

**DECREE OF THE MINISTRY OF THE ENVIRONMENT AMENDING THE DECREE
OF THE MINISTRY OF THE ENVIRONMENT ON IMPROVING THE ENERGY
PERFORMANCE OF BUILDINGS UNDERGOING RENOVATION OR ALTERATION**

EXPLANATORY MEMORANDUM

1 General

The Decree of the Ministry of the Environment on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration was issued on 27 February 2013 as part of the national implementation of the recast Energy Performance of Buildings Directive (2010/31/EU).

1.1 Objective

The objective is to incorporate into the Decree of the Ministry of the Environment on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration the changes contained in formal notice 2016/2030 of the European Commission dated 29 April 2016.

In its response to formal notice 2016/2030 of the Commission, the Finnish Government stated, among other things, that the necessary amendments to the Decree can be made in early 2017.

1.2 Drafting

The Decree was drafted as part of official duties by the Buildings and Construction unit of the Department of the Built Environment at the Ministry of the Environment.

Requests for comments were sent to 37 different recipients (request for comments YM7/600/2016). The period for comments began on 18 October 2016 and closed on 25 November 2016. The request for comments was posted on the Ministry of the Environment's website and comments on the documents could be provided also by others than those included on the list of recipients invited to comment. A total of 28 persons or organisations submitted comments. There were four joint comments submitted. The draft decree underwent the technical notification procedure (2016/563/FIN). The three-month waiting time ended on 21 January 2017.

Comments were submitted both at the general level and relating to details. A separate summary of the comments has been produced.

Key proposals

Subsection 2 of section 1 containing a list of the categories of buildings to which the obligation to improve energy performance does not apply would be deleted, definitions for technical, functional and economic feasibility and for major renovation would be added and minimum efficiency requirements for heating systems would be set.

1.3 Authorisation to issue the decree

The Land Use and Building Act (132/1999) lays down provisions on the construction of buildings, and the authorisation to issue the decree is contained in section 117g of the Land Use and Building Act.

1.4 Effectiveness and requirements

The amendments are technical refinements in accordance with formal notice 2016/2030 of the European Commission dated 29 April 2016 that have no effects on requirement levels.

It has not been possible in this context to make updates to the references used in the Decree in other parts of the National Building Code of Finland as they are currently undergoing drafting. Updating in their respect will need to take place following their entry into force no later than on 1 January 2018.

For example, the term ‘major renovation’ is used also in other directives than the Energy Performance of Buildings Directive (EPBD). The term is also used in the Directive on the promotion of the use of energy from renewable sources (RES), (2009/28/EC), and in the Energy Efficiency Directive (EED), (2012/27/EU). The definitions of terms now introduced can also be utilised in future in evaluations of the impacts of directives in conjunction with preparation and implementation. Some terms are also used in other national decrees laying down provisions on construction.

2 Detailed rationale

1 Section 1 Scope of application

The intention is for the Decree to delete subsection 2 of section 1 containing a list of the categories of buildings to which the obligation to improve energy performance does not apply. The list is unnecessary because it has been added to section 117g of the Land Use and Building Act (132/1999). More detailed rationale is provided in government proposal HE 220/2016.

Section 1a Technical, economic and functional feasibility

A technically feasible solution improving the energy performance of a building undergoing renovation or alteration is a solution that is designed and implemented so that characteristics in accordance with sections 117a–117g of the Land Use and Building Act or in accordance with requirements laid down under those sections are not impaired compared with the existing design solution. A functionally feasible solution is one that does not result in the use of the building for its intended use being prevented. An economically feasible solution is a solution that on the basis of examination can be implemented cost-effectively.

For economic feasibility, the examination period shall be 30 years for residential buildings and 20 years for other buildings if the normal lifecycle of the building element or system or its part is not less than this.

Technical, functional and economic feasibility is currently described in the rationales of the Land Use and Building Act and the Decree of the Ministry of the Environment on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration. The formal notice of the Commission calls for more binding definitions to be provided. The wordings of the definitions will change slightly, if only because the text of the Decree must be written in a certain format. The intention is to add the definitions as section 1a of the Decree.

The definition of a technically feasible solution contains the essential technical requirements in accordance with the Land Use and Building Act, characteristics in accordance with which or in accordance with requirements laid down under which may not be impaired compared with the existing solution. The essential technical requirements also specify energy performance in accordance with section 117g, because the terms defined in this Decree are also used in other statutes concerning building and in part also in EU directives.

Under section 117g, subsection 2 of the Land Use and Building Act, energy efficiency must be improved in connection with renovation or alteration of a building or changes to the intended use of a building subject to a building or action permit if this is functionally and economically feasible.

Under section 175 of the Land Use and Building Act, under the conditions and restrictions referred to in section 171, the local building supervision authority may grant a building permit in the case of a minor deviation from provisions, regulations, prohibitions or other restrictions concerning building. (196/2016). In addition, a minor deviation from the technical and corresponding

requirements of a building requires that the deviation does not set aside the essential requirements of building.

Therefore, there would still be no obligation to conduct an evaluation of potential technical, functional or economic feasibility in cases other than those where a party engaging in a building project wishes to apply for an exemption from the requirements set by the Decree on those grounds. In other words, it is enough to comply with the requirement levels of the Decree of the Ministry of the Environment on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration and there is no need to separately justify compliance with them.

In cases where a party wishes to use economic feasibility as grounds for an exemption, the duration of the examination periods would be the same as that used when calculating cost-optimal levels in accordance with the EPBD. This is because the purpose of the calculations is to demonstrate a comparable project-specific difference from the requirement levels provided for the cost-optimal level concerning the entire building stock calculated using the examination periods in accordance with Commission Delegated Regulation (EU) No 244/2012, which are 30 years for residential buildings and 20 years for other buildings.

It is stated in the rationale of the Land Use and Building Act that the variables to be used for examining economic feasibility, are, as appropriate, the same as those for cost-optimality calculations used in general evaluation of national requirement levels. This makes it more coherent and simpler to compare calculation results.

2 Section 2 Planning for energy performance improvements

In conjunction with the planning required for a permit relating to a renovation or alteration project, the party engaging in the project must submit the measures intended to be taken to improve the building's energy performance specifically to building elements, systems or the entire building in accordance with the size of the project and the method decided by the party. *In conjunction with the planning required for a permit relating to a renovation or alteration project, the party engaging in the project must submit the measures intended to be taken to improve the building's energy performance specifically to building elements, systems or to the entire building in accordance with the size of the project and the method decided by the party. A renovation is major where the total cost, based on the cost of reconstruction, of the renovation relating to the building envelope or the technical building systems is higher than 25% of the value of the building, excluding the value of the land upon which the building is situated. For major renovations, the party engaging in the project shall demonstrate that the selected measures are at a cost-optimal level.*

The definition of ‘a major renovation’ would be almost word-for-word the same as Article 2(10)(a) of the recast Energy Performance of Buildings Directive (2010/31/EU).

”10. ‘major renovation’ means the renovation of a building where:

- (a) the total cost of the renovation relating to the building envelope or the technical building systems is higher than 25% of the value of the building, excluding the value of the land upon which the building is situated;”

The definition has been added to the third subsection of section 2.

Because no separate requirements have been set in Finland concerning major renovations, it is not necessary to evaluate major renovations separately in situations where the planned solution of a renovation project subject to a permit meets the requirement levels laid down in section 6 or section 7 or section 8 of the Decree of the Ministry of the Environment (4/13) on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration or, in case of technical systems, also the requirements levels laid down in section 5 of the Decree regardless of the selected alternative of section 6, section 7 or section 8. The requirement levels of the Decree of the Ministry of the Environment on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration (4/13) are cost-optimal levels as required by the Energy Performance of Buildings Directive. For this reason, it is also sufficient in the context of major renovations that the minimum requirement levels in accordance with the Decree of the Ministry of the Environment on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration (4/13) are met.

In other words, there is no need to specify separately whether a renovation is major or whether solutions are cost-optimal if the selected solutions meet the minimum requirements under the Decree of the Ministry of the Environment on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration (4/13). The selected measures can be demonstrated to be at a cost-optimal level by complying with the minimum requirement levels in accordance with the Decree of the Ministry of the Environment on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration (4/13). In Finland, buildings are typically renovated in stages, which means that renovations carried out at a time are usually not major when assessed on the basis of the definition in accordance with the Decree.

Section 5 Requirements for technical systems

When renovating, renewing or replacing technical building systems, the following requirements shall be complied with:

- 1) The quantity of heat that shall be recovered from extract air in the ventilation system is a quantity of heat corresponding to at least 45% of the

quantity of heat required for the heating of ventilation, that is, the annual efficiency of heat recovery shall be at least 45%.

2) The specific fan power of a mechanical supply and extract ventilation system may be a maximum of 2.0 kW/(m³/s).

3) The specific fan power of a mechanical extract ventilation system may be a maximum of 1.0 kW/(m³/s).

4) The specific fan power of a ventilation system may be a maximum of 2.5 kW/(m³/s).

5) *The efficiency of heating systems shall be improved insofar as any equipment and systems are renewed. Following renewal, the ratio of the efficiency of the building's primary heat generation system to the efficiency of the primary space heating distribution system shall be at least 0.8. The ratio shall be calculated as the quotient of the annual efficiencies of the primary heat generation system and the primary space heating distribution system. The annual efficiency of the primary heat generation system or the primary space heating distribution system shall be at least 0.73. Where a building's renewed primary heat generation system is a heat pump, the ratio of the heat pump's Seasonal Performance Factor (SPF) to the annual efficiency of the primary space heating distribution system shall be at least 2.4. The ratio shall be calculated as the quotient of the heat pump's SPF and the annual efficiency of the primary space heating distribution system. The specific electrical energy consumption of auxiliary units of a renewed primary space heating distribution system may be a maximum of 2.5 kWh/net m² (per net heated area).*

6) The provisions laid down concerning new buildings apply to the renewal of water and/or sewage systems.

The section contains the requirements for a building's technical systems as regards system renovation, renewal or replacement with entirely new ones. Amendments have only been made to paragraph 5 of the section.

The requirements have been determined so as to comply with good building practice and so as not to result in disadvantageous solutions when taking into account the remaining service life of equipment in existing building stock. The examinations have taken into account the prevailing current practice and cost effectiveness. Special attention has been paid in the determination of the requirement to avoiding barriers to trade. Furthermore, there has been an emphasis in the examinations on steering towards the increased prevalence of good solutions. Values in accordance with tables provided in Part D5 of the National Building Code of Finland: Guidelines for the calculation of power and energy needs for heating of buildings (2012) can be used when calculating the efficiency ratio.

For example, an oil-heated house where the oil boiler is replaced.

The oil boiler is replaced with a modern condensing oil boiler for which Table 6.6 of Part D5 of the National Building Code gives an annual efficiency of 0.87 (dividend).

The building has a hydronic primary heat distribution system with hot water radiators at 70/40 °C and with non-insulated distribution pipes. For this, Table 6.2 of Part D5 of the National Building Code gives an annual efficiency of 0.8 (divisor).

The annual efficiency of the primary heat generation system or the primary space heating distribution system must be at least 0.73. Both of the values of the table are greater than 0.73, which means they meet the requirement.

The ratio in accordance with section 5, paragraph 5 is calculated as the quotient of the annual efficiencies of the primary heat generation system and the primary space heating distribution system.

Following replacement, the ratio of the building's primary heat generation system to the primary space heating distribution system must be at least 0.8.

Division $0.87(\text{dividend})/0.8(\text{divisor})=1.0875(\text{quotient})$. The quotient is greater than the requirement under section 5, paragraph 5, 0.8, whereby the replacement of the oil boiler will not result in any additional measures.

Heat pump example

For example, an electrically heated house with hydronic underfloor heating as the primary space heating distribution system.

A geothermal heat pump is introduced alongside electrical heating as the primary heat generation system. The highest supply water temperature, 40 °C, is selected from Table 6.13 of Part D5 of the National Building Code, which means the SPF is 3.0 (dividend).

The building has hydronic 40/30 underfloor heating. Table 6.2 of Part D5 of the National Building Code gives an annual efficiency of 0.8 (divisor). The annual efficiency of the primary space heating distribution system must be at least 0.73, which means the building's heat distribution system meets the requirement set for the primary space heating distribution system.

The ratio in accordance with section 5, paragraph 5 is calculated as the quotient of the annual efficiencies of the heat pump's SPF (dividend) and the primary space heating distribution system (divisor).

Following replacement, the ratio of the building's primary heat generation system to the primary space heating distribution system must be at least 2.4.

Division 3.0(dividend)/0.8(divisor)=3.75(quotient). The quotient is greater than the requirement under section 5, paragraph 5, 2.4, whereby the introduction of the geothermal heat pump will not result in any additional measures.

2.1 Impacts of the proposed decree

Economic impacts

The proposed decree will not have economic impacts proper, impacts on the position of households, impacts on enterprises, impacts on overall economic development, the national economy or general government finances.

As the starting point is for the benefits generated by the investments to exceed the investment costs over an examination period of 30 years for residential buildings and 20 years for other buildings, the impacts are estimated to be to some extent positive over the 30- and 20-year periods due to reduced operating costs.

Impacts on the authorities' activities

The proposed decree is not estimated to have impacts on the duties or activities of central government authorities or the duties or procedures of municipal authorities. Meeting the essential technical requirements related to the energy performance of buildings has already been a condition for being granted a building permit.

Environmental impacts

The proposed decree is not estimated to have environmental impacts.

Societal impacts

The proposed decree is not estimated to have impacts on health as energy efficiency does not mean compromising on indoor conditions. The healthiness of buildings is ensured through good design and implementation.

The proposed decree is not estimated to have impacts on building users.

The proposed decree is not estimated to have employment impacts.

The proposed decree is not estimated to have impacts on business activities.

The proposed decree is not estimated to have impacts on the data protection or data security of citizens or enterprises.

The proposed decree is not estimated to have gender impacts.

3 Comments

The draft decree was circulated for comments from 18 October to 25 November 2016.

4 Legislative editing

The proposed decree has undergone legislative editing by the Unit of Legislative Inspection of the Law Drafting Department of the Ministry of Justice.