# 'ECOmise it': EBV Elektronik Presents Latest Update on EuP-Regulation Regarding 'External Power Supplies'

External Power Supply Units Must Use Less Energy

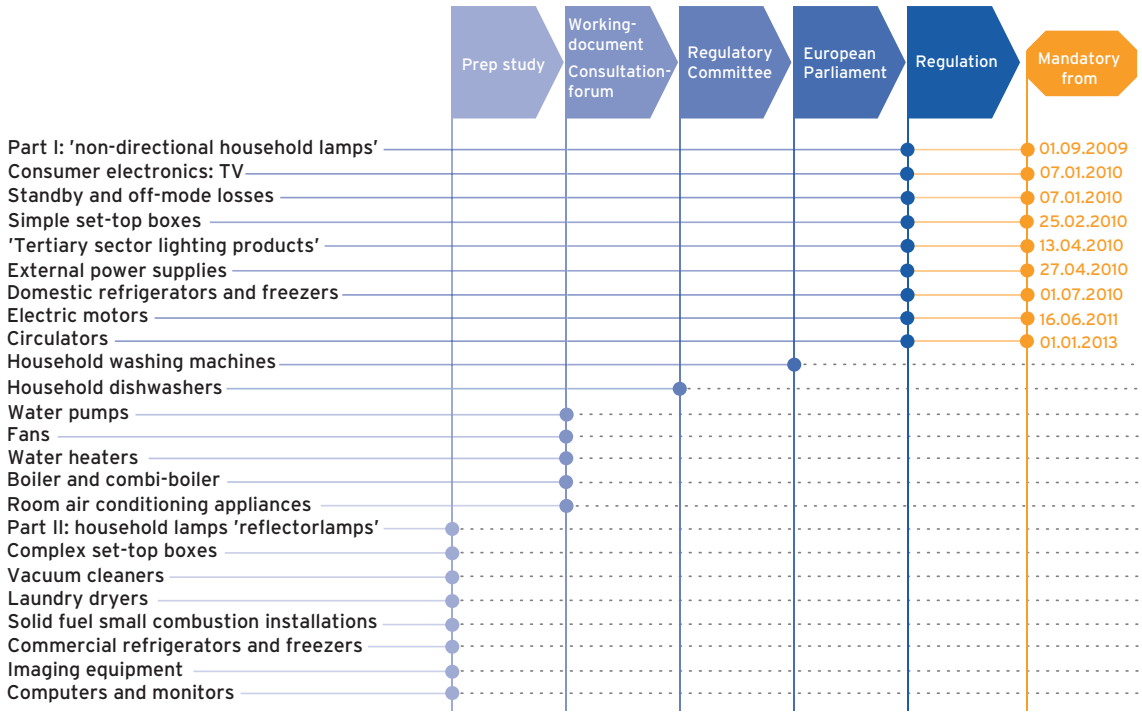
by Dr. Norbert Reintjes, Ökopol GmbH/EuP Consultant EBV Elektronik, August 2009

Usually sold with electrical and electronic goods, external power supply units are placed on the market in large quantities. Commission regulation no. 278/2009 was published in the Official Journal of the European Union on 7th April 2009 and sets out new requirements regarding the environmentally friendly design of external power supply units. From 27th April 2010 onwards, only devices that meet the power consumption requirements specified in the regulation may be brought into circulation in the EU.

All mobile phones are sold with an external power supply. The same is true for a wide range of other products, from electric toothbrushes to laptops. When buying these products, customers base their decisions on the features of the end devices (primary consumer) rather than the features of the power supply units. Even if customers are fully aware of differing quality of power supply units, they are ultimately bound by their choice of end device. As a result, there is little reward for efforts undertaken by manufacturers to offer high energy-efficient power supply units.

That being said, the past few years have seen a lot of progress on the market for power supply units. The core function of power supply units – to convert alternating current from the socket outlet to a lower-voltage alternating or direct current – is performed by linear and switched-mode power supply units alike. However, linear power supply units, which used to be common place on the market, are now being increasingly superseded by switched-mode power supply units due to the rise in the price of raw materials. The latter require fewer materials (e.g. copper, iron), which makes them lighter, and are much more energy efficient.

Even so, external power supply units with comparatively poor energy consumption values are still available due to




*Status quo of processing the various product groups (status: August 2009)*

considerable pressure on prices in a wide range of application areas. With the publication of Commission regulation (EC) no. 278/2009, the European Commission aims to put an end to this.

The scope of the Regulation is restricted, among other things, to external power supply units that have an output of less than 250 W and supply just one output voltage at a time. It also only applies to external power supply units designed for use with electrical and electronic household and office equipment as per Commission regulation no. (EC) 1275/2008 ('standby regulation'). Commission regulation no. (EC) 278/2009 explicitly does not apply to, among other things, voltage converters, uninterruptible power supplies, battery chargers or halogen lighting converters.

The main requirements of the regulation relate to no-load power consumption and average efficiency, and will come into effect at two different times. Power supply units connected to the mains power source but not to the device that constitutes the primary load (e.g. telephone) are not allowed to consume more than 0.5 W if sold after 27th April 2010. As of April 2011, an upper limit of 0.3 W will be set for AC/DC power supply units with a maximum output of 51 W as well as for external, low-voltage power supply units.

The regulation sets out minimum requirements regarding average efficiency during operation depending on the output. This average efficiency is calculated on the basis of the average efficiency at 25%, 50%, 75% and 100% of the output identified on the specification plate. Here too, the values effective from April 2011 shall be more stringent than those effective from April 2010.

According to the European Commission, the limit values stipulated in the regulation are comparatively easy to implement at a technical level and will furthermore provide end customers with a cost-effective means of reducing energy consumption.

By implementing these measures, the European Commission hopes to achieve electricity savings of 9 TWh by 2020. On the basis of a study conducted before this regulation was drafted, the European Commission expects annual electricity consumption due to losses for power conversion and no-load to amount to 17 TWh (equivalent to 6.8 million tons of $CO_2$). In the absence of this regulation, this value is predicted to increase to 31 TWh in the EU in 2020.

Companies placing products on the market (i.e. manufacturers in Europe or importers) are responsible for ensuring compliance with this regulation. A particularly important aspect here is that importers of mobile telephones, for example, are also made responsible for the external power supply units imported with these products. By awarding the CE mark, companies placing products on the market declare that the products comply with the regulation. Companies placing products on the market must ensure that they keep the technical documents specified in the regulation ready for market surveillance purposes.

In addition to this regulation, binding minimum requirements for eight more product groups have been defined in the form of legally binding EC regulations as part of the implementation of the ecodesign or EuP (Energy-using Products) Directive. These cover the power consumption of electrical and electronic household and office equipment in stand-by and off mode (1275/2008), simple set-top boxes (107/2009), products for industrial lighting (245/2009) and domestic lighting (244/2009), electric motors (640/2009), circulators (641/2009), televisions (642/2009) and household refrigerating appliances (643/2009). Further Regulations will follow.

A comprehensive description of the ecodesign Directive and a description of the regulations mentioned above were provided in a series of articles supported by EBV Elektronik.

| **Regulation** | **(EC) 278/2009** |
|---|---|
| Date of publication | 7th April 2009 |
| Came into force on | 27th April 2009 |
| Valid | 27th April 2010 |
| Scope | External power supply units |
| Area of applicability | No-load power consumption and average efficiency during operation |

*Schedule, scope and area of applicability of Commission Regulation No. 278/2009/EC Article dated 3rd August 2009*

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