2st stakeholder meeting

"Technical assistance study for the assessment of the feasibility of using "points system" methods in the implementation of Ecodesign Directive (2009/125/EC)"

Hallstein Room, Berlaymont, Brussels, 10/03/2017, 09.30-17.30h

Participants

The Commission:

- Michael Bennett (DG GROW);
- Davide Polverini (DG GROW);
- Veerle Beelaerts (DG ENER);
- Jeroen Van Laer (DG JUST);
- Jiannis Kougoulis (DG ENV)

Project team:

- Paul Waide (WSE);
- Jan Viegand (VMAS);
- Clemens Rohde (Fraunhofer);
- Tim Hettesheimer (Fraunhofer);
- Karolien Peeters (VITO);

Stakeholders (in alphabetical order of family name/ first name):

- Barillot Thomas (Digital Europe);
- Blankemeyer Hanna (VDMA);
- Broos Alexander (German Machine Tool Builders' Association (VDW));
- Dardenne Jo (Member of EVIA Secretariat (European Ventilation Industry Association));
- Dugdale Joshua (Manufacturing Technologies Association);
- Dürer Jörn (CETOP (European Fluid Power Committee));
- Ebert Thomas (Apple);
- Fagerlund Kirsti Hind (NVE);
- Fayole Chloe (ECOS - ecostandard);
- Frank Sebastian (TRUMPF);
- Geerts Filip (CECIMO);
- Geigerich Jens (Vorwerk Elektrowerke GmbH & CO KG);
- Haendel Claus (Technical Secretary of EVIA (European Ventilation Industry Association));
- Hernandez Maria (Sony);
- Jung Oliver (European Heat Pump Association);
- Kadenbach Dorothea (HKI);
- Kalamajka Rainer (Miele);
- Kinning Lina (Swedish Energy Agency);
- Lock Tom (ICF Consultancy supporting BEIS (UK Government);
- Maigret Aline (BEUC);
- Mailleux Félix (CECED);
- Oki Takahiro (EPEE);

- Outinen Pia (Energy Authority of Finland);
- Patra Martial (CEN/ CENELEC overall Ecodesign/ Schneider Electric);
- Pathmanathan Durca (Daikin Europe);
- Presutto Milena (ENEA);
- Rateau Fanny (EHI);
- Ralf Reines (ISO/ TC 39/ WG 12 re. ISO 14955/ VDW);
- Rimmer Edward Michael (DECC UK);
- Schiansky Jethro (Vorwerk);
- Scuderi Fransesco (Eurovent);
- Siderius Hans-Paul (RVO);
- Soenen Bram (Ministry of Environment – Belgium);
- Strada Carlo Alberto (Eumabois);
- Suffys Tristan (Eurofuel);
- Toulouse Edouard (Independent consultant, assisting ECOS);
- Vyrobal Jiri (SST - Association of Engineering Technology / RCMT (Research Center of Manufacturing Technology));
- Wagner Sarah (Digitaleurope);
- Whittaker Bryan (BT connect);
- Wiik Carina (Teknologiateollisuus);
- Yuste Prieto Marta (CECED)

Agenda

1. Opening – Introduction to the study and quick summary of the object of today's meeting (DG GROW)
2. Presentation of draft Task 3 report – Proposed generic points systems methodology (Consortium VITO - Waide Strategic Efficiency Ltd–Viegand & Maagøe–Fraunhofer ISI–VHK)
3. Presentation of draft Task 4 report – case study of generic points methodology applied to Data Storage Devices (Consortium VITO - Waide Strategic Efficiency Ltd–Viegand & Maagøe–Fraunhofer ISI–VHK))
4. Presentation of draft Task 4 report – case study of generic points methodology applied to Machine Tools (Consortium VITO - Waide Strategic Efficiency Ltd–Viegand & Maagøe–Fraunhofer ISI–VHK))
5. Analysis, discussion and exchange on "Task 3 - generic points system methodology" (all)
6. Discussion and exchange on "the Task 4 – Data Storage Devices case study" (all)
7. Discussion and exchange on "the Task 4 – Machine Tools case study" (all)
8. Presentation of implementation issues (Consortium VITO - Waide Strategic Efficiency Ltd–Viegand & Maagøe–Fraunhofer ISI–VHK))
9. Discussion of implementation issues (all)
10. Next steps
11. AOB

1 Opening – Introduction to the study and quick summary of the object of today's meeting (DG GROW)

Welcome by DG GROW (Michael Bennett):

The objective of today is to gather your comments on the task 3 and 4 reports. Based on these comments the reports will be revised.

This meeting is not about ecodesign measures for data storage devices and machine tools. These two product groups have been chosen as case studies because they are typical complex products. Based on the findings of these case studies (task 4 reports) and the stakeholder comments we will identify if we have to revisit the methodology proposed in task 3 (first attempt to create a points system).

The next steps will be to review the task 3 and 4 reports and to start the additional task 5.

2 Presentation of draft Task 3 report – Proposed generic point systems methodology (Paul Waide)

Paul Waide presents the Task 3 report

From the review of techniques in Task 2, we found only a few elements that are applicable for a points system method for use in the implementation of the Ecodesign Directive. This is because of the very specific remit that such an approach needs to fulfil, if it were to be used to help design and implement Ecodesign policy measures. Therefore it has been decided to develop a logic that is driven by the stakeholder feedback.

Summary of stakeholder feedback: see slides 2nd stakeholder meeting.

Paul Waide presents under which circumstances a points approach is merited and the factors to consider in the design of the methodology: See slides 2nd stakeholder meeting.

The case studies revealed that parts of the Task 3 report have to be amended. Currently the method does not deal with weighting impact categories, to result in any amalgamated scoring concept(s). However, this could be an option in the future, depending on the case-specific use of the proposed method, in conjunction with taking note of case-specific stakeholder feedback. The focus on the case studies is presently still on energy, but the same approach can be used for other impact parameters. The method is extendable.

Paul Waide then presents the proposed methodology, a 10-step process. He illustrates the linkage of the generic methodology to the MEErP and to the Ecodesign process, and gives a clarification of the rationale for the proposed methodology: See slides 2nd stakeholder meeting.

3 Presentation of draft Task 4 report – case study of generic points methodology applied to Data Storage Devices (VMAS)

Jan Viegand presents the findings of the case study on data storage devices: See slides 2nd stakeholder meeting.

The aim of the case studies is to apply the theoretical approach to specific product groups. As a general feedback comment, it can be said that it was difficult to perform the Data Storage Devices (DSDs) case study, and to apply the methodology meticulously. Several substantial reporting iterations were also required, regarding the draft report. The DSDs draft report is on the website and we look forward to receiving your comments.

A data storage device is a product which is placed in a data centre, consisting of servers, storage equipment, network equipment, short-term backup and data centre cooling. There are five main components responsible for energy consumption and environmental impact. The data storage equipment itself contains storage media, storage controllers, network interfaces and software. The devices in scope for this case study are defined as 'Online 2, 3, 4'.

The environmental impact of data storage consists of the energy consumption of product per se, together with the infrastructure in the data centre: the network, the Uninterruptible Power Supply (UPS), and the cooling necessary for data centre temperature control. The energy consumption of these three components increases in line with the overall energy consumption related solely to data storage. As the consultants principally responsible for the DSDs study, we used data from other studies which had been previously carried out to derive other energy consumption figures. It is important to note that the energy consumption of data centres is still increasing, and the expectation is that it will double by 2030. Hence, it is desirable to ameliorate these effects as far as possible, e.g., by better design of the individual products and systems.

A points system could be applicable to data storage products because there is a mix of quantifiable and qualitative product ecodesign features. In addition, it is difficult to translate each ecodesign feature into a regulation, and it is complex to apply a rigorous performance assessment method. Therefore a points system provides a compromise for an improved ecodesign product.

Existing regulation and schemes comprise: DG GROW Lot 9, the ENERGY STAR, SNIA (Storage Networking Industry Association) Green Storage Initiative and ASHRAE (the American Society of Heating, Refrigeration and Air-Conditioning Engineers). Note that especially ENERGY STAR and SNIA are important for this study.

Jan Viegand emphasises that this case study is an illustrative case study, and it is certainly not a final proposal. Existing (limited) data have been used (the dataset available from ENERGY STAR), and assumptions have been made regarding some parameters. The proposed weightings are based on the use of engineering/ expert judgement.

In the case study, the different steps proposed in the Task 3 methodology have been followed, and may be consulted in the accompanying slides: please see Second stakeholder meeting slides.

To assess step 7, the assessment of the implications of the product, freely accessible data from ENERGY STAR have been used. The Energy Star data consists of 289 data fields. A finding from the case study is that it can be said that the data allow for good conclusions at this stage; however, a lot of analyses had to be carried out on the Energy Star data, e.g., the necessity to perform "data washing". One data treatment is that the 10% highest performing products have been excluded for some of the analyses. This is a choice that was made, to attempt to gain a more representative sample, overall, of the devices most frequently used. However, this statistical data treatment is not important for understanding the fundamental methodology used.

Regarding step 8, COMs (Capacity Optimisation Method), it has been assumed that deduplication, thin provisioning, delta snapshots and compression are applied, in order to obtain points for a more effective product. This is solely an assumption, and should be further developed. The improvement of ecodesign options 1-5 are the project team's estimations of how much the energy budget should be improved. Subsequently, inverting the total performance regarding the overall energy budget requirement has been applied, so that the most efficient product gets the smallest number.

A calculation guide is included in slide 44 (see slides second stakeholder meeting).

Jan Viegand shares a few thoughts on market surveillance.
There are three levels:

1. Technical documentation: this is applicable to all ecodesign measures. This is quite effective for market surveillance. One often discovers a number of errors in supporting technical documentation.
2. The next step is to recalculate, as a check. One has the public data, and if one also has the manufacturer's data, it is possible to recalculate the claimed results, via applying the method.
3. Take the product and actually test it. This has the disadvantage that it is more expensive. However, there is a specific recognised test program.

Good commissioning guidance is another option, and one where points could be suitably allocated, in addition to solely product design per se. However, this will need discussion, and it partly involves subjective judgements.

Conclusions from the case study:

- Viegand Maagøe thinks that it is possible to refine and develop it into a real points system;
- More test data for a varied selection of data storage are needed;
- There is a need to look more into the weightings, e.g., of the COMS techniques, of course, to be undertaken together with industry input, and incorporating expert judgements.

4 Presentation of draft Task 4 report – case study of generic points methodology applied to Machine Tools (Fraunhofer)

See slides: Second stakeholder meeting

Overview remarks: Michael Bennett, DG GROW

Michael Bennett makes some overview remarks before lunch:

- Although the Task 4 case studies, and even the Task 3 report highlight that the points systems are very complex, one may think of the detailed design of the elements a little like using a mobile phone. I imagine that most of us may not understand all the hardware and software, the applications and the satellite technology behind what we now use on a daily basis, but we are able to somehow use it, and we are glad that it is there.
- Some of these more advanced systems might be useful in the future even though they seem quite complicated. The "back office" complexity is necessary to address the problem, but should not hinder its real-world application to actual product design problems and checks, such as market surveillance, client-manufacturer contractual relationships, etc.
- However, the Task 4 examples highlight the importance of the fact that the points systems must of necessity be capable of being interrogated or drilled down into by interested partners, be they industry, machine tool builders or market surveillance authorities … so the results can be cross-checked or proven. We cannot work with a "black box" approach - we have to be as transparent as possible.
- None of these elements are more complicated in genesis than typical hierarchical decision-making techniques. Ecodesign is about making a difference, not about making the most thorough environmental profile exercise ever. Ecodesign should not go into endless detail, but sufficient detail so that product improvement recommendations can come out of it.

5 Analysis, discussion and exchange on 'Task 3 – generic points system methodology' (all)

Stakeholders are now given the opportunity to raise comments and ask questions about the draft Task 3 report.

Bram Soenen asks if the method allows to add features, or innovative options. For example, it might not be applicable to disruptive/ innovative design. Moreover, Bram Soenen asks about market surveillance. If market surveillance authorities have to verify the modelling or calculation of points, it could be that errors are made or that Member States' market surveillance authorities and manufacturers disagree. On a related issue, has an estimation of the susceptibility to, and calculation of error propagation been made?

Paul Waide answers that both case studies look at the currently known state of knowledge regarding the products addressed. The data storage devices case is based on an existing database (Energy Star), and thus a scale is set which references the presently-known Best Available Technology ("BAT"), for example. The machine tools case instead re-examines and defines the design options under any specific new phase of the duty profile. To do this, some sort of library should be available. If the disruptive type of technology occurs in the data storage case study, one can adjust the known "BAT" scale as soon as the technology is tested. In the case of machine tools, one would have to have a process to enable the review and revision of the list of options. We do not have an impartial database which clearly defines the functional unit for machine tools, unfortunately, in the way that we have information describing what it available for data storage devices. The approach taken for machine tools instead gives the manufacturer the freedom to state what the machine tool does, via describing its features, properties and capabilities. It was not possible to externally define the functional unit for machine tools. For the machine tools case, innovation should be included in the list of available options.

Clemens Rhode answers that tolerances and errors are of course a problem, especially when one works with ordinal scales. It is, to some extent, subjective. There are two factors to be considered. One is the fact that it is a multi-criteria approach. This type of approach is to a certain extent tolerant to errors. It is satisfactory to be a little uncertain on a single indicator, as it will most likely level out, since one is taking the average of many factors. The second factor is that it is actually not a technical question, but a political question. Politically you have to decide how much error one would allow.

Paul Waide completes this discussion by adding that, in principle, one can perform an analysis that checks how the error propagates, e.g. with a Monte Carlo approach.

Bram Soenen remarks that he still thought that it was unclear if features such as the throughput of a machine are evaluated somewhere in the analysis, particularly with regard to machine tools.

Clemens Rhode answers that throughput is something we actually don't look at; it is not a variable that's being considered. We compare a machine tool to a better and worse version of itself. It is more a variable we consider in Step 1, but not in the stages where we look at the impact. Bram Soenen asks if it is then possible that two different machine tools, where one machine tool has only half of the throughput of the other machine can both end up with the same score? Clemens Rhode answers that this could indeed happen, but that this would be an extreme hypothetical case. This is

actually part of the design process, and a proper, thorough design process should prevent such a case. If we would compare machine tools based on throughput we are again struggling with the functional unit issue, which is related to duty cycle(s). If the (several) duty cycle(s) and the rapidity/ throughput requirements could be successfully defined, and then related to the design options being considered, then that would enable the two issues to be addressed.

Hans-Paul Siderius mentions that this study should actually come to a kind of structured and simple way of dealing with the issues that came across: Modularity, duty cycles, innovation in functions. He states that his general problem is that he has not yet seen a relation between these issues in the general methodology and the solutions for it. I think the solutions will be broader than those that are currently used. It would be good if the team could think a bit more about the structure.

Hans-Paul Siderius also mentions a few more specific points. He thinks that a different interpretation of the use phase is being used. In the MEErP methodology, the energy consumption during use is an impact of the use phase. This is of course influenced by the design and so on, but it is allocated to the use phase. In what the team has presented, he regards things as being shifted around to some extent. His request is to bring this in line with the general ecodesign methodology.

It is proposed to make the decision to use a points system in MEErP Task 5. Hans-Paul Siderius thinks it would be useful to make this decision earlier in the steps of the typical MEErP process. It can already be assessed in the quick-scan step ("Task 0"). If the decision is made only in MEErP Task 5, one might have to redo the earlier steps.

Takahiro Oki (EEPE heating and cooling ventilation) remarks that the points system only looks at the environmental aspect. EPEE believes that economic aspects have to be taken into account. There is a sentence at the end of the report stating that LCC aspects have to be taken into consideration in a later stage. Oki Takahiro asks how this will be done and how will synergies be created? A second remark relates to the aspect of market surveillance. Certain design options will get certain points. The actual points a design option gets depends on how it may be aligned. We find this in the machine tools study, where a table considers where 0 to 5 points are to be allocated. The system is looking at the design options, while the current methodology looks at energy efficiency. How can market authorities look at design options to see whether a product is fulling the points or not? This is quite subjective and requires further clarification.

Paul Waide answers that the economic aspects would be determined as an additional parallel step. It is referenced in the study, it is spoken about, but it is a parallel thing to be done, it is not part of this study. Michael Bennet reinforces this, i.e., that the economic aspects are outside the agreement of this project.

Clemens Rohde answers that market surveillance of a points system would be different. It is not so much about the final energy consumption. It will be required to look at the design materials, all the files and whether there are measures to be implemented. It is much closer to an auditing process than a classical measurement of the product.

Edouard Toulouse remarks that in the points system there are two really critical aspects: the first one is weighting, and the second relates to uncertainty. He would expect that they would be very much discussed and elaborated on in the report. If one has a scoring that involves nominal data, how would one weight that into an overall score when it is mixed with ordinal or cardinal data. This needs more clarification. How will the panel of experts decide? This can lead to long discussions. In addition, the overall uncertainty of a points system method is not much discussed. The uncertainty can accumulate and the final score can have a very high uncertainty. This is missing in the study.

The methodology should always entail a step that evaluates the uncertainty. There is a formula in the report for ordinal data that can be uncertain. The score can be discounted in a certain way. Where does this formula comes from? Here it would be good to compare how this issues have been dealt with in other methodology. You have not referred at all to the findings of the methods reviewed in Task 2. You could check how these methods deal with uncertainty, weighting and ordinal data.

Edouard Toulouse further mentions that throughout the whole report, it is assumed that the methodology will be used in hard regulation measures. Voluntary agreements from the industry are not considered. This is often the preference of the industry, and even of the Commission. If the industry comes with a voluntary initiative, what would be the way to go forward? What are the minimal conditions for a point system to be acceptable in the context of voluntary agreements.

Paul Waide answers that indeed the report could discuss more the issue of weighting and uncertainty. However, this easily gets prescriptive and we were counselled not to get overly prescriptive in the previous stakeholder meeting. We can include this as long as they are understood as suggestions and not a firm recommendation. This methodology acknowledges it and it requires you to flag up when you are dealing with different level of quality in data. The points systems referenced in Task 2 deal very non-transparently with uncertainty. None of the systems in Task 2 comes up with a systematic treatment of uncertainty. Often they come up with panels, and for most of the points systems it is not clear and transparent how the panels work.

Paul Waide asks: Regarding the implementing measures and voluntary agreements, isn't a voluntary agreement just one type of implementing measure, and doesn't the study reference implementing measures rather than just regulations? Paul Waide explains that he will check back on the wording used and address this point if the current wording is inadequate. It is not clear we will have the resources and time to address your question on the minimum requirements necessary for voluntary agreements, but things of that nature have to written up as being worthy of future investigation as a minimum.

Jan Viegand adds that for the data storage we could elaborate on the weighting, however it will be different from case to case. For the servers, the process was via technical standards that came up with a metric, also based on some workload standard code. Some work has been done to come up with one metric (weighting).

Michael Bennett answers that we can take up the comment on voluntary agreements. It is the objective that the proposed methodology is equally as applicable to voluntary agreements as it would be to potential regulatory measures. This is maybe a bit lost in the detail of how the reports have been presently compiled, but the work the consortium did is equally applicable in both cases. We have to extract this a bit more in the report. Michael Bennett agrees with Edouard Toulouse that we need transparency on the weighting procedure and the representativeness of the panels.

Michael Bennett mentions that we should come back to market surveillance. As a general point it might be easier to apply to voluntary agreements. We also have to come back to the uncertainty point and possibly revisit Task 2.

Hans-Paul Siderius thinks there is some confusion on uncertainty. There is the uncertainty on a measurement, but uncertainty was also used when talking about the impact of giving user information or a general design check or within data storage product, if the data storage product uses less energy there is an impact on the air conditioning. With the second type of uncertainty we should be very careful to go too much into the uncertainty discussion. This goes into things the

manufacturer cannot control. Ecodesign is about what the manufacturer can control. Please treat the two types of uncertainty differently and not together, and be more firm on the aspects the manufacturer can control.

Jan Viegand agrees with what Hans-Paul Siderius said. It concerns all products; you never know how people will treat a product. It must be acceptable that there is some uncertainty on this.

Davide Polverini comes back on the point for data storage. What has been shown provides an effective tool to rate the energy efficiency of the products. He agrees that some features are not detectable at the point of placing on the market (e.g. capacity). However, one can - at the moment of placing the product on the market - investigate the capability of the system to do so, and then base the judgement mostly on the capability, rather than solely on what has been proven.

Michael Bennett adds that we can for example give some points on the ability to get access to some components. With ecodesign we can only control how the product is placed on the market, not how it is used and certainly not in advance regarding its second life.

Francesco Scuderi asks to clarify which products are to be considered as complex products. The definition of a complex product is quite wide. Regarding Task 4, if this methodology is going to be applied, it is important to understand the boundary conditions. Manufacturers do not know the duty profile, they don't know where and when the product is sold and what the typical use is. How to assess the market surveillance in this way?

Michael Bennett explains that in the Task 3 report, generic considerations have been given on at what point you can say that something is complex or not. The Commission asked to define a logical process helping you to decide whether a product is complex or not.

Paul Waide answers that defining the duty profile is always a challenge, even for the simple products. We were confronted with this when applying the Task 3 methodology in Task 4. If one can define a sufficiently stable duty profile, then this is what one should use. In the case of machine tools this wasn't possible, because there are far too many possibilities. We fully accept this. However, manufacturers are far more aware of what the duty profile will be than anyone else, apart from the client. The market surveillance process, in that case, is based on an audit approach where one takes the duty profile proposed by the manufacturer. Whether this is right or wrong is of course an open question.

Durca Pathmanathan says that after reading the documents, the general impression is that the methodology and its application is not really clear. The definition of a complex product needs to be reviewed. The following three remarks on the definition are given:

1. It is too vague: It is understandable that making a very specific definition is difficult. However, this definition is complicated and it is laborious to define if a product is complex or not. There is a list of characteristics, but does the product have to correspond to one of the first 5 points or the two last points or to one of the seven points? The 1st and 3rd point seem to be similar. If a product does not provide a standard configuration it is a customized product. What is your definition of a standard configuration?
2. The terms are not restrictive: the definition will be clearer if you try to restrict.
3. No clear difference is made between a complex product, an extended product and product systems. The distinction is hard and the boundary seems to be thin. The definition of a product system should be put into the definition of a complex product. This is because a product system is an extended product. The first two points of the definition of an

extended product are in the definition of a complex product. There is an overlap and this needs to be clarified.

Paul Waide answers that the consortium went through a similar process of thinking. We were warned not to be too proscriptive. We tried to be distinctive, but we will look back if the lines are blurred. The methodology doesn't lay down the law at exactly which point you have a complex product. There is a judgement to be applied. This goes beyond the objectives of the project, but we can certainly try to tie up the conclusions and steps to get there better.

Milena Presutto acknowledges that it is important that this study has been done. In the end we will know if the points approach can be used or cannot be used. It stimulates the discussion on the future of ecodesign. However, what is the added value of the points system compared to the current system being used? We already apply a weighting, we apply a certain type of correction or correction factor e.g. to thermostats in boilers. Do we need a points systems to give an added value to what we are doing? I don't currently see any added value. First of all, it is not a points system because of the indicated way of scoring. There is too much uncertainty. Market surveillance will be different, but must be feasible. An audit on manufacturing options is not feasible. You cannot imagine going to e.g. India for assessing manufacturing options.

Milena Presutto further asks how representative the user scales are? How much uncertainty is there? They are not representative at all or only partly representative of the product that we are investigating.

Milena Presutto adds that currently she sees the use of the system as an ex-post engineering calculation to assist in understanding the potential savings achieved by the very simple ecodesign requirements that are set for a product. Part of this work can be also included in the current work (e.g. in Task 5 or even in Task 0), in order to understand the relation between usage pattern and possible ecodesign requirements. Another application could be the internal audit of a manufacturer. In addition, she comments that the consultants should not say 'we believe that market surveillance is possible'. Rather, they have to prove that market surveillance is possible.

Bram Soenen agrees with what Milena Presutto just said, i.e., that in part we already use points system approaches. A second point is with regard to voluntary agreements. It is worthwhile considering that separately, because the ways of administering the policies are different. There is an overall obligation for manufacturers to comply with something, which is not model specific, but instead is a fleet approach, and there is an additional layer of internal surveillance by the voluntary agreement organisation itself. A third comment is on the uncertainty. There is currently a Product Environmental Footprint ("PEF") project going on and there is an LCA handbook related to that. Via this handbook, there must surely be guidance on how to assess data quality for life cycle assessment. This approach might help, and could be implemented somewhere. A fourth point is on material efficiency. There are some examples in that field as well of points systems where there is some value judgement of several options to improve material efficiency of products. That could be an interesting field of application for a points system. Then as a fifth point, I read the conclusion in Task 3 report that there was a consensus not to look into weighting. If we are going from energy efficiency to material efficiency, how will these two be combined? This could be done by a two-dimensional analysis by translating impact from fuel and kilograms into kg CO_2 eq. A weighting proposal for such a trade-off could be interesting.

Michael Bennett comes back to the point on uncertainty and regarding life cycle assessment. Some of the approaches could be drafted across to the MEErP. It is a good point to take on board. He also answers the point raised by Bram Soenen on weighting. If we are now going to take the MEERP or

ecodesign to another level and look at material efficiency, reparability, expected life time of products, we need a slightly more sophisticated approach with the MEErP.

Michael Bennett answers the point raised by Milena Presutto on the added value of a points system. If we could for example in case of the washing machines, instead of just imposing one or two "typical" washing machine cycles as "typical duty cycles", were to add a few complicated angles based on statistical analyses of real use frequencies by consumers, we would be making some real and useful progress, i.e., we could build in the areas that we miss by standardisation. One of the real key elements where the weighting and points systems could be used is where we try to cope with a better reflection of real-life situations.

Paul Waide answers the question of Milena Presutto on the necessity of a points systems. When you go into this you don't have to come out with a points system. You could stop at percentages, you don't have to have weighting. It doesn't have to go down to any final calculation of points, as long as you have a logical framework and structured approach. The decision made in the previous stakeholder meeting not to focus on several impact categories removed the necessity to have a points approach.

Michael Bennett uses the examples that "bonus-malus" schemes related to refrigerants in some Ecodesign product groups, or a more sophisticated control device associated with heating products are "points systems". Although the consultants' report states which procedure one would have to go to then justify the use of a points system and ultimately have a weighting panel, to date this has not been done in any rigorous way with regard to Ecodesign Directive product groups. One of the weighting panels we could think of is the Ecodesign Consultation Forum, and/ or via the stakeholder meetings, during the Preparatory Study phase, per product group.

6 Discussion and exchange on "the Task 4 – Data Storage Devices case study" (all)

Edouard Toulouse poses two questions that cover both case studies. In Task 3, and in the two Task 4 case studies you only focus on energy in the use phase and you explain that the methodology can easily be replicated to other environmental criteria. Edouard thinks that it is unclear that it is so easy. Resource efficiency has other difficulties than energy in the use phase. It might have been better if one case study had been on energy use, and the other one, for example, on resource efficiency. If we wish to develop a points system on resource efficiency, how would one do this? E.g. how does one give a score to the use of recycled plastic? It is not so straightforward as for energy use.

Edouard Toulouse adds that a second question is that from his understanding, the machine tool case study is really a genuine case study on points systems. However, the data storage case study is not really a points system. Only at the very end is the index turned into a score, but one can also just use the energy efficiency and set a minimum requirement on it. Sometimes a points system might not need to be the best way forward. This should be made clearer in Task 3, i.e., that what has been done is broader than just assigning points - it is a method to deal with complexity.

Takahiro Oki raises a general question. We see that in Task 4 points are given, but what if tomorrow there is another innovation? The design option coming from innovation cannot be accurately mentioned in the report, as it does not yet exist (at least publicly). How do you propose to account for this in the methodology? This is especially relevant for products with many components that can be changed.

Jan Viegand answers the question from Edouard Toulouse on the fact that we only treat energy in the use phase. It is a good comment, but we follow in general the comments submitted, and from attendees at the first stakeholder meeting. It was also partly due to the resources available for the contract duration/ budget, the basis of the data and previous work. We had to concentrate the resources on the development of the points system.

Jan Viegand explains that the data case study is a real points system. One combines various measures (efficiency and performance) into one figure. He explains that it is possible to take innovative measures into account. This would be done via the basis that we have regarding the various performances and features. Thus, we could also cover some other options, but within the same type of performances and features.

Clemens Rhode shares additional thoughts on the question on innovative measures. It is possible to include innovative measures in the approach. The machine tools study sets the upper and lower boundaries. One could include a proxy measure. One would then have the freedom to apply this measure to a certain extent, if good proof could be provided. Via such an approach, one can of course not cover a really disruptive innovation. However, with a list that is not really fixed one can still insert various degrees of flexibility.

Paul Waide comes back on the issues raised by Edouard Toulouse and agrees that we do not really have to end up with a points system. But at least the study includes a way of thinking through the process systematically. Paul Waide further explains that covering material efficiency is possible to a certain extent, especially in the DSDs case study. However, given the budget and time constraints that we have, this will almost certainly have to go to the future “to do” list.

Martial Patra raises a general comment related to usability of the points system method. The Task 3 report states that the points system methodology should be compatible with the existing ecodesign methodology. He thinks that stakeholders should be involved more deeply in the preparatory phase, because of the points system methodology. Complex products in fact are well known by the manufacturers, system integrators and their end-users. Until now, stakeholders have been involved, on a product-specific basis, during the stakeholder meetings, the Consultation Forum and through the process of submitting written comments, together with the exchange of answers. However, the basic methodology could be adapted in order to involve stakeholders more.

Durca Pathmanathan asks if the definition of the reference case can be clarified. For example, in the machine tools case study, the reference case is not the product representative for the average energy performance on the market, whereas this is the case for the data centres. For machine tools, instead the reference case is defined as the design option which has none of these energy saving features. Hence, why is it that the points calculated in Stages 1 and 3 are not used for the final calculation? For Stage 1 you state you have 58 points, whereas in the final calculation you cite 46 points. Could you please offer clarifications/ explanations for this?

Paul Waide answers that indeed there is a difference in defining the reference case between the two studies. However, all one needs for any “points system” are two points on a scale, which delineate a lower point and a higher point. Once the lower and higher points are set, one can define a scale. It doesn’t really matter what the reference case is (e.g. market average, worst on market, etc.) as long as it allows a scale to be established that treats all products fairly. We will amend the text to make this clearer in the revised Task 3 draft final report.

Clemens Rhode says that the first and third stage points should be used in the final calculations. It is solely an editorial error which the contractors' consortium will rectify in the subsequent re-draft.

7. Discussion and exchange on "the Task 4 – Machine Tools case study" (all)

Alexander Broos raises the issue of productivity. The decision of buying a machine tool by a customer follows its productivity, at least regarding certain properties, if the customer has a certain use in mind. However, often this is not the same as what the designer has in mind. The designer will design the machine based on some boundary conditions like speed, cutting power, etc. Often, he claims that the designer cannot know what the user has in mind.

A second point Alexander Broos raises is that defining a duty profile is always dependent on the workpiece. It is easy to calculate the throughput for specific machines for e.g. the production of car components in the automobile sector, but this is not the case for "universal" (i.e., general use) machine tools. It depends on many issues, inter alia the workpiece material (various metals, etc), the geometry of the cutting, quality issues, etc. Hence, the duty profile will always be based on assumptions for these general cases, when one uses it in when applying this method. Making assumptions that do not match reality is not advisable, and secondly being judged on these assumptions is even worse.

A third point is the complexity of real-life situations. If we consider today's PowerPoint slide with all the different design options, how much burden do you wish to put on a machine tool producer to assess all these design options? It has to be possible for the industry to undertake, and also for market surveillance authorities. In his opinion, it is almost impossible to bring this method into real application.

A fourth point is that we always focus on energy savings. However, we are also talking about industrial production and keeping revenue and jobs in Europe. We should be interested in addressing overall increases in energy consumption, of course, by instead being more efficient per work piece. It is too short-sighted to look just at the kWh consumed per machine. One machine can be twice as productive as another one, and this cannot be judged based on the kWh used.

A fifth remark is that at no point do existing (ISO) standards state that there are any predefined saving potentials for any measures. It is not possible to claim numbers for individual measures. The existing draft method tries to make everything individual (customised), but by making it so individual it makes it poorly applicable for regulatory uses.

Edouard Toulouse says that CECEIMO had previously developed a voluntary agreement. He asks the consultancy consortium - could you quickly compare your proposal with their proposal?

Alexander Broos answers that what we see here and what we have presented in the previous CECIMO voluntary agreement (VA) are quite similar. If one thinks of the way in which the product is structured, there are not so many options. Unfortunately, it was almost impossible to implement the voluntary agreement, because of the exact nature of transforming the technical issues into application with reasonable effort for our companies. And another issue was the 80% of market coverage that trade associations etc have to prove, according to the European Commission's Ecodesign Guidelines re. VAs, and we never managed to achieve this via our membership.

Michael Bennett replied that his understanding via the historical and ongoing communication with CECIMO was that it was the 80% market take-up that was the unworkable aspect, rather than the technical elements. This points systems proposal might be useful for the evolution of CECIMO's voluntary agreement, if you were able to apply it.

Clemens Rhode recognizes that we are dealing with complex products, and that methods may be complex to put into practice. But with the help of tools, a lot of the complexity could be taken out of the assessment process.

Clemens Rhode also answers the question raised regarding the duty profile and productivity of machine tools, and acknowledges that these are issues. He responds that the consultancy consortium couldn't really cover productivity, because it bases the analysis on the classical concept of the functional unit. Productivity is, however, covered by the market itself because it will be considered by the consumer. It is not part of the methodology. The designer might not have a specific duty profile in mind, but there is probably a reasonable range of duty profiles. Uncertainty of the duty profiles is however a point that we have to look at into detail. The duty profile has a big influence on the results.

Ralf Reines says that the document refers several times to the standard for machine tools and gives the impression that the method developed in the standard is applied here. However, he states that this is not the case. The only element(s) that the consultants have taken from the existing parts of the ISO standard are the informative annex.

The existing ISO informative annex has 170 design options. In the consultant's machine tools case study you have dealt with 6 design options. I would be very happy to see a case study dealing with all the 170 design options of a machine tool. It would take months, and he states that a software tool would not help. From my perspective, I send a strong signal to the Commission that we are willing and able to support developing a system to assess the method we have developed, and it would be fine that we were mandated to do so.

Hanna Blankemeyer raises a question on the section on credibility and market surveillance. The consultants allocate points for trying to document well the efforts put into implementing measures. A factor 1 is given to self-declaration, a factor 2 for providing documents and 3 for third party verification. Why is a self-declaration less valuable? How did you come to this valuation?

Tom Lock has a general point about the presentation of the two case studies. They are structured quite differently. Standardisation of the way of working might contribute to the readability - and subsequent potential use - of the reports.

Clemens Rhode answers the question on self-declaration. The weighting factors are only applied for Stages 1 and 3, for the more procedural aspects. The rationale behind this is that it might make a difference if one is able to provide some kind of concrete proof, that is easily verifiable. This is a common process for auditing procedures. If something is externally audited, it is frequent to assign another higher quality to it.

Clemens answers Ralf Reines' comment and agrees it would be very interesting to have a fully worked-out example. However, it would require more work than we were able to invest given the budget and timeline of the current project.

Bram Soenen says that the machine tools case study illustrates the level of complexity that we are dealing with. Maybe there is a solution via voluntary agreements. There is also a mandate out on

welding machines, and legislation on transformers. Maybe it might be worthwhile to look at certain processes, and types of machine tools to simplify the array of products being addressed.

Edouard Toulouse notes that there are quite a lot of critical comments on the machine tools case study. It could be useful to distinguish between a points system that would support a labelling tool and a points system used only for ecodesign minimum requirements. If one is trying to have an information tool, such as a label that would give a score for the whole machine tool market and would facilitate comparisons across the whole market, then indeed one has to take into account the 160+ options. Hence, in his opinion, probably labelling is not possible. If we come to ecodesign requirements, the points system can cover a portion of the options. We do not need to address everything, and the score does not necessarily need to be 100% public information. As the distinction has not been made, we are mixing the discussion.

Ralf Reines answers to Edouard Toulouse that the 160+ options cannot be applied to all machine tools. We cannot take an excerpt of only the 20 or 30 most applicable options, in his opinion. This is because the product group is too heterogeneous. Thus, one cannot say that there are common features, since one cannot apply one single option to all the machine tools.

8. Presentation of implementation issues (Paul Waide, Jan Viegand, Fraunhofer)

Jan Viegand presents slides on market surveillance for the data storage case – see slides data storage case study.

Davide Polverini adds to the presentation of Jan Viegand that he finds the presented solution an interesting solution and he thinks market surveillance is feasible. Of course, it must be underlined we need to work out remaining elements regarding this issue.

The slides for the machine tools case study on market surveillance have been presented already under point 4 – see slides machine tools case study.

Paul Waide presents slides on Implementation issues – see slides second stakeholder meeting. These slides discuss where in the ecodesign process one could implement the go/ no-go assessment. Also the comment of Hans-Paul Siderius has been noted, and therefore the team of consultants will investigate again whether it should come in MEErP Task 0/ Task 1 or Task 5.

9. Discussion of implementation issues (all)

Edouard Toulouse comments that for voluntary initiatives the steps might be different. Industry might come with a proposal earlier in the process, which maybe might already include a weighting, methods on how to deal with measurement, and internal market surveillance. How do we assess this? Should we still have a panel of experts? Do we trust the initiative, and on what grounds? As regards the weighting and the way to deal with different data, he comments that he is sure that industry federations may have interesting views. It could be a way of finding a balance.

Filip Geerts says that CECEIMO strongly believes in voluntary agreements. However, as long as the VA guideline boundaries set by the Commission remain in force, it is impossible to make it happen, i.e., to reach the 80% market coverage minimum is impossible, at least for the machine tools industry sector.

Michael Bennett asks if it would be possible, or indeed better, to consider a fleet-based ecodesign regulation, if that were possible in the future?

Filip Geerts says the question will be taken into consideration.

Paul Waide responds to Edouard Toulouse, and agrees the consultancy team can add something about what to consider in the event of a voluntary agreement, or at least come up with possible options.

Edouard Toulouse says that an industry association might come up with a proposal for a points system that could include weighting. It might be impossible to find experts to come up with a better set of weighting. The question is, how do we then respond to this? Do we just say: ok, or do we come up with a set of elements to be checked? Therefore, it would be very useful to give an idea to the industry group preparing a voluntary agreement on what to think about, and how it will be evaluated, e.g., share of ordinal versus nominal, quality of technical data etc, given by the industry association (and its members).

Edouard Toulouse has a second question. Are there are not dozens of products in the ecodesign workplan that could or would need a points system? Can't the consultants come up with a 'could' list of candidates for a points system approach? Or could you do the opposite and say which products don't need a points system approach?

Michael Bennett answers that the above questions seem to be very much product-specific, and therefore it will be unfair to talk about product groups that haven't even begun their passage through the typical Ecodesign process.

Paul Waide answers the question of Edouard Toulouse and says there are plenty of products with a lot of complexity. Hence, this work can certainly be used to apply a more systematic approach on considering the issues of complex products.

Mike Rimmer wants to pick up on what Edouard Toulouse said. You might find that there are certain products within each of the ecodesign measures that will fit themselves to a points-based approach. If you bring this work forward at the study level at Stage 1 or 0 in the MEErP process, then you might have washing machines or other products that could be treated via a points system, and other products going down the traditional energy efficiency route.

Tom Lock asks for clarification. Is this an open question that we're not sure yet where the panel and weighting will go into the process?

Paul Waide responds that there are different panel needs. As a general thing, yes some thinking on where that could occur will be helpful and we will write something up. Suggestions are welcome.

Tom Lock asks to use a graphical diagram for the next generation of the report. This would help to simplify presenting the stages and processes involved.

Bram Soenen says that before starting with the MEErP there is the Ecodesign Working Plan. You may start with the Working Plan as a point of departure from which to identify for which product groups a points system might be relevant.

10. Next steps

The deadline for comments is set for the end of March.

The consultants and the Commission will examine the feedback received, and reiterate some of the work for Task 3 and Task 4.

There is a task 5 in this study. On the wish-list of Task 5, Michael Bennett has noted from previous considerations, and taking into account feedback from today's discussions the following possible options, from which only one will be possible (feasibility to be discussed with consultants if feasible):

- Test real machine tools to examine the feasibility of the points system approach postulated;
- Do analyses regarding the effects of duty cycles on the overall considerations regarding machine tools;
- Data storage devices: check the technical weightings on the percentages used in Table 6 (page 31, DSDs Task 4 case study);
- Further work on uncertainty and error propagation;
- Cross-referencing the Task 3 report with the Task 2 report findings (through part of the current work).

Michael Bennett asks if anyone has additional thoughts for Task 5 (bearing in mind the 2- to 3-person weeks of budget and timeline available)?

No further suggestions.

11. AOB

Michael Bennett thanks all the stakeholders for their valuable contributions.

The meeting closes at 17.30.