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**Nuclear Power in New Zealand:
A Question of Economics?**

A thesis presented in partial fulfilment of the requirements for the
degree of

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Abstract

The purpose of this research is to investigate whether there is sufficient economic justification of the omission of nuclear energy from the policy sphere in New Zealand. Technologically speaking nuclear is a reliable and clean source of electricity, but concerns surround its safety and cost competitiveness.

In order to reach a relevant conclusion, a range of literature, scientific reports, cost data, and other various institutional publications have been evaluated. Consideration is also made of the political treatment of nuclear technology, with the understanding that nuclear power needs to gain acceptance in the eyes of the public and policymakers, not just prove economically competitive.

The findings of the research are two-fold. First, nuclear power is potentially economically competitive – when carbon cost estimations are taken into account. In the absence of any adjustments for emissions, the outcome is less clear. Nevertheless, this is promising in the case of New Zealand, which has a carbon trading scheme and a strong focus on emissions costs in its energy outlook. Secondly, the safety risks of a modern nuclear energy are not nearly as drastic as public perception may hold. The oft-quoted examples of Chernobyl and Three Mile Island are – in the case of a modern reactor design – irrelevant and encouraging, respectively. However, the findings also point to on-going challenges facing nuclear energy, particularly that of long-term waste disposal.

The author asserts that, on balance, there is no justification for simply dismissing nuclear as an energy option. Further research and an integration of the technology into the evaluation of possible future electric generation mixes would be desirable, in order to reach a definitive conclusion about the possible role of nuclear generation in the NZ energy sector.

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