

INCREASING THE UPTAKE OF SOLAR WATER HEATING DISCUSSION DOCUMENT SUBMISSION FROM BEACON PATHWAY LIMITED

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I am happy to be contacted about our submission.

About Beacon

Beacon Pathway Ltd is a collaborative research consortium working to find affordable, attractive ways to make New Zealand's homes more sustainable: warmer, healthier, cheaper to run and kinder to the environment. Beacon aims to drive sustainability outcomes consistent with New Zealand sustainable development requirements.

Beacon is funded by industry, with matched revenue from Government research funds from the Foundation for Research, Science and Technology. There are currently five shareholding partners – Building Research, Scion, New Zealand Steel, Waitakere City Council and Fletcher Building.

Beacon's vision of:

Creating homes and neighbourhoods
that work well into the future
and don't cost the Earth

will be realised through the achievement of the following two goals:

1. To bring the vast majority (90%) of New Zealand homes to a high standard of sustainability by 2012 and;
2. That every new subdivision and any redeveloped subdivision or neighbourhood from 2008 onwards be developed with reference to a nationally recognised sustainability framework.

The consortium has been established to bring about significant improvement in the sustainability of the residential built environment in New Zealand, by carrying out research, managing resultant Intellectual Property, and facilitating development and increased availability of products and systems via emergent markets, through working together with like minded organisations, and by lobbying regulatory authorities.

Beacon intends to develop interventions, which meet sustainability goals in a manner that aligns with consumer lifestyle and choices, achieving home quality and comfort with appropriate affordability.

Beacon is committed to funding research and initiating projects on interventions that will enable a more sustainable residential built environment. This will assist New Zealand consumers to adopt more sustainable residential built environment outcomes, ensuring better returns (social, environment, cultural, and economic) for shareholders, stakeholders and the wider public.

Reason for Submission

Beacon recognises that increased uptake of solar hot water systems is one way in which the sustainability of the residential built environment can be increased and that the government programme needs to be well targeted and industry informed. In particular Beacon sees the need for any programme to lead to a “stepwise change” – rather than an extension of business as usual. In this way, the principles involved in promoting the uptake of solar hot water are similar to those which can be applied to any new technology in the residential building sector.

Submission

General Comments

Complexity of Options

Generally the options proposed do not appear to be likely to result in the stepwise change or significant ramping up of the solar hot water installations needed to meet the Government objectives. They appear to be complex, and in some cases bureaucratic, which is likely to mean they will not be widely taken up by the sector.

Beacon’s experience with the building industry is that a key requirement of any new proposal is that it is easy to understand, simple in implementation and delivers a high degree of certainty. Solar hot water is competing within a market where both electric and gas hot water systems are delivered easily and simply, to the consumer and the building industry and this should be the objective around solar hot water.

Beacon notes the current \$300 loan interest scheme is not well targeted at any of these markets and is unappealing to all but the most committed of consumers. It is a relatively cumbersome system, is not as appealing as a direct grant for the same amount of money would be, and is probably only being taken up by people who would be installing solar hot water systems anyway.

Current State of the Industry

Beacon also notes that the current solar hot water supply installation consists of a large number of small players, many of whom are unlikely to be able to significantly expand their businesses.

Beacon notes that EECA has funded the Solar Industries Association significantly, despite the fact that there are two other non-EECA funded associations in existence.

It appears (from a distance anyway) that this association largely works in the interests of a small core of industry players, and that providing significant financial support for it may not be the best use of EECA funds.

As is discussed further below, a more contestable approach to assistance with support for marketing and promotion of solar hot water systems may be a more effective way of building capacity within the industry to function in the more entrepreneurial manner required. It may also provide a mechanism to attract other building sector companies to become involved in solar hot water (eg. roofing companies or existing gas or electric hot water suppliers).

Programme Needs to Prioritise Key Markets

Beacon believes that the Government programme needs to be well targeted at the areas of the market where uptake of solar hot water systems is easiest. This will help build capability and capacity for bulk installations in the sector, and help mainstream the technology. While the sector focuses on individual, small scale, tailored solutions, it will remain a small scale, “fringe” technology.

Beacon believes there are four key markets which should be targeted through government incentives. These are:

- New development – particularly spec homes and volume build greenfield and infill developments. These are financed on a different basis to retrofits, and the higher cost of solar hot water systems becomes a relatively minor issue, when operating cost savings are “sold” by the developer. Targeting bulk development companies who undertake multiple developments, such as Stonewood Homes, Fletcher Residential, Neil Construction, McConnell International, Infinity Group etc, would have a significant impact, as these developments lead the market. They also are the easiest installations to undertake.
- Commercial applications – led in the first instance by local and central government, eg. prisons, schools, hospitals, aquatic facilities, community centres, leisure centres etc. Commercial applications are a significant potential, largely untouched, potential sector for solar hot water industry.
- Proactively identified bulk retrofits – groups of homes (eg. a street) retrofitted at the same time to allow for an efficient and more cost-effective outcome. This is a similar approach to that which was undertaken by the gas industry in the 70s and early 80s, where a travelling promotion pulled up in streets and sold gas systems to households on a street by street basis. This involved a “one stop approach” and easy financing for the householder and was taken up extensively.
- Individual hot water system replacements – of which there are in the order of 60 – 80,000 annually undertaken in New Zealand. This is perhaps the most difficult market, in that what is required is a fast, simple and efficient process, which currently the industry is not capable of delivering. In terms of the quality assurance, information and price aspects of the programme, this is the area that needs the most attention.

Beacon believes that different methods will be effective at promoting the uptake of solar hot water in these four core market segments and that the package adopted by government needs to recognise this, rather than take a “one size fits all approach”. Beacon also notes that the industry is currently not specifically targeting any of these sectors, and this reinforces the comments above around the need for bigger players and a more entrepreneurial approach needed by the industry.

Specific Feedback on Options

Beacon believes that Options One, Two and Five are too complex to result in significant uptake. If implemented they would, like the current interest subsidy scheme, make only a minor impact on the number of installations.

Options Three and Four are considered to be the most workable, but changes in the detail of Option Three are needed to recognise the priority market segments, and the

different approach needed to deal with these. These are discussed further below in relation to Beacon's Proposed Package.

Option Four is considered useful, in that it enables some capacity building within smaller players to expand their businesses where financing and certainty are issues. It also has the advantage of being visible and demonstrating a "walk the talk" approach, which is an important leadership role of government.

Beacon's Proposed Package

1. Promotion of solar hot water uptake in new development.

- Aimed primarily at the developer and builder (volume and spec)
- Inclusion of solar hot water systems on show homes
- Price subsidy –part to developer and part to the consumer
- Marketing and promotion assistance for developer/builder (point of difference) – could be through funding application similar to insulation retrofit programme
- Minimum number of installations to be eligible for assistance (eg 20) – or household units supplied with solar systems (eg apartments where the complex has a solar hot water "pre-heating" system)

Advantages

- Most visible impact
- New homes lead the market
- Easiest to install in new homes
- Can become a standard specification
- No regulatory issues (part of larger building consent)
- Able to be applied to standard house designs
- Potential for future expansion to promotion of other energy efficient (and other resource efficient) technologies (eg LED lighting, high insulation standards, photovoltaic systems, rainwater tanks etc)
- Will increase familiarity of plumbers and builders who would not otherwise be exposed to solar hot water systems

2. Promotion of Solar Water Heating into new / existing commercial and institutional buildings – government sector

- Aimed at the developer/tenant (local/central government/tertiary education)
- Price subsidy to government agency/authority based on a minimum level of use in each development
- Price subsidy for installers based on large volume installations
- Government take lead, setting standards with own buildings. Solar hot water becomes key element of Govt3. EECA advisors work with Education, Health and Corrections facilities.
- EECA work with local government (eg Energy Wise Councils) to ensure they adopt Govt3 principles.
- Contestable fund from EECA for monitoring and information (eg signage) around effectiveness of installation

- A future widening of the programme to private commercial developments could target hotels, motels, restaurants with a subsidy delivered through tax incentives

Advantages

- Lead by example
- Walking the talk
- Construction usually undertaken by a different sector of the industry to residential – creating familiarity with subcontractors and head contractors
- Effectiveness (energy savings) easily monitored and used to promote benefits

3. Promotion of solar hot water uptake in bulk retrofits

- Aimed to support the entrepreneurial supplier
- Price subsidy to the consumer
- Small performance based subsidy to the supplier for minimum nos. (eg 20) of installations
- Marketing, promotion, information subsidy for the supplier
- Could involve underwriting of capital costs for suppliers if undertaking a minimum number of installations (Beacon suggests this would need to be in the hundreds not dozens to eligible for underwriting in order to encourage industry expansion)

Advantages

- Will encourage development of efficient retrofit approaches
- Will enable uptake in areas where slow or no growth, but high suitability (eg parts of Northland, Gisborne etc)
- Particularly suitable for retrofits of the past mass commuter housing developments in Auckland where large areas have only a small number of housing typologies exist– eg Massey, Glenfield, Manurewa
- Enables the development of standard retrofit packages
- Is a model which has proven successful with other technologies (eg gas, aluminium window retrofits).

4. Promotion of solar hot water in hot water system replacements

- Focus on partnership:
 - with local government around streamlined building consent process, and
 - with suppliers/installers around developing a 1 visit, fast turn around response
- May be best done through trialling initially with a small number of local councils eg Waitakere, Kapiti and Hamilton City Council who are participating in the BRANZ “Eco Advisor” programme for the next 12 months and nominated suppliers
- Price subsidy to consumer

- small price subsidy to installers that meet quality/timeliness criteria
- financial support for trial projects to allow upskilling of regulatory authority and industry to deliver a fast turnaround quality outcome

Advantages

- most difficult market but needs to be addressed if solar hot water is to become standard
- where current programme is targeted – but no connection between regulator and industry, fragmented nature means minimal critical mass development or capacity building

Administration of the programme

Beacon believes that what is needed is to get the ball rolling, and then, as occurred with other emerging technologies (eg. heat pumps), uptake will escalate and the need for ongoing subsidies will diminish.

It is suggested that a 3 year funding approach be taken, with provision for the amount of subsidy to decrease as the number of installations increase. The whole programme could be set up in the following manner.

	New Development	Government Commercial	Mass Retrofit	Hot water system replacement
Direct subsidy -applies to perhaps first 1000 installations in each category and then steps down for next 2000 with further step for following 5000	Grant - \$300 for developer (min 20 installations), \$300 for consumer	Grant - to government agency per installation (\$value to vary depending on size of installation – eg community centre vs swimming pool) Performance based subsidy for installers for minimum no (or size). of installations	\$500 for consumer Performance based subsidy (eg \$100) for supplier/installer for minimum 20 installations	\$500 for consumer Performance based subsidy (eg \$100)for installations within set time and quality (administered locally)
Marketing/ promotion fund	Developers make proposals for part funding to assist in promotion	Proposals made for part funding to monitor/ promote (eg through signage) demonstration & benefits	Suppliers make proposals for funding to assist in promotion	For trial, allocation of funds to local council, preferred supplier for promotion With wider roll out: Local councils, suppliers and installers make proposals for funding to assist in promotion.

	New Development	Government Commercial	Mass Retrofit	Hot water system replacement
Quality Assurance	all industry participants must meet min. stds	all industry participants must meet min. stds	all industry participants must meet min. stds	Supplier/installers tender for involvement in “preferred supplier” aspect of programme.
Building Consent process streamlining				<p>Trials with interested & committed local government partners through Eco Advisor Programme.</p> <p>Grant to councils to help them get streamlined process.</p> <p>Documentation of results for promotion beyond trial areas in future.</p>

Research into the Sector

Beacon notes that EECA has undertaken research into what would make people take up solar hot water, and other energy efficiencies. From sector experience, Beacon suggests that any further research by EECA into this area focuses not just on intentions (what would make you buy?) but actualities (ie. why did you buy?) as this will give a far greater insight into the barriers and ways to overcome them. This is an area of interest for Beacon generally and it may be that Beacon can undertake research as part of its current research programme which could provide the answers to some of these questions for both our benefits.

Beacon has undertaken some limited analysis of case studies of sustainable home retrofits, which have included solar hot water systems. The overwhelming feedback from the consumers who undertook these installations was that trusted, independent, and accessible information that was simple and well packaged was needed. This was also true for other aspects of energy efficient technology. The information currently available is generally provided by the supplier (ie. not independent), complex (eg. discussion of the range of systems and the need to get the right panels, tanks, booster systems etc), and poorly packaged (selling solar panels not a solar hot water system – compared with other hot water system suppliers).

Interestingly in all the case studies looked at (which were in Auckland), building compliance issues did not arise. In this part of the country at least, there are sufficient numbers of installations being undertaken already, that building inspectors are familiar with the systems.