

13<sup>th</sup> September 2010

## **Austrian position on**

### **Working document on possible measures targeting the energy efficiency of lighting in the tertiary sector**

Presented by the Directorate General for Energy for consultation of the Consultation Forum

### **Scope and objectives of the EC working document**

The EC has presented a working document for consultation on possible measures targeting energy efficiency of lighting in the tertiary sector. The measures indicated are intended to complement the already implemented regulation for tertiary lighting (245/2009) which mainly covers lamp and lighting ballast technologies. The proposed options address the optical efficiency of luminaires (eco-design measure, proposed option A) and the overall efficiency of installed lighting systems (measure outside the eco-design framework, option B). According to the EC document the proposed options could either be implemented alternatively or in combination as complementary measures.

From the Austrian perspective the eco-design and the system level measure must be combined. Addressing only one of these options would be much less effective not allowing to exploit a large part of the energy saving potential. The advantage of a combined approach is described and discussed in the following position.

### **Relevance of an eco-design measure and possible approach for development and implementation**

The evaluation by the European Commission indicates that an eco-design measure addressing the efficiency of luminaires and complementing regulation 245/2009 (option A) allows energy savings of 15-20% or 30 to 45TWh/a (after a longer period of implementation). This is clearly only part of the savings which could be achieved by a system level measure addressing the design and operation of lighting systems. As outlined further below a complementary system level measure is therefore essential.

However while not allowing an exploitation of the whole energy saving potential the eco-design measure provides an important prerequisite for the additional system level measure. It allows to optimize energy efficiency and standard information requirements for the lighting hardware which are an important basis for optimized design of lighting systems. Furthermore eco-design criteria can also provide the basis for hardware labelling at a later stage when an appropriate labelling concept meeting the requirements of both industry and the demand side market has been developed.

Thus there would be no justification for deleting the planned eco-design measure in favour of a system level measure which still has to be discussed and designed (see challenges indicated further below).

The development of criteria for an eco-design measure for luminaires has already been started two years ago as part of the developments for regulation 245/2009. The main problem which could not be solved at that stage was the development of an appropriate categorization concept for luminaires. The approach proposed by industry had not been accepted by the EC due to high complexity. It was decided to postpone this issue to a later stage.

In the meantime an alternative improved concept has been developed by industry which is to be discussed with EC soon. According to industry this concept allows to remove the 15% of the most inefficient luminaires from the market.

The main challenge of any approach to optimize optical efficiency of luminaires is to develop a luminaire categorization concept which on one hand side allows significant efficiency improvement and on the other hand is not too restrictive regarding luminaire design types. Different design types of luminaires have specific optical devices for example to control glare, or to direct light (from a lamp through reflectors or refractors) directly to a specific visual task. A restrictive categorization would imply that many luminaire design types would disappear from the market leaving only very limited choice for buyers. This shall be avoided as less efficiency at the hardware component level often can be compensated or even over compensated by appropriate lighting system design. However, a too simple categorisation of luminaires has the problem that certain specifically designed luminaires for specific visual requirements could be phased out while other simple but obviously efficient luminaires with less quality in optical devices are allowed. In the end, in an installation these luminaires might fail in efficiency and in visual requirements.

From the Austrian perspective it is strongly recommended to implement basic efficiency criteria and information criteria for luminaires however based on a luminaire categorization concept which avoids a phase out of a large number of luminaire types. As such the new categorization approach developed by industry seems promising. The strategy at eco-design level should not be to phase out a large part of the luminaire designs but to achieve a reasonable phase-out of the 15-20% of most inefficient products.

Furthermore and probably most important the eco-design criteria should be used to implement standardised information criteria for luminaires. Many technical information criteria for luminaires are addressed in lighting standards however so far there is no requirement established for standardised mandatory product information. Furthermore a surveillance system is needed to check the quality and correctness of the product information especially of photometric data.

Especially this second aspect of an eco-design measure provides an important basis for the design of efficient lighting systems and thus an essential prerequisite for a system level measure.

### **Relevance of a complementing system level measure and possible approach for development and implementation**

The evaluation by the Commission indicates that a measure at lighting system level complementing regulation 245/2009 would allow savings of 80-90TWh for the whole tertiary sector (after a longer stage of implementation e.g. between 2030 and 2050). Thus the theoretical saving potential is significantly higher than for a stand alone eco-design measure.

However also challenges and barriers to exploit these potentials are much higher than for the eco-design measure. International experiences with both eco-design and system level concepts have shown that system approaches are much more difficult to implement and control and thus the lower savings at hardware level are easier to achieve. In any case a system approach has to be thoroughly designed to be successful.

From the Austrian perspective we support the view that an eco-design measure must be complemented by a system level measure to allow full exploitation of efficiency potentials. A

large part of the potential energy savings for lighting in the tertiary sector can be achieved by optimized planning, design, operation and maintenance of lighting at the system level.

Measures at the level of planning, design, operation and maintenance however are outside the scope of the eco-design directive and have to be addressed with alternative legal instruments. The EC working document references the building directive and the service directive as an appropriate framework to implement criteria and requirements for lighting.

However both directives do not yet provide any concrete requirements for lighting systems. Thus so far it is up to Member States if and to what extent lighting is specifically addressed within this framework. The building directive is currently implemented in very different ways in Member States which indicates that a standardised approach for addressing lighting issues will not be feasible on the current basis. Thus neither the current version of the EC building directive nor the service directive provide a basis for addressing system lighting in an effective standardised way at EU level.

We therefore recommend the implementation of an additional legal measure at EU level which allows a standardised implementation of concrete requirements for the design of lighting systems which can be controlled with reasonable effort. The most appropriate approach would be a supplementing regulation on lighting system design. Such an instrument should be developed on the basis of adequate stakeholder consultation.

We strongly doubt that an effective lighting system level measure complementary to the eco-design measure can be implemented without a specific additional regulation.

Concrete options for the development and implementation of an appropriate legal instrument should be discussed. However this is clearly outside the responsibility of the eco-design directive and requires the involvement of the responsible bodies.

Summarizing from the Austrian perspective both an eco-design measure and a system level measure shall be implemented. In combination these two measures allow to optimize lighting systems. The two instruments provide the following benefits:

- Clear, complete and standardised information criteria for luminaires which serve as an important basis for the system level measures and their surveillance
- Removal of the 15% of most inefficient products from the market (according to a categorisation method which needs to be decided)
- Providing a basis for a potential labelling concept on system level which can be implemented at a later stage. An appropriate labelling concept has to be developed.
- Support of optimized planning, design, operation and maintenance of lighting systems.
- Eco-design measures on product level only will not exploit the possible energy efficiency, so the decision for option A only shall be avoided.

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