reaLIFEstandards - Deliverable 2.1

Intervention plan for ECOS

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The reaLIFEstandards project

Technical standards have a broad impact on the safety and well-being of citizens and the environment. Therefore, it is necessary to ensure that the participation of societal stakeholders in the development of standards is strengthened. Ensuring civil society participation in European standards-making is fundamental to deliver standards that can support EU's climate and energy goals.

Standardisation plays a key role in supporting EU legislation on the clean energy transition, in particular on the Ecodesign and Energy labelling regulations, as well as on energy management and audits. These policies are crucial for the implementation of the EU's 2030 energy and climate framework and its 2050 climate neutrality objective. To ensure regulations can deliver the energy savings they were designed to bring about and to adequately implement the Energy Efficiency First principle, appropriate, repeatable, reproducible standardised test methods are needed. They should account for real-life usage reflecting average end-user behaviour and be robust to deter circumvention.

The goal of ***reaLIFEstandards*** is two-fold: (i) to ensure the effective participation of environmental and consumer stakeholders in standardisation, and (ii) to promote the integration of environmental and consumer interests in standards underpinning the clean energy transition. In the framework of this action, project partners will participate in the technical work within the European and International Standardisation Organisations to provide expertise, understand and challenge industrial interests and influence the drafting of standardisation deliverables. The project will directly foster civil society participation in standards-making, pushing for a more inclusive standardisation system, by raising awareness on the importance of environmentally robust standards that account for consumer expectations.

Introduction

This deliverable is part of Work Package 2 'Environmental voice influencing Ecodesign and Energy Labelling standardisation'. Led by ECOS, WP2 will make sure that product-specific and horizontal standards to support Ecodesign and Energy Labelling are environmentally ambitious and fit-for-purpose to underpin EU regulation. ECOS will participate in drafting the product-specific and horizontal technical standards within the relevant groups in CEN, CENELEC, ETSI, ISO and IEC, as well as influence discussions in standardisation strategic groups, while seeking synergies with consumer representation.

This document constitutes the deliverable D2.1 ECOS Intervention Plan. The aim of this deliverable is to identify the priority areas for promoting and defending the civil society environmental interest in the field of ecodesign and energy labelling standardisation. This document will provide a summary of the state of play and relevance of forthcoming standardisation activities related to ecodesign and energy labelling, supporting the creation of a list of priority work areas and associated standardisation work that ECOS will focus on for the duration of this project.

Ecodesign and Energy Labelling policies are supported by numerous standards covering a wide range of product categories. As the revision of regulations will be ongoing and existing standards will be revised, new regulations and concepts will gain prominence within the energy-related product policy field, leading to the development of yet more standards. To maximise our impact on standardisation deliverables, it is thus critical to identify and prioritise the standardisation work that ECOS will be influencing. The present deliverable will provide a list of priorities fulfilling that purpose, based on a set of criteria presented in the following section.

This deliverable will set the direction based on the information available at the time of drafting; it may be reviewed if and as necessary throughout the duration of the project.

Method & selection criteria

Method

The initial step was to look into all active work areas relevant to Ecodesign and Energy Labelling necessary to underpin the regulations (long list).

The work items on the long list were then evaluated against the criteria listed below. The criteria helped identify what work items had the most favourable combination of: on the one hand a high relevance for limiting environmental impact, and on the other hand a realistic opportunity for ECOS to make a difference towards this end, with respect to timing, resources, and strategic fit. The top-ranking work items were compiled into a short list, which constitutes ECOS intervention plan. This intervention plan indicates also associated standardisation work and may be modified throughout the duration of this project, notably due to external factors such as unexpected political developments or delays in the standardisation process.

Criteria

ECOS used the following criteria, listed in approximate order of importance:

1. Environmental relevance: Potential energy, resource and material efficiency gains, important market share or products that are iconic for consumers, leading to behavioural shifts and raising awareness.
2. Timing and status of process: The regulatory and standardisation processes, as well as the existence of a standardisation request, determine whether engagement in the standardisation process allows for an effective and results-based contribution. Furthermore, the Ecodesign and Energy Labelling Working Plan 2022-2024 also provides clarity on the work to be foreseen as it sets out which products will potentially be regulated.
3. Expertise and access: The availability of technical expertise, as well as the ability to access the standardisation processes, particularly at the international level. ECOS has the right to access any technical committee or other group within the European Standardisation Organisations (ESOs) CEN, CENELEC and ETSI. We are eligible to apply for liaison to bodies of their international counterparts, ISO and IEC, which offers opportunities to engage at the international level, but requires further technical expertise that will be evaluated case by case.
4. Strategic fit: It was also considered how the potential priority standards would fit and harmonise with ECOS existing resources and strategic direction, in terms of existing in-house expertise of ECOS staff, coherence with organisational priorities, and synergies with related work streams and campaigns.

While environmental relevance is an absolute criterion to fulfil to make the short list, the weighing of other criteria was more flexible and assessed on a case-by-case basis, as it is acknowledged that timelines and standards developments are sometimes difficult to predict and can be subject to change. Similarly, an initial lack of expertise and access can sometimes be overcome. The priority ranking given to each standardisation deliverable reflects the best possible compromise between the criteria.

The final short list of standards, and the basis for their selection, is presented in the following section.

Priority work areas and associated standardisation work

The implementation of the proposed assessment criteria to the initial long list has determined ECOS intervention plan in the following work areas:

- Heating appliances

- Cooking appliances
- Electronics
- PV modules
- Professional refrigeration
- Taps and showerheads
- Material Efficiency
- Strategic aspects

The specific committees and work items and their reason for being selected are listed and explained in the following sections, according to each of the priority work areas.

Heating appliances

Solid fuel heating – boilers and local space heaters are in the 2022-2024 Working Plan for ecodesign and energy labelling regulations. The most important work for this product lot is currently done in CEN/TC 295.

Gas heating appliances are included in the working plan for ecodesign and energy labelling regulations, however there is the intention of the EC to ban sales of non-hybrid fossil fuel boilers as of September 2029 via ecodesign requirements. With this ban, the interest in this product lot will be less relevant in the near future.

ECOS will focus on the following committees:

CEN/TC 57 Central heating boilers

It is responsible for the standardisation of constructional and performance requirements as well as efficiency tests for central heating boilers made from steel or cast iron and for oil fired air heaters. This work includes requirements, testing and marking on central heating boilers for solid and liquid fuels. WG 1 deals with solid fuel boilers and part 5 of EN 303 standard ("Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW") includes terminology, requirements, testing and marking specifications for solid fuel fired boilers up to 500 kW. Harmonisation of the standards with ecodesign and energy labelling regulations are envisaged thanks to mandate M/551 on solid fuel boilers.

CEN/TC 109 Central heating boilers using gaseous fuels

This technical committee is dealing with efficiency and emission tests for all gas-fired central heating boilers with or without integrated domestic hot water production as well as performance requirements. Multiple WGs are currently active to develop the following:

- WG1: it is setting the general requirements and testing method for gas-fired heating boilers, specifically on the standard EN 15502-1. Important elements are about gas quality distribution, tolerance of the room temperature and safety issues. Part of the development is also focusing on the hydrogen heaters standards, however the standards developments are happening before the real introduction of those appliances in the market.
- WG4: a new Work Item on smart control for gas-domestic appliances producing hot water has been adopted as EN 13203-8 in February 2023. And new works just started afterwards for this action.
- WG6: it tackles the angles of material efficiency for boilers, many issues in ENxxx2 are raised on reparability of the appliance, test reliability and exclusion of components' repair with the final targets of including component failure data in the durability assessment and avoiding a complex assessment in case the manufacturer declares components will be made available as spare parts within the claimed durability period.

CEN/TC 295 Residential solid fuel burning appliances

This Technical Committee works in the field of residential heating and cooking appliances burning solid fuels. Specifically, WG5 and WG6 are responsible for developing test method CEN/TS 15883 for the emissions of such appliances. Solid fuel heating (solid fuel boilers and solid fuel local space heaters) is particularly relevant for ecodesign and energy labelling regulations as they are in the 2022-2024 Working Plan and currently at the start of the revision process.

The development of the methodology measurements of the emissions particulate matter (PM) emissions of solid-fuel local space heaters is the main ongoing activity. Several methods are in place, but a unified European methodology (called 'EN-PME') is applied. The latter underestimates the emissions and does not consider condensed particles and part-load emissions, undermining the reliability of the test.

Moreover, TC295 is in charge of developing the EN16510 series – of which the most important are part 1 for general standards and part 2 for product group standards. The series covers all aspects of solid fuel local heaters, measurement and calculations related to emissions, energy efficiency and safety among others.

Important work needs to be done to harmonise standards with policies. EN16510-1 is currently harmonised with ecodesign and energy labelling whereas EN16510-2 is planned to be harmonised with CPR. Either way, the intention with mandate M/577 (COMMISSION IMPLEMENTING DECISION of 29.7.2021 on a standardisation request to the European Committee for Standardisation as regards space heating appliances in support of Regulation (EU) No 305/2011 of the European Parliament and of the Council) is that CPR regulation and the EN16510 series of standards simply take over ecodesign and energy labelling regulations of local solid fuel heaters, which we strongly oppose.

CEN/TC 113 Heat pumps and air conditioning units

This TC develops standards for the most important appliance to decarbonise residential heating: heat pumps, alongside air conditioners. They are related to performance of factory-made heat pumps, air conditioning units (ducted and non-ducted), hydronic room fan coil units, and liquid chilling packages whether vapour compression or sorption, regardless of energy used, for domestic or commercial purposes excluding industrial processes and rational use of gas energy. Moreover, it is about the rating conditions, performance testing and the presentation of data of refrigerant compressors and condensing units.

The most important WGs are the following:

- WG7: responsible for the standard "EN 14825: "Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling — Testing and rating at part load conditions and calculation of seasonal performance", relevant to the standardisation request M/535 (COMMISSION IMPLEMENTING DECISION of 29.7.2021 on a standardisation request to the European Committee for Standardisation as regards space heating appliances in support of Regulation (EU) No 305/2011 of the European Parliament and of the Council), and products covered by space heaters, local space heaters and air conditioners for ecodesign and energy labelling regulations.
- WG10: responsible for the standard EN 16147: "Heat pumps with electrically driven compressors – Testing, performance, rating and requirements for marking of domestic hot water units", relevant to water heaters for ecodesign and energy labelling regulations.
- WG8: responsible for the standards EN 14511: "Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors", particularly relevant are part 2 (Test conditions) and part 3 (Test methods), relevant to space heaters for ecodesign and energy labelling regulations.

Additionally, multiple experts from WG7 and 10 are converging to work together for an ad-hoc group for a test and rating method for heat pump, air conditioners and chilling liquid package.
Heat pumps are set to play a major role in the decarbonisation of heating. Setting realistic and unbiased testing methods for these products is a priority to ensure that consumers are provided with reliable and accurate information regarding their performance.

The highlights of the developments of this committee include the legionella regulations affecting the efficiencies results from tests, identification of non-heated space and indoor air as heat sources and, most importantly, the introduction of the compensation method as a new testing methodology to measure against, among others.

Cooking appliances

Cooking appliances regulations are currently under review. ECOS has long been calling for a number of standardisation deliverables that will improve implementation of the revised regulation. ECOS experts have been very actively involved in the development of new energy performance test methods for ovens and fume extractors. In the beginning of the grant period we intend to see the revision of these standards through to the end to secure the impact of our previously invested work. In the mid-term, ECOS also intends to follow the foreseen development of a test method that would allow for adequate energy performance comparison between gas and electric hobs. In addition to the expected energy savings, cooking appliances is an important product group in the broader context of decarbonising European homes, by electrifying heating as well as cooking. This is a contributing factor to the prioritisation of this product group. In addition, ECOS are well positioned as we have a long-term engagement with loyal experts in this standardisation committee.

ECOS will be anticipating a possible standardisation request for aligned test methods for gas and electric cooking and intends to follow the development of such a standardisation deliverable in the relevant working group. As an intermediate engagement, ECOS will monitor the developments of the working groups CENELEC TC59X WG 10 and CEN TC49 WG2 who are currently maintaining the electric and gas performance test standards EN 60350-2 and prEN 30-2-1 respectively.

Electronics

In the area of electronics, ECOS will focus on the following committees:

DEN/EE-EEPS47-X - Assessment of material efficiency of ICT network infrastructure goods (servers and data storage products) - GROW 09:
It was estimated by the Commission that switching to products servers and data storage products that comply with the ecodesign rules developed in 2019 EU (2019/424) will lead to electricity savings of up to 9TWh/year, which was approximately the yearly electricity consumption of Estonia in 2014. It was also estimated that this would lead to greenhouse gas emission reductions of up to 3 Mton CO2 equivalent per year.

ECOS has started its active engagement with the EE Technical Committee and the EEPS Group within ETSI around 3 years ago. Engagement was prioritised in relation to standards that are being developed in support of regulatory requirements for servers – both because of their environmental relevance as well as due to the pilot nature of some of the planned deliverables. This includes the standard on firmware updates, data deletion functionality, and disassembly, all of which being developed for the first time and possibly replicated in other contexts (e.g. in support of requirements for electronic displays). These three standards are now about to be finalised, within the first year of the project, and ECOS is willing to provide the last efforts to ensure that they are in line with regulatory requirements.
ECOS will be funded by other sources to work on this topic.

ENER 05 – Series of standards following Standardisation Request on Displays

According to the Commission, the EU energy labelling and ecodesign requirements (EU 2019/2013) will save up to 39 TWh per year by 2030. Up to 13 million tonnes of CO2 emissions will also be avoided each year. In addition, 84 thousands of tonnes per year of plastics will be recycled instead of being incinerated.

ECOS intends to get involved in the standardisation process that will follow the publication of the Standardisation Request (SR) on electronic displays as an implementing act. From the final SR that has been circulated late 2022, 5 planned standards are of interest for ECOS:

- European standard on measurement of power demand in watts in on mode in standard dynamic range for electronic displays
- European standard on measurement of peak white luminance for electronic displays with standard dynamic dange functionality
- European standard on methods for the measurement of screen area and verification of resolution of electronic displays
- European standard on measurement of power demand in watts in off, standby and networked standby modes of electronic displays
- European standard on testing and assessment methods for material efficiency of electronic displays

ECOS will be funded by other sources to work on this topic, but not necessarily for the whole period of this project.

ENER 03 - Standardisation Request on Computers

According to the inception impact assessment on the review of ecodesign requirements for computers and computer servers, a combination of a revised ecodesign regulation with an EU Energy Label with the inclusion of 'active mode' energy efficiency requirements could result in savings of 30 TWh/year by 2030. Also, material efficiency requirements could increase useful lifetime, thus reducing WEEE (particularly from mobile computers, the additional amounts of recycled materials would be: 30-60 tonnes of cobalt, 4-7 tonnes of lithium, 80-170 tonnes of copper and 0.2-0.6 tonnes of various precious metals).

Computers are an indispensable appliance in consumers daily lives, so it will be a priority for ECOS to participate in the standardisation work to support the upcoming revised regulations.
A Computers draft SReq was expected for 2022 and has not yet been circulated. Once finalised, this SR will trigger standardisation work that will start approximately during the second half of the reporting period or later.

PV modules, systems and inverters

The installed capacity of PV panels is set to increase from 165 GW in 2021 to 600 GW in 2030 to meet the goals set in the EU Solar Energy Strategy.

Following the 2016-2019 ecodesign working plan Ecodesign and Energy Labelling regulations for on photovoltaic (PV) modules, inverters and systems are currently being drafted and discussed. The environmental relevance of the potential legislation mostly lies in greater material efficiency (through reducing resource use and improving reliability, repairability and recyclability), increasing performance and reducing the energy and carbon intensity of the production process.

As envisioned by the European Commission's Annual Union Work Programme on Standardisation a standardisation request will be issued to support the implementation of the legislation. The negotiations

on this mandate have not started yet. At this stage we envision the need for standards on material efficiency, module performance and grid integration

In addition, to foster a second-hand market for PV panels, standards to test modules for re-use will be needed. IEC TC82 is drafting a Technical Report that can feed into an international standard.
Overall, ECOS is supported by a competent expert and maintaining good relations with both the European and international standardisation committees.

Professional refrigeration

The ecodesign and energy labelling regulations for professional refrigerating appliances is under review and ECOS is actively following it. This product group is of high environmental relevance as the energy consumption of these appliances is large, and the potential energy savings from policy intervention are therefore significant.

As one of the foreseen outcomes of the review is the inclusion of more products into the scope, notably on scientific and health care cabinets, there will be a need for a European test standard to underpin the updated regulation. A standardisation request for this is anticipated and ECOS intends to be involved in this work.

Taps and showerheads

Following the 2011-2014 and 2016-2019 ecodesign workings plan Ecodesign and Energy Labelling regulations a preparatory study on taps and showerheads regulations has been published. The Commission issued standardisation request M/572, which should deliver an EN standard for measurement and calculation methods on functional performance, energy and water consumption for taps and showers by 30 November 2023.

ECOS has been actively participating to the WG meetings, urging the group to progress and address all aspects of the Sreq. Overall, ECOS is supported by a competent expert who is chairing the subgroup on taps.

A focus on the timely delivery of M/572 is relevant due to the large potential for energy and water savings[1] from a labelling requirement for water-related products, including taps and showerheads.

Material Efficiency

CEN-CLC/JTC 10 Material efficiency

CEN and CENELEC finalised in 2019 and 2020 all the European horizontal standards related to material efficiency aspects for Ecodesign products under the request M/543. Discussions are now taking place with regards to improving the first versions of these standards and providing better guidance on how these can be transposed to product-specific standards (this work has been handled by CLC/TC 59X/WG23 and within ETSI).

ECOS has been actively involved in the development of all the standards prepared under mandate M/543. We believe that these methods can provide the methodological basis to ensure the systematic consideration of material efficiency aspects in future Ecodesign regulations and product-specific European standards.

[1] Up to 70 TWh per year (and 1900 Mm3 of abstracted water) in 2025 and up to 17 TWh per year (and 700 Mm3 of abstracted water) in 2030.

ECOS has established itself as a key member of the Committee, facilitating a comprehensive, ambitious and timely development of the methodologies requested. ECOS considers this project of very high environmental relevance and strategic importance for upcoming Ecodesign regulations and standards and beyond, especially after the release of the Ecodesign for Sustainable Products Regulation by the Commission which promotes the development of material efficiency ecodesign requirements.

CLC/TC 59X/WG 23 Material efficiency of household and similar electrical appliances
The WG has drafted a technical report (CLC/TR 50727:2022 - Material efficiency - Household and similar electrical appliances - Assessment of applicability of EN 4555X). It was voted on positively and published the 15th of April 2022.

The TR summarises the observations on the EN 4555X series of standards in view to applying them to household and similar electrical appliances. The document assesses the applicability of the EN 4555x series to household and similar electrical appliances that are in the scope of ecodesign (2009/125/EC) and highlights where further work on metrics and measurement methodologies is necessary or may be needed for beyond each of the EN 4555X standards.

Based on this previous work, ECOS has participated in the drafting of a technical report on the assessment of the durability of washing machines within CLC/TC 59X/WG. A draft is currently being drafted. ECOS' main objective is to ensure that the reliability test procedure properly reflects the average usage of a washing machine and that repairability and upgradability aspects are also considered in the standard.

ECOS considers this project of very high environmental relevance and strategic importance for upcoming Ecodesign regulations and standards – and beyond, hence the importance of closely monitoring the work of WG23.

Strategic Ecodesign & Energy Labelling standardisation groups

Influencing strategic standardisation activities in the field of ecodesign and energy labelling, including coordination groups and discussions that are overarching and of strategic nature, with no particular product-specific focus nor a wider product-family focus, are similarly relevant for environmental stakeholders.

ECOS will therefore continue to participate in and contribute to CEN-CENELEC Ecodesign Coordination Group (Eco-CG) which serves as a coordinating platform on all standardisation issues related to Ecodesign and Energy Labelling policies.

Participation in specific Eco-CG Task Forces (TF) in charge of identifying horizontal issues related to ecodesign requirements for a variety of product groups (e.g. TF 4: Resource Efficiency) or in horizontal discussions linked to the particular product family of household appliances (e.g. CENELEC/TC59X/WG22 Consumer relevant testing), will be decided upon on an *ad hoc* basis, depending on the relevance of the work plans defined therein.

ECOS will aim at ensuring that environmental aspects are taken into account in the discussions and the development of deliverables on the horizontal topics dealt with by the Eco-CG, its Task Forces when relevant, with a view on guaranteeing consistency and harmonisation with regards to definitions, procedures, and environmental aspects across all ecodesign-related standards.

Summary of priority work areas & associated standardisation work

Work area	Standard reference (if applicable)	Standard name/work description	Standardisation committee (if applicable)
Heating	EN 16147	Heat pumps with electrically driven compressors - Testing, performance rating and requirements for marking of domestic hot water units	CEN/TC 113/WG10
	EN xxxx2	Material efficiency for boilers	CEN/TC 109/WG6
	EN 14825	Air conditioners, liquid chilling packages and heat pumps, with electrically driven compressors, for space heating and cooling, commercial and process cooling - Testing and rating at part load conditions and calculation of seasonal performance	CEN/TC 113/WG7
	EN 14511-2/3	Air conditioners, liquid chilling packages and heat pumps for space heating and cooling and process chillers, with electrically driven compressors - Part 2: Test conditions, Part 3: Test methods	CEN/TC 113/WG8
	EN 303-5	Heating boilers - Part 5: Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW - Terminology, requirements, testing and marking	CEN/TC 57/WG1
	EN 16510-series	Residential solid fuel burning appliances	CEN/TC 295/WG1, 5, 6
Cooking Appliances	EN XXX	Common test method for gas and electric cooking	TBD
	prEN 30-2-1	Domestic cooking appliances burning gas - Part 2-1: Rational use of energy - General	CEN TC49 WG2
	EN 60350-2	Hobs - Methods for measuring performance	CLC TC59X WG10
Electronics	EN XXX	Series of standards following SR on Computers	TBD
	EN XXX	Standards following SR on Displays	TBD
Taps and showers	EN XXX	EN standard for measurement and calculation methods on functional performance, energy and water consumption for taps and showers	CEN/TC164/WG8

Professional refrigeration	EN XXX	New standard for scientific and healthcare refrigerated cabinets	CEN TC44 WG06
Photovoltaic panels	IEC TR XYZ: Re-use of PV modules and circular economy	Re-use of PV modules	IEC/TC82
	IEC/EN PV module standards	IEC/EN standards relevant for Ecodesign & energy labelling for PV modules	IEC/TC82 and CLC/TC82
	IEC/EN inverter standards	IEC/EN standards relevant for Ecodesign & energy labelling for inverters	IEC/TC82 and CLC/TC82
Material Efficiency	DEN/EE-EEPS47-X	Assessment of material efficiency of ICT network infrastructure goods (circular economy)	EE EEPS
	prTR XXXXX: XXXX	Material efficiency of household and similar electrical appliances	TC 59X/WG 23
	EN 4555X	Material efficiency aspects for products in scope of Ecodesign legislation	CEN-CLC JTC 10