

Value Proposition of Low Carbon Housing

PROJECT FACTSHEET



KEY POINTS

- **Low carbon housing provides a wide range of costs and benefits**
- **The study shows that low carbon housing provides economic benefits to owner-occupier households**
- **The study shows that low carbon housing policy provides economic benefits to the wider community**

CRC for Low Carbon Living

We are a national research and innovation hub supported by the Commonwealth Government's Cooperative Research Centres programme that seeks to enable a globally competitive low carbon built environment sector.

With a focus on collaborative innovation, we bring together practitioners from industry and government with leading Australian researchers to develop new social, technological and policy tools for facilitating the development of low carbon products and services to reduce greenhouse gas emissions in the built environment. For more information visit www.lowcarbonlivingcrc.com.au/

THE OPPORTUNITY / CHALLENGE

Housing design specifically for low carbon living provides both public and private benefits and costs as compared to housing that is designed to meet minimum regulatory standards. The understanding and quantification of these benefits and costs are important in providing the evidence base on which to determine future minimum house energy standards.



OUR RESEARCH

The value proposition for low carbon living is defined as the measurable value an organisation or individual will receive from the experience; where the end value equates to the perceived benefits minus perceived costs. This means that the value of low carbon living is unique to the perspective of the investor, and the set of benefits and costs included in the economic equation are related only to those likely to be perceived by the investor.

The research was divided into three components:

- Conduct a literature review to establish the global understanding of the range of private and public benefits and costs associated with low carbon living.
- Draw on data from the Lochiel Park Green Village to determine the value proposition from the perspective of an owner occupier household of a home specifically designed for low carbon living.
- Draw on data from the Lochiel Park Green Village to determine the value proposition from the perspective of the Government responsible for the policy requiring homes to be specifically designed for low carbon living.

OUTCOMES

This research finds that the value proposition of low carbon living is overwhelmingly positive to owner occupier households with a conservative NPV of \$24,935 if the home was built in Year 1 of a policy change to net zero energy housing, and with larger net benefits received for homes constructed in subsequent years. The empirical evidence describing the experience of householder investors demonstrates that low carbon living provides many benefits including lower energy bills, increased levels of thermal comfort, improved health and wellbeing, intrinsic values associated with taking climate change action, and benefits from increased social capital.

From the perspective of the policy maker, in this case the Government of South Australia, the research finds that the value proposition of low carbon living is overwhelmingly positive with a conservative NPV of \$1.31 billion for a 10 year policy action, and a benefit/cost ratio of 2.42. The empirical evidence demonstrates that low carbon living will provide many benefits including improved energy efficiency, energy network infrastructure savings, improved human health and wellbeing, carbon emission reductions, and benefits from increased social capital. The benefits far outweigh the costs associated with creating low carbon housing.

USERS OF THE RESEARCH RESULTS

The results of this research will provide some of the evidence from which to consider improvements to the minimum house energy standards required in the National Construction Code. The results will be useful to private and public investors in new housing.

LESSONS

Many of the health and wellbeing impacts of low carbon living are real and perceived by the investor but difficult to monetise with sufficient certainty to be included in the economic equations. Therefore the economic results published for this research should be regarded as a conservative estimate of the benefits and well below the real benefits experienced by the investor.

NEXT STEPS

The next stage of this research is to determine the value proposition of medium density low carbon housing. This research is being conducted by HDR student Catherine Kain under the supervision of Dr Kathryn Davidson and Dr Stephen Berry.

PROJECTTEAM

Dr Stephen Berry, UniSA, Primary Project Researcher

Dr Kathryn Davidson, UniSA, Project Supervisor

Industry partners: Renewal SA, the South Australian Government's land development agency

PROJECTREPORT(S)

The research outputs include three Reports:

[Berry S., Davidson K. \(2015\) 'Value Proposition: Literature Review', Report to the CRC for Low Carbon Living, Sydney, Australia](#)

[Berry S., Davidson K. \(2016\) 'Value Proposition: Householder Experience', Report to the CRC for Low Carbon Living, Sydney, Australia](#)

[Berry S., Davidson K. \(2016\) 'Value Proposition: Low Carbon Housing Policy', Report to the CRC for Low Carbon Living, Sydney, Australia](#)

FURTHERINFORMATION

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