

Words for Submission on Energy White Paper Issues Paper

Gillian King

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General

Australia's energy policy in the 21st century must reflect the issues and opportunities that we face in the 21st century. The Energy White Paper needs to take a strategic approach to meeting the needs of the 21st century. It needs to guide transformations where they are needed, rather than perpetuating systems and mindsets from past centuries.

The primary issue for the 21st century is mitigating climate change and ocean acidification. Climate change, with its twin ocean acidification, is the greatest problem that has ever faced humanity. It is not just another discreet economic or political problem. It is a systemic crisis that requires concerted action locally and globally. It is about this planet and its ability to support life as we know it. It is about our children and our fellow humans.

Tackling this problem will require everyone – including the energy sector – to reduce emissions of greenhouse gases to zero.

The Climate Change Authority recognises that ‘Continued growth in global emissions creates real risks for all countries, including Australia. It is in Australia's interests to contribute to global action to limit the increase in global average temperature compared with pre-industrial levels.’ I hope that the Government accepts this advice.

The decisions that the Government takes now and the actions all stakeholders take under its leadership are vital if life on Earth as we know it is to survive. Evidence is increasing that climate change is accelerating. This amplifies the imperative to act quickly and boldly : we are beyond the stage where we can take a ‘gently, gently’ approach. Even to have a 50:50 chance of limiting global warming to 2°C (which, many warn, already involves facing massively damaging climate impacts), industrialised countries like Australia must cutting our greenhouse gas emissions by about 10 per cent a year – and we need to start right now.

We are living in times that are very dangerous for the future of our planet's ability to support life. Because of built-in lag times, our children and grandchildren, and our ecosystems are already facing a very different world to previous generations. They will experience much more extreme weather and worse food and water shortages.

And – if we continue to dig up, export and burn fossil fuels like coal, oil and gas – those impacts will only get worse...to the extent that planet Earth will be uninhabitable for humans and most other species.

Australia is in the unique position of being both a developed country and a primary production country – and of suffering severe impacts as a result of climate change. If we, in that unique position and already experiencing some of those impacts, do not show the world that we understand and are prepared to really tackle climate change, what hope is there for other developed countries and newly industrialised countries to do so?

So why do we continue to dig up, export and burn fossil fuels?

For most applications we now have alternatives to fossil fuels, so the only answer is so a few people can make a quick profit.

But what use is that money if life is miserable or you are dead because of the impacts of climate change?

It is the current climate that allows us to have our civilisation, including our economy and standard of living: if the climate changes, so does human civilisation – and that will make economic challenges like the Great Depression and the Global Financial Crisis look miniscule. If we do not change the way we live, the economic security systems on which most political leaders focus will no longer be there. And that is without even looking at the human toll, through such things as dramatically increased deaths, adverse health impacts and population displacement. What we face now is a Global Future Crisis, and it needs serious action.

We *can* stop this march to our own destruction...if we all work together to ensure quick and decisive action to reverse this march.

That's the call of The Elders. In an article on 24 January 2014, Kofi Annan challenges governments, businesses and citizens across the world to step up and take bold action on climate change. (<http://www.theelders.org/article/united-call-action-climate-change>)

The latest science demands that Australia and the world take stronger action to reduce emissions and do so quickly. The IPCC report released in September 2013 made clear, yet again, that the world is warming rapidly, humans are the primary cause, and very substantial action is immediately required.

The majority of Australians want stronger action on climate change. This majority support has been repeatedly reaffirmed in many polls and research.

Ensuring that planet Earth remains habitable means that we need to transform current human-made systems from ones that are destroying our planet's resilience and ability to support us to ones that sustain life.

All this means that **Australia, and its energy sector in particular, needs to take bold action to transform itself from being a major contributor to the climate change and ocean acidification problem to being a major contributor to the solution.**

I recognise that this is a big ask. And it will require some serious decision-making.

Essentially, we must move to a 'war footing' where we take all actions that that could be needed to have any chance of winning this 'war', the war for our survival.

Fighting the 'war' against climate change is *not* about protecting our coal, oil and gas industries; quite the reverse. It is about shifting to sustainable energy and sustainable practices. And it is about providing some equity between generations, and between those who are contributing most to the problem and those who will suffer its impacts most severely.

But the later we leave reducing greenhouse gas emissions from the energy sector to zero, the harder it will be to turn around our changing climate and oceans, the more drastic the actions will need to be and the greater the costs will be.

The Climate Change Authority points out that ‘the evidence suggests international action on climate change is strengthening, particularly in some of the world's largest economies’. Australia already has to do more to make our industries ready for a carbon-limited future, because Australia’s economy is more greenhouse gas emissions-intensive than many of our trade partners and comparable countries. Every year of slow, ineffective action means we are missing opportunities for benefitting from innovation and transformation – and higher costs from the consequences of inaction or slow action are substantial.

This simply strengthens the case that Australia needs to take strong action quickly to transform our economy and energy sector from being focussed on fossil fuels to being focussed on renewable energy.

Unlike many other countries, Australia has bountiful renewable energy resources and some of the best researchers in the world. Australia is a nation of innovators, world leaders in relevant technologies such as renewable energy. We need to foster, care for and profit from these natural advantages, rather than to ignore them or hobble them. In that way we can position our economy so it is sustainable in the long term – and is in harmony with Earth being able to support life as we know it.

Work to set out how we can transform our economy and infrastructure so that we meet our energy requirements without greenhouse gas emissions has already been done very efficiently and outside government and industry. This is contained in several publications (such as those by Beyond Zero Emissions and University of New South Wales’ Centre for Energy and Environmental Markets). This work shows how we can move to having no greenhouse gas emissions from energy within ten years – using existing technology, economically and with many additional benefits.

So, moving the energy sector to zero greenhouse gas emissions very quickly is not only desirable, it is possible and could benefit Australia tremendously.

We can make the transformation. And, hopefully, we can do it in the timeframe required to ensure a habitable planet.

Specific comments against Issues Paper

The Security of Energy Supplies – Key Issues	
<ul style="list-style-type: none">• Ensuring reliability and long-term energy security• International agreements and emergency response measures	<ul style="list-style-type: none">• Addressing infrastructure and supply constraints and barriers to emerging energy sources• Increasing transparency in market conditions
The Security of Energy Supplies	
The Government seeks comment on:	
<ul style="list-style-type: none">• ways community expectations can be better understood and reflected in reliability standards;• the value of developing fuel reserves to meet Australia’s international oil security obligations, and augment domestic security;• ways to increase new gas sources to meet demand and measures to enhance transparency in market conditions; and• issues relating to the regulation of energy infrastructure.	

I agree that energy policy needs to underpin the day-to-day reliability, longer term security and the cost of energy’ and that this can be done ‘in an efficient and competitive market’. However, it is vital that the means of providing energy to end-users takes place within the Earth’s ecological limits and do not destroy the environment on which we as humans depend. This is much easier to achieve if the starting point is focussing on what end-users need (comfortable living and working places, heat, power, electrical energy) rather than the type or source of energy. It is particularly important to move away from 18th and 19th century industrial thinking that fuel (and fossil fuels in particular) is the best or main way of providing energy. Rather, we need to be thinking of how to meet the needs of end-users in a sustainable, cost-effective way. That may mean, for example, giving more attention to building standards and less to, say, gas for heating.

The Issues Paper says that the ‘Energy White Paper will consider the supply and use of Australia’s energy resources to deliver security of supply’ but it tends to focus on fossil fuels at the expense of Australia’s abundant supplies of renewable energy (particularly solar energy) that are fully sustainable, secure and avoid the damage to our atmosphere, oceans, ground water, soils, landscapes and people’s health that exploiting fossil fuels cause.

The only truly reliable sources of energy are ones that are always available without new sources and/or supplies having to be found, i.e. renewable energy. Publications such Beyond Zero Emissions’ Zero Carbon Australia Stationary Energy Plan show how renewable energy can supply day-to-day reliability and meet the ongoing needs of consumers.

It is unclear (from the Issues Paper, at least) how ‘ensuring consumers pay no more than necessary for reliable and secure energy supplies becomes more challenging against this background of declining energy consumption and growth in new sources.’

Surely, if the market chooses the lowest-cost methods of reliably and securely meeting consumers' needs then consumers will pay no more than necessary? Or is there concern about suppliers padding prices and rigging markets to ensure healthy profits? If the latter is the case, it should be spelt out and appropriate remedies implemented.

The Issues Paper does not mention security of supply in terms of actual security, that is, physical threats facing the energy supply system.

Single or few sources and transmission routes for meeting consumers' energy requirements carries a much higher risk of failure or disruption through, for example terrorist attack, than multiple, dispersed sources and transmission routes.

Further, there are sizable population areas and existing and potential supply sites that are not linked to other sites. They cannot, therefore contribute to or benefit from energy connections to other parts of the country.

These shortcomings show that Australia's transmission and distribution is not as well-developed as indicated in the Issues Paper. They also reduce the robustness, reliability and security of Australia's energy supply system, particularly in regard to electricity.

This vulnerability has been demonstrated in the past when, for example, South Australia has suffered brown outs because of its weak single link to the Victorian electricity grid.

More recently, in the mid-January 2014 heatwave in south-eastern Australia the capacity of electricity cables between Victoria and Tasmania and between Victoria and New South Wales was constrained (Keen, L and Angela Macdonald-Smith, A. Mega temperatures push power watts. The Australian Financial Review, 16 January 2014). If it wasn't for the contribution of small generators distributed throughout the region, consumers would have been left without power when they most needed it for cooling (which, with our current building stock, mainly comes from electricity). According to modelling by the REC Agents Association, photovoltaic energy was meeting nearly 25% of South Australia's afternoon electricity demand and 6% of Victoria's. This played a significant role in lowering demands on the electricity system and reducing energy prices for the entire community during the heatwave. Importantly, it also demonstrated the value of having multiple, dispersed sources and transmission routes for supplying electricity. Australia's energy policy should encourage this.

More broadly, energy security can be enhanced if consumers' needs can be met via multiple modes of provision. For example, highly energy efficient, passive solar buildings mean that occupants can remain at comfortable temperatures without relying on external sources of energy : they do not need electricity to run air conditioners. Where buildings are less energy efficient, consumers can meet much of their thermal comfort needs through appropriate behaviour (how they 'drive' their building). In this way, consumers can be more in control of their own energy security. (Interestingly, consumers wanting to take control of their future electricity prices and/or supply has been a major driver behind the recent rapid uptake of

photovoltaic energy.) The Energy Green Paper should canvas options for helping consumers to be active players in improving energy security in Australia.

Where energy does need to be supplied from external sources, sourcing and transmission methods should be regulated to ensure:

- robustness of electricity supply, particularly through encouraging (or at least not deterring) multiple, dispersed sources of supply
- community health and safety, particularly to avoid fire and pollution and eliminate (or at least minimise) use of water
- minimal (if any) destruction of farmland and natural environments.

These issues will become increasingly important as climate change progresses. Consideration should also be given as to whether ensuring security of supply (particularly reducing the threat of terrorism attacks) might be better served by having critical energy infrastructure in public ownership.

Rather than developing new sources of petroleum and gas, the Energy White Paper needs to provide a clear pathway away from them. Concern about supplies of fossil fuels reflects out of date thinking.

Instead, the focus should be on the purposes for which those fuels are used and how to encourage alternatives to fossil fuels. For example, electricity can power motor vehicles and, where powered by renewable energy, this can dramatically lower pollution and greenhouse gas emissions. And the change in vehicle stocks can happen rapidly. The Norwegian government has been encouraging the uptake of electric through a number of incentives, such as offering tax breaks, free parking and allowing drivers access to bus lanes. As a result, in the last quarter of 2013, sales of electric cars in Norway were higher conventional models.

The question raised in the Issues Paper about gas supplies in eastern Australia raises the issue of whether the Australia's energy policy (and this Energy White Paper in particular) should focus on domestic energy security, or international energy security. I would argue that it should be primarily focussed domestically.

Nevertheless, there are benefits to international cooperation, such as through the International Energy Agency.

As a member of the IEA, Australia could work to have IEA requirements for fuel stockpiles changed to reflect 21st century problems rather than 20th century ones.

Until then, Australia could meet the IEA stockpile requirements but make the change to using energy from sources other than fossil fuels to meet day-to-day needs.

Gas should no longer be viewed as an interim energy source for reducing greenhouse gas emissions. We have known for a long time that methane (CH₄) is a much more potent greenhouse gas but now we know that it is even more potent than we had previously realized. Furthermore, gas extraction and distribution infrastructure leaks

and this means that the associated methane is contributing to environmental problems and community dangers without creating community benefits.

Furthermore, the perception being created that there is a gas shortage only arises when domestic gas supplies are made available on the export market that currently pays a higher price than the domestic price. Gas prices would only fall domestically if domestic supply was increased to levels large enough to lower the world price. That can only occur by exploiting unconventional gas.

Along with adding to the problems of climate change and ocean acidification, unconventional gas causes immense, irreparable damage to local environments, people's health and groundwater in a time when all these are under increasing stress as climate change progresses. Flaring from unconventional gas wells also increases the risk of fires, which are already on the increase as a result of climate change.

There is absolutely no need to use coal seam gas, shale oil and gas and other new sources of fossil fuels. Quite the opposite : pursuing them will create and exacerbate problems facing the Australian community. Many of those problems – such as poisoning scarce water and soil resources for which we have no alternatives – will be irreversible.

If methane gas is required for some applications until alternatives can be developed, it can be captured from existing biological sources, such as sewerage farms and rubbish dumps containing organic material. Capturing methane from these sources is already practiced, particularly in Asia and in newer rubbish dumps in Australia. It also has an added benefit of reducing methane emissions to the atmosphere.

And the best way to understand community expectations? Ask the community, particularly after showing them – truthfully – options and alternatives, and give them plenty of time to respond.

Regulatory Reform and Role of Government – Key Issues

- Reducing unnecessary regulatory burden on business
- Streamline project approvals while maintaining environmental safeguards
- Greater price transparency
- Improving market competition

Regulatory Reform and Role of Government

The Government seeks comment on:

- priority issues, barriers or gaps within the COAG energy market reform agenda;
- possible approaches and impacts of review of tariff structures including fixed network costs, further time-of-use based electricity tariffs and the use of smart meters;
- possible measures to promote greater price transparency in gas markets; and
- areas where further privatisation of government-owned assets would contribute to more effective regulatory frameworks and better outcomes for consumers.

As well as leading the way on regulatory reform, government has an important role to play in laying out clear and consistent policy settings to help our energy sector transform to becoming sustainable and treading lightly on our precious Earth as a matter of urgency. We only have one planet that sustains life as we know it, and we need to have the right policy settings to ensure that Earth can continue to be habitable.

Regulatory reform must focus on:

- transitioning the energy sector (both in Australia and overseas, via our exports) to zero greenhouse gas emissions very quickly so that we have a good chance of maintaining the habitability of planet Earth. If regulatory reform is to facilitate user choice, it must therefore particularly encourage users to choose renewable energy with no greenhouse gas emissions. Alternatively, regulatory reform could mandate non-greenhouse gas-emitting renewable energy. Either way, regulatory reform needs to pave a clear, consistent path to transforming Australia's energy sector, providing certainty to investors and the wider community;
- as a top priority, removing all subsidies and other incentives that encourage fossil fuel extraction, burning and export. That would save at least \$10 billion per year plus more in avoiding the extra costs that fossil fuels cause, for example to health and roads;
- meeting end-users' needs, not just suppliers' desires; and
- deterring damage to the environment and people (both now and in the future) and ensuring that those who create any such damage are held responsible and have to pay meaningful penalties and restitution (not necessarily monetary).

The Issues Paper notes that 'the Government is considering reforming electricity markets and pricing to improve user choice through consumer information and cost reflective tariff structures.'

Have consumers been asked whether they want greater choice? If so, and if they have said yes, have they been asked whether they want that choice to be provided through consumer information and tariff structures that reflect costs? Such reforms should only proceed if that is what consumers want. Effective information tools, appropriately deployed, can empower consumers to improve their energy efficiency and this may reduce their energy bills. At this stage, however, consumers are indicating that they do not want large energy utilities (particularly large electricity utilities) unnecessarily maintaining outdated business models and profit levels by charging customers (or particular types of customers) extra or ‘gold plating’ infrastructure and services. Large, established utilities need to change in response to the demands of the 21st century.

Pursuing downward pressure on energy prices may be a priority for the Government. Lower prices may or may not be desired by consumers, particularly if it comes at great price in other areas (for example, no potable water, no food, inhospitable environment). In any case, lower prices can be delivered in a variety of ways, not just regulatory reform. For example, the market can deliver lower prices as long as it is not distorted to prefer one type of supplier (e.g. fossil fuels, centralised electricity generation) over another (e.g. renewable energy, decentralised electricity generation).

The Issues Paper acknowledges that a major cause of rising electricity prices is currently due to requirements for significant investment in network infrastructure. However, higher consumer costs are also due to suppliers having to install extra generation capacity to cope with peaks in demand due to extreme weather, and heat waves in particular. These demands are likely to increase because extreme weather increases as climate change progresses. However, there are alternatives to air-conditioning powered by grid-supplied electricity, such as:

- reducing the likelihood of extreme weather by mitigating climate change;
- using solar-powered air-conditioning;
- having more energy efficient buildings;
- cooling buildings naturally, through, for example, external shading or good design; and
- changing consumer behaviour, for example, to change when they use air-conditioning or to cooling down by other means (e.g. water)

One reform that customers may welcome is for smaller electricity generators to be paid feed-in tariffs that reflect the prices being paid by consumers. In other words, new smaller supplier customers should be paid what their electricity is actually worth at a particular time. The benefits (of contributing electricity supply and adding robustness and security to the electricity market) should also flow to smaller generators, not just network businesses, network users and consumers.

Any improvement to the gas market’s function must be consistent with the long-term vision of transitioning it to zero greenhouse gas emissions very quickly so that we maintain a habitable planet.

Privatisation of state and territory owned energy assets and businesses should only proceed where a clear, ongoing benefit to the community can be demonstrated following community consultation – not because of ideological dogma. Since privatisation of state-owned assets began in earnest a couple of decades ago, there have been ongoing complaints about selling off community-owned ‘family jewels’ without clear, ongoing benefits to the community. In the case of power supplies post-privatisation, concerns have been particularly expressed in relation to reductions in reliability of supply, ongoing investment and maintenance, environmental safeguards, and tariffs. It is therefore of concern that the Issues Paper suggests that privatisation could reduce the regulatory burden on business and that it assumes that there are ‘potential efficiencies of private sector operation’. There are also potential efficiencies of public sector operation, which is one reason that governments start providing services.

Care needs to be taken with any proposals for one-stop approaches for approval and licensing to ensure good standards for protection of the environment, human health, cultural needs and local communities. The aim should not simply be on reducing the regulatory burden on business while maintaining ‘appropriate levels of disclosure and transparency’. In particular:

- Matters of national significance should be assessed by the national (i.e. Commonwealth) government because it is the only level of government that can properly take a national view and it must not cede its responsibilities. Those responsibilities include discharging international obligations. Furthermore, state governments have repeatedly demonstrated a failure to properly consider matters of state, national and international significance. This demonstrates that they cannot, and cannot be trusted to, make assessments on matters of national significance.
- The aim of environmental assessments, for example, is about assessing the environmental impacts of a proposed action or suite of actions. It should not be about ‘making swift decisions’ and ‘delivering certain outcomes’.
- Any administrative reforms should be about maximising the effectiveness as well as efficiency of assessment and licensing processes. They also need to recognise the role, interests, expertise and needs of Indigenous peoples and local communities.
- If it is decided that a State or Territory Government will carry out a role (e.g. environmental assessment) for the Commonwealth, then all draft documents, including draft standard terms of reference, should be made available to the Commonwealth and the public for comment and agreement before they are finalised.

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Growth and Investment – Key Issues

- Supporting growth
- Encouraging investment
- Reducing costs and barriers
- Community engagement

Growth and Investment

The Government seeks comment on:

- commercial or market initiatives that could enhance growth and investment in the energy and resources sectors;
- areas where approvals processes could be further streamlined while maintaining proper environmental and social safeguards;
- further ways that regulatory burdens could be reduced while maintaining appropriate levels of disclosure and transparency in energy markets; and
- the impacts of variable land access policy and ways the community could be better informed and engaged on development in the energy sector.

We will only be able to continue to have high living standards if we continue to have a physical environment that supports us living to those high standards and life on Earth as we know it. We have a finite Earth and must respect its ecological limits. This means that we (our species, our economies, etc) cannot grow forever; in fact, the human species has already well outgrown the capacity of the Earth to support us in our current numbers and with our current way of living. Instead of focussing on growth, the Energy White Paper should be focussing on sustaining the Australian community/culture.

Rather than assuming expansion of fossil fuel exploitation, major projects should be about things like:

- switching from fossil fuels to renewable energy;
- improving the reliability, security and resilience of energy supply networks, particularly in relation to electricity, by extending and connecting them; and
- achieving modal shifts, changes in consumer behaviour and better stocks of items such as buildings.

Examples of major energy infrastructure projects that should be mentioned in the Energy White Paper are the construction of:

- east-west linkages to modernise Australia's electricity grid; and
- electricity generation plants that use concentrated solar thermal with storage.

Workforce training and re-training as part of the energy sector transitioning to becoming fossil fuel-free would be another major project that warrants mention.

It also is important that the Energy White Paper deal only with energy and, in particular, how consumers' needs can be best met. The Issues Paper repeatedly uses the term 'resources sector', and occasionally 'mining' or 'minerals', in addition to

the ‘energy sector’. The ‘resources sector’ is a vague term and, when used in conjunction with ‘energy sector’ is confusing and muddies the waters. In the context in which they are presented in the Issues Paper, these terms also perpetuate old-fashioned thinking that fossil fuels, which need to be mined, are needed to meet consumers’ (energy) needs. The Energy White Paper should therefore avoid using the terms ‘resources sector’, ‘mining’ and ‘minerals’.

Business dislikes uncertainty and frequent change. Uncertainty is not good for anyone. In individuals, it leads to stress. In business, it leads to ‘battening down the hatches’ and deferral of investment.

Maintaining market certainty (as far as possible) – rather than market stability, as the Issues Paper says – ‘and sustainability is important to give confidence for long-term investment and innovation, both for energy suppliers and users’. This is particularly the case for renewable energy, where investors have had to deal with.

One way to tackle this is by having multi-partisan (or at least a bi-partisan) agreement on the way forward to quickly transforming Australia’s energy sector so that it is sustainable in the longer term and consistent with the ecological limits of the Earth.

The Issues Paper says that ‘the Government is committed to reducing costs to maintain a competitive position for the Australian energy...sector[s].’ This is likely to be welcomed as long as it does not apply to fossil fuels, which must be phased out quickly to maintain the ability of our planet to support life as we know it.

There are considerable opportunities for growth in Australia and overseas for renewable energy, energy-related products and services. Relevant companies and organisations will welcome the Government:

- taking up the ‘significant opportunity for Australian business to re-orient towards developing intellectual property and value-added products...[including] proactively exploring opportunities for research and development, collaboration and investment’ and
- recognising that ‘[i]ndustry leadership in fostering a business culture that supports and facilitates innovation and sustainability, and collaborates with government and the community is fundamental for growth and development.’

It is vital that the Energy White Paper explain how this will be achieved, particularly given the need to help the energy sector transition from a focus on supplying fossil fuels and fossil fuel-based energy to focussing on meeting end-users needs without emitting any greenhouse gases.

In relation to the Government’s call for comment on areas where approvals processes could be further streamlined while maintaining proper environmental safeguards, I repeat here my comments on Regulatory Reform and Role of Government:

Care needs to be taken with any proposals for one-stop approaches for approval and licensing to ensure good standards for protection of the environment, human health, cultural needs and local communities. The aim should not simply be on

reducing the regulatory burden on business while maintaining ‘appropriate levels of disclosure and transparency’. In particular:

- Matters of national significance should be assessed by the national (i.e. Commonwealth) government because it is the only level of government that can properly take a national view and it must not cede its responsibilities. Those responsibilities include discharging international obligations. Furthermore, state governments have repeatedly demonstrated a failure to properly consider matters of state, national and international significance. This demonstrates that they cannot, and cannot be trusted to, make assessments on matters of national significance.
- The aim of environmental assessments, for example, is about assessing the environmental impacts of a proposed action or suite of actions. It should not be about ‘making swift decisions’ and ‘delivering certain outcomes’.
- Any administrative reforms should be about maximising the effectiveness as well as efficiency of assessment and licensing processes. They also need to recognise the role, interests, expertise and needs of Indigenous peoples and local communities.
- If it is decided that a State or Territory Government will carry out a role (e.g. environmental assessment) for the Commonwealth, then all draft documents, including draft standard terms of reference, should be made available to the Commonwealth and the public for comment and agreement before they are finalised.

The Issues Paper suggests that the Government could ‘relieve the need for each project proponent to develop environmental baseline data for each individual impact assessment [by] the Government...introducing efficiencies such as creating a repository of data sourced from the public domain or existing industry submissions.’

The Energy White Paper (and other relevant Government reviews) need to recognise that:

- Community submissions to impact assessment processes are a source of a wealth of data that might help form baseline environmental data.
- Often there is no baseline data or it is of very poor quality. In these cases there is no short-cut : the basic research must be conducted to establish baseline data.

The Government’s focus on reducing ‘regulatory burdens’ that ‘do not provide a net benefit for the economy’ fails to recognise that the economy exists to serve the community and that the net benefit that needs to be considered is the net benefit to the community.

Regulation that serves to provide a net benefit to the community should be retained, or even reformed for improved effectiveness in delivering net benefits to the community. Existing regulations should be reviewed to ensure that they do not impede development of the renewable energy and energy efficiency industries. I have

provided further comment on this in the section on Regulatory Reform and Role of Government.

Regulation that meets community expectation needs to be put in place before new technologies and potentially dangerous methods and substances are used in providing energy goods and services. This is the situation with health goods and services, and there is no reason for the energy sector to be treated any differently.

As the Issues Paper notes, '[c]ommunities expect to be fully engaged on the social, economic and environmental dimensions of projects.' The community will therefore welcome the Government's commitment 'to public disclosure on the development of energy resources.' This needs to be done well in advance of development proposals, and throughout their implementation, so there is plenty of time for the community to be involved in relevant decision-making.

The impacts of different policies regarding access to land and associated resources have been well documented. Of particular concern is that mining interests, particularly those associated with exploitation of fossil fuels, are given precedence over land holders. Land holders should be given a general right to control who has access to their land, particularly so that they can protect their land, water and health.

Trade and International Relations – Key Issues

- Growing export markets including value-added products and services
- Attracting foreign investment
- Encouraging open and transparent international energy markets
- Enhancing energy supply security

Trade and International Relations

The Government seeks comment on:

- how to grow the export of value-added energy products and services;
- ways to remove unnecessary barriers to continued foreign investment in Australia's energy sector;
- ways to strengthen support for access to export markets; and
- ways to support business to maximise export opportunities for Australia's energy commodities, products, technologies and services, including the value of Australia's participation in the variety of international forums.

The Trade and International Relations section of the Energy White Paper needs to focus on energy (rather than 'resources' and mining) and Australia:

- being a good global citizen, particularly by taking its fair share of responsibility to prevent major disruption to our climate and oceans;
- phasing out coal and gas exports quickly; and
- capitalising on Australia's natural strengths in meeting international energy supply and services needs.

Our International Relations will be enhanced by showing how we are transforming our energy sector (and economy) from being focussed on fossil fuels and contributing to the single greatest problem for the 21st century to being focussed on taking strong action to reduce that problem by transforming our energy sector and associated products quickly so that it does not emit greenhouse gases. If we lead from the front, we can change from being international laggard and pariah to being international hero in the fight for human survival in the late 21st century and beyond.

Doing this, and capitalising on our natural assets that will enable us to make that change, could give Australia an international trading advantage. These natural assets include:

- our abundance of sunshine and other renewable energy resources (which allows us to be a leading supplier of electricity based on renewable energy);
- our world leaders in development of many relevant technologies (such as photovoltaic and solar thermal technologies); and
- Australia being a nation of innovators with sought-after project managers (which allows us to export expertise in helping other countries transform too – as long as we are in a leadership position in the first place).

Again, the benefits from investment in Australia's energy sector, need to flow to the community and not just the economy.

The Issues Paper mentions the most significant challenges for mining equipment, technology and services (METS) sector firms.

What significant challenges has the energy sector – the subject of the White Paper – identified? As the sector must transform to be focussed on renewable energy and energy efficiency, what are the most significant challenges facing firms that provide those goods and services? The Energy Green Paper should identify them and propose ways of addressing them.

These firms have not had the 'stable and efficient regulatory environment' touted in the Issues Paper – quite the contrary. For the transition away from fossil fuels, and any associated foreign investment, renewable energy and energy efficiency need a stable and efficient regulatory environment that does not tilt the playing field toward fossil fuels. If anything, the playing field should be tilted toward renewable energy and energy efficiency to attract the investment necessary to facilitate the transition.

Global energy security is best served by focussing on users' end needs, renewable energy, and diverse and robust supply networks – not simply 'open, transparent and effective markets and investment frameworks, with minimal government intervention.'

Australia's objectives for international energy engagement policy need to include promoting the development – and deployment – of energy supplies, technologies and services that allow users' end needs to be met without emissions of greenhouse gases.

Efficient energy markets can:

- promote diversification of energy sources and technologies, and result in more robust supply chains; and
- promote appropriately timed, sized and located investment in production and supply capacity, in turn delivering long-term price stability and supply security

as long as the markets are not focussed on or favouring one energy source or technology (for example, fossil fuels or electricity (particularly that generated using fossil fuels)).

I am pleased to see that the Government 'works with industry and foreign governments' to maximise Australia's export opportunities and 'to enhance domestic and regional energy security.' It must also work with industry and foreign governments to maximise the change of continuing to have a habitable planet. Both of these objectives, and their associated support mechanisms, are not compatible with Investor State Dispute Settlement provisions in trade agreements (such as the Trans Pacific Partnership currently under development).

The fact that Australia can meet (and even exceed) its energy requirements using renewable energy, coupled with the adverse impacts of uranium and nuclear power, mean that there is no need to mine and sell uranium in Australia. Because of the heightened security risks, uranium should certainly not be sold to any country that has not signed the Nuclear Non-proliferation Treaty.

Workforce Productivity – Key Issues

- Increasing workforce productivity
- Addressing skills shortages
- Addressing long-term training and skills development needs
- Building skills for emerging and alternative¹ energy technologies

Workforce Productivity

The Government seeks comment on:

- the nature of any current skills shortages being experienced and how these could be addressed by and with industry;
- the capacity of industry and education sector-led programs to meet long-term training and skills development needs of the energy and resources sectors; and
- specific long-term training and skills development needs for alternative transport fuel, renewable energy, energy management and other clean energy industries.

In dealing with workforce productivity, the Energy White Paper needs to focus on the productivity of the workforce in the energy sector – not the ‘resources’ or mining sectors.

The Energy Green Paper must outline the workforce needs, particularly skills and workforce shortages, in the renewable energy and energy efficiency industries – and propose ways for remedying the situation. If this information cannot be immediately supplied by the industries, then the Government should commission suitable research. In that way, the Energy White Paper can focus on Australia having an appropriate workforce in the energy sector to meet the demands of the 21st century.

As well, the Papers must show how workers currently in the fossil fuel industries will be supported, re-trained and re-deployed in the transition away from fossil fuels.

It is pleasing to see that the ‘Government has identified Indigenous issues as a key policy focus, including employment opportunities’. The Government and companies in the energy sector also need to recognise Indigenous cultural expertise and needs, and not ignore them (as often happens now, for example in relation to proposed coal mining in the Leard Forest).

I generally agree with the statement in the Issues Paper that:

A challenging range of strategic, operation and business skills are needed to drive growth in the energy sector. Industry leaders will have a major influence on the culture and attitudes of the energy workforce. This includes the scientific research capacity and entrepreneurial capabilities to develop and commercialise new technologies as well as engineering and practical skills to install and operate equipment and facilities.

It particularly applies to transforming the energy sector to becoming free of fossil fuels. The range of skills needed also includes technical and support skills (for example, in engineering, science, architecture, and construction).

¹ when used in this paper in reference to energy sources, fuels and technologies, the word ‘alternative’ makes no inference about whether serving an existing role, or having future potential.

Driving Energy Productivity – Key Issues

- Supporting energy productivity
- Maximising social and economic benefits
- Encouraging demand-side participation and energy efficiency to reduce peak energy use
- Increase energy efficiency within the transport sector

Driving Energy Productivity

The Government seeks comment on:

- the current suite of energy efficiency measures, ways these could be enhanced to provide greater energy efficiency or possible new measures that would enhance energy productivity;
- the use of demand-side participation measures to encourage energy productivity and reduce peak energy use; and
- measures to increase energy use efficiency in the transport sector.

Energy enables good quality of life and standards of living for people. It is not just ‘an enabler of improved productivity and competitiveness within the Australian economy’. Consequently, driving energy productivity should focus on improving people’s quality of life and standards of living (which includes mitigating climate change and ocean acidification).

Renewable energy – as well as energy efficiency – can reduce peak demands for energy. This was clearly demonstrated in the mid-January 2014 heat wave in south-eastern Australia.

Investment in energy transmission and distribution infrastructure to meet peak demands is only needed if energy is not supplied at the point of use. Encouraging reduced energy demands (through, for example, greater energy efficiency) and energy supply at point of use will reduce the need for investment in infrastructure to transmit and distribute energy.

Further, energy efficiency may be less important if:

- renewable (rather than finite fossil fuel) energy is used;
- energy is supplied at point of use; or
- users’ end needs are met without the need for separate energy supply (for example, by obtaining heat from the sun).

On the other hand, improvements in energy efficiency can reduce the need for investment in supply and transmission of energy and energy products such as heat, at economy, industry and organisation level.

Furthermore, although the Executive Summary of the Issues Paper indicates that reductions in electricity use is a challenge for the energy sector, moving away from fossil fuels (particularly liquid and gas fossil fuels) will lead to an increase in electricity use if plans to move to renewable energy along the lines outlined by Beyond Zero Emissions are followed.

Businesses, other organisations and families that need it would welcome Government assistance to controlling and reduce their consumption of externally-supplied energy.

One way of doing this is to dramatically raise minimum energy performance standards for buildings, motor vehicles (of all types), appliances and other equipment – and enforce them.

(Enforcement is vital.) In this way, the overall efficiency of the stock pool is improved as stock is replaced or improved. This is very important for improving the energy efficiency of the relevant stocks, which are in operation for many years.

Australia lags behind other major economies in energy efficiency standards. Moving to require or exceed world's best practice in energy efficiency could help transform Australia's energy sector and improve exports (particularly of goods and services relating to energy efficiency).

Introduction of national retrofit program for Australian homes and other buildings would dramatically improve the energy efficiency of the existing building stock. This has been undertaken successfully in other countries.

Another way of helping consumers controlling and reduce their consumption of externally-supplied energy is facilitate switching to other ways of meeting the users' end-needs. Heating and cooling of buildings, for example, can be usually be met through clever design and careful construction.

As well, appropriate individual behaviour can be encouraged through appropriate educational means.

Energy efficiency should also be applied to the design and operation of infrastructure such as transport systems (both overall and individual components such as rail rolling stock and roads) and urban design and function. Shifts in transport modes and the way end-users' needs are met offer considerable opportunities for reducing externally supplied energy.

It is pleasing to see acknowledged in the Issues Paper that:

- '[e]nergy efficiency measures driven by government action have delivered significant economic benefits;' and
- '[t]hese benefits have been delivered without evidence of any significant increase in required upfront investments.'

Clearly they use successful models that should be replicated.

I also support mechanisms suggested in the Issues Paper for helping energy consumers control the costs of their externally-supplied energy.

Alternative and Emerging Energy Sources and Technology – Key Issues

- Encouraging competitive renewable, low-emission technologies and alternative energy sources
- Supporting research and development for emerging technologies
- Encouraging use of competitive alternative transport fuels and electric and biofuel vehicles

Alternative and Emerging Energy Sources and Technology

The Government seeks comment on:

- ways to encourage a lower emissions energy supply that avoids market distortion or causes increased energy prices;
- the need to review existing network tariff structures in the face of rapidly growing deployment of grid-backed-up distributed energy systems, to ensure proper distribution of costs;
- additional cost-effective means, beyond current mandatory targets and grants, to encourage further development of renewable and other alternative energy sources and their effective integration within the wider energy market;
- how the uptake of high efficiency low emissions intensity electricity generation can be progressed;
- any barriers to increased uptake of LPG in private and commercial vehicles and CNG and LNG in the heavy vehicle fleet; and
- any barriers to the increased uptake of electric vehicles and advanced biofuels.

Terms for various types of energy in this section need to be carefully defined. For example, what is ‘new energy’? Does it refer to renewable energy? If so, it is misleading because the oldest source of energy is the sun, which is also the basis for most other forms of energy, including fossil fuels.

Australia has plentiful energy resources, especially renewable energy. The question is how to make best use of those resources that can ensure sustainability without massive detrimental side-effects such as catastrophic climate change and collapse of marine ecosystems due to ocean acidification. Australia’s renewable energy resources like sunshine meet the test – unlike fossil fuels. That is why we need to urgently transform our economy and energy infrastructure from being highly reliant on fossil fuels to being based on renewable energy.

I am therefore pleased to see that ‘[t]he Government seeks to encourage the deployment of renewable energy...technologies in a way that avoids market distortion.’ The first step to this is to remove all the subsidies and other assistance that distorts the market in favour of fossil fuels. (It is good to see that LNG and CNG are being transitioned into the fuel taxation arrangements.) Removal of subsidies and other assistance for fossil fuels will remove a huge barrier to the further uptake of renewable energy. Some distortion of the market toward renewable energy may be needed to remedy the long-term systemic discrimination against renewable energy. Beyond that, several publications (such as those by Beyond Zero Emissions and Mark Diesendorf and the team at the University of New South Wales’ Centre for Energy and Environmental Markets) describe how we can move to having no greenhouse gas emissions from energy within ten years using existing technology and economically.

In this regard, it is important that both the Energy Green Paper and the Energy White

Paper acknowledge that, while Australian Government instruments to encourage the uptake and development of renewable energy have been broadly successful, some electricity consumers have also invested in supplying renewable energy. Customers have made these investments despite policies that have distorted the market in favour of fossil fuels for decades and that have lead to the crises of climate change and ocean acidification that we now face. Major reasons for customers making these investments have been:

- to play an active part in reducing greenhouse gas emissions because they understand the need to urgently transform our energy sector; and
- to attempt to future-proof their electricity bills from further increases.

As a result, as noted earlier in this submission, such customers are indicating that they:

- want to be paid what their electricity is actually worth at a particular time;
- want the benefits (of contributing electricity supply and adding robustness and security to the electricity market) to also flow to them (and not just network businesses);
- do not want large energy utilities (particularly large electricity utilities) unnecessarily maintaining outdated business models and profit levels by charging customers (or particular types of customers) extra or ‘gold plating’ infrastructure and services; and
- want the electricity market to work like the mobile telecommunications market, with network costs being shared evenly and not passed on to particular customers so that customers choose their provider based on their charges for consumption, without the need to consider infrastructure charges.

Additionally, private investment in generating electricity from renewable energy should not be penalised. Amongst other things, it reduces the need for utilities to invest in new generation and it increases robustness of the supply grid by increasing distribution of generation.

It follows from this that, should electricity utilities try to charge customers who are also suppliers higher infrastructure charges than customers who are consumers only, then supplier customers will move to extract themselves from the grid. There are indications that this is the way that those customers are thinking, and the market in Australia is already responding by marketing electricity storage in grid areas. If supplier customers go off-grid, then:

- electricity supply to the broader community will become less robust and secure;
- electricity consumption will become more expensive at times of peak demand; and
- the utilities will also lose customers and therefore revenue.

The Issues Paper uses IEA forecasts to justify continued investment in fossil fuels as well as investment in ‘lower emissions fossil fuel technologies such as carbon capture and storage (CCS)’. However, this is somewhat misleading, as the IEA uses information supplied by member countries for its forecasts. In the case of Australia, this includes Australia’s current focus on fossil fuels. When Australia’s focus changes to renewable energy, the IEA’s forecasts will change accordingly.

Furthermore, CSS and other ‘lower emissions fossil fuel technologies’ are unproven on a large scale and certainly not at the scale needed to reduce emissions from fossil fuel extraction, distribution and burning to zero. This means that they would take a long time to establish and make any difference to greenhouse gas emissions. As well, the technologies come with environmental risks which will become a burden for future generations.

Any discussion of alternative energy sources and technology (particularly regarding fossil fuels) needs to mention their side-effects. For example, exploitation of coal seam gas and other unconventional fossil gas and oil wrecks the local environment, water resources, soil and local people’s health and livelihoods. These are all further reasons (in addition to mitigating climate change and ocean acidification) to avoid pursuing these fuels.

In dealing with energy for transport, the Energy White Paper needs to move its thinking beyond petroleum-based liquids and other fossil fuels. Instead, the ultimate purpose for those fuels should be considered. In the case of transport, the aim is to provide a means of propelling transport vehicles. This can often be achieved by means other than fossil fuels, such as electrical energy, as is being amply demonstrated in the Norwegian car market recently. It is pleasing, therefore, to see that the Government welcomes the development of vehicles driven by means other than fossil fuels. Care needs to be taken, however, with biofuels. They:

- will still release greenhouse gases when they are burnt;
- may consume more energy than they provide; this largely depends on whether or not they are by-products from some other process;
- if produced from crops grown specifically for the purpose, can divert land, water, nutrients and other resources from growing much-needed food.