



ENER LOT 1 & ENER LOT 2 REVIEW

AND

**ADDITIONAL CONTRIBUTION AFTER THE
MEETING OF 28 JANUARY 2021**

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ABOUT MARCOGAZ

Founded in 1968, Marcogaz represents 27 member organisations from 20 countries. Its mission encompasses monitoring and policy advisory activities related to the European technical regulation, standardisation and certification with respect to safety and integrity of gas systems and equipment, rational use of energy as well as environment, health and safety issues. It is registered in Brussels under number BE0877 785 464.

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I. High-stake subjects

1. Energy label class limits

The energy consumption for heating existing buildings is a major source of GHG emissions reduction. The stock of old and inefficient boilers exceeds 60 million units. Achieving the sector's decarbonization objectives require radically improving the energy performance of buildings and heating and domestic hot water equipment. The condensing boiler remains a relevant solution to achieving these objectives because it is economically accessible to a large number of households (3 times less expensive than an electric heat pump) and enables energy bills to be reduced, especially for households the most modest thanks to a reduction in consumption - but also in GHGs - of around 30%.

It is also a solution that fits perfectly with the decarbonization objectives for 2050 insofar as it is:

- Now compatible with Green and Carbon-free gases: 100% with biomethane and up to 20% with mixed H2 for a number of manufacturers.
- Allows an evolution towards other technologies such as the gas heat pump or the fuel cell thanks to the hot water loop by nature scalable.

Achieving the decarbonization objectives of the residential sector implies accelerating its refurbishment and encouraging the replacement of the stock of old boilers with more efficient equipment capable of integrating the transition to green energies, by offering consumers a wide choice of solutions. Energy labeling allows customers to make informed choices based on the energy consumption of energy-related products. This ranks the condensing boiler in A, the hybrid heat pump in A +, etc.

In this phase of necessary acceleration of the ecological transition, this classification must be kept to avoid any negative signal to the consumer in application of the EU regulation 2017/1369 of the European Parliament and of the Council of July 4, 2017.

In order to prepare the introduction of labels reworked according to a scale from A to G cited in the regulations, Marcogaz proposes the launch of a study on the proposed device on which label would enable to compare various technologies with very different energy performances like an electric boiler ($\approx 45\%$) and a GHP ($\approx 300\%$), an electric boiler and condensing boiler with controls system ($\approx 100\%$).

Marcogaz proposal :

class	Seasonal space heating energy efficiency η_s in %		
	From 2023 (pef 2.1)	2025	2030 at the latest
A+++	$\eta_s \geq 180$	Toward a new labelling : Impact study	New labelling
A++	$140 \leq \eta_s < 180$		
A+	$99 \leq \eta_s < 140$		
A	$90 \leq \eta_s < 99$		
B	$82 \leq \eta_s < 90$		
C	$75 \leq \eta_s < 82$		
D	$43 \leq \eta_s < 75$		
E	$39 \leq \eta_s < 43$		
F	$35 \leq \eta_s < 39$		
G	$\eta_s < 35$		

2. Biomethane and H2 compatible boiler

In Europe, the decarbonization of natural gas is underway. Gradually, natural gas in the networks will be shifted to a mixture of natural gas, biomethane and/or hydrogen (H2). In addition, experiments using 100% H2 for heating and hot water in the residential sector are emerging in various European countries.

It seems necessary to ensure that all the boilers installed are able to operate in complete safety with a rate of 20% H2 over a time horizon compatible with the orientations of the operators of European gas networks, i.e. 2030. In addition, to allow direct use of H2 from dedicated networks, all boiler manufacturers should be encouraged to develop 100% H2 compatible equipment.

Regarding the compatibility of boilers with biomethane, Marcogaz proposes for an information to consumers via a "100% biomethane Ready" pictogram on the boiler on the energy label and the appliance sheet,
Regarding natural gas (and/or biomethane) mixtures with H₂, Marcogaz proposes an obligation for the boilers to operate - over a time horizon to be determined - with a H₂ level of up to 20%. This obligation will result in the affixing of a "20% H₂ Ready" pictogram like the boilers compatible with the different types of CH₄ (natural and renewable).

Finally, concerning the compatibility of boilers with 100% H₂, Marcogaz proposes to encourage their development by affixing a "100% H₂ Ready" pictogram like biomethane.

Moreover, in order for the H₂ value chain to be complete and consistent, the update of EN 437 shall be carried out as soon as possible in order to integrate the new gas categories to cover 20%H₂ and 100%H₂ (pressures and test gases) which correspond to the future distributed gases containing 20% H₂ or 100% H₂. The work of CEN/TC238/WG1 in that way should be launched as soon as possible within the framework of the support of the EN standards to the provisions of the Gas Appliances Regulation 426/2016/EU.

3. Exceptions of boilers Types B1, C4 and C8

The so-called B1 exception made it possible to replace standard and low-temperature boilers in collective residential buildings, connected to a duct common to several apartments, where technical solutions do not yet exist to allow their replacement by high-performance boilers called "condensing". R & D work makes it possible to foresee, within a few years, new solutions allowing the evacuation of combustion products from high-performance boilers.

Marcogaz proposes that the B1 exception be maintained and proposes to better regulate its use in EU regulation 813/2013 of August 2, 2013 to reserve it only for collective residential dwellings by adapting the wording of the product information sheet.

Marcogaz proposal:

Text to be reviewed:

'This natural draught boiler is intended to be connected only to a flue shared between multiple dwellings in existing buildings that evacuates the residues of combustion to the outside of the room containing the boiler. It draws the combustion air directly from the room and incorporates a draught diverter'.

To be completed by the bolt sentence:

*'This natural draught boiler is intended to be connected only to a flue shared between multiple dwellings in existing buildings that evacuates the residues of combustion to the outside of the room containing the boiler. It draws the combustion air directly from the room and incorporates a draught diverter. **This natural draught boiler is not intended to be connected / (forbidden) in an individual household.**'*

II. Other technical subjects

1. Hybrids Heat Pumps (Hybrid units)

Marcogaz welcomes the proposal to create a family of Hybrid systems, with seasonal performance requirements. Regarding the characterization of this performance, in order to facilitate the development of the different configurations coupling a condensing boiler and an electric heat pump, **Marcogaz proposes to keep the separate and combined methods of standard EN 14825 as well as the product and package labels according to criteria to be defined (individual/collective uses, output, etc).**

2. Fuel boiler temperature and test regime

The "Draft Interim Report on Central Hydronic Space Heaters WG 1/2/3" of December 2020 recommends for boilers of less than 70 kW, to lower the modulation level to 15% against 30% currently with a minimum performance requirement equal to that at 30% load.

Considering that:

- Boiler performance is tested at 30% and 100% load.
- The report does not provide any information to justify a reduction to 15% of P_{min} .
- That a large number of boilers do not modulate up to 15% load and would require the development of new burners.
- That the B1 boilers will not be able to cope with a decrease of modulation down to 15% of P_{rated} , due to technology limitations.
- Adding up to 20% of H₂ in gas networks implies to check some combustion parameters like flame velocity to investigate the modulation range with H₂GN mixtures. Between 30% and 100% P_{rated} .

Marcogaz proposes that the tests for the calculation of seasonal efficiency for space heating be maintained at 30% and 100% load, respectively P4 and P1 and that no obligation for appliances to go down to 15% of modulation is to be implemented.

3. Temperature controls

Considering that:

- The report does not provide any scientific evidence to justify an increase in the F1 coefficient from -3 to -8; We understand that results from field-test studies has been used to change F1 coefficient.

We propose to reformulate with something like "the proposal to increase F1 to 8% is based on bad installation rather than bad operation of the appliance, it would make no sense to increase the F(1) in the calculation of the seasonal efficiency for space heating since it would penalize appliances correctly installed."

- That this change would no longer allow B1 boilers to meet the seasonal performance requirement.

Marcogaz requests that the F1 coefficient be maintained at -3%.

4. Scope extension to 1 MW

Marcogaz is in favor of extending the scope to equipment between 400kW and 1MW. However, the actual test methods between $P \leq 400$ kW and $400\text{kW} < P < 1\text{MW}$ differ and the tests for the latest category are sometimes carried out in situ. Consequently, extending the scope by simply transposing current requirements to output greater than 400kW is not feasible and requires in-depth analysis in consultation with the manufacturers and the laboratories carrying out the tests.

5. Cogeneration

The calculation method proposed by the consultant does not reflect the approach of the main stakeholders (association and manufacturers) based on the specific Energy Consumption used in the standard EN 50465. CEN/CENELEC experts have extensively worked on developing and validating this accurate methodology and their expertise should be taken into account.

The calculation provided in the December report from the consultant are based on "artificial" appliances and does not reflect the actual value of the seasonal efficiency for space heating for real appliances on the market. The method of calculation is a re-work of the transitional method but there are no scientific evidence that the results represent better the reality than other methodologies discussed in the review study.

Especially, the method proposed by VHK leads to underestimating the performance of residential fuel cells since they propose low electrical power while this threshold of power has been chosen to optimize self-consumption of electricity produced and therefore to optimize the benefit for the customer compared to higher power appliance. The methodology from the consultant therefore is biased and an impact study is needed to scientifically decide on the correct methodology and hypothesis behind.

6. Transitional Methods

As proposed by the Interim report, Marcogaz supports the transfer of "information" included into the Transitional Methods published by the European Commission. This transfer is supported to get an alone and more simple regulation structure and applicable for relevant information to the Annex of Regulations on measurement methods and calculations (or to the corresponding European standards candidate to harmonization on ErP).

7. Third Party Certification Assessment (TPCA)

As already expressed, **Marcogaz supports, the TPCA** (module(s) to be decided) mainly for the following reasons and benefits:

- increases credibility in data intended to consumers.
- reduces free riders in the UE market;
- support the schemes of UE market surveillance (public data, transparency, ...).

III. Additional Contribution after Meeting of 28 January 2021

Marcogaz shares the ambition of the European Commission for carbon neutrality in 2050 and supports measures aimed at accelerating the energy renovation of buildings. It is worth pointing out that combustion technologies are today the most affordable efficient solutions for replacement of old heating systems: a gas condensing boiler is at least 3 times cheaper than the best technology on a « hot water loop ». On the other hand, with the arrival of renewable gases (biogas, biomethane, etc), these technologies are fully compatible with the objective of achieving carbon neutral buildings by 2050.

Marcogaz supports the ecodesign and the energy labeling of heating appliances which was implemented in 2015, because they are effective tools in support of collective energy policies to contribute to the achievement of the objectives of the European Green Deal and the renovation of buildings.

Up to now, the energy label remains the most appropriate way to inform consumers about the performance of equipment by allowing them to compare different technologies performing the same function regardless of the energy. The current regulation should therefore maintain its objective of promoting efficient technologies with the current label at least until the legislative review of 2026 and not to downgrade them prematurely. Item (17) of Regulation EU 2017/1369 of the European Parliament and of the Council of 4 July 2017 mentions that *“The existing labeling system clearly distinguishes between conventional technologies based on fossil fuels, which are at best class A, and technologies using renewable energies, which are often significantly more expensive, to which classes A +, A ++ and A +++ are reserved. Since significant energy savings can already be achieved thanks to the most efficient fossil fuel technologies, it would be advisable to continue to promote them in class A ”.*

To meet the ambitious goals of carbon neutrality in 2050, the energy label system needs assessment, in particular for heating buildings, given the weight of this sector in Europe's energy consumption and significant increase in the use of electricity envisaged to decarbonize this sector. “Heating equipment” has very different (climatic) consumption profiles from “domestic appliances”, and has a significant impact on the sizing of energy systems (means of production and energy delivery infrastructure used).

Furthermore, energy labels for heating devices do not have the same notoriety among consumers as those for household appliances. In fact, these were introduced in 2015 even though those for household appliances date from the mid-1990s. It is therefore premature to launch an early

rescheduling for a device which, unlike household appliance products, has not yet been widely disseminated and has therefore not been able to make its full use.

Before initiating any resizing and label change process provided for in Regulation EU 2017/1369 of the European Parliament and of the Council of July 4, 2017, **MARCOGAZ recommends that the impacts of this change be thoroughly studied in order to assess in addition to the social / societal and industrial consequences of the new label and its ability to point towards equipment. Questions like those presented below could be addressed in the study:**

- Leading to using the least carbonaceous and cheapest energy at all times?
- Limiting back-up needs by new cutting-edge production tools:
 - Combined cycle with gas?
 - Other means of storage (battery, power-to-gas-load shedding) inseparable from an increasingly renewable electricity production mix?
- Strengthening the security of energy supply at all times and in all places in Europe?
- Presenting in fine the best full costs (over its life cycle) for the community?

The display of energy performance alone will no longer suffice to take into account the positive externalities for the community of the various equipment using all renewable energies: the choice of the least carbon-intensive energy in real time, the capacity to adapting to dynamic pricing, providing the flexibility to the energy system, etc.

The label must provide more complete information to end customers, without excluding solutions that add value to the energy system as a whole, and allow a range of efficient and affordable solutions for each category of household, technically feasible and economically sustainable for the community.

This requires a system based on a multiplicity of objective criteria.

Pursuant to Regulation EU 2017/1369 of the European Parliament and of the Council of July 4, 2017 - item (19) - Marcogaz requests an in-depth analysis of the criteria that must compose this future label in order to:

- **Encourage consumers to seek solutions that are efficient from an energy and environmental point of view;**
- **But also to promote equipment whose positive externalities will contribute to the resilience and sustainability of the European energy mix.**