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Energy Forum Denmark's response to the European Commission's consultation on the delegated act on cost-optimality for buildings

The European Commission has initiated a consultation on its draft delegated regulation on the calculation of cost-optimal levels for minimum energy performance requirements for buildings and building components. The regulation sets out how to calculate the maximum energy demand thresholds for zero-emission buildings and the minimum requirements for building components and technical installations in the Building Regulations.

This memorandum contains Energy Forum Denmark's comments on the Commission's draft.

1. Correct calculation of cost-optimality for relevant building categories is crucial

It is apparent from Article 11(4) of the EPBD that the maximum energy demand threshold of a zero-emission building is determined by compliance with the provisions on cost optimisation.

In plain language, this means that a calculation of the level of renovation of an existing building should carry out to define what is the most profitable renovation to carry out, when all costs and benefits are weighed against each other. This level will of course be very different for different building categories and depend on e.g. the age of the building, size, materials and use.

In addition, the technical systems for larger buildings must also be separately renovated up to the cost-optimal level.

The calculated cost-optimal renovation level of existing buildings for each building category will therefore define the end target that existing buildings must strive towards in order to achieve zero-emission building status by 2050 the latest.

It is therefore important that the calculation of the cost-optimal renovation effort for a specific building in a given building category is aligned with the individual building categories, so that the end goal for the specific building is realistic and aligned with what is cost-optimal to implement for the given category.

The presented draft delegated act for the calculation of cost-optimality for the renovation of buildings and the associated annexes provides a good starting point for providing such a solid and credible benchmark for the renovation efforts to the building owners.

But there is also room to make the draft even better, more precise and more suitable as a benchmark for the owners of existing buildings in their considerations of the renovation efforts towards 2050.

Energy Forum Denmark would like to point out the following conditions, where we recommend that the draft be clarified, tightened or expanded:

2. Socio-economic calculation methods should be used

According to the Commission's draft, cost-optimality calculations must be carried out both from a financial and macro-economic perspective. It is thereafter up to each country to decide which calculation method they will use to specify the maximum thresholds for zero-emission buildings and the related requirements in the Building Regulations.

The two calculation methods are different, as the calculation from a financial perspective includes taxes and duties in the calculation, but omits the macroeconomic advantages and disadvantages in relation to indoor climate, energy system, etc. The macroeconomic calculation includes these benefits, as well as the allowance price for CO2 emissions.

If it is also allowed to use the results from the financial calculation, the social benefits of the renovations, such as the value of e.g. improved indoor climate and saved health costs, will not be included. Similarly, the value of the reduced need for expansion of the energy system will also not be included.

Energy Forum Denmark therefore proposes that the regulation be amended so that it is required to use the calculation from the macroeconomic perspective as the basis for determining the maximum thresholds and requirements in the Building Regulations. If this is not possible, the legal act should contain a strong invitation to use the macroeconomic calculation.

3. A sufficient number of building categories must be identified nationally to make a calculation of the cost-optimal renovation effort useful for the owners of existing buildings in different categories.

Article 6(1) of the EPBD requires that the framework for calculating the cost-optimal renovation level must distinguish between new and existing buildings, and between different categories of buildings.

This requirement is partially continued in the draft delegated act for the calculation of cost-optimality. This can be seen, for example, in Annex I, which contains minimum requirements for how many building categories must be calculated. These requirements are not very precise nor comprehensive, as they only include requirements for the implementation of calculations for very broad categories of buildings that do not necessarily reflect the diversity of the building stock. However, it also appears that the countries may choose to implement a subdivision of the building stock into subcategories according to year of construction, building use, typology, etc.

Energy Forum Denmark considers it essential that the delegated act specifies that there must be a sub-division into an adequate and sufficient number of subcategories for the cost-optimal calculation that reflects the diversity of the building stock, so that realistic targets for zero-emission buildings can be defined for the commonly occurring subcategories.

This is essential to ensure in order to have credibility about the end goals for building renovations up to 2050. And it is essential to ensure that the individual building owner can easily and credibly place his or her building in a relevant building category and therefore be informed about the cost-optimal level of renovation in a credible way.

The division of the building stock into sub-categories is also of great importance in relation to the restructuring of energy labelling that is to be implemented as a result of the directive. It is also apparent from Article 19(2) of that directive that zero-emission buildings must be labelled 'A', irrespective of whether they are new or old, and regardless of the type of building. This means that the energy label for the individual categories or subcategories of buildings must in future indicate the distance to the zero-emission level for the individual building.

This will be a major advantage compared to the current energy labelling scheme, where all buildings are effectively measured against the energy efficiency of a new building, regardless of whether this level of efficiency is realistic to achieve through renovation or not.

It should be noted here that what is currently the background for the energy label, namely the calculated energy requirement for the building's operation, can easily be retained as a supplement to the new energy label.

The new energy labelling scheme will thus make it possible for all buildings to achieve energy label "A" when carrying out cost-optimal renovations and thereby achieve the status of a zero-emission building. This also means that financial institutions can classify loans for these cost-optimally renovated buildings according to the "Taxonomy"'s best energy label class in the same way as for a new building.

If a cost-optimally renovated building is not aligned in this context with a newly constructed building in the allocation of energy label "A", this will lead to a significant incentive for strengthened "tear-down-and-build-new", to achieve optimal financing opportunities.

Energy Forum Denmark must therefore propose that the draft act be amended so that it is required by the member states to carry out calculations for a larger number of categories and subcategories of buildings that together represent and reflect the diversity of the building stock.

4. **Efforts must be made to ensure that compliance with a calculated level of cost-optimal renovation will have credibility up to and including 2050.**

The EPBD states that the level of cost-optimality for the building categories must be recalculated every five years, taking into account new technologies, etc.

This requirement may create uncertainty among owners of existing buildings as to whether early attainment of zero-emission building status may risk being undermined by revised calculations in the coming few decades. And if this uncertainty is not addressed, there is a risk that building owners will postpone a thorough renovation effort to increase the certainty that the building is also defined as a zero-emission building by 2050 and thus has achieved the full financial benefits of having achieved an energy label "A".

It should therefore be included in the delegated act for the calculation of cost-optimality that early attainment of zero-emission building status will not be undermined by the required updates every five years.

5. **It shall be ensured that both the relevant cost categories and the socio-economic benefits are included in the calculation of the cost-optimal levels for renovations in the relevant building classes in accordance with Article 3(2)(c) of the consultation draft, relating to the listing of cost categories in Annex 1.**

Annex 1 for the calculation of cost optimality lists a large number of relevant cost categories that must be included in the calculations.

However, if a true socio-economic calculation of the cost optimality applicable to relevant building categories is to be carried out, then the benefits must also be included as requirements.

We must point out here the following advantages of a comprehensive renovation of existing properties, which must be included:

A. Benefits of improving the indoor climate

Quite a few places in the Building Directive point out that it must be ensured that not least in renovation efforts there is no deterioration of the indoor climate of buildings, and preferably of course an improvement, as joint consideration of energy and indoor climate considerations in the same renovation effort both provides the cheapest overall effect and at the same time prevents deterioration of the indoor climate, e.g. as a result of sealing the building without establishing additional ventilation.

An effort to improve the indoor climate and thus for the usability of the building will require a (small) extra investment. If this investment is not matched by an achieved effect converted into economic terms, then consideration of an improved indoor climate in the renovation effort will actually lower the level of the renovation scope.

It is therefore crucial that the calculation of the cost-optimal level for each building category includes the economic benefits of improving the building's indoor climate, with effects such as improved health, fewer sick days, fewer hospitalisations, improved productivity in offices, improved learning capacity in schools, reduced number of sick days for children in institutions, better recovery after the working day, etc.

There is extensive research in this area that can provide a basis for national determination of the benefits of improved indoor climate in the calculation of the cost-optimal level of renovation for each building category.

In a way, the current draft legislation already obliges Member States to include the benefits of improved indoor climate in buildings. The Energy Forum supports this amendment and recommends that this be translated even more clearly into the text.

B. Benefits for the energy system

The energy needs of buildings for heating make up a significant part of the total energy demand.

In practice, this energy demand defines the extent of the overall energy system's needs for production capacity, balancing capacity and for energy distribution infrastructure in relation to avoiding energy shortages during peak load situations.

In countries with a significant heating demand and with a significant part of the energy production coming from non-thermal renewable energy sources such as solar and wind, such peak load situations will typically occur on cold winter days when the sun is not shining and the wind is not blowing.

Here, energy efficiency of buildings is a cost-effective tool to lower winter consumption peaks and thus reduce the need for expansion of production capacity and infrastructure.

For countries where it is the peak load of the summer period that is dimensioning for the energy system, it will be lowering the need for cooling through the renovation effort that will be crucial.

This positive impact on the energy system will be a societal benefit and should therefore also be reflected in the setting of the cost-optimal maximum thresholds for zero-emission buildings.

This will also entail a reduction in energy prices for both households and businesses, thus contributing to the objective of improving the competitiveness of businesses.

However, those advantages are not included in the present draft act. Energy Forum Denmark will therefore propose that the legal act be amended so that it is required for Member States to include the positive value of savings in production capacity and distribution in the socio-economic calculation of cost-optimality.

C. Increased value after renovation

In addition to taking into account the calculated cost-optimal level of renovation for the building category to which the building in question belongs, the calculation should also take into account the economic benefits that a renovated and more attractive building provides. For example, it can be increased rental capacity, higher rental income, fewer empty leases, better energy labelling and wider possibilities of use – e.g. due to a better indoor climate. In addition, the need for maintenance and operation will often be reduced. All of this can significantly increase the value of the building.

However, it is difficult to put exact figures on these increases in value, as they depend on the current type of building, its use and, not least, the building's geographical location. Nevertheless, Energy Forum Denmark recommends that it be analysed whether the increase in value can be included as a recommendation or possibly even a factor in Annex 1 when calculating the cost-optimal renovation level.

6. Produced energy on-site should only be offset against the building's energy needs within the same month as production takes place as a maximum

Both the Building Directive and the draft calculation of cost-optimality still operate with the full annual possibility of fully offsetting produced renewable energy on-site against the building's annual energy needs. This is despite the fact that it is also stated that the building's energy needs must be calculated on at least a monthly basis.

In an energy system where renewable energy production such as solar and wind are gaining ground, and where transmission and distribution of electricity and heat are challenged by peak

load situations, this practice means that the costs of balancing, reserve production and distribution increase more than necessary.

For countries where there is a significant need for heating of buildings in winter, this practice will lead to an increase in the production of renewable energy during the summer period, when there is already an increasing number of hours of overproduction and negative electricity prices, and increased in the winter, when the cold winter days are dimensioning for the energy system.

For countries where there is a significant need for cooling of buildings in winter, there will be a much greater correlation between the production of electricity based on solar cells and the reduction of peak load, which coincides with production.

An introduction of a monthly balancing instead of an annual balancing between the renewable energy produced on-site and the requirements for the building's energy needs will be manageable to implement and will thus provide significant benefits for the energy systems in the countries that require heating, while there will not be much effect in the countries that require cooling.

The present draft legal act underlines that local energy production in or on buildings consumed at the same time as it is produced can only be offset against the building's energy needs. Energy Forum Denmark supports this.

Best regards

On behalf of Energy Forum Denmark

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