

## **PL comments on the draft eco-design and energy labelling regulations for lighting products**

Poland supports the objectives of the eco-design regulation to transform of the lighting sector to mercury-free LED solutions in order to achieve substantial energy savings compared to conventional technologies. However, we would like to stress the need to adopt balanced measures, giving industry and end-users adequate time to adapt to the undergoing change. It is why; we suggest evolutionary approach to achieve this objectives, i.e. to ensure a smooth, cost effective transition of the lighting sector towards more sustainable products.

Especially, we have a deeply concern regarding the proposal to ban T8 fluorescent lamps in 2020. We believe this fast track is not economically justify. We have noticed that the official analysis ("Study to assess socio-economic impact of substitution of certain mercury-based lamps" prepared by Oeko-Institut e.V., Institute for Applied Ecology, and Fraunhofer-Institut for Reliability and Microintegration) shows that the fast transformation is associated with huge costs estimated at 671 billion EUR for the replacement of lamps and luminaires in Europe in the period 2019-2021. More over analysis shows that too early luminaires' replacement will generate unnecessary waste stream estimated on 8 million tons of additional waste in Europe in the same period.

In Poland T8 lamps are used in large quantities (several million T8 luminaires) in public buildings like hospitals, schools, offices but also in trains and at the railway stations. We estimate that more than 80% of public indoor infrastructure constitute of T8 lighting. In the private sector T8 lamps also dominates as the general lighting solution in office buildings, industry, warehousing but also small businesses and to some extend in private homes (usually in kitchen, under cabinet lighting and in garages).

The market share of T5 installation in Poland is relatively low compared to western European countries. However we have to underline that a lot of lighting installations were renovated during last 10 years following the Eco-design requirements of the use of electronic ballasts with controls but vast majority were executed in T8 lighting, in which the use of LED substitution is questionable and at least not easy as one to one replacement.

We are aware that there are LED substitutes for T8 florescent lamps on the market but we also noticed that they are not available for all applications or they have some limitations e.g.:

1. Many end-users take the existing ballast out, issues: high costs, safety, insurance (fire hazard).
2. High costs of the substitutes
3. Problems with dimming
4. Different light parameters could cause that after substitution the lighting will not be longer fulfilling the working standards (it could negatively influence the productivity and well-being of the workers)
5. Some colours are not available (mixing colours case could negatively influence on human beings)
6. Are the lamps allowed in areas sensitive to sparks?
7. Can the lamps be replaced in safety exit signs (with the same guarantee)?
8. Flicker-Strobo effects for cheaper expensive brands.

We also cannot neglect that at the market there are many of LED retrofits that do not fulfil EU technical standards and those products cause our serious concern. The recent

investigation done in Poland by the Market Surveillance Institute shows that many LED products do not comply with electromagnetic compatibility (EMC) standards, which are the basic requirements to meet once we strive to build the smart installations.

You can notice many negative effects of the influence of higher harmonics on the power supply network, which is very likely with massive, uncontrolled replacement with products, which do not comply with EMC regulation:

- Overload wires and power cables associated with the increase of the current value,
- Overload of the neutral conductor, caused by the sum of three-order harmonics, whose sources are single-phase loads,
- Voltage supply deformations, which are the reason for improper operation of sensitive receivers,
- Overload of power network elements, e.g.: transformers, batteries, capacitors, etc.

We have also to be aware that even at the applications, where theoretically we can replace the T8 lamps with LED substitutes easily we can still face serious issues (especially when a large amount of T8 lamps are replaced). Several complains from the market are known, where some disturbance in the normal work of electrical or electronic devices were reported. In addition to this at some installations the end-users faced the problems of extensive consumption of reactive power. With the massive substitution of T8 fluorescent lamps by LED retrofit lamps, the problem of reactive power compensation arises/may appear along with electromagnetic compatibility caused by harmonic distortions of low quality LED products that are apparently at the market.

The oldest T8 fluorescent installations are based on analog 50 Hz induction ballasts (inductive reactive power), while the LED substitutes are based on LED drivers (capacitive reactive power). Before the replacement we have the situation that the whole installation has inductive reactive power characteristic, which is compensated assuming that the design and installation were done properly. After the replacement the situation is completely different, the installation has capacitive reactive power characteristic. The installation starts to consume much too high amount of reactive power, which can lead to additional charges for the usage of this kind of electricity by the utilities. In this case, when the simple substitution is done, it can appear that the end-user pays even more or only a little less than before substitutions. The proper substitution has to consider the evaluation of the flow of induction and reactive power later on and in many cases the additional cost of the adequate compensation of the capacitive reactive power from LED substitutes.

This problem does not exist, when the installation is renewed by replacement of the old T8 luminaire by the new LED luminaire, which has to be design according to existing technical standards.

Therefore we are in favor of the evolutionary process of phasing out T8 fluorescent lighting and support the extension of use T8 lamps as long as the smooth transition will take place (at least until the next revision of the eco-design regulation in 2022).

Additionally we would like to point out that it will be wise to synchronize some of the EU legislation in order to optimize the effectiveness. As an example we can mention the idea to create the link between the Eco-design and Public procurement legislation. For example, why not to restrict the public procurement of the new investment and renovation only on digital LED lighting or create the guidelines for public bodies regarding how to do substitution properly but simultaneously to allow of the usage of T8 lamps but only as the replacement

for the existing installation. We have randomly checked that there are still some pending renovations in public tenders, which were designed on T8 lighting in public sector.

Since there are several serious concerns we believe that T8 lamps shall be available as the replacement lamps for existing installations at least until 2022 or longer to ensure a smooth transition phase from this technology to LED replacement and avoiding unnecessary cost.

### **Energy labelling regulation**

Poland supports proposals of no label for luminaires as well containing products, such as for example household appliances, furniture etc. However, we suggest to ensure information at the point of purchase for consumer to choose the right product.

We propose also stick to the key principle, i.e. keep simplification in order to be friendly to the customer.

Regarding the label design, we suggest to improve the layout of the label and choose different colours for the frame, symbols and word "Energy" (the green color can be confusing in relation to the same green color of the energy efficiency class A).