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Understanding Non-Adoption of Residential Solar PV: The Role of Information, Uncertainty, and Housing Tenure in Aotearoa New Zealand

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Extended Abstract

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Abstract Summary

Despite declining costs, improving financial returns, and compatibility with policy goals, residential solar photovoltaic (PV) adoption in Aotearoa New Zealand remains comparatively low. This presents a persistent puzzle in energy economics: why do households fail to adopt technologies that appear privately beneficial? Traditional explanations focus on financial barriers or market failures, yet growing evidence suggests that behavioural and structural factors play an equally important role, almost as if not everyone approaches the solar decision with a spreadsheet.

This paper examines preferences for policy and the determinants of non-adoption using a nationally distributed survey that combines two empirical approaches: an information experiment for homeowners and a discrete choice experiment for renters. The information experiment tests how different presentations of financial outcomes and uncertainty affect willingness to adopt solar PV, while the choice experiment evaluates preferences for alternative solar access models among renters. By integrating these methods, the study captures both behavioural responses to information and structural constraints related to housing tenure and household composition. While much of the literature focuses on adopters, this study shifts attention to non-adopters to better understand the persistence of low uptake. This perspective is particularly relevant in the New Zealand context, where policy support for distributed energy remains limited in scope and scale.

The paper contributes to three strands of literature. First, it extends behavioural energy economics by examining how uncertainty and information framing influence adoption preferences. Second, it contributes to the literature on inclusive energy transitions by explicitly incorporating renters into the analysis. Third, it provides policy-relevant insights for countries where improving economic fundamentals alone has not translated into widespread adoption.

Presenting Author Biography

Dr Yvonne Matthews is an economist specialising in applied energy and environmental economics, with a focus on issues relevant to New Zealand policy. Her work combines econometric modelling, choice experiments, and policy cost-benefit analysis to examine how behavioural and structural factors shape responses to energy and environmental policies. She has contributed to national policy modelling, including New Zealand's Emissions Reduction Plan, and has published on a range of environmental issues spanning water, land, and energy systems. She is currently a Marsden Fund grant recipient, researching the behavioural economics of residential solar and complementary technologies.