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Industrial kilns and furnaces are already sufficiently regulated – additional eco-design requirements are not needed.

ERA Technology Ltd. and Bio Intelligence Service have been commissioned by the European Commission (DG Enterprise) to look into the feasibility of setting eco-design criteria for industrial and laboratory furnaces and ovens. The scope of the study is such that *all* types of furnaces and ovens are covered – even large custom designed industrial installations.

With the publication of the final draft report on 1 March 2012, the undersigned industrial sectors underline that eco-design measures are not required to improve the performance of custom designed industrial kilns and furnaces, for the following reasons:

1. Custom designed industrial furnaces and kilns do not fall under the scope of the Eco-Design Directive.

Article 2.1 defines an energy-related product as any *good* that has an impact on energy consumption during use which is placed on the market and/or put into service. It also includes *parts* intended to be incorporated into energy-related products covered by this Directive. Industrial furnaces (such as tunnel kilns, roller kilns, regenerative and recuperative furnaces, electric arc furnaces and blast furnaces) which are custom made and part of whole industrial processes do not fit with the concept of a ‘good’ or ‘part of a good’.

Moreover, the final draft of the report¹ clearly states that “*Larger industrial furnaces are often used in production lines or within complex multi-stage processes (such as steel production and in oil refineries) with other equipment and so it is often difficult to consider the energy consumption and*

¹ Sustainable Industrial Policy – Building on the Eco-Design Directive – Energy-Using Products Group Analysis / 2 Lot 4: Industrial and Laboratory Furnaces and Ovens – Tasks 1 – 7 – Draft Report. Authors: ERA: Dr. P. Goodman, Dr. C Robertson and Mr. A. Skarstein; BIO: Mr L. Lyons and Mr S. Pahal. European Commission, DG Enterprise Contract S12.549003

efficiency of a furnace or oven in isolation. Heat input can be from a previous process step, e.g. in the form of hot liquid metal, and heat output can be utilized in either different stages within the process or elsewhere, such as to heat buildings". These furnaces are part of complex industrial processes and, as such, **it is the whole performance of the process that must be assessed in an integrated way**. In fact, in the final report, the assessment of large industrial furnaces base cases also considers the energy consumption of pumps, fans, blowers and other parts connected to the furnaces. The assessment appears focused on a process rather than a single product and therefore should not fall under the Eco-Design Directive. This opinion was also confirmed during the Consultation Forum on 20 January 2012 when the consultant in charge of eco-design methodology development agreed that *"[...] steam boilers are mostly found in industrial installations. The large ones are already covered by existing legislation, such as the Industrial Emissions Directive"*². For the steam boiler product group, the consultant will focus only on smaller units; the same logic is also valid for large industrial furnaces (kilns).

Article 15 provides the criteria a product must meet to be covered by an implementing measure or by self-regulation. It is clear that **custom built industrial furnaces do not meet the criteria** mentioned under article 15 (2) (e.g. volume of sales, absence of legislation addressing environmental impact, disparity of environmental performance).

2. Industrial furnaces and kilns are already sufficiently covered by other, more appropriate, legislation.

The undersigned sectors are all "energy intensive", meaning that energy costs represent a substantial part of their total production costs and therefore these sectors are economically prompted to rationalise their energy use. Furthermore, *Article 15 (2)(c)(i) of the Eco-Design Directive states that "the product shall present significant potential for improvement in terms of its environmental impact without entailing excessive costs, taking into account (...) the absence of other relevant Community legislation or failure of market forces to address the issue properly"*. Unlike consumer goods for which eco-design criteria have successfully been developed, industrial furnaces are regulated by a range of specific EU and national/regional legislations.

Companies in our sectors face tough legislation aiming at reducing their carbon emissions. (e.g. the EU Emissions Trading Scheme (ETS) or equivalent measures aiming at reducing carbon emissions at national level). In the absence of any breakthrough technologies (such as CCS) enhancing energy efficiency at installation level is one of the levers for reducing carbon emissions. The EU ETS is thus an important and direct driver towards energy efficiency – and makes any further eco-design measures completely redundant.

In addition, Industrial Emissions Directive (IED) lays down the conditions for the granting of permits for industrial furnaces. This Directive takes an integrated approach and foresees sector specific reference documents on Best Available Techniques (BREF documents) which allow for a case by case assessment by the permitting authority. This legislation targets the operator of the industrial furnace

² 2009/125/EC Consultation Forum – Eco-design Consultation Forum CF-2012-02-EC : draft of the 2nd Working Plan of the Eco-Design Directive (2012-2014); minutes of the meeting

and regulates all relevant emissions to the environment and related energy efficiency issues, indicating appropriate techniques for increasing energy savings³.

To conclude: The implementing measures or self-regulation required by the Eco-Design directive would lead to over-regulation and would create confusion. It is clear that eco-design requirements would overlap with other pieces of legislation.

3. Industrial furnaces and kilns require a case-by-case approach.

As the draft report rightly points out, **nearly all industrial furnaces and ovens are custom designed**. The concept of a representative product makes no sense as almost every plant is unique. Within a given sector, or even installation, the energy input per tonne of product differs according to the variety of products, the choice and quality of raw materials etc. These aspects are independent of the design of the furnace.

The largest impact on energy efficiency is determined by how the furnace is operated and whether it can work at full capacity. This in turn heavily depends on the economic situation which is outside the control of the builder of the furnace.

It is also worth mentioning that **a furnace or kiln never operates in isolation within an installation**. For example, excess heat is transferred to pre-heating or cooling zones or is used for drying. However, as this falls outside the mandate of the Eco-Design Directive these aspects are disregarded in the study. This is acknowledged in the study contained in the draft of the final report which says that *“Many types of furnaces including blast furnaces and cement kilns may appear to be relatively inefficient when considered in isolation but this neglects the fact that much of the energy that is apparently “lost” is actually used in other parts of the production process such that overall the system efficiency can be very high”*. Consequently, eco-design criteria on custom designed industrial furnaces could even lead to non-optimal designs when considered from the whole of the industrial facility of which the furnace will be part.

4. Conclusions

Given the high importance of eco-design and energy efficiency in European policy, the undersigned sectors fear that, once finalised, this report will lead to unjustified conclusions and unattainable measures not only with regards to the Eco-Design Directive but also with regards to future policy initiatives related to energy efficiency. **In conclusion, we consider that custom designed industrial furnaces and kilns are not eligible under the criteria given in the Eco-Design Directive and that installations covering activities regulated by the EU Emissions Trading Scheme and Industrial Emissions Directive should by definition not be subject to the Eco-Design Directive.**

³ Reference Document on Best Available Techniques for Energy Efficiency - <http://eippcb.jrc.ec.europa.eu/>.