

MINUTES FOR EUP (LOT 11) PUMPS SECOND STAKEHOLDER MEETING

Tuesday 21 November 2006

Venue: Education Centre (BIZ), Research and Technology Center, WILO AG,
Nortkirchenstrasse 100, 44263 Dortmund, Germany

Attendees

John Fraser	Circulating Pumps
John Bower	Floserve
Jurgen Bach	Grundfoss
Horst-George Schmalfluss	Independent
Ismo Gronroos-Saikkala	European Commission
Armia Marko	Wilo
Otello Zaccarelli	Caprari
Frank Hatner	ABS
Manfred Bartoschek	KSB
Friedrich Klutsch	VDMA
Peter Knapp	Sterling SIHI
Helle Nystrup	Grundfoss
Robert Dodane	Salmson
Niels Bidstrup	Grundfos
Julia Oberschmidt	Fraunhofer ISI
Markus Teepe	Wilo
Hugh Falkner	AEAT PLC
Charles Gaisford	AEAT PLC

Apologies

David Reeves	Independent Consultant
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These minutes record the main issues and outcomes discussed at this second stakeholder meeting. The details of this meeting were posted on the study web-site in advance of this meeting, and an e-mail sent to all registered stakeholders to alert them to these web-site updates. The discussion and questions raised were based on the contents of the second report also posted on this web-site in advance of the meeting (<http://www.ecomotors.org/files/LOT%2011%20Pumps%202nd%20report%20Nov%2006%20vW.1.pdf>)

Between the first and second formal stakeholder meetings, Hugh Falkner also attended two meetings at the request of the Europump “Energy” Joint Working Group at which additional technical input to the study was received.

Key Decisions and Actions

Definition of Products

It is considered that a pump is a product if it is sold alone or is part of an easily separable combined product (motor + pump).

Where the motor and hydraulics can not be split, then this is a product ('integrated product'). For the study, this applies to the submersible pump only. *Note that this represents a change in position from the v2.0 report, where the latter was considered as two separate products.*

ROHS (Restriction of Hazardous Substance Directive 2002/95/EC) and WEEE (Waste Electrical and Electronic Equipment) Directive 2002/96/EC)

The initial view of the study group was that pumps are excluded from the WEEE directive, and this view was agreed with by Europump. There being no objections raised to this interpretation, AEA will write up a final statement detailing how this conclusion is arrived at.

But more importantly, the study should also show which products use ROHS proscribed substances. The MEEUP model will highlight these.

4" and 6" submersible (borehole) pumps

It was considered that 6" borehole pumps could be seen as a practical and more efficient alternative to the much more common 4" borehole pumps. We should therefore analyse them as a separate product.

A suggested scheme for labelling and minimum standards for these pumps was suggested for discussion by Jurgen Bach, (although this did not represent the Europump position). While this was a useful contribution, full MEEUP analysis needs to be undertaken in order to understand the suitability of this scheme, and so it will not be considered any further at this time.

In line volute pumps

The suction inlet side of these pumps is significantly different to those of end suction types, and so at this stage they should be analysed separately. This is because if the MEEUP analysis shows that there are significant differences in performance, it might be unreasonable for both types to have identical eco-impact criteria in terms of any design options.

Statistics

There are many items of statistics currently missing. Once stakeholders have confirmed that they have submitted their final agreed data, AEA will complete the remainder of this phase of the work. *Stakeholders are asked to do this by end December 2006 in order that this stage of the study can be closed off.* AEA will propose a full data set for the next stakeholder meeting.

International standards

Korean standards to be forwarded to AEA by Europump.

Chinese standards to be circulated by AEA.

Please would all stakeholders inform AEA of any other existing or planned standards relating to pump efficiency or eco impact that they are aware of. Additionally, AEA will continue to complement these efforts by speaking to contacts / organisations in other countries.

Result of initial MEEUP runs

These results (included in the annexes to the report) demonstrated that it is the IN USE phase, ie energy efficiency, that dominates the eco impact of pumps. On this basis, the data collection on pumps should be focused on energy efficiency considerations. *Further analysis will be done by AEAT to establish what further data on production and end of life data is needed (eg BOMs). If there are any pumps with unusual materials (eg particularly high or low masses or ROHS proscribed substances) then this should certainly be analysed further.*

Pump data collection

The proposed Europump efficiency classification scheme was presented and discussed. In that it considers operation away from BEP, and efficiencies are related to specific speed, it is regarded as offering a possible approach. However, it is not possible to evaluate the suggestion until the MEEUP analysis has been completed.

The MEEUP analysis requires the input of total energy use, rather than just an efficiency figure. It is accepted that it is important to look not just at 100% flow performance, but also at a reduced and higher flow as well. AEA had earlier suggested 50, 75 100 and 125% as an initial proposal. Europump has suggested 75, 100 and 110%. To get final agreement on the points to be considered, agreement must be reached on what constitutes a “typical” flow profile.

The idea of a simple weighting scheme to attempt to give the relative importance of operation at these different points was accepted. But in order to do this, a methodology must be developed so that the actual power consumption at off-BEP conditions can be calculated.

It was noted that although pumps do sometimes operate at very low flows, this is not so important in defining the efficiency of a pump because:

- The hydraulic power is small.
- The efficiency:flow curve in practice follows a fairly steady line between say 50% and 0% flow, hence performance at very low flows is not essential for distinguishing one pump from others.

It was noted that in practice a “flat” efficiency:flow profile is to be preferred over a “peaky” curve, but not at any 'peak' reduction cost.

It is accepted that constructing a single value of weightings of time at each flow, and of a single system curve, is an approximation, (as is any modelling), that may not represent any particular real life situation. However, it will give us a common basis on which to compare different pumps. The impact of these approximations can where necessary be quantified by undertaking sensitivity analysis on key parameters.

AEAT will undertake further analysis and then propose a final suggestion relating to this model. Any stakeholder inputs on this are welcome – *please submit any information that may help with this by end December 2006.*

Data collection methodology

Europump has offered to collect this technical data (ie pump Bill of Materials and performance data) for the study, which will enable the data to be “neutralised”(ie made impossible to trace back to individual pumps/manufacturers). This is acceptable and welcomed, on the basis that the method is agreed in advance, all work is completely transparent, and that sample pump data can be audited. *To complement this data, AEA will provide data from non-Europump members following the same neutralised basis.*

Impeller diameter

The ongoing assumption has been that we should only consider pumps with full impeller, but it is recognised that this does not represent market reality. Considering reduced impeller diameter pumps would lead to a huge increase in the number of pumps to be analysed, and would have the effect of lowering the efficiency spread by a few percent.

On the following basis we should collect data primarily on maximum impeller pumps:

- Pumps are designed around maximum impeller diameters, and so in terms of improving the efficiency of pumps this is a reasonable thing to do.
- Users should be encouraged to select the best pump for their particular duty – it is likely that if they are offered a pump with a very small impeller, then they can find a more efficient pump that has a fuller impeller from a different supplier. However, this information is not always transparent to the customer.
- *The study group should analyse the impact on efficiency of reduced impeller diameter. The report can then state what the “typical” reduction in efficiency is due to the sale and use of pumps with a reduced impeller.*

It is noted that the next Europump JWG meeting is December 6th. Accordingly, please comment on these draft minutes in advance of this date.

Hugh Falkner 1 December 2006