

15 September 2025

Dear Productivity Commission,

Thank you for seeking feedback from stakeholders on the interim report *Investing in cheaper, cleaner energy and the net zero transformation*. Fair Futures is a for-purpose consultancy, working at the intersection of the renewable energy transition and human rights. Our comments draw from our experience advising policy makers and businesses on human rights risk embedded in supply chains.

We strongly support the Australian Government's ongoing efforts to transition to a net zero economy. Accelerating the renewable energy transition in a timely and cost-effective way is crucial to our efforts to achieve net zero targets. There is no question of "whether" we should progress this agenda but there are questions that need to be considered, and options that should be examined, around "how".

In particular, there are real risks *to people* to be managed, when transitioning to a net zero economy. Reflecting the economic, social and political conditions in various source countries such as the Democratic Republic of Congo, Myanmar and Indonesia, fundamental human rights abuses, up to and including modern slavery, forced labour, and child labour are embedded in the international supply chains of various critical minerals such as cobalt, lithium, rare earth elements and nickel. As such, proactively managing and mitigating human rights risk linked to renewable energy supply chains should be part of any policy development on emissions reduction.

In our view, the Productivity Commission should place the protection of human rights at the centre of its emissions reduction policy design. At present, our policy settings assume that individual businesses will be able to effectively respond to this risk, under the Modern Slavery Act regime. However, given the system wide nature of the human rights risks in question, a "business by business" approach is neither efficient or cost effective. More coordinated, collaborative efforts, ideally with government backing, are needed if we are to ensure that Australia's renewable energy transition is both economically efficient and consistent with its international commitments to human and labour rights.

We note several concerns with the interim report:

1. The interim report focuses on reducing emissions across electricity, industrial, and transport sectors, but overlooks other important areas of sustainability. Notably, there is an significant concern around human rights violations,

including modern slavery, forced labour, and child labour, associated with the renewable energy transition across these sectors. There is both an economic, pragmatic and moral case to be made that efforts to achieve emission reduction goals should not come at the expense of fundamental human rights. We urge the Productivity Commission to take a more comprehensive approach in line with international standards, that considers the broader social impacts of emission reduction policies.¹

2. The Federal Government has introduced several initiatives to advance Australia's renewable energy transition. Funding initiatives, such as the *Solar Sunshot Program* that sits under the *Future Made in Australia Plan* mandate consideration of modern slavery for renewable energy projects.² In contrast, the interim report does not include provisions for assessing or addressing human rights risks. Without explicit consideration of modern slavery, the interim report risks misalignment across emission reduction initiatives and reducing overall policy coherence. We recommend that the Productivity Commission aligns its approach with existing emission reduction policies that incorporate human rights considerations, to support streamlined compliance and a coordinated approach to policy.
3. In certain sectors, such as renewable energy generation, the supplier base for key components is relatively limited. As a result, multiple businesses are conducting due diligence and traceability efforts on the same set of suppliers, leading to duplicated efforts and inefficiencies. Recognising this challenge, the *ACCC's Guide on Sustainability Collaborations* was updated in 2024 to enable a level of business to business collaboration on modern slavery due diligence, in addition to climate change risks.³ While a degree of collaboration in sourcing is possible in theory, in reality collaboration is unlikely to occur without carefully thinking through what would de-risk and incentivise industry-wide collaboration in this area. We recommend that the Productivity Commission recognises the important role that government-backed, multi-

¹ The OECD Guidelines for Multinational Enterprises on Responsible Business Conduct (Chapter 4 and 6) and the EU Corporate Sustainability Due Diligence Directive (Article 3) approach sustainability from an environmental and human rights perspective. Environment and human rights each have their own distinct criteria defining what they constitute under these standards, but they are both considered integral parts of the overall concept of sustainability. Available at: https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/06/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct_a0b49990/81f92357-en.pdf

² Solar Sunshot Program Guidelines (2024) Point 4.23. Available at: <https://arena.gov.au/assets/2024/08/Solar-Sunshot-Program-Guidelines-23082024.pdf>

³ ACCC Guide to Sustainability collaborations and Australian competition law (2024) Available at: https://www.accc.gov.au/system/files/sustainability-collaborations-and-australian-competition-law-guide_1.pdf

stakeholder initiatives could play, to coordinate due diligence in the renewable energy sector as a means to improve efficiency and reduce costs for businesses and investors.

Scale of modern slavery in renewable energy supply chains

The interim report recognises that “Australia will need to install thousands of wind turbines, millions of panels for solar farms, new transmission lines and substantial storage capacity”, which will be necessary for Australia “to meet its target for 82% of electricity to come from renewable sources by 2030”.⁴ Modern slavery, forced labour, and child labour have been documented across these renewable energy supply chains, from the extraction of raw materials to the processing and manufacturing of components. Just as we consider embodied carbon in a product, where each stage of production contributes to its overall carbon emissions, the similar concept of embodied injustice is useful when applied to this context.⁵ In the case of renewable energy, modern slavery, forced labour, and child labour is present throughout the production process, with these exploitations effectively carried through the supply chain and imported into Australia.

The key risk to Australia’s renewable energy transition is the importation of products and materials that embody modern slavery in their value chain, particularly in solar panels, batteries, wind turbines, and electric vehicles.⁶ It is estimated that Australia imports USD \$1.3 billion worth of solar panels each year that carry a risk of embodied modern slavery.⁷ Moreover, the United States Department of Labor has identified several essential minerals and materials used in renewable electricity generation and transport that are produced using child or forced labour.⁸ These include aluminium, silicon, cobalt, nickel, copper, and lithium. In August 2025, the United States added steel, copper, and lithium to its high-priority sectors for

⁴ Page 7 of Interim Report, <https://www.pc.gov.au/inquiries/current/net-zero/interim/net-zero-interim.pdf>

⁵ See “Mulvaney, D. (2024) Embodied energy injustice and the political ecology of solar power. *Energy Research & Social Science*, 115: 103607” for an explanation on embodied injustice.

⁶ See further, Fiona David and David Tickler, Submission to Inquiry into Australia’s Human Rights Framework, 18 July 2023, <https://fairfutures.com/media/222bjy2s/fdavid-dtlickler-human-rights-act-sub223.pdf>.

⁷ WalkFree, Modern slavery in Australia. Available at: <https://www.walkfree.org/global-slavery-index/country-studies/australia/#:~:text=Australia%20imports%20US%2417.4%20billion,made%20using%20forced%20labour%20annually>.

⁸ US Department of Labor (2024) List of Goods Produced by Child Labor or Forced Labor. Available at: https://www.dol.gov/sites/dolgov/files/ILAB/child_labor_reports/tda2023/2024-tvpra-list-of-goods.pdf

enforcement under the *Uyghur Forced Labor Prevention Act*.⁹ These minerals and materials are also key inputs into renewable energy technologies. The *Uyghur Forced Labor Prevention Act* establishes a rebuttable presumption that goods produced in whole or in part in the Xinjiang region are prohibited from entry into the United States due to their direct links with state-imposed forced labour, unless importers can prove otherwise.¹⁰

Case study: Solar panels in Australia

According to forecasts by the Australian Energy Market Operator in its 2024 *Integrated System Plan*, Australia will need to add approximately 6 GW of utility scale generation each year by 2030 to achieve its target of 82% renewable electricity generation.¹¹ Australia is positioned as a world leader in solar installations, with the rooftop solar industry surpassing four million installations on households and small businesses in 2024.¹² Solar is an important part of Australia's energy transition, however, in 2024 the NSW Anti-Slavery Commissioner identified solar panels as a product with a high risk of modern slavery that requires government agencies and businesses to undertake enhanced due diligence measures during procurement.¹³

These heightened risks are founded upon state-sponsored forced labour programs that target Uyghur communities in the Xinjiang Uyghur Autonomous Region in Western China. These concerns have been expressed by the UN's High Commissioner for Human Rights, who found that there is "large-scale arbitrary deprivation of liberty of members of Uyghur and other predominantly Muslim

⁹Office of the United States Trade Representative (2025) Forced Labor Enforcement Task Force Release of the 2025 Update to the UFLPA Strategy. Available at: <https://ustr.gov/about/policy-offices/press-office/press-releases/2025/august/forced-labor-enforcement-task-force-release-2025-update-uflpa-strategy#:~:text=The%20UFLPA%20Strategy%20also%20designated,News>

¹⁰ U.S. Department of State (2025) Uyghur Forced Labor Prevention Act (UFLPA) fact sheet. Available at: <https://www.state.gov/office-to-monitor-and-combat-trafficking-in-persons/releases/2025/01/uyghur-forced-labor-prevention-act-uflpa-fact-sheet>

¹¹ Australian Energy Market Operator (2024) Integrated System Plan For the National Electricity Market. Available at: https://www.aemo.com.au/-/media/files/major-publications/isp/2024/2024-integrated-system-plan-isp.pdf?rev=b811f5d66df24e0a980ce0df8eaa5687&sc_lang=en

¹² Clean Energy Council (2025) Clean Energy Australia. Available at: <https://cleanenergycouncil.org.au/getmedia/f40cd064-1427-4b87-afb0-7e89f4e1b3b4/clean-energy-australia-report-2025.pdf>

¹³ NSW Gov (2023) NSW Anti-slavery Commissioner and Clean Energy Council join forces to tackle modern slavery risks in renewables. Available at: <https://dcj.nsw.gov.au/legal-and-justice/our-commissioners/anti-slavery-commissioner/news-and-media/nsw-anti-slavery-commissioner-clean-energy-council-renewables.html#:~:text=In%20an%20Australian%20first%2C%20the,in%20renewable%20energy%20value%2Dchains>

communities” in Xinjiang.¹⁴ Modern slavery risk exists throughout the solar panel supply chain, from extracting critical minerals to manufacturing modules. It has been reported that state-sponsored forced labour is being widely used in the mining and production of metallurgical grade silicon and solar-grade polysilicon.¹⁵ The scale of the products that are linked to these inputs is significant. For example, solar-grade polysilicon is the primary material in 95% of solar modules,¹⁶ of which up to 35% of the world’s supply comes from Xinjiang.¹⁷

The *Silicon to Solar* report, produced in support of the *Solar Sunshot Program*, highlights Australia’s significant dependence on solar modules manufactured in China.¹⁸ The report notes that Australia is currently unable to fully meet its solar energy demand through domestic production alone. While efforts to develop a local solar industry are underway, Australia will still need to rely on imports to achieve its renewable energy targets. However, research conducted by Sheffield Hallam University identified several companies with high risks of modern slavery, many of which are key suppliers in the Australian market.¹⁹ ²⁰ Without coherently integrating human rights considerations across Australia’s initiatives, the current reality signals a significant risk that the country’s energy transition will be built on the exploitation of others.

Australia’s international commitments to sustainability

The Australian Government has numerous binding commitments regarding environmental objectives and human rights. These include treaties concerning prohibitions on child labour, forced labour, slavery, human trafficking, and requiring

¹⁴ Crawford, A. & Murphy, L. (2023) Overexposed: Uyghur Region Exposure Assessment for Solar Industry Sourcing. Sheffield Hallam University. Available at: <https://www.shu.ac.uk/helena-kennedy-centre-international-justice/research-and-projects/all-projects/over-exposed>

¹⁵ Cockayne, J. (2022) Making Xinjiang Sanctions Work: Addressing forced labour through coercive trade and finance measures. University of Nottingham. Available at: <https://www.xinjiangsanctions.info/wp-content/uploads/2022/07/Making-Xinjiang-Sanctions-Work-FINAL.pdf>

¹⁶ Murphy, L & Elima, N. (2021) In Broad Daylight. Sheffield Hallam University. Available at: <https://www.shu.ac.uk/helena-kennedy-centre-international-justice/research-and-projects/all-projects/in-broad-daylight>

¹⁷ Crawford, A. & Murphy, L. (2023) Overexposed: Uyghur Region Exposure Assessment for Solar Industry Sourcing. Sheffield Hallam University. Available at: <https://www.shu.ac.uk/helena-kennedy-centre-international-justice/research-and-projects/all-projects/over-exposed>

¹⁸ Australian Renewable Energy Agency (2023) Silicon to Solar Report. Available at: <https://arena.gov.au/assets/2024/02/APVI-Silicon-to-Solar-Detailed-Report.pdf>

¹⁹ Crawford, A. & Murphy, L. (2023) Overexposed: Uyghur Region Exposure Assessment for Solar Industry Sourcing. Sheffield Hallam University. Available at: <https://www.shu.ac.uk/helena-kennedy-centre-international-justice/research-and-projects/all-projects/over-exposed>

²⁰ Hill, J. (2023) Australia’s top 10 most installed solar panels and inverter brands, One Step off the Grid. Available at: <https://onestepoffthegrid.com.au/australias-top-10-most-installed-solar-panels-and-inverter-brands/>

protection of the right to decent work.²¹ The Paris Agreement's preamble also notes that when taking action to address climate change, human rights obligations must be respected, promoted and considered to achieve a just transition.²² The connections and interdependencies between human rights and emission reduction obligations have recently been clearly affirmed by the International Court of Justice.²³

From a business and investor perspective, key international standards are set out in the UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct (OECD Guidelines), which addresses both environmental and human rights considerations. More broadly, these are given shape through the UN Sustainable Development Goals, which are used by many businesses and investors as part of target setting.

Australian policy landscape

The Australian Government has introduced several policies and regulations relevant to the interim report. The Productivity Commission could reference these to promote policy coherence and take a more comprehensive approach to sustainability in the renewable energy transition.

Modern Slavery Act Cth (2018)

Organisations with a consolidated revenue of \$100m have obligations to report on the steps they are taking to identify, assess, address, and remediate modern slavery in their operations and supply chains. This includes federal departments such as the Department of Climate Change, Energy, the Environment and Water, which fall under Commonwealth reporting. Following a review of the Act, the government appointed an Australian Anti-Slavery Commissioner, whose functions include engaging with all levels of government to promote ongoing improvements in modern slavery policies

²¹ Including the International Covenant on Civil and Political Rights, the International Covenant of Economic, Social and Cultural Rights, the Convention on the Rights of the Child, the Slavery Convention of 1926, and the Supplementary Convention on Slavery.

²² The Preamble to the Paris Agreement notes that "Acknowledging that climate change is a common concern of humankind, Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity". Available at: https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf?gclid=CjwKCAiAq4KuBhA6EiwArMAw1Bvn_1249NGUCVOARLgAfTYxKskppSVV_thbES3BBMLiU06-QjNo5RoCT7lQAvD_BwE

²³ International Court of Justice Advisory Opinion on Obligations of States in Respect of Climate Change, 23 July 2025, <https://www.icj-cij.org/case/187>

and practices.²⁴ Additionally, the government will be seeking targeted input on mandatory due diligence legislation, which would transition the framework from solely reporting requirements to the active implementation of due diligence measures.²⁵

Solar Sunshot Program

Applicants for the Solar Sunshot's \$1 billion grant program must agree that they will:²⁶

1. "Take reasonable steps to identify, assess and address risks of modern slavery practices in the operations and supply chains used in delivering the Project;
2. If applicable, comply with its obligations under the Modern Slavery Act;
3. Assist ARENA to comply with its obligations under the Modern Slavery Act; and
4. Make a declaration in the application form that it, and its Related Bodies Corporate, will meet these requirements in relation to the Modern Slavery Act."

ACCC Guide on Sustainability Collaborations

The principles outlined in the guidance can be applied to collaborations focused on addressing modern slavery, notably in relation to modern slavery due diligence.²⁷

Recommendations

The Australian Government's commitments under the Paris Agreement, international human rights treaties, the Sustainable Development Goals, and the OECD Guidelines underscore its responsibility to ensure that human rights are central to the renewable energy transition. However, the interim report does not yet reflect these commitments by promoting a transition that is not only fast and affordable, but also ethical, inclusive, and sustainable across all dimensions.

²⁴ Australian Anti-Slavery Commissioner (n.d.) Anti-Slavery Commissioner's Functions. Available at: <https://www.antislaverycommissioner.gov.au/what-commissioner-does/anti-slavery-commissioners-functions>

²⁵ Attorney-General's Department (2025) Strengthening the Modern Slavery Act: Consultation Paper. Available at: https://consultations.ag.gov.au/crime/modern-slavery-act/user_uploads/consultation-paper-strengthening-the-modern-slavery-act.pdf

²⁶ ARENA (2024) Solar Sunshot Program Guidelines, 4.23. Available at: <https://arena.gov.au/assets/2024/08/Solar-Sunshot-Program-Guidelines-23082024.pdf>

²⁷ See "Case Study 6" on page 12 for an example of a collaboration related to modern slavery: https://www.accc.gov.au/system/files/sustainability-collaborations-and-australian-competition-law-guide_1.pdf

In light of these concerns, Fair Futures recommends that:

1. Human rights risks are fully considered in the development of the final report's emission reduction policies, in alignment with Australia's international human rights commitments.
2. Adopt a whole-of-government approach by aligning the final report's emission reduction policies with Australia's broader policy initiatives and regulations on human rights and modern slavery.
3. Establish multi-stakeholder initiatives and industry-level collaborations that enable companies and investors to share due diligence on climate and modern slavery risks.
4. Work in collaboration with the Australian and NSW Anti-Slavery Commissioners to integrate modern slavery risk management into emissions reduction policy.

We welcome discussing our recommendations with the Productivity Commission if it would prove useful.

Yours sincerely,

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