European Insulation Manufacturers Association

Position Paper

October 2016

Towards a common EU framework of core indicators for the environmental performance of buildings

Accompanying the Eurima response on the consultation on the choice of Core Indicators

Eurima provides its opinion on the first proposal for a framework of core EU indicators for the environmental performance of buildings. As the opinion cannot be seen in isolation of the vision on sustainable buildings in the EU, this position paper should be seen as a reading grid for the Eurima reply on the public consultation.

The future need for a policy framework on sustainable buildings

Although voluntary efforts are valuable for improving the sustainability of the built environment, the European Commission and Member States have a critical role to play in improving the sustainability of the entire building stock. To perform the role adequately, a core set of indicators and related methodologies should be defined to cover the main elements of the sustainability performance of buildings.

Sustainability performance data could be collected to create a database that would support *push* up the sustainability performance of the entire building stock.

In the long term, Eurima recommends the development of a European method to define regionally minimum performance targets, which could be considered an Ecodesign requirement for buildings. The setting of such minimum requirements should follow the principles of subsidiarity, but all contributing to a global targeted performance at the European level. The evolutionary process of the EPBD and the EED, culminating with the NZEB by 2021, can be taken as an example for future policy initiatives on the sustainability performance of buildings.

The on-going evolution of reduced energy consumption during the use phase will lead to increased focus on the other stages of the life cycle of the building. Policy initiatives on sustainable buildings should be made coherent with the EPBD and EED in order to avoid negative interactions between them.

A strong policy framework for sustainable buildings would greatly strengthen the competitiveness of the construction sector and would contribute significantly to reducing its environmental impact. Sustainability of the construction sector in a broader framework of sustainable cities and regions will serve as a driver for new jobs, innovation, and transformation to a sustainable future, in line with the EU 2020 strategy.

The role of Life-Cycle assessment approaches

To properly assess the environmental impacts of a building, “life-cycle thinking” is the best route. When considering the environmental impact, the life-cycle assessment (LCA) method, which is defined by International Standards ISO 14040 and ISO 14044, helps to avoid the shifting of environmental-impact burdens between the various phases of the product life cycle. These general ISO rules have been specified for buildings by CEN/TC 350 (in EN 15978) and in ISO 21930.

LCA is the only methodology that allows considering the whole life cycle of the building and its components, and taking into account a number of agreed and well documented indicators. As one of the goals of the application of the Core Indicators is to show the pathway to significantly reduce the environmental impact of buildings there is no other route than LCA. The choice of the Core Indicators should be a clear indication from the Commission for the whole construction sector that this is what should be gradually implemented.

The “summary findings and indicator proposals” published by DG JRC in July 2016 clearly mention that one of the horizontal themes is: “Encouraging professional development and life cycle thinking”. It is stated that the relationships between indicators and differing ambition levels could be used to encourage professional development. In the proposed macro-objectives 3 different indicators are following the life cycle approach (1.2, 2.1 and 6.1).

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Eurima believes that the EC should translate this horizontal theme into clearly defined indicators for which the LCA approach is the basic scenario:

- GWP under macro-objective 1,
- Water under macro-objective 3,
- Cost under macro-objective 6,
- Resource-related impacts under macro-objective 2

Eurima acknowledges the need to facilitate the work to be done to calculate the LCA of the building.

Eurima believes that the EC should push for an approach where all life cycle stages and all components are taken into account in order to avoid biased/wrong assessments. We recognize that this is not without posing some problems but there are solutions, and the whole sector is ready to create many more, if there is a strong incentive to do so. The Framework of Core Indicators should become this incentive.

In order to simplify the calculations the possibility could be given to make a first calculation with industry average environmental product declarations, which are then replaced by product specific information for those parts of the buildings which have the highest impact. Lacking information should be replaced by generic information with a penalty factor on it. For most building elements and products LCA-based information is available in at least 1 country in Europe. This information should be used.

The methodology to calculate the environmental performance of the building should not create the possibility to hide relevant information or to bias the results of the assessment

If the EC doesn't want to take this pro-active position the demand for EPD-information will not be created and some manufacturers will not make it available on a voluntary basis.

Besides putting emphasis on the application of the principle of LCA for those indicators related to environmental impact, Eurima recognizes that there are other indicators, as important, for example related to well-being, for which the LCA methodology does not apply. Indoor Air Quality or Acoustical performance and thermal comfort are typical indicators for which the use phase should be the primary, if not the only focus.

Specific position on proposed core indicators

Macro-objective 1: Greenhouse gas emissions from building life cycle energy use

Eurima supports the 2 proposed indicators for macro-objective1. Seen the current use of these indicators in many voluntary and mandatory systems, they should both be considered as basic indicators.

Paying more attention to role of the building envelope, which determines the overall efficiency of a building over its entire lifespan and enables the correct sizing of equipment's, is a key issue. Measures ensuring a performing and long-lasting building envelope should be a core element of energy efficiency programmes for new buildings and of deep energy retrofit programmes for existing buildings . This approach safeguards against inevitable changes on the energy supply side, prevents the lock-in of voluminous portions of savings and avoids having oversized heating and cooling distribution system ending up as stranded assets. A secondary level requirement (for which a target could be defined at national level), through the inclusion of a value (KWh/m2/year) for H&C demand could complete the current proposed set of indicators.

To guarantee that the performance calculated at the assessment will be achieved during the use stage, Eurima believes that commissioning is a really important tool. The intrinsic performance of some construction products can only be achieved during the use stages if this is following a good design of the building and good installation of the products in the building.

As detailed above, Eurima supports the assessment of environmental impacts on the basis of a life-cycle thinking approach, in casu Global Warming Potential. In the light of the agenda of COP21 and the transition towards decarbonised energy supply the assessment of CO2 in parallel to the total energy consumption, which takes into account both the renewable and non-renewable energy, is coherent and mutually reinforcing. This indicator should be in parallel with the life cycle assessment of other impact categories under macro-objective 2 in order to avoid burden shifting. Once the LCA information is available for one indicator it is almost automatically available for the other LCA indicators which are commonly used, being the one already provided in the EPD today.

Macro-objective 2: Resource efficient material life cycles

The best way to assess the "resource efficiency of material life cycles" is to make a life cycle assessment for the impact categories "energy" and "resource depletion - ADP". By this approach the full life cycle is covered for the 2 most important resource streams. Water as a resource is covered under macro-objective 3. ADP is as an indicator already used in the Dutch legislation since many years. This shows that is indicator is certainly mature enough to integrate it.

The principle of life cycle assessment already takes into account the service life of the building. It is not necessary to integrate this as an additional indicator. This creates more confusion than it creates added value.

It seems interesting to make an indicator (2.4) which assesses the waste production. Eurima believes the indicator should focus on the construction phase. The demolition phase is related to the previous building but not to the assessed building and is though difficult to influence. In the light of the current focus on circular economy it seems strange to make no differentiation between incineration and recycling; and to only focus to diversion from landfill.

Design for recyclability (indicator 2.3) seems an important step forwards in the design of more resource efficient buildings. It is nevertheless more a tool to improve the resource efficiency of the building (if applied correctly) than it is an indicator, which should then be measurable and reliable. Eurima would propose to keep this as an advice to architects but not as an indicator as such.

Macro-objective 3: Efficient use of water resources

Eurima believes that this indicator could be assessed through an LCA-based approach.

Macro-objective 4: Healthy and comfortable spaces

Eurima strongly supports the idea to have "healthy and comfortable spaces" as one of the 6 macro-objectives. The current restriction of the scope is a disappointment for Eurima. Only the Indoor Air Quality of the building is tackled under this macro-objective while for example acoustics is certainly as important for the comfort in a building and has indirectly a very large impact on the healthy aspect of a building.

80 million EU citizens are exposed to noise. Further 170 million live in acoustic grey zones that seriously affect people's well-being. Result of this is a negative health impact: the EU's GDP is cut by an estimated 0.2% to 2%. Annual follow-up costs: well over 12 billion Euro. CEN/ISO is currently finalising the standardisation of an acoustic classification system for dwellings. It would be useful to integrate this as an indicator under macro-objective 4.

Thermal comfort is another part of "healthy and comfortable spaces" that is not covered by the proposed core indicators.

Macro-objective 5: Resilience to climate change

Eurima fully supports the principle of making the building resilient to climate change. This resilience needs to integrate the behavior of the building in more extreme weather conditions, considering both warmer summers and cooler winters.

The calculation method on how the building will perform under more extreme weather conditions should be identical to the calculations methods described in macro-objective 1. There is no reason to work with different calculation methodologies. The use of different methodologies would create extra burden, without providing added value to the consumer.

Eurima favors the idea to regroup all energy indicators under macro-objective 1 covering both the current and the future climate.

Macro-objective 5 should focus on the thermal comfort under the more extreme situations (both warmer summers and cooler winters). The indicator of thermal comfort is a key one from a well-being perspective and in the heart of the function of the buildings. Also from a resource efficiency point of view this potential discomfort is important. If a building will not be comfortable enough it will lead to premature replacement and renovation which increases the resource consumption of the buildings.

The Green factor as proposed as one of the core indicators can be considered as a potential solution to make a building resilient. It is as such not an indicator. The green factor could be included in the calculations of the energy performance at the design stage.

Macro-objective 6: Optimised life cycle cost and value

The different indicators on life cycle cost (6.1a and 6.1b) should be merged and should cover all the elements of the buildings (see overarching explanation on LCA). If a restricted scope is applied this will potentially lead to wrong decisions by stakeholders in the building chain. The economic part of the sustainability of a building is a key factor on which most occupants are lacking good information. The LCC should take into account the increasing energy price during the life span of the building.

The implementation of the framework

Eurima is looking forward to the finalisation of the definition of the core indicators in order for stakeholders to be able to test these indicators in pilots. The implementation of this framework throughout Europe, if the choice of the indicators is ambitious enough, could lead to a transition in the functioning of the construction industry. This will lead to benefits for society on the economic, the social and the environmental level.

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