



Final Report

The environmental sustainability of Australia's private rental housing stock

authored by

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ACRONYMS

ABS	Australian Bureau of Statistics
AHURI	Australian Housing and Urban Research Institute
ANAO	Australian National Audit Office
ARIA	Accessibility/Remoteness Index of Australia
BCA	Building Code of Australia
CDD	Cooling degree days
CPRS	Carbon Pollution Reduction Scheme
DEWHA	Department of Environment, Water, Heritage and the Arts
DPAC	Department of Premier and Cabinet
EEHP	Energy Efficient Homes Package
FaCHSIA	Families, Community Services, Housing and Indigenous Affairs
FG	Focus group
GAER	Glenorchy Greenhouse Action Energy Rebate
GCCR	Garnaut Climate Change Review
HDD	Heating degree days
HES	Household Expenditure Survey
HILDA	Household, Income and Labour Dynamics in Australia Survey
HIP	Federal Government's Home Insulation Program
LEAPR	Low Emission Assistance Plan for Renters
LHS	Left Hand Side
MIAESR	Melbourne Institute of Applied Economic and Social Research
NFEE	National Framework for Energy Efficiency
NGO	Non-government organisation
OLS	Ordinary least squares
RECS	Renewable Energy Certificates
RHS	Right Hand Side
SEIFA	Socio-economic Indexes for Areas
SLT	Sustainable Living Tasmania
TCCO	Tasmanian Climate Change Office
VCOSS	Victorian Council of Social Service
VEET	Victorian Energy Efficiency Target

EXECUTIVE SUMMARY

This project contributes to present debates about the sustainability of Australian cities by focusing attention on the opportunities for and barriers to improving the environmental sustainability of Australia's private rental housing stock. The Australian Government, in partnership with state and territory and local governments, is currently committed to delivering a 60 per cent cut in carbon emissions from 1990 levels by 2050. At the household level, this has translated into a commitment to improving the energy efficiency of residential housing stock and to assisting residential households to reduce their resource consumption (DEWHA 2008). While early research and policy initiatives in Australia have been directed towards the construction industry and new homes, less attention has been granted to the existing dwelling stock, including private rental housing. In contrast, private rental housing has been the focus of policy and research attention in the United Kingdom and Europe, and to a lesser extent Canada and the US (See positioning paper www.ahuri.edu.au/publications/download/40560_pp, pp.10–15). This research project addresses this gap.

Improvements in the environmental sustainability of Australia's private rental housing offers advantages for the community in terms of achieving substantial reductions in emissions from Australia's residential sector, as well as potential long-term economic benefits for landlords and improved health and well-being of tenants. However, improving the environmental sustainability of private rental housing poses unique policy challenges. Of central concern is the 'principal-agent' or 'split incentive' problem. While the landlord (or the principal) is generally responsible for purchasing the energy-using facilities in the home, the tenant (or the agent) is generally responsible for the payment of recurrent energy bills (GCCR 2008, p.456). This situation potentially discourages landlords from investing in the infrastructure required in order to protect private rental tenants, particularly low-income tenants, from rising energy and water costs. The role of the 'split incentive' and other potential barriers, such as cost and lack of information, in constraining property adaptation is examined through quantitative modelling work and consultation with stakeholders and private rental investors.

A summary of the five research questions and the major findings is provided in Table 1 below.

Table 1: Summary of project findings

<i>Research question</i>	<i>Major findings</i>
1. How does the current policy and legislative framework operate to facilitate or discourage investment in environmentally sustainable private rental housing stock?	There are substantial barriers to advancing the environmental sustainability of private rental stock and limited incentives and programs in place (relative to UK).
2. What is the impact of the carbon emission trading scheme (i.e. higher energy prices) on private rental tenants' energy bills, particularly <i>low-income</i> tenants?	<p>Low-income households are vulnerable to higher energy costs and CPRS would have a regressive impact on households.</p> <p>Private renters have lower energy use than owner occupiers, but they must put aside a similar percentage of disposable income in order to meet higher energy bills under CPRS.</p>
3. Does market failure due to principal-agent problems contribute to higher energy bills for private rental tenants and leave them more vulnerable to the adverse consequences of increased energy prices than other housing consumers?	There is no evidence to support the assumption that private renters face higher energy bills than home owners due to split incentive problems. Might speculate that Australia is well-placed to encourage change in private rental sector due to high churn in rental properties, lack of controls on rent allowing landlords to capture premium rents for upgraded properties, and generous taxation incentives that encourage investment in dwellings. There are critical gaps in data which need to be addressed.
4. What are the potential impacts of policy measures designed to improve the environmental performance of private rental housing stock on private rental tenants, particularly <i>low-income</i> tenants?	<p>Institutional and legislative frameworks at the federal and state level play a significant role in facilitating capacity building across the not-for-profit community and private property sectors.</p> <p>A range of programs is required to reach self-managed rentals, agent-managed rentals, and low-income private rental households.</p> <p>Programs that are focused either exclusively on private rental sector or underpinned by targeted information campaign are required, otherwise risk of households self-selecting out.</p> <p>Policy horizon: expansion of programs and establishment of long-term frameworks; ongoing role for intermediaries; and coordination of information, agencies and programs. In addition, development of a disclosure scheme, with the potential to underpin this with the introduction of a green minimum standard.</p>
5. What are the attitudes of private rental housing investors towards measures to improve the environmental sustainability of their housing investment (price/other motivations)?	<p>Investors are generally supportive of measures to improve environmental sustainability.</p> <p>Investors are receptive to policy measures in this area if information is clear, costs are minimal, and administration is not onerous.</p> <p>Programs must overcome major barriers, primarily cost.</p> <p>Investors are motivated by a mix of drivers, altruistic and self-interest.</p> <p>More consultation is required on mandatory disclosure, with assistance available to help investors adjust.</p> <p>Investors want more information on the market for sustainable rental housing, particularly in low cost areas.</p>

The project has generated an array of findings; some of which clarify key issues surrounding sustainable home improvement in the private rental sector, and some of which beg further research questions.

The quantitative modelling work demonstrated that low-income private rental households are vulnerable to rising energy costs. While private renters have lower energy use than owner occupiers, they must put aside a similar percentage of their disposable income in order to meet higher energy bills under the CPRS. Related to this issue, is the question of whether private renter households are able to adapt to higher energy prices by exercising choice in the marketplace by opting for more sustainable properties, as well as the extent to which the private dwelling in which they live is likely to undergo energy and water saving improvements. The available quantitative data does not support the hypothesis that there is a 'split incentive' in place that results in private rental households paying higher bills than owner occupiers; indeed owner-occupiers pay more for energy, even when a range of assumed explanatory variables such as gross household income, household size and dwelling type are held constant.

In contrast, consultation with private rental investors revealed that even among a group of investors who were relatively supportive of environmental measures, the major barriers to adopting energy and water saving measures were viewed as cost and a lack of financial incentive to act. Investors raised the issue of the split incentive, particularly in relation to large cost items such as solar panels and hot water systems. In addition, they did not envisage that they would be able to recoup costs through higher rental yields. Further, investors noted that record low vacancy rates meant that they had little incentive to upgrade properties to attract tenants.

These results are puzzling and they emphasise the need for more adequate quantitative data on household energy and water consumption and the condition of Australia's housing stock, including information about key infrastructure items such as space heating and cooling systems and installation of solar technologies. Interestingly, the quantitative modelling work and qualitative consultation with stakeholders and investors suggests that barriers to advancing Australia's private rental stock might not be as insurmountable as first presumed. Indeed, there are aspects of Australia's private rental market that suggest some flexibility and capacity for sustainable home improvement. In particular, there are established incentives available through the taxation system to encourage investment in dwellings. In general, these were not seen by investors as sufficiently generous for them to act, but they did see some scope for the acceleration of depreciation schedules and the introduction of complementary rebates and measures such as land tax relief. The high churn of properties in and out of the private rental market also acted as a driver for sustainable home improvements among the investors consulted. This characteristic of the Australian market can not in itself deliver comprehensive change across the sector, but it raises the prospect of sustainable properties entering the property market at the higher end. Moreover, the profile of private rental investors is important. There are many investors who had not anticipated owning rental properties, but who have entered the market in order to support themselves in retirement. These investors are dependent on the income generated by their rental properties, but they also hold a range of views and values in relation to environmental and social issues.

Our program review, as well as our consultation with stakeholders and investors, emphasises that different segments of the private rental market require different policy settings and interventions in order to overcome major barriers, create well-targeted incentives, and tap into existing motivations and drivers among investors.

Low-income private rental housing

Program coordinators of sustainable retrofit programs have encountered significant problems with recruitment of low-income private rental households. They found that there is a tendency by these households to self-select out of these programs even when adequate information is made available. Tenants were hesitant to initiate contact with their property manager or landlord as they did not want to be viewed as a 'troublemaker' and they did not want to risk a potential rent increase or eviction. Notably, comprehensive audits and retrofits have occurred where there have been dedicated house managers that can provide: extensive liaison and negotiation between tenant, landlord and property manager: support in completing government applications for rebates and special assistance: and tailored advice and assistance with installation. Coordinators observed that recruitment can be aided by clear communication of the project objectives and by identifying benefits to potential participants, that is, participation can improve tenant comfort and reduce energy bills, with an added benefit for the environment in reducing energy and water use.

These programs are clearly resource intensive. While recruitment is most effective when coordinated and managed by local organisations, the experience in Victoria highlights advantages in providing adequate institutional support and ensuring that comprehensive rebates and incentives are in place. The Energy and Water Taskforce is an example of an effective collaborative model between state government and non-government organisations (NGOs). Reforms within the energy sector and support for an emerging 'green skills' industry enables local programs to develop longer term planning and move towards a business model. A similar collaborative model has been proposed at a federal level: the Green Start program. This initiative, coupled with state programs, could shift the current piecemeal approach to delivering sustainable retrofits in the lower end of the housing market, and deliver substantial improvements in home comfort and energy and water savings across the sector.

In addition, well-supported retrofit programs could be supplemented by a range of initiatives. There is scope for: greater support and engagement with property managers; education campaigns that target landlords who hold property in low cost suburbs; and the provision of more generous rebates and tax concessions for landlords who invest in affordable housing or who have a low-income tenant in place. There is also scope for stronger government regulatory settings, in particular the introduction of mandatory disclosure and a green minimum standard to overcome barriers to adaptation at the lower end of the housing market.

Managed private rental housing

Throughout the project, investors and stakeholders raised the prospect of private property managers taking a more active role in facilitating the uptake of energy and water saving measures. It was suggested that these managers have extensive experience with dealing with landlords and tenants and they are able to reach a large number of landlords with minimal cost and effort. Stakeholders within the property sector held mixed views. There was agreement that property managers could be supported through further professional education and training in the area of environmental sustainability. However, stakeholders also suggested that managers are operating at capacity and they do not see themselves as specialists in this area. The Goes Green model demonstrated what could be achieved within the industry. The agency had overseen significant water savings across their rental properties with only a small extension to their existing operation.

An increasing role for property managers could be accelerated through stronger government regulatory settings such as mandatory disclosure. By compelling landlords to undertake energy and water assessments, this could encourage investors to seek out property managers who have built a reputation in the area of sustainable property management (i.e. services might include conducting energy and water audits or arranging for energy and water efficiency upgrades) and in turn facilitate the expansion of sustainable property management services across the sector.

Self-managed private rental housing

The policy options available to support tenants, who reside in self-managed rental properties, and their landlords are more limited. These investors are the hardest to reach in terms of the delivery of information. When consulted, they emphasised that they were receptive to information campaigns, including receiving brochures about minor measures they could undertake. These could potentially be delivered with council rates notices. They also saw value in the establishment of a landlord association that could disseminate information and represent their views in regards to new policy measures such as mandatory disclosure.

These investors were looking for government support through rebates and tax measures. They were fearful of onerous administrative and bureaucratic requirements as they operate with minimal resources and time. They wanted some support in navigating complex and shifting policy settings. While they did not anticipate a dedicated property manager, a centralised telephone service that was not specific to a particular program, but provided advice across various sectors was viewed as desirable. They also wanted an independent body that could advise on emerging sustainable technologies. This needed to go further than generic advice to providing comparative information on product performance including product testing.

Finally, the project has revealed gaps in existing housing literature and research. Research on the operation of split incentives in the Australian housing market is hampered by the absence of comprehensive databases with adequate energy consumption measures—either expenditure or volume. In addition, there is a lack of information on infrastructure such as the types of heating and cooling systems.

Other issues raised through the project that require further investigation, include the specific issues surrounding sustainable home improvements in strata-titled, multi-unit developments. In addition, there is scope for additional monitoring of the quality of environmental house assessments and the impact of retrofit programs on households. Households are currently able to tap into environmental assessments through the Federal Government green loans, through retrofit programs offered to low-income households, and potentially through the property management agencies, as well as accredited assessors in response to mandatory disclosure requirements. There is a need for greater coordination and information sharing across discrete programs in order to maximise individual and broader social and environmental outcomes.

1 INTRODUCTION

This Final Report is the concluding output of a research project examining the environmental sustainability of private rental housing. The Final Report documents the key findings relating to Research Questions 3, 4 and 5. It also provides a summary of the results of Research Questions 1 and 2, which have been documented in an earlier Positioning Paper (see Gabriel et al. 2010) and a supplementary Modelling Report (see Wood et al. 2010). The concluding chapter is a synthesis of the project results. The Positioning Paper and Modelling Report can be found at the AHURI website: www.ahuri.edu.au.

This Final Report has been structured as follows: the remainder of this introductory chapter lays out a brief overview of the study, including the main ideas behind the research, the central research questions, and other considerations involved in conceptualising the study.

Chapter 2 outlines the findings from economic modelling work, which aims to measure the significance of split incentive issues for tenants' energy bills (RQ3).

Chapter 3 analyses current policy and community initiatives to improve the environmental sustainability of private rental housing in Victoria and Tasmania (RQ4).

Chapter 4 reports on the views of 52 private rental investors in Victoria and Tasmania (RQ5).

Chapter 5 provides a summary and synthesis of the key findings of each of the research questions from RQ1 to RQ5. It responds to the overarching research question: What are the barriers to and opportunities for advancing the environmental sustainability of Australia's private rental housing stock?

1.1 Research and policy significance

This project contributes to present debates about the sustainability of Australian cities by focusing attention on the opportunities for and barriers to improving the environmental sustainability of Australia's private rental housing stock. While early research and policy initiatives in Australia have been directed towards the construction industry and new homes, less attention has been granted to the existing dwelling stock, including private rental housing. In contrast, private rental housing has been the focus of policy and research attention in the United Kingdom and Europe, where energy performance certification has been introduced in the residential sector (See positioning paper www.ahuri.edu.au/publications/download/40560_pp, pp.11–12).

The Australian Government, in partnership with state and territory and local governments, is currently committed to delivering a 60 per cent cut in carbon emissions from 1990 levels by 2050. The Australian Government has also agreed to make progress towards this goal by committing to up to a 15 per cent cut in carbon emissions by 2020 on the proviso that other advanced economies take on comparable reductions. Housing activity in Australia plays a central role in achieving such goals. Recently, the United Nation's Sustainable Buildings and Construction Initiative estimated that 'the building sector contributes to about a third of all energy-related CO₂ emissions worldwide' (Koeppel & Urge-Vorsatz 2007, p.3). While the residential sector is dominated by owner-occupation with present levels of home ownership at around 70 per cent in 2005–06, 22 per cent of households in private rental housing and a further five per cent in public rental housing (ABS 2008), increased problems of housing affordability combined with a decline in public rental housing stock has

facilitated greater reliance on private rental housing for long term occupancy rather than a transitional tenure, particularly among low-income households (Seelig et al. 2006; Beer 1999; Wulff & Maher 1998). Moreover, in contrast to home owners, private rental households are more likely to be experiencing poverty and housing stress. Higher concentrations of low-income households within the private rental sector and existing problems of housing affordability place financial restrictions on the capacity of these households to adapt to increased energy and water prices.

Improvements in the environmental sustainability of Australia's private rental housing offers advantages for the community in terms of achieving substantial reductions in emissions from Australia's residential sector, as well as potential long-term economic benefits for landlords and improved health and well-being of tenants. The benefits for landlords are potentially higher rental charges, increased occupancy rates and stronger reputations. The benefits for tenants are a more comfortable living environment, with improved health and wellbeing and lower energy bills. However, improving the environmental sustainability of private rental housing poses unique policy challenges. Of central concern is the 'principal-agent' or 'split incentive' problem. While the landlord (or the principal) is generally responsible for purchasing the energy-using facilities in the home, the tenant (or the agent) is generally responsible for the payment of recurrent energy bills (GCCR 2008, p.456). This situation potentially discourages landlords from investing in the infrastructure required in order to protect private rental tenants, particularly low-income tenants, from rising energy and water costs.

The project provides policy-makers with insight into strategies that can encourage providers and consumers of rental housing to adopt more energy efficient practices, while ensuring that such policies do not exacerbate existing socio-spatial inequalities in Australian cities.

1.2 Research themes and questions

The central research question guiding this project is: what are the potential opportunities for and barriers to improving the environmental sustainability of Australia's private rental housing stock? There are five specific research questions:

1. How does the current policy and legislative framework operate to facilitate or discourage investment in environmentally sustainable private rental housing stock?
2. What is the impact of the carbon emission trading scheme (i.e. higher energy prices) on private rental tenants' energy bills, particularly for low-income tenants?
3. Does market failure due to principal-agent problems contribute to higher energy bills for private rental tenants and leave them more vulnerable to the adverse consequences of increased energy prices than other housing consumers?
4. What are the potential impacts of policy measures designed to improve the environmental performance of private rental housing stock on private rental tenants, particularly low-income tenants?
5. What are the attitudes of private rental housing investors towards measures to improve the environmental sustainability of their housing investment? (price/other motivations)?

1.3 Research design

The team used a range of primary qualitative and secondary quantitative data to examine the three research questions documented in this report. The key approaches in this report include:

- Hedonic modelling work that relates energy expenditure to personal and housing characteristics in order to examine the impact of the 'split incentive' in the Australian housing market.
- A review of sustainable private rental programs in Victoria and Tasmania, including consultation with 29 stakeholders, in order to identify the impacts of current policy measures and to identify the scope for further policy development.
- Group and individual interviews with 52 private rental investors in Victoria and Tasmania.

Further detail on each of these research methods is available in the relevant chapters.

1.4 Summary of early project findings

In this section, we provide a summary of the early project findings. These findings appear in two earlier reports: the project positioning paper (Gabriel et al. 2010) and 'Modelling the impact of the Carbon Pollution Reduction Scheme in Energy Bills' (Wood et al. 2010). They are repeated here as they inform the research undertaken in this Final Report and contribute to the overarching project conclusions presented in Chapter 5.

In the project positioning paper, the team responded to RQ1: how does the current policy and legislative framework operate to facilitate or discourage investment in environmentally sustainable private rental housing stock?

Based on an initial literature and policy review, Gabriel et al. (2010) identified a range of barriers to advancing the environmental sustainability of Australia's private rental sector. Major barriers included: the 'principal-agent' or the 'split incentive' problem; the lack of institutional investors in the market: the opportunity for landlords to quit housing stock, thereby undermining the effectiveness of compulsory measures; the lack of mandatory basic housing standards in state and territory residential tenancy legislation; and ongoing problems of housing affordability, which provides little incentive for landlords to act or tenants to risk security of tenure. We also identified policy approaches and programs in operation in the UK that had been successful in facilitating energy saving measures in low-income private rental households, and that, in comparison, the scope of programs available in Australia are limited.

In an earlier modelling report, Wood, Ong and Seymour (2010) responded to RQ2: what is the impact of the carbon emission trading scheme (i.e. higher energy prices) on private rental tenants' energy bills, particularly for low-income tenants?

Based on 2006 HILDA survey data, Wood et al. (2010) modelled the impact of the CPRS on household energy bills. They found that low-income households are vulnerable to higher energy costs and that the proposed CPRS would have a regressive impact on households. They found that although private renters have lower energy use than owner occupiers, they must put aside a similar percentage of disposable income in order to meet higher energy bills under the proposed CPRS. This can be explained in part by the observation that private renters have significantly lower disposable incomes and that they are more likely to live in flats and apartments which, in turn, are more reliant on carbon intensive electricity.

2 HOUSING TENURE AND ENERGY CONSUMPTION: THE PRINCIPAL-AGENT OR SPLIT-INCENTIVE ISSUE

2.1 Introduction

In this chapter, we report on the findings from an empirical inquiry that aims to measure the significance of split incentive issues for tenants' energy bills. Here we respond to RQ3:

- Does market failure due to principal-agent problems contribute to higher energy bills for private rental tenants and leave them more vulnerable to the adverse consequences of increased energy prices than other housing consumers?

The Garnaut draft report (GCCR 2008, p.476) draws on economic analysis of market failure to point out that this is an example of the more general principal-agent phenomenon. An asset is owned by one party, the principal, but used by another party, the agent. If the objectives of principal and agent differ, and it is costly for each party to monitor and police observance of contractual terms, the asset's net income stream may be sub-optimal as principal and agent lack the incentives to use and invest in the asset so that returns are maximised. In the present context the principal is the landlord; while the landlord is responsible for purchasing the energy-using facilities in the home, the tenant is generally responsible for the payment of recurrent energy bills (GCCR, 2008, p.456). Since the landlord does not reap the immediate benefits of investment in alternative energy saving equipment, the financial incentive motivating such investment is weaker than it is for homeowners. On the other hand, tenants do not have the right to adapt their homes without landlord acquiescence, and any gains in asset value that accrue from energy efficient investments are captured by the landlord. This issue has become popularised as the split incentive problem in the housing literature.

Our enquiry is based on the use of hedonic modelling techniques that have been widely used in the economic analysis of housing policy (Green & Malpezzi 2003). The approach treats the total expenditures on products or services as a function of product characteristics, as well as conventional variables that affect ability to pay (e.g. household income). In the present context, our aim is to uncover the strength of split incentives, by the hedonic modelling of energy consumption measures that are specified as a function of key housing characteristics, which include the tenure and landlord type of the dwelling. The size and the statistical significance of these last two variables will be used to judge whether and to what extent the tenants of private and public rental housing consume more energy as a result of the blunt incentives associated with split incentives.

There are potentially important incidental benefits from this approach. The hedonic model controls for both property characteristics and the personal characteristics of occupants. It is then possible to make inferences about the relationship between energy consumption, the 'engineering' dimensions of residential buildings and urban form, controlling for the possibly confounding influence of residents' personal characteristics.

We begin by reviewing similar studies of energy consumption. The empirical analysis is then initiated by a discussion of methods, before findings are presented and interpreted. The key conclusions, policy implications and directions for future research round off this section of the report.

2.2 Review of literature

All studies reviewed and summarised in Table 2 are overseas based; USA and Canada being the most influential source. With the exception of Rehdanz (2007), the typical data source is surveys specifically conducted for the purpose of analysing energy consumption. This has advantages as it typically means that the survey has been designed to collect information on the variables expected to drive the demand for energy. Some of the studies have also been careful to include energy price variables, though this is less common in those papers exploring the role of urban form (Holden & Norland 2005; Kahn 2000). Relative energy prices will be influential determinants of the type of space and water heating systems, and conditional on this choice, the level of energy prices should shape the amount of energy consumption. Though prices are emphasised in the papers published in economics journals, it often turns out that price elasticity estimates are low, as is expected when the focus is on short-run use.

Dubin and McFadden's seminal paper in 1984 set the benchmark for modelling approaches by taking into account the joint nature of decisions with respect to space and water heating system, and those taken with respect to power use. Nesbakken (2001), using a Norwegian Energy Survey, and Bernard et al.'s (1996) study based on Canadian data, have been strongly influenced by the Dubin and McFadden paper. Model parameters are estimated using a two-stage approach. At the first stage, the decisions regarding space and water heating systems are modelled, typically within a Multinomial Probit (MNP) framework. Then, at the second stage, the demand for energy conditional on the chosen heating system is estimated using ordinary least squares, and a correction is applied in order to eliminate the potential estimation bias from the joint nature of the decisions.

Most of the studies summarised in Table 2 include four types of 'right hand side' variables in their models:

- Personal characteristics, such as income and household size.
- Property characteristics, such as age, size, type and location, from which inferences about urban form are commonly deduced.
- Climate variables that can be expected to influence energy consumption for heating and cooling purposes.
- Energy prices.

The vector of property characteristics commonly includes a variable distinguishing between dwellings that are owner occupied or rented. In the studies conducted by Rehdanz (2007) and Bernard et al. (1996), for example, residents of owner-occupied dwellings are found to consume significantly lower energy than their tenant counterparts.

Table 2: Literature review of energy consumption studies using microdata

Study	Data	Model	Dependent variables	Explanatory variables
Ewing, R. and Fang, R. (2008). 'The impact of urban form on U.S. residential energy use', <i>Housing Policy Debate</i> ,19,1–30.	2001 US Residential Energy Consumption Survey (RECS)—3737 housing units	OLS—there were other more complex auxiliary models such as an urban temperature model where the LHS variable is urban temperature and the RHS variables are urban form and other controls using multi-level modelling specifications, but the main model of energy use was OLS.	Log of total annual delivered energy use in British thermal units (BTUs) for each of the following categories: (1) space heating (2) space cooling (3) all other uses	Log of energy price (\$ per thousand British Thermal Unit) House type House size (square feet) Year built Number of adults Number of children Ethnicity Annual heating degree-days (HDDs) for households at their places of residence Annual cooling degree-days (CDDs) for households at their places of residence
Kahn, Matthew E. 2000. 'The Environmental Impact of Suburbanization', <i>Journal of Policy Analysis and Management</i> 19(4),569–86.	1993 US Residential Energy Consumption Survey (RECS)—7040 households	OLS	Log(1+x) where x is energy consumption measured in annual thousand BTUs. Household energy consumption was estimated for each of the following categories: (1) all (2) electricity	Whether in city Log of household income Log of family size Whether in city Heating degree-days (HDD) Cooling degree-days (CDD)

<i>Study</i>	<i>Data</i>	<i>Model</i>	<i>Dependent variables</i>	<i>Explanatory variables</i>
			(3) natural gas (4) liquid propane (5) fuel oil	
Holden, E. and Norland, I.T. (2005), 'Three Challenges for the Compact City as a Sustainable Urban Form: Household Consumption of Energy and Transport in Eight Residential Areas in the Greater Oslo Region', <i>Urban Studies</i> 2005; 42, 2145–2166.	2003 survey conducted in eight residential areas in the Greater Oslo Region (between 590 to 780 households depending on dependent variable)	Regression (form not specified but adjusted R ² reported so assume that OLS is used, but that the dependent variable has not been converted into log form)	Household consumption of energy (KWH/year) in each of the following categories: (1) heating and operating the house (2) everyday travel (3) long leisure-time travel by plane (4) long leisure-time travel by car	House type House size (square metres) Age of house Whether access to garden Housing density in residential area (housing/decare) % of area developed for housing within residential area Distance from city centre (km) Distance to local sub-centre (km) Number of household members Socio-economic and demographic characteristics (age, gender, income, etc.). Whether member of environmental NGO
Rehdanz, K. (2007), 'Determinants of residential space heating expenditures in Germany', <i>Energy Economics</i> ,	German socio-economic panel survey 1998 and 2003–12634	Panel-corrected least squares model (using cluster option in STATA)	Log of monthly expenditures for space heating and hot water supply per square meter	Dwelling size (square meter) Heating system – dummies representing presence of oil,

<i>Study</i>	<i>Data</i>	<i>Model</i>	<i>Dependent variables</i>	<i>Explanatory variables</i>
29(20), 167–182.	households Most similar data to HILDA except that the 1998 and 2003 German data contains a special energy consumption module not found in HILDA		No information is available on energy consumption for space heating. However, expenditures on energy consumption are reported	gas, coal, electricity, solar, municipal heat distribution Whether modernisation in last year Building type Year built Condition of property Community size Whether home owner Whether property is a council house Household size Number of children Household net income % of household members unemployed Age Whether property has central heating Whether property has a bath or shower Whether costs for heating and hot water are included in the

<i>Study</i>	<i>Data</i>	<i>Model</i>	<i>Dependent variables</i>	<i>Explanatory variables</i>
				rent Year of survey State
Reiss, P. and White, M., (2005), 'Household electricity demand, revisited', <i>Review of Economic Studies</i> , 72, 853–883.	US Residential Energy Consumption Survey (RECS)—1300 Californian households	Non-linear censored regression model (very complex derivations)	Monthly kilowatt-hour consumption of each of the following: (1) baseline electricity use (electricity consumption of appliances that are universally owned, such as the first refrigerator and lights) (2) electric space heating (3) central air conditioning (4) room air conditioning (5) electric water heating (6) swimming pools (7) additional refrigerators & freezers (8) other appliances.	Electricity price in cents/kWh Household income Number of members Number of rooms Number of bathrooms Size of appliance in cubic feet Monthly heating degree-days (HDDs—see note below) Monthly cooling degree-days (CDDs—see note below) Rural/urban location Whether apartment Whether public housing Whether someone is normally at home during the day
Dubin, J. A., and McFadden, D.L. (1984), 'An econometric analysis of residential electric appliance holdings and consumption', <i>Econometrica</i> 52, 345–362.	1975 survey conducted by the Washington Center for Metropolitan Studies for the Federal Energy	Discrete-continuous choice models—the discrete choice refers to the choice of energy equipment, while the continuous choice refers	Discrete choice model: Either space and heat equipment both electric or both gas Continuous choice model of energy consumption: Annual electricity	Income less energy cost of chosen space-water heat choice Capital cost of chosen space-water heat choice

Study	Data	Model	Dependent variables	Explanatory variables
	Administration— 3249 households	to the energy consumption decision restricted by the discrete choice. (1) Discrete choice model—Logit model of space heat choice and water heat choice model (2) Continuous choice model—OLS electricity demand model Discrete and continuous choice modelled jointly	consumption in kilowatt-hour	Gas availability index if electric space-water heat choice chosen Marginal price of electricity if electric space-water heat choice chosen Whether homeowner Gas availability index Number of persons in household Number of rooms Marginal price of electricity (\$/KWH) Marginal price of gas (\$/KWH equivalent)
Nesbakken, R. (2001), 'Energy Consumption for Space Heating: A Discrete-Continuous Approach', <i>Scandinavian Journal of Economics</i> , 103(1), 165–184.	1990 Norwegian Energy Survey	Discrete-continuous choice models Discrete choice model— multinomial logit	(i) Electricity (electric heaters); (ii) Electricity and oil (electric heaters combined with stoves for oil/ paraffin); (iii) Electricity and wood (electric heaters combined with wood stoves); (iv) Electricity, oil and wood (electric heaters combined with stoves for oil/paraffin and stoves for wood. Discrete choice model in which	Dwelling size (square meter) HDDs Average energy price of heating system (Norwegian Krone/year) Dummy for temperature regulation Dummy for energy-saving strategies Age of household member

<i>Study</i>	<i>Data</i>	<i>Model</i>	<i>Dependent variables</i>	<i>Explanatory variables</i>
			<p>there are four choice categories:</p> <ul style="list-style-type: none"> (i) Electricity only; (ii) electricity and oil; (iii) electricity and wood; (iv) electricity, oil and wood <p>Continuous choice model of energy consumption: Annual electricity consumption in kilowatt-hour</p>	

2.3 Method

2.3.1 Data and sample design

We conduct our analysis using the 2006 Household, Income and Labour Dynamics in Australia (HILDA) Survey. There are several unique characteristics of this dataset that make it helpful for measuring the relative influence of the determinants of energy consumption, including the incentive effects associated with the dwelling's ownership arrangements. The HILDA Survey is a nationally representative dataset that contains a wide range of variables representing the demographic, socio-economic and housing characteristics of Australian households. In addition, the Survey contains information on the annual energy expenditure of households. Specifically, households are asked about their annual expenditure on electricity, gas and other heating fuel.

Retrofitting existing buildings with energy efficient amenities typically requires capital investment and may need access to credit in order to finance. The 2006 HILDA survey contains a special wealth module that allows measurement of a household's net worth and self reported difficulties in raising finance (borrowing or liquidity constraints). We expect liquidity constrained households with low net worth to live in dwellings with less energy-efficient amenities.

Our sample comprises households in private dwellings, that is, home owners, private renters, public renters and rent-free households. Group households are retained as we are interested in overall household energy consumption, that is the total energy consumption of all persons living in the same dwelling regardless of whether they are related or not. However, we exclude certain groups of households from our analysis. First, a household in non-private dwellings such as nursing homes as it is unclear whether their energy expenditures are captured in their payments for board and residence. The recorded energy expenditure of non-private dwelling residents may commonly under-report their energy consumption. Second, residents of mobile dwellings such as caravans and houseboats are also excluded; there will again be uncertainty over recorded energy expenditures. Third, there are a number of households who report annual energy expenditure of less than \$100;¹ it is likely that these households have not lived long in their dwelling, or they are renters and residents of non-private dwellings whose energy expenditures are partly captured in their rent payments. We treat these observations as outliers and exclude as it is probable that their responses do not capture their energy consumption for the full year. Finally, households that own property apart from their primary home are excluded as these households may have reported the energy expenditure on both their primary home and other properties, whereas our interest lies in energy expenditure on the former only. The 2006 HILDA Survey is particularly useful in separating out households that own other properties as information on ownership of other properties can be derived from the Survey's special wealth module. The final sample comprises 3650 households, of which 2560 are home owners and 1090 are renters. The exclusion rules result in the omission of 1503 home owner households and 786 renter households. Both units of analysis and measurement are on a household basis. When measuring personal characteristics such as age and ethnicity, we have chosen those of the eldest person in the household. The educational qualification variable used in the regression is that of the most highly qualified member in the household.

2.3.2 Variable measurement and modelling approach

Actual energy consumption is not reported in the HILDA Survey; we use a variable that represents annual household energy *expenditure*. There are three concerns with

¹ Over half are living in rented property or are living rent free, and most (66%) live in detached housing.

this variable. First, it is not measured as a panel and so cross section models must be estimated. Second, and equally if not more important, expenditure is not as precise as quantity measures of energy consumption, and so the use of controls for dwelling characteristics and location in hedonic models (see below) is relied on to address measurement error concerns². Third, HILDA elicits actual expenditures that will be net of energy rebates where the household is eligible, and will not include energy consumption in communal areas that can be included in strata fees or rents. Consider the first of these problems. Households are billed for their energy consumption by retailers who deduct rebates from the amounts due. When asked to provide annual energy expenditures, eligible consumers will respond with estimates of the amounts due in energy bills and these will understate consumption. We address this measurement error by repeating our empirical exercises using a restricted sample of households that the AHURI-3M micro-simulation model has identified as ineligible for rebates (see Wood, Ong & Seymour, forthcoming 2011, for details). Energy consumption in communal areas will affect the measures for renters but not in detached or terraced housing, so the findings for these types of dwellings will be unaffected.

The controls included in hedonic model specifications consist of variables representing housing tenure (our key variable of interest), location, climate, dwelling characteristics and the household's personal characteristics. This vector of explanatory variables includes both binary and continuous variable measures. An example of the former is a variable that equals one if a person lives in Victoria and zero otherwise; an example of the latter is age.

Housing tenure is represented by a series of binary variables that identify owners, private renters, public renters and rent-free households. Our primary interest lies in whether owners spend more or less on energy than private renters after controlling for other factors; hence the binary variable representing private renters serves as the reference category to which the owner variable can be compared.

There are three broad groups of location variables. One comprises a string of binary variables representing the state or territory of residence. Energy prices vary by location because diverse energy sources are relied on in different parts of the nation, and these energy sources will have different costs of production and hence prices. Unfortunately, a price variable is unavailable. State and territory location serves as a crude proxy for energy price variations. To further account for price differences a second sequence of binary variables are added representing location in major cities, inner regional areas, outer regional areas and remote or very remote areas. Each remote area represents an aggregation of non-contiguous geographical areas that share common characteristics of remoteness based on the Accessibility/Remoteness Index of Australia (ARIA). For example, major cities are collection districts with an ARIA index of 0 to 0.2, and inner regions are collection districts with an average ARIA index greater than 0.2, but less than or equal to 2.4 (for further details, refer to ABS 2001). The third location variable is in fact a neighbourhood variable that represents the socio-economic profile of the neighbourhood of residence. Here, the 2001 Socio-economic Indexes for Areas (SEIFA) of advantage/disadvantage is used. Collection districts are grouped in ten separate deciles, which reflect a continuum of advantage (high deciles) to disadvantage (low deciles). The index is based on variables such as the number of families with high incomes, the number of people with a tertiary education, and so on (ABS 2003).

² Other studies sharing the same limitation include Rehdanz, K. (2007— see Table 1 above.

The state location variables are crude proxies for energy price variations because they will also pick up climate differences. Overseas studies have used alternative and precise measures to represent climate differences; annual heating degree-days (HDDs) and annual cooling degree-days (CDDs). HDDs and CDDs are quantitative indices indicating demand for energy to heat or cool houses. They are based on how far the daily average temperature varies from a human comfort level. The Australian Bureau of Meteorology (2010) calculates HDDs and CDDs using two alternative temperature thresholds that reflect human comfort levels. The first set of thresholds is 12°C for HDDs and 18°C for CDDs; should the temperature fall below 12°C it is expected to generate a demand for energy to heat houses; if the temperature were to rise above 18°C it is expected to generate a demand for energy to cool houses. The alternative temperature thresholds are 18°C for HDDs and 24°C for CDDs; if the temperature falls below 18°C it is expected to generate a demand for energy to heat houses; if the temperature were to rise above 24°C we anticipate a demand for energy to cool houses. It is the second set of temperatures (18°C and 24°C) that we adopt to calculate HDDs and CDDs.

For each capital city, the maximum and minimum temperature reached on each day in 2006 was sourced from the Bureau of Meteorology. The average temperature for each day in 2006 was set equal to the midpoint lying between the maximum and minimum temperature achieved each day. If the average temperature was below 18°C, the heating degrees (HDs) for that day are put equal to 18°C minus the average temperature. If the average temperature was above 24°C, the cooling degrees (CDs) for that day would be equal to the average temperature minus 24°C. The HDDs (CDDs) for each capital city was derived by summing up the HDs (CDs) for that capital city over the entire year. It is not possible to calculate the HDDs and CDDs of regional areas. While the Bureau of Meteorology is able to provide daily temperatures for each regional centre, the HILDA Survey location variables are not disaggregated enough to allow one to identify each regional centre. Hence, the two climate variables (HDDs & CDDs) are only included in a separate model that estimates capital city residents' energy expenditures.

The third vector of variables includes dwelling characteristics. Here, we expect that dwelling size will have a positive association with energy expenditure. In the absence of actual dwelling floor size, we must rely on the number of bedrooms to indicate dwelling size. Different dwelling types are also expected to have differential impacts on energy expenditure—for example, residents of separate houses are likely to spend more on energy expenditure than residents of flats, holding all other factors constant. A series of binary variables representing residence in separate houses, semi-detached houses and flats, units or apartments are entered into the model.³

The final vector of variables includes measures of household personal characteristics. Household size is an obvious determinant since the larger the number of people living in a dwelling, the higher the annual energy usage. It is also potentially important to identify whether someone is normally at home during the day as this will increase energy use as compared to a household whose members are away from the dwelling during the day. We strive to capture this effect through a variable set equal to the number of adults unemployed or not in the labour force (excluding full-time students). We speculate that ethnicity might be important; persons from warmer climates could demand more energy for heating because they are less tolerant of cooler conditions,

³ The energy bills for communal areas in multi-family housing (apartment blocks) could be met through strata bills that are not reported by owners and tenants as part of their annual energy expenditure. The reported expenditures of residents of flats, apartments and units may then under-estimate energy consumption in these dwellings. We return to this point below.

whereas those from cooler climates might demand more energy for cooling. The ethnicity variable is coded by grouping respondents' countries of birth under one of the major regions of the Standard Australian Classification of Countries (ABS 1998)—Australia, Oceania and Antarctica, North-west Europe, Southern and Eastern Europe, North Africa and the Middle East, South-east Asia, North-east Asia, Southern and Central Asia Americas, Sub-Saharan Africa. As household members may originate from different regions, the ethnicity of the household's oldest responding member is used. The age of the oldest household member is also entered into the model. Age could be relevant to energy consumption because older persons socialise less (and are *ceteris paribus* more 'home loving' than their younger counterparts) and as we age we become more averse to extreme temperatures.

The vector of personal characteristics includes various financial variables. Capacity to pay for energy use is captured by gross household income, a variable that is almost always present in energy consumption models. We use an equivalised measure where reported gross income is divided by an equivalence factor based on the modified OECD equivalence scale which assigns a weight of 1 to the first adult in the household, 0.5 to each subsequent adult, and 0.3 per child aged under 15. Current income can temporarily deviate from *normal* income as a consequence of unanticipated events, and these transitory components to income may therefore have little impact on energy use.⁴ This argument suggests that it is the unobservable normal or permanent income of the household that is relevant. However, we proxy this unobservable by the inclusion of variables representing the qualifications of the household. Here the qualification of the household member with the highest educational level is used; for example, if a household comprises a member with a university degree and two members with no post-school qualifications, the household's qualification is represented by that of the household member with a university degree. Net worth, that is, assets less debt, is collateral that can secure borrowing, or be drawn on to help finance investment in home retrofitting designed to lower energy consumption. The potential impact of liquidity constraints is explored by exploiting a variable in the HILDA Survey that records a respondent's difficulty in raising \$2000 in an emergency. Each adult responding household member is asked whether s/he could easily raise \$2000, could raise \$2000 though it would involve some sacrifices, would have to do something drastic to raise \$2000, or couldn't raise \$2000. As members of the same household may answer differently to this question, we have used the response of that household member with the greatest difficulty in raising \$2000. Finally, expenditure on electrical appliances will be directly correlated with expenditure on energy; hence the former is entered into the regression.

The regression model is estimated by ordinary least squares (OLS), with the dependent variable and continuous 'right hand side' variables expressed in natural logarithmic form.⁵ There is an advantage because the estimated coefficient on a variable such as income represents its elasticity measure. In the case of income elasticity, values exceeding (less than) one indicate an elastic (inelastic) demand because a 10 per cent increase in income results in an increase in energy consumption that is greater than (less than) 10 per cent. Table 3 below lists the variables included in the regression, a brief definition, and whether they are binary or continuous variables.

⁴ One such event is unemployment and this is measurable, so we also include whether the household has at least one unemployed household member.

⁵ Where a continuous variable is equal to zero, the log of the variable is set equal to zero as it is not possible to take the log of zero values. A drawback is that because the log of negative values cannot be measured, households with negative income or net worth are excluded from the sample. There are 248 households (6.4%) excluded from the sample as a consequence.

Table 3: Energy expenditure model variables

<i>Variable</i>	<i>Definition</i>	<i>Binary or continuous</i>
Housing tenure	Whether homeowner. Whether public housing. Whether private renter (omitted). Whether rent-free.	Binary
Location and climate		
State	NSW (omitted), Vic, Qld, SA, WA, Hobart, NT, ACT.	Binary
Remoteness area	Major city (omitted), inner regional, outer regional, (very) remote or migratory.	Binary
Socio-economic profile of neighbourhood	Log of 2001 SEIFA decile of index of advantage/disadvantage.	Continuous
Heating degree-days (HDDs), capital city residents only	Log of annual HDDs.	Continuous
Cooling degree-days (CDDs), capital city residents only	Log of annual CDDs.	Continuous
Dwelling characteristics		
Dwelling size	Log of number of bedrooms.	Continuous
Dwelling type	Separate house, Semi-detached house with one storey (omitted), Semi-detached house with two or more storeys or attached to a shop, office etc. Flat/unit/apartment in one-storey block. Flat/unit/apartment in two-storey block. Flat/unit/apartment in three-storey block. Flat/unit/apartment in four or more storey block Other types of flat/unit/apartment.	Binary
Household personal characteristics		
Household size	Log of number of adults aged 15 years or over. Log of number of children aged under 15 years.	Continuous
Whether someone is normally at home during the day	Log of number of adults who are unemployed or not in the labour force (excluding full-time students).	Continuous
Ethnicity	Whether the oldest responding household member is from Australia or one of the following regions: Other Oceania and Antarctica, North-west Europe, Southern and Eastern Europe, North Africa and the Middle East, South-east Asia, North-east Asia, Southern and Central Asia Americas, Sub-Saharan Africa.	Binary
Age	Log of age of oldest member of household.	Continuous
Qualification	Whether the qualification of the adult household member with the highest qualification is: Bachelor degree or higher, Other post-school qualification, No post-school qualification (omitted).	Binary

<i>Variable</i>	<i>Definition</i>	<i>Binary or continuous</i>
Unemployment status	Whether at least one household member is unemployed.	Binary
Incomec	Log of household income from all sources. Income is divided by an equivalence factor based on the modified OECD equivalence scale which assigns a weight of 1 to the household head, 0.5 to each subsequent adult, and 0.3 per child aged under 15.	Continuous
Non-housing net worthc	Log of difference between non-housing wealth and non-housing debt.	Continuous
Difficulty raising \$2,000 in an emergency	Whether the household: Could easily raise \$2,000 (omitted), Could raise \$2,000, but it would involve some sacrifices, Would have to do something drastic to raise \$2,000, Couldn't raise \$2,000d.	Binary
Expenditure on electrical appliances	Log of household expenditure on electrical appliances.	Continuous

Two models are estimated. The first includes all households that meet the criteria listed under the sample design section but excluding HDD and CDD measures that cannot be computed for regional centres. A second model is estimated that incorporates HDD and CDD measures. However, the model is estimated on a smaller sample of households in capital cities (residents of Sydney, Melbourne, Brisbane, Adelaide and Perth). These climate measures replace the state and remoteness area variables in the model.

Descriptives

It turns out that the typical home owner spends 34 per cent more on energy than the typical renter in our sample. The average annual 2006 expenditure by owners was \$1287, but that of renters was only \$961; assuming no differences in the price per unit of energy paid by these two groups, it seems that contrary to expectations home owners consume more energy, despite split incentives that are expected to deter landlord investment in energy saving amenities, insulation, draught proofing and energy efficient building materials. But these averages reflect differences in property type and size that could obscure tenure related differences in energy consumption.

Table 4a and 4b presents comparisons of average expenditures on energy by property type and size and for dwellings in owner occupied and rental tenures. It is therefore controlling for the confounding effects of property type and size. We can see from these figures how important it is to control for these property attributes. Average annual (2006) expenditures by occupants of detached housing is \$1273, a 'whopping' \$369 (41%) higher than the average outlays incurred by residents in semi-detached/terraced, and an even larger \$404 (46%) higher than the average outlays incurred by residents of flats. Only 21 per cent of detached housing is occupied by renters and so this feature of the housing stock will boost home owner energy consumption; but even when we control for property type and compare expenditures by renter-occupied and owner-occupied detached housing, the latter have significantly higher energy expenditures—\$1316 or 18 per cent higher than the \$1112 annual expenditures in renter-occupied detached housing. We obtain the same higher expenditures by owners when comparing outlays in the two other types of housing—in

fact, the spending differentials are even wider with owners outspending renters by 50 per cent in semidetached//terraced, and 30 per cent in flats.

Table 4: Mean and median annual energy expenditure of owners and renters, by dwelling type and number of bedrooms, 2006, dollars

(a) Mean and median energy expenditure, all households

<i>Dwelling type</i>	<i>Number of bedrooms</i>	<i>Mean</i>			<i>Median</i>		
		<i>Renter</i>	<i>Owner</i>	<i>Total</i>	<i>Renter</i>	<i>Owner</i>	<i>Total</i>
Separate (Detached) house	<3	860	986	943	765	875	800
	3	1161	1236	1219	1000	1000	1000
	4+	1193	1507	1459	1000	1310	1250
	Total	1112	1316	1273	1000	1135	1075
Semi-detached/row/terrace house	<3	684	882	771	600	800	710
	3	797	1253	1028	722	985	800
	4+*	450	1389	1218	450	1400	1400
	Total	729	1090	904	600	903	800
Flat	<	771	1047	848	600	760	612
	3	928	962	943	800	800	800
	4+	950	1800	1375	950	1800	1550
	Total	794	1036	869	600	800	678

* There are only two renters in this row; for sample numbers see Table 4b below.

(b) Sample, unrestricted sample

<i>Dwelling type</i>	<i>Number of bedrooms</i>	<i>Sample</i>		
		<i>Renter</i>	<i>Owner</i>	<i>Total</i>
Separate (Detached) house	<3	114	218	332
	3	331	1177	1508
	4+	156	873	1029
	Total	601	2268	2869
Semi-detached/row/terrace house	<3	83	65	148
	3	64	66	130
	4+	2	9	11
	Total	149	140	289
Flat	<	291	113	404
	3	47	37	84
	4+	2	2	4
	Total	340	152	492

Source: Authors' own calculations using the 2006 HILDA Survey

Size also matters. Occupants of detached housing with four or more bedrooms spend \$1459 per annum. This is 55 per cent more than the outlays (\$943) typical among occupants of detached housing with two or less bedrooms. The size differentials are even wider at 58 per cent (62%) among semi-detached/terraced (flats). Home owners occupy dwellings that have an average 3.3 bedrooms, while renters occupy dwellings that typically have 2.6 bedrooms. This size differential will raise energy consumption by owner occupiers. But on comparing owners and renters occupying housing of the same type and size, the weight of evidence suggests that owner energy consumption

is higher. In virtually every size and type category, owner-occupants typically spend more than their renter-occupant counterparts, though the differential does narrow for some size and property types. In three-bedroom detached housing and flats, for example, median energy expenditures are the same, though sample numbers among occupiers of three-bedroom flats are rather small (47 renters and 37 owners) and so this is a reservation⁶.

There are personal characteristics that distinguish owners and renters and that correlate with energy consumption. Owner occupier household incomes are typically higher; couples with dependents are more likely to be home owners and so on. Table 5 compares a range of relevant personal characteristics, location and climate variables across Australian home owners and renters, with private and public renters listed separately. The key points are that:

- The location and climate features of owners' and renters' residences are similar.
- As already pointed out, home owners are much more likely to occupy energy 'guzzling' detached housing and larger housing is also more common among home owners, as is to be expected given a larger household size.
- The financial and demographic profile of owner occupiers and renter occupiers is very different. The former have higher incomes, even after adjustment for household size, and their net worth is healthier on both a housing inclusive and exclusive measure. Their experience of liquidity constraints is then less common.
- Private renters have a number of important distinguishing characteristics. They are younger, which is relevant because studies have shown that energy consumption in the home is positively related to age. Their financial characteristics tend to lie at some point between those of home owners and public renters. Their outlays on electrical appliances is around 40 per cent less than that of home owners, and this will correlate with energy consumption.

This brief description of profiles highlights the importance of taking confounding influences into account. Split incentive effects could be masked by the higher incomes of owner occupiers, particularly if energy consumption is income elastic. Their larger homes will be more expensive to heat and cool, and it would seem that the type of housing most commonly occupied by owners is a more intensive user of energy, though whether this is due to the design and vintage of this housing, the heating and cooling systems generally used in detached housing, or other factors, is a moot point. The modelling exercise that we now explain controls for some of the more important confounding factors.

⁶ The sample of all households meeting the sample design criteria is used in Table 2. The patterns are very similar when excluding those eligible for rebates. Results are available from the authors on request.

Table 5: Descriptive statistics: Column percentages or means

<i>Variables</i>		<i>Owner</i>	<i>Private renter</i>	<i>Public renter</i>	<i>All</i>
State (%)	New South Wales	28.5	29.0	24.5	28.7
	Victoria	24.6	23.5	15.0	23.8
	Queensland	20.1	24.1	19.0	21.0
	South Australia	11.1	7.6	23.1	10.8
	Western Australia	10.4	9.0	9.5	10.0
	Tasmania	3.3	3.4	6.8	3.4
	Northern Territory	.5	.9		.6
	Australian Capital Territory	1.5	2.5	2.0	1.7
Region (%)	Major city	60.1	64.6	61.9	60.8
	Inner regional	26.4	24.0	21.1	25.9
	Outer regional	12.0	10.3	12.2	11.7
	Remote, very remote or migratory	1.5	1.2	4.8	1.6
Climate (capital cities only)	Mean HDD	191.8	191.0	195.9	182.5
	Mean CDD	46.5	47.0	46.7	48.9
Mean Number of bedrooms		3.3	2.6	2.3	3.1
Dwelling type (%)	Separate (detached) house	88.5	55.8	42.2	78.4
	Semi-detached house with one storey	0.1	0.4		0.2
	Semi-detached house with two or more storeys or attached to a shop, office etc.	3.2	6.5	18.4	4.9
	Flat/unit/apartment in one-storey block	2.3	5.6	2.0	3.0
	Flat/unit/apartment in two-storey block	2.6	12.2	23.8	5.8
	Flat/unit/apartment in three-storey block	1.3	8.4	6.8	3.4
	Flat/unit/apartment in four or more storey block	1.3	6.1	2.0	2.4
	Other types of flat/unit/apartment	0.6	3.9	4.8	1.5
SEIFA index of advantage/disadvantage (%)	Lowest quintile	21.2	21.2	46.9	22.5
	Second quintile	21.5	21.6	27.2	21.7
	Third quintile	19.2	17.4	7.5	18.4
	Fourth quintile	19.7	17.4	14.3	18.7
	Highest quintile	18.4	22.3	4.1	18.7
Mean number of children aged under 15 years		0.5	0.5	0.6	0.5
Mean number of adults aged 15+ years		2.0	1.7	1.7	1.9
Qualification (%)	Bachelor degree or higher	28.7	26.1	8.8	27.0
	Other post-school qualifications	41.1	36.4	30.6	39.5
	No post-school qualification	30.2	37.5	60.5	33.5
Whether at least one household member unemployed (%)		3.8	7.3	12.9	4.9
Mean annual gross household equivalised income (\$)		42322.7	37943.8	20612.0	40133.2
Mean net worth (\$)		598273.7	79600.3	28214.3	448038.8
Mean non-housing net worth (\$)		268292.2	78565.2	27194.8	216302.5
Difficulty raising \$2,000 (%)	Could easily raise \$2,000	57.3	33.0	18.2	50.1
	Could raise \$2,000, but it would involve some sacrifices	22.3	24.1	21.7	22.6
	Would have to do something drastic to raise \$2,000	9.0	15.7	14.0	10.8

	Couldn't raise \$2,000	11.4	27.2	46.2	16.5
Mean number of adults usually at home		0.6	0.3	0.8	0.6
Region of birth (%)	Australia	76.1	80.7	73.5	77.3
	Other Oceania and Antarctica	2.8	4.0	2.7	3.1
	North-west Europe	13.1	7.4	13.6	11.6
	Southern and Eastern Europe	3.4	1.3	3.4	2.8
	North Africa and the Middle East	0.4	0.6	2.7	0.5
	South-east Asia	1.7	0.9	1.4	1.5
	North-east Asia	0.8	0.5		0.7
	Southern and Central Asia	0.7	1.8	0.7	0.9
	Americas	0.6	1.2	1.4	0.7
	Sub-Saharan Africa	0.6	1.8	0.7	0.8
Mean age of oldest responding household member (years)		54.6	40.0	53.7	51.2
Mean annual expenditure on electrical appliances (\$)		1415.8	1076.0	609.6	1291.2

Source: Authors' own calculations using the 2006 HILDA Survey

Model findings

Tables 6 and 7 below report OLS regressions coefficient estimates (column headed coef), their standard errors (column headed Std error) and finally significance (column headed Sig). Each table reports two sets of findings—one for all households in the sample and the second set excludes those eligible for energy rebates. As discussed earlier, our fear is that eligible households report energy bills net of rebates and therefore understate their consumption. The estimates excluding eligible households will be free of this potential source of bias. Table 6 presents findings Australia wide; state, regional and remote location categories are used to distinguish residents that might face different climatic conditions (and price regimes). In Table 7 the sample is restricted to state capitals where we have HDD and CDD climate measures. Sample numbers are healthy (always exceeding 1000 households) even when restrictions are employed.

Consider first the Australia-wide estimates, and the property variables in particular. With the exception of the critical split incentive, test variable property characteristics have expected impacts on energy expenditure. Using a sample of all households, detached housing is found to be energy intensive (bills are 20% higher than in semi-detached, row and terraced housing); large housing units are more expensive to heat and cool (each extra bedroom adds 17% to energy bills). But even after controlling for these and other factors expected to shape energy consumption, the bills of homeowners are estimated to be 13 per cent higher than those of tenants in private rental housing. If residents of rental housing are more likely to be eligible for rent rebates, these coefficient estimates could be 'contaminated'. In fact, the proportions of owner occupants and private renters that are eligible for rebates are similar; 35.3 per cent of owner occupants are eligible for rebates, and 37.2 per cent of private renters. On restricting the sample to ineligible households, we arrive at an even higher owner energy bill premium of 16 per cent. Rebates are not masking split incentive effects.

The other variables reveal some interesting patterns. Residents in the southern states have higher energy bills, with those living in Victoria spending 18 per cent more than their New South Wales' counterparts. Household size is a very important influence; each additional child under 15 adds 18 per cent and each adult 15 years and over adds 27 per cent to household spending on energy. We estimate a positive income elasticity, but it is low at 0.06. According to Rehdanz (2007), the majority of studies estimate income elasticities between 0.08 and 0.17. Outlays on electrical appliances

are also found to have a positive elasticity of 0.03. These low estimates reflect short run responses, that is variation in annual expenditures. Long run estimates might well turn out to be larger. While the above variables are found to be significant, others are unimportant, Liquidity constraints, age and net worth are in this group in one or more model specifications⁷.

Table 6: Energy expenditure model results: households in all urban, regional and remote areas of Australia

<i>Explanatory variables</i>	<i>All households</i>			<i>Households that are ineligible for rebates</i>		
	<i>Coef.</i>	<i>Std. error</i>	<i>Sig.</i>	<i>Coef.</i>	<i>Std. error</i>	<i>Sig.</i>
Constant	5.394	0.234	0.000	5.046	0.310	0.000
Victoria	0.178	0.030	0.000	0.160	0.037	0.000
Queensland	-0.180	0.031	0.000	-0.128	0.038	0.001
South Australia	0.157	0.039	0.000	0.126	0.051	0.014
Western Australia	-0.073	0.039	0.062	-0.011	0.050	0.831
Tasmania	0.112	0.061	0.068	0.130	0.087	0.135
Northern Territory	0.291	0.137	0.034	0.265	0.184	0.152
Australian Capital Territory	0.253	0.084	0.002	0.265	0.091	0.004
Inner regional	0.019	0.028	0.491	0.052	0.035	0.140
Outer regional	0.067	0.037	0.073	0.106	0.050	0.033
Remote, very remote or migratory	0.057	0.086	0.504	0.101	0.106	0.341
Log of HDD						
Log of CDD						
Log of number of bedrooms	0.172	0.040	0.000	0.130	0.050	0.010
Separate house	0.203	0.052	0.000	0.251	0.072	0.000
Semi-detached house with two or more storeys or attached to a shop, office etc	0.125	0.077	0.106	0.133	0.097	0.171
Flat/unit/apartment in one-storey block	0.074	0.065	0.255	0.119	0.093	0.203
Flat/unit/apartment in two-storey block	0.019	0.075	0.804	0.079	0.099	0.427
Flat/unit/apartment in three-storey block	0.049	0.084	0.560	0.063	0.103	0.542
Flat/unit/apartment in four or more storey block	-0.077	0.098	0.435	-0.063	0.122	0.602
Other types of flat/unit/apartment	0.142	0.189	0.452	0.728	0.283	0.010
Log of SEIFA index of advantage/disadvantage	0.063	0.018	0.000	0.068	0.023	0.004
Home owner	0.132	0.031	0.000	0.157	0.037	0.000
Public renter	0.065	0.059	0.272	-0.002	0.114	0.988
Rent free	0.166	0.072	0.021	0.199	0.101	0.048
Log of number of children aged under 15 years	0.178	0.034	0.000	0.160	0.039	0.000
Log of number of adults aged 15+	0.270	0.032	0.000	0.253	0.039	0.000

⁷ Conclusions are generally unaffected when the same model is estimated using only those households ineligible for energy rebates.

<i>Explanatory variables</i>	<i>All households</i>			<i>Households that are ineligible for rebates</i>		
	<i>Coef.</i>	<i>Std. error</i>	<i>Sig.</i>	<i>Coef.</i>	<i>Std. error</i>	<i>Sig.</i>
years						
At least one household member unemployed	-0.055	0.050	0.277	0.018	0.140	0.897
Log of gross household equivalised income	0.055	0.016	0.001	0.040	0.023	0.084
Log of non-housing net worth	0.024	0.008	0.003	0.014	0.012	0.268
Could raise \$2,000, but it would involve some sacrifices	-0.042	0.028	0.129	-0.018	0.034	0.594
Would have to do something drastic to raise \$2,000	-0.012	0.039	0.752	0.021	0.047	0.661
Couldn't raise \$2,000	-0.013	0.036	0.719	0.010	0.047	0.831
Log of number of adults usually at home	-0.132	0.049	0.008	-0.101	0.108	0.352
Age of oldest responding household member	-0.064	0.039	0.100	0.097	0.055	0.077
Log of expenditure on electrical appliances	0.026	0.003	0.000	0.024	0.004	0.000
Sample	3594			2182		
Adjusted R ²	0.225			0.200		
F-stat	24.732			13.400		
			0.000			0.000

In Table 7, the sample is limited to residents of capital cities and we have an opportunity to more rigorously investigate the role of climate. It turns out that the number of heating degree days is both statistically significant and quantitatively important. A 10 per cent increase in the number of heating degree days raises energy outlays by 4.3 per cent. It is then unsurprising to note that the model's specifications reported in Table 6 find that residents in the southern states typically have higher energy bills. On the other hand, the number of cooling degree days has no impact, with a coefficient estimate that is not significantly different from zero.⁸

Importantly, we have further confirmation that split incentive problems are absent. In the all household sample homeowners are discovered to be spending 15 per cent more than private renters, 'all else equal'. On excluding those eligible for energy rebates, the premium once again increases to 16 per cent. Findings with respect to other variables are very similar.

⁸ There is multicollinearity here that makes it difficult to disentangle effects. Based on the sample of all households in capital cities, the correlation coefficient between the log of HDD and log of CDD is -0.828 and is significant at the 1 per cent level. When the sample is further restricted to those that are ineligible for rebates, the correlation coefficient remains high at -0.843 and again significant at the 1 per cent level.

Table 7: Energy expenditure model results: Households in capital cities only

<i>Explanatory variables</i>	<i>All households</i>			<i>Households that are ineligible for rebates</i>		
	<i>Coef.</i>	<i>Std. error</i>	<i>Sig.</i>	<i>Coef.</i>	<i>Std. error</i>	<i>Sig.</i>
Constant	2.631	0.664	0.000	1.865	0.855	0.029
Log of HDD	0.430	0.072	0.000	0.404	0.091	0.000
Log of CDD	0.046	0.052	0.374	0.081	0.066	0.219
Log of number of bedrooms	0.143	0.052	0.006	0.009	0.065	0.888
Separate house	0.218	0.063	0.001	0.356	0.084	0.000
Semi-detached house with two or more storeys or attached to a shop, office etc	0.156	0.091	0.086	0.257	0.112	0.022
Flat/unit/apartment in one-storey block	0.147	0.082	0.073	0.320	0.112	0.005
Flat/unit/apartment in two-storey block	0.015	0.088	0.861	0.142	0.113	0.207
Flat/unit/apartment in three-storey block	0.073	0.096	0.446	0.144	0.118	0.222
Flat/unit/apartment in four or more storey block	-0.030	0.109	0.786	0.087	0.135	0.521
Other types of flat/unit/apartment	0.208	0.227	0.360	0.729	0.432	0.092
Log of SEIFA index of advantage/disadvantage	0.035	0.024	0.157	0.055	0.033	0.092
Homeowner	0.152	0.040	0.000	0.163	0.047	0.001
Public renter	0.074	0.077	0.336	0.168	0.155	0.277
Rent free	0.256	0.110	0.020	0.318	0.166	0.056
Log of number of children aged under 15 years	0.219	0.046	0.000	0.185	0.052	0.000
Log of number of adults aged 15+ years	0.231	0.042	0.000	0.273	0.051	0.000
At least one household member unemployed	-0.255	0.127	0.044	-0.009	0.197	0.964
Log of gross household equivalised income	0.072	0.025	0.004	0.074	0.038	0.049
Log of non-housing net worth	0.033	0.011	0.003	0.025	0.016	0.122
Could raise \$2,000, but it would involve some sacrifices	-0.017	0.037	0.643	0.003	0.045	0.942
Would have to do something drastic to raise \$2,000	0.042	0.053	0.420	0.103	0.062	0.098
Couldn't raise \$2,000	0.035	0.048	0.475	0.030	0.061	0.621
Log of number of adults usually at home	-0.048	0.067	0.480	-0.062	0.138	0.652
Age of oldest responding household member	-0.030	0.053	0.566	0.182	0.073	0.013
Log of expenditure on electrical appliances	0.032	0.004	0.000	0.036	0.005	0.000
Sample	1995			1262		
Adjusted R ²	0.235			0.224		
F-stat	18.055		0.000	11.109		0.000

Source: Authors' calculations using the 2006 HILDA Survey

Note: Ethnicity and education variable coefficients are not reported in the table as they are generally insignificant.

2.4 Summary

Our investigations fail to offer evidence in support of the split incentive hypothesis. But before dismissing split incentives we should pay careful attention to a number of important caveats. From the economist's perspective, there are at least three. The first is the absence of a satisfactory measure of the per unit energy prices that

households must pay. Closely related to this is a second weakness—the unobserved choice of space and water heating (or cooling) systems. The preferred approach since Dubin and McFadden (1984) is the simultaneous modelling of heating (cooling) systems and the demand for energy in a two-stage estimation procedure. Finally, the empirical work reported here is based on a cross section data set. Longitudinal data can generate more compelling research designs that exploit changes in key variables such as tenure, and the fixed nature of other variables that cannot or rarely change over time. This type of data has important advantages that this study has been unable to use. From an ‘engineering and design’ perspective, the absence of an age variable is worrying. Buildings of different vintages will differ with respect to energy efficiency, and it is conceivable that owner occupiers are more likely to reside in buildings of an earlier vintage than those occupied by tenants. This could mask important differences in energy consumption, but if split incentives are important you would expect owner occupiers to retrofit their older housing, and so this explanation is not compelling.

These are important deficiencies that future research needs to address. But putting these caveats to one side, and accepting, for the sake of argument, that the split incentive phenomenon is indeed unimportant, what explanations might we offer? One potentially important factor that we perhaps overlook is the powerful tax incentives that motivate Australian landlords to hold residential investments with high building to lot ratios (Wood, Ong & Stewart 2010). Land taxes that exempt owner occupiers but apply to property held by investors, encourages the acquisition of property with small lot sizes. On the other hand, depreciation allowances on amenities (that will include energy saving appliances), building write off allowances for construction costs, the addition of retrofit capital outlays to the cost base used to compute taxable capital gains, the deduction of interest on borrowings to finance such retrofits, and the lenient taxation of capital gains (relative to rental income) are all tax preferences that encourage landlord investment in the building rather than the land that rental properties ‘sit on’.

We might also remark on the source of empirical studies that can be cited in support of the split incentive hypothesis. They have typically been conducted in Western Europe or North America where institutional arrangements can be different. Rehdanz (2007, p.18), explains that landlords in Germany have less of an incentive to improve on energy-efficiency because they have to bear the costs of improvements themselves, and adjustments in rental rates to recoup those costs are curbed by strict regulations. This observation suggests a market adjustment that we could have overlooked in our enthusiasm to investigate split incentives. Tenants will pay lower bills when energy saving investments are made by their landlords. If there is competition between tenants for rental properties, and tenants are well informed, those landlords that have retrofitted will be able to capture a rent premium. Countries that have no rent regulation, such as Australia, could well find that the combination of tax preferences and rent premiums are sufficient to offset any split incentive effects.⁹ There is one additional related point. In some Western European countries (and some parts of North America), rent control is accompanied by security of tenure legislation that ‘locks’ landlords into their investments, and arguably deters maintenance of buildings. Critics argue that in such countries private rental housing will typically be older and dilapidated, and so lower energy consumption among owner occupiers is unsurprising. In Australia, there is no such regulation and in fact there is considerable churning of properties in and out of the sector.¹⁰ We could well have an Australian

⁹ We might also add that such rent premiums could be capitalised into house prices.

¹⁰ In Wood et al. (2010), we report that one-quarter of landlords from a sample of over 600 ‘sold up’ or ‘moved in’ within one year of them first being tracked in a longitudinal data set.

housing stock with property careers that feature considerable movement back and forth between owner occupation and rental occupation, a feature much less likely in more regulated overseas housing markets.¹¹ There is much research to be completed here, but these are potentially important ideas in the present context as such churning would weaken the effect of split incentives, and indeed other barriers that might deter investment in energy-efficient building construction designs and amenities.

It is apparent from this discussion that there is much to learn because of critical gaps in our knowledge. Research in this area is hampered by the absence of comprehensive data bases such as those generated by the USA Residential Energy Consumption Survey. The ABS has not conducted a similar survey in recent times at the national level.¹² Three state-based surveys cover some of the same ground but are more limited in scope (Domestic use of Water and Energy, South Australia 2004; Domestic Water Use, Western Australia 2003; and Domestic Water Use, New South Wales 2002). The surveys record the energy sources used for domestic applications, e.g. the source of energy for hot water systems; the technology used for applications, front- or top-loader washing machines for instance. But the surveys do not contain consumption measures—either expenditure or volume.¹³ The ABS Household Expenditure Survey (HES) has an important advantage over HILDA because it contains disaggregated energy expenditure variables—expenditure on gas, electricity, wood, etc. But once again price information is lacking, as well as details on the type of heating and cooling systems.

¹¹ This mobility of properties can have negative impacts on wellbeing, particularly ontological security, but this is outside the scope of this study.

¹² The ABS last conducted its National Energy Survey—Annual Consumption of Reticulated Energy by Households in Australia (Cat 8218) in 1985/86.

¹³ Reports on each survey are available from the ABS and customised tabulations of the survey data are available on request. All surveys contain dwelling characteristics such as region (capital or balance of state); dwelling type; tenure type. The South Australian survey contains additional energy use variables, such as type of space heater for example.

3 POLICY AND COMMUNITY INITIATIVES TO IMPROVE THE SUSTAINABILITY OF PRIVATE RENTAL HOUSING

3.1 Overview

In this chapter, we review and analyse the effectiveness of current policy and community initiatives that aim to improve the sustainability of private rental housing in Australia. We respond to RQ4:

- What are the potential impacts of policy measures designed to improve the environmental performance of private rental housing stock on private rental tenants, particularly for low-income tenants?

In Section 3.2, we document our research methods, including our focus on two case sites, Victoria and Tasmania, as well as the recruitment of stakeholders.

In Section 3.3, we provide an overview of current policy settings and review sustainable private rental retrofit programs that have been implemented in Victoria and Tasmania. These programs represent a range of delivery approaches and they target different client groups. They include a rebate program administered through the Federal Government; a sustainable retrofit program administered through the state government that targets low-income households; a sustainable retrofit program administered through a non-government organisation that targets households in disadvantaged suburbs; a retrofit program administered through volunteers that targets low-income private rental households; and a private sector sustainable initiative that targets landlords.

In Section 3.4, we review the key insights and lessons to emerge from the program review and our consultation with stakeholders in Victoria and Tasmania, including those who work with property managers, landlords, private rental tenants, and low-income households. This consultation provides insight into the particular challenges associated with facilitating the uptake of sustainability measures among low-cost private rental households.

3.2 Research methods

In response to RQ4, the project team examined a spectrum of energy and water retrofit programs available in Victoria and Tasmania. These two states provide the opportunity to compare quite different policy landscapes. While Victoria is recognised as having quite advanced institutional frameworks and targets to address issues of environmental sustainability in the residential sector, in contrast, Tasmania has limited institutional support in this area, with a reliance on non-government organisations to administer and deliver relevant sustainable housing programs. As highlighted in the review, this has significant consequences for the delivery of sustainability retrofit programs in each state and the capacity of programs to reach diverse household types, including private rental households, in particular, low-income tenants. It is anticipated that the lessons arising from the range of innovative programs available within these two states will be of relevance to policy-makers and community organisations around the country.

The programs selected for review represent a range of delivery approaches and they target different client groups (See Table 8 below). Our key criterion was that the program was open to private rental landlords and/or tenants. We report on the experience of the Federal Government's Home Insulation Program (HIP), which

initially targeted assistance to private rental households. In Victoria, we report on the work undertaken by the Energy and Water Taskforce, a sustainable retrofit program administered through the Victorian Government that targets low-income households. We report on the experience of *Just Change*, a retrofit program administered through volunteers that targets low-income private rental households. We also examine a private sector sustainable initiative that engages with landlords. In Tasmania, we report on the Glenorchy Green House Action Plan, which is an energy efficiency home improvement program available to low-income households including private rental households. A table of the major sustainable home improvement support schemes available across Australia is provided in Appendix Two.

Table 8: Overview of sustainable housing programs reviewed

<i>Sector</i>	<i>Lead organisation</i>	<i>Program</i>	<i>Region</i>	<i>Tenure</i>	<i>Low income</i>
Government	Federal	Home insulation program	Australia-wide	Open to all	no
Government	State	Water and energy taskforce	Metropolitan Melbourne and rural Victoria	Open to all	yes
Community	NGO	Greenhouse action energy rebate project	Greater Hobart	Open to all	yes
Community	Community volunteers	Just Change	Metropolitan Melbourne	Private rental	yes
Private	Real estate agency	Goes Green	Metropolitan Melbourne	Private rental	no

In addition, the team consulted with stakeholder organisations that engage with or deliver services to private rental landlords and tenants. The team consulted with relevant government departments, non-government and community organisations, and private industry, including the property and energy sectors. The team conducted 14 stakeholder interviews in Victoria and 15 stakeholder interviews in Tasmania. The interviews were conducted between November 2009 and June 2010. Table 9 below lists the participating organisations by sector, as well as those who were invited but declined.

Table 9: List of organisations that participated in stakeholder consultation

<i>Sector</i>	<i>Organisation</i>	
	<i>Victoria</i>	<i>Tasmania</i>
NGO/ Community	VCOSS	TasCOSS
	Tenants' Union of Victoria	Tenants' Union of Tasmania
	Brotherhood Green	Anglicare
	Mission Australia	Salvation Army
	Just Change	Shelter Tasmania
Government	Moreland Energy Foundation	Sustainable Living Tasmania
	Sustainability Victoria	Housing Tasmania, Dept. of Health and Human Services
	Dept. of Sustainability and Environment	Tasmanian Climate Change Office, Dept. of Premier and Cabinet
	Office of Housing, Dept. of Human Services	Office of Energy Planning and Conservation, Department of Infrastructure Energy and Resources
	Consumer Affairs Victoria (declined)	Consumer Affairs and Fair Trading, Department of Justice
Property sector	Yarra City Council	
	Real Estate Institute of Victoria	Real Estate Institute of Tasmania
	Compton and Green Professionals	Raine and Horne
	Owners' Corporations Victoria	LJ Hooker
Energy provider	Victoria Electricity (declined)	Aurora
	Origin Energy (declined)	

Interviewees were asked to comment on the effectiveness of existing programs designed to encourage energy and water efficiencies among private rental investors and tenants; the impact of new policy measures to encourage energy and water efficiencies on housing affordability; the barriers to the uptake of energy and water efficient infrastructure and practices among investors and tenants; and policy measures that might encourage greater uptake of energy and water efficient infrastructure and practices among investors and tenants. The stakeholder interview schedule is provided in Appendix One. The interviews were approximately half an hour in length and they were conducted either by phone or in person. The interviews were recorded and transcribed.

3.3 Sustainable private rental housing programs

In this section, we provide an overview of the policy landscape in Victoria and Tasmania. We then review the Federal Government's Home Insulation Program (HIP), as well as sustainable private rental retrofit programs available in Victoria and Tasmania, and we highlight the key lessons to emerge from this spectrum of sustainable private rental programs.

3.3.1 Overview of policy framework

Measures to support home improvement for sustainability have expanded significantly over the past decade. At a national level, this has included: the introduction of new institutional frameworks such as the *National Framework for Energy Efficiency* (NFEE) in 2004, which aims to deliver a nationally-consistent and cooperative approach to

energy efficiency; improved building standards for energy and water efficiency through the Building Code of Australia (see below); the development of consumer information programs such as the Federal Government's 'Your Home' site and minimum energy performance standards and labelling; and a range of household assistance and rebate schemes, including the Federal Government's Home Insulation Program (HIP) and assistance for the installation of energy efficient solar and heat pump hot water systems. While the major regulatory measure proposed by the Federal Government to support sustainability improvement in the residential sector in 2009 was the Carbon Pollution Reduction Scheme, bi-partisan support for such a scheme has yet to be realised. Currently, the Australian Government is reviewing options for establishing a carbon price signal. The government has also made sustainable home assessments and loans available to householders through the Green Loans project. This program has recently been replaced with a new assessment program, Green Start, which provides targeted assistance to low-income households (see <http://www.climatechange.gov.au/>, viewed 11 October, 2010).

In Australia, national building standards are regulated through the Building Code of Australia (BCA), however, responsibilities for building standards generally rests with state and local governments and therefore variation exists between the states. In the late 1990s, the Australian Government supported investigation into BCA requirements for energy efficiency. In 2003, the issue of sustainability was adopted as a core national goal within the BCA alongside health, safety and amenity. In response, energy efficiency regulations were incorporated into the BCA with the introduction of a new five-star standard for all new residential homes (Ashe et al. 2003, p.327). While some states immediately adopted the national five-star standard for new build and have acted to expand the sustainability requirements of the BCA (e.g. NSW BASIX assessment regulates water efficiency and management), others opted for amendments that reduced the requirements to 3 and 4 stars. More recently (May 2008), the BCA's energy efficiency requirements have been extended to home renovation. These energy efficiency requirements apply only to substantial home renovations and each state and even local governments have specific requirements.

In addition to building standards, opportunities for sustainability reforms in the residential sector can also potentially be achieved through the establishment of minimum building standards through the residential tenancy acts. To date, there have been no significant legislative reforms requiring landlords to meet new sustainable building standards via these acts. Instead, minimum standards are being introduced in a piecemeal way through alternative legislative requirements, such as the phase out of electric storage hot water systems and wood burning heaters in some jurisdictions. In NSW, a minimum water efficiency standard is currently being proposed. This will require landlords to implement new water efficiency measures in order to be able to charge tenants for water.

Victoria has established its environmental direction with strategic goals as set out in *Our environment our future Victoria's environmental sustainability framework* (State of Victoria 2005), including the need for Victorians to reduce their everyday environmental impacts. Victoria has introduced substantial reforms in the energy sector, including the introduction of the Victorian Energy Efficiency Target (VEET) scheme that creates incentives for prescribed energy saving activities, as well as the introduction of the Victorian Renewable Energy Target scheme, which mandates that Victoria's consumption of electricity generated from renewable sources be increased to 10 per cent by 2016 (see <http://www.esc.vic.gov.au/public/VRET/Overview.htm>, viewed 18 May 2010). Under the scheme, all electricity retailers and wholesale purchasers of electricity in Victoria will have a legal liability to contribute towards the generation of additional renewable energy by acquiring Victorian renewable energy

certificates. In Victoria, energy and water prices are monitored and regulated by the Essential Services Commission. In addition, the Victorian Government is proactive when compared to other states in relation to the provision of rebates, programs and funding for community organisations to support water and energy efficient home improvements. To date, Sustainability Victoria has managed rebate schemes that target landlords, including landlords of low cost housing. Victoria also has a number of current retrofit programs in place to support the uptake of energy and water efficiency measures among low-income households. Since 2004, Victoria has had a 5-star energy and water requirements for new housing and has recently extended this standard to substantial renovations.

In contrast, activities and support for sustainable home improvement in Tasmania are relatively limited. In Tasmania, energy and water prices are monitored and regulated by the Office of the Tasmanian Economic Regulator. Unlike mainland Australia, where water pricing is used as a key mechanism for managing water usage, in Tasmania this approach is comparatively underdeveloped. Water management is currently in a state of transition, with the establishment of new water and wastewater providers and proposed residential water meters. The Tasmanian Climate Change Office (TCCO) allocates funding for projects focused on climate change, with support for a range of projects, such as assisting remote communities to access Federal Government rebates, facilitating the provision of training for housing officers in energy efficiency, and supporting community retrofit and bulk-buying initiatives, including some programs run by Sustainable Living Tasmania (SLT). To date, the Tasmanian Government has not provided extensive funding support for energy and water efficiency improvements in the residential sector. In view of this gap, the non-government organisation SLT, has taken a leading role in energy and water home improvements. It delivers the only energy and water retrofit program available in Tasmania and it has supported the training and accreditation of sustainable home assessors. SLT works collaboratively with a range of community groups and organisations to promote practical steps towards reducing energy and water consumption and waste. Tasmania is the last state to move towards a 5-star energy and water standard in relation to new housing and renovations. This was achieved in January 2010 (see http://www.wst.tas.gov.au/industries/building/bca/5_star_energy, viewed 18 May, 2010). Reforms in the energy sector have also been limited. However, unlike other states, Tasmania's domestic energy market relies predominantly on hydro-electricity and the state is recognised as being advanced in terms of the generation of renewable energy (see http://www.dier.tas.gov.au/energy/renewable_energy#5, viewed 18 May, 2010).

3.3.2 The Federal Government's Home Insulation Program

In 2009, the Federal Government introduced the Energy Efficient Homes Package (EEHP). The Package included the Homeowner Insulation Program (HIP), which provided assistance of up to \$1600 for homes with little or no ceiling insulation, and the Low Emission Assistance Plan for Renters (LEAPR), which provided assistance of up to \$1000 to landlords who install ceiling insulation. The Package also provided a rebate of \$1600 to households for the replacement of electric hot water systems with a solar or heat pump hot water system (DPAC 2009, p.39). The package was not means-tested and householders could claim either insulation or solar hot water assistance for one address, but not both.

The EEHP was supported by \$3.9 billion in funding, which it was anticipated would be directed towards 2.7 million Australian homes being insulated and the installation of 400 000 homes with solar hot water (DPAC 2009, p.41). Notably, the package was part of the Federal Government's \$42 billion Nation Building Economic Stimulus Plan.

This plan was designed to respond to the global financial crisis through substantial government expenditure in key policy priority areas. As noted by Hawke (2010, p.vi), from the outset the HIP had twin objectives: 'to generate economic stimulus and support jobs and small business' and 'to improve the energy efficiency of homes'.

During the early establishment phase of HIP and LEAPR, which ran from February 2009 to the end of June 2009, demand for the available insulation rebate was higher among home owners than landlords. While 52 484 home owners (93.7%) had applied for the rebate available under HIP, 3526 landlords (6.3%) had applied for the rebate available under LEAPR (DPAC 2009, p.40). During this period, 37 300 applications were received for solar hot water systems nationally. In recognition of the relatively low up-take among landlords, LEAPR was discontinued on 1 September 2009 and landlords were able to access assistance of up to \$1600 for ceiling insulation.

There were some key changes to the package in late 2009. On 4 September 2009, householders replacing an electric storage hot water system with a solar hot water system were provided with up to \$1600 assistance and those installing a heat pump hot water system were provided with up to \$1000. The maximum available assistance per household was reduced from \$1600 to \$1200 on 2 November 2009 (DEWHA 2009, p.9). The initial higher funding was designed to 'achieve maximum impact in line with the economic stimulus and employment objectives of the program' (DEWHA 2009, p.14), with a reduction in the size of the rebate following an easing of the financial crisis. By 6 December 2009, over 800 000 households had received assistance for ceiling insulation, and over 90 000 households had received assistance for solar or heat pump hot water systems (DEWHA 2009, p.4). By this date, \$1.03 billion had been expended on insulation and almost \$145 million for hot water systems (DEWHA 2009, p.4). At the close of the scheme, it was estimated that 1.1 million roofs had been insulated at a cost of \$1.45 billion (i.e. the scheme had reached 40% of the original target).

The package was designed to be demand driven, with the government anticipating that HIP would be expended by the end of December 2011 and the Solar Hot Water Rebate by June 2010 (DEWHA 2009, p.4). However, the Federal Government insulation rebate scheme was suspended on 19 February 2010 and discontinued in April 2010. The suspension of the scheme followed the death of four insulation installers and concerns about the use of foil insulation in ceilings in Queensland. Other concerns about the scheme related to the lack of training for installers, inflation of insulation costs, and the use of low quality insulation that failed to meet Australian standards.

The HIP has received wide criticism within the Australian media and is subject to a range of inquiries, including the Inquiry into the Energy Efficient Homes Package by the Senate Environment, Communications and the Arts References Committee, a performance audit of the HIP by the Commonwealth Auditor General (ANAO 2010), Alan Hawke's Review of the Administration of the Home Insulation Program (HIP), and investigations by state territory occupational health and safety authorities, police and coroners. The major criticisms of the program relate to compliance problems and fraudulent use of the scheme by installers; the use of poor quality materials and workmanship thereby reducing potential gains in emission reductions; and unsafe work practices resulting in injury and deaths. These problems have been linked to the twin objectives of the scheme, that is, the economic stimulus objectives necessitated an emphasis on speed and scale of implementation, without adequate time to adequately assess risks and install effective safeguards against fraudulent and unsafe practices. This was exacerbated by: poor program design and planning; the Federal Government's lack of experience within construction industry operations; a lack of

understanding of householder capacity and behavior (e.g. a key assumption of the program was that householders would be equipped to check the quality of their insulation installation), and the lack of an existing national mechanism to deliver and monitor the program (Hawke 2010, p.vii; ANAO 2010, pp.32–37). The problems that beset HIP have implications for the roll out of future sustainable home improvement programs. As noted in a recent performance audit report:

The fallout from the program has caused serious inconvenience to many householders, reputational damage to the insulation industry, and financial difficulties for many Australian manufacturers and installers. It has also harmed the reputation of the Australian Public Service for effective service delivery (ANAO 2010, p.27).

The experience of HIP highlights the need for capacity building in expanding sustainable building industries such as ceiling insulation installation. It also demonstrates the need for adequate program planning and consultation prior to the implementation of any major program, as well as staged implementation of the program in order to allow government departments to respond to emerging problems. The HIP attracted a significantly higher take up rate than anticipated (ANAO 2010, p.34). While one of the strengths of the program was its popularity, the volume of demand was unanticipated by DEWHA and inadequately planned for (e.g. inadequate staffing levels). In later stages of the program, DEWHA struggled to respond to the volume of inquiries and complaints generated by the program (ANAO 2010, p.34).

Despite this high up-take generally, the up-take of claims remained relatively low among landlords throughout the duration of the scheme. Table 10 below demonstrates that rental households were under-represented in the uptake of claims in both Victoria and Tasmania. While the scheme was open to all tenures, there was no concerted effort to engage landlords via a comprehensive and targeted communication strategy. Real estate agents interviewed as part of this project observed that they were not consulted about the program when it commenced and accordingly they initially struggled to field enquires from landlords (Tas stakeholder 13, 23/2/2010; Tas stakeholder 14, 7/4/2010; Vic stakeholder 4, 4/5/2010). In the absence of a comprehensive dissemination program, landlords obtained information about the scheme through general media and often through aggressive marketing from private insulators. This problem was compounded by the economic stimulus objectives of the program that emphasised speed and scale of delivery. One of the key lessons to emerge from the program is that private rental housing improvements require a more targeted communication strategy and implementation than a tenure-neutral approach.

I think you probably need both [national and local]. Something like insulation where you know there may be a million houses that don't have insulation and you know that will make a substantial and permanent improvement to that house. I think that doing a national blitz is a reasonable way to go. It would have worked better had there been some localisation of that program so that there were properly resourced local networks that could support letting people know that it was available (Tas stakeholder 5, 10/12/2009).

Table 10: Owner and renter claims of HIP rebate, Victoria and Tasmania

	<i>Owner claims (n.)</i>	<i>Owner claims (%)</i>	<i>Renter claims (n.)</i>	<i>Renter claims (%)</i>
Victoria	227,533	89.6	26,510	10.4
Tasmania	10,785	83.0	2,211	17.0

Source: Claim data provided by the Department of the Environment, Water, Heritage and the Arts, March 2010

Stakeholders recognised some of the benefits of the scheme. They observed that funding was directed towards a key measure that can make a substantial difference to energy usage in the home. By the close of the program, 'over one million homes had been insulated' (Hawke 2010, p.vii).

In addition, the rebate was sufficiently generous to enable many householders to access the program at minimal cost, thereby ensuring that financially constrained households were not necessarily excluded. Notably, landlords were able to access additional concessions that were unavailable to owner occupiers. Landlords who borrow to finance their investment in insulation are able to claim both the rebate and able to deduct their interest on borrowings from assessable income; further, if treated as expenditure of a capital nature, they are able to use it to offset future assessable capital gains. This additional incentive was not widely understood by the landlords consulted as part of this study.

Stakeholders raised concerns about the lack of equity considerations given that the scheme was available to all householders and it was not means-tested. They questioned to what extent it was strategic to be subsidising high-income owner-occupiers and private rental investors (Tas stakeholder 1, 16/11/2009; Tas stakeholder 7, 18/12/2009). Rather than overpaying higher-income households for insulation installation in order to ensure that the scheme was sufficiently generous to enable lower-income households to participate, the number of lower-income households participating in the scheme might have been boosted through the introduction of a higher rebate payment to households whose members hold a health care card.

Others were concerned that there were some segments of the housing market that were unable to access financial support. Non-government organisations responsible for the management of social and community housing expressed concern that their clients were unable to benefit from the scheme (Tas stakeholder 11, 1/2/2010; Tas stakeholder 7, 18/12/2010; Vic stakeholder 2, 26/3/2010). In addition, owners' corporations were unable to access funding through the scheme to support wider uptake of insulation in common and shared areas of multi-unit residential developments.

Stakeholders were concerned that the Federal Government's mismanagement of the scheme has had an impact on the implementation of smaller-scale, locally-delivered retrofit programs. They noted that as a consequence of the scheme, householders and property owners had become more concerned about the potential for property damage arising from poor installation of insulation. They noted that there was a decline in levels of trust among the community, particularly towards the capacity of governments to adequately manage programs (Vic stakeholder 7, 21/5/2010; Vic stakeholder 8, 21/5/2010; Vic stakeholder 13, 11/6/2010).

3.3.3 Energy and Water Taskforce (Vic)

In 2003, Sustainability Victoria, in association with not-for-profit organisations, established an Energy and Water Task Force to assist low-income Victorians to adapt to climate change and to save energy and water at home. The Energy and Water Task Force offers free audits and energy and water home improvements to low-income households. It is not exclusive to private rental properties, but private rental tenants do participate in the program. The program offers a suite of measures to address energy and water efficiency within the home. These measures include draught proofing, top-up insulation, energy efficient lighting, and water efficient shower roses. The program is funded by the state government's Victorian Property fund, and is delivered in collaboration with the Department of Human Services Neighbourhood

Renewal Program, the Department of Planning and Community Development, and community organisations such as the Brotherhood of St Laurence and Mission Australia. While Sustainability Victoria employs client or project managers who work with people delivering local projects and overseeing the evaluation of the program, the day-to-day management of the project is by the community organisation or contracted not-for-profit organisation.

Sustainability Victoria estimate that, to date, 4700 low-income households in metropolitan and rural areas across Victoria have received a free energy and water retrofit (<http://www.sustainability.vic.gov.au/www/html/1464-energy-task-force.asp>, viewed 16 May 2010). The program has ongoing funding and it is anticipated that it will reach an additional 8000 low-income households by 2011. The program is community-based and relies on local community networks to assist with the recruitment of eligible low-income households. Accordingly, the program targets areas of socio-economic disadvantage and is implemented in select localities each year. Programs vary in the length of time they are available within communities. In regards to accessing the program, anyone who lives in the participating area and who holds a concession card is eligible to participate in the program, whether they be owner-occupiers, private rental or public housing tenants. Private rental tenants need to obtain consent from their landlord in order to participate in the program. If the landlord doesn't consent for any work to be undertaken on the property, the tenant can still receive a free assessment and a kit that assists them with achieving minor reductions in energy and water use.

An evaluation of the program has found that: 'On average, households whose homes are retrofitted enjoy annual electricity savings of 9 per cent, gas savings of 16 per cent and have each reduced greenhouse gases by approximately by 7.5 tonnes over 10 years'. Such savings are estimated to be worth approximately \$120 on bills per year. In addition, the majority of householders reported feeling 'improvements in their level of comfort' (http://www.resourcesmart.vic.gov.au/for_households_4195.html, viewed 25 May 2010). The program also seeks to involve local residents in the delivery of services. Accordingly, it has achieved some success in providing 'green skills' training and creating local employment opportunities (Vic stakeholder 5, 17/5/2010). It is estimated that during the early phase of the project, up to two-thirds of these trainees had gone on to further work or training, but not directly in the area of energy and water assessments and installation. With the expansion of government programs more recently and the emergence of green industries, this situation has changed with participants able to access jobs directly in the area. Some participating organisations are also beginning to set up their own enterprises in energy and water assessments and installation and this situation is creating further employment opportunities (Vic stakeholder 5, 17/5/2010).

While this scheme is effective in targeting areas of socio-economic disadvantage, the program only covers a small percentage of the low-income households in urban and regional Victoria that could be eligible for household retrofits. Despite limits on the number of households the program can reach, the program's place-based, community focus is recognised as a key strength, particularly in regard to recruitment of households. The use of community channels to disseminate information and to promote the availability of the services to households has been important in accessing households that are often difficult to reach, such as households where English is a second language (Vic stakeholder 5, 17/5/2010).

Stakeholders reported that private rental households are difficult to target as program coordinators are unable to contact them directly and instead they rely on other social and community networks to get the message out. While some programs have

attempted to reach private rental households through contact with real estate agents, each program is unique and dependent on local networks. Further difficulties lie in accessing those rental households that are managed by individual investors rather than real estate agencies. In regard to targeting low-income private rental households, it is estimated that approximately 13 per cent of the households who have participated in the scheme are private rental households, with some variation in uptake across metropolitan and regional areas (Vic stakeholder 5, 17/5/2010). As with other assessment and rebate programs, private rental households are underrepresented.

Some of the key lessons emerging from the program include:

- The importance of local community networks in reaching a diverse range of household types.
- Ensuring that landlords and tenants receive adequate information that provides them with confidence in the legitimacy and value of the program.
- Engaging local residents in 'green skills' training and employment can lead to future work in newly emerging green industries such as the delivery of assessments and installation.
- The importance of clear and relevant messages to encourage uptake among low-income households.

Our message around the Energy and Water Taskforce is not environment, that's a sub-message. The message is cut your energy bills and improve your home comfort. Be warmer in winter and cooler in summer; and there are environmental benefits. So it is there, but the key message is improve your home comfort. So you can encourage people who obviously have competing issues by sending out a message that is more relevant and useful to their lives. (Vic stakeholder 5, 17/5/2010)

The advantages were that they were getting into the areas of most need and also part of the one of the principles is not just the energy efficiency but also the employment benefits. So they actually engage local long-term unemployed. So it has a dual role. (Vic stakeholder 9, 23/5/2010)

They do the actual retrofit so they get some training and they're supervised by a trained supervisor and things that need a registered plumber or electrician that still happens, but other tasks are undertaken by local unemployed. (Vic stakeholder 9, 23/5/2010)

3.3.4 *Glenorchy Greenhouse Action Energy Rebate Project (Tasmania)*

The Glenorchy Greenhouse Action Energy Rebate (GAER) project was devised and managed by the non-government organisation Sustainable Living Tasmania (SLT). It was implemented in partnership with Glenorchy City Council, the Commonwealth Department of the Environment and Water Resources' Australian Greenhouse Office (which has since merged into the Department of Climate Change), and local businesses. The aim of the project was to assist low-income households to make improvements that increased the energy and water efficiency of their homes. The project commenced in February 2007. The GAER project was primarily funded through Federal Government grants. The project framework has since been applied to projects run in other areas of Greater Hobart, including Brighton and Kingborough. The project provided residents of the Glenorchy City council area with access to home energy assessments and rebates on energy efficient appliances and fixtures purchased for their homes. The rebates were available for insulation, heat pumps, curtains, and solar hot water systems. Draught-proofing tape, a thermometer and

compact fluorescent lights were also offered in energy efficient packs that were sold for \$10. Water-saver showerheads could also be purchased for \$13. The rebates were advertised locally. Interested local householders were then asked to identify the energy efficient improvements they were hoping to make to their homes (from the specified list) and to submit an application form. SLT staff managed the applications. If an applicant requested a heat pump rebate, a home energy assessor visited the property to decide of the suitability of the purchase. SLT supported the decision-making processes of the selected households by providing information for product selection and a list of supporting suppliers.

According to SLT, over 200 residents accessed rebates made available through the GAER project. Initially, applicants were overwhelmingly owner occupiers. In the early phase, the project had only seen two tenants apply for rebates and no landlords at all. The push to recruit landlords began later in the project. In response, landlord recruiting was undertaken through real estate agents. Project managers were asked to send out letters to landlords and to display the rebate/energy pack offers on their notice boards. When approaching landlords, the focus was on insulation rebates and the energy saver packs. The landlord-focused promotions generated over 65 enquiries, with 27 private rental households supported. In contrast, the Energy and Water Taskforce and Just Change projects project coordinators engaged directly with the tenants of low-cost housing.

The GAER experience demonstrates the importance of local engagement and responding to people at a local level. The approach and delivery of the program has varied across different municipalities as SLT have opted to work with existing community and social networks. SLT also found that harnessing local business support was important in providing another communication channel to engage residents who may not be active within local community organisations (Tasmanian stakeholder 4, 10/12/2009).

In regard to engaging low-income tenants, the GAER experience highlights the need for targeted measures that can overcome additional barriers that low-income households may face. These additional barriers include: financial stresses; competing priorities; disengagement with local community networks; alienation from their housing (due to insecure tenancy); anxiety about contacting and negotiating with landlords; and a lack of personal capacity and efficacy to be able to translate recommendations into action. Some of the ways that SLT have attempted to address these barriers include: more proactive recruitment, with program coordinators reaching out through attendance at community events; facilitating communication between landlords and tenants; acknowledging the need for more assistance and allocating resources to enable program coordinators to follow-up individual cases; and recognising that good outcomes are dependent on allocation of time and support (Tasmanian stakeholder 4, 10/12/2009).

It worked really well in areas where there are higher education and income levels, and more personal efficacy within the household, but it worked less well in [disadvantaged areas]. And what we've discovered is that we really need to go to events where people are already gathering There is much more suspicion, less awareness of issues, even though power bills are really significant costs; and much less interest and response, even though the need is far greater. So it's been more difficult to make contact with the householders and to encourage them to take action if they do have an assessment. In some cases, we've actually organised for someone to come in and make the installation because the person involved didn't quite know how to go about doing it (Tasmanian stakeholder 4, 10/2/2009).

SLT has recently produced a 'green renter's guide'. The organisation is continuing to provide support for energy retrofits and it is undertaking new programs that reach households that are not well-served by mainstream services, including people with intellectual disabilities who are independently housed, and recently arrived refugees. The latter of which are likely to be housed in the private rental sector.

3.3.5 *Just Change (Victoria)*

Just Change Australia is a not-for-profit organisation founded in 2008 by volunteers. The organisation was established specifically to facilitate the uptake of existing energy and water efficiency rebate schemes available through the various levels of government among low-income renters. The central aim of the Just Change program is to support low-income private rental households to undertake sustainable home improvements. To be eligible to participate in the program, householders had to hold a valid health care card. In addition, to ensure that the program reached households in high need, the team required participants to live in a stand-alone house built before 1991 with limited or no insulation.

Through the Just Change pilot program, ten low-income rental households received a free comprehensive energy assessment. The team then organised the installation of major energy efficiency measures, including ceiling insulation, water saving showerheads, energy saving light bulbs, draught proofing on windows and doors, exhaust fan covers and window treatments. A volunteer house manager was allocated to each participating household. This manager was responsible for overseeing the assessment and installation.

Recruitment of the ten low-income rental households was a major challenge for the organisation. Initially, the team was committed to recruiting half of their participants through community organisations and the remainder through real estate agents in order to provide a comparison of these approaches. However, the decision to work with community-based non-government organisations proved difficult in early 2009 as these organisations were working at capacity trying to support families involved in Victoria's 'Black Saturday' bushfires. The team also received minimal referrals from real estate agencies that were unwilling to recommend the program to landlords who they anticipated would not be interested (Dillon et al. 2010, p.6). Instead, the team relied on other referral pathways including community and environmental organisations, media, the website, and word of mouth (Dillon et al. 2010, p.6). Problems with recruitment were also compounded by the organisation's requirement that landlords agree not to raise rent for a year. While many landlords were supportive of the scheme, they were unwilling to be locked into such an agreement (Dillon et al. 2010, p.1).

A key difficulty that the team faced was tenant reluctance to initiate contact with the landlord and to request permission to adapt the home. The team found that tenants were anxious about interacting with property managers and owners and that they did not want to risk rental increases (Dillon et al. 2010, p.2). This issue of negotiation between landlord and tenant was viewed by the Just Change team as a key barrier to wider uptake of government rebates. This barrier is not addressed in mainstream government programs.

If you don't allocate time and budget for time to specifically help renters they're going to miss out. There's a lot of self-selecting out of programs (Vic stakeholder 7, 21/5/2010).

In terms of the services provided to householders, the list of activities reflected key government funding priorities. The team accessed energy and water assessments available through Sustainability Victoria's Energy and Water Taskforce program.

Tenants were also issued with the Victorian Green Renters' Guide produced by Environment Victoria. The installation of energy and water saving measures were then outsourced to independent providers. Costs for installation were recouped through Federal Government rebates and the creation of carbon reduction certificates under the VEET scheme (Dillon et al. 2010, p.4). The program focused on compliant residential household activities that improve energy efficiency, such as energy saving light bulbs and exhaust fan covers and which in turn generate VEET certificates that are then purchased by energy retailers.

The key lessons to emerge from the Just Change pilot program included that:

- The availability of programs to rental households needs to be made clear and disseminated widely, otherwise rental householders will assume that they are not eligible.
- The recruitment of rental households is difficult and requires the use of a range of trusted channels.
- Negotiations between tenant and landlord are sensitive and can be drawn out, therefore programs that are targeting rental households need to factor this in and provide resources to support this process.
- A considerable amount of time is required for the tenant to negotiate consent to make alterations to the property from the landlord.
- Minor changes to government programs (e.g. change to the application form) have a greater impact on rental households than other households as this creates further delays in obtaining permission and discourages tenants who are already reluctant to make contact with the landlord.
- Real estate agents are pressed for time and assisting rental households to access government programs that can provide energy and water savings is low on their list of priorities (Vic stakeholder 7, 21/5/2010).

In view of the lessons of the Just Change pilot program, members favoured a strengthened residential tenancy act, which would put in place a green minimum standard. This would require landlords to make recommended energy and water efficiency modifications to the property at the end of a lease. In doing so, this would address the problem of tenants requesting consent from landlords. This was viewed as a more effective method of improving the sustainable profile of private rental housing stock at the lower end of the market than a mandatory disclosure scheme, which requires landlords to provide prospective tenants with information on their property's energy and water performance (Vic stakeholder 7, 21/5/2010; Dillon et al. 2010, p.2).

3.3.6 Goes Green (Victoria)

As part of their property managing services, Victorian real estate agency Compton and Green have developed a new program—the Goes Green initiative—to inform landlords about the energy and water efficiency of their property and, where relevant, to assist landlords to reduce water and energy usage in their rental properties (see: <http://www.goesgreen.com.au/>, viewed 7 June 2010). Compton and Green have developed a Goes Green report that is based on a simple check list of key measures that can reduce water and energy usage. The Goes Green report is completed for all new tenancies and monthly inspections. The check list identifies the key energy and water saving features of the property and this information is then disclosed to the landlord. As part of the initiative, property managers provide landlords with assistance in obtaining quotes for major works such as water tanks and fixed price costs for minor works such as replacing a shower head. Should the owner choose not to do

any work, a copy of the form is kept on file for future reference, with the opportunity to re-visit the check list in the future. Where applicable, property managers can provide advice on government rebates. General advice on energy and water usage is also made available to landlords and tenants on their website.

While the Goes Green initiative was developed specifically for Compton and Green's business, the approach can be readily adopted by other real estate agencies. One of the strengths of the program is that it is simple and easy to deliver. The checklist focuses on measures that can be readily identified by a property manager without special expertise and equipment. For example, the checklist includes whether or not the property has dual-flush toilets installed, but does not cover features that are out of view such as insulation. The property manager can easily complete the report while undertaking a general condition report. It provides an additional service to the client, with only minimal cost and limited administrative requirements.

In its present form, the Goes Green initiative has translated into considerable savings in water usage in the properties managed by Compton and Green. A higher uptake of similar programs across the real estate industry could add up to significant savings. In contrast, the Goes Green initiative has yet to achieve comparable reductions in energy usage. The measures that can make a substantial difference to energy use tend to be structural and require significant financial outlays. For the Goes Green initiative to make more impact on energy usage, a more substantial energy assessment is required than the Goes Green report. Currently, there is some capacity for property managers to direct their landlords to the Commonwealth Government's Green Loans scheme that offers free energy assessments. The information obtained by the landlord and/or property manager could form part of a long-term property management plan. However, there is limited incentive for property managers to undertake this additional work in partnership with private landlords and government.

The Goes Green initiative presents the real estate industry with a good demonstration model of what can be achieved by property managers who are already well-versed in repair and maintenance issues and who are experienced in dealing with landlords and tenants. The simplicity of the approach means that it can be readily adopted by agencies with minimal cost. The approach could also be developed further and extended to meet the needs of landlords who are actively looking for and willing to pay for a comprehensive sustainable property management service. However, stakeholders and private rental investors whose properties were managed by a real estate agent noted that sustainability issues are currently low on their agent's list of priorities. Moreover, it is not clear how the Goes Green initiative could be readily translated to the lower end of the private rental housing market, where expectations of rental yield is low and property management and maintenance is minimal.

3.4 Key lessons from program review and consultation

In this section, we document key insights to emerge from the program review and the consultation with stakeholders.

3.4.1 Institutional frameworks and incentives in place

An examination of the Victorian and Tasmanian policy landscapes highlights the significant role of institutional and legislative frameworks in facilitating capacity building across the community and private sector, and in supporting retrofit programs at the lower end of the housing market. The Victorian Government has an established organisation, Sustainability Victoria, dedicated to the promotion and demonstration of sustainable resource use. The organisation has supported innovative sustainability programs in the residential sector that complement Federal Government targets and

programs, including rebates schemes that target landlords and a retrofit program aimed at low-income households. Victoria has also introduced substantial reforms in the energy sector, including the introduction of the VEET scheme, which creates incentives for prescribed energy saving activities. In addition, there has been state-level support for the development of a *green skills* industry that can offer legitimate pathways for participants of training and employment schemes. This situation provides non-government organisations with adequate incentives to enable them to undertake energy and water retrofit programs and to support training and employment placements in this area. It encourages non-government organisations to shift their focus from discrete pilot projects to the consideration of longer term frameworks and programs that can operate within a business model. The Victorian Government's support for sustainability issues has also enabled greater engagement across different sectors, including engagement with the real estate industry, than is the case in Tasmania.

In Tasmania, in contrast, there is support from the state government towards sustainable resource use, but policy initiatives in the residential sector have been limited. The Tasmanian Government has established the Tasmanian Climate Change Office (TCCO), which supports community organisations in the development of retrofit and bulk-buying programs and which supports remote communities in accessing Federal Government rebates. However, the state government has not been active in designing and delivering programs that address sustainable resource use in the residential sector. The lack of governmental coordination and management has hindered capacity building in the community sector around sustainability issues and discouraged the development of a range of retrofit programs and models. This in turn has hindered opportunities for retraining and employment programs that feed directly into an emerging 'green skills' industry. In addition, there has been limited engagement with the real estate industry to address sustainability issues in the residential sector.

The program review and consultation also provided some insight into the interaction of sustainable initiatives across federal, state and local government boundaries. While in Victoria the assistance offered by the Federal Government was matched by state government support and complementary programs, in Tasmania stakeholders suggested that the activity of the Federal Government may have potentially reduced or stalled the development of state-led programs. Beyond these observations, our review indicates that interaction between levels of government is relatively limited due to the lack of major national and state-based regulatory reforms in this country such as the establishment of a Carbon Pollution Reduction Scheme, mandatory disclosure and sustainable minimum standards.

3.4.2 Delivering agencies

In the program review, we examined the experiences of a range of delivery agencies: Federal Government, state government, non-government organisations, volunteers and a real estate agency. The review revealed that agencies hold different advantages and disadvantages in terms of accessing private rental households.

As a delivery agency, the Federal Government has the capacity to coordinate individual payments across the country through existing administrative arrangements such as medicare and social security payments. However, the Federal Government's administration of the home insulation rebate came under considerable criticism within the mainstream media, as well as by stakeholders and investors who participated in this project. Key criticisms of the program included the lack of a comprehensive communication campaign about the program and the lack of an adequate and

accessible contact point between the delivery agency and the public. Opportunities for greater coordination with state government and local agencies were missed.

While the Energy and Water Taskforce was designed and monitored by the state government, coordination and management of the program in disadvantaged regions was undertaken by non-government and local community organisations. This collaborative model was effective, enabling organisations on the ground to tailor the delivery of the program. For example, organisations in different regions were able to trial methods for recruitment of householders and use existing local networks. Equally, the role of the state government was critical in: securing ongoing funding, providing continuity in service delivery across regions, and monitoring the program outcomes and lessons learnt.

The experience of 'Just Change', a program established and managed by a group of volunteers, provides an important contrast to established non-government organisations that are focused on the delivery of a range of social and community services. The volunteers brought energy and commitment to achieving specific energy and water saving outcomes. While they were unable to draw on an existing base of community linkages when trying to recruit householders, they were able to be flexible in the strategies they employed to recruiting householders. Like the not-for-profit organisation Sustainable Living Tasmania (SLT), Just Change volunteers worked across the community and private sector. SLT engaged directly with landlords, as well as with tenants. Just Change attempted to reach landlords of low-cost housing through real estate agencies, albeit not always successfully. Subsequently, SLT and Just Change have forged some links with the real estate sector, with both organisations playing a role in the promotion of sustainable issues among property managers.

In regard to the Goes Green initiative, the delivery agency was a real estate agency. The clear advantage for this agency is that it is able to tap into an existing client base of landlords with minimal time and cost. However, there are limits on the scale of the energy and water savings that can be readily achieved through this approach. Moreover, the client relationship between the property manager and the landlord sets limits on what can be achieved, with property managers averse to placing any additional imposition on the landlord.

3.4.3 Broad-scale or targeted approach

The programs reviewed varied in terms of the scale of the program; that is, the range of energy and water efficiency improvements and the number of households reached. They also varied in terms of the target client group; whether they are open to all households or whether they target private rental households exclusively and/or low-income households exclusively.

In terms of household numbers, the Federal Government's Household Insulation Program (HIP) reached a far greater number of private rental households than any of the other programs combined. Notably, the Goes Green program has some scope for reaching relatively high numbers of private rental households if it was supported and adopted across the property management sector. Despite performing well in terms of the sheer number of households, the impact of these programs in terms of reduction in energy and water usage, as well as increased levels of comfort, are more limited than the retrofitting programs offered through the Energy and Water Taskforce, the GAER project, and Just Change.

Both the HIP and Goes Green lack the social equity focus of the Energy and Water Taskforce, the GAER project, and Just Change. The Energy and Water Taskforce and Just Change are programs that have been delivered exclusively to low-income

households, defined as those households with a member who held a health care card. The GAER project eligibility criterion is not as exclusive. The project was initially based in an area of socio-economic disadvantage in order to address equity concerns and SLT continues to prioritise support for households located in areas of disadvantage. There is potential for large scale federal rebate programs to address social equity concerns through targeted eligibility criterion and by offering more generous rebates to low-income households. Currently, it is not clear whether there is potential interest in the Goes Green approach across the property management sector and, in particular, among agencies that manage a high proportion of low-cost rental properties.

The Just Change program and Goes Green program were the only two programs that focused exclusively on private rental households. This exclusive approach was valuable in gaining a more detailed understanding of: the demographic profile of rental households and landlords; the negotiations required between landlord, property manager and tenant; the characteristics of the rental dwelling stock (i.e. higher proportion of strata-titled, multi-unit development); and the legislative and policy environment in which tenants, landlords and agents operate.

3.4.4 Engaging with private rental tenants and landlords

One of the major challenges raised by coordinators of retrofit programs was the challenges associated with engaging with the private rental sector and disseminating information about their program to private rental households. The programs used a range of channels to recruit either landlords of low-cost housing directly or to recruit low-income private rental households. Obvious channels, such as local real estate agencies, were not necessarily effective in putting program coordinators in touch with eligible landlords—they were either too busy or were hesitant to pass on information to landlords as they anticipated they would not be receptive to the program objectives. Equally, some community-based organisations did not have the capacity to forward this information to eligible tenants. In some communities, recruitment was dependent on program coordinators reaching out to private rental households through specific local community events.

Program coordinators working on retrofit programs that target low-income tenants discussed additional challenges in recruitment of these households, namely problems of affordability and security of tenure. Tenants were hesitant to initiate contact with their property manager or landlord as they did not want to be viewed as a 'troublemaker' and they did not want to risk a potential rent increase or eviction.

Experience from existing retrofit programs also suggests that different approaches are required to reach: landlords who self-manage properties rather than through an agent; private rental tenants in areas of socio-economic disadvantage; and diverse tenant households, including tenants with a disability or culturally and linguistically diverse communities.

Key lessons around recruitment include:

- Dissemination of targeted information to landlords and tenants and a reliance on practical and relevant messages.
- Adequate planning and allocation of time to organise recruitment.
- Recruitment depends on the use of a range of channels, including existing social and community networks, mainstream and local media campaigns, and an ongoing community presence.

- Private rental households are diverse and require different levels of information and assistance.
- Need for an intermediary to facilitate negotiations between tenant, landlord and/or property manager.

3.4.5 *The role of real estate agents*

Stakeholders were optimistic about the role of real estate agents in facilitating the uptake of minor energy and water efficiency measures among landlords. Engaging real estate agents overcomes many of the barriers to recruitment experienced by coordinators of retrofit programs and they have the potential to reach a substantially larger pool of investors.

Industry leaders expressed mixed views as to the role that real estate agents might play in addressing environmental sustainability in private rental housing. They noted that the industry was supportive of the need for education among real estate agents and that this was already taking place.

We have to acknowledge ... that the world is changing and our members have got to reflect that. And in the same way as they had to become conversant on the pool and the pump years ago, they have to be conversant on the water tanks and the photovoltaics and that sort of thing. It's just part of the mainstream. (Vic stakeholder 6, 21/5/2010)

While they felt comfortable with supporting property managers to pass on relevant information about government programs and changing policy settings to their clients, they did not envisage property managers as key agents of change:

It's probably unrealistic to rely on property managers to be the agents of change. They can be helpers and not be impediments, but they can't be the agents of change directly because their relationship with the landlord is a client relationship and there is only so far they can go. (Vic stakeholder 6, 21/5/2010)

Property managers can play a role in presenting options to clients, but they are not in a position to make that final decision.

People are not against it. The conundrum is that our members don't own the property that needs to be changed. I've no doubt our members are very interested, but it is not in their purview to make that change. (Vic stakeholder 6, 21/5/2010)

Moreover, it was suggested that property managers could not be expected to become experts in such a complex, diverse and rapidly changing area.

I think it is unrealistic to expect that they will become experts. They're transaction people—they're introducing A to B and negotiating on a price on A to B—that's really their role. It's a matter of them having an energy rating certificate if that's what's required in years to come or where do you go for more information, but I think the idea of them going away and doing a course and becoming a semi-expert as part of their job, I don't think it's going to happen, and I think it would be dangerous too. (Tas stakeholder 4, 4/12/2009)

While engaging property managers is important in accessing a larger pool of private rental households, it is not clear whether there is potential interest in the management of sustainability issues across the sector and in particular among agencies that manage a high proportion of low cost rental properties.

3.4.6 Policy horizon: Mandatory disclosure

While stakeholders were generally supportive of the introduction of mandatory disclosure, they held a range of views on the potential for mandatory disclosure to deliver sustainable home improvements in the private rental sector.

Stakeholders in the property sector favoured further consultation with policy-makers about the format and content of the disclosure and they wanted plenty of advanced notice about potential changes in legislative settings. This was viewed as important in providing landlords with sufficient time to adapt to any new regulatory environment.

They deserve to give people a good lead time. I mean housing is not a quick mover and people deserve to know what the regulatory environment is. If they are given adequate notice then they can adapt and take advantage of that. (Vic stakeholder 6, 21/5/2010)

Yes. I can see the concept of an energy rating system has got to be the way of the future. It's just a matter of how fast it arrives. (Tas stakeholder 4, 4/12/2009)

They also emphasised the need for any mandated home assessment to be worthwhile to the landlord. They wanted the rating system be transparent and simple enough for prospective tenants to be able to use, but sufficiently comprehensive to enable landlords to gain insight into the potential areas of their property that could benefit from an upgrade. They did not want to see landlords wearing these costs and they favoured some government subsidy to cover initial assessment costs.

In the community sector, stakeholders were primarily concerned about the capacity of low-income private rental households to exercise choice in a constrained market with low vacancy rates.

But the market is too tight here. We have record low vacancy rates ... so even if you have an energy rating—it's a start—but when there is no choice you just have to take the low rating property. (Tas stakeholder 5, 14/12/2010)

Having mandatory disclosure really only addresses the upper and the middle end of the market, but many people do not have the capacity to choose between properties. So if you don't have the capacity to choose between a 3-star or 5-star property then you end up in the poorer rated properties. And while it may create incentives in the upper end of the market and attract higher premiums for rent, it won't have the same impact on the lower end of the market. (Vic stakeholder 2, 26/3/2010)

They were sceptical about the capacity of the scheme to facilitate property improvements at the lower end of the housing market. Instead, they viewed mandatory disclosure as a 'stepping stone' towards the introduction of a green minimum standard.

We see it as a 'stepping stone' towards the introduction of an energy efficiency standard in rental housing. (Vic stakeholder 14, 15/6/2010)

Concerns were also raised about how the scheme will deal with strata-titled, multi-unit developments. One stakeholder asked: 'Who is disclosing? The owners' corporations or the individual owners?' (Vic stakeholder 12, 10/6/2010) There was a concern that currently there is limited support for owners' corporations to undertake sustainable work in common areas. There are also a range of grey areas around common property that are yet to be clarified prior to the introduction of mandatory disclosure, such as the capacity for owners' corporations to engage in power generation to the grid given that it is illegal for owners' corporations to run businesses.

3.4.7 Policy horizon: Minimum rental standards

Many stakeholders from the community sector expressed the view that the introduction of minimum standards is the most effective way to support low-income household tenants. They supported the introduction of a general minimum standard, with some provision for minimal energy and water measures in low-cost housing. In both Victoria and Tasmania, the residential tenancy acts do not include a minimum standard, however, there are ad hoc default standards set out in other pieces of legislation.

We think that the RTA needs to allow the minister to regulate minimal rental standards. There's nothing in there at the moment that suggests any sort of property standard at all other than general cleanliness at the start of the lease. We think it could cover things like energy efficiency of appliances and at the moment at the Victorian one—when water appliances are replaced, they have to be replaced by an A standard when best practice is triple A. So I think that there does need to be best practice benchmarks. We think you need a floor in there to start building on because at the moment you don't even have a floor of basic standards. (Vic stakeholder 2, 26/3/2010)

We're doing some work on trying to get minimum standards recognised. Our residential tenancy legislation doesn't require any minimum standards at all. It would be great to have those sorts of things [energy efficient appliances] regulated, but at the moment we're just concerned with things—like heaters aren't required in a leased house. (Tas stakeholder 1, 16/11/2009)

I think I'm increasingly taking the view that regulation is the way to go. That voluntary programs take too long and that regulation is probably the way to go. Perhaps maybe a program that gives landlords temporary financial support to make required changes and that then becomes the regulated standard for rental accommodation. (Tasmanian stakeholder 5, 10/12/2009)

The introduction of standards is more likely to lead to better outcomes at the lower end of the housing market. (Vic stakeholder 14, 15/6/2010)

Stakeholders in the community sector viewed mandatory disclosure and the introduction of a minimum rental standard as complementary.

Mandatory disclosure won't have the same impact on the lower end of the market. That's why we need a floor through the RTA. (Vic stakeholder 2, 26/3/2010)

It may work to assist with the enforcement of standards. There's an opportunity there to enforce the *Residential Tenancy Act* without a tenant having to bring a complaint forward. It would be disclosed at point of lease. (Vic stakeholder 2, 26/3/2010)

In addition, one stakeholder observed that strengthened provisions in the *Residential Tenancy Act* could address the problem of landlords withholding consent to undertake reasonable energy and water efficiency adaptations and to participate in retrofitting programs.

It would be really useful to have a provision in the RTA that said that they can't unreasonably withhold their consent and then if they did unreasonably withhold their consent then you could actually challenge that in the tribunal and have the tribunal make a determination. (Vic stakeholder 1, 19/3/2010)

Stakeholders also noted the importance of location in regard to tenant preferences, and therefore they argued that the introduction of minimum standards would have a

minimal affect on affordability. (Vic stakeholder 1, 19/3/2010; Vic stakeholder 2, 26/3/2010)

In contrast, stakeholders within the property sector were opposed to the introduction of minimum rental standards as they felt that it would impact negatively on housing affordability. The process of achieving legislative changes was viewed as onerous and difficult to achieve.

The amount of time and effort involved in mandating a certain minimum standard is such that it will never get there. It is such an enormously contentious issue. In my view, it's the wrong way round. There are a range of changes that could be made to rental homes where the public good was greater than the private gain to the landlord, then the state should just pay through the property fund. The rationale is that the landlord is not getting anything out of it, our society is by saving water and energy and this would be in an area where governments are already giving products away (e.g. showerheads). (Vic stakeholder 6, 21/5/2010)

3.5 Summary

In this chapter, we have reviewed policy programs that support tenants and landlords in adopting energy and water saving measures. The focus of the review was on programs available in Victoria and Tasmania. A comparison of these policy landscapes highlights the significant role of institutional and legislative frameworks in facilitating capacity building across the community and private sector. The Victorian Government has an established organisation dedicated to the promotion and demonstration of sustainable resource use and it has supported innovative sustainability programs in the residential sector that complement Federal Government targets and programs. This situation provides existing NGOs and new players with adequate incentives to enable them to undertake energy and water retrofit programs and to support training and employment placements in an emerging 'green skills' industry. It encourages non-government organisations to shift their focus from discrete pilot projects to the consideration of longer-term frameworks and programs that can operate within a business model. The Victorian Government's support for sustainability issues has also enabled greater engagement with the real estate industry. In contrast, in Tasmania there is support from the state government towards sustainable resource use, but policy initiatives in the residential sector have been limited. The lack of governmental coordination and management has hindered capacity building in the community sector around sustainability issues and discouraged the development of a range of retrofit programs and models. This, in turn, has hindered opportunities for retraining and employment programs and there has been limited engagement with the real estate industry to address sustainability issues.

The program review demonstrates the value of developing capacity across a range of delivery agencies and sectors. A collaborative state government-community organisation model of program delivery was effective in integrating the program with existing targets and policy settings, managing and monitoring program outcomes, and tailoring the delivery of the program to the relevant community. While not-for-profit environmental organisations and volunteers were unable to draw on an existing base of community linkages when trying to recruit householders, they were flexible in the strategies they employed to recruit householders. In addition, these groups were able to forge links with the real estate sector. This is important as property managers hold clear advantages as a delivery agency in terms of accessing an existing client base of landlords. However, it is not clear what is required to further engage the property

sector in addressing sustainability issues, and in particular support agencies that manage a high proportion of low-cost rental properties.

Experience from existing retrofit programs suggested that different approaches and programs are required to reach: landlords who self-manage properties rather than through an agent; private rental tenants in areas of socio-economic disadvantage; and diverse private rental households. Programs that focused exclusively on private rental households were valuable in gaining a more detailed understanding of the challenges faced in the private rental sector. In contrast, programs that were open to all tenures had experienced problems with private rental tenants and landlords assuming that the program was not relevant to their situation and consequently these households were self-selecting out of the program.

In regard to the policy horizon, stakeholders were generally supportive of the introduction of mandatory disclosure. Stakeholders in the property sector favoured further consultation with policy-makers about the format and content of the disclosure and they wanted plenty of advanced notice about potential changes in legislative settings. In the community sector, stakeholders were primarily concerned about the capacity of low-income private rental households to exercise choice in a constrained market with low vacancy rates. Instead, they viewed mandatory disclosure and minimum rental standards as complementary policy settings. Stakeholders from the community sector expressed the view that the introduction of minimum standards is the most effective way to support low-income household tenants. They supported the introduction of a general minimum standard, with some provision for minimal energy and water measures in low cost housing. In contrast, stakeholders within the property sector were opposed to the introduction of minimum rental standards as they felt that it would impact negatively on housing affordability. The process of achieving legislative change was viewed as onerous.

The work achieved in the private rental sector under each of the programs reviewed demonstrates that there are effective means of overcoming the split incentive that discourages landlords from upgrading their properties for energy and water efficiency. However, apart from the HIP, the scale of the programs has been relatively limited. There is scope for further expansion of retrofit and support programs among low-income private rental households and for increased education and support for private rental households in general. This requires a shift from pilot and ad hoc programs to a longer-term policy framework supported by adequate targets, monitoring and evaluation. In Victoria, where more advanced policy settings are in place, their stakeholders identified a need for greater coordination across levels of government and agencies, as well as an ongoing role for intermediaries who can negotiate between tenants, landlords and agents and who can assist them in navigating their way through the web of policy programs and settings.

4 VIEWS OF PRIVATE RENTAL INVESTORS

4.1 Overview

In this chapter, we examine the views of private rental investors in response to RQ5:

- What are the attitudes of private rental housing investors towards measures to improve the environmental sustainability of their housing investment?

We begin by outlining the research methods and providing a profile of the investors we recruited. We then provide an analysis of the data obtained through consultation with private rental investors. This analysis is based on the views of 52 investors and as such is qualitative and exploratory. Here we examine investor views of environmental sustainability including: their attitudes towards environmental sustainability; their knowledge of environmental sustainability; and the actions they have taken to improve environmental sustainability. We then document the major barriers as reported by investors that prevent them from taking up measures to improve the energy and water performance of their private rental dwellings. In addition, we examine investor views of existing and future policy options, in particular the specific policy proposal of mandatory disclosure. Finally, we report on investor perceptions of the current and potential market for sustainable rental properties.

4.2 Research methods

The project team consulted with 52 private rental investors between March 2010 and June 2010.¹⁴ The team conducted telephone or face-to-face interviews with 37 investors: 17 of these investors held properties in Victoria and 20 held properties in Tasmania. While most participants held properties in the major cities of Melbourne, Hobart and Launceston, some held properties in rural Tasmania. There were investors who held multiple properties, some of which were interstate. In addition, the team conducted four focus groups with 15 private rental investors. In Victoria, the team conducted two focus groups with seven investors at the civic meeting room at the Springvale town hall on 3 and 4 May 2010. Seven investors attended. In Tasmania, the team conducted two focus groups with eight investors at the Glenorchy state library on 7 and 8 April 2010.

Previous studies of Australian landlords have experienced difficulties in recruiting landlords due to the fact that the majority of them are sole or joint investors, often managing the property themselves, and hence they lack a public, organised face. While databases of landlords do exist as a consequence of property/land tax and bond authorities, due to privacy concerns it was not possible to access these lists for this study.

Investors were recruited through key contacts, relevant networks, local radio bulletins, and advertisements placed on community notice boards and in newspapers. In Victoria, advertisements were placed in local newspapers in five areas: Dandenong/Springvale, Knox, Waverley, Moreland and Preston. In Tasmania, advertisements were placed in two major daily newspapers, *The Mercury* and *The Examiner*.

The interview schedule addressed four themes: investor attitudes towards environmental sustainability; investor knowledge of the sustainable profile of their property; investor actions to improve the sustainable profile of their property; and

¹⁴ The reporting of some questions is limited to 37 respondents as focus group participants were not asked to respond to all the questions covered in the private rental investor survey.

policy support, including investor views on one policy option mandatory disclosure (See Appendix One.)¹⁵

4.3 Profile of private rental investors

The private rental investors who participated in the study represented a range of investment and property management situations. Most investors who participated in the study owned one property (n=29, 55.8%), with 11 investors holding two properties (21.2%), and 12 investors holding over two properties (23.1%).

Over half of the investors engaged a real estate agent to manage their property (n=28, 53.8%), with 22 investors managing the property themselves (42.3%) and two investors relying on a mix of self-management and agent (3.8%).

Half of the participants were sole investors, 20 participants were joint owners (38.5%), and one participant held property as part of a trust business (1.9%). The remaining five participants identified with a mix of situations (9.6%), including sole investor, joint owner and/or trust.

The team aimed to recruit a range of landlord types: those who had already invested in low-emission technologies; those who had yet to invest in low-emission technologies; and those who had invested in low-cost suburbs and housing.

In regard to the uptake of low emission technologies, over two-thirds of participants (n=36, 69.2%) had undertaken minor or major improvements to their rental properties. This reflects the recruitment strategy, which depended largely on self-selection through advertising in local media and via community networks.

In regard to the recruitment of investors in low-cost housing, just under half the investors who participated in the study (n=25, 48.1%) held at least one property in a low-cost suburb, with the remainder (n=27, 51.9%) investing in middle and high-cost suburbs and regions.

4.4 Attitudes towards environmental sustainability

Private rental investors were predominantly concerned about issues of environmental sustainability, with around half of the participants (n=19, 51.3%) stating that they are 'very important' and a further 17 participants (45.9%) stating that they are 'somewhat important'. Only one investor stated that issues of environmental sustainability were 'not important at all' (2.7%).

I'm all for it. I'll do whatever it takes to make my rental as well as my own home sustainable. (Tas FG, 7/4/2010)

It matters a lot to me. I need to do what I can in everything that I do to minimise my impact whether that's properties I own or how I transport myself or whatever. (Tas FG, 8/4/2010)

Some respondents noted that within a generation environmental issues have emerged as major individual and societal concerns:

Yes, it's important to me. I think it's important to everyone. I think it's an issue that we all have to focus on. (Vic FG 4/5/2010)

¹⁵ While the interview schedule asked investors about waste management, this was identified by investors as a tenants issue and no respondents nominated actions to improve waste management. Accordingly, there is no reference to issues of waste management in this section.

Back then, you didn't worry about it. But now it is one of the things you do think about. And if you're doing any renovations or building, you've got to think about it. (Vic FG 4/5/2010)

While many of the investors who did regard issues of environmental sustainability as 'very important' had taken actions to improve the energy and water performance of their rental dwelling, this was not always the case. Some respondents acknowledged that their strongly held views had not translated into changes to their rental property. They noted that although they had made changes to improve the sustainability of their own homes, they had simply not considered the environmental performance of their rental property.

In purchasing the properties it didn't come into it at all. I didn't look at whether they had good environmental features at all. It didn't even enter my head. I think about it heaps in my own home. Like, heaps. But not at all in the rentals. (5 Vic investor, 17/5/2010)

I am concerned about environmental matters, but I don't suppose I live my life in every respect in relation to minimising my footprint. So, for example, I like to think the fact that I don't own a car and that I cycle and walk everywhere allows me indulgence in certain other areas. (11 Vic investor, 27/5/2010)

So this property I bought for my primary residence I only bought three years ago and it has all these water saving features in and I hadn't even thought about them for the rentals but maybe I should. (6 Tas investor, 19/3/2010).

I think maybe if you don't live in a place you don't think about it as much as you would if you actually did live in it.' (10 Tas investor, 22/3/2010)

I suppose I think it's a lot to do with how much the tenants actually use. Yes, I hadn't thought of it so much in terms of what we can do to modify the property. (2 Vic investor, 3/5/2010)

Of those respondents who nominated issues of environmental sustainability as 'somewhat important', many qualified their concern about the environment with their capacity to pay for energy and water saving measures.

Reasonably concerned, but it's buffered by economics really and the profit I'm making. (8 Tas investor 22/3/2010)

While many participants were willing to put their own money into energy and water efficiency measures, they noted that there were limits on their capacity to pay.

We don't mind being out of pocket a bit if we're looking after the environment, but it is how much we can afford to be out of pocket. A couple of thousand dollars is alright, but if you're talking \$10 000 then on our income it's probably not affordable. So, yes, I suppose there's a cap somewhere there where we are prepared to pay a certain amount in order to be sustainable and care for the environment, but we just don't have the funds to do that. (2 Vic investor, 3/5/2010)

Some observed that while environmental issues are not a major priority for them, they were happy to support sustainable initiatives where they would not be inconvenienced.

I'm aware of sustainability and all that sort of stuff so it's not something that I'm hugely into but given any sort of opportunity I'd lean towards going that way to any—given any, you know, 50/50 decisions you'd go that way sort of thing, but I'm not that strong, like, really strongly about it. (Vic FG, 3/5/2010)

Look, I'm not concerned, but if I can make it easier for my tenants I will. I'll bring in things that will make the utilities bills easier. (6 Tas investor, 19/3/2010)

Probably not [interested in an energy assessment of the property]. If they wanted to then I probably wouldn't object to it. (7 Vic investor, 23/5/2010)

Others stated that it was:

Lost money. (Tas FG, 7/4/2010)

For the most part, it's not a cost I bear. (7 Vic investor, 23/5/2010)

4.5 Knowledge of environmental sustainability

Most private rental investors (n=32, 85.5%) had not thought about issues of energy and water efficiency at the point of purchasing their rental property, with only five (13.5%) of the respondents interviewed having considered these issues. Many commented that when they first purchased their rental property, issues of climate change and environmental sustainability were not major public concerns. In contrast, most respondents (n= 27, 73.0%) were now concerned about the performance of their property in terms of energy and water use. The minority who did not express concern were those who had for the most part already undertaken measures to improve the energy and water efficiency of their property.

Investors were asked about their awareness of the energy and water performance of their property. The most knowledgeable were: those who were very interested in environmental issues and who had taken actions to improve the dwelling; those who had built the dwelling themselves; and those who had lived in the property and who were aware in a general sense of the comfort level of the dwelling.

While a majority of respondents (n=25, 67.6%) had sought information about improving the energy and water efficiency of their property, only one investor had had an energy audit conducted on their property and another investor was currently in the process of organising one through the Federal Government's green loan program. The former situation was not a typical landlord-tenant arrangement, but rather the tenant in place was a relative who had initiated an audit by a private environmental consultancy with permission from the landlord. Both landlord and tenant were well-informed and interested in the energy and water performance of the rental property.

Just over half of the participants (n=20, 54.1%) stated that they had some awareness of the energy and water performance of the property. However, 16 of these participants suggested that this awareness was limited, rather than comprehensive, and they were interested in obtaining more information about the sustainable profile of their property. The remaining 17 participants (45.9%) stated that they were not aware of the energy and water performance of their rental property.

I don't think the general public has an idea of—you know, how do you find this out? Do you have to actually build a house to find out what goes into a house? I'm an engineer and I'd like to know more about building because my idea of a good house is something built with a double brick wall because that's a solid house and it's never going to fall down. It takes days to heat up and days to cool down. It seems the old way was good in some ways. (4 Vic investor, 17/5/2010)

I'm fumbling through in the dark; (3 Tas investor, 15/3/2010)

It's something I really haven't thought through much before, but the relationship between where your power comes from and how it's generated is

something I've never really thought through all that consistently. (8 Tas investor, 22/3/2010)

I had an electrician in and basically, you're going on what they tell you. Now it's either with what they're familiar with that you get. But it's really, really hard because there are a lot of heaters out there to choose from. I just don't have a lot of idea on what really is best for that particular property. (14 Tas investor, 23/4/2010)

Accordingly, most investors (n=28, 75.7%) welcomed more information on the sustainable property of their rental dwelling, and most investors (n=33, 89.2%) welcomed more information on the measures and technologies available to improve the energy and water efficiency of their rental dwelling. Some noted that it was difficult to determine what measures were best for their particular property as they felt that they were reliant on advice from company representatives and salespeople, rather than independent advice from government organisations.

There was no-one you could get in touch with and say, 'Hey, look, I've got all this information. This is the house I'm building. Now which is going to suit it the best?' I don't know. I'm not an expert in this field and each company is telling me that theirs is the best and the other one doesn't do all these things. So you sort of say, well, hello! (Vic FG 4/5/2010)

I think finding out about the different ones is hard, too. Because when I built my house in Dandenong, trying to get information on solar hot water units, solar electricity. You would ring up the different companies to get information from them and then try to figure out which was the most efficient, which was the best way to go. (Vic FG 4/5/2010)

4.6 Action to improve environmental sustainability

The majority of the private rental investors (n=36, 69.2%) who participated in the study had undertaken actions to improve the energy and/or water efficiency of their rental dwelling, with many of these investors noting that the changes they had made were minor and low cost.

There was considerable variation in the range of actions undertaken by investors and the degree of actions taken. The most common actions cited by investors were installing energy efficient light bulbs and installing low water use showerheads. In regard to energy performance, investors had used sealing to minimise draughts, installed ceiling insulation, installed energy efficient whitegoods and improved window coverings. In regard to water use, investors had installed water saving measures such as dual-flush toilets, water tanks and low water use whitegoods. They had also planted low maintenance gardens.

Yes, got those little stickers that insulate the whole thing around the doors. A lot of people wouldn't do that, of course. I got the roll and when they move out I'm going to check and if they need some I just put it on. (Vic FG, 3/5/2010)

We did a lot of minor conversions, minor additions. Things like energy-efficient light globes and off-peak devices and little things there. (Tas FG, 7/4/2010)

Showerhead's been done, energy-efficient light globes, I've put pelmets up in some of the rooms, but obviously they should be in every room being cold and being Hobart. Sort of take everything into account. Insulation's been done. (Tas FG, 7/4/2010)

Weather strip, the seal, the foam seal around, that's been put around everywhere. (Tas FG, 7/4/2010)

I've installed Venetian blinds as well as curtains so that the sun can be more directly regulated. (09 Tas investor, 22/3/2010)

When we put the new bathrooms in, we put front loading washing machines, which are supposed to be better; we put in efficient wall heaters; we put in gas hot water services in some of them because it's supposed to be good. (11 Tas investor, 29/3/2010)

Additional measures cited by a small minority of investors included: wrapping hot water systems; installing solar hot water and instantaneous gas hot water; installing more efficient space heating systems, such as gas and heat pumps; and installing solar panels.

But the other thing, too, that a lot of people don't realise, is that by wrapping your pipes where you leave your hot water cylinder—wrapping the hot water pipes is a major saving. I've done that with quite a few of the rental properties and that makes a big difference because on the mainland they put hot water cylinders outside and your hot water pipe is running down the side of the house. (Tas FG, 7/4/2010)

On one property we've added solar hot water. We've insulated all of the properties. One of them we've converted everything to natural gas; all the heating et cetera. Got rid of the wood heater. We're still waiting on the electric hot water to die. The pipe there is capped off ready for a gas flow-through system which will be much more efficient. Other than that, I guess in regards to the landscaping we're mulching all of the beds and using drought tolerant species in our landscaping. (3 Tas investor, 15/3/2010)

Since we bought it. we put the insulation in and we've installed a solar hot water system. (12 Tas investor, 6/4/2010)

The few who had built or extensively renovated their investment properties had: considered issues of the impact of the house on the landscape (opting for piers rather than a concrete slab); used recycled material; opted for double glazing or laminated glass; and considered issues of appropriate design and siting to maximise sunlight.

I'm aiming for six-star or better. And my approved plan has storm water reticulation to toilets and garden water as much as what the local council will allow. It's got eco-glass or thermo-glass installed. Double glazing. And I'm using recycled materials. So the first unit. I'm not really thinking of the return, it's more like a demonstration (for other units). (15 Tas investor, 30/4/2010)

We didn't excavate the block. We built on piers so there was no soil removed and we retained the natural slope of the land. There were a lot of things that we did, like we used second hand materials and we made sure we insulated the floor of course. And we put a water tank in as well. We put in instant gas water heaters rather than a water storage heater. I actually put in two so that we could have one directly outside, or between the kitchen and laundry and the other one directly in front of the two en-suite bathrooms, so that there is minimal run for the hot water to go to the outlet. We took a middle option with glazing. We would have used double glazing, but it was too expensive so we've used what they call 'comfort glass' which is a laminated glass. (16 Tas investor, 26/4/2010)

Promisingly, a number of investors noted that they would be factoring in environmental issues when upgrading heating and cooling systems and hot water systems.

I put a solar hot water system on our private residence and I'd probably look at doing it down the track at our investment property. Mainly for two reasons: (a) as a bonus to a good tenant to lower his overhead costs, and (b) as an environmental benefit. It's a double-edged sword. It's environmentally beneficial and financially beneficial. (4 Tas investor, 18/3/2010)

I take the point that we might look at it next time we get in there. If the tenant changes and we have to fix up a few things, maybe we'll look at the shower heads and draught sealing and so on. We would look at them because we would want to improve it to attract the next tenant. Things would be getting a bit tired so we'd need to fix it up anyway. That would be a good opportunity. (4 Vic investor, 17/5/2010)

At some point I would like to put in LED lights which I think are much better in that sense. Number one, they are more energy efficient and number two is you don't have to replace globes anywhere near as often. (9 Vic investor, 24/5/2010)

Some investors noted that they made improvements to the energy and water efficiency of the property when they had previously lived there. In doing so, they were able to obtain some direct benefit from the changes. Others noted that they were still unsure whether the property would remain a rental property or whether they would return to the property in the future and for that reason they were keen to ensure that there were improvements to the energy and water performance of the property.

If it was to stay a rental property, we would probably spend the bare minimum amount of money on it if we had to renovate it, but we would try to be as green as possible when we did so. But if we were renovating it to move back into it ourselves, then we would make it very much more energy efficient. (6 Vic investor, 19/5/2010)

When I bought the property I actually occupied it myself so I probably sealed—like made sure the windows and doors and things were sealed [3:29 over noise] heating, and that there was good insulation. But since it's been a rental property, I haven't made any changes. (2 Vic investor, 3/5/2010)

4.7 Barriers to uptake

Many private rental investors were receptive to the idea of making minor improvements to their rental dwellings, but recognised that there were currently barriers to undertaking this work. The most common concern cited by investors was the cost of taking up measures to improve the energy and water efficiency of their property. Other barriers cited by investors included: the lack of financial incentives; the potential for property damage; disinterested tenants; problems with accessing property to undertake audit and installations; problems associated with gaining permission to act in a strata-titled, multi-unit dwelling; the condition of the building; the investor's personal situation; a lack of awareness of the significance of sustainability issues in rental housing; and obstructive local planning regulations.

4.7.1 Cost

The upfront cost of major works was seen as a key barrier to undertaking the changes that would make a substantial difference to energy and water usage on the property.

It just feels like a prohibitive cost. I cannot—it's just too expensive to do anything. (5 Vic investor, 17/5/2010)

It's mostly a cost issue. (8 Tas investor, 22/3/2010)

But I wouldn't be putting in solar hot water because it is expensive and I am not convinced that it is economical in terms of the cost and how long it takes to pay off in terms of what you save. (10 Tas investor, 22/3/2010)

When the price comes down, per unit, we'll be switching to LEDs, but at the moment it's ridiculously expensive. (9 Tas investor, 22/3/2010)

Time and financial constraints. We've got a set amount of budget we spend per year just to maintain our tax write-off. (4 Tas investor, 18/3/2010)

But there are two types of maintenance. One is to make the place liveable, comfortable; insulation helped a little bit, but some of the other things such as looking now at double glazing and that sort of thing would just not bear a return. (Tas FG, 7/4/2010)

My biggest bug bear is the labour costs. To get anybody to do anything at all you're looking at \$70 an hour. (10 Vic investor, 25/5/2010)

Others commented that their financial situation was such that they did not have sufficient funds and were unable to take on additional loans.

I would like information, but if it involves me outlaying money I wouldn't do it. My circumstances have changed and I can't spend money on those properties. And anyway, why would I? Doesn't benefit me ... I know that doing nothing is not congruent with my beliefs, but it's my economic reality. (13 Tas investor, 12/4/2010)

Not really because they're negatively geared. They cost me money. Not much but a little bit and I can't afford to subsidise anything at this time. (13 Tas investor, 12/4/2010)

And because when you continuously sustain losses then you are trying to mitigate these losses. (Vic GF, 3/5/2010)

Investors also expressed concern that the costs of managing a rental property were already high and that they felt that any additional outlay would make this form of investment less attractive.

The good thing about rental property, obviously, is it goes up in price, you know, it goes up in value, but if there's too much to do and too many costs and too much legislation that you've got to comply with, like rental bond boards and whatever else, which I don't disagree with, but it does make the system a bit more difficult, you know, you're less inclined to buy into that asset. (8 Tas investor, 22/3/2010)

4.7.2 Lack of financial incentive

Many investors raised the issue of a lack of incentive for them to act. They noted that they would not be able to directly reap the benefit of a more energy efficient property.

It's really not in my interest. Well it's a lower priority for me to work out the most energy-efficient option on property that's rented where the tenant's paying the cost of the energy. (8 Tas investor, 22/3/2010)

One of the reasons for not doing anything special with the unit is that the tenant pays the electricity bill and they would reap the benefit of any capital

works that we did to improve energy efficiency, not us. (9 Tas investor, 22/3/2010)

There's a bit of a conflict of interest, really. I might be concerned about it, but it costs me money and I don't get the benefit. (13 Tas investor, 12/4/2010)

For me it's a financial investment. Period. (17 Vic investor, 15/6/2010)

In regard to water, where landlords were currently paying the water bill, they felt again that there was little incentive to act as water bills are not significant on compact dwellings.

I think while the tenants have to pay for the electricity, the power and the gas, the only incentive for me is if I can do something about the usage of the water. (02 Tas investor, 15/3/2010)

For the most part, it's not a cost I bear. So the tenant pays electricity and gas. The only utility bill I have to pay is the water and it's an apartment so it's not significant. In terms of cost-benefit, it wouldn't pay off, I couldn't justify it. (7 Vic investor, 23/5/2010)

It's not so much whether I'm satisfied or dissatisfied. It's just I don't care because I don't pay for that. (17 Vic investor, 15/6/2010)

Another concern expressed by investors was that they did not anticipate that their expenditure on the property to improve its energy and water efficiency could be recouped through higher rent. They felt that tenants were not prioritising these features when searching for a rental dwelling.

The main one is, yes, cost. That it's not financially viable. I don't get a decent enough kick-back. And at this point in time I don't feel tenants recognise the benefit of it. So, it's not something—if I put in solar electricity, I don't think I could put the rent up much in comparison. Like, that might be something in the next few years when people are more aware, but at this point in time there's no benefit from the rent perspective. (12 Vic investor, 31/5/2010)

While there's a shortage of rental properties, tenants can't afford to be fussy and therefore you're going to get a small minority that want a sustainable property. (14 Tas investor, 23/4/2010)

The real estate agents said that none of these things would probably make a huge difference rent-wise. We'd been told by the solar hot water man that some landlords charged an extra \$5 a week on their rent because the tenant would be saving that much in electricity. So that was interesting because it hadn't occurred to us til he said that. Then we ran it by the real estate agent and he said, 'Well, probably not'. It all depends on the market at the moment for houses, but she said that most of the kinds of tenants that we have they just don't count electricity like, they're just not on the ball enough. They wouldn't realise that they were saving \$5 a week. (12 Tas investor, 6/4/2010)

With the power from the solar cell you've got the option to feed that back into the grid but, again, the economics of that are cloudy; keep changing. I don't know what the payback is—probably ten years. (4 Vic investor, 17/5/2010)

In general, investors did not perceive the availability of tax preferences (such as depreciation allowances on amenities, deductions on the interest of borrowings to finance retrofits, and lenient taxation of capital gain on their property) as a major incentive for them to invest in energy and water saving measures. One investor observed that the preferential tax treatment of maintenance works on rental property,

as opposed to capital works, discouraged landlords from upgrading major infrastructure.

For tax purposes I don't get any benefit in going off and replacing something before it's worn out....because that's seen as a capital issue. Whereas if you wait until it breaks down, then it's a maintenance issue and it comes into the tax realm. I think that's also an important distinction between capital and maintenance. (1 Tas investor, 15/3/2010)

4.7.3 *Property damage*

Investors were also concerned about problems with maintenance and the potential damage to property from tenants. For example, they were hesitant to opt for more expensive window coverings or they were worried about long-life energy efficient globes disappearing at the end of a tenancy.

Your tendency is to go for the cheaper option because there's no point going for something expensive that's going to get damaged. Why are you going to pay a little bit more when, you know, you're skeptical tenants are going to look after it, whereas at home, for your own, you would think about it and be much more willing. (Vic GF, 3/5/2010)

A lot of it comes down to maintenance with tenants. Like, at my own personal property, I've got thick curtains and things like that because it's obviously better. But, you know what? They're very expensive and I've had tenants that are lucky to keep the place clean, let alone not damage things. So, again, I don't want to spend five grand on curtains if they're going to be destroyed in a couple of years. (12 Vic investor, 31/5/2010)

And for a rental property like that, I think too many things can go wrong with renters to make it worthwhile. (10 Tas investor, 22/3/2010)

We changed all the light globes to energy-efficient light bulbs. The tenants keep nicking them when they move. (Vic FG, 4/5/2010)

We're lucky at the moment we've got good tenants, but we've had some dreadful ones too. People don't realise what they do. (20 Tas investor, 1/6/2010)

4.7.4 *Disinterested tenants*

A number of investors felt that tenants were not particularly interested in measures to improve the energy and water efficiency of their rental property, and that some tenants had actually removed water efficient showerheads.

The main concern from tenants was, "How warm is the house?" Really, their attitude was more practicality based. They didn't really have a conscience as far as the performance of the house. (3 Tas investor, 15/3/2010)

The tenant liked it, but then he moved out, someone else moved in and just took it for granted. (Tas FG, 7/4/2010)

We had a bit of trouble renting it because it was a bit unusual. The design of the property was unusual in that it's got a large foyer area between the living space and the sleeping and bathing space. A lot of people couldn't get their heads around that. (16 Tas investor, 26/4/2010)

The property that I settled six months ago I did all of that because it was vacant and then I put a tenant in. Ten days after the tenant moved in, I had a request to remove the AAA shower head. (1 Tas investor, 15/3/2010)

We have some tenants who've taken them out and put the old splash ones in. They're basically not very interested. (11 Tas investor, 29/3/2010)

Investors expressed concern that even if they made energy and water efficiency improvements this would not necessarily translate into the tenant minimising their energy use or using tank water rather than the mains.

The tenants wasting the time and money. The tenants that we've had so far, it would have been a waste of a lot of time, money and energy to have done anything to date. (07 Tas investor, 19/3/2010)

I can put a water tank in, but if the tenant is not going to use it to water the garden then I've just wasted a couple of grand. (12 Vic investor, 31/5/2010)

I wouldn't be particularly interested in investing in that element of it until we had appropriate tenants in there. (7 Tas investor, 19/3/2010)

In terms of the tenants I'm thinking about it's got to be the right tenant, not just anybody ... Like a one-star tenant living in a six-star house. It won't work, you know. (15 Tas investor, 30/4/2010)

One landlord who had installed considerable energy and water efficiency measures at personal cost noted that there was no feedback from the tenant.

It's not nearly as rewarding as doing it to our own place because we live here and we can see the results whereas you know, you put the solar hot water in and you don't hear anything. You don't get any feedback. Not any. Not even thanks. No-one says, "Hey, it's going really well". No-one said anything. (12 Tas investor, 6/4/2010)

4.7.5 *Property access*

The issue of obtaining permission to access the property during a tenancy was raised by landlords as a barrier to undertaking a comprehensive audit and/or installing energy and water efficiency measures.

First of all it would be actually logistically difficult to get somebody in to assess it because the tenant's there.' (4 Vic investor, 17/5/2010)

One of the dilemmas is actually getting the time that you can have the property available. And timing it, so it's convenient for the tenants because you've got students with exams and arranging times to get it—a convenient time just to get tradesmen in. (17 Tas investor, 30/4/2010)

And a property that I have since sold which was a unit in Moonah, West Moonah, I bought that in 2003 and I wanted to put ceiling insulation in there and the tenant would not allow the workmen in to do it. I actually had to wait for that property to become vacant three years later in order to do that. So I actually think that whilst there are policies around—you can have as many policies in place as you like, but unless the tenants are on board as well. (1 Tas investor, 15/3/2010)

Yes, it was just trying to get hold of the tenant and getting that to happen. Now, it's been a little while. Things just got—life's got caught up and now she said, "Yes, okay. You can get them to contact me directly." And now I've just got to get hold of them. So it's back and forth. (5 Tas investor, 19/3/2010)

In regard to property access, a number of landlords commented on the challenges involved in replacing a standard hot water system with a solar hot water system.

Cylinders are replaced when they break down and it's almost impossible to get a hot water cylinder within the time-frame that the tenancy act requires. So, like, you can't physically do it for a tenanted property. It's not possible within the time-frame involved to replace it with an energy-efficient—well, with a solar hot water system. (1 Tas investor, 15/3/2010)

In contrast, one landlord found it relatively easy to install such a system with a tenant in place due in part to good communication and relations between himself and the tenant.

We contacted them and said we'd really like to put a solar hot water system in and they immediately responded and said, "That's great. Yes, anytime. Just tell them to come around and ... " you know. They made it really easy. They weren't without hot water at all because we had it all scheduled. It worked out they just switched over the cylinder and ... (Tas FG, 8/4/2010).

4.7.6 *Owners' corporation*

Many of the investors who owned unit/flats or apartments identified the owners' corporation as a key barrier to undertaking further energy and water efficiency improvements to their individual dwelling and other dwellings in the apartment block. They raised several concerns: an obstructionist manager of the owners' corporation; difficulty in raising awareness of sustainability issues and then obtaining agreement across individual owners; and difficulty in getting owners to pay for energy and water saving measures.

I am in some respects hitting a brick wall with the manager of the owners' corporation ... what I did then was I contacted our consumer affairs and I said, "Look, this is what I would like to have done. Is the owners' corporation manager justified in refusing permission for me to go ahead?" So they contacted me and said, "What you need to do is you need to get 75 per cent of the total to agree, even though they are not affected and they are not going to be involved financially, that it is okay by them for you to have the solar hot water service panels, and the hot water service itself, on the roof." So I haven't followed that up because I thought I will leave it. Otherwise, you know, [the manager will think] "Not her again. Troublemaker!" (3 Vic investor, 4/5/2010)

We looked at getting insulation put in. And I was thinking about doing the solar water/energy thing as well, but the only one that is going to go ahead is the water one I think. [Interviewer: Why did you choose to go ahead with that one and not the others?] It's the one we have most control over and able to do without too much trouble. The body corporate always takes a long time and all it takes is one or two dissenters and it won't go ahead ... In terms of putting the water tanks in, it was proposed through the body corporate and I agreed it was a good idea to do that. You get an agreement in principle to begin with and then they work out how much it is going to cost and then they have to agree to the costs and then we have to collect the money, and after we collect the money then you can actually think about putting it in. So it's a drawn out process. (9 Vic investor, 24/5/2010)

The body corporate is very strict and I can't imagine what hoops I'd have to go through to get solar panels on the roof. They won't even let people hang their washing out on the balcony because it detracts from the tone of the place. You have to jump through hoops to get a satellite dish for pay TV and, in fact, at one stage they were talking about having just one for the whole complex and you tapped into that so that there'd only be one intrusion on to the roofline. (9 Tas investor, 22/3/2010)

It's a bit fraught because we have done that for our unit. But, of course, the whole property is the entire building ... I used to be the president of the body corporate so I was in the position of sending emails to everybody on this matter and just asked people for their feedback. I did get several replies and everybody said they thought it [solar panels] was too expensive. (18 Tas investor, 3/5/2010)

4.7.7 *Condition of building*

Another barrier identified by investors was the condition or the design of the existing building.

It would not be a good investment to try to improve the energy efficiency of that [old fibro house]. If we'd kept it longer we might have pulled it down and built something else on it and then we would be conforming with the newer building codes which require better efficiency and so on. (4 Vic investor, 17/5/2010)

The nature of the building means we can't do—there's nowhere to put a water tank, for example, so that's not feasible. Heat, we can't change the heating and cooling regime other than that unit that's in there. It's not that big a place. It's just got the one reverse cycle unit so it's not much compared to houses which might have three or four of them. What was the other? Hot water is—I think it's electric hot water, which again, it's what you have to have in a multi-unit like that. Can't really have gas. Not feasible. (4 Vic investor, 17/5/2010)

I did think about it [installing a water tank], but I do think that space would be a real issue. It's a small backyard and there's not much scope to use the water. (13 Vic investor, 3/6/2010)

Some landlords noted that their property really required substantial maintenance and repair work before they turned their attention to energy and water efficiency measures.

My plan is that once those maintenance issues are completed then looking at the sustainability issues. So, yes, I haven't done anything pro-active yet. (8 Vic investor, 24/5/2010)

4.7.8 *Investor situation*

The investors' plans for the property, whether they would be holding or selling the property in the near future, also impacted on their capacity and interest in undertaking sustainable improvements.

I'm quite interested in having a water tank and solar power and those things, but they're big and we're looking to sell this property in two years. ... We may purchase another investment property and then if we're looking at having that in the longer term then we'd be much more open to putting some measures in for that property. Like a ten-year time frame rather than two years. (2 Vic investor, 3/5/2010)

4.7.9 *Lack of awareness*

For some investors, the major barrier was simply a lack of awareness about the significance of a sustainability profile of their rental dwelling. While they had made changes to their own properties, they had not given much thought to their rental dwelling.

This is the first time I've ever owned real property so a lot of it just could be ignorance of the options and not really—just not really turning my mind to it. I

guess I'm pretty busy and it's not the sort of thing that comes to the forefront of my mind. (11 Vic investor, 27/5/2010)

I had never even thought about this. (10 Tas investor, 22/3/2010)

4.7.10 Local planning regulations

One landlord had experienced problems with trying to install water tanks in an urban area. She noted that such anomalies within local planning schemes could deter landlords from taking up water saving measures.

The planning scheme in many councils, and Clarence is a good example of this, you can't actually do it. if it's a rural or semi-rural area, you can have it [water tanks], but if it's like connected to a water reticulation system, you can't. [To challenge this entails] lots of energy, time and coordination. (1 Tas investor, 15/3/2010)

4.8 Drivers

Investors provided feedback on why they had undertaken energy and water efficiency home improvements and under what circumstances they would be encouraged to undertake them. Some investors noted that they had not anticipated owning rental properties, but rather they had entered the market in order to support themselves in retirement. While these investors are dependent on the income generated by their rental properties, they also held a range of views and values in relation to environmental and social issues.

4.8.1 Reduce impact on the environment

For some, the main driver for undertaking sustainable improvements was to reduce their impact on the environment.

It's purely on environmental grounds. (9 Vic investor, 25/5/2010)

Personally I'm all for it. I'll do whatever it takes to make my rental as well as my own home sustainable. (Tas FG, 7/4/2010)

I was willing to subsidise the tenants because it would be beneficial to the whole development and the tenants themselves. (Vic FG, 3/5/2010)

4.8.2 Increase comfort and reduce cost for tenant

For others, the key motivation was social equity issues, including increasing the comfort for tenants and reducing their energy costs.

My concern also was—what I can do to sustain my future tenants in making sure that they're comfortable in living in an environmental way, it is going to hopefully get them to adapt and adopt to the global warming and whatnot. (Tas FG, 8/4/2010)

Insulation I did for a tenant, who was a good tenant and who'd been there for a while, and I knew he'd get the benefit out of it. I didn't do it with other properties at that stage because the cost was fairly high for virtually no return. (Tas FG, 7/4/2010)

4.8.3 Attract and retain good tenant

Several investors noted that investment in the sustainable features of a property could yield some return by assisting them to attract and retain good tenants.

You might not gain any extra rent or any monetary value, but what you do gain in the long run, you find that tenants tend to stay a lot longer. So the fact that

you're not turning over tenants on a short-term basis all the time is actually saving you money in the long run. (Tas FG, 7/4/2010)

There would be a limit on the cost, but we've not been afraid to spend money to help make the place a better rental place. (13 Vic investor, 3/6/2010)

The reason why we did that was because we were aiming specifically for one type of tenant. (Tas FG, 7/4/2010)

4.8.4 Moving into property

Another driver that had motivated investors to undertake sustainable home improvements was that they or family members had lived in the property previously or were planning to move into the property in the future (2 Vic investor, 3/5/2010; 5 Vic investor, 18/5/2010; 13 Vic investor, 3/6/2010).

4.8.5 Regulatory environment

The regulatory environment was also understood by investors as critical in providing them with the incentive to act. While investors noted that the present lack of adequate incentives through the taxation system discouraged them from taking up energy and water efficiency measures, those who had recently built rental properties observed that they had to meet environmental standards as set out in the Building Code of Australia (16 Tas investor, 26/4/2010; 10 Vic investor, 25/5/2010; 17 Vic investor, 15/6/2010).

4.9 Satisfaction with existing policy settings

In general, landlords were critical of existing policy settings aimed at improving the sustainability of Australian housing. They felt that recent measures to improve the energy and water efficiency of Australian housing were mismanaged and that current assistance available to private rental housing is limited. They were concerned about: the lack of targeted information available to investors about government programs; changing policy settings; profiteering and fraudulent practices in relation to the Federal Government's insulation scheme; contradictory policy settings across government; and the financial burden of land tax. There were some investors who appreciated the support they received from government programs, but these investors were in the minority.

4.9.1 Lack of targeted information

Among investors there was a low level of awareness of the availability of government programs for private rental dwellings. In particular, respondents were critical of the Federal Government's dissemination of information about the insulation scheme and the green loans scheme. Many did not know that they were available to landlords.

Yes, I just happened to find it by accident. One day I was [at the] market and there were the pamphlets given out to people who want to do it. If I didn't happen to go there I wouldn't know that they were supplying for the landlords. (Vic FG, 3/5/2010)

When they do provide something, it's like, "Hush, hush, we don't want too many people to, like, take money from the pot. You have to go and hunt it. And if you're lucky you might find something". (Vic FG 4/5/2010)

I knew it was available for private households, but I didn't know that it was open to landlords. (Tas FG, 7/4/2010)

I'd vaguely heard something about it [Green Loans program]. I wouldn't put it any higher than that. (11 Vic investor, 27/5/2010)

I don't know why but it just didn't occur to me that I would be able to apply it [the Green Loans program] to my rental property. It just didn't seem to hit the radar. I knew about. (13 Vic investor, 3/6/2010)

Landlords were unclear about the various initiatives offered across different levels of government.

I think that it's difficult to make a statement about that unless you're fully aware of the full gamut of them. But what I would probably say is that they introduce them in an ad hoc way and because some of them are state and some of them are council and some of them are federal, there's no one place to go to, to hear about everything. (1 Tas investor, 15/3/2010)

The only way I found out about the insulation was that my neighbour was getting it installed and knew I had all these properties and came over and said, "Now it is open to landlords". Then a bit later, "Now they've increased the amount that landlords can get so that I can do it for you without any outlay from you." So I said, okay, go ahead and do them. (13 Tas investor, 12/4/2010)

Oh, I think there's not much information. Even I think just people who are in a normal property or live in their property, they didn't—my parents didn't even know who did that scheme with the solar panels on the roof. Everyone knows about the insulation but no-one knew about the solar panels. (Vic FG 4/5/2010)

4.9.2 *Changing policy settings.*

Investors expressed concern that recent policy settings in this area were constantly changing and that this discouraged them from pursuing government programs and investing in renewable energy options. They were concerned that the federal insulation scheme had been subject to continual shifts in the guidelines and criteria and that the scheme had been closed with short notice. Equally, they were frustrated by changes to the Federal Government's Green Loans program, which meant that they could no longer access no interest loans.

One of the things that makes me hesitant to look at things like solar heating or hot water is the regulatory regime. With the government every five minutes changing the rules and the rebates and affecting the payback period and so on. I guess which doesn't encourage me to spend a lot of money on these things, whether it's water tanks, solar heating or solar panels ... So there's no consistency. You spend a whole lot of money thinking that you will be reimbursed or get some kind of benefit and then in a few years or new government they'll change it and you feel ripped off. (4 Vic investor, 17/5/2010)

I had a Green Loans person come into my house to see how it all worked. It was scheduled to happen and then the whole thing has sort of been put on hold and we don't know what's happening with that. I only just now received mine five months later. The same week, Peter Garret sent a letter saying the whole scheme's gone, in essence. But within three days of that I actually got my results saying these are the things you could do on your house and you can get the money. And I was like, I've got a letter here saying, "This is what you can do". And here's the letter saying, "Oh, but we're not going to do it anymore". (Tas FG, 8/4/2010)

I remember I came in and went, "Guess what? It's gone. We've started our project and the scheme's gone. (Tas FG, 7/4/2010)

I'm still actually waiting on the report thanks to the government's complete stuff-up of everything. They pulled the Green Loan before I could even apply

for the Green Loan. I was going to see how easy it was to go about it with my home and then do it for the investment property. But, obviously, the government canned it before I even got started. (12 Vic investor, 31/5/2010)

4.9.3 *Profiteering and fraudulent practices*

While investors were generally supportive of more financial assistance from the government to install energy and water efficiency measures, they felt that private companies were the main beneficiaries of existing government rebate schemes. They expressed concern that recent schemes had been subject to profiteering and fraudulent practices due to a lack of adequate governmental regulation and management of the schemes.

When I did my unit the price came very close to what the government grant was. (Tas FG, 7/4/2010)

With rebates I have this problem in that—and I'll give you an example—as I said my husband is a pretty good handyman and we installed two smaller water tanks. One is about 700 litres. We started with that mainly for garden and then we installed a bigger one because we had the space to do it, and, as I said, after we installed the two small ones, the state government's rebates came into effect. But as a result of that the plumbers put their rates up. So I am not in favour of rebates because it has that other side to it. (3 Vic investor, 4/5/2010)

I know it is really difficult, obviously, for a government to manage price, but when water tank rebates came in water tank prices jumped in exactly the same amount the rebate was. [Interviewer: So your rebate is just going back to the installer?] Yes. (12 Vic investor, 31/5/2010)

Whenever there's a government rebate involved, the price of that particular technology seems to go up by an equivalent amount. So we don't actually get the rebate—the installers generally end up with that. (03 Tas investor, 15/3/2010)

Every time the government gets involved and throws money at it, the sharks turn up. (04 Tas investor, 18/3/2010)

Every time the government brought in a new safety step, someone found a way to make more money out of it. (Tas FG, 7/4/2010)

We found that someone, a dodgy company, had got one of the tenants to sign to do it for them and when our insulation company had a look in the roof, it was only done around the edges. We rang and complained. They didn't want to talk to us. In fact, we were told to go away and keep quiet. (Vic FG 4/5/2010)

It's not bad, but it is still, you know, some of the work is not up to scratch. There were bits and pieces that they didn't insulate so I had to go back and patch it up. (15 Tas investor, 30/4/2010)

4.9.4 *Inadequate incentives for solar energy*

Some investors were disappointed that there were not adequate incentives in place to encourage wider uptake of solar panels among rental properties. They felt that this technology had the potential to make a substantial contribution to reducing the household's energy costs. They were discouraged by the limited availability of the rebate, that is, one per person rather than property.

So I felt that would a good thing to do. But I sort of tried to inquire about it, but no-one was really that helpful. It just seemed like I would have to pay for it.

There's no subsidy by the government for a landlord [to install solar panels]. (Vic FG 4/5/2010)

I have actually recently looked into solar energy. I then found out that the government only provides the rebates and the RECs for one property per person. So, there's no benefit for me to do my investment property. I'm better off to do my own property because I don't get the RECs with an investment property. I'd only get the original rebate which is not much. (12 Vic investor, 31/5/2010)

I mean solar is always an expensive outlay—it always has been and you've always got to look at justifying the costs unless you're buying some place that is going to gain massive capital gain in the short term. But often it's not viable, particularly in a unit in a multi-unit dwelling. (Tas FG 7/4/2010)

There were also considerable challenges for investors who held properties in strata-titled, multi-unit developments. These included: resistance from owners' corporations and individual owners to any significant visual feature that had the potential to detract from the perceived value of the property, difficulties in gaining agreement across multiple owners; and prohibitive costs.

4.9.5 Contradictory policy settings

Other criticisms expressed by investors related to broad policy settings. Investors were concerned that the fundamental policy settings for energy and water usage, as well as urban planning and transport, in Victoria and Tasmania, were inadequate and contradictory.

People want bigger blocks of land, bigger houses. They're going further and further away from the city. And you think; you're 50 km from the city and you have to drive to work. Then you're using all the petrol. There's no public transport. And as if they're going to make public transport 50 kms away from the city. (Vic investor FG, 4/5/2010)

If they fix the railway that would make the town far more efficient than anything about the water and energy there. (07 Tas investor, 19/3/2010)

In Victoria, landlords raised the issue of the state government's support for a desalination plant.

For what it's costing the de sal plant, it would have been cheaper for the government to actually buy a water tank for every household. It's just ludicrous. I mean, because the environmental damage it's doing because it's going to have a lot of salt in that area. ... even if they bought everybody a water tank it would have been cheaper than doing a de-sal plant. (Vic FG 4/5/2010)

In Tasmania, landlords commented on the failure of state government to mandate energy efficient hot water system replacement.

Around the country if you put in a new hot water system or replaced one, it has to be based on solar power or solar hot water or other alternative energy or renewable energy. He exempted Tasmania so that Tasmanians can continue to put in the standard hot water cylinders. They weren't forced to upgrade. And that is indicative of the governmental approach to it. (Tas FG, 8/4/2010)

4.9.6 Land tax

Landlords in both states expressed concern about the financial burden of land tax. They commented that that burden reduced their profit margin and reduced their capacity to redirect funds to energy and water saving measures.

4.9.7 *Positive comments on existing policy*

On the positive side, landlords were encouraged by some aspects of recent policy initiatives. Many landlords were supportive of the insulation scheme; they felt that the rebate was generous enough to encourage landlords to take up this measure. One landlord had been able to access the full Green Loans program and she appreciated the feedback provided by the assessor and the opportunity to access a non-interest loan in order to upgrade her property. Another landlord spoke positively about the programs offered by her local council, including a series of information-sharing workshops and support for a local bulk-buying scheme.

The real estate agent told me about them. Yes. And they are very quick on the mark as to what the government has. You know, this is what they can access and what is out there. They just talked me through the entire process. "Look, this is what needs to be done. This is how it's going to be done. This is how much we will lend you. This is how much the costs involved. This is how much rebate you get. (Tas FG, 8/4/2010)

Our council did a lot of homework in that they ran workshops for us to attend and there was a lot of publicity in local newspapers And even with the solar panels that we've got on our roof [own roof not rental property], that too was a council input. Five councils got together and did the groundwork and did the research and brought on a company that did all the bulk buying. So I must admit, rather than me getting on the phone and ringing up half a dozen solar energy people, they did all the groundwork, came up with the best product and the best price and as we all know, you buy in bulk and the costs comes down. (3 Vic investor, 4/5/2010)

4.10 Policy options and preferences

Investors expressed a range of opinions on how governments could best encourage and support them to address energy and water efficiency issues in their rental properties. The key suggestions for policy development included: ensuring investors are made aware of government programs through targeted information campaigns; establishment of a landlord association; establishment of an independent central body to provide information on sustainable housing; providing educational opportunities for landlords and tenants; making financial assistance available to investors; providing continued access to environmental assessments at no cost to the landlord; addressing the particular concerns of strata-titled, multi-unit developments; engaging real estate agents; providing a secure policy framework; providing incentives for solar energy; and establishing a green minimum standard. While most envisaged a minimal governmental role, in the form of small-scale rebates and education, a minority were comfortable with greater government regulation in this area.

4.10.1 *Targeted communication strategy*

Investors stated that they would have liked to have received more targeted information from the government about sustainable housing initiatives via trusted local channels such as the local council or their property managers. They also wanted practical information presented in a way that is clear and simple and readily understood by the general public.

But a lot of the things that we run into are finding the information. It's getting the information. And then they drop it on us and say, "Well, you find out about it." Well, I mean, I'm not an engineer or anything like that. Well, I don't know what all this stuff means. (Vic FG 4/5/2010)

I think that they need to be better coordinated and I also think that they should write to people instead of just announcing it and walking away or occasionally you might get something in the newspaper which, if you don't happen to read it on that particular day you miss anyway. But I would say this about any legislative change that they bring in they should write to people. Like, how difficult is it? (01 Tas investor, 15/3/2010)

What I feel is that the councils could promote this when they are taking the rates. They could promote it. (Vic FG, 3/5/2010)

Target landlords with an information program or campaign. Say, "These are the things you can do. This is the help that's available for you as a landlord". (13 Tas investor, 12/4/2010)

4.10.2 Independent sustainable housing body

Some respondents saw the need for a central body to provide independent information and advice on energy and water saving technologies and measures around the home. They emphasised that such a body would need to step beyond the provision of generic information which is currently available on government websites and instead provide comparative data on product performance.

Guidelines and an access—I mean all this time we still all flounder around looking through ... books and websites. If there was an organisation that you go to or which actively promoted ways to save energy and stuff that was available ... Yes, there's so much stuff. Like we all watch 'The Inventors' and go, "Wow that looks really good" .But where do you get it? And then you never hear about it again. [It has to be] suitably independent, but hard-hitting. I've seen some government websites, they've got some information, but so pussy-footing. They're too afraid to damage people's commercial—like they don't like to put anybody above anybody else. (12 Tas investor, 6/4/2010)

Keeping abreast of all the changes and what can be done. For example, there's no central website you can go to that says this is what you can do as a landlord to improve your properties, and this is what you can get back and this is what you can't get back. Something like that would be—just information in general. (Tas FG, 7/4/2010)

It would be nice to know the data about—like the up-front cost and what the energy savings are. (2 Vic investor, 3/5/2010)

Is gas heating the best way to go? Who determines these things? They all seem to be a bit of a fashion. You've only got to look at the past 25 years and we've gone from wood heaters, to electric heating, to gas, to heat pumps to, you know. Landlords can't be replacing things that regularly just to suit a fad or a fashion. (1 Tas investor, 15/3/2010)

4.10.3 Landlord association

Some respondents wanted to see the establishment of a landlord association, which would be able to represent the views of landlords, particularly those who were self-managing the property, and to disseminate relevant information. Such an association would provide an avenue for extended consultation with landlords about new policy and legislative settings, including the introduction of mandatory disclosure.

We need an owner's corporation ... and we need a landlord association. I would thoroughly support those initiatives. (1 Tas investor, 15/3/2010)

It would protect a lot of people from shocking rip-offs that have been occurring from time to time from these people that fly in and fly out. ... And information like government schemes could be disseminated to landlords through a landlord association. (Tas FG 7/4/2010)

4.10.4 Landlord education

In addition to governments using local, trusted channels to target landlords with information, some respondents suggested the need for governments and relevant bodies to provide general education to landlords about their responsibilities in providing and managing a sustainable rental property. This was seen as particularly important for those landlords who are managing the property themselves. Respondents envisaged that landlord education could be delivered via information days, workshops and informative single-issue pamphlets sent either directly with land tax or council rates or via owners' corporations. One respondent suggested a short TAFE course for people who had recently acquired property.

I think government can help, certainly by education and also by research. (15 Tas investor, 30/4/2010)

Is just the general bringing of such matters to the forefront of consciousness, so that people generally think about these things, not at some sort of—not as the step that only the greenies take and the people who really just want to live their life with a zero carbon footprint, but in fact make it a standard option for increasing the value of your house. I mean if it was deposited on my doorstep I would certainly have a look at it. (11 Vic investor, 27/5/2010)

I just received my assessment for land tax the other day. They could actually put some brochures in with the land tax that were simple and that each time suggested something that was not terribly expensive that people could do. (10 Tas investor, 22/3/2010)

I do think there's potential there to get a message through, so maybe the policy-makers should send things to body corporates for their people to consider as well. Like, "This year our theme is energy reduction in a certain way". (10 Tas investor, 22/3/2010)

I think there should be a landlords' TAFE course.—How to be a landlord and how to be a tenant— ... I think you should be able to—like a Master Builders thing. A Master Landlord Association where you get five stars for your property. (16 Tas investor, 26/4/2010)

4.10.5 Tenant education

A number of investors felt strongly that the tenant had a key role to play in ensuring that energy and water use was reduced on their rental property. Some stated that it was a waste of money investing in energy and water saving measures, if their tenants were not interested in changing their behaviours to ensure that energy and water usage was minimised. To this end, respondents wanted to see more information and education targeted at tenants. Again, this may be achieved through readily available brochures such as green rental guides (which are currently available in both Victoria and Tasmania) at the point of lease and through information days and workshops.

And this is another thing, too, that maybe we should be saying to tenants, "Okay. What do you ask?" They don't know what to ask. (Tas FG, 7/4/2010)

I think that there would need to be a huge education program for tenants and I think that you would get a different response from tenants, say, in [high cost suburbs] to ones that perhaps live in [low cost suburbs]. Because the take-up

of information and the education and the access to the internet and newspapers and all of those sorts of things would make it longer for them to catch on and to realise. And I also think that tenants, and perhaps the government and policy-makers, have a tendency to say it's the landlord's responsibility. But waste and water management are not—are not! You know, they're tenant responsibilities. You have no control over how much they use, (01 Tas investor, 15/3/2010)

I think that that's pretty much what policy-makers forget, is that they need to educate the tenants, not just the landlords, or impose—you know, or impose these arbitrary disclosure statements. (02 Tas investor, 15/3/2010)

By changing the power that's metered to the house. Tasmania's already using hydro-electricity generally. [Interviewer: In Tasmania you can opt for a more expensive green energy supplier.] Yes, you can and, again, that's up to the tenants. So I don't know apart from governments making it easier for people to access things like that. Information about their energy use—that really could help things. (07 Tas investor, 19/3/2010)

Like the hard word's been put on the landlords but if the tenants were keen then we'd be keen. Is there someone who can link up with the tenants and even sort of explain What they should do; what benefits they might get from it and just why they would want to be green. (12 Tas investor, 6/4/2010)

Not—but it is a desirable thing for my property. It will be very good if I have a water tank there and the tenant has also benefited, but unless the tenant is also motivated—of course, one way of motivating him is to link it to the sewage. But ideally he should be able to use the water for other purposes and maintain the property. (Vic FG, 3/5/2010)

4.10.6 Financial assistance through rebates and taxation system

Investors wanted continued financial assistance from governments in order to support them to make improvements to the energy and water performance of their property. Some investors expressed a strong preference for upfront rebates rather than incentives through the tax system or low interest loans. They felt too financially stretched to be able to take on additional debt. They also wanted to be able to access the rebate per property, rather than per person in order to be able to enable them to make changes to their rental properties as well as their own homes.

I think if the government is really serious about helping low-income earners then if they offer me some sort of rebate I would only be too happy to do things that would increase the efficiency of my properties because I want my tenants to be happy. (01 Tas investor, 19/3/2010)

Well, they can offer us the rebate and that would give us the incentive to improve. That's the only thing. You know, if the government comes out and says, "We'll cover a third of the cost for you to put solar panels on your rental properties I'd be into it like that. if the government was jumping in and saying," well, hey, let's give landlords encouragement to help out the tenants", I'd be happy to jump in. (6 Tas investor, 19/3/2010)

I think the rebate should be one per property, not one per person. Otherwise they are literally wiping out the whole investment properties. Most people with investment properties would have their own home. The other thing is I think just depreciation. If they want people to do this and spend that up-front money, they are not necessarily going to get any rental return or anything to help it, to

reduce the depreciation time I think would be an encouragement in itself. (12 Vic investor, 31/5/2010)

Subsidise the cost, dramatically. If the cost could be reduced, I'd be more open to pursuing some of those strategies. (17 Vic investor, 15/6/2010)

Others were critical of rebates as they felt that past experience had demonstrated that the rebate coincided with increased prices from suppliers and, as such, any rebate program quickly became a subsidy for the supplier. Instead, they were more comfortable with increases in depreciation schedules for the purchase of energy and water efficient technologies. They also suggested that expenditure on these items could make landlords eligible for reduced land tax.

Depreciation schedules for when you can depreciate new items as an extra incentive in place through the taxation system. (4 Vic investor, 17/5/2010)

Some taxation rebate. In fact that would be better than giving an outright subsidy. That way it is targeted. (Vic FG, 3/5/2010)

Could be rebates via land tax. If you do these things we will give you a reduction of equivalent value on your land tax. (Tas FG, 7/4/2010)

4.10.7 Engaging real estate agents

Investors envisaged a significant role for real estate agents in improving the sustainable profile of private rental housing. Some respondents noted that with real estate agents on board there is a real capacity to make substantial energy and water savings across the city. Investors wanted to see real estate agents doing more to: disseminate information about sustainable energy and water options; raise awareness among landlords about the state of their property in terms of energy and water performance; provide incoming tenants with green rental guides; assist and coordinate landlords and tenants to undertake energy and water efficiency improvements; and assist with the management and servicing of major works such as solar hot water systems, solar panels and space heating and cooling systems. Some respondents noted that having real estate agents play a central role in facilitating sustainable improvements to rental properties would be a significant turnaround from the existing situation whereby their agent undertakes a minimal property management role.

If you get one estate agent on board, it's worth the equivalent of getting a thousand landlords on board. So it's a good place to target it from a policy point of view. (11 Vic investor, 27/5/2010)

So, I think first point they need to—the departments need to get all the information to the Real Estate Institutes in each state. Also, the next point would be to any of the groups, the head offices of the big groups. (Vic FG, 4/5/2010)

I think it is up to them [the government] to advertise. The only way I would find out about them [government programs] is if the real estate agent contacted me. That would be the best way for me to find out. I don't look at generic pamphlets. If it comes in an envelope from the real estate agent then I look at it. I think it's more important. (5 Vic investor, 17/5/2010)

I would like to see it as part of a property inspection, really. But it would be nice to see as part of a property inspection to have an environmentally sustainable inspection too, that this property has got this, that and the other. (Tas FG, 8/4/2010)

For landlords so that we don't have to go do all that research again ourselves. These management agencies should come up with a package and say, "Your house would qualify for this, this, and this. Do you want to do it?" (Tas FG, 8/4/2010)

I wouldn't know how to go about it [an energy audit] and I would want the real estate agent to be involved in that. (5 Vic investor, 17/5/2010)

But I guess in terms of policy, probably more information that could be not necessarily through advertising campaigns but perhaps through the real estate agent. Some options might be mandating that agents provide information and/or establishing a voluntary standard for rental properties. The property agents already have to give tenants information, so just adding another booklet about sustainability would be a simple thing that could be simply added to the pack. (8 Vic investor, 24/5/2010)

It would be a good role for a real estate agent to be the go-between. (13 Tas investor, 12/4/2010)

Because a lot of properties including ours are managed by real estate agents by having them much more pro-active about encouraging landlords. I mean we've never had any information at all from ours. (17 Tas investor, 30/4/2010)

4.10.8 Continued access to environmental assessments

While most respondents had yet to arrange an environmental assessment on their rental property, many wanted continued access to comprehensive environmental assessments. For some, who expressed strong concern for environmental issues, but had yet to undertake significant improvements to their rental property, they saw this as the starting point for making changes to their property. One respondent felt that any environmental assessment should entail a comprehensive auditing of the property's carbon footprint.

I think having continuing those environmental assessments done on your property is a good idea. Because it makes people aware. Like, you know, if you have an assessment done on your property and it might make you aware of all these things that you really had no idea about and it might make you think twice about maintenance that you are going to do or changes that you are going to make. (6 Vic investor, 19/5/2010)

I would just need someone to tell me all the things I could do and an estimate of the costs. (5 Vic investor, 17/5/2010)

It's fine to have all these ideas, but I really need someone to come in, tell me what the audit is, tell me the best thing to do and get it done, rather than me trying to scratch my head and try and look at all these different options. (08 Tas investor, 22/3/2010)

Yes, I guess I would like to see I suppose a more integrated service for landlords. Like, if there is someone who can come in and first assess the property and then provide advice to landlords that the best, the optimal arrangements both from sustainability but also—well, the three aspects of sustainability are the social, the economical and environmental. (17 Tas investor, 30/4/2010)

Support an extensive carbon auditing of residential properties. (15 Tas investor, 30/4/2010)

But if someone did an audit and said, “These are things you can do to make this property more efficient; better to live in. Different type of ventilation, changing a few things here and there. And next time you need to get a new hot water service, a new stove, a new heater, or to have something done in repairs and maintenance, you change from that to that.” If you could do an audit like that, that would be useful. Really useful. (Vic FG, 4/5/2010)

4.10.9 Address concerns of multi-unit dwellings

Investors who held strata-title dwellings felt that more could be done to ensure that owners’ corporations were open and responsive to the uptake of energy and water saving measures in individual units and in common property areas. Respondents envisaged that the managers of owners’ corporations could do more to disseminate information to individual landlords and to initiate change within the building, rather than being obstructionist. In addition, these respondents wanted to see more information about sustainability issues tailored to the needs of multi-unit developments rather than the typical free-standing house.

One way to get more energy efficient buildings would be to force legislation or some other means of making sure that the body corporate has to comply by certain rules and regulations similar to the OH&S rules that they have to comply with. But that’s pretty heavy handed and it wouldn’t necessarily be the best solution. The government does need to consider the situation of apartment blocks, especially with new housing. (9 Vic investor, 24/5/2010)

More onus on body corporate manager: “I suppose there are regulations to make it a bit more practical so that managers can then implement those rather than say, “We are not allowed to access dah, dah, dah”. (3 Vic investor, 4/5/2010)

Probably number one would be, like, most of the literature and whatever else and advertising is designed around a stand-alone house, and it just doesn’t apply to a unit or a block of flats. So individually in a block of flats you can’t do a lot and the government would have to focus on dealing with body corporate rather than individual owners. (9 Vic investor, 24/5/2010)

The body corporate would be forced to then make all the landlords get together and pay for these things. (14 Vic investor 9/6/2010)

4.10.10 Secure policy framework

Regardless of the form of the particular policy initiative, investors wanted governments to provide secure policy settings and ensure that any future schemes have *sunset* or *grandfather clauses* that can provide investors with a secure time frame in which to plan and manage any investments in energy and water saving technologies.

Bring in a system where the rebates are known and are—what’s the term—grandfather clauses so if you make a commitment and then if they change the rules it doesn’t apply retrospectively. (4 Vic investor, 17/5/2010)

4.10.11 Incentives for solar energy

As highlighted previously, investors wanted to see the eligibility for solar rebates expanded from one rebate per household to one per property. While investors viewed solar technology as effective in reducing energy usage, they wanted financial support to assist with installation.

4.10.12 A green minimum standard

Some respondents suggested that properties should be granted an energy and water star rating and that this should be accompanied by a green minimum standard.

I think they need to have a standard that has to be passed, like a green standard, before a tenant can rent a house. I think so many people [who] have got to rent are already disadvantaged and then they have to rent a crap house which costs a lot to heat and they can't afford that. (16 Tas investor, 26/4/2010)

I think the way to go is to regulate. Once you lose a tenant if you don't put insulation in then you can't rent it. (14 Vic investor 9/6/2010)

4.11 Investor responses to mandatory disclosure

Private rental investors were split over the value of a mandatory disclosure scheme whereby an investor would pay for an accredited assessor to undertake a report on the energy and water efficiency of their property and then provide this report to prospective tenants. Just under half of the participants (n=17, 45.9%) agreed that if it was going to be introduced then it should be compulsory. A further five investors stated that it should be voluntary to begin with and then move to a compulsory setting.

I think to help the environment we do everything. (Vic FG, 4/5/2010)

Well, knowing what the efficiency of a property was, and disclosing it, I think it's a good idea and the disclosure wouldn't matter. (Vic FG, 4/5/2010)

I think it would be a good idea if we did have audits on properties to see how efficient they were and see what could be done to make them more efficient. (Vic FG, 4/5/2010)

More information about the property is a good thing and to be welcomed. (Tas FG, 7/4/2010)

Compulsory, I think. I think it would need to be. Well, if we're serious about changing properties to be more sustainable and reduce energy use, water use, then I think a compulsory system is important. (2 Vic investor, 3/5/2010)

If it's compulsory that would make me do it, which is good, because I just might not get around to it. (5 Vic investor, 17/5/2010)

But compulsory means that, well, it would be more likely to be dealt with through the real estate agent. They'd ask for the information and give that out automatically. Means I don't have to worry about it. (9 Vic investor, 24/5/2010)

I think if you're going to have the scheme you'd have to make it compulsory because otherwise most people aren't going to do it and then the tenants aren't going to care whether you've made a statement or not. It's not going to mean much to them. (12 Vic investor, 31/5/2010)

The standard response to these sorts of regulatory things is, "Well, it will impose an extra cost on business" or, in this case, landlords, and that cost will be passed on to the tenant. And I've never really accepted that. I don't think it actually works that way. So, no, I think that you have to regulate to make changes. I think that that is the role of government. I don't think you can rely solely upon people just deciding it might be a nice thing to do. So I think that that sort of thing is worthwhile. (11 Vic investor, 27/5/2010)

I think it would be good because then it would give you that incentive as well. And people would recognise it and be able to say, "Well, I want this property over this property". If it was compulsory then that would be good, I think,

because everyone would then have to do it and then you could compare across the market rather than just compare the people that had done some work. (5 Tas investor, 19/3/2010)

If it's going to happen it has to be compulsory I mean, whether I would like it or not, I probably wouldn't do it unless it was compulsory. ... If it is something that is considered important enough for society to do then it should be compulsory. (10 Tas investor, 22/3/2010)

'I kind of don't know that there'd be much point in it unless it was compulsory because there would probably only be a handful offering information that wouldn't mean anything to anybody. Until you can see enough stats, side by side, it would just be a waste of time.' (12 Tas investor, 6/4/2010)

I think it should be compulsory because it would clean up the bottom end a bit. (16 Tas investor, 26/4/2010)

That's a really good idea because it will [be a] stimulus, then, in a competitive market, for landlords to do things that are going to make their property more appealing to a customer. (17 Tas investor, 3/5/2010)

Some respondents noted that they would like to see a disclosure scheme introduced on a voluntary basis initially, which would enable policy-makers to gain insight into how such a scheme would work in practice, before moving to mandatory disclosure.

I don't think it can do any harm at all. All it will do is raise the awareness and make people try and improve their properties and that can only be a good thing really. Maybe they should start it as voluntary and then make it compulsory. Ease people into it. (6 Vic investor, 19/5/2010)

I think they should test first and see how it works, and then evaluate it, and then, if it's really good, yes compulsory. (20 Tas investor, 1/6/2010)

Others suggested that should such a scheme go ahead it would need to be simple and straightforward.

They would need to keep it really simple. Even if it came down to coloured bars. You know: "Meets, green; not quite as good as it could be, yellow; and whoa, this is really bad, this requires lots of upgrade, red." You know, so that you would just look at it and say, "Okay. It's got lots of red. This property is not so great," versus, "Uses so many kilowatts per 15 minutes" you know, however they mask things to make it look better. I agree it's a great idea but it would have to be really simple. (Tas FG, 8/4/2010)

Yes [I would be happy to volunteer information about the sustainability of my property]. Particularly if it was something as simple as the whitegoods energy star rating. If there was a star rating on each property that would be something that I could use as a marketing tool for those properties. It would be because my houses probably would perform better than the average. (3 Tas investor, 15/3/2010)

Around 40 per cent of investors (n=15) were insistent that any disclosure scheme should be voluntary. They were concerned about the costs associated with having a property regularly audited by an accredited assessor. They envisaged that such costs would place an unnecessary financial burden on landlords, with these costs being passed onto the tenant through higher rent. They were concerned that such a scheme would be difficult to monitor and that it could be open to corruption. They were also concerned about the extra administrative work required. Other investors noted that

such a scheme would provide tenants with comprehensive information about the state of the property, which the tenant could then use to agitate for upgrades.

I think a voluntary one would be good. (Tas FG, 7/4/2010)

Voluntary's best, you know, but the expense comes into it, doesn't it, if you can't get the money from elsewhere. (Tas FG, 8/4/2010)

Cost will be bad. And then either we have to push it on to the tenant or we have to smile and wear it. (Vic FG, 3/5/2010)

If it was an issue that you alone could do, sort of sort it out on your own, it's okay. But when this becomes official you cannot touch it. It's like an electrician. You cannot do anything. It has to be certified by an electrician. And for them to come in and certify you, give you a certificate, they charge you \$100. (Vic FG, 3/5/2010)

I'm always worried about giving the government too much information. (Vic FG, 4/5/2010)

Scared of these people coming in and doing absolutely nothing and just giving a stupid figure. (Vic FG, 4/5/2010)

Are we going to achieve anything by doing it, because are we going to introduce another level of bureaucracy that the landlord, and ultimately the tenant, is going to end up paying for without any real benefits? Because tenants are fairly savvy. They work out what is going on and if a place costs too much to run then they work out a way to do it. (Tas FG, 7/4/2010)

It's going to be a huge financial burden. And in a rental property, it is the tenant who is ultimately going to be paying it off, isn't it? (3 Vic investor, 4/5/2010)

I guess the concern I would have is that it would create a whole new industry of property inspectors that would charge a fee to do this and I imagine it would be several hundred dollars. Bit cynical again about how the government would implement it. I imagine it will be heavy handed or over-bureaucratic and it will spawn a whole industry of the equivalent of the insulation installers. (4 Vic investor, 17/5/2010)

I prefer voluntary and I don't know if it suits all property types and, again, legislation tends to be blanket so it's got to be matched to what you are actually trying to do. (4 Vic investor, 17/5/2010)

'Look, I'm not concerned about it as long as it's not like every other government legislation where people rot it. Obviously you would need to get an auditor in to audit the property and I think, again, the insulation is a perfect example. You know, all these companies started up not knowing what they're doing, charging money to the government.' (12 Vic investor, 31/5/2010)

I do think that tenants can grab hold of that sort of information and say it's been recommended that the heat pump is eight years old and needs replacement in the next 12 months. So I think that could be an issue. [Interviewer: That it will make tenants potentially more demanding?] More demanding, yes. Absolutely. (14 Tas investor, 23/4/2010)

Yes, two concerns: the added burden of extra paperwork and cost; in a nutshell. (3 Tas investor, 15/3/2010)

It will involve extra costs. (15 Tas investor, 30/4/2010)

It adds to the expense. I've got to pay for that report just to please the government. (17 Vic investor, 15/6/2010)

Investors were concerned about how a star rating scheme would work across such a diverse housing market, with such variation in dwelling type, size and age. In Tasmania, investors were particularly concerned about the impact it might have on the rental market, with investors shying away from heritage properties that might be difficult to retrofit. This in turn was viewed as a problem for the provision of affordable, rental opportunities in inner city areas.

I'm curious about those who are going to buy heritage-listed homes. (Tas FG, 8/4/2010)

[If] you can't get your energy rating up to an acceptable standard then what's going to happen to those properties? Are you then going to create a two-tiered system where properties that have mandatory star rating of an acceptable standard are leased through property agents and everything else is just leased out of the paper and there is no disclosure anyway? I think there is real potential for that to happen. Or the people that don't have the capital up front to make that investment to just get out of the property market altogether. And is that really what you want given that there's a housing shortage? (1 Tas investor, 15/3/2010)

Well, the problem is no such thing as common sense comes into these things. You get someone who's a techno-freak and has some gismo tool that reads out that this building uses this much energy or consumes this much energy—I wouldn't be afraid of it, but I think the implementation of it would be, particularly in Tasmania, with the heritage buildings that we've got. ... if it was brought in that it was encouraged and desirable and more forced by the tenants asking, rather than the government imposing, I think it would be better. I'd prefer that it be voluntary or phased in over a time-frame. (4 Tas investor, 18/3/2010)

We wouldn't want another set of regulations that we have to comply with. We wouldn't want that to force that sort of an issue and say, "We're not going to do this anymore. They're just putting yet another lot of bits of paper for us to fill in". Not only pieces of paper to fill in, but I'm just sort of imagining what one would have to do to actually do an audit of a property. If it were a simple one it mightn't take long at all, but I can imagine it taking, you know, especially if you had to call in other professional people to do it, it could take days to actually get it all together and send it off. (11 Tas investor, 29/3/2010)

Some investors expressed the view that such a scheme was not the most efficient way to go about improving the sustainable profile of rental housing. They felt that it directed funds away from more effective schemes (e.g. direct rebates for water tanks).

What would be easier, just to tell everyone—be cheaper and easier just to get everyone to put in a water tank in their units than to do something like this? [Interviewer: You think it's a bit of a roundabout way of doing things] Yes! (Vic FG, 4/5/2010)

My rental property in the city is fully furnished and equipped executive rental and it's short term. So I could be doing this three or four times a year. For what purpose? Does it reduce their bills by any way, shape or form? (9 Tas investor, 22/3/2010)

Many wanted more information on how the scheme would work in practice and they wanted to be consulted about the detail of any new disclosure scheme.

It would be nice if they consulted the landlords when they were negotiating the legislation. (Tas investor 20, 1/6/2010)

Some of the questions raised by investors included:

- How would energy and water performance be measured?
- Who would pay for the environmental assessment and star rating?
- How would the quality of the environmental assessment be monitored?
- How would housing of different ages and dwelling type be compared?
- How would household behaviour be factored into the assessment and star rating?
- Would the scheme cover short-term rentals?

It depends. You know, on what the cost of it is and what parameters you've got to be within, or if you do. (Vic FG, 4/5/2010)

Great idea. and I would love to see something like that. I'd be curious how they are doing the metrics around that. Because so much of the energy use in a home depends on how people are living in that home. Do they let the hot water run for hours and therefore having to re-heat all that water? I mean, how is it measured? So that would have to be really clear and it would have to be really basic for people to understand it. (Tas FG, 8/4/2010)

It's just one more cost on running the property. It's difficult to say I'd be happy to do it on either a voluntarily or compulsorily basis because I don't know the framework: what it would cost; how it would happen. (4 Vic investor, 17/5/2010)

I think it's a great idea. My only concern, from the top of my head, is the implementation for something like that, with accredited people who can provide that report and it's not—well, for example, done like the home insulation scheme where the rogue agents have come in and stuffed it up, basically, so that it's actually regulated properly and not sort of left to the market. Well, with sufficient regulation in it so it's not left to the negative elements of the marketplace. (7 Vic investor, 24/5/2010)

The only concerns would be the logistics of getting access to the property and costs involved. But otherwise it sounds fine. (9 Vic investor, 24/5/2010)

Some respondents noted that a scheme that requires landlords to disclose the energy and water performance of their property should be matched with adequate incentives to enable landlords to improve the sustainable profile of their property.

As a safe thing, to start off voluntarily for a couple of years and then move to compulsory. The marketplace is based on greed so that people—their first tendency will be not to do it, so if there are other incentives, like, I don't know, small tax breaks or partial rebates; things like that, that would be an incentive to get on board. (8 Vic investor, 24/5/2010)

It would be fairly pointless unless you actually provided incentives to do something more about it. (17 Tas investor, 30/4/2010)

I mean, there is a carrot and stick approach. I mean if it's a stick as in a government requirement for a landlord to disclose an energy rating, I think a carrot should be that some people closely involved like economists who can work out—or property valuers and real estate agents themselves—can work out the advisability of doing up the kitchen versus the cost—and then a cost/benefit analysis of doing up the kitchen versus energy efficiency improvements. Because a lot of landlords can't afford to do both. I think that

incentive information has to be disseminated simultaneously with any sort of compulsory scenario. (18 Tas investor, 3/5/2010)

Finally, one investor of low-cost housing observed that the housing options for low-income tenants in the present marketplace are severely constrained and therefore they did not believe that these tenants would benefit from a mandatory disclosure scheme.

I think that's a great idea, but I actually think in the end it will only affect the top end of the market because the people at my end of the market are just happy to have a roof over their heads and they wouldn't care if it was a no star property or a ten. They're just desperate. They don't have a lot of options. (14 Vic investor 9/6/2010)

4.12 Is there a market for sustainable properties?

One of the key questions raised by investors when asked their views about mandatory disclosure was: 'Is there a market for sustainable properties?' They asked:

- Are tenants factoring in their energy costs against rental costs?
- Are there tenants who are willing to pay for energy and water efficient properties?

While existing research on tenant preferences shows that location is the primary driver of their preferences, it is not clear how these preferences might shift in an environment of higher energy and water costs and where tenants are able to access clear information about the sustainable performance of properties and therefore make informed choices in the marketplace. Respondents were interested in obtaining more information on this issue, in particular, the potential financial returns associated with any investment in sustainable measures.

Maybe, if it's actually adding value to the property; if tenants are actually looking for that in properties and, if you are looking to sell, whether buyers are looking for those sorts of things now. If there is solar power then does that actually add value because people are looking for those things. And water tanks; I'm sure people would be looking for water tanks now in Melbourne. (2 Vic investor, 3/5/2010)

Asking the landlords to do it out of the goodness of their hearts, probably won't do it, but if the tenant says, "If it is more efficient I will pay a little bit more on my rent," then that would have a much bigger impact I would have thought. But you would have to be convinced that the tenant would pay more rent for it. (7 Vic investor, 23/5/2010)

Private investors were asked if they would be happy to pay for measures to improve the energy and water efficiency of their properties. Some respondents perceived this as a potential investment that could translate into a return over the long term, enabling them to attract high quality tenants:

Being a landlord—it's a business and one of the things is you've got to value-add. (Tas FG, 7/4/2010)

We just think it's a better way of doing it. It was mostly because of the environmental stuff and also because we thought it would be good for getting more tenants' (12 Tas investor, 6/4/2010)

I mean I always advertise the fact I've got a heat pump in one of my properties. In fact, I've actually thought of probably heading up the advert in future—just write 'heat pump' instead of saying '[suburb]'. Might actually be more attractive. (8 Tas investor, 22/3/2010)

Others were more skeptical:

I don't think I could put the rent up much in comparison. Like, that might be something in the next few years when people are more aware, but at this point in time there's no benefit from the rent perspective. (12 Vic investor, 31/5/2010)

We're happy to pay it back, but to have to borrow at whatever the interest rate will be now, eight per cent, to do it when it's not actually going to save us any money. Because the market rental rate for the property won't change because that is not really an established thing that if it is an environmentally friendly house, energy efficient, it doesn't rate you as being able to charge more rent, necessarily. (Tas FG 8/4/2010)

I'm not going to get a rental increase if I put in a solar hot water heater or solar panels on the roof. ... There's minimal return on that cost in terms of rent and property value. I mean in a very hot climate if you owned a house you'd want it insulated, but smaller things like low flow showerheads, tenants are not going to pay an extra \$10 a week to get a low flow showerhead. (17 Vic investor, 15/6/2010)

Investors of low-cost housing observed that while they would be happy to pay for minor measures to improve the energy and water efficiency of their properties, they believed that low-income tenants were focused solely on affordability and as investors they could not expect to be able to charge higher rents to recoup these costs.

Most of the tenants are driven by their income. So if they want to keep a roof over their head they've got to go to the cheapest accommodation they can find. (Vic FG, 4/5/2010)

It is adding to the value of the house [a family home]. But in a two-bedroom flat in Dandenong, I don't know. (3 Vic investor, 4/5/2010)

But the properties I had in the poorer areas like Moonah which is a kind of lower socio-economic area, people really aren't too concerned about the power saving. It's a small one-bedroom unit, but that's not the primary reason they turn up. It's affordability of rent and people really don't think too much about the heating costs. (08 Tas investor, 22/3/2010)

I think about the properties in terms of liveability and whether they're going to be easy to rent out. And all of those factors, I think, would make it—I thought would make them easier to rent out. Tenants sometimes have different views. ... I was also aware when I purchased that they were low-income areas and would probably have people living in them that didn't have high incomes as well, so I needed to provide something that would make it easier for them to stay there. (1 Tas investor, 15/3/2010)

The only reason I bought it was it was cheap and that's the only reason why anyone bought them. ... You'd never get it back in that area. People aren't going to pay that much. (14 Vic investor 9/6/2010)

They also held the view that while there might be some interest in environmental sustainability issues in middle and high-income suburbs, there was limited knowledge and interest in environmental issues in low-income suburbs.

The type of tenants you're going to get in this area, so I don't think it would be high on their priorities. Not too many would be worried about that sort of stuff, (Vic FG, 3/5/2010)

4.13 Summary

In this chapter, we examined the views of 52 private rental investors from Victoria and Tasmania. We reported on: investor attitudes towards environmental sustainability; their knowledge of environmental sustainability issues including the sustainable performance of their own property; the actions they've undertaken to improve the energy and water performance of their property; barriers to the uptake of energy and water saving measures; drivers that motivate investors to undertake sustainable home improvements; investor satisfaction with existing government programs and settings; investor preferences for future policy measures; investor views on one policy option, mandatory disclosure; and their views on the current and potential market for sustainable rental properties.

We found that investors were largely concerned about environmental issues. While this did not necessarily translate into concerted action to improve the energy and water performance of their rental dwellings, most had undertaken low-cost minor actions. Investors who participated in the study listed a range of activities they had undertaken in relation to both reducing energy and water use. These activities ranged from low-cost measures such as minimising draughts to more expensive items such as installing energy and water efficient whitegoods and solar hot water systems. Promisingly, some investors were beginning to factor energy and water efficiencies into their maintenance plans.

Most investors had not thought about issues of energy and water efficiency at the point of purchasing their rental property. In general, investors were receptive to finding out more about sustainable technologies that could improve the energy and water performance of their properties. A majority stated that they would be interested in finding out more about the energy and water performance of their property and identifying areas for future action. Some expressed the view that they would not be interested in this information until the right incentives were in place to encourage them to act.

In general, investors felt that there were some major barriers that prevented them from making substantial improvements to the energy and water performance of their property and which also hindered a wider uptake of sustainability measures in the rental housing market. The major barriers identified by investors were: high upfront costs; the lack of financial incentives to act, given that they are unable to recoup their expenditure; potential property damage; disinterested tenants; difficulties in accessing the property to undertake works; problems gaining agreement across strata-titled multi-unit developments; the condition of the building; the individual investor's situation; and a lack of awareness of the issue.

Investors provided feedback on the key drivers that had encouraged them to undertake sustainable home improvements. These included: a reduction in the property's environmental impact; increasing the comfort for their tenant and reducing their tenant's costs; attracting and retaining good tenants; the investor's plans to move into the property in the future; and responding to existing regulations (e.g. conforming to building code requirements).

When asked about policy settings, investors reported that they had limited awareness of existing government programs and the eligibility criteria of most schemes. Most were aware of the Federal Government's home insulation scheme. While some favoured the generosity of the scheme and the fact that it was available to landlords, they were critical of the administration of the program, the lack of a targeted information campaign for landlords and the announcement of changes to the guidelines and eligibility criteria at short notice. In general, investors were cynical

about the government's capacity to deliver future programs given the problems encountered with the administration of the insulation scheme, namely the profiteering and fraudulent practices of suppliers. They were also critical of contradictory policy settings across government.

When asked about policy options and preferences, most investors envisaged a minimal governmental role, in the form of rebates and education. The key suggestions for policy development included: ensuring investors are made aware of government programs through targeted information campaigns; establishment of a landlord association; establishment of an independent central body to provide information on sustainable housing; providing educational opportunities for landlords and tenants; making financial assistance available to investors; providing continued access to environmental assessments at no cost to the landlord; addressing the particular concerns of strata-titled, multi-unit developments; engaging real estate agents; providing a secure policy framework; providing incentives for solar energy; and establishing a green minimum standard.

Investors were invited to comment on one policy option, mandatory disclosure. Investors held mixed views on the value of the scheme. Many felt that the scheme would be most effective if it was compulsory, but some suggested that the scheme be voluntary initially before moving to a compulsory setting. They hoped that any new scheme would be phased in slowly enabling them to adjust to new policy settings and that they would have the opportunity for further consultation. Investors who were opposed to the scheme or who preferred the scheme to be voluntary were concerned about: the costs and extra administrative work associated with having a property regularly audited by an accredited assessor; the difficulty in monitoring the scheme; tenants using the audit to agitate for property improvements; and the impact of the scheme on private rental investment, particularly in properties that are difficult to retrofit. Investors had many questions about the operation of the scheme in practice, including how dwellings of various types, sizes and ages would be measured and compared.

Finally, investors raised the issue of whether there is a current or future market for environmentally sustainable properties. While some felt that there was scope for green rental properties and tenancies in the near future, others were sceptical about this prospect. Investors in low-cost properties observed that low-income tenants were focused solely on affordability and they did not see this situation changing in the immediate future without a considerable shift in policy settings.

5 CONCLUSION

This Final Report is the concluding output of a research project examining the environmental sustainability of private rental housing. In this chapter, we provide a summary of the major project findings. We present our early project findings in relation to RQ1 and RQ2, which are documented in the positioning paper (Gabriel et al. 2010) and an earlier modelling report (Wood, Ong & Seymour 2011, forthcoming). We then present a summary of the key findings in relation to RQ3, RQ4 and RQ5, which have been documented in each chapter of this report. In addition, we provide a synthesis of these disparate findings. Here we respond to the overarching project question: What are the barriers to and opportunities for advancing the environmental sustainability of Australia's private rental housing stock? We also discuss future research directions.

5.1 Project findings

5.1.1 *Early project findings*

In the project positioning paper, the team responded to RQ1: How does the current policy and legislative framework operate to facilitate or discourage investment in environmentally sustainable private rental housing stock?

Based on an initial literature and policy review, Gabriel et al. (2010) identified a range of barriers to advancing the environmental sustainability of Australia's private rental sector. Major barriers included: the 'principal-agent' or the 'split incentive' problem; the lack of institutional investors in the market: the opportunity for landlords to quit housing stock, thereby undermining the effectiveness of compulsory measures; the lack of mandatory basic housing standards in state and territory residential tenancy legislation; and ongoing problems of housing affordability, which provides little incentive for landlords to act or tenants to risk security of tenure. We also identified policy approaches and programs in operation in the UK that had been successful in facilitating energy saving measures in low-income private rental households, and found that, in comparison, the scope of programs available in Australia are limited.

In an earlier modelling report, Wood, Ong and Seymour (2010) responded to RQ2: What is the impact of the carbon emission trading scheme (i.e. higher energy prices) on private rental tenants' energy bills, particularly low-income tenants?

Based on 2006 HILDA survey data, Wood, Ong and Seymour (2010) modelled the impact of the CPRS on household energy bills. They found that low-income households are vulnerable to higher energy costs and that the proposed CPRS would have a regressive impact on households. They found that although private renters have lower energy use than owner occupiers, they must put aside a similar percentage of disposable income in order to meet higher energy bills under the proposed CPRS. This can be explained in part by the observation that private renters have significantly lower disposable incomes and that they are more likely to live in flats and apartments that in turn are more reliant on carbon intensive electricity.

5.1.2 *Current project findings*

In Chapter 2, the team responded to RQ3: does market failure due to principal-agent problems contribute to higher energy bills for private rental tenants and leave them more vulnerable to the adverse consequences of increased energy prices than other housing consumers?

Based on 2006 HILDA survey data, we found no clear evidence to support the assumption that private renters face higher energy bills than home owners due to split incentive problems. In trying to make sense of this counterintuitive finding, we

recognise that there are some deficiencies in the data. With this caveat in mind, we speculate that Australia has been better placed than other countries when it comes to sustainable home improvements in the private rental sector due to a combination of factors such as: the presence of taxation incentives that encourage investment in dwellings; a lack of control over rent setting thereby allowing landlords to capture premium rents for upgraded properties; and the high churn of properties that frequently results in property careers where ownership has switched back and forth between landlords and owner occupiers. However, the first two observations are not well-supported by the qualitative consultation with investors which revealed: a limited understanding of and use of taxation measures to subsidise energy and water saving measures; and a perception among investors that they would not be able to recoup costs through higher rental yields. The analysis highlights some critical gaps in quantitative data on household energy consumption and the condition of Australia's housing stock.

In Chapter 3, the team responded to RQ4: what are the potential impacts of policy measures designed to improve the environmental performance of private rental housing stock on private rental tenants, particularly low-income tenants?

Based on a review of relevant retrofit and rebate programs available in Victoria and Tasmania and consultation with 29 stakeholders, we found that the institutional and legislative frameworks in place at a federal and state government level are important in facilitating capacity building across the not-for-profit community sector and private property sector. In order to reach households across the private rental market, including self-managed rentals, agent-managed rentals, and low-income private rental households, a range of approaches and programs are required. Experience to date highlights the need for programs that are either exclusively focused on the private rental sector or underpinned by a targeted information campaign, otherwise there is a risk that these households self-select out. In regard to the policy horizon, stakeholder consultation provided support for: an expansion of programs and the establishment of long-term frameworks; an ongoing role for intermediaries who can negotiate between tenants, landlords and agents; and the need for greater coordination of information, agencies and programs. In addition, stakeholders were generally supportive of the development of a mandatory disclosure scheme. Stakeholders in the community sector emphasised that such a scheme would need to be underpinned by the introduction of a green minimum standard in order to facilitate change at the lower end of the private rental market.

In Chapter 4, the team responded to RQ5: what are the attitudes of private rental housing investors towards measures to improve the environmental sustainability of their housing investment?

Based on consultation with 53 private rental investors, we found that investors were largely concerned about environmental issues and were interested in finding out more about sustainable technologies that could improve the energy and water performance of their properties. In general, investors felt that there were some major barriers that prevented them from making substantial improvements to the energy and water performance of their property. These included: high upfront costs; the lack of financial incentive to act; potential property damage; disinterested tenants; problems gaining agreement across strata-titled multi-unit developments; the condition of the building. Other concerns related to difficulties in accessing the property; the individual investor's situation; and a lack of awareness of the issue. Investors also identified key drivers that had encouraged them to undertake sustainable home improvements such as: a reduction in the property's environmental impact; increasing the comfort for their tenant and reducing their tenant's costs; attracting and retaining good tenants; the

investor's plans to move into the property in the future; and responding to existing regulations.

When asked about policy settings, investors felt that recent measures to improve the energy and water efficiency of Australian housing were mismanaged and that current assistance available to private rental housing is limited. When asked about their policy preferences, most investors envisaged a minimal governmental role, in the form of rebates and education. Investors held mixed views on the value of a mandatory disclosure scheme. They had many questions about the operation of the scheme in practice, including how dwellings of various types, sizes and ages would be measured and compared. While some felt that there was scope for green rental properties and tenancies in the near future and that such a scheme would accelerate this process, others were more skeptical.

A summary of the five research questions and the major findings is provided in Table 11 below.

Table 11: Summary of project findings

<i>Research question</i>	<i>Major findings</i>
1. How does the current policy and legislative framework operate to facilitate or discourage investment in environmentally sustainable private rental housing stock?	There are substantial barriers to advancing the environmental sustainability of private rental stock and limited incentives and programs in place (relative to UK).
2. What is the impact of the carbon emission trading scheme (i.e. higher energy prices) on private rental tenants' energy bills, particularly for low-income tenants?	Low-income households are vulnerable to higher energy costs and CPRS would have a regressive impact on households. Private renters have lower energy use than owner occupiers, but they must put aside a similar percentage of disposable income in order to meet higher energy bills under CPRS.
3. Does market failure due to principal-agent problems contribute to higher energy bills for private rental tenants and leave them more vulnerable to the adverse consequences of increased energy prices than other housing consumers?	There is no evidence to support the assumption that private renters face higher energy bills than home owners due to split incentive problems. Might speculate that Australia is well-placed to encourage change in private rental sector due to high churn in rental properties, lack of controls on rent allowing landlords to capture premium rents for upgraded properties, and generous taxation incentives that encourage investment in dwellings. There are critical gaps in data that need to be addressed.
4. What are the potential impacts of policy measures designed to improve the environmental performance of private rental housing stock on private rental tenants, particularly low-income tenants?	Institutional and legislative frameworks at the federal and state level play a significant role in facilitating capacity building across the not-for-profit community and private property sectors. A range of programs is required to reach self-managed rentals, agent-managed rentals, and low-income private rental households. Programs that are focused either exclusively on the private rental sector or underpinned by a targeted information campaign are required, otherwise risk of households self-selecting out.

<i>Research question</i>	<i>Major findings</i>
	Policy horizon: expansion of programs and establishment of long-term frameworks; ongoing role for intermediaries; and coordination of information, agencies and programs. In addition, development of a disclosure scheme, with the potential to underpin this with the introduction of a green minimum standard.
5. What are the attitudes of private rental housing investors towards measures to improve the environmental sustainability of their housing investment? (price/other motivations).	<p>Investors are generally supportive of measures to improve environmental sustainability.</p> <p>Investors are receptive to policy measures in this area if information is clear, costs are minimal, and administration is not onerous.</p> <p>Programs must overcome major barriers, primarily cost.</p> <p>Investors are motivated by a mix of drivers, altruistic and self-interest.</p> <p>More consultation is required on mandatory disclosure, with assistance available to help investors adjust.</p> <p>Investors want more information on the market for sustainable rental housing, particularly in low cost areas.</p>

5.2 Concluding remarks and future policy and research directions

5.2.1 Synthesis of findings

This project has used a range of primary qualitative data and secondary quantitative data to examine the barriers to and opportunities for advancing the environmental sustainability of Australia's private rental housing stock.

The project has generated an array of findings; some of which clarify key issues surrounding sustainable home improvement in the private rental sector, and some of which beg further research questions.

The quantitative modelling work demonstrated that low-income private rental households are vulnerable to rising energy costs. While private renters have lower energy use than owner occupiers, they must put aside a similar percentage of their disposable income in order to meet higher energy bills under the CPRS. Related to this issue, is the question of whether private renter households are able to adapt to higher energy prices by exercising choice in the marketplace by opting for more sustainable properties, as well as the extent to which the private dwelling in which they live is likely to undergo energy and water saving improvements. The available quantitative data does not support the hypothesis that there is a 'split incentive' that results in private rental households paying higher bills than owner-occupiers; indeed owner-occupiers pay more for energy, even when a range of assumed explanatory variables such as gross household income, household size and dwelling type are held constant.

In contrast, consultation with private rental investors revealed that even among a group of investors who were relatively supportive of environmental measures, the major barriers to adopting energy and water saving measures were viewed as cost and a lack of financial incentive to act. Investors raised the issue of the split incentive, particularly in relation to large cost items such as solar panels and hot water systems. In addition, they did not envisage that they would be able to recoup costs through

higher rental yields. Further, investors noted that record low vacancy rates meant that they had little incentive to upgrade properties to attract tenants.

These results are puzzling and they emphasise the need for more adequate quantitative data on household energy and water consumption and the condition of Australia's housing stock, including information about key infrastructure items such as space heating and cooling systems and installation of solar technologies. Interestingly, the quantitative modelling work and qualitative consultation with stakeholders and investors suggest that barriers to advancing Australia's private rental stock might not be as insurmountable as first presumed. Indeed, there are aspects of Australia's private rental market that suggest some flexibility and capacity for sustainable home improvement. In particular, there are established incentives available through the taxation system to encourage investment in dwellings. In general, these were not seen by investors as sufficiently generous for them to act, but they did see some scope for the acceleration of depreciation schedules and the introduction of complementary rebates and measures such as land tax relief. The high churn of properties in and out of the private rental market also acted as a driver for sustainable home improvements among the investors consulted. This characteristic of the Australian market can not in itself deliver comprehensive change across the sector, but it raises the prospect of sustainable properties entering the property market at the higher end. Moreover, the profile of private rental investors is important. There are many investors who had not anticipated owning rental properties, but who have entered the market in order to support themselves in retirement. These investors are dependent on the income generated by their rental properties, but they also hold a range of views and values in relation to environmental and social issues.

5.2.2 Policy directions

There are a range of policy settings, including regulatory and market mechanisms, education campaigns and retrofit programs, open to governments to support sustainable home improvement. The major policy settings currently on the policy horizon include: establishing a national carbon price signal; further use of energy and water price setting to influence consumer behaviour; strengthening existing legislation such as building codes; introducing mandatory disclosure of the sustainable performance of residential properties, introducing a green minimum standard via the *Residential Tenancy Act* and a new national retrofit program, Green Start. Support for these measures varied across stakeholder groups, with the real estate industry and private rental investors emphasising the need for sound planning and consultation, as well as long-term security and stability. These stakeholders were particularly critical of recent changes to national programs, which had dampened confidence and undermined home improvement activity and investment. Stakeholders from the community sector, in contrast, advocated strong regulatory measures such as the implementation of green minimum rental standards in order to protect the well-being of low-income tenants.

Our program review, as well as our consultation with stakeholders and investors, emphasises that different segments of the private rental market require different policy settings and interventions in order to overcome major barriers, create well-targeted incentives, and tap into existing motivations and drivers among investors.

Low-income private rental housing

Program coordinators of sustainable retrofit programs have encountered significant problems with recruitment of low-income private rental households. They found that there is a tendency by these households to self-select out of these programs even when adequate information is made available. Tenants were hesitant to initiate

contact with their property manager or landlord as they did not want to be viewed as a 'troublemaker' and they did not want to risk a potential rent increase or eviction. Notably, comprehensive audits and retrofits have occurred where there have been dedicated house managers that can provide extensive liaison and negotiation between tenant, landlord and property manager: support in completing government applications for rebates and special assistance: and tailored advice and assistance with installation. Coordinators observed that recruitment can be aided by clear communication of the project objectives and by identifying benefits to potential participants, that is, participation can improve tenant comfort and reduce energy bills, with an added benefit for the environment in reducing energy and water use.

These programs are clearly resource intensive. While recruitment is most effective when coordinated and managed by local organisations, the experience in Victoria highlights advantages in providing adequate institutional support and ensuring that comprehensive rebates and incentives are in place. The Energy and Water Taskforce is an example of an effective collaborative model between state government and NGOs. Reforms within the energy sector and support for an emerging 'green skills' industry enables local programs to develop longer term planning and move towards a business model. A similar collaborative model has been proposed at a federal level—the Green Start program. This initiative, coupled with state programs, could shift the current piecemeal approach to delivering sustainable retrofits in the lower end of the housing market, and deliver substantial improvements in home comfort and energy and water savings across the sector.

In addition, well-supported retrofit programs could be supplemented by a range of initiatives. There is scope for: greater support and engagement with property managers; education campaigns that target landlords who hold property in low-cost suburbs; and the provision of more generous rebates and tax concessions for landlords who invest in affordable housing or who have a low-income tenant in place. There is also scope for stronger government regulatory settings, in particular the introduction of mandatory disclosure and a green minimum standard to overcome barriers to adaptation at the lower end of the housing market. However, such an approach also carries risks with the capacity of private rental investors to quit the sector in response to excessive costs and administrative requirements.

Managed private rental housing

Throughout the project, investors and stakeholders raised the prospect of private property managers taking a more active role in facilitating the uptake of energy and water saving measures. It was suggested that these managers have extensive experience with dealing with landlords and tenants and they are able to reach a large number of landlords with minimal cost and effort. Stakeholders within the property sector held mixed views. There was agreement that property managers could be supported through further professional education and training in the area of environmental sustainability. However, stakeholders also suggested that managers are operating at capacity and they do not see themselves as specialists in this area. The Goes Green model demonstrated what could be achieved within the industry. The agency had overseen significant water savings across their rental properties with only a small extension to their existing property management operation.

An increasing role for property managers could be accelerated through stronger government regulatory settings, such as mandatory disclosure. By compelling landlords to undertake energy and water assessments, this could encourage investors to seek out property managers who have built a reputation in the area of sustainable property management (i.e. services might include conducting energy and water audits

or arranging for energy and water efficiency upgrades) and in turn facilitate the expansion of sustainable property management services across the sector.

Self-managed private rental housing

The policy options available to support tenants, who live in self-managed rental properties, and their landlords are more limited. These investors are the hardest to reach in terms of the delivery of information. When consulted, they emphasised that they were receptive to information campaigns, including receiving brochures about minor measures they could undertake. These could potentially be delivered with council rates notices. They also saw value in the establishment of a landlord association that could disseminate information and represent their views in regard to new policy measures such as a mandatory disclosure scheme that requires landlords to provide prospective tenants with information on their property's energy and water performance.

These investors were looking for government support through rebates and tax measures. They were fearful of onerous administrative and bureaucratic requirements as they operate with minimal resources and time. They wanted some support in navigating complex and shifting policy settings. While they did not anticipate a dedicated property manager, a centralised telephone service that was not specific to a particular program, but provided advice across various sectors was viewed as desirable. They also wanted an independent body that could advise on emerging sustainable technologies. This needed to go further than generic advice to providing comparative information on product performance, including product testing.

5.2.3 Research directions

Finally, the project has revealed gaps in existing housing literature and research. As noted in Chapter 2, research on the operation of split incentives in the Australian housing market is hampered by the absence of comprehensive databases such as those generated by the USA Residential Energy Consumption Survey. The ABS has not conducted a similar survey in recent times at the national level. Three state-based surveys cover some of the same ground, but are more limited in scope (Domestic use of Water and Energy, South Australia 2004; Domestic Water Use, Western Australia 2003; and Domestic Water Use, New South Wales 2002). The surveys record the energy sources used for domestic applications, e.g. source of energy for hot water systems; the technology used for applications, front- or top-loader washing machines for instance. But the surveys do not contain consumption measures—either expenditure or volume. The ABS Household Expenditure Survey (HES) has an important advantage over HILDA because it contains disaggregated energy expenditure variables—expenditure on gas, electricity, wood etc. But once again price information is lacking, as well as details on the types of heating and cooling systems.

Another issue that emerged through the quantitative and qualitative analysis was the challenge of sustainable home improvement in strata-titled, multi-unit developments. This project has highlighted some key problems for this segment of the housing market, including problems that individual investors faced in gaining consent in order to undertake adaptations. Concerns were also expressed about barriers such as the illegality of the sale of energy by owners' corporations back to the grid and the exclusion of owners' corporations from accessing major government support programs such as the HIP in order to undertake works in common areas. More positively, higher density dwellings are associated with lower levels of energy consumption and therefore the capacity for adaption is critical in continuing to support higher density and more diverse residential development across Australian cities.

In addition, there is scope for additional monitoring of policy programs including: the quality of environmental house assessments, the impact of retrofit programs on households, and the interaction of key regulatory/legislative reforms and program initiatives across various levels of government. Households are currently able to tap into environmental assessments through Federal Government green loans, through retrofit programs offered to low-income households, and potentially through the property management agencies, as well as accredited assessors in response to mandatory disclosure requirements. There is a need for greater coordination and information sharing across discrete programs in order to maximise individual and broader social and environmental outcomes.

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APPENDIX ONE: STAKEHOLDER INTERVIEW SCHEDULE

Background

1. Please outline key services/programs/activities and/or support provided by your organisation to private rental households (in particular low-income households)/tenancies/landlords.
2. Please outline key services/programs/activities and/or support provided by your organisation that aim to improve the environmental performance of rental housing. Who are these programs targeted at (low-income households)? Who have these programs reached? Can you comment on the effectiveness of these programs to date?
3. [If relevant] Does your organisation play any role in increasing landlord/tenant knowledge about issues of environmental sustainability? If so, please describe.
4. [If relevant] Does your organisation play any role in linking landlord/tenants with key government programs designed to improve the energy efficiency of private rental dwellings? If so, please describe.

Environmental sustainability

5. Do you think there is growing concern/interest and knowledge about issues of environmental sustainability (such as energy and water efficiency and comfort of dwelling) among residential investors/landlords?
 - Have the residential investors you are in contact with raised any concerns about issues of environmental sustainability, particularly in relation to their specific investment property/dwelling (i.e. insulation, energy efficient whitegoods, water saving devices)?
 - In your experience, what are their major concerns?
6. Do you think there is growing concern/interest and knowledge about issues of environmental sustainability (such as energy and water efficiency and comfort of dwelling) among private rental tenants?
 - Have the tenants you are in contact with raised any concerns about issues of environmental sustainability? (For example, requests for installation of energy/water saving devices.)
 - In your experience, what are their major concerns? (e.g. rising energy costs).
7. Can you identify any current barriers that might prevent potential and existing investors from improving the environmental sustainability of their investment property/dwelling?
8. Can you identify any current barriers that might prevent tenants (including low-income tenants) from reducing their energy and water usage?

Affordable rental housing

9. How would you describe recent trends in the private rental market, including affordability, quality and vacancy rates? And, how have these impacted on landlords and tenants, including low-income tenants?
10. Given this context, what do you think are the key challenges facing private rental households, including low-income households?

11. Are you concerned that improving the energy and water efficiency of private rental properties/dwellings may impact negatively on housing affordability for private renters? Do you have any suggestions as to how these impacts might be offset?

Institutional context

12. In your opinion, how might governments act to improve tenancy arrangements for private rental households, including low-income households, and increase the supply of affordable rental housing?
13. In your opinion, how might governments act to improve the environmental performance of rental housing generally and low-income households in particular?
14. Are there any other issues/concerns that you would like to raise?

APPENDIX TWO: MAJOR SUSTAINABLE HOME IMPROVEMENT SUPPORT SCHEMES BY STATE AND TERRITORY

Table A 1: Major sustainable home improvement support schemes by state and territory

<i>Scheme</i>	<i>Stakeholders involved</i>	<i>Open to all tenure types?</i>	<i>Low-income focus</i>	<i>Type of assistance, time frame and number</i>
Victoria				
Energy and Water Taskforce low-income house retrofits	Vic./Govt. led and significant NGO involvement	Low-income specific	Yes	Retrofits, ongoing, 4,700 homes retrofitted prior to 2010 and 2,800 retrofits per year after.
Water saving rebates	Vic. Govt.	Yes	No	Various rebates depending on devices purchased, ongoing.
Hot water installation rebates	Vic. Govt.	Yes	No	Various rebates depending on technology installed, ongoing.
Greener Futures Program	Vic. / NGO led	Yes	Yes	Retrofits for 5,000 low-income households over two years (2010–2013)
Warm home Cool Home	Moreland Energy Foundation and Brotherhood of St Lawrence	Rental focus	Yes	Retrofits for 1,000 low-income rental households, just beginning, ongoing.
1 million homes project	Environment Victoria and NGOs	Yes, but with rental focus	Yes	Retrofits, currently a proposal only.
Victorian Government Appliance incentive	Vic. Govt.	Yes	No	Rebate for energy/water efficient appliances, 10,000 received (2009 only).
Vic RECs	Vic. Govt.	Yes	No	Renewable energy certificates, ongoing.
Various council initiatives	Local councils	Yes	No	Shower head give-aways and retrofit assistance.
Tasmania				
Glenorchy Energy Rebate Project	Tas. NGO led with Federal Government funds, Local Council and local business support.	Yes	Focus of project, but not targeted.	Various rebates offered for energy efficient home appliances, fixtures and fittings given to 200 households in 2008.
Brighton and Kingston retrofit	NGO and Tas. Govt.	Yes	Yes	Retrofit assistance and rebates offered, similar

programs	collaboration			in scale to the Glenorchy project conducted in 2009-10.
Waterworks Valley community connect project	Tas. Govt. and various community sector groups.	Yes	No	Surveys, support and giveaways to reduce household climate impact and have made contact with 200 households, 2009–2010only.
Council rebates	Hobart City Council, Launceston City Council	Yes	No	Hobart City Council have rainwater and solar hot water rebates, ongoing. Launceston had a wood heater buy back scheme, now ended.
New South Wales				
Home power savings	NSW Govt.	Yes	Yes	Energy assessments, power saver kits, advice and action plans, to 220,000 households until June 2013.
NSW home saver rebates	NSW Govt.	Yes	No	Water and energy saving device rebates, with 180.000 rebates handed out by December 09.
South Australia				
Residential energy efficiency (REES)	SA Govt. funded with energy and gas providers providing services.	Yes	1/3 household targets must be low-income	Energy audits to 13,000 low-income households 2009–11.
Queensland				
Climate smart home service	Qld. Govt.	Yes	No	Wireless energy monitor installations, audits and minor retrofits, ongoing.
Northern Territory				
Cool Mob	NT Govt. and utilities	Yes	Free to concession card holders.	Home sustainability audits with energy saving kits with 800 households joined up in January 2010, ongoing.
Australian Capital Territory				
ACT Energy Wise Program Home Energy Advice Team (HEAT)	ACT Govt.	Yes	No	Advice, audit and possible \$500 rebate.

National				
Green Loans	Australian Government	Yes	No	Household sustainability audit and report, ongoing. Previously also \$10,000 interest free loans.
Green Start	Australian Government with execution by local NGOS and state and local governments.	Yes	Yes	Retrofits, advice, assistance and advocacy commencing 2011.
Solar Hot Water Rebate	Australian Govt.	Yes	No	Solar hot water rebates.

APPENDIX THREE: PRIVATE RENTAL INVESTOR INTERVIEW SCHEDULE

One of the key terms I will be using in the interview is 'sustainability'. People define this differently, but in this project we are particularly interested in three aspects of sustainability: strategies to reduce energy use, water use and waste.

About your rental investment

1. How many rental properties do you have?
2. Describe your rental properties in terms of:
Dwelling type (house, unit, detached/attached),
Suburb
Annual maintenance budget.
3. How is the property/are the properties managed?
Real estate agent.
Self/partner
4. What ownership arrangement best describes your current property investment situation?
Sole investor.
Joint owner with spouse/family partner.
Joint owner with others.
Trust/business
5. How important is your rental income to your overall income?

Attitudes towards environmental sustainability

6. How important are issues of environmental sustainability to you?
Very important.
Somewhat important.
Not important.
7. Did you think about issues of environmental sustainability when deciding to invest in residential housing (eg energy, water and waste)?
8. Are you concerned about the energy, water and waste efficiency of your rental dwelling?

Knowledge of sustainable profile of property

9. Since purchasing the property, have you sought out information about improving the energy, water and waste efficiency of your rental dwelling/property?
10. Have you had an energy performance audit conducted on your property [by either yourself or a trained energy assessor]?
11. Are you aware of how energy, water and waste efficient your property is?

12. Would you like to know more about the sustainability profile of your property (by this we mean the energy performance of the property, the capacity to reduce water and manage waste)?
13. Would you like more information on the types of measures and technologies that can assist in reducing energy and water usage, and waste?

Action to improve sustainable profile of property

14. Since purchasing the property, have you taken action to improve the energy, water and waste efficiency of your investment property/dwelling?
15. *If yes*, can you tell me the specific measures you have taken? [e.g. efficient showerheads].
→ Are there any further changes you would like to make to your rental dwelling in order to make it more energy, water and waste efficient?
16. *If not*, can you tell me—is there anything in particular that is preventing you from taking up measures to improve the energy, water and waste efficiency of your property? For example, cost, time, information, skills.

Policy support

17. Are you aware of any government programs that assist landlords and tenants in improving the energy, water and waste efficiency of private rental dwellings? [e.g. insulation scheme, solar hot water, green loans].
18. Have you accessed such government programs? Why/ why not?
19. If yes, are you satisfied with the level of support offered by government programs?
20. What do you think are the main ways that governments can support landlords and tenants in improving the energy, water and waste efficiency of their dwelling/property?
21. Would you be willing to cover some of the costs of improving the energy, water and waste efficiency of your investment property? What type of incentives would you require to encourage you to undertake these improvements? (e.g. matching funds, subsidies, low-interest loans etc).

I now want to ask you about your views on one specific policy option which entails landlords providing prospective tenants with information about the performance of their property in terms of energy and water usage.

22. Do you have any concerns about legislative changes that would make it mandatory for all landlords to provide information about the energy, water and waste performance of their property to tenants?
23. Would you personally be willing to volunteer information about the performance of your property in terms of energy and water usage to new tenants?
24. Would you prefer this scheme to be voluntary or compulsory?
25. Finally, do you have any further comments to add/ any issues I might not have covered in the interview?

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