

Ethical Supply Chain Risks in Renewable Energy Projects in South Wales

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This poster summarises an undergraduate dissertation exploring ethical supply chain risks in renewable energy projects in South Wales.

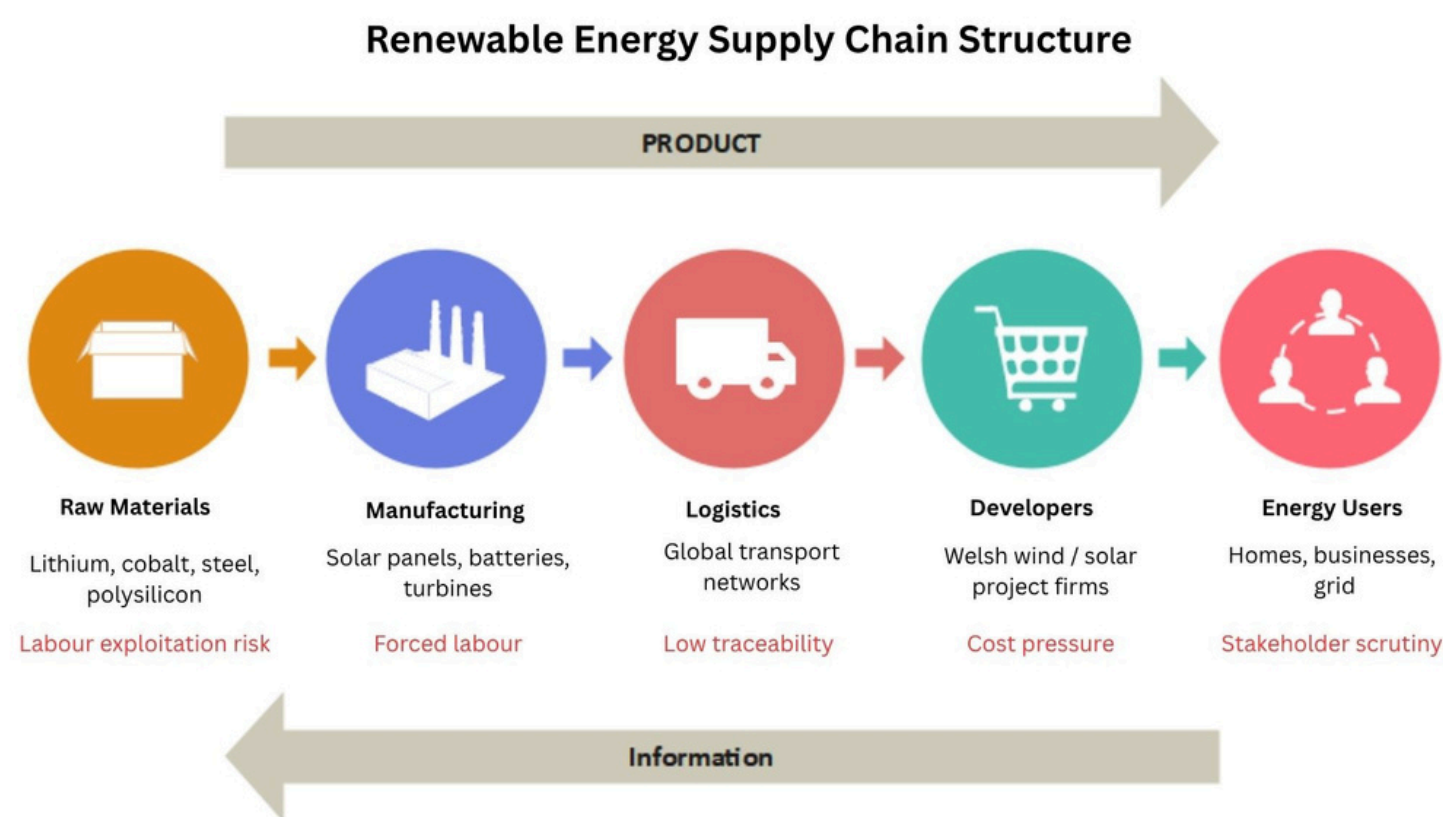


Figure 1. Simplified renewable energy supply chain showing key stages and ethical risk points (Author's own).

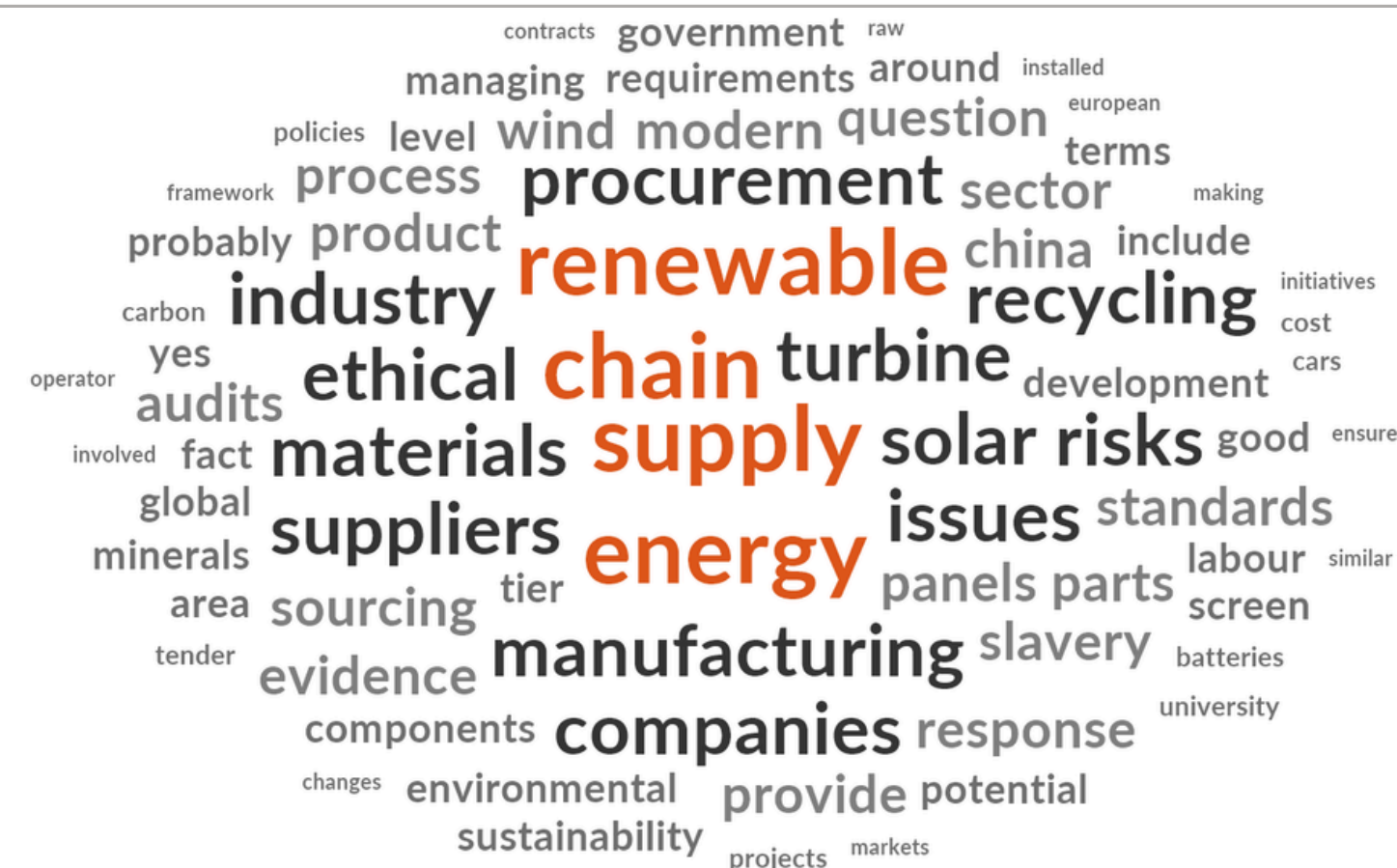


Figure 2. Word cloud highlighting recurring themes from interview data (Author's own).



Figure 3. Wind energy infrastructure, illustrating the wider renewable energy context (Wilde, 2016).

01. Introduction

The rapid expansion of renewable energy is essential for achieving global climate targets (Vaz et al., 2022); however, the ethical implications of the supply chains supporting this transition remain relatively underexplored in Wales. This study investigates ethical risks within renewable energy supply chains, with a specific focus on projects in Wales.

02. Research Objectives

- To examine how Welsh renewable energy developers and related organisations assess and screen suppliers during procurement processes.
- To investigate the extent to which due diligence measures, policies and monitoring systems are implemented to manage ethical supply chain risks.

03. Methodology

A qualitative approach was used, using semi-structured interviews with five professionals from the renewable energy, higher education, and public service sectors. This enabled in-depth exploration of procurement practices, ethical sourcing barriers, and regulatory compliance (Winwood, 2019).

04. Results & Discussion

- Participants described renewable energy supply chains as complex and lacking transparency, with limited visibility beyond direct suppliers identified as a key barrier to ethical procurement, consistent with literature on transparency and traceability challenges in renewable energy supply chains (International Energy Agency, 2022; Sovacool et al., 2020).
- Participants suggested greater recycling of renewable energy components as a way to improve supply chain ethics. This reflects literature indicating that recycling critical minerals can reduce demand for new extraction and ease pressure on supply chains (Kotarska and Young, 2023).

06. Conclusion

Although progress has been made, significant ethical supply chain challenges remain in the renewable energy sector. Greater transparency, stronger independent certification, and improved governance may help organisations manage these risks more effectively.

References

- Vaz, S., Rodrigues de Souza, A.P. and Lobo Baeta, B.E. (2022) 'Technologies for carbon dioxide capture: A review applied to energy sectors', *Cleaner Engineering and Technology*, 8 (February) article 100456. Available at: <https://doi.org/10.1016/j.clet.2022.100456>.
- Winwood, J. (2019) 'Using interviews', in M. Lambert (ed.) *Practical Research Methods in Education: An Early Researcher's Critical Guide*. Routledge, pp. 12-22.
- International Energy Agency (2022) *Special Report on Solar PV Global Supply Chains*. Available at: <https://www.iea.org/reports/solar-pv-global-supply-chains>. (Accessed: 11/05/2026).
- Sovacoal, B.K., Ali, S.H., Brazilian, M., Radley, B., Nemery, B., Okatz, J., Mulvaney, D. (2020) 'Sustainable minerals and metals for a low-carbon future', *Science*, 367 (January) article 6473. Available at: <https://doi.org/10.1126/science.aaz6003>
- Kotarska, G. and Young, L. (2023) *Unearthing Environmental and Human Security Risks Critical Minerals in the UK's Energy Transition*. Available at: <https://www.rusi.org/explore-our-research/publications/occasional-papers/critical-minerals-energy-transition-environmental-and-human-security-risks>. (Accessed: 12/05/2026).
- Wilde, E. (2016). Available: <https://www.flickr.com/photos/dret/24110028330> (Accessed: 10/05/2026).