

## ENERGY STAR Pool Pumps Stakeholder Comments on the Framework Document and Stakeholder Webinar – Due 1/20/2012

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### Hayward Industries John O'Hare

Hayward Industries would like to thank the US Environmental Protection Agency and US Department of Energy for the opportunity to participate in the development of an Energy Star program for residential swimming pool pumps. At this time, we would like to share our following comments regarding the Energy Star Residential Swimming Pool Pump Specification Framework document and conference call of December 20, 2011.

- With regards to the title of the program, we understand the initial focus to be the residential in ground swimming pool market however a concern was raised if by applying the Energy Star label to a pump, this might inadvertently limit its market acceptance by suggesting it is suitable for residential applications only. There is a lot of cross-over between residential and light-commercial (hotels, motels, etc.) particularly when you consider pumps of higher horsepower ranges. Perhaps we should consider revising the title to "in-ground filtration pumps rated up to "X" horsepower" or some other suitable title.

With regards to the proposed test method, based on our experience we would like to suggest that the data points be a fixed increment GPM starting from zero flow rather than a percentage % of the max flow  $Q_{max}$  as described in AS 5102.1. By doing so we believe this would minimize challenges associated with testing, comparing and repeating the performance of a particular pump. For example, pump "ABC" could exhibit a max flow of 128 GPM on one test setup but perhaps 132 gpm on another setup or another day. On the first test setup the data points would be 128gpm, 115.2gpm, 102.4, etc. vs. 132, 118.8, 105.6, etc. for the second. While graphically this might not be a challenge, comparing an actual data table could.

However if we start from zero flow and work in say increasing 10 or 15 or 20 gpm increments, all pump data would be recorded at the same flow points and the comparison of data from one pump to another would be simpler.

- The program needs to accommodate that fact that depending upon the metric used, a pump will likely not meet the proposed Energy Factor level at all speeds that it is capable of operating. Even the most efficient variable speed and two speed pump when run at maximum operating speed (for example 3450 rpm) can exhibit a relatively low energy factor however this should not be grounds for disqualifying a particular pump from participating in the program. Hayward has some preliminary data regarding Energy Factor which we have obtained in accordance with ANSI-HI 1.6 and is willing to share with DOE & EPA on a confidential basis if interested.

- We agree that the program be technology neutral (non prescriptive) and that the initial launch of the program should not seek to eliminate any particular technology but rather be used as an incentive for continuous improvement for all type products. (single speed, multi-speed, variable speed)

- The program needs to consider that energy efficiency is not just limited to the product itself, but is highly dependent upon how the product used as well. If used improperly, even the best of pumps will exhibit poor energy performance as viewed by this program.

- Hayward currently does not have data obtained in accordance with the proposed Australia Standard AS 5102.1-2009 however historical data obtained in our lab in accordance with ANSI-HI 1.6-2000, suggests that an EF of 3 would be a reasonable starting point, providing for recognition of the following:

- o Most energy efficient single (1) speed pumps less than 1 total horsepower
- o Multi-Speed pumps (e.g. two-speed pumps)
- o Variable Speed Pumps

As noted above, this threshold should not necessarily apply to all speeds of a multi or variable speed pump given the impact of motor speed to Energy Factor as per the Affinity Law.

- With regards to certification testing, has DOE & EPA approached any NRTL's (UL, Intertek, NSF, etc.) to solicit their input on the proposed test method? It is important that the certification scheme allow manufacturers who participate in laboratory certification programs with the various NRTL's be allowed to conduct Energy Star testing in-house under the guidance of these established data acceptance programs.
- Regarding EPA's question 12, we do not believe there are any barriers to conducting this additional testing. Hayward conducts pump performance testing in accordance with ANSI-HI 1.6 to generate Energy Factor data
- Regarding EPA's question 13, our initial thought is to maintain Curve A and Curve C.
- Regarding EPA's question 14, small size pumps will intersect the system curve A however it may not be at a significant flow (gpm)
- Regarding EPA's question 15, while we recognize some of the enhanced benefits of Connected Functionality, we do not support this technology as a sole means of recognizing a swimming pool pump for Energy Star status. There is much Intellectual Property on this subject and it would need to be made available in the public domain before manufacturers could begin to consider adopting.

Thank you for the opportunity to comment on the framework for this program. We look forward to our continued participation in the process.

Sincerely,

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