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**Submission to: Commonwealth of Australia,
Senate Standing Committee on Environment and Communications
Inquiry on “Retirement of Coal Fired Power Stations”**

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To: Committee Secretary, Senate Standing Committee on Environment and Communications

From: Professor John Wiseman Deputy Director, Melbourne Sustainable Society Institute, University of Melbourne

I wish to provide the following submission to the Senate Inquiry on *Retirement of Coal Fired Power Stations*

Current role and context of this submission

I am currently employed as Deputy Director, Melbourne Sustainable Society Institute and Convenor of the Climate Transformations Research Cluster, University of Melbourne.

My current research work includes the role of joint Chief Investigator (with Associate Professor Frank Jotzo, Crawford School, ANU) of some components of the Australian contribution to the *International Coal Transitions Project* (see Att A). This international research project, led by *IDDRI* and *Climate Strategies* aims to:

- “promote deeper understanding amongst relevant national and international stakeholders of the implications of global climate mitigation activities for the future of coal production and consumption;
- support societally acceptable transition away from coal, to marry coal phase out with economic renewal and a just transition in key countries;
- promote knowledge and acceptance of new narratives on the future of coal, enabling conditions, and concrete steps for national coal phase out strategies;
- promote exchange, learning and more coordination on transition policies at the international level.”

Focus of this submission

The focus of this submission to the Inquiry primarily responds to Terms of Reference (d) “policy mechanisms to give effect to a just transition for affected workers and communities likely impacted by generator closures, as agreed in the 'Paris Agreement', including:

- (i) mechanisms to ensure minimal community and individual impact from closures, and
- (ii) mechanisms to attract new investment and jobs in affected regions and communities”

It may be useful to read this submission in conjunction with the submission to this Inquiry from Associate Professor Frank Jotzo which focusses more sharply on TOR (c) “Policy mechanisms to encourage the retirement of coal-fired power stations from the National Electricity Market.”

Submission to Senate Inquiry on *Retirement of Coal Fired Power Stations*

1. A rapid transition away from coal, including the closure of coal fired power stations, is an essential precondition for meeting the goals and commitments of the Paris Climate Agreement. Recent research by *The Climate Institute* has, for example, noted that Australia will need to phase out all coal power by 2030-2035 to have a reasonable chance of meeting the Paris Climate Agreement emission reduction targets.¹
2. Internationally and in Australia there is growing recognition of the increasing likelihood of the early closure of many coal fired power stations.²
3. Policy mechanisms with the potential to encourage and facilitate a rapid transition away from reliance on coal mining and fired power generation include the following options.³
 - a moratorium on new coal mines;
 - reducing or abolishing direct and indirect subsidies to coal mining operations and coal fired power generators;
 - taxes on coal supply;
 - declining tradeable quota schemes, either on export coal or on all coal supply;
 - payments for closure of coal-fired power capacity (including options for payments being determined through a reverse auction mechanisms);⁴
 - regulated standards for greenhouse gas emissions and for health and environmental impacts from coal mining and coal-fired power generation;
 - increases in rehabilitation bonds; and
 - carbon emissions tax or trading schemes.
4. Key barriers to swift and effective implementation of policies designed to accelerate the transition away from coal fired power include:
 - lack of strong and decisive leadership from governments in driving actions required to achieve rapid and equitable greenhouse gas emission reductions;
 - lack of policy certainty;
 - first-mover disadvantage (ie. if one power station operator closes the remaining operators can potentially benefit from subsequent increases in wholesale prices);
 - lack of clarity about responsibility for costs involved in coal fired power station closures including for the cost of unfunded rehabilitation liabilities; and
 - the failure of coal transition policies to adequately address stakeholder concerns in relation to security of energy supply and the minimization of social and economic impacts arising from the closure of coal fired power stations.
5. There is broad recognition that the closure of coal fired power stations needs to be undertaken in a way that minimises the social and economic impact on communities, workers and businesses affected by these closures. In addition to the strong ethical case for supporting certain adversely affected individuals and communities, a 'just transition' away from coal is also an important precondition for maximising political support from all key stakeholders.

¹ Climate Institute (2016), "A Switch in Time: Enabling the electricity sectors transition to net zero emissions", Climate Institute, Sydney.

² See, for example, Buckley, T. and Nicholas, S. (2016) "Three trends highlighting the Accelerating Global Energy Market Transformation", Institute for Energy and Financial Analysis, November; 'AGL boss: regardless of climate science, it's time to drop the 'emissions business' 'The Guardian, 24 February 2016;

³ These options are explored in more detail in the submission to this Inquiry by Associate Professor Frank Jotzo.

⁴ See Jotzo, F and Mazouz, S. (2015), "Brown Coal Exit: a market mechanism for regulated closure of highly emissions intensive power stations", Crawford School of Public Policy, Australian National University

6. An effective and equitable approach to the closure of coal fired power stations will need to be underpinned by well informed understanding of the legitimate concerns which diverse stakeholders including consumers, energy producers, energy users, workers, unions, businesses and communities have about the impact of coal transition policies. The following table (Table 1) provides an overview of the ways in which differing policy goals and assumptions will influence choices about ways of addressing coal transition policy impacts on different stakeholders.

Table 1: Coal transition policy options⁵

	No support	Compensation (backward-looking)	Structural adjustment assistance (forward-looking, narrow)	Adaptive and proactive support (forward-looking, broad)
Consumers/ households	No support	New policies that raise consumer prices or taxes are fully or partially offset for all or some (e.g. low-income) households)	Consumers (or a sub-set, eg. low-income consumers) are supported to adapt to the new policy	-
Workers	No support	Compensation for losses	Workers are given cash or in-kind assistance to assist them to retrain into new jobs and/or relocate	Workers are supported to obtain employment of similar social standing, in the same industry and/or same location
Communities	No support	-	-	Communities in which industries have declined are supported (e.g. through public investment in infrastructure, skills, industry policy)
Businesses	No support	New policies that adversely affect value of corporate assets are accompanied by compensation for lost asset value or existing assets are 'grandfathered'	Businesses are provided cash or in-kind assistance to adapt to new policy	Proactive strategies to strengthen local and regional economy

⁵ This table is based on work which Fergus Green (PhD candidate, London School of Economics and Research Associate, Melbourne Sustainable Society Institute has prepared for the Australian Coal Transition project.

7. A number of recent policy and research reports published internationally and in Australia have highlighted key principles and priorities for ensuring a just transition away from coal. These reports, which are informed by learning from a range of industry transition and structural adjustment examples, include the following.

Recent international reports and papers on just transition principles and priorities

- International Labour Organisation (2015), *Guidelines for a just transition towards environmentally sustainable economies and societies for all*, ILO, Geneva.
- Rosemberg, A (2010). "Building a Just Transition." *International Journal of Labour Research* 2(2): 125–62.
- E3G and Oxfam Canada (2015), *G7 Coal Phase Out*: Ottawa, Canada.
- Just Transitions plan of the Californian Public Utilities Commission, see Din, C. (2007), "Making a Just Transition", *Solar Today*, 21, 3, p. 24
- Pollin, R and Callaci, B. (2016) "A just transition for the US fossil fuel industry workers" *The American Prospect*, 27, 3, p. 88
- Louie, E. P., & Pearce, J. M. (2016). Retraining investment for U.S. transition from coal to solar photovoltaic employment. *Energy Economics*, 57, 295–302.
- Haney, M., & Shkaratan, M. (2003). *Mine Closure and its Impact on the Community: Five Years After Mine Closure in Romania, Russia and Ukraine* World Bank Policy Research Working Paper No. 3083, World Bank.
- Hospers, Gert-Jan (2004): Restructuring Europe's rustbelt: The case of the German Ruhrgebiet, *Intereconomics*, ISSN 0020-5346, Vol. 39, Iss. 3, pp. 147-156
- The Climate Group (2016), "How North Rhine-Westphalia responds to the concerns of citizen about renewable energy development by facilitating dialogue", The Climate Group.
- Morton, T., & Müller, K. (2016). Lusatia and the coal conundrum: The lived experience of the German Energiewende. *Energy Policy*
- Stroud, D, Fairbrother, P, Evans, C and Blake, J 2014, 'Skill development in the transition to a 'green economy': A 'varieties of capitalism' analysis', *Economic and Labour Relations Review*, vol. 25, no. 1, pp. 10-27.

Recent Australian reports and papers on just transition principles and priorities

- Australian Conservation Foundation (2015), "Supporting workers and communities transition to a clean energy economy", *ACF Briefing Paper*.
- Australian Conservation Foundation and Australian Council of Trade Unions (2016), *Jobs in a Clean Energy Future*, ACF and ACTU, September.
- The Climate Institute (2016), *A Switch in Time: Enabling the electricity sectors transition to net zero emissions*, Climate Institute, Sydney.
- Environment Victoria (2016), *Life After Coal: Pathways to a Just and Sustainable Transition for the Latrobe Valley*, Environment Victoria, Melbourne September.
- Green Institute (2016), *The End of Coal*, The Green Institute.
- GetUp and Solar Citizens (2016) *The Homegrown Power Plan*, GetUp and Solar Citizens, Sydney
- Colley, P. (2016) *Staring into the abyss: the Global (Thermal) Coal Industry. Orderly exit or catastrophe for workers and their communities?* Report prepared for the International Trade Union Confederation (ITUC), CFMEU Mining and Energy, Sydney, February.

8. Key lessons and recommendations from these policy and research reports about ‘just transitions’ include the following policy principles, priorities and mechanisms.
- i) It is essential that government and business **commitments to ‘just transition’ principles be underpinned by detailed implementation and resourcing plans** (ie that the commitment to ‘a just transition’ is substantive and not limited to public relations rhetoric).
 - ii) **A proactive, planned approach** to developing and implementing a carefully considered strategy for phasing out power plants is likely to achieve far better outcomes than reactive, emergency action after power station closures are announced.
 - iii) A co-ordinated and integrated approach to coal transition policy development and implementation needs to **involve all key stakeholders** including all levels of government, unions, workers, communities, local businesses, educational institutions and power station owners.
 - iv) Transition policies need to be carefully tailored to address the concerns and **build on the strengths of specific regions and communities**. It will also be essential to recognise the importance of **a sustained and long term commitment** to transition strategies.
 - v) **Stakeholder consultation and engagement needs to be inclusive, respectful, well informed and fully transparent** in relation to the processes and timelines for considering and responding to concerns and proposals. Particular attention needs to be paid to ensuring inclusion of groups who are often sidelined from these discussions including women, young people, Indigenous people and socio-economically disadvantaged groups.
 - vi) The **costs and responsibilities for addressing the impacts of coal transition strategies need to be fully transparent and equitably shared**.⁶
 - vii) **Low-income households** adversely affected by coal closure policies (e.g. through higher electricity prices) **should be supported** through appropriate combinations of offsetting tax reductions, welfare payments and in-kind adaptive measures (e.g. energy efficiency rebates and retrofits).
 - viii) **Workers in the coal-fired power sector who are at risk of losing their jobs need to be adequately supported** to find new employment close to their current residence and with comparable remuneration and conditions. In cases where appropriate employment is not immediately available adequate bridging income support and access to education and training programs will need to be provided. Wage replacement and/or early retirement packages for older workers also need to be respectfully negotiated and backed by adequate long term funding.
 - ix) **Communities impacted by coal transition policies need to be supported to diversify their economy and attract new economic opportunities** through infrastructure

⁶ The Environment Victoria report, *Life After Coal: Pathways to a Just and Sustainable Transition for the Latrobe Valley*, notes the potential value of establishing a regional ‘coal closure transition fund’ (similar to New York State’s Fossil Fuel Plant closure fund) to provide a guaranteed, long term source of funds for regional economic development and capacity building.

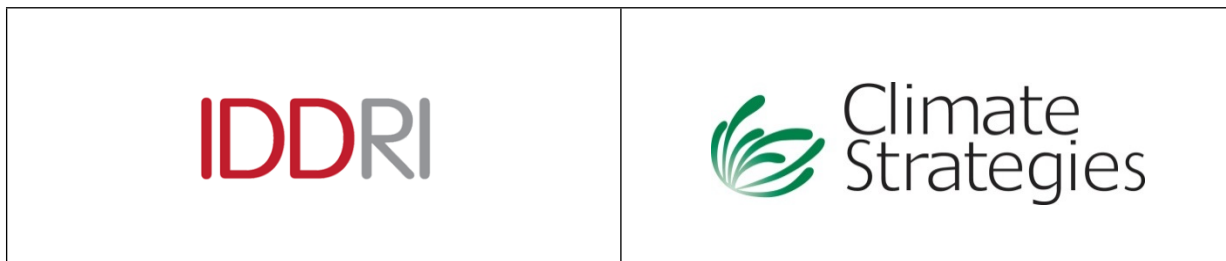
- investment, skills initiatives, industry policy and capacity building programs.⁷
- x) Coal transition strategies should include **comprehensive, long term plans to promote and support alternative economic and employment futures** for affected workers, businesses and communities. Alternative economic and employment strategies should wherever possible build on local economic strengths (including natural assets, physical infrastructure and skills) and be informed by local experience and expertise.
 - xi) **Sufficient funding needs to be available to carry out rehabilitation of mine sites** and regions to an acceptable standard and in line with community expectations. It will be important to ensure that coal mining and power generation companies allocate sufficient funds to support site rehabilitation and just transitions strategies before they relocate or go bankrupt. While mine rehabilitation has the potential to be a valuable source of temporary employment it is important that there is clear understanding that these jobs are likely to be short term and that long term employment and economic development strategies are also essential.

Conclusion

9. A rapid and equitable transition away from coal, including the closure of coal fired power stations, is an essential precondition for meeting the goals and commitments of the Paris Climate Agreement. A carefully planned, co-ordinated and inclusive approach to developing and implementing strategies for closing coal fired power plants is likely to achieve significantly fairer and more sustainable outcomes than reactive, emergency action after closures are announced.

⁷ The Environment Victoria *Life After Coal* report on Latrobe Valley transition options also usefully identifies a range of industries with significant potential to create new economic and employment opportunities including home energy efficiency retrofit programs; commercial building energy efficiency; renewable energy, manufacturing and education initiatives; solar water-heating manufacturing; sustainable prefabricated housing construction.

Attachment A. Project outline: *International Coal Transitions Research project*



Coal Transitions: Research and Dialogue on the Future of Coal

Background

In many major emitting countries coal remains an important source of energy supply - up to 70% of total primary energy supply in China and South Africa, with dominant share of total electricity generation in many countries (40% in Germany, more than 70% in Australia, China, India, Poland and South Africa). The Nationally Determined Contributions (NDCs) submitted under the UNFCCC Paris Agreement imply significant reductions in the share of coal in primary energy by 2030. Holding the increase in global temperature to well below 2°C and pursuing efforts to limit it to 1.5°C would require even deeper reductions in coal use in the energy system by 2030 and 2050, even allowing for CCS technology.

Relevant research and advocacy efforts have so far focused, with a high degree of success in many places, on stopping new coal plants. **But early phase out of both coal production and consumption assets will also be necessary to stay well below 2°C.** This is a major economic, social and political challenge. Key issues include energy security, fiscal impacts, labour market implications and the need for a ‘just transition’. Other key issues include the stability of policy frameworks to guide private and public decisions and societal and political acceptability of economic change.

The project

The “Coal Transitions” project is KR Foundation funded 2-year transdisciplinary, international effort to link and reinforce policy, research and advocacy efforts on coal transition in different countries. The project will link to other initiatives focusing on coal (e.g. on the investor side), but aims to fill the gap of international dialogue and lesson learning on coal transition. It will be carried out by a consortium of 8 organisations, led by IDDRI and Climate Strategies.⁸ The project covers: **Australia, China, Germany, India, Poland and South Africa.** Other countries will also be covered in a report on how coal transitions have been managed in the past.

The project aims to:

- promote deeper understanding amongst relevant national and international stakeholders of the implications of global climate mitigation activities for the future of coal production and consumption;
- support societally acceptable transition away from coal, to marry coal phase out with economic renewal and a just transition in key countries;
- promote knowledge and acceptance new narratives on the future of coal, enabling conditions, and concrete steps for national coal phase out strategies;
- promote exchange, learning and more coordination on transition policies at international level.

⁸ For more information on these organisations, see iddri.org and climatestrategies.org. Teresa Ribera, Michel Colombier (respectively Director and Scientific Director, IDDRI) and Henry Derwent (Senior Advisor, Climate Strategies) will provide leadership. Thomas Spencer, Henri Waisman (IDDRI), Andrzej Błachowicz and Germana Canzi (Climate Strategies) will jointly manage the project. Core project team: IBS, Poland (Piotr Lewandowski); DIW, Germany (Karsten Neuhoff, Franziska Holz); Tsinghua University, China (Fei Teng); Indian Institute of Management Ahmedabad, India (PR Shukla, Amit Garg); Australian National University (Frank Jotzo); University of Cape Town (Jesse Burton, Harald Winkler, Tara Caetano).

A project **Advisory Group** will be created, to advise the project and facilitate dissemination and provide feedback on whether the project is achieving its aims. **Communication activities** will be based on clearly written reports and briefings, with concise summaries for policy makers. Targets will include specialised reporters globally, and national level press.

Expected project outputs

- 1) **Sept 2016 – May 2018: Stakeholder workshops & International Roundtable on the Future of Coal.** At the start and middle of the project, the project will convene national and international stakeholders of the coal sector (policy-makers, researchers, unionists, investors and industry). This will test results, share experiences and create among policy makers and industry a sense of shared international challenges and effort on coal phase out. First meeting to be held in Paris in September 2016, while the second will be in India or in China. Side events at COPs are also envisaged. At the end of the project, there will be an International Roundtable on the Future of Coal, where results of the project and future recommendations will be discussed and publicised.
- 2) **By January 2017 (roughly): Report on lessons from past experiences of coal transition.** This will include a review of historical examples of national transitions away from coal. It will analyse how socio-economic impacts were managed. It will identify lessons derived from these past experiences and from the results of strategies applied to tackle these challenges.
- 3) **Feb – Dec 2017: National reports.** These will analyse the social, human, labour, economic, fiscal and industrial relations dimensions implied by the transition away from coal and the policy options to manage the transition in each country, addressing social, economic, fiscal and industrial policy issues. These will also be discussed in national level stakeholder events.

Reports will also cover country-specific issues such as:

- India: challenges of avoiding coal lock-in in a fast growing emerging economy
 - China: risk of investment bubble and stranded assets in the coal sector
 - Germany: challenges of regional lock-in to a coal-based regional economy
 - Australia: policies to control investment and retire coal assets early
 - South Africa: Coal to liquids, industrial development and a just transition
 - Poland: socially viable public policy mix to foster the reallocation of the labour force out of the coal sector.
- 4) **By July 2017: Report on global implications of coal transition (investment, trade, global markets, and stranded assets).** This will analyse global-scale implications and potential unanticipated impacts of coal transition, notably on coal prices, trade flows, investment patterns or employment. This information will inform the national case studies to identify potentially unforeseen socio-economic or fiscal impacts. It will also identify and quantify issues such as stranded assets and investment shifts associated with coal transition.
 - 5) **By September 2017: report on Energy system pathways and the future of coal under NDC and 2°C compatible scenarios.** This will define in each of the six project countries, energy system and coal sector pathways to 2050 under two scenarios: ‘Paris contributions’ (NDCs) and <2°C compatible deep decarbonisation. These national pathways will describe the possible evolution of the coal sector in these countries’ economies under different policy settings, consistent with national climate policy and development goals. Uncertainties will also be detailed (such as CCS). They will provide comparable information about coal production and use, import and export flows in each country. They will also provide a foundation for subsequent policy analysis and revealing potential policy inconsistencies (e.g. continued investment in coal power or mining capacity).
 - 6) **By May 2018 – Final report on international policy implications and key principles for the global coal transition.** This will lay out key recommendations and lessons for policy approaches to coal phase out and the enabling conditions under which they could work eg. identifying specific coordination needs between countries. It would also highlight specific lessons and enabling conditions emerging from the country case studies and lessons from past experience. This analysis is designed to be used by decision-makers, coal industries and other stakeholders managing or undergoing restructuring and to promote a just transition to a low carbon economy.