

Eurofuel's Comments Subsequent to June 24-25 2009 Consultation Forum on Draft Implementing Measures (IM) for Boilers - Eco Design (EuP) LOT 1.

The European Heating Oil Association (Eurofuel) represents the national organisations that promote the use of liquid fuels for domestic heating in 10 European countries, including over 10,000 companies.

Eurofuel welcomes the opportunity to comment on the latest version of the European Commission's Draft Implementing Measures (IM) Documents 1-9 (issued June 4, 2009) associated with LOT 1 (Boilers) of the Energy using Products Directive.

1. General Comments regarding Documents 1-9, June 4th 2009 Lot 1 Proposed Implementing Measures (IM), and New Outline Provisions Announced by the European Commission at the Consultation Forum, June 24-25th

POINTS SUPPORTED/ GENERALLY WELCOMED

- Eurofuel supports the exclusion from Lot 1 provisions for boilers and combi-boilers designed for the use of bio-oil ("bioliquids" in the terminology of Directive 2009/28/EC on renewable energy sources), or mixtures of bioliquids with a biofuel content of 10% or more (i.e., \geq B10). Eurofuel's experience to date in RTD (research and technological development) of bioliquids blends used in heating boilers confirms that B10 is the correct threshold level at which to set the bio-fuel/ equipment exclusion. The above exemption will enable the European oil heating industry to devote more of its resources to accelerating bioliquids RTD, via laboratory testing and customer trials, to enable faster readiness and market penetration of these technologies.
 - Eurofuel will forward to the Commission supporting technical documentation which explains why a bioliquid content of 10% is appropriate for the current development stage of bioliquids heating. It is suggested that inspection regimes to ensure that the stated percentage of bioliquids are being used in the heating apparatus could be set up by Member States on the basis of an inspections regime to be developed in conjunction with the bio-gasoil/ bio-kerosene fuel suppliers, possibly related to the Renewables directive (2009/28/EC).
- Eurofuel welcomes the transparent publication of the latest 3 June 2009 version of VHK's "EcoBoiler" model on the Commission's CIRCA website. Future revisions should likewise be disseminated to all stakeholders via CIRCA, and the further changes should be transparent and must be thoroughly annotated, to enable third-party examination and auditing.
- In order to expedite addressing problems with the EcoBoiler model - further discussed below, and in Section 2 - Eurofuel welcomes the Commission's decision made at the Consultation Forum to set up a "mini-Working Group", in order to make the EcoBoiler model reflect reality more closely. Eurofuel looks forward to the opportunity to offer expertise at this mini-Working Group, regarding gasoil- and kerosene-fuelled heating systems, and their combination with other heating technologies.
- Eurofuel welcomes the possibility of installers being assigned a greater role, possibly extending to certification of installed systems. However, the above approach must be discussed in detail with national and EU-wide installers' professional bodies, together with Member States' organisations/ institutions responsible for implementing and certifying both EPBD and EuP, for Lot 1. Note that the preferred "enhanced installer responsibility" approach is directly opposite to the "black box" approach presently embraced by the EcoBoiler model, which denies installers a greater, innovative role in designing, specifying, installing and certifying heating systems.

POINTS WHERE CLARIFICATION IS SOUGHT

- Eurofuel seeks urgent clarification from the European Commission regarding the issue of presently overlapping measures for boilers and overall heating systems being simultaneously treated as “products”, for the purposes of the implementation of the Energy-using Products (EuP) directive, and as “technical building systems”, for the implementation of the Energy Performance of Buildings Directive (EPBD), currently in the process of being recast.
- Eurofuel likewise seeks clarification from the Commission on potential uses within the EPBD Recast for the EcoBoiler model, once the existing EcoBoiler model has been simplified, and once aligned with standard inputs and calculation methodology according to appropriate CEN standards (via, inter alia, the work of the “mini-Working Group”). There may be possibilities for the *simplified and revised* EcoBoiler model to be used as a contributory basis for a proposed “common calculation model” (terminology according to the European Parliament report on EPBD Recast, P6_TA(2009)0278), or “single comparative calculation methodology” (European Commission terminology), when utilised with reference to the existing CEN standards in this subject area. (Eurofuel supports the European Parliament’s philosophy of a common calculation methodology for EPBD, and likewise gives its support to the European Parliament’s amended Article 8 of the EPBD Recast, and associated amended Articles.)
- Eurofuel seeks assurance that coherence will be maintained between EuP Lots which address space heating and water heating, regarding minimum energy efficiency levels and environmental emissions, with reference to the relevant Consultation Fora. These considerations apply, *inter alia*, to EuP Lots concerning boilers (Lot 1), water heaters (Lot 2), circulators (Lot 11), solid-fuel boilers (Lot 15), local room heating products (Lot 20) and central heating products using hot air (Lot 21).

POINTS WHERE EUROFUEL DISAGREES/ STRONGLY DISAGREES WITH THE CURRENT LOT 1 IM

- Eurofuel and its members are very concerned that the sophisticated but complex “EcoBoiler” model proposed by the Commission’s contractor, VHK, is still not “fit for purpose” regarding EuP Lot 1, and risks compromising the contribution that the heating (“boilers”) sector could make to the Commission’s ambitious aims of “20/20/20 by 2020”. The complexity of the present version of the EcoBoiler model is not helpful for the presumed intended audience of heating equipment manufacturers, and heating installers. The lack of transparency of some of the assumptions in the model, and their lack of strict adherence to accepted (e.g., CEN) standards, is also of fundamental concern.
- Eurofuel once again questions the transparency and applicability of the Commission’s reliance throughout the current proposed IM on the single efficiency figure (so-called “seasonal efficiency”, or “specific efficiency”), derived via the EcoBoiler model (which considers a theoretical heating system of one or more heating sources, together with theoretical performance of modelled heating controls). This single “seasonal efficiency” parameter is obtained without reference to any real heating installation, and the calculation is performed with reference to a choice of three theoretical modelled climatic geographical settings. This is a clear example of unsatisfactorily mixing the remits and methods of EuP and EPBD.
- With regard to EuP, Eurofuel again disputes the use of the theoretically-derived EcoBoiler “seasonal efficiency” figure as the basis for deciding *minimum energy performance levels*, which are in turn used to set the *boundaries of the bands related to energy labelling*. Note that this process means that *products* are being rated, via *theoretical system modelling*. The current IM persists in ranking all types of energy sources and equipment (oil boilers, gas boilers, the various types of heat pumps, direct electrical resistance heaters and combinations thereof), within the same comparative table, based on theoretical “seasonal efficiency”, via use of Primary Energy conversion factor assumptions. Eurofuel strongly recommends instead a solution to *labelling that is based on a fuel-specific, technology-specific basis* (i.e., one label for oil, one for gas, one for electricity, etc), as previously outlined to the Commission, and again as reiterated in the following *Section 2*.
- It is absolutely imperative that the Commission notes that the present “seasonal efficiency” minimum energy efficiency levels included in the IM are *technologically unrealistic*, both for the illustrative groupings by technology type (e.g., “best condensing”, “average condensing”, etc) and also for the stated “benchmarks”. These serious problems with DG TREN’s current approach have been pointed out by numerous stakeholders, both before and during the

Consultation Forum. Whatever labelling system is ultimately adopted, the aspirational energy efficiency levels and adopted timetable must be *realistic*, to create *real, cost-effective* market transformation of heating technologies in the EU by 2020, and beyond.

- The current IM's proposals regarding emissions of nitrogen oxides (NOx) will have unacceptable negative impacts on (a) the very high efficiency, compact, kerosene-fuelled boilers of 70kW and below capacity in the UK and Republic of Ireland; and (b) gasoil appliances EU-wide, between 70kW and 400 kW. ***These impacts are contrary to the provisions of Article 15 of the "parent" EuP directive***, and therefore must be revisited. Whilst Eurofuel and its members appreciate the progress towards more feasible NOx emission limit values which has been made since the first Consultation Forum on Lot 1, ***the NOx levels and associated timetable which Eurofuel strongly recommends in Section 2 represent the limits of technological and economic feasibility to which the industry sector can extend itself, without compromising the energy efficiency of current "best practice" oil-fired appliances.***
- Another by-product of the above choice of "seasonal efficiency" methodology, as simulated by the EcoBoiler model, which causes serious concerns to Eurofuel and its members, is that the "theoretical system" treatment comprises a "packaged" approach to assessing individual products and controls. This "theoretical system" packaging facilitates ***bundled*** heating systems to be placed on the market by large-scale manufacturers of various heating products, e.g., those with the capacity to produce fossil fuel boilers, solar thermal collectors, associated hot water storage tanks, controls, etc. However, Small and Medium Enterprises (SMEs), or producers of only one type of heating product, or heating control systems/ components manufacturers, are seriously disadvantaged by this "packaged" approach, which may therefore create gross distortions to the internal market, and unjustifiably threaten the capacity of the important SME sector regarding market share retention, innovation or market entry.

2. Detailed Comments on the Working Documents, IM Lot 1 (June 4th, 2009)

- a. **Energy source-specific labelling (one label per energy type). IM reference: *Comment applies to all nine Documents in the current IM, because the present single energy comparative labelling methodology is used throughout.***

Eurofuel reaffirms its demands for **energy source-specific labelling**, i.e., separate labelling schemes for devices powered by electricity, gaseous fuels and heating oil (gasoil or kerosene). As Eurofuel and similar heating-related associations (EHI, Marcogaz and AEGPL) have repeatedly pointed out in previous Consultation Forum meetings, the majority of the EU market for LOT 1 systems/ components is in equipment **replacement**. Energy source-specific labelling allows consumers and heating installers to compare more easily the best-performing equipment for the same fuel, and is also a far more understandable and transparent method. That installers and consumers would choose the best-performing heating equipment on an energy source-specific basis, obviously does not preclude them from combining these technologies into bivalent etc technology combinations.

The single label for all technologies, presently proposed throughout the Lot 1 IM, as well as having the generic disadvantages pointed out in the "General Comments" Section 1 above, also may cause stagnation in the heating market, i.e., precisely the opposite effect to "market transformation", which was intended via EuP. This could occur for the following reasons:

- **Cost** - cost is naturally important to consumers. The present single label methodology in the IM, based on the "seasonal energy efficiency" parameters, may indicate to both consumer and installer alike that the best-labelled, very highest efficient boilers cannot be obtained cost-effectively. Therefore, this could have the unintended end-result of inducing a period during which existing heating equipment is repaired over a longer period than might otherwise occur, i.e., ***old technology "lock-in" at the expense of product replacement.*** This means that consumers holding on to antiquated heating equipment for progressively longer periods will cause a loss of potential energy savings, ultimately being counter-productive to the ambitious "20/20/20 aims by 2020", with regard to the EU heating sector.
- **Compression of labelling classes** - if all energy sources and equipment are combined into one table, the technological differences between the equipment in each energy grouping are either impossible, or much harder, to denote, i.e., any "best-in-class" fine-tuning is lost in

the resulting compression of specific product types into a narrow range on the label. The end-results are that: innovation is stifled, and inaccurate comparisons between energy types and technologies may be induced.

Eurofuel recommends the use of separate labels for each energy: electricity, gas and oil. Efficiency gains from two or more energy technologies can be incorporated into each of the different labels.

b. Proposed Emission Limit Values for NO_x. IM reference: Document 4, Section 3.

Eurofuel must again stress that the Commission's current proposals for NO_x emission limit values per kWh are unworkable and disproportionate, both for gas oil and for kerosene fuel technologies.

NO_x emission limit values for burners using gasoil or kerosene should be set to **120 mg/kWh by 2015**, to apply to both the less than 70 kW boiler rating, and the 70 – 400 kW boiler rating, all tests being in accordance with accepted standard EN 267.

The present additional emphasis by the European Commission to also incorporate overly stringent NO_x limit design limits, in addition to promoting beyond current technologically feasible best-practice energy efficiency equipment, as part of the draft EuP LOT 1 Implementing Measures, represents an extreme design challenge, **which is impossible for oil heating manufacturers to meet, and to meet within the presently-assigned 2014 deadline.** The Commission must consider the additional, simultaneous constraints on manufacturers, many of whom are SMEs, namely: maintaining and improving very high equipment efficiency (already at almost physical technological limits), providing consumers with heating equipment at an economic retail price, whilst taking into account additional manufacturers' research, development and technology deployment costs which will be needed to achieve the technological advances required to reduce NO_x emissions.

Eurofuel must insist on NO_x emission limit values of 120mg/ kWh for all gasoil and kerosene boilers within the remit of Lot 1, to be achieved by 2015. The NO_x emissions issue comes squarely within the remit of Article 15 of the EuP directive. Eurofuel will provide the Commission with further supporting information, for the ongoing socio-economic Impact Assessment related to Lot 1, EuP.

c. Proposed Exclusion from the IM Regulation of boilers and combi-boilers designed for the use of bio-oil, or mixtures of fossil and bio-oil with a bio fuel content of 10% (>B10) or more. IM reference: Document 2, Chapter 1, Section 2 (g).

Eurofuel supports this proposed measure, on the grounds that it importantly supports the development of a nascent technology, and gives the time required for the liquid fuels heating sector to continue and refine the ongoing thorough tests on gasoil and kerosene boilers at various mineral oil/ bio-oil blends, both in the laboratory, and - importantly - in extended customer field trials, i.e., in actual domestic heating systems, in a variety of conditions.

Sustainably-procured *bioliquids* (the correct term for non-transport biofuels, under the Renewables directive) offer excellent prospects to utilise bioenergy, whilst still maintaining the extremely high boiler efficiency levels of present in contemporary best-practice condensing boilers using liquid fuels. This use of bioenergy should be promoted on a level playing field basis with solid fuel biomass boilers, presently advantaged in their treatment in the separate EuP Lot 15.

Eurofuel and its members consider that the Commission's proposed exclusion threshold level of greater than 10% bio fuel (>B10) is appropriate in a bioliquid-mineral heating oil blend, based on current laboratory and customer field test results. That is, heating fuel composed of gasoil or kerosene, blended with bioliquids up to a level of B5, requires little or no modification to heating systems. B10 blends have proven reasonably successful, but do require modifications to the heating systems, to keep to current very high levels of efficiency, without excessive heating system maintenance, etc. B10 to B20 blends have shown promise, but additional modifications to the equipment are necessary, and the equipment has not been proven to date, in real customer

situations, in the EU. B20 and upwards is an even more challenging fuel and technology area to work in. Eurofuel will provide supporting information to the Commission, as input to the ongoing socio-economic Impact Assessment associated with Lot 1, EuP.

Eurofuel understands concerns expressed at the Consultation Forum regarding whether consumers would be consistent in using a bio-blend fuelled heating oil boiler, i.e., that they would not return to using 100% mineral oil (even where they were owners of completely redesigned boilers and ancillary equipment, customised for higher bioliquids blends). In the USA, where B10 heating oil is commonly used, and is subject to an income tax rebate in, *inter alia*, New York state and New York City, inspections by the relevant tax authorities are an integral component of the verification process involved in receiving the rebate. In Germany, where B5 and B10 gasoil is now on the market to a limited extent, records of the delivery and proof of use of the bio-blend heating oils must be maintained for five years, in a similar scheme to that used to prove the supply of Low Sulphur heating oil, and its use of by consumers. EU-wide, there are additional opportunities for similar schemes to promote sustainable bio-blended heating oils, possibly to be implemented by external authorities in conjunction with heating oil distributors, as part of the national implementation of the Renewables Directive (2009/28/EC).

d. **Minimum Energy Efficiency requirements for Boilers (IM reference: Document 4, Section 2), related Indicative Benchmarks for Boilers (IM Reference: Document 8) and Possible Energy Labelling Requirements (IM Reference: Document 9).**

The “Minimum Efficiency Requirements” given in Document 4, Section 2, are *inextricably linked* to the “Benchmarks” indicated in Document 8, and the “Possible energy labelling requirements” of Document 9.

It is Eurofuel’s understanding that present “best practice” condensing boiler technology (fuelled by either oil or gas) would represent a significant increase in energy efficiency over the majority of heating systems installed in people’s homes today (2009). Current data from Eurofuel’s members shows that the EU-wide market penetration of condensing technology for *new boiler purchases per year, as a percentage of total new boiler sales*, is becoming high in some countries (e.g., over 90% in the UK, over 60% in Germany), moderate in others (e.g., approximately 25% for new oil boilers in Belgium) and very low in other Member States (e.g., close to zero in Spain).

It is also Eurofuel’s understanding that one of the principle aims of the Lot 1 IM of the EuP directive is to increase the average energy efficiency of the “parc” of the EU’s boilers. Unarguably, “best practice” condensing boilers represent one of the principle Best Available Technology heating systems available to most EU citizens today, on a Least Life Cycle Cost basis.

The “Minimum Energy Efficiency Requirements” in Document 4 should aim to phase out less efficient technologies, on a feasible, realistic timetable. However, the current stated levels:

- **Prohibit “best practice condensing boilers” from 1.1.2013**, for up to 70kW maximum heat input, based on the “seasonal efficiency” requirement of 75%, as calculated by the EcoBoiler model. This is clearly unrealistic.
- **Will permit only a combination of “condensing boiler plus a collective water-water heat pump” from 1.1.2013**, for the 70kW-400kW heat input range, in order to attain the 88%/- 96% “seasonal efficiency” requirement. This is also clearly unrealistic.


By way of illustration, we reproduce - overleaf - Slide 5 of the Commission’s presentation, “Possible Ecodesign Implementing Measure on boilers”, given at the 24-25 Lot 1 EuP Consultation Forum.

In the following comments regarding Slide 5, Eurofuel is assuming that “net efficiency” is synonymous with “seasonal efficiency”.

Tests by one of Eurofuel’s national member organisations have shown that even state-of-the-art oil condensing boilers can only reach the “>64% seasonal efficiency” band, given the final figure produced by the EcoBoiler model. In the above slide, *best Low Temperature boilers* are assigned to the “>64%” band, whereas best condensing boilers supposedly reach the “>79%” energy efficiency band. Therefore, there is a fundamental mismatch of **two efficiency bands** between real conditions, and those indicated as “example technologies” by the EcoBoiler model.

If “best condensing” products were to be banned from 2013, this would self-evidently result in Europe’s heating market being permitted to utilise only the top three technology categories in Slide 5, with a present combined market penetration of less than 4%. In other words, 96% market transformation would in theory have to occur in the EU’s heating sector, in less than three years (if the Lot 1 IM regulation were to be implemented in 2010).

The 96% market transformation also does not take into account the important factors of economic viability for consumers, environmental desirability of increased dependence on electricity as the energy source, and intrusion on Member States’ energy mix decisions.



Examples	market share	net efficiency
vertical ground-source + gas fired heat pumps	<1%	> 119%
best air-based electric heat pump + average horizontal GSHP	<1%	> 103%
best solar assisted + micro CHP	2%	> 87%
best condensing	8%	> 79%
average condensing	10%	> 71%
best Low Temperature	12%	> 64%
average Low Temperature	15%	> 56%
low-end Low Temperature (TODAY'S AVERAGE)	30%	> 48%
average atmospheric	15%	> 40%
low-end atmospheric +electric resistance	6%	< 40%

Figure 1 - Reproduced Slide 5 of the Commission’s presentation, “Possible Ecodesign Implementing Measure on boilers”, given at the 24-25 Lot 1 EuP Consultation Forum

Eurofuel insists that the “seasonal efficiency” factors be examined firstly theoretically within the mini-Working Group addressing the EcoBoiler model, and secondly any figures derived must be subject to an intense programme of third-party independent verification, to correlate real heating appliance performance with the performance indicated by the EcoBoiler model. Whether the resulting revised model would then be best used under the EuP framework, or as an input to Member States’ EPBD implementing process, is also a question to be resolved, as pointed out under Section 1, “General Comments”, of this Position Paper.

The alternative approach is to abandon the EcoBoiler approach completely, and update the Boiler Efficiency Directive, as an Implementing Measure regulation, for boilers as Lot 1, under the EuP directive.

e. **Multiple Loads Approach.** IM reference: *Document 4, Section 4, Tables II.2 and II.3.*

The presently indicated IM requirement to separately label products depending on the load category may lead to confusion amongst both consumers and installers. This is another example of overlapping, confusing remit and methodology between EPBD and EuP. The multiple loads approach also has internal market implications, because the same heating device (i.e., the same product) may receive a different energy rating in separate Member States, as correctly pointed out by the Italy representative during the Consultation Forum discussions.

Eurofuel recommends the removal of multiple load labelling. Instead, a specific heat load should be used, appropriate to the particular heating appliance.

f. **Areas of the IM and EcoBoiler model, which must be subject to detailed examination and scrutiny by the “mini-Working Group”, to be set up to improve and adapt the EcoBoiler methodology, inputs and technical issues overall.**

IM reference: *Documents 3, 5, 6, 7, 8.*

Eurofuel recommends that the mini-Working Group set up to examine the EcoBoiler model, must examine in detail all of IM Documents 3, 5, 6, 7 and 8. These documents are inextricably linked, and the review process must review them in a thorough, joined-up manner.

3. Eurofuel’s Initial Reaction to New Concepts Presented by the Commission during the EuP Lot 1 Consultation Forum, 24-25 June.

The first comment that must be made is that the Commission is contravening its own rules of procedure in presenting ideas of considerable importance and content, only at the convened Consultation Forum. Nevertheless, Eurofuel would like to offer some initial comments on these new proposals, with the proviso that the comments are purely outline and provisional.

- a. **Potential role for installers, to offer certification services.** Eurofuel welcomes this proposal as being potentially constructive and useful, provided that installers’ bodies, Member States, certification bodies under both EPBD and EuP, and other relevant stakeholders are thoroughly consulted on the matter. **Any progress towards authorising certification by installers is contingent upon resolving the present overlaps in both methodology and scope of the EPBD and EuP directives regarding heating installations, as noted in Section 1 (General Comments).**
- b. **“ABC Method”.** The details of this methodology have not been fully presented by the Commission. Eurofuel’s initial reaction is that the “ABC Method” seems to be an unnecessary complication, involving inappropriate overlap with the EPBD Recast, and Member States’ implementation thereof.
- c. **Real-time monitoring of heating devices.** Initial advice from Eurofuel’s members is that this measure would not be cost-effective, either for larger or smaller heating applications.
- d. **Requirement for Manufacturers to provide web-based “ready-reckoner” heating demand/equipment devices.** A number of Eurofuel’s national association members provide such systems on their websites, but this proposal seems to pose too many commercial liability problems for manufacturers of heating appliances. Eurofuel’s initial recommendation would be that consumers should approach qualified energy advisors and/or heating installers, for such advice.

4. Ongoing Procedure - Eurofuel's Members and Contact Details

Eurofuel looks forward to continuing to take part in the ongoing constructive process with the European Commission and Member States regarding LOT 1 of the EuP.

For further information or clarification, please contact Michael Bennett (mbe@eurofuel.eu), Executive Director of Eurofuel, www.eurofuel.eu

Eurofuel's Members

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Finland: The Finnish Oil and Gas Federation, www.oil-gas.fi

France: Chauffage Fioul, www.chaleurfioul.com

Germany: IWO-Institute for economic oil heating, www.iwo.de

Republic of Ireland: OFTEC (Oil Firing Technical Association), www.oftec.org

Luxembourg: Mazout-info Luxembourg ASBL (M.I.L.), www.mazoutinfo.lu

Norway: Norwegian Petroleum Industry Association (NP), www.np.no

UK: OFTEC (Oil Firing Technical Association), www.oftec.org

Switzerland (Associate Member): Union Pétrolière, www.erdoel.ch

UPEI (Associate Member): Union Pétrolière Européenne Indépendante, www.upei.org