Modern slavery risks in the higher education sector

Renewable energy

US$1.9 trillion is the expected value of the global renewable energy sector in 2030, up from US$881.7 billion in 2021.[1]

16.2 million people are employed in the renewable energy sector globally in 2023.[2]

631 human rights abuses related to the critical minerals for the renewable energy sector have been documented between 2010 and 2023. Many more cases remain unreported.[3]

What is modern slavery?

Modern slavery is a serious violation of an individual's dignity and human rights. Exploitative practices, including human trafficking, forced labour, child labour, debt bondage and forced marriage, are all considered modern slavery and are serious crimes under Australian law.

Regulatory context

Modern Slavery Act 2018 (Cth)

Organisations, including universities, based or operating in Australia with at least AU$100 million in annual consolidated revenue are required to report annually on the steps they have taken to identify and address modern slavery risks in their operations and supply chains. See *Commonwealth Modern Slavery Act Guidance for Reporting Entities*.

Modern Slavery Act 2018 (NSW)

Certain universities in NSW have due diligence reporting obligations under the NSW Modern Slavery Act to ensure the goods and services they procure are not the product of modern slavery. See *NSW Anti-slavery Commissioner's Guidance on Reasonable Steps to Manage Modern Slavery Risks in Operations and Supply-Chains*.

Modern slavery practices in the renewable energy sector

Forced Labour

Employers may coerce, threaten, or deceive workers into work. Forced labour is a risk in the extraction and processing of raw materials needed for renewable technologies, such as cobalt, and the manufacture of renewable equipment, such as solar panel components. Forced labour may also be a risk in the installation of renewable equipment, such as solar panels or wind turbines, where there has been reports of exploitation, particularly of migrant workers, in Australia.

State-sponsored Forced Labour

Approximately 40-45% of the global supply of polysilicon, a key component in solar panels, comes from the Xinjiang Uyghur Autonomous Region, which has well documented reports of forced labour of Muslim and other ethnic minorities. Ethnic minorities are engaged in factories supplying solar panels, along with lithium-ion batteries, through state-sponsored involuntary labour schemes.

Child Labour

Children working in hazardous conditions has been well documented in the mining and processing of critical minerals needed for renewable technologies. This exposes children to harmful health and safety risks, including physical injuries, dust inhalation and carrying of heavy loads, and interferes with their schooling.

Why is renewable energy high risk?

Complex, global supply chains limit the visibility of working conditions.

Raw materials and components are often sourced from high-risk countries with documented forced labour.

The workforce is vulnerable to modern slavery. Workers are often members of an ethnic minority or come from a disadvantaged background. They may experience discrimination and may not be aware of their work rights.

[1] Beyond Compliance in the Renewable Energy Sector: Assessing UK and Australian Modern Slavery Act statements, Walk Free, 2023.
[2] Renewable Energy and Jobs - Annual Review 2024, International Renewable Energy Agency, 2024.
[3] Minerals essential to energy transition linked to human rights abuses, Business and Human Rights Resource Centre, 2024.

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Renewable energy

THE UNIVERSITY OF SYDNEY

How modern slavery risks in the renewable energy sector may be linked to universities

Procurement *Universities may be linked to modern slavery risks in the renewable energy sector through their supply chains, including in the extraction of raw materials, the manufacturing of components, final assembly of products and in the labour to deliver services on campus.*	
Product, Sector & Geographic Risks	Sourcing from a high risk location or supplier without adequate due diligence. • **Solar panels:** Forced labour and child labour has been documented in the manufacture of solar panels, including state-sponsored forced labour of Muslim and other ethnic minorities in the Xinjiang Uyghur Autonomous Region of China – particularly in the extraction and processing of polysilicon, a key component of solar panels, and the manufacture of panel components (*e.g. Australian company linked to forced labour in the sourcing of solar power*). • **Fleet purchases of electric or hybrid vehicles:** There is a high risk of forced labour in the supply chain of lithium-ion batteries, used in electric vehicles (EVs) and hybrid vehicles *(e.g. NSW Anti-slavery Commissioner conducts monitoring probe into Transport for NSW over forced labour concerns in EV bus procurement).* • **Electronic components:** Forced labour and hazardous working conditions have been documented in the mining and processing of critical minerals needed for renewable technologies, including nickel in Indonesia and cobalt in the Democratic Republic of Congo (DRC) used for wind turbines, lithium-ion batteries and EVs *(e.g. forced labour in artisanal mines in the DRC supplying EV manufacturers).* • **Wind energy:** Balsa wood, which is commonly used in wind turbine blades, has been linked to displacement of indigenous communities, environmental degradation and human trafficking, particularly in Ecuador and Peru.
Services Risk	Installation and maintenance of renewable energy technologies. • **Installing and maintaining renewable energy equipment**, such as solar panels and charging infrastructure, may be linked to forced labour, debt bondage and substandard working conditions. In the construction sector in Australia, subcontracting, low-cost margins and reliance on migrant workers, who may have limited know of their work rights, leaves workers vulnerable to modern slavery.
Teaching & Research *Universities may be linked to modern slavery risks, through their teaching and research activities and partnerships. Risks often intersect with other human rights concerns and counterparty risks related to sensitive technologies, sanctions and national security.*	
Research Development & Application Risks	Carrying out research without adequate due diligence of research partners or materials. • **Research involving lithium-ion batteries,** such as development of new battery technology and battery applications and enhancements may source components produced using child labour or forced labour. • **Research involving solar technologies,** such as the adaption and use of solar panels, solar cell materials, solar cell manufacturing or improving solar efficiency may source components produced using child labour or forced labour.
Partnership & Collaboration Risks	**Business and Industry Collaborations** • Engaging with external parties with reports of modern slavery in their operations and supply chain. • The U.S. has banned imports from major solar panel manufacturers and producers of polysilicon under the Uyghur Forced Labor Prevention Act, which creates an assumption that goods from the Xinjiang Region are produced with forced labour. • Partnering with renewable energy companies who do not demonstrate responsible mineral sourcing. In the 2025 Renewable Energy and Human Rights Benchmark only four of 23 solar and wind companies had sufficient policies in place, and no company disclosed traceability of their solar supply chain, key in addressing the risks.

Modern slavery risks in the higher education sector

Renewable energy

Case study

This case study has been developed using publicly available reports. It is intended solely for illustrative purposes and does not represent any specific university, supplier, or partner organisation.

An Australian university is participating in a Government-funded research consortium to improve the efficiency of solar cells and modules. The consortium includes several other universities, an Australian start-up and the Australian subsidiary of a Chinese company that is a major manufacturer of solar panels.

The Chinese parent company has been linked to human rights violations in the Xinjiang Uyghur Autonomous Region in China. An academic report alleged the company's solar manufacturing site is co-located with a detention centre for ethnic minorities. It is not clear whether detainees work at the company's site but this practice has been reported elsewhere in the Region.

The Australian subsidiary is primarily providing technical advice to the consortium but may supply a number of components for testing enhancements to the solar panels.

The university is not the project lead but engages with other members of the consortium to put in place due diligence to manage the risk that the research may be linked to modern slavery, including modern slavery contract clauses with the solar company and requirements for supply chain traceability of any components being used in the project to identify and avoid links to sites located in the Xinjiang Region.

Learn more

- Addressing modern slavery in the clean energy sector - Clean Energy Council, 2022.
- Resources, energy and modern slavery – Australian Human Rights Commission & KPMG, 2021
- Managing modern slavery risks in NSW government procurement of electric vehicles – NSW Anti-slavery Commissioner, 2025
- Solar Stewardship Initiative Buyers Guide - Solar Stewardship Initiative, 2025
- Beyond compliance in the renewable energy sector – Walk Free, 2023.
- Transition mineral tracker – Business & Human Rights Resource Centre, 2025.
- List of Goods Produced with Forced and Child Labor – U.S. Department of Labor
- In Broad Daylight: Uyghur Forced Labour and Global Solar Supply Chains – Sheffield Hallam University, 2021