



CONSUMER INTERESTS IN POSSIBLE ECODESIGN AND ENERGY LABELLING REQUIREMENTS FOR VACUUM CLEANERS

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Summary

- In this position paper we recommend improvement options for the technical design of vacuum cleaners in order to decrease their impact on the environment.
- We also call on the Commission to introduce an Energy Label for vacuum cleaners informing consumers on the energy efficiency of vacuum cleaners as well as on important performance aspects such as dust emission, noise, cleaning efficiency and average annual electricity consumption.
- In order to determine the scope clearly, we ask to better define the distinction between commercial and household vacuum cleaners. We also propose including battery operated appliances into the scope.
- With regard to calculating the energy consumption of vacuum cleaners we propose basing the calculation on a certain number of cleaning cycles instead of hours of use.
- We also ask for power consumption limits as the cleaning performance is not directly linked to the input power.
- Finally, we ask to address other environmental relevant aspects such as the use of recycling material.

Introduction

The European Commission provided working documents on possible Ecodesign and Energy Labelling requirements for vacuum cleaners to stakeholders. The topic will be discussed at the Consultation Forum meeting on 25 June 2010. As the working documents have not reached the stage of draft legislation yet, we will provide preliminary comments with regard to the different options at this stage.

Ecodesign and labelling requirements are needed for vacuum cleaners

As it is important to improve the technical design of vacuum cleaners, to phase out the least efficient appliances and to inform consumers about the energy efficiency and performance of vacuum cleaners, we recommend introducing Ecodesign and Energy Label requirements for vacuum cleaners.

Scope

As commercial vacuum cleaners will not be in the scope of the measure, we see a need to include a clear definition for “commercial” vacuum cleaners to provide for a clear distinction of this product group from domestic vacuum cleaners. The attempt to differentiate both categories based on different user groups contains currently some contradictions.

To achieve a clearer distinction between products intended for home use and for professional use, the Low Voltage Directive 2006/95/EC and the Machinery Directive (2006/42/EC) and related guidance documents may provide for clarification. While it is possible for a private consumer to acquire an appliance intended for commercial use or for a professional user to acquire an appliance intended for domestic use, the criterion of the Machinery Directive for determining the ‘intended use’ is the use stated by the manufacturer of the appliance in the product information or the Declaration of Conformity.

Vacuum cleaners that are designed to be used for domestic use are covered by the Low Voltage Directive. Vacuum cleaners that are designed for professional use are covered by the Machinery Directive.

As it may be important to set mandatory ecodesign requirements for commercial vacuum cleaners, these products should be addressed in a separate implementing measure in order to address differences of commercial and household vacuum cleaners.

The scope should include “electrical mains-operated household vacuum cleaners and electric mains operated household vacuum cleaners that can also be powered by batteries”. The preparatory study suggests that larger battery operated models may come on the market as replacement to mains operated machines. The market seems to develop into this direction as Miele recently started to place on the market appliances operating by mains or by battery (Miele hybrid¹).

¹ The Miele S 4812 hybrid vacuum cleaner can be either powered by the mains or by a lithium ion battery and switches seamlessly between the two.

We also ask for a clear definition of battery powered vacuum cleaners that are intended to be in and out of the scope. In case certain battery operated vacuum cleaners will be excluded, we ask for clear a clear reason why they will not be addressed in terms of market share and environmental impact.

The Ecodesign and Energy Labelling measures should include at a later stage vacuum cleaners using water filters. A precondition will be the development of appropriate test methods.

With regard to robot vacuum cleaners, we ask for more information with regard to their latest sales figures and improvement potential. As these appliances are offered to consumers, it should be the aim to design these appliances also more environmentally friendly. We therefore question the feasibility to exclude them from the scope.

Life time expectancy

Life time expectancy should be considered as an important part of the ecodesign measures. The preparatory study assumes a maximum life time expectancy of 500 hours in on-mode before the motor fails. However, comparative testing from consumer organisations² using a durability test based on 550 hours life time expectancy demonstrates that most appliances available on the market pass this durability test. To extend the life time of a vacuum cleaner, we propose durability requirements the motor of at least 550 hours. As the Ecolabel for vacuum cleaners required a life time of the motor of 550 hours already in 2003, such a requirement is reasonable for the Ecodesign measure³ in view of technological progress.

In addition, most consumers replace a vacuum cleaner due to a decrease in the cleaning performance of the product over time but only rarely because the motor is broken. We therefore recommend setting also minimum performance requirements regarding the cleaning efficiency after a certain number of uses as this may prolong the use time of vacuum cleaners.

Moreover, we propose setting requirements with regard to the life time of the plastic parts of a vacuum cleaner.

Finally it is important to inform consumers with regard to the maintenance of the products in order to increase the use time of vacuum cleaners.

For information on the product see the manufacturers' website:

http://www.miele.de/de/haushalt/produkte/30822_30827.htm?highlight=hybrid

² See comparative testing performed by ICRT members for vacuum cleaners (durability test based on 550 hours) or by the German consumer organisation Stiftung Warentest for the motors (durability test based on 600 hours).

³ Commission Decision 2003/121/EC of 11 February 2003 establishing the ecological criteria for the award of the Community eco-label to vacuum cleaners. The Ecolabel for vacuum cleaners does not exist anymore as the criteria expired.

Assumptions on cleaning hours to be based on real consumer behaviour

The preparatory study is based on the assumption that consumers spend about one hour per week vacuuming. However, in a survey performed by several consumer organisations (Altroconsumo, DECO, OCU and Test-Achats), the average use of vacuum cleaners is of two hours per week or more. As the assumed cleaning time could have an impact on the Ecodesign measure, we propose taking actual consumer behaviour into account when calculating the Energy Efficiency Index and when setting the level of ambition of the Ecodesign measure.

Calculation of environmental impact should be based on cleaning cycles per year

From a consumer perspective the number of hours that a vacuum cleaner is used per year seems not to be an appropriate approach to define the functional performance of VCs.

We propose that the annual energy consumption should be calculated by a certain number of cleaning cycles per year based on an average cleaning area and based on a mix of carpet and hard floor covering. For this reason different usage patterns for different household sizes should be established. When calculating the Energy Efficiency Index, it should be taken into account that there may be considerable differences in Europe with regard to type the floor covering. In southern European countries for instance fewer carpets are used.

When calculating the energy consumption, VCs should not be calculated on the basis of maximum power input but on the basis of the energy consumption needed for a defined use. Such an approach would be in line with the calculation method for washing machines which takes into account a defined number of washing cycles at different temperatures and different loads.

Noise should be addressed by ecodesign measure and labelling requirements

As there is considerable difference concerning the noise emissions from vacuum cleaners, we strongly recommend including this information on the Energy Label. Noise is an environmental pollutant and the information may have a significant influence on consumers' purchase decisions.

To ensure that the worst performing appliances will be phased out of the market, we suggest setting two successive steps of ecodesign requirements addressing noise emissions:

- One year after the implementing measure comes into force: ≤ 80 dBA;
- Three years the implementing measure comes into force: ≤ 76 dBA.

Based on the experience of consumer testing organisations a value below 80 dBA is easily achievable and it should thus not be allowed to produce appliances above this threshold on the market one year after the measure enters into force.

As there seem to be currently differences in the testing methods that are used to determine noise levels, the implementing measure has to decide which definition and test method will be used to ensure comparability.

Filtration performance should be addressed by ecodesign and labelling requirements

The ability of a vacuum cleaner to prevent small particles from re-entering the atmosphere is an important performance aspect as insufficient filtration may negatively affect the cleaning performance and may have a negative health impact. For this reason consumer organisations usually measure the dust emission levels as this is the relevant information for the consumer. For this reason, we strongly recommend making dust emission limits mandatory for all vacuum cleaners through ecodesign requirements. We propose the following steps:

- One year after the implementing measure enters into force: 99.5% filtration efficiency;
- Three years after the implementing measure enters into force: at least 99.6% filtrations efficiency.

As the performance of vacuum cleaners may still differ considerably despite legal minimum requirements, we also strongly recommend informing consumers on the Energy Label on dust emission levels. However, as the information on dust emission (mg/m^3) or filtration efficiency (%) may be too difficult to use for comparing different products, we suggest giving this information based on the A-G scale.

In addition, the measurement methods should define the size of the particles adequately. Consumer organisations test dust particles of a size from $0.3\mu\text{m}$ to $20\mu\text{m}$ diameter.

The current method for measuring the dust reemission of a vacuum cleaner only takes into account the dust emissions leaving the filter. However, as dust particles may bypass the filter and may thereby exit the vacuum cleaner through other openings in the plastic housing, the overall dust emissions may be higher than the result that is measured based on the existing test method. We therefore encourage the Commission to address this fact when giving possibly a standardisation mandate to the European Standardisation Organisations on vacuum cleaners in the future. From our perspective, a standard which specifies a test method for dust emissions from vacuum cleaners, should measure the overall dust reemission from vacuum cleaners and not only particles that are leaving the filter.

Cleaning performance and dust removal efficiency

Currently the cleaning performance of vacuum cleaners is determined by the dust removal after five double strokes at a given surface. However, this intense cleaning does not really correspond to usual consumer behaviour. Therefore the working document proposes assessing the cleaning performance on carpets and hard floors after two double strokes compared to the current five double strokes. We support this approach. Tests performed by consumer organisations indeed showed that appliances equally perform after one and after five strokes: best remained best and worst remained worst irrespective of whether tested on the basis of one or five strokes⁴.

⁴ According to the comparative testing that has been developed by ICRT members for vacuum cleaners.

Limitation of power consumption should be introduced

In the past the power levels for VCs have been increasing because consumers think that more power provides for a better cleaning result. Thus, the increasing power levels have been used in marketing. However, there is no direct correlation between the pickup performance and the motor power. Therefore the input power could be far lower than today's average VCs without a loss of performance for consumers. We propose the following ecodesign requirements:

- Three years after the implementing measure has come into force a maximum input power of $P_{\max} \leq 1,800$ Watt;
- Five years after the implementing measure has come into force a maximum input power of $P_{\max} \leq 1,300$ Watt.

To make consumers aware, the information available to consumers should explain that there is no correlation between input power and cleaning performance.

Minimum ratio between power and efficiency

The nozzle has a high influence on the energy efficiency. A vacuum cleaner with high power consumption but a bad nozzle delivers low cleaning performance despite the high energy consumption. The Ecodesign measure should therefore set a minimum ratio between power and efficiency.

Handling of the vacuum cleaner

According to Stiftung Warentest⁵, the convenience of handling a vacuum cleaner plays an important role for consumers.

Some features of a vacuum cleaner such as the manoeuvrability and the lengths of the cord may have an indirect influence on the power consumption. In case the appliances cannot be easily steered, the appliance may turn over when being in on mode leading to an increase in consumption. In addition, insufficient manoeuvrability may lead to more damages in the plastic parts of the appliances as the vacuum cleaner may collide with furniture or walls. We therefore recommend that the Ecodesign measure takes into account the handling of vacuum cleaners. One option to improve the manoeuvrability of vacuum cleaners would be to use only wheels that can steer easily to all directions.

Benchmarks should be indicated

The working document outlines different improvement options. However, information on the best available technology is missing. Therefore we ask for introducing benchmarks into the draft legislation that reflect the latest technological developments.

⁵ Stiftung Warentest (2010): Die halten dich – Bodenstaubsauger, test 5/2010, pp. 48 – 54.

Claims need to be substantiated

According to recent tests in consumer magazines, the product names of vacuum cleaners use additives such as “ECO2 pro nature”, “green power edition”, “Ecoline Green” or “R-Control Eco”. As the claims are not always clear to consumers, we see a potential for consumers to be misled with regard to the real environmental performance of vacuum cleaners. For this reason we see an urgent need for the Commission to set ambitious ecodesign and labelling criteria and to address all environmentally relevant aspects of vacuum cleaners such as the use of recycling plastic.

We suggest including into the legislation other environmental aspects such as green design to facilitate recycling. For this reason the Ecodesign implementing measure should require

- easy dismantling of the product;
- plastic parts above 25 grams to be identifiable based on ISO 11469;
- metal parts to be easily accessible;
- electrical parts to be mechanically connected;
- plastic parts with no metal inlays.

In addition to requirements on recycling, the implementing measure should require an indicator when the dust bag is filled as this might be relevant for persons with allergies.

The implementing measure should limit the use of substances which are harmful for health and environment. We recommend deriving ecodesign criteria from the EU Ecolabel for vacuum cleaners.

Information on performance on the Energy Label

The possible list of labelling information in the working document refers to energy efficiency class, cleaning performance (dust removal on both, carpet and hard floor), filtration efficiency, nominal input power, average annual energy consumption and noise. WE support including all these aspects into the labelling scheme. However, as the working document does not contain a proposal concerning the spreading of the classes, we may come back with more information at a later stage.

Energy Label should include different types of vacuum cleaners

We ask for developing one labelling scale for different types of VCs such as canister and upright appliances as this will allow consumers to compare the energy consumption and performance of all different household VCs that are available on the market.

END.