

Exploring the Environmental Impact of the Coal Industry in Australia

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Introduction

The coal industry in Australia has long played a significant role in the country's economy, serving as a major source of energy and export revenue. However, there are growing concerns regarding its impact on the environment not only in Australia, but globally. The processes that coal mining involves contribute to pressing issues such as air and water pollution, deforestation, greenhouse gas emissions, and climate change (De Valck et al., 2021). With Australia being one of the largest coal exporters globally, the country faces increasing pressure to address these environmental issues and transition towards more sustainable energy alternatives to mitigate the impacts on local ecosystems and the global climate (Grech et al., 2016). This report will identify and evaluate the issue's extent and analyse its broader social consequences. The latter section will discuss recommendations on how to combat the environmental impacts and social consequences of this industry.

Identifying and Evaluating the Extent of the Issue

The coal industry has been a significant driver in the Australian economy since European invasion in 1788. Black coal was discovered in 1791, with its mining and exportation commencing in 1799 (Geoscience Australia, 2023). Decades later, brown coal was discovered in 1857, however, its production did not commence until 1889 (Geoscience Australia, 2023). It has been contended that the coal industry was crucial to early industrial development and that it continues to benefit modern Australia (Quince, 2015). This is evident through the creation of various employment opportunities, the generation of wealth, and Australia's overall economic well-being (Curran, 2021).

The Australian government has shown continuous support for the coal industry, arguing its necessity as a global resource for energy and its promotion of prosperity

(Blondeel & Van de Graaf, 2018). Between 2021 and 2022, the revenue for coal exports in Australia reached \$112 billion, demonstrating how profitable the industry is for the government and coal companies (Saunders & Campbell, 2022). Despite the positive impact on Australia's economy, the coal industry has caused devastating environmental, health, and social impacts - highlighting the need for a shift to more sustainable practices.

In 2022, the Australian government set a target of achieving net zero emissions by 2050, which involves the reduction of greenhouse gas emissions (Climate Council, 2023). However, since this target was set, the government has approved the opening of additional coal mines, indirectly supporting the release of up to 156 million tonnes of emissions (The Australia Institute [TAI], n.d.). Evidently, this does not align with the goal of achieving net zero. Coal mining is widely known to emit significant amounts of greenhouse gases and it is ultimately a dominant contributor to global warming and climate change (Castleden et al., 2011). This problem can be seen not only in Australia, but globally. With the need for international cooperation to address this climate emergency, various countries have committed to the Paris Agreement to reduce greenhouse gas emissions to avoid increasing global temperature by more than 2% (Climate Council, 2023).

The environmental impacts of the coal industry in Australia extend far beyond mere localised disturbances, presenting a broader challenge that requires comprehensive attention. The combustion of coal releases pollutants such as sulphur dioxide, nitrogen oxides, and particulate matter, contributing to decreased air quality (Hendryx et al., 2020). Water resources are another critical casualty of the coal industry's operations. Coal mining often involves the use of water for extraction processes, leading to the contamination of nearby rivers and aquifers with heavy metals, salts, and other pollutants (Castleden et al., 2011). The resultant water pollution not only threatens aquatic ecosystems but also jeopardises the health

and well-being of communities relying on these water sources for drinking and agriculture (Castleden et al., 2011).

Furthermore, coal extraction necessitates vast expanses of land, leading to deforestation and habitat destruction. This has profound consequences for biodiversity, as ecosystems are disrupted and numerous species face the loss of their natural habitats (Boldy et al., 2023). The cumulative impact on flora and fauna further weakens the resilience of ecosystems, potentially leading to cascading ecological effects (Boldy et al., 2023). The Australian Conservation Foundation's (ACF) (2022) report found that the mining industry is largely responsible for approved, and therefore legal, habitat clearing in Australia. The investigation revealed that between 2012 and 2021, this industry was responsible for 75% of habitat destruction that posed a medium-high impact threat (ACF, 2022). The aforementioned issues all highlight the extent in which the coal industry impacts the environment.

Broader Social Consequences

The impacts of the coal industry extend beyond environmental harms. The health impacts of this industry in Australia are deeply concerning, with communities near mining and power generation facilities experiencing a disproportionate burden of harm. The combustion of coal releases a mixture of harmful pollutants, and these have been linked to respiratory illnesses such as asthma and chronic obstructive pulmonary disease (Hendryx et al., 2020). Studies consistently demonstrate elevated rates of respiratory conditions in regions with active coal operations, underscoring the direct correlation between coal-related air pollution and compromised public health (Manisalidis et al., 2020; Munawar, 2018). The unjust distribution of these health risks is often evident in socioeconomically disadvantaged communities, where the lack of political influence leaves residents more vulnerable to the adverse consequences of coal-related pollution (Higginbotham et al., 2010). The disparities in exposure to these health hazards raise ethical concerns, pointing to a systemic injustice where

the most vulnerable endure the consequences of an industry that contributes significantly to Australia's economy.

Moreover, the potential for criminality lies in the inaction and lax regulation by the government in addressing the health impacts of the coal industry. Despite ample evidence linking coal emissions to severe health issues, the regulatory framework often falls short of adequately safeguarding the well-being of affected communities (Hendryx et al., 2020). This regulatory vacuum can be perceived as a failure to protect citizens from harm, raising questions about the accountability and responsibility of the government (Heenan et al., 2023). White and Heckenberg (2014) proposed that capitalism is largely responsible for the continued exploitation of natural resources. The government's failure to address coal mining as a problem is therefore rarely subjected to legal consequences, as those who financially benefit from the coal industry thrive, neglecting the injustices experienced by other people.

In cases where industry practices knowingly contribute to public health crises without robust intervention, there is a moral and potentially legal imperative to address the apparent negligence. The inaction, at times, seems to prioritise economic interests over the health and rights of citizens, posing a serious ethical dilemma and potentially constituting a form of environmental injustice (Blondeel & Graaf, 2018). It is crucial for the government to reassess its stance on the coal industry, taking proactive measures to safeguard public health and rectify the systemic inequities that persist in the wake of coal-related health hazards.

The coal industry in Australia has inflicted profound injustices and harms upon Indigenous communities, exacerbating historical disparities and perpetuating environmental injustices (Mathews, 2021). Indigenous people are often disproportionately affected by the adverse consequences of coal mining, as their ancestral lands frequently overlap with resource-rich areas targeted for extraction (Sincovich et al., 2018). The extraction process disrupts sacred sites, damages culturally significant landscapes, and compromises access to

traditional resources, undermining the spiritual and cultural foundations of Indigenous communities (Mathews, 2021).

Additionally, the environmental degradation associated with coal mining, such as water pollution and habitat destruction, directly impacts Indigenous peoples who rely on the land for sustenance and cultural practices (Sincovich et al., 2018). The health disparities are glaring, as exposure to pollutants from coal mining has been linked to higher rates of respiratory illnesses and other health issues among Indigenous populations (Sincovich et al., 2018). Despite these profound impacts, Indigenous communities often face limited participation in decision-making processes and benefit minimally from the economic gains of the coal industry (Mathews, 2021). This stark imbalance underscores the need for comprehensive reforms that acknowledge and rectify the historical and ongoing injustices faced by Indigenous people in the context of coal mining in Australia.

Recommendations

Addressing the impacts, harms, and injustices caused by the coal industry in Australia, which also have a flow-on effect globally and are exacerbated by government inaction, requires a multifaceted and comprehensive approach. A fundamental recommendation is a swift transition from coal-based energy production to renewable and sustainable alternatives (Quiggin, 2020). The Australian government should implement policies that prioritise the development and adoption of clean energy sources, such as solar, wind, and hydroelectric power (Diesendorf, 2019). Investing in renewable energy not only reduces greenhouse gas emissions but also mitigates the environmental and health impacts associated with coal mining and combustion (Diesendorf, 2019). To uphold their commitment to net-zero by 2050, the government should stop approving new or expanding coal mine projects, and begin phasing out existing mines (Climate Council, 2023). This transition should be accompanied by a just transition framework that supports affected

communities and workers in coal-dependent regions, ensuring they have access to new employment opportunities and social support systems during the transition period (Quiggin, 2020). With the considerable profits received by coal companies and the government, there should be ample funding to support people and communities affected by the transition.

There is an urgent need to strengthen and enforce environmental regulations related to coal mining and power generation. The Australian government should establish robust regulatory frameworks that limit emissions, protect water resources, and safeguard biodiversity (TAI, 2020). This includes implementing stricter emission standards, monitoring and enforcing compliance with pollution control measures, and incorporating Indigenous perspectives and traditional knowledge in decision-making processes (TAI, 2020). Ensuring transparency and accountability in the regulatory process is crucial to prevent undue influence from the coal industry and hold polluters accountable for environmental damages (TAI, 2020). These regulations should be paired with legal consequences for failing to uphold the outlined obligations, particularly to promote accountability for major companies and the government. This is important as they have historically received little to no consequences for their contribution to environmental harms and injustice.

Recognising and addressing the specific impacts of the coal industry on Indigenous communities is also important. The Australian government should actively engage with Indigenous peoples, respecting their rights, traditional knowledge, and connection to Country. In decision-making processes related to resource extraction, Indigenous communities should have meaningful participation and consent (Mathews, 2021). This involves acknowledging and rectifying historical injustices, providing avenues for redress, and establishing mechanisms that ensure equitable distribution of benefits arising from natural resource utilisation (Mathews, 2021). Moreover, initiatives should be undertaken to support Indigenous-led renewable energy projects, fostering economic empowerment and

environmental management within Indigenous communities (Mathews, 2021). Through these measures, the government can work towards rectifying historical injustices and promoting a more inclusive and sustainable approach to energy and resource management.

Conclusion

This case study has delved into the environmental impacts and broader social consequences of the coal industry in Australia. It has revealed the urgent need for transformative actions to address the multifaceted impacts, harms, and injustices associated with coal mining and the government's inaction. To ensure a sustainable future, the Australian government must prioritise a swift transition to renewable energy sources, ensuring a supportive transition for affected communities and workers. Strengthening and enforcing environmental regulations is paramount to hold both the government and coal industry accountable for their environmental obligations. Additionally, recognising and rectifying the specific impacts on Indigenous communities requires meaningful engagement, respect for Indigenous rights, and support for Indigenous-led initiatives. These recommendations are imperative to foster environmental stewardship, social equity, and a sustainable energy future for Australia and the world.

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