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ISER Impact Story

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Where to next? Charting Australia's journey away from coal-fired power stations.

The transition of Australia's electricity industry from coal-fired power stations to renewable energy technologies is well underway – but not everyone supports the current pace of change.

The transition, by necessity, involves the closure of power stations, fundamental changes to the workforce, and alterations to our electricity infrastructure. Such grand changes, which take significant time and resources to complete, require acceptance by the policymakers and the community, or a “social licence”, to move ahead with ease.

One case example of the necessity for a social licence for this transition involves AGL's commitment to “getting out of coal” by 2050, and its decision to close the Liddell Power Station in New South Wales as a step towards this. AGL is Australia's largest energy producer and distributor, and previously owned three large coal plants that provided approximately 85% of Australia's energy.

The decision was made based on both environmental and economic factors, with AGL's previous chief economist Associate Professor Tim Nelson stating,

“I had run the numbers, and I knew the decision made economic and environmental sense. Australia's energy market is changing, because of climate change pressures, changing technology costs, and reductions and shifts in electricity demand. Coal is less viable as a new investment option.”

But AGL's decision to close the Liddell Power Station instigated a debate, involving both consumers and government actors, and the transition was significantly impeded as a result.

“AGL faced intense pressure to either keep the plant running, or sell it to someone who would,” said Nelson.





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Nevertheless, AGL closed the Liddell Power Station in April 2023, and Associate Professor Tim Nelson (who left AGL in 2018) has worked with Dr Tracey Dodd at the University of Adelaide to examine this case as an important lesson in industry transition that can inform future policy decisions.

Dr Tracey Dodd is a corporate governance and sustainability academic at the University of Adelaide Business School and is a member of the University's Institute for Sustainability, Energy, and Resources (ISER).

Her expertise spans renewable energy, social policy, and sustainability, and she has extensive experience as an industry and government consultant in this field. Her research seeks to assist policymakers and industry to chart Australia's journey away from coal-fired power stations. Through interdisciplinary partnerships across Australia and overseas her research explores the myriad of regulatory and social factors that will contribute to a smooth transition to renewable energy technologies.

This Liddell case research (refer to 'The AGL Case Study') assisted in illustrating that recent changes in market dynamics and conditions have changed the most appropriate response of Australian firms to renewable energy issues, and highlights that new approaches to renewable energy are desperately needed.

The analysis also provides energy companies and policymakers with essential guidance on the social issues that underpin the transition to renewable energy.

This partnership between energy companies and researchers like Dr Tracey Dodd and Associate Professor Nelson illustrate how high-quality research can inform positive social change and enable industries to move in the best direction – not only for the environment, but also for their employees and shareholders, and the Australian consumers who rely on their services.

The AGL Case Study

In 2019, Dr Dodd and Associate Professor Nelson published a comprehensive analysis of the Liddell case.

"We examined two scenarios to demonstrate why AGL's decision may have generated such significant stakeholder reactions," Dr Dodd explains.

"The first scenario is based upon current technology and market assumptions, while the second scenario is based upon technology and market assumptions from a decade ago. Our modelling demonstrated that it was more economic for the firm to replace ageing coal-fired power stations with variable renewable sources of energy, supported by firming generation technologies."

"We also show that stakeholder pressure to keep the power station operating beyond its scheduled 2022 closing date was consistent with 2007 assumptions, which omit climate change considerations."

This means that much of the debate surrounding the closure of the Liddell power station was actually based on outdated market assumptions, and that the social perceptions of the situation could be affected by increased education surrounding the way the market and environment has changed over the last decades.