Draft

Decree of the Ministry of the Environment

on the energy performance requirements for certain technical building systems

By decision of the Ministry of the Environment, the following is enacted pursuant to section 37(5) of the Construction Act (751//2023), as it stands in Act xx/20xx, and section 118(3):

Section 1

Scope

This Regulation applies to the construction of new buildings, the repair and alteration of buildings and changes to the intended use of buildings, where the building consists of a roofed structure with walls, and energy is used to maintain the quality of the indoor environment in accordance with the building's intended use.

This Regulation establishes energy performance requirements for self-regulating devices, building automation and control systems, on-site renewable energy production and energy storage.

Section 2

Definitions

For the purposes of this Decree, the following definitions shall apply:

1) *technical building system* means the technical equipment used in a building or part of a building for the heating and cooling of the premises, ventilation, domestic hot water, built-in lighting, building automation and control, on-site renewable energy production and energy storage, or a combination thereof, including systems that use energy from renewable sources;
2) *building automation and control system* means a system covering all products, software and engineering services that can support the energy efficient, economical and safe operation of technical building systems through automatic controls and by facilitating the manual management of these technical building systems;
3) *on-site renewable energy generation* means a system installed in a building or on the land on which it is situated, designed for the generation of renewable energy and, where applicable, energy storage, and connected to the building and its energy systems;
4) *energy storage* means a system installed in a building or on the land on which it is situated, designed to store energy for later use and to compensate for the time lag between energy production and consumption;
5) *self-regulating devices* means devices that automatically adjust the heating or cooling capacity of premises according to settings;
6) *refrigeration unit* means the part of an air-conditioning system that provides useful cooling to optimise levels of healthy indoor air quality, including comfort levels;
7) *energy from renewable sources* means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, osmotic energy, ambient energy, tidal energy, wave energy and other ocean energy, hydropower, biomass, gas and biogas produced at landfills and sewage treatment plants;

8) *heat generator* means the part of a heating system that generates useful heat using one or more of the following processes: combustion of fuels, the Joule effect in heating elements of an electric resistance heating system and heat recovery from ambient air, ventilation exhaust air or a water or geothermal heat source with the use of a heat pump;
9) *technical feasibility* means the application of regulations in such a way that it does not result in significant changes to the building or its heating, cooling or ventilation systems, or combinations thereof;
10) *economic feasibility* means the application of regulations in such a way that the total expected benefits of the investment outweigh the investment and operating costs;
11) *functional feasibility* means the application of provisions in a way that does not impede the functioning of the system or the use of the building for its intended purpose.

Section 3

Installation of self-regulating equipment in a new building

Anyone embarking on a construction project must ensure that self-regulating devices are installed in new buildings. Self-regulating devices shall be installed in such a way that they regulate the temperature in each room individually. If the requirements for the indoor environment of premises in the area are the same, or if the rooms in the area are not structurally separated from one another, self-regulating devices may be installed in such a way that they regulate the temperature within a specified heated or cooled area of the building. If self-regulating devices are installed in a fluid-circulation network, the network shall be balanced after installation.

The provisions of subsection 1 shall apply where the installation of self-regulating devices is technically and economically feasible.

Section 4

Installation of self-regulating devices when a building heat generator, heat distribution centre or cooling generator is replaced

When a building's heat generator, heat distribution centre or cooling units are replaced or added, the party undertaking the construction project must ensure that self-regulating devices are installed in those rooms where the heat generator, heat distribution centre or cooling unit being replaced or added will be used for heating or cooling. Self-regulating devices shall be installed in such a way that they regulate the temperature in each room individually. If the requirements for the indoor environment of premises in the area are the same, or if the rooms in the area are not structurally separated from one another, self-regulating devices may be installed in such a way that they regulate the temperature within a specified heated or cooled area of the building. If self-regulating devices are installed in a fluid-circulation network, the network shall be balanced after installation.

The provisions of subsection 1 shall apply where the installation of self-regulating devices is technically and economically feasible.

Section 5

Energy efficiency requirements for building automation and control systems, on-site renewable energy production systems and energy storage systems

Where a building automation and control system, an on-site renewable energy production system or an energy storage system is designed and constructed, the system shall meet energy performance requirements in terms of overall system energy performance, appropriate dimensioning, correct installation, proper commissioning and control, and, where appropriate, fluid circulation balancing.

The requirements established in subsection 1 above shall apply to the construction of new buildings and to the installation, replacement or upgrading of systems, provided that meeting such requirements is technically, economically and operationally feasible. Requirements shall be met while taking into account the design conditions and typical or average operating conditions.

Section 6

Total energy efficiency of the automation and control system

A specialist designer must plan the building's automation and control system in a way that ensures that the system is capable of controlling and monitoring the technical systems and equipment that are key to the building's energy consumption, with a view to optimising energy use. The control system must be designed and implemented in such a way that the building and its technical systems will function in accordance with their intended purpose. The building automation and control system must, for its part, ensure that a good, healthy and safe indoor climate is achieved in an energy-efficient manner.

Section 7

Overall energy efficiency of the on-site renewable energy production system and energy storage system

The specialist designer must plan the on-site renewable energy production system and the energy storage system so that they operate energy-efficiently and are connected to the building's energy system in such a way that the energy generated can be efficiently exploited in the building.

Section 8

Appropriate dimensioning of the automation and control system

Specialist designers shall, in accordance with their tasks, ensure that a building automation and control system is designed and dimensioned to work together with the technical systems of the building to optimise energy use. The design and dimensioning shall take into account the target indoor conditions, the building type, the potential energy savings, the design conditions and typical or average operating conditions.

Section 9

Appropriate dimensioning of the on-site renewable energy production system and energy storage system

The specialist designer must design and dimension the on-site renewable energy production system and energy storage system to be energy-efficient, taking into account the building type and its use, energy-saving potential, the time lag between energy production and demand,

energy cost savings, local conditions, design conditions and typical or average operating conditions, as well as any constraints that may affect the design.

Section 10

Installation of an automation and control system

The person responsible for the building automation and control system during the construction phase must include a report on the conformity of the installation with the plans as part of the construction inspection document. They must also make a note in the inspection document and its summary confirming that the system is operating as planned.

Section 11

Installation of on-site renewable energy production and energy storage systems

The person responsible for the construction phase of the on-site renewable energy generation system and energy storage system shall ensure that the on-site renewable energy generation system and energy storage system are installed in the building or structures as planned and in a way that ensures the most energy-efficient operation of the systems while also ensuring that they do not have an adverse effect on the functionality of structures, the building or its users.

Section 12

Requirements for the commissioning of automation and control systems

The person responsible for the building automation and control system during the construction phase must include a report on the functioning of measuring devices, control and regulation circuits as well as the reports' conformity with plans as part of the construction inspection document. They must also make a note in the inspection document and its summary confirming that the system is operating as planned.

Section 13

Requirements for the putting into operation of the on-site renewable energy production system and the energy storage system

The responsible person for the on-site renewable energy production system and energy storage system construction phase shall verify that the operation, design compliance and electrical safety of the on-site renewable energy production system and energy storage system have been checked and, where applicable, the liquid-based network balanced before commissioning. The inspection report must be included in the construction inspection document, and a note must be made in the summary of the inspection document to confirm that the work has been carried out as planned.

Section 14

Requirements for the control of automation and control systems

The specialist designer must ensure that the building's automation and control system includes user interfaces that are tailored to the building and suitable for different user groups, in order to ensure proper use and ease of use. The specialist designer must ensure that the building's automation and control system includes a function for displaying information on the building's energy performance and any deviations from the target values for the building's environmental conditions.

Section 15

Requirements for steering the on-site renewable energy production system and the energy storage system

The specialist designer shall ensure that the on-site renewable energy production system, energy storage system or building automation and control system includes a means of displaying information on the amount of renewable energy generated and their diversion to own consumption, storage or public energy networks, or a method by which such information can be determined.

Section 16

Electrical devices and equipment

The Electrical Safety Act (1135/2016) establishes the requirements for electrical devices and equipment, demonstrating and monitoring the conformity of electrical devices and equipment, and electrical works and their monitoring.

Section 17

Verification and recording of the overall energy performance of the system

Following the installation, a replacement or upgrading of a building's automation and control system, an on-site renewable energy production system or an energy storage system, the person responsible for the construction phase make an entry in the construction inspection document and its summary regarding the systems' compliance with the plans.

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This Decree enters into force on [date] [month] 20xx.

Upon the entry into force of this Decree, pending projects are subject to the provisions valid at the time of entry into force of this Decree.

This Decree repeals the Ministry of the Environment's Decree on the energy efficiency requirements for certain technical systems (718/2020).

Helsinki xx xx 20xx

Minister of ... First name Last name

Nimike Etunimi Sukunimi