



## Submission for proposed changes to the Building Code and Compliance Documents on energy efficiency of hot water systems and HVAC (heating, ventilating and air-conditioning) systems

Submissions can be sent by:

**email to:** [comments@dbh.govt.nz](mailto:comments@dbh.govt.nz) (please put 'Energy Efficiency' in the subject line)

or

**post, courier or hand deliver to:** Consultation Feedback – Energy Efficiency  
Department of Building and Housing  
Building Quality and Performance  
Level 6, 86 Customhouse Quay  
PO Box 10-729  
Wellington

or

**fax to:** (04) 494 0290 (please put 'Energy Efficiency' in the subject line)

The **closing date for submissions is 29 June 2007**. Please note that all responses will be public information and may be subject to requests for information under the Official Information Act 1982.

### Contact details

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### I am commenting on behalf of:

- industry  
 myself (private citizen)  
 non-profit organisation

### Transitional arrangements

**Question 1: Do you agree with the proposed effective date and the transitional arrangements?**

- Yes                      x  Yes, but with comments                       No, with reasons described below

#### Comments

Beacon supports the timeline for implementing the measures but would certainly not wish to see the "effective from" date pushed out any further than April.

### Building Code H1 Energy Efficiency

**Question 2: Do you agree with removing the limit of application on "plant and equipment" for the Building Code Functional requirement H1.2(a)?**

- Yes                      x  Yes, but with comments                       No, with reasons described below

#### Comments

Beacon supports the removal of the limit on application but would prefer to see a higher standard of efficiency/sustainability required from any HVAC system which is installed. The consultation document appears



to suggest that the standard being required is “possibly even below good practice’ and certainly below “best practice”. Beacon appreciates that any move toward a higher level of building sustainability is a step process, but would prefer to see the industry being pushed along faster than the proposed measure will require. Assuming that best practice targets set by the Green Star rating system will be taken up widely and/or that tenant demand will be sufficient to drive change is in our opinion overly optimistic. HVAC systems are significant users of energy. Reducing their energy demands substantially over time will be a key element to a strategy of reducing carbon emissions from the residential and commercial built environment and in turn reduce NZ’s overall quota of greenhouse gas emissions. As such more specific requirements of systems set at a higher level of sustainability would be preferable to the more laissez faire approach suggested by this amendment as it stands.

**Question 3: Do you agree with the proposed new Building Code Performance requirement H1.3.4(c)?**

Yes                      X  Yes, but with comments                       No, with reasons described below

**Comments**

Generally Beacon believes that the proposed approach proposed in this discussion document does not go far enough in promoting a high standard of energy efficiency in hot water systems. Beacon believes that much greater steps are required – such as those taken in Australia through the application of BASIX whereby electric hot water systems have effectively been eliminated through requirements to improve energy efficiency. Beacon submits that H1.3.4 should be amended to reflect a higher performance standard, whereby more efficient methods of heating hot water are required to be implemented, rather than continued acceptance of electric storage water heaters as part of an Acceptable Solution.

**Question 4: Do you agree with the proposed new Building Code Performance requirement H1.3.6?**

Yes                      X  Yes, but with comments                       No, with reasons described below

**Comments**

Once again Beacon supports the addition of this new clause but would like to see a higher performance target set with whatever standard introduced in the Acceptable Solution to be able to progressively extended.

**Question 5: Do you agree with the proposed new Building Code Performance requirement H1.3.7?**

X  Yes                       Yes, but with comments                       No, with reasons described below

**Comments**

**Question 6: Do you agree with the proposed new Building Code Performance requirement H1.3.8?**

X  Yes                       Yes, but with comments                       No, with reasons described below

**Comments**

**References for Compliance Documents H1/AS1 and H1/VM1:**

**Question 7: Do you agree with the proposed changes to the reference documents for H1/AS1?**

X  Yes                       Yes, but with comments                       No, with reasons described below

**Comments**



### Acceptable Solution H1/AS1 - Hot water:

**Question 8: Do you agree with the changes to paragraph 5.01, and associated comment, in the Acceptable Solution H1/AS1?**

Yes                      X  Yes, but with comments                       No, with reasons described below

**Comments**

Generally Beacon believes that the proposed approach proposed in this discussion document does not go far enough in promoting a high standard of energy efficiency in hot water systems.

**Question 9: Do you agree with the deletion of the comment from paragraph 5.02 in the Acceptable Solution H1/AS1?**

Yes                      X  Yes, but with comments                       No, with reasons described below

**Comments**

Generally Beacon believes that the proposed approach proposed in this discussion document does not go far enough in promoting a high standard of energy efficiency in hot water systems.

**Question 10: Do you agree with the deletion of paragraph 5.03, and associated comment, in the Acceptable Solution H1/AS1?**

Yes                      X  Yes, but with comments                       No, with reasons described below

**Comments**

Generally Beacon believes that the proposed approach proposed in this discussion document does not go far enough in promoting a high standard of energy efficiency in hot water systems.

**Question 11: Do you agree with the proposed new paragraph 5.03 for the Acceptable Solution H1/AS1?**

Yes                      X  Yes, but with comments                       No, with reasons described below

**Comments**

Generally Beacon believes that the proposed approach proposed in this discussion document does not go far enough in promoting a high standard of energy efficiency in hot water systems.

### Acceptable Solution H1/AS1 - HVAC:

**Question 12: Do you agree with the proposed new paragraph 7 in Acceptable Solution H1/AS1?**

Yes                       Yes, but with comments                       No, with reasons described below

**Comments**

**Question 13: Do you agree with the proposed new paragraph 8 in the Acceptable Solution H1/AS1?**

Yes                       Yes, but with comments                       No, with reasons described below

**Comments**



**Question 14: Do you agree with the proposed new paragraph 9 in the Acceptable Solution H1/AS1?**

Yes

Yes, but with comments

No, with reasons described below

**Comments**

**My general comments on the proposed changes to the hot water energy efficiency (changes to the Building Code Performance requirement H1.3.4(c) and the Acceptable Solution H1/AS1, section 5):**

Beacon Pathway would like to use this opportunity to present some information about itself and to give some context for some of the points made within this submission.

Beacon is a residential building industry research consortium aiming 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 NZ homes to a high standard of sustainability by 2012 and;
2. 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 NZ, by carrying out research, managing resultant Intellectual Property ("IP"), 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.

As seen in general Beacon agrees with the recommendations made in the consultation document.

Generally Beacon believes that the proposed approach proposed in this discussion document does not go far enough in promoting a high standard of energy efficiency in hot water systems. Beacon believes that much greater steps are required – such as those taken in Australia through the application of BASIX whereby electric hot water systems have effectively been eliminated through requirements to improve energy efficiency. While it is recognised that mandating solar hot water heating may not be an appropriate option for all circumstances across the country, there are other energy efficient options such as heat pump hot water systems which could be used. Generally it is considered that the performance standards need to be set at a much higher level – whereby use of electric storage water heaters will no longer meet the performance standards.

Generally Beacon would support standards that would aim for a higher standard of sustainability than those recommended here. Beacon does not believe that as a nation we have the benefit of time with respect to reducing the overall ecological footprint of our built environment. Climate change, resource availability and changing demographics demand a greater level of ambition from building regulation and policy. As the housing we build today is likely to still be around in 40 plus years time, we will continue to leave a legacy of inefficient poor quality housing to future generations of New Zealanders if we are unable to demand more from the systems we use to build and maintain our living environments.

With respect to the options provided in 4.4 (being options for improving energy efficiency of hot water systems) Beacon would advocate that the option of mandating for water efficient showerheads, should in fact be taken up. Besides providing a benefit in terms of a reduction in energy use, low flow showerheads provide a range of other improved environmental outcomes including a reduction in wastewater from a house site and a reduction in water demand from what are already often stretched urban water systems. The fact that some users may



“prefer high flow rates and multiple heads” is not an adequate justification for not mandating these – particularly within the context of climate change drivers. Beacon’s water research suggests low flow showerheads could provide a substantial reduction in overall household water use if they were to be installed nationwide. If energy saving benefits were included then the overall net benefit of this initiative would not be insubstantial. Water will be an increasingly scarce resource over the course of this century. Low flow showerheads can provide a very good shower utilising a combination of air and water that gives the impression of a good shower flow rate whilst accomplishing a reduction in actual water flow in litres per minute.

**My general comments on the proposed changes to the HVAC energy efficiency (changes to the Building Code Clauses H1.2(a), H1.3.6, H1.3.7, H1.3.8 and the Acceptable Solution H1/AS1, sections 7, 8 and 9):**

**Comments**

Thank you for making a submission. Any changes to the proposals as a result of your feedback will be finalised by September 2007, and subject to approval will be published before the end of the year. Please check our website, [www.dbh.govt.nz/energy-efficiency](http://www.dbh.govt.nz/energy-efficiency), for updates on progress of the proposals.