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Submission to Department of Industry

Energy White Paper

Issues Paper

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Total Environment Centre's National Electricity Market advocacy

Established in 1972 by pioneers of the Australian environmental movement, Total Environment Centre (TEC) is a veteran of more than 100 successful campaigns. For nearly 40 years, we have been working to protect this country's natural and urban environment, flagging the issues, driving debate, supporting community activism and pushing for better environmental policy and practice.

TEC has been involved in National Electricity Market (NEM) advocacy for ten years, arguing above all for greater utilisation of demand side participation — energy conservation and efficiency, demand management and decentralised generation — to meet Australia's electricity needs. By reforming the NEM we are working to contribute to climate change mitigation and improve other environmental outcomes of Australia's energy sector, while also constraining retail prices and improving the economic efficiency of the NEM — all in the long term interest of consumers, pursuant to the National Electricity Objective (NEO).

Energy White Paper - Issues Paper

TEC welcomes the opportunity to input into this process. We regret that the proximity of this Energy White Paper (EWP) process to the 2013 EWP and the range of energy sector reforms currently ongoing mean that this submission is necessarily short, focusing on our particular areas of concern and expertise.

Our main concern with the Issues Paper is the almost complete disconnect between energy policy and climate policy. While the Issues Paper makes passing reference to Australia's climate change mitigation obligations, the content and tenor of the Issues Paper gives the impression that our energy policy exists in a vacuum. A credible EWP must reconnect energy policy and climate policy and lay the foundations for the transformation of our energy system, rather than entrenching an outdated system.

We address this in detail below and provide feedback on some key areas, including: the East coast gas price squeeze and promotion of coal seam gas (CSG) development; regulatory reform; privatisation; transparency; fossil fuel subsidies; promotion of renewable energy; and network tariff restructuring.

Reconnecting energy policy with climate policy

The Issues Paper refers to Australia's bipartisan commitment 'to reducing carbon emissions by five per cent by 2020 (against 2000 levels).'[1] It does not explain the source of this target, its relationship to safe climate goals derived from the plethora of available science, [2] or put this mediocre target in the context of the commensurate bipartisan agreement to lift Australia's goal to 20 per cent by 2020 if other nations do likewise. The remainder of the Issues Paper makes no attempt to explain how the policies canvassed therein would assist or hinder the attainment of this target. Still less is there any cognisance of the role that Australia's coal and gas exports will play in hampering global climate change mitigation efforts. Instead, the Issues Paper focuses on the economic dimensions of energy policy and on energy security, downplaying the transition already occurring in Australia and globally to energy system based on renewables.

Despite significant changes over recent years, the energy sector remains the largest source of greenhouse emissions in Australia. At the time of writing, southern Australia is experiencing record heatwaves, and we have only just emerged from a year in which numerous climate records were broken. Meanwhile, in the

[1] Page ii.

[2] IPCC, *Climate Change 2013: the Physical Science* Basis (2013) http://www.ipcc.ch/report/ar5/wg1/.

Issues Paper the Australia energy sector appears to operate in a bubble: emissions from fossil fuel exports are considered somebody else's responsibility; lower prices and higher profits are the hallmarks of a successful energy policy; and a market-driven gas shortage in NSW can be solved only by rapidly developing CSG against the wishes of the community.

The Issues Paper states that the International Energy Agency (IEA) 'forecasts that fossil fuels will continue to provide a significant share of global stationary energy generation, which is largely driven by economic growth in emerging economies'. Simply quoting this forecast out of context ignores that the IEA has also strongly stated the need to reverse this trend:

> *If stringent new action is not forthcoming by 2017, the energy-related infrastructure then in place will generate all the CO2 emissions allowed in the 450 Scenario up to 2035, leaving* ***no room for additional power plants, factories and other infrastructure unless they are zero-carbon****, which would be* ***extremely costly****.*[3]

The '450 scenario' calls for a radical transformation of the global energy system in the next three years — not recourse to polluting CSG, unproven carbon capture and storage (CCS)[4] and costly, risky and long lead-time nuclear energy. Yet even this scenario gives only a 50:50 chance of not exceeding the 2 degree warming threshold this century.[5] Few people offered only a 50:50 chance of surviving crossing the road would take the risk, but even this highly risky future is currently beyond the possibility of a global agreement, and, if this Issues Paper is to be believed, beyond the Australian government.

The dire situation we find ourselves in calls for a more radical, yet feasible, energy policy response than the one advocated in this Issues Paper, and we call on the Government to provide the Australian public with a forward-looking vision for an energy policy that will deliver a safe climate as well as affordable and reliable electricity..

Increasing east coast gas prices and coal seam gas (CSG)

It is generally accepted that the growth of liquid natural gas (LNG) exports will more closely link the previously isolated east coast gas market to international markets and drive an increase in domestic gas prices. Despite broad agreement on the nature of the problem, the issue is complex and multi-faceted, with a range of potential options for mitigation.

Yet the Issues Paper focuses on only one option: the rapid expansion of CSG. After briefly acknowledging that CSG can only partially solve this problem, the Issues Paper proceeds to make a number of statements more reminiscent of a scare campaign than a serious policy document, warning that: 'the timeline for proving up and extracting these resources is critical'; small delays in CSG development are 'significant for assessments of price and availability'; and current 'planning impediments' must be 'addressed urgently'.

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[3] IEA, *World Energy Outlook 2011* (2011) Executive Summary, p.2 (emphasis added) http://www.worldenergyoutlook.org/media/weowebsite/2011/executive_summary.pdf.

[4] The Issues Paper notes that CCS has been 'demonstrated in a range of applications globally', but does not mention that only 4 commercial-scale CCS-equipped power stations are currently in operation according to the CCS Association (CCS Association website, 'Industry Experience', http://www.ccsassociation.org/why-ccs/industry-experience/. Even the UK Government, which has invested £1.12 billion ($2.12 billion) in a commercialisation competition research program, only has its sights set on a cost-competitive CCS industry in the 2020s (UK Government website, 'Increasing the use of low-carbon technologies', https://www.gov.uk/government/policies/increasing-the-use-of-low-carbon-technologies/supporting-pages/carbon-capture-and-storage-ccs.

[5] See, e.g., IEA, *World Energy Outlook 2011*, note 3 above.

The Issues Paper notes that communities expect to be fully engaged on the social economic and environmental dimensions of projects and that the lack of a 'social licence to operate' has hindered CSG development in NSW. Yet rather than acknowledge the legitimacy of widespread opposition and the existence of alternatives, the Issues Paper simply suggests that this 'impasse' must be overcome, and that CSG development must be advanced in spite of opposition. The Issues Paper should note that the rapid, widespread and large-scale development of CSG is not currently a viable option in NSW due to the lack of a social licence, and provide a signal to industry to begin developing alternatives.

TEC's major concern is that an EWP that fails to provide this signal will entrench the view that CSG is the only option, leaving it too late to develop alternatives and resulting in CSG ultimately being forced on the community in a panicked attempt to mitigate a price squeeze. As the Grattan Institute notes:

> *If it is determined that coal seam gas development poses unacceptable risks or cannot win community acceptance, then **alternatives are available**. However, companies may be unwilling to invest in other solutions if they believe that approval of coal seam gas developments is imminent. **The Commonwealth and New South Wales governments need to provide clarity and certainty to industry**.*[6]

Despite the failure of the Issues Paper to recognise the legitimacy of community opposition to CSG, a number of non-CSG solutions are already being pursued by industry, and these will be intensified if the correct policy environment is provided. These efforts will provide more domestic gas capacity to the East Coast and ease the price squeeze, yet they are not considered in the Issues Paper. TEC would like to see more considered discussion of this complex issue and recognition of ongoing developments, including:

- **Developing Australia's abundant biogas resources.**[7] Biogas is a mature, proven technology, with the potential to meet a quarter of natural gas demand globally.[8] Biogas can be generated from a range of organic wastes readily-available in Australia,[9] and can be used to produce electricity, heat and transport fuels.[10] The US has over 2,200 sites producing biogas and Germany alone has 7,470,[11] yet despite such widespread use Australia has seen very little uptake. Just as higher gas prices provide impetus for CSG development, they can also provide impetus for the development much cleaner, cheaper, and proven gas production from biogas technologies.
- **Increasing gas production from the Cooper Basin.** For example, Santos has committed $800m between 2013-17 to expand production in the Cooper Basin.[12] This will substantially increase capacity and assist in meeting NSW demand.[13]
- **Increasing the capacity of pipelines delivering gas from Victoria**. Australia's largest natural gas infrastructure business is already pursuing this course of action, expanding the capacity of the northern zone of the Victorian Transmission System, thereby increasing peak winter gas flow

[6] Grattan Institute, *Getting Gas Right* (2013) http://grattan.edu.au/static/files/assets/ba24a4e0/189_getting_gas_right_report.pdf (emphasis added).

[7] Biogas is produced by anaerobic fermentation of organic matter and is composed principally of methane and carbon dioxide.

[8] World Bioenergy Association, Biogas Factsheet, http://www.worldbioenergy.org/sites/default/files/wfm/Factsheet_Biogas.pdf.

[9] E.g. manure, agricultural bi-products (such as bagasse), energy crops, landfill, industrial food waste and waste water treatment bi-products.

[10] World Bioenergy Association, Biogas Factsheet, note 8 above.

[11] Ibid.

[12] Santos, 'Moomba 191 and Beyond' (2013) http://www.santos.com/library/130828_Moomba_191_and_beyond.pdf.

[13] See Grattan Institute, note 6 above.

capacity to NSW by 125 per cent.[14] These expansions are in pursuance of contracts with electricity generators; further expansions could be initiated to mitigate foreseen supply constraints.

- **Expansion of the NSW-Victoria Interconnect**.[15] This is already in progress and, combined with the above-mentioned pipeline expansions, will increase firm peak winter gas flow into NSW by 145 per cent.[16] All three expansions will be completed by winter 2015.
- **Gas storage**. Gas could be stored as LNG at non-peak times and injected into the gas network at peak times to ease supply constraints. The Dandenong LNG Storage Facility in Victoria has a storage capacity of 12,000 tonnes, or 0.7 petajoules (PJ) and is already used to manage peak demand in that state.[17] The AGL Newcastle Gas Storage project is currently under construction in NSW with a capacity of 30,000 tonnes 1.5 (PJ).[18] AGL has also been storing non-liquefied natural gas in a depleted gas reservoir since 2011 and partly uses this to balance seasonal variations in demand.[19]

Furthermore, the Issues Paper only seeks comment on ways to increase new gas sources. This ignores the demand-side and other non-supply alternatives, for example:

- **Not connecting new dwellings to the gas network.** If gas prices are to rise, placing cost of living pressures on consumers, it makes sense to refrain from connecting new dwellings to the gas network. Yet TEC is aware of anecdotal evidence that property developers in Victoria are being paid tens of thousands of dollars per block by that state's government to connect new dwellings to the gas network. Such subsidies should instead be directed to providing rebates to low income households to enable them to switch from gas to energy efficient electric appliances.
- **Reserves for domestic gas customers.** A domestic gas reservation (DGR) policy would earmark a quantity of gas production for domestic use at prices below global market prices. DGR policies already exist in WA and Queensland, while the Victorian opposition has promised a DGR as an election commitment.[20] A de facto reservation policy may already exist in NSW as well, with AGL committing to commit all its CSG production in that state for intrastate use.[21] Such policies are supported by a range of consumer and industry groups, but are generally opposed by gas producers.
- **Concessions and social tariffs** would assist those disadvantaged residential consumers who are least able to change their usage patterns to cope with price rises. Such assistance is a common policy response worldwide, including in jurisdictions that do not support DGR policies. The Government should commission a comprehensive evaluation of social tariffs and alternative/complementary policy options, including consideration of international experience with respect to the design and scope of such assistance mechanisms.

[14] APA, 'APA Signs New Gas Transportation Agreement with Energy Australia' (2013) http://www.apa.com.au/investor-centre/news/asxmedia-releases/2013/apa-signs-new-gas-transportation-agreement-with-energyaustralia.aspx.

[15] The pipeline from Barnawartha to Wagga Wagga connecting the Victoria and New South Wales transmission systems at Culcairn.

[16] APA, 'APA to Further Expand Vic-NSW Interconnector' (2013) http://www.apa.com.au/investor-centre/news/asxmedia-releases/2013/apa-recontracts-gas-transportation-services-with-origin-energy-on-moomba-sydney-pipeline.aspx and http://www.apa.com.au/investor-centre/news/asxmedia-releases/2013/apa-to-further-expand-vic-nsw-interconnect.aspx.

[17] APA website, 'Our Business', http://www.apa.com.au/our-business/energy-infrastructure/victoria.aspx.

[18] AGL website, 'Newcastle Gas Storage Facility Project', http://www.agl.com.au/about-agl/how-we-source-energy/gas-storage/newcastle-gas-storage-facility-project/the-project.

[19] AGL website, 'Silver Springs Gas Storage', http://www.agl.com.au/about-agl/how-we-source-energy/gas-storage/silver-springs-gas-storage.

[20] See NSW Parliamentary Research Service, *Gas: resources, industry structure and domestic reservation policies* (2013) http://www.parliament.nsw.gov.au/prod/parlment/publications.nsf/0/BEA3EE2904867594CA257C3F00136087/$File/Gas%20-%20resources,%20industry%20structure%20and%20domestic%20reservation%20policies.pdf.

[21] See eg http://www.yoursayagl.com.au/projects/welcome-to-agls-online-community?category=supply&tool=news_feed.

Though there is legitimate concern regarding price pressures, if there is a supply squeeze the market will simply revert to its default and innate mechanism for balancing supply and demand – i.e., higher prices – and consumers will default to their default mechanism, reducing demand. Gas-fired generators would run less often, particularly if other power generators are available to meet the state's electricity requirements (e.g. renewables – see discussion of the role of renewables in recent peak demand events below). Industrial users would lower their use of gas through innovation and efficiency.[22] Commercial gas users may also reduce gas use, substitute gas for alternative fuels, or scale back their operations. Residential consumers would also reduce their usage, with those unable to do so being supported through concessions and social tariffs.

The elasticity of demand highlights an important aspect of this complex issue missed by the Issues Paper. Ultimately the business case for CSG, which is inherently more expensive to produce than conventional gas, is predicated on higher wholesale prices in the first place. If demand is lowered in response to higher prices, or if supply is increased to ease the pressure, prices will once again come down and the business case for CSG will be lost – i.e., if additional CSG capacity *would* keep prices at current levels, it would not be worth developing.

Regulatory reform

TEC is currently working on three projects to assist in reforming regulatory arrangements to manage the transition from a centralised and fossil-fuel-based energy system to a 21st century decentralised and sustainable energy system..

Firstly, TEC has submitted a rule change request, which will likely be merged with a similar request from the Standing Council on Energy and Resources (SCER), relating to the Demand Management and Embedded Generation Connection Incentive Scheme (DMEGCIS). Updated rules on developing a DMEGCIS will give the Australian Energy Regulator (AER) more scope to provide greater incentives for networks to do more demand management activities instead of building new infrastructure.

Secondly, the TEC/Institute for Sustainable Futures (ISF) virtual net metering (VNM) project is likely to result in a rule change request to mandate networks to provide lower tariffs where generation and consumption occur on the same premises, feeder line or local substation area. VNM will help consumers to benefit from the financial value of local renewable energy in the NEM, by allowing the value of the energy generated to be credited to the accounts of multiple customers. In particular this will benefit:

- Community renewable energy projects[23]
- Shared rooftop PV projects in residential flat buildings[24]
- PV or co/trigeneration in shopping centres[25]
- Precinct scale cogeneration and trigeneration projects[26]

[22] For example, Brickworks has already responded to higher gas and begun using sawdust to fire a kiln in Tasmania and biogas from landfill at several sites on the mainland (Australian Financial Review, 'Gas Crisis Looms for Manufacturing' (2013) http://www.afr.com/p/national/gas_crisis_looms_for_manufacturing_lxnA82K5smXZcLUIHE4cgJ.

[23] In which there are numerous shareholders/customers who are not on the same site as the power station, but who are in the same zone substation area.

[24] in which there is a PV system on the rooftop and tenants may wish to purchase power from it without requiring individual wires and extra meters, which landlords may not be willing to invest in.

[25] In which the landlord/owner installs a plant and wishes to sell the generated energy to tenants on the same site without installing additional meters and wires.

Thirdly, TEC and Ellipson Consulting are undertaking a research project on network tariffs which will feed into the current IPART/SCER network tariffs rule change request in respect of the move to more cost-reflective network tariffs.[27] In particular, the project provides critical analysis of mandating long run marginal cost (LRMC) as the basis for calculating charging parameters.

Questioning privatisation

The Issues Paper invites comment on 'areas where further privatisation of government-owned assets would contribute to more effective regulatory frameworks and better outcomes for consumers.' TEC is concerned that privatisation may have failed to provide the benefits to consumers and the economy that have been promised. Furthermore, some governments still own assets, which distorts the market and brings into question the legitimacy of the privatisation project.

In 2013 The Australia Institute comprehensively assessed privatisation in the ellectricity sector and noted that:[28]

- since 1995, productivity in the electricity sector declined by 24.9 per cent, a stark contrast to productivity across all workers, which increased by 33.6 per cent;
- privatisation has split electricity entities into smaller units, each requiring its own employees, administrators and managers; and
- capital costs have increased as private buyers generally pay more than the value of electricity assets because of the potential for profits. Prices then must be increased in order to achieve a competitive return.

Even on its own terms privatisation has failed, as some states still have commercial interests in private electricity assets. For example, the NSW Government received $6.7 billion in dividends from its interests between 2006-2012.[29] This affects these state governments' ability to impartially regulate the energy sector in the best interests of consumers and effectively represents an indirect tax on electricity consumers.

Given the foregoing, the EWP represents an ideal opportunity to openly and fairly consider the merits of privatisation.

Streamlining approvals processes

TEC supports the streamlining of regulation so long as the environment and consumers are adequately protected. Unfortunately, claims that 'red tape' is stifling industry and calls for 'streamlining' frequently result in the removal of important environmental safeguards. Indeed this is already beginning to happen, with some state governments already reaching agreement to take over the Federal Government's responsibilities for environmental approvals under the EPBC Act.[30]

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[26] in which the project proponent wishes to sell the generated energy to business customers at other sites within the same zone substation area.

[27] See AEMC website, http://aemc.gov.au/Electricity/Rule-changes/Open/distribution-network-pricing-arrangements.html.

[28] See The Australia Institute, 'Electricity and privatisation: What happened to those promises?' (2013) http://www.tai.org.au/node/721.

[29] NSW Budget Papers, 2006-2012, http://www.treasury.nsw.gov.au/Publications_Page/Budget_Papers.

[30] See, e.g. EDO Victoria, 'It's on - Federal Government starts handing over its powers to the States' (2013) http://www.edovic.org.au/blog/its-federal-government-starts-handing-over-its-powers-states.

TEC also notes that renewable energy projects face a range of regulatory barriers that they must overcome. The EWP must therefore address streamlining approvals and improving the regulatory frameworks for renewables, as well as traditional generation technologies.

Transparency in energy markets

TEC has previously advocated for increased transparency in energy markets and would welcome a much clearer focus on this in the future. The NEM Report Card found that transparency in the NEM is lacking and that the reporting of performance is deficient in a number of areas, stating:

> *there is quite limited publicly available data on the performance of the NEM in relation to the long term interest of consumers… it is crucial that more relevant, reliable and consistent data be collected and reported. It is therefore recommended that more comprehensive reporting be undertaken with regards to NEM performance.*[31]

There are two main steps that should be taken to improve this situation:

1. publication of annual performance against the NEO; and
2. extension of reporting to the demand-side of the market.

Such reporting could be included in the annual State of the Energy Market Report and would highlight where the NEM is performing well and help to identify potential areas for improvement and advocacy.

This should include annual reporting against the NEO and against specific quantitative and qualitative performance indicators and benchmarks relevant to the long term interests of electricity consumers. In particular, there is currently a pronounced lack of information available on the demand side of the market, e.g. regarding energy poverty, efficiency, DM and overall customer satisfaction.

A further area where improved transparency is required is in the disclosure by retailers of the fuel mix of their investments in the financial market. A briefing note from the ISF on electricity retailer disclosure commissioned by TEC[32] highlighted the fact that the current National Electricity Rules do not require this disclosure, despite the importance Australian consumers place on purchasing environmentally sustainable products.[33] Retailers should be more transparent regarding the sources of the electricity they sell. There are a number of international precedents for this: the UK requires retailers to provide data to their consumers on their fuel mix[34] and carbon intensity, Ireland has introduced the same requirement, and the European Union has issued a directive for consumer labelling of fuel mix.[35]

[31] Institute for Sustainable Futures, NEM Report Card (TEC, 2012) xii.

[32] Available at http://www.tec.org.au/green-energy-action/national-electricity-market/reports-and-submissions/393-reports-and-submissions.html.

[33] Independent polling conducted in November 2013 by Essential Media for TEC found that 78 per cent of consumers want access to information about their electricity retailer's fuel mix, while 87 per cent want information about their retailer's energy efficiency performance.

[34] See, e.g., the summary at http://www.electricityinfo.org/supplierdataall.php?year=latest.

[35] Note of DG Energy & Transport on Directives 2003/54 and 2003/55 on the Internal Market in Electricity and Natural Gas, 'Labelling provision in Directive 2003/54/EC', http://ec.europa.eu/energy/gas_electricity/interpretative_notes/doc/implementation_notes/labelling_en.pdf.

Network costs, 'green schemes' and rising prices

Electricity prices are a major contributor to cost of living pressures. The carbon price and other 'green schemes' have frequently been painted as a leading cause. The Issues Paper notes that these have had a 'significant impact', yet the reality is that electricity prices have been increasing rapidly for the past two decades (170 per cent from 1995 to 2012),[36] starting well before such policies were in place. That higher network costs are largely to blame for skyrocketing retail prices is now well-established.[37] As the AER puts it, 'Energy network investment in the current five year regulatory cycle is running at historically high levels'.[38] Electricity transmission network companies are spending $7 billion and distribution companies $35 billion on network infrastructure over the 5 years 2010-2015.[39]

The Issues Paper fails to acknowledge that rising network costs have not been driven only by ordinary infrastructure replacement, but also by a poorly regulated NEM that has been focussed on the supply-side of the market until very recently. This has enabled network businesses to extract excessive profits and entrench costly supply-side infrastructure for which consumers will be paying for years to come.

Furthermore, while the increases in network costs are taking place simply to perpetuate the status quo, the minor contribution to price rises caused by environmental policies and support for renewables represent a modest price paid to help Australia transition to an energy system equipped for the future.

Market distorting support for fossil fuels

The Issues Paper seems to suggest that subsidies for renewables are a major market distortion, without mentioning the perverse incentives given to the fossil fuel industries in Australia. The Australian Conservation Foundation estimated that subsidies to fossil fuels, such as the diesel fuel rebate, amounted to around $12 billion in 2011.[40] This is in spite of the fact that Australia is party to a G20 agreement to eliminate inefficient fossil fuel subsidies[41] and at the Rio+20 conference reaffirmed its commitment to 'phase out harmful and inefficient fossil fuel subsidies that encourage wasteful consumption and undermine sustainable development'.[42]

In addition to direct subsidies, fossil fuels continue to be supported by a an outdated system which completely externalises the negative impacts of fossil fuel generation. An EWP based on the Issues Paper would further entrench this situation. There are a number of costs that are not accounted for in traditional analyses, such as environmental and health costs. Including these costs is particularly important in a carbon-constrained world and in the context of falling consumption but rising peak demand and prices.[43]

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[36] See, e.g. The Australia Institute, note 27 above.

[37] See, e.g., TEC, 'How it works slide Pack', http://www.tec.org.au/ge-latest-news/991-how-it-works-slide-pack.

[38] Australian Energy Regulator, *State of the Energy Market 2011* (2011) http://www.aer.gov.au/sites/default/files/State%20of%20the%20energy%20market%202011%20-%20complete%20report.pdf.

[39] Ibid.

[40] See ACF, 'Australia spends $11 billion more encouraging pollution than cleaning it up' (2011) http://www.acfonline.org.au/news-media/releases/australia-spends-11-billion-more-encouraging-pollution-cleaning-it.

[41] Australia is currently one of four states that has opted not to provide reports under this agreement. See IISD, *Phasing Out Fossil-Fuel Subsidies in the G20: a Progress Update* (2012) http://www.iisd.org/gsi/sites/default/files/g20lib_oilchange_2012_phasingoutffs.pdf.

[42] UN, *The Future We Want* (2012) http://sustainabledevelopment.un.org/futurewewant.html, pp.225.

[43] See AER, note 37 above, p.6.

The Australian Academy of Technological Sciences and Engineering, in their 2009 study *The Hidden Costs of Electricity: Externalities of Power Generation in Australia,*[44] estimates that 'greenhouse gas damage costs for currently deployed fossil fuel technologies in Australia range from $18/MWh for natural gas to $39/MWh for brown coal'.[45] By contrast, the externality costs for renewables varied between $1.50 for wind to $5 for solar PV.

Health impacts of fossil fuels have also largely been ignored or poorly-quantified to date.[46] Physicians for Social Responsibility have catalogued the negative health impacts, ranging from asthma to lung cancer, in an extensive report, *Coal's Assault on Human Health*.[47] The report states that 'A medically defensible energy policy must take into account the public health impacts of coal while meeting our need for energy'.[48]

The case for including negative externalities in the purported cost of fossil fuel sources is overwhelming, and it is simply no longer legitimate to pretend that fossil fuels are 'cheap' given that so much of their true cost is ignored. The EWP should at least acknowledge this reality.

Alternative and emerging energy sources and technology

The final EWP must more clearly acknowledge the positive role that renewable energy generation is already playing in our energy system. In 2012, renewable energy in Australia generated 13% of our electricity, attracted $4.2 billion in investment and employed over 24,000 people.[49] Renewables are helping Australia deal with increasingly regular extreme weather events (see below), while traditional generation fails to provide the stability is often lauded for.[50] Renewables are also lowering wholesale electricity prices and reducing volatility in the market.[51]

Some support is necessary to help the renewable energy sector find its feet and to date renewables policies, in particular the Renewable Energy Target has been very effective. However, as with other industries, the renewables industry requires a stable policy environment in which to make long-term investment decisions. The EWP should focus on long-term support and ensure that any changes to existing policies do not undermine the fledgling industry.

[44] Australian Academy of Technological Sciences and Engineering, *The Hidden Costs of Electricity: Externalities of Power Generation in Australia* (2009) http://apo.org.au/research/hidden-costs-electricity-externalities-power-generation-australia.

[45] Additional to the existing wholesale price, based on a CO2 cost of $31/tonne.

[46] The Age, 'Health costs of coal well hidden' (2011) http://www.theage.com.au/national/letters/health-costs-of-coal-well-hidden-20110224-1b74f.html#ixzz1lXlikWi1.

[47] Physicians for Social Responsibility, *Coal's Assault on Human Health* (2009).

[48] Ibid p.44.

[49] Clean Energy Council, *Clean Energy Australia 2012* (2012) https://www.cleanenergycouncil.org.au/dam/cec/policy-and-advocacy/reports/2013/Clean-Energy-Australia-Report-2012/Clean%20Energy%20Australia%20Report%202012.pdf.

[50] Sydney Morning Herald, 'Power Blackouts Tipped for Industry in Heatwave' (2014) http://www.smh.com.au/business/power-blackouts-tipped-for-industry-in-heatwave-20140115-30v5y.html.

[51] See Renew Economey, 'Can One Day Make or Break an Energy Source?' (2014) http://reneweconomy.com.au/2014/can-one-day-make-break-energy-source-13448.

Network tariff structures and distributed renewables

TEC broadly agrees with the need to review existing network tariff structures. However, such a review should be a holistic one that does not solely focus on demonising owners of distributed energy systems but instead truly provides cost-reflectivity.

TEC agrees that it is reasonable for owners of distributed energy systems to face network tariffs that reflect their reduced usage of, but continued reliance on, the grid. However, there are two important issues that must be considered in order to ensure the proper distribution of costs that the Issues Paper desires.

Firstly, the **benefits of distributed generation** must also be factored in, as it is unfair to charge consumer-generators for grid usage without also acknowledging their contribution to mitigating growing grid costs, e.g. via reducing and delaying evening peak demand. The recent heatwave across Australia provides a stark example of these benefits. Despite the flawed attempts of detractors to minimise the role of renewables,[52] it is clear that distributed solar PV clipped peak demand in South Australia and Victoria by 4.6 per cent during the heatwave,[53] displacing peaking generation.[54] Figures released by the Australian Energy Market Operator (AEMO) confirm this.[55] Network operators, recognising the role of distributed generation, are now looking to ever-cheaper battery storage to manage demand.[56]

Conversely, tariffs must also **recognise the costs imposed by large loads** – ie, tariffs must be cost-reflective for all users of the grid, and not only penalise consumer-generators. In particular, owners of older, inefficient air-conditioning systems and pool pumps contribute significantly to load, especially on peak demand days, and should therefore also pay the true cost of their systems.

We acknowledge, however, that vulnerable consumers should be protected in the move to more cost-reflective network tariffs, by not being forced onto time of use or other new tariff types. Equally, they should be protected from networks trying to shift more of their revenue burden onto fixed daily charges – a move which is regressive and inefficient.

[52] See Renew Economy, 'Ant-Renewables Bingo During the Upcoming Heatwave' (2014) http://reneweconomy.com.au/2014/anti-renewables-bingo-during-the-upcoming-heatwave-94234 and Ibid.

[53] Renew Economy, 'Solar PV Clipped Peak Demand by 4.6pct During Heatwave' (2014) http://reneweconomy.com.au/2014/solar-pv-clipped-peak-demand-by-4-6pct-during-heatwave-52250. See also Renew Ecnomy, 'Solar Saved Southern States from New and Costly Demand Peaks' (2014) http://reneweconomy.com.au/2014/solar-saved-southern-states-from-new-and-costly-demand-peaks-92609.

[54] Renew Economy, 'Solar puts heat on big generators as demand peaks subside' (2014) http://reneweconomy.com.au/2014/solar-23763.

[55] Renew Economy, 'How AEMO saw rooftop solar in the heatwave' (2014) http://reneweconomy.com.au/2014/graph-of-the-day-how-aemo-saw-rooftop-solar-in-heatwave-27763.

[56] Renew Economy, 'Australia networks look to battery storage to cut grid costs' (2014) http://reneweconomy.com.au/2014/australia-networks-look-to-battery-storage-to-cut-grid-costs-47334.

Recommendations

1. **Reconnect energy and climate policy** in order to deliver a safe climate as well as cheap and reliable electricity.

2. **Reframe the gas issue** as an export market-driven price squeeze, rather than an imminent gas 'shortage'.

3. **Develop non-CSG gas options**, including both supply- and demand-side solutions.

4. **Support regulatory reforms** that will improve demand side participation and provide more flexibility for generator-consumers.

5. **Critically assess privatisation policy**.

6. **Streamline approvals processes for renewables** as well as other energy sources and maintain strong environmental safeguards.

7. **Improve transparency** in the energy market by improving annual reporting against the NEO and requiring retailers to disclose information regarding the electricity they supply.

8. **Acknowledge regulatory failures** as a significant contributor to rising network costs.

9. **Acknowledge the minor role of 'green schemes'** in energy price rises.

10. **Commit to removing market distorting fossil fuel subsidies** and including so-called externalities (such as health and environmental impacts) in the calculation of energy costs.

11. **Support the development of renewable** energy as a priority, including maintenance and continuation of long-term support policies such as the RET.

12. **Fairly restructure network tariffs** by considering the benefits provided to the grid by renewable energy and the costs imposed on the grid by other large loads.

Yours sincerely,

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