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Towards enabling mitigation of climate change through green technology investment and innovation: an empirical investigation into the Australian offshore oil and gas industry

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As business managers scramble to compete in the global economy, they must do so within societal constraints characterised by ever-increasing environmental accountability. This accountability includes heightened public scrutiny of both the firm's environmental performance and its strategies to invest in green technology and innovation. Over the past decade, the concept of green investment has expanded to include the simultaneous consideration of economic growth, environmental protection, and social equity in business planning and investment decision-making. Green investment has a role to play in promoting the compatibility of a firm's good environmental and financial performance, thereby encouraging greater corporate environmental transparency and contributing to changing investment behaviour.

This study examines the influence of a firm's regulatory environment on business managers' decisions to invest in green technology and innovation in a risk-averse, experimental setting. While arguments exist that regulatory factors can influence business managers to adopt environmentally friendly production and processes that require investment in low-carbon technologies, no empirical study has been presented to examine the interrelationships to do so. From a sample of 95 managers employed in the Australian offshore oil and gas industry, we show that regulatory environment has a significant influence on managers' decisions to make investments in a firm's pollution prevention strategies. In particular, the findings revealed that regulatory environment has a significant influence on business managers' decisions to make investments in the use and development of low-carbon technologies that can enable the mitigation of climate change. The experimental case material included a between-subjects manipulation to examine the relative influence of mandatory versus voluntary regulatory environments on managers' intention to undertake investments in low-carbon technologies. As expected, in all circumstances, the managers were more willing to undertake investment in low-carbon technologies in a voluntary industry self-regulatory environment rather than in a mandatory government regulatory environment. This is consistent with the findings of previous studies, which have suggested that regulatory pressures caused significant variability in a firm's pollution prevention strategies that were adopted by business managers. The findings of this study will be important to regulators and government policy-makers, business, industry organisations and policy analysts because it provides useful empirical evidence of the relative efficacy of mandatory government regulation and voluntary industry self-regulation in influencing a firm's climate change mitigation and pollution prevention strategies.