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## **UCT analysis maps coal mine jobs most at risk in SA's energy transition**

The global energy transition from fossil fuels to clean energy is putting increasing pressure on coal mining. However, a just transition requires a deep understanding of the local context and the social realities of mine closure. In a paper published in the respected international journal [Energy Research & Social Science](#), a University of Cape Town (UCT) researcher characterised South Africa's coal mine workforce and assessed the coal mines and workers most at risk of closure in South Africa.

The analysis of 47 000 coal mine workers, conducted by [Dr Megan Cole](#) of UCT's [Future Water Institute](#), drew on all 33 publicly available Social and Labour Plans (SLPs), spatial tax data and mine technical data. The innovative use of data on mine workers from the SLPs ensures that the data is relatively recent and can be assessed from a spatial perspective providing new insights into the vulnerability of contract workers while also supporting the overall coal worker risk assessment.

The analysis showed that the workforce is predominantly black African (81%) and 82% are men. Importantly, 43% are contract workers with little protection, fewer benefits and lower education levels. "Over half of workers are unskilled or semi-skilled, making re-employment much harder. Coal mine jobs pay 55% more than local averages, so job losses ripple across entire local economies," said Dr Cole.

Four municipalities in Mpumalanga – Victor Khanye, Emalahleni, Steve Tshwete and Msukaligwa – face highly concentrated transition risks. Cole said strategic and targeted interventions are needed in such areas to address the specific vulnerabilities of the workers and ensure a just transition.

"South Africa is the world's seventh biggest coal producer and the country most dependent on coal for electricity. Coal mining and power generation employs about 100 000 workers, while over 2.5 million people live in diverse coal mining communities. Coal mining is a cornerstone of the economy and the transition towards clean energy needs to be informed by a comprehensive understanding of both the coal workers and their communities," she said.

According to Cole, the national just transition narrative often overlooks important local-level details, such as the expected years until closure (the life of a mine) of different mines, or the nature of the affected communities, which are predominantly small towns.

“Each mine is different, mining thermal coal and/or metallurgical coal, employing predominantly permanent workers or contractors, and with varying coal reserves that may or may not extend the life of mine. The energy transition is a transition – it will take place over the next few decades in different places and have varying social and economic impact,” she said.

Although 15 coal mines are expected to close by 2030 and a further 23 mines are expected to close by 2040, Cole said there is time to plan for closure and economic diversification. Many mining companies already provide skills training and forums for discussions on mine closure. Collectively, the 33 mine SLPs budgeted R4.7 billion over five years for human resource development (48%), local economic development (18%), housing (2%), enterprise and supplier development (2%), and mine downscaling and retrenchments (30%).

“Even though SLP implementation is not guaranteed, with challenges around procurement, capacity of sub-contractors and stakeholder engagement, they are an established framework that can be used as catalysts for the just transition,” she said.

Cole added: “It is hoped that the analysis will promote deeper discussions on the just energy transition amongst a diverse group of stakeholders, empower communities to prepare for closure, and support evidence-based decision-making. It comes at an important time, as the country moves from strategy development to implementation. This analysis helps identify where and for whom the risks of transition are highest, offering useful insights for policymakers aiming to target support for a just transition in South Africa.”

[Access the paper.](#)

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***Issued by: UCT Communication and Marketing Department***

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