



MAJOR ELECTRICITY USERS' GROUP

22 September 2006

Solar Water Heating Discussion
Energy Efficiency and Conservation Authority
By email to solar.discussion@eeca.govt.nz

Dear Madam/Sir

Submission on Solar Water heating discussion document

1. This is a submission by the Major Electricity Users' Group (MEUG) on the Energy Efficiency and Conservation Authority (EECA) discussion document, *increasing the uptake of solar water heating* (SWH), published 1 September 2006.
2. The discussion paper has a very good summary of the SWH industry. The paper explains how SWH has been an emerging technology for several decades but the key barrier to growth has been the very high initial capital and installation costs compared to "traditional" sources of water heating. There is no lack of innovation or competition in SWH equipment supply in NZ as evidenced by the fact there are 14 equipment suppliers and market shares can change rapidly (refer page 43 of the report). Nevertheless penetration of the water heating market is slow and in addition to the cost barrier there are other constraints including:
 - a) a small pool of qualified installers;
 - b) lack of useful comparative information for consumers; and
 - c) RMA consenting problems with different local authorities having different standards, different costs to seek consent and confusion by consumers about the necessity to have an RMA consent.
3. Nevertheless, without any government intervention MEUG expect SWH will continue to increase market share because of the following market opportunities and behaviours:
 - a) Electricity and gas water heating costs for households are likely to rise thereby progressively making SWH a more economically attractive alternative;
 - b) Technological improvements and possibly scale economies of manufacturing plants overseas will lower the cost of SWH equipment;
 - c) The SWH industry in NZ is likely to gain sufficient momentum to become more organised to promote SWH by improving information to consumers about the benefits of SWH and ensuring quality (eg developing own industry training and codes); and
 - d) Consenting problems with the RMA will be fixed. This is probably the one area where direct government intervention would be beneficial.
4. Given the above background to the SWH industry the question is why should government intervention be needed and what are the benefits and costs of intervention? In the view of MEUG the discussion document does not answer these questions sufficiently to justify government intervention.

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5. The discussion paper correctly identifies capital costs as the major barrier and then proceeds to suggest a range of options to lower these costs. All of the options are in effect subsidies with taxpayers bearing some additional costs or risks. However all emerging technologies in every industry face this barrier. Government doesn't subsidise the initial capital cost of all emerging technologies; why then should it subsidise SWH?
6. Even if there were some special barrier that differentiated SWH from other emerging technologies, MEUG would expect an economic cost-benefit analysis that quantified the forecast subsidy against the benefits NZ would gain. The lack of any quantified cost-benefit analysis of the options is a significant shortcoming of the report.
7. The enthusiasm to subsidise SWH seems to be mainly due to the political agenda set in the Labour party cooperation agreement with the Green Party. Achieving political agendas is part of our democracy, but this should never be at the expense of being transparent and accountable about the costs and benefits to taxpayers and the economy as a whole of politically set policies.
8. MEUG believe the political agenda is founded on an overly optimistic view of the potential of the SWH market. The following explain why we think this:
 - a) The Ministers foreword (p4) suggests that if a third of NZ households had SWH then that would save 1,100 GWh pa and households would have lower power bills to the value of \$192m pa. This equals an average unit rate saved of 17.45 c/kWh. This estimate of the value to households is misleading for two reasons.
 - b) First, it is highly unlikely the amount of retrofitting that would be needed to achieve a third of households using SWH would be possible. The report itself ranks retrofitting as a high cost option. Realistically MEUG would expect that even a 5% market share by SWH within the next 5 years would be a high target given the installation capability constraints and current SWH market share of less than ½ %.
 - c) Second, the avoided value to households of electricity claimed by the Minister of 17.45 c/kWh is too high because it includes line charges and is based on retail prices not the avoided cost of new generation. The energy only cost saving to households would be approximately 12 c/kWh (refer MED statistics published 2 August 2006 for an average 8,000 kWh pa household as at 15 May 2006). Even this is too high for a national economic cost-benefit analysis as the appropriate cost to use would be the avoided long-run marginal cost of new generation. Recent MED estimates indicate a range for new generation of 6 to 7 c/kWh. This is almost a third of the avoided value quoted by the Minister.
 - d) Taking these two factors together MEUG estimate the gross value of electricity savings to households might reach \$12m in 5 years (SWH achieves 5% market share and avoids incremental generating costs of say 7 c/kWh) compared to the Ministers estimate of \$192m (33% market share at 17.45 c/kWh). From this gross value the costs of installing this SWH need to be deducted to estimate the net benefit to New Zealand.
9. In conclusion MEUG expect SWH will increase market share but the rate of growth is best left to the market to exploit as opportunities arise. The case for taxpayer involvement is not proven in the discussion paper in terms of identifying a flaw in the market (ie a barrier) that needs an intervention. Setting this point aside, the discussion paper fails to have a quantified cost-benefit analysis as justification for subsidising the SWH industry. There is a political agenda to help SWH; but even the foundation of that enthusiasm doesn't match close inspection if the appropriate avoided cost of new generation is used and a more realistic forecast of SWH growth assumed.

Yours sincerely



Ralph Matthes
Executive Director