate change. The challenge requires nothing less than an international 'War Council' approach and Australia can play a lead role in its establishment.

SPECIFIC COMMENTS TO THE GARNAUT EMISSIONS TRADING PAPER

A global challenge

Notwithstanding that the challenge is global and all key players need to be drawn into rapid action, Australia can develop a leadership advantage by showing how an energy intensive economy can retain its prosperity by being smarter and more efficient. EBA therefore differs with commentators who suggest that the risk in early action outweighs the benefits.

EBA believes that Australia should take the necessary steps to realise the potential opportunities that lie in a new technological era, new industry, new companies, and new employment. Australia should not wait for leadership from others.

Target and trajectories

Targets, timelines and trajectories are important if the architecture for action is to be developed quickly enough and if it is to provide adequate clarity and incentive for investors and business more generally. Targets provide critical information to the market and to company boards. EBA has provided above its advice regarding potential targets.

Objective of an ETS

The essence of the stated objective is agreed with, however, EBA recommends a slight change to the wording to read "... a limit must be placed on GHGs in order to rapidly mitigate climate change." The current wording "... on rights to emit GHGs to the atmosphere" sends a misleading message. Likewise in the second paragraph "holder of permit *not to exceed* a specified volume"

⁴ Further details on these points are outline in 'Wedges, levers and a zig zag'

Design of an ETS

From the environment industry and cleantech perspective EBA agrees that the ETS should be primarily a transactional space to facilitate GHG emissions reductions. But it will have, and should have, complementary roles. These include demonstrating that economies can benefit from internalising costs of negative externalities and advancing the emergence of the next great technological era.

Guiding principles

While the following are clearly the core themes throughout the paper it is worth stating at the outset that the underlying principles behind the guiding principles are:

- Abatement of GHG emissions
- Mitigation of existing and unavoidable emissions and climate change in 'pipeline'
- Develop smarter and more efficient ways of achieving and maintaining prosperity
- Protect natural ecosystems and the services humanity relies on

Principles to guide the design of an ETS

Recommend adding *urgency/timing* and *context* to the current 5 guiding principles of scarcity, tradability, credibility, simplicity and integration.

Principle 1 – scarcity

An underlying issue is that while we value commodities, we give scant regard to the context for those commodities and to date countries have been slow to 'put a price on the head of anti-commodities'. This broader perspective may allow the market to better foreshadow the price/scarcity/abundance of commodities and the broader risks and opportunities.

Principle 3 – credibility

"...procedures that undermine the integrity of the market" – there is a corollary here and that is the procedures that add value to the integrity of the market from a societal perspective.

At present the rules do benefit one party (or at least a limited number of parties) at the expense of other market participants, the community and the environment.

Principle 4 – simplicity

General agreement – but with the caveat that complementary measures to an ETS are required simply because of the scale and urgency of the task ahead and emissions trading and a carbon price will not be able to provide a rapid or broad enough suite of solutions. Again, we refer to the issue of "cost" and emphasise the new opportunities that should provide economic benefit for Australia.

Setting an emissions limit

EBA agrees that Government should set the emissions limit for Australia and that this should be expressed as a trajectory of annual emissions targets over time, which defines long-term budgets. EBA's target recommendations for Government to consider appear in 'Targets for our future' (attached).

Given the size of the challenge ahead the 2012 Kyoto commitment (for all countries) is extraordinarily low. Australia's achievement of even the 108% is essentially an unrewarded wealth transfer from the agricultural sector to the resources and electricity generation sector. Much work remains to be done.

Setting an ambitious energy efficiency and demand side management target for 2010 would be beneficial for the longer term trajectory.

Changes to the emissions limit

Notwithstanding the need for clarity which is supported by EBA, there is need for flexibility in the emissions targets given the uncertainty of the pace of climate change. Moving from one trajectory to another may be more urgent than a five year notice period would allow for. The fundamental social equity at stake should take precedence.

Permit allocation

EBA supports the auctioning of all permits. The reason for this support is that this approach generates revenue that can be used to achieve desired outcomes and the transition ahead requires major investment.

Market failures

EBA most strongly supports the statement that there is a role for Government action to correct ongoing market failures in the areas cited. We would add there is also an imperative for Government to more broadly correct the market failure in competition policy where poor performance can undermine good performance by outsourcing waste and pollution with enterprises profiting from this non-accountability.

Compensation

Cash compensation, either to business or the community, would have little national benefit. It is unlikely that it would be invested in reducing carbon footprint from business as usual or even from a projected growth in footprint. The revenue generated from auction permits and other sources would be better invested in stimulating the market, industry sectors, individual companies, and community behaviour to achieve desired outcomes.

TEEIs

Shareholders in energy intensive companies have a long enough warning period that they are investing in a risk area and are therefore given the option to move their investments elsewhere or to encourage transition inside the corporations they invest in. Investing in the share market does not provide a 'guarantee for life' that investment value will continue to increase notwithstanding the bull market of recent years. Indeed, lessons should be learned from the sub-prime market shocks that there is an equivalent 'carbon overload' risk.

Available finance could however be used as an opportunity to drive change – to enable companies to undertake structural adjustment to achieve/maintain new benchmarks (see recommendations in EBA summary above).

Households

If an effective national energy efficiency and demand side management system is developed there should be minimal effects on household electricity prices. A social safety net for low income households should not be extended to all households.

Employment and regional impacts

The issue of employees in high risk sectors, and the ripple impact on communities may well require social adjustment compensation and should be assessed on a case by case basis.

International trade

EBA recommends that the Australian ETS be linked where feasible to international trade in permits. Verification of offsets and/or project viability will however be important.

International trade is an aspect of the ETS that can build gradually. EBA has previously suggested that Australia help build an APEC+India trading block.

Governance

The concept of an Independent Carbon Bank is an excellent one.

Public finance

EBA supports the revenue of permit auctions being focussed on national interest technology development, infrastructure projects, sectoral restructure.

EBA has proposed a national "Climate Bond" to channel these funds and we also propose that 10% of superannuation funds be directed to national interest infrastructure projects and sectoral decarbonisation.

All projects that are publicly financed/have a component of public finance should demonstrate from planning through to inception and operation that they have the lowest possible GHG emissions footprint and this should be an integral component in the design and assessment of projects.

Coverage

Gases – agree all six gases should be included in the ETS. Also agree that the coverage should be as broad as possible from the outset. However, suggest that the ETS also incorporate the built environment and that the feasibility of including the household and commercial sector on an aggregate basis be investigated.

Initially there may have to be some broad brush assumptions regarding sectoral emissions, e.g. in agriculture (although the NCAS recently selected by the Clinton Climate Initiative for major project analysis is world's best). We know enough to act - refinement can occur over time with operational learning.

A number of offset providers will also have other GHG abatement, climate change action benefits so it may be preferable to involve them completely in the emissions trading scheme – for example:

- The built environment (efficiency gains, supply chain of materials selection). Submissions by the Green Building Council cover this in depth
- Waste (emissions at approximately 3% of Australia's total but savings through recycling materials, embodied energy, soil carbon could provide up to 10% cuts in GHGs – a more important consideration than merely capturing landfill gas for offsets)
- Forestry/land management/soil carbon replenishment (rebuilding Australia's natural energy balance through reforestation programs increases evapo-transpiration potentially reducing drought severity; soil carbon replenishment helps stabilise soil structure and increases agricultural productivity without the side effects of chemical fertilisers. Likelihood of better water quality and improved surface/groundwater supplies.

Domestic offsets

Agree that domestic offsets should be included, especially in the first 20 years where massive mitigation is needed alongside abatement. However, EBA's recommendation is that offsets be part of a high emissions reduction target otherwise the risk of underaction on abatement is too high.

Point of obligation

Set at pointS of emission and drivers to emission – otherwise demand side management reduction is less likely to occur (e.g. household and commercial sectors).

Permit issuance

Permits should be auctioned and not given away.

International linkages

There is strong potential to link the Australian ETS with a number of international trading programs, with offsets from developing countries through the CDM. There are also benefits to be gained from linking the Australian ETS with offsets from deforestation avoided and re-forestation projects in developing countries. Providing financial incentive to curb emissions will assist developing countries engage in climate action. Australia could also consider investing in capacity building and technology/infrastructure trialling alongside/in lieu of cash payment in developing countries.

In terms of biological sinks, Australia is now in a stronger position to renegotiate for forestry sinks and ecosystem resilience building to be included in CDM and JI.

Price controls

EBA does not support a ceiling cap on prices. There may however be merit in considering a 'reserve' floor price.

Inter-temporality

Agree with the banking approach, but this should not be extended to borrowing which would likely lead to a stalling of action in the 'hope' of a major technological fix emerging at some future date; this would likely lead to increased emissions and making the task ahead even harder.

Banking could help reward early action – borrowing would stifle it.

Governance

The optimum approach is that policy framework be set by government (with advice from the private sector on routes to achieve desired policy outcomes), and that the scheme be administered by an independent authority, a.k.a. Independent Bank of Carbon.

Use of permit revenue

Permit revenue (conservatively estimated at approximately \$10-12 billion per annum) be hypothecated to focus spend on desired outcomes (not technology specific)

- National energy efficiency performance
- National demand side management energy reduction
- R&D, technology demonstration and trialling
- Fast-tracking commercial diffusion of smart and efficient technologies
- Fast-tracking amortisation to retirement of existing energy projects that do not comply with GHG emission reduction targets
- Encouraging diversification of investment portfolios and business activities to eliminate collateral damage at any stage in the supply chain
- Standards – including appliance benchmarking for efficiency and low energy use include centralised turn off/down micro-chipping controlled via broadband
- Where absolutely necessary and for a limited time, border tariff adjustments for genuinely energy intensive trade affected sector companies

Permit issuance

As stated earlier in this submission, EBA's preference is for auctioning of permits with hypothecation of revenue to achieve desired outcomes (i.e. not for consolidated revenue or tax breaks).

In terms of conditions – also worthy of inclusion are introduction of new/improved standards; product/process replacement over a stipulated timeframe with additional 'reward' for early achievement – perhaps in the form of permit auction price with an x% deduction.

Avoiding trade distortions

In response to commentators and lobby organisations who suggest that trade-exposed companies will leave Australia and pollute elsewhere, our research has not brought to light one company prepared to make a material declaration to the ASX that it will leave Australia when emissions trading is introduced and:

- Seek a licence to pollute from their shareholders, investors, bankers, insurers
- Abandon sunk assets and long-term resources, good infrastructure and skilled personnel
- Relocate from a stable economic and political regime to a country where these assets and stability are not present
- Gamble on marginally lower costs of electricity remaining low, or a carbon price not coming into play in other countries
- Ignore market signals of an international carbon price and increasing demand from consumers and investors for 'clean and green'

Research by the OECD supports our findings. Following introduction of new or strengthened environmental regulation in a number of countries the OECD have not found evidence of companies relocating to countries with less stringent regulation and enforcement.

The general conclusion - that it is unlikely that the shadow cost of carbon would have much impact on asset maintenance/project development/investment decisions. There will inevitably be decisions to locate new investments in other countries and maybe to speed up amortisation of some existing projects, but realistically tax regimes, skilled staff, cost of labour, good infrastructure, political/economic stability and easily accessible resources are far more deterministic criteria. If the shadow cost of carbon is proven to be a trade inhibitor then appropriate border adjustments could be made for specific periods following an analysis of the Australian component and the overseas component of a company's balance sheet.

And regarding a possible future transfer of wealth overseas, we highlight that this is already happening through damage to the commons - and in virtually every report, scientific or economic, about climate change, Australia is singled out as one of the countries most vulnerable to early and deep negative impacts from climate change.

That incumbent polluters will be disadvantaged (comparative to their status quo benefits) by governments putting in place frameworks to protect the public good is to be expected, and is a step in the right direction for the economy and for the next wave of wealth generation. There are however, many ways to ease the transition which, although it must *begin* immediately, gives most companies and sectors 20 to 30 years to adapt. It is doubtful whether such a long 'warning' period has been given to business since the onset of the industrial era.

A piecemeal approach to a national emissions trading scheme, providing a 'carbon holiday' for some sectors, would in reality extend the market for inefficiency. EBA therefore recommends that all significant players – companies and sectors should be involved in trading from the outset.

The other aspect for consideration is that with the development of clean energy such as solar thermal and geothermal Australia could become a manufacturing and value-adding country of choice.

Compliance and penalties

Penalties should be punitive measures rather than an alternative form of compliance. The proposed 'make good' provision is an integral design feature.

The regulatory framework of the ETS should include director personal responsibility.

Exogenous factors affecting the implementation of an Australian ETS

While consideration of other countries' activities in relation to trading and GHG abatement is important, EBA suggests that at this stage it is more important to build the Australian framework. This will increase Australia's ability to trade successfully in carbon markets, and competitively in broader commodity markets (where GHG abatement is priced in and is a basic consumer demand standard). Responding to this new marketplace (preferably proactively) will determine Australia's next competitive edge.

Scientific and technological uncertainties

The security and ecosystem aspects of climate change impacts are closely interlinked and flexibility regarding abatement, mitigation and adaptation will be required. Food production, water supply, settlements are things we humans have taken for granted. It is not wise or worthwhile to gamble that the worst climate change scenarios will not eventuate. Making any economy smarter and more efficient can hardly be as high on the economic risk scale as playing down the problem and acting insufficiently. And, as mentioned elsewhere in this submission, countries who have embraced each great technological era have vastly improved their society and their GDP, the next great technological era can deliver equal

rewards if it is facilitated to happen in time to avoid the worst consequences of climate change.

Technological uncertainties

Agree with points i) and ii) in the ETS paper and would add iii) speed of introducing systemic energy efficiency.

There are numerous existing technologies that can be deployed and there are many near-horizon technologies worthy of demonstration, refining, and eventual deployment. We caution strongly against the fallacy of assuming that one technology will emerge to solve the entire problem in 15-20 years' time. So, while EBA will continue to voice support for trialling of CCS we most emphatically advise that the broader portfolio of potential solutions should be fast-tracked.

At the risk of being repetitive - Australia's leadership opportunity is to demonstrate that an energy intensive economy can remain prosperous by becoming smarter and more efficient and more adept at handling the challenges we face. Australia should therefore seek to be a leader of trajectory D (four stages of trajectories for Australia).

We must indeed be robust in the face of pressures from vested interests.

Fiona Wain
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