Article 4

Setting of minimum energy performance requirements

1. Member States shall take the necessary measures to ensure that minimum energy performance requirements for buildings or building units are set with a view to achieving cost-optimal levels. The energy performance shall be calculated in accordance with the methodology referred to in Article 3. Cost-optimal levels shall be calculated in accordance with the comparative methodology framework referred to in Article 5 once the framework is in place.

Member States shall take the necessary measures to ensure that minimum energy performance requirements are set for building elements that form part of the building envelope and that have a significant impact on the energy performance of the building envelope when they are replaced or retrofitted, with a view to achieving cost-optimal levels.

When setting requirements, Member States may differentiate between new and existing buildings and between different categories of buildings.

These requirements shall ~~take account of~~not be prejudicial to indoor climate requirements set in accordance with Article 4a and general indoor climate conditions rated in accordance with Annex IB, in order to avoid possible negative effects such as inadequate ventilation, high pollutant concentration levels, and overheating, ~~as well as~~and shall take account of local conditions and the designated function and the age of the building.

A Member State shall not be required to set minimum energy performance requirements which are not cost-effective over the estimated economic lifecycle.

Minimum energy performance requirements shall be reviewed at regular intervals which shall not be longer than five years and, if necessary, shall be updated in order to reflect technical progress in the building sector.

2. Member States may decide not to set or apply the requirements referred to in paragraph 1 to the following categories of buildings:

(a) buildings officially protected as part of a designated environment or because of their special architectural or historical merit, in so far as compliance with certain minimum energy performance requirements would unacceptably alter their character or appearance;

(b) buildings used as places of worship and for religious activities;

(c) temporary buildings with a time of use of two years or less, industrial sites, workshops and non-residential agricultural buildings with low energy demand and non-residential agricultural buildings which are in use by a sector covered by a national sectoral agreement on energy performance;

(d) residential buildings which are used or intended to be used for either less than four months of the year or, alternatively, for a limited annual time of use and with an expected energy consumption of less than 25 % of what would be the result of all-year use;

(e) stand-alone buildings with a total useful floor area of less than 50 m2.

Article 4a

Setting of indoor climate requirements

1. Member States shall take the necessary measures to ensure that minimum indoor climate requirements for buildings or building units designed for human occupancy, and building elements that have a significant impact on the indoor climate performance of the building when they are replaced or retrofitted, are set with a view to optimise health, indoor air quality and comfort levels of building occupants in so far as this is technically, functionally, environmentally and economically feasible. Optimal health, indoor air quality and comfort levels shall be set with reference to the common framework methodology in Annex IB.

Minimum indoor climate requirements shall be reviewed at regular intervals which shall not be longer than five years and, if necessary, shall be updated in order to reflect changes in technical, functional, environmental and economic feasibility.

2. Member States may decide not to set or apply the requirements referred to in paragraph 1 to the following categories of buildings:

(a) buildings officially protected as part of a designated environment or because of their special architectural or historical merit, in so far as compliance with certain minimum indoor climate requirements would unacceptably alter their character or appearance;

(b) buildings used as places of worship and for religious activities;

(c) temporary buildings with a time of use of two years or less, industrial sites, workshops and non-residential agricultural buildings;

(d) residential buildings which are used or intended to be used for either less than four months of the year or, alternatively, for a limited annual time of use;

(e) stand-alone buildings with a total useful floor area of less than 50 m2.

[…]

Article 6

New buildings

1. Member States shall take the necessary measures to ensure that new buildings meet the minimum energy performance and indoor climate requirements laid down in accordance with Article 4 and Article 4a.

2. Member States shall ensure that, before construction of new buildings starts, the technical, environmental and economic feasibility of high-efficiency alternative systems, if available, is taken into account.

Article 7

Existing buildings

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Member States shall take the necessary measures to ensure that when buildings undergo major renovation, the energy performance of the building or the renovated part thereof is upgraded in order to meet minimum energy performance requirements set in accordance with Article 4 in so far as this is technically, functionally and economically feasible.

Member States shall in addition take the necessary measures to ensure that when buildings undergo renovation, or when a building element that forms part of the building envelope and has a significant impact on the indoor climate is retrofitted or replaced, the indoor climate of the building is preserved or improved to meet minimum indoor climate requirements set in accordance with Article 4a.

Those requirements shall be applied to the renovated building or building unit as a whole. Additionally or alternatively, requirements may be applied to the renovated building elements.

Member States shall in addition take the necessary measures to ensure that when a building element that forms part of the building envelope and has a significant impact on the energy performance of the building envelope, is retrofitted or replaced, the energy performance of the building element meets minimum energy performance requirements in so far as this is technically, functionally and economically feasible.

Member States shall determine these minimum energy performance requirements in accordance with Article 4.

Member States shall encourage, in relation to buildings undergoing major renovation, high-efficiency alternative systems and systems which significantly improve healthy indoor climate conditions, in so far as this is technically, functionally and economically feasible, and shall address ~~the issues of healthy indoor climate conditions,~~ fire safety and risks related to intense seismic activity.

Article 8

Technical building systems, electromobility and smart readiness indicator

1. Member States shall, for the purpose of optimising the energy use of technical building systems and their impact on indoor climate, set system requirements in respect of the overall energy performance and indoor climate, the proper installation, and the appropriate dimensioning, adjustment and control of the technical building systems which are installed in existing buildings. Member States may also apply these system requirements to new buildings.

System requirements shall be set for new, replacement and upgrading of technical building systems and shall be applied in so far as they are technically, economically and functionally feasible.

Member States shall require new buildings, where technically and economically feasible, to be equipped with self-regulating devices for the separate regulation of the ~~temperature~~ indoor climate conditions in each room or, where justified, in a designated heated zone of the building unit. In existing buildings, the installation of such self-regulating devices shall be required when heat or cooling generators or ventilation units are replaced, where technically and economically feasible.

[…]

9. Member States shall ensure that, when a technical building system is installed, replaced or upgraded, the overall energy performance and impact on indoor climate of the altered part, and where

relevant, of the complete altered system, is assessed. The results shall be documented and passed on to the building owner, so that they remain available and can be used for the verification of compliance with the minimum requirements laid down pursuant to paragraph 1 of this Article and the issue of energy performance certificates. Without prejudice to Article 12, Member States shall decide whether to require the issuing of a new energy performance certificate.

[…]

Article 11

Energy performance certificates

1. Member States shall lay down the necessary measures to establish a system of certification of the energy performance of buildings. The energy performance certificate shall include the energy performance and an evaluation of the indoor climate conditions in accordance with Annex IB of a building and reference values such as minimum energy performance and indoor climate requirements in order to make it possible for owners or tenants of the building or building unit to compare and assess its energy performance and indoor climate.

The energy performance certificate may include additional information such as the annual energy consumption for non-residential buildings and the percentage of energy from renewable sources in the total energy consumption.

2. The energy performance certificate shall include recommendations for the cost-optimal or cost-effective improvement of the energy performance and indoor climate of a building or building unit, unless there is no reasonable potential for such improvement compared to the energy performance and indoor climate requirements in force.

The recommendations included in the energy performance certificate shall cover:

(a) measures carried out in connection with a major renovation of the building envelope or technical building system(s); and

(b) measures for individual building elements independent of a major renovation of the building envelope or technical building system(s).

3. The recommendations included in the energy performance certificate shall be technically feasible for the specific building and may provide an estimate for the range of payback periods or cost-benefits over its economic lifecycle.

4. The energy performance certificate shall provide an indication as to where the owner or tenant can receive more detailed information, including as regards the cost-effectiveness of the recommendations made in the energy performance certificate. The evaluation of cost effectiveness shall be based on a set of standard conditions, such as the assessment of energy savings, and indoor climate improvements including cost-indicators for health and productivity improvements, and underlying energy prices and a preliminary cost forecast. In addition, it shall contain information on the steps to be taken to implement the recommendations. Other information on related topics, such as energy audits or incentives of a financial or other nature and financing possibilities may also be provided to the owner or tenant.

5. Subject to national rules, Member States shall encourage public authorities to take into account the leading role which they should play in the field of energy performance of buildings, inter alia, by implementing the recommendations included in the energy performance certificate issued for buildings owned by them within its validity period.

6. Certification for building units may be based:

(a) on a common certification of the whole building; or

(b) on the assessment of another representative building unit with the same energy-relevant and indoor climate-relevant characteristics in the same building.

7. Certification for single-family houses may be based on the assessment of another representative building of similar design and size with a similar actual energy -performance and indoor climate quality if such correspondence can be guaranteed by the expert issuing the energy performance certificate.

8. The validity of the energy performance certificate shall not exceed 10 years.

9. The Commission shall, by 2011, in consultation with the relevant sectors, adopt a voluntary common European Union certification scheme for the energy -performance of non-residential buildings. That measure shall be adopted in accordance with the advisory procedure referred to in Article 26(2). Member States are encouraged to recognise or use the scheme, or use part thereof by adapting it to national circumstances.

[…]

Article 14

Inspection of heating systems

1. Member States shall lay down the necessary measures to establish regular inspections of the accessible parts of heating systems or of systems for combined space heating and ventilation, with an effective rated output of over 70 kW, such as the heat generator, control system and circulation pump(s) used for heating buildings. The inspection shall include an assessment of the efficiency and sizing of the heat generator compared with the heating requirements of the building, an assessment of the impact of the heating system on the indoor climate of the building, and, where relevant, consider the capabilities of the heating system or of the system for combined space heating and ventilation to optimise its performance under typical or average operating conditions.

Where no changes have been made to the heating system or to the system for combined space heating and ventilation or to the heating requirements of the building following an inspection carried out pursuant to this paragraph, Member States may choose not to require the assessment of the heat generator sizing to be repeated.

Article 15

Inspection of air-conditioning systems

1. Member States shall lay down the necessary measures to establish regular inspections of the accessible parts of air-conditioning systems or of systems for combined air-conditioning and ventilation, with an effective rated output of over 70 kW. The inspection shall include an assessment of the

efficiency and sizing of the air-conditioning system compared with the cooling requirements of the building, an assessment of the impact of the air-conditioning system on the indoor climate of the building, and, where relevant, consider the capabilities of the air-conditioning system or of the system for combined air-conditioning and ventilation to optimise its performance under typical or average operating conditions.

Where no changes have been made to the air-conditioning system or to the system for combined air-conditioning and ventilation or to the cooling requirements of the building following an inspection carried out pursuant to this paragraph, Member States may choose not to require the assessment of the sizing of the air-conditioning system to be repeated.

Member States that maintain more stringent requirements pursuant to Article 1(3) shall be exempt from the obligation to notify them to the Commission.

Article 15a

Inspection of stand-alone ventilation systems

1. Member States shall lay down the necessary measures to establish regular inspections of the accessible parts of ventilation systems with an effective rated air volume flow of over [XXX] m^3/h. The inspection shall include an assessment of the efficiency and sizing of the ventilation system compared with the indoor air quality requirements of the building and its use and, where relevant, consider the capabilities of the ventilation system to optimise its performance under typical or average operating conditions related to indoor air quality performance requirements.

Where no changes have been made to the ventilation system or to the indoor air quality requirements of the building following an inspection carried out pursuant to this paragraph, Member States may choose not to require the assessment of the sizing of the ventilation system to be repeated.

Member States that maintain more stringent requirements pursuant to Article 1(3) shall be exempt from the obligation to notify them to the Commission.

Article 16

Reports on the inspection of heating and air-conditioning systems

1. An inspection report shall be issued after each inspection of a heating, ventilation or air-conditioning system. The inspection report shall contain the result of the inspection performed in accordance with Article 14, ~~or~~ 15, or 15a and include recommendations for the cost-effective improvement of the energy performance of the inspected system and the improvement of the system's impact on the indoor climate.

The recommendations may be based on a comparison of the energy performance of the system inspected or its impact on indoor climate with that of the best available feasible system and a system of similar type for which all relevant components achieve the level of energy performance and indoor climate required by the applicable legislation.

2. The inspection report shall be handed over to the owner or tenant of the building.

Article 17

Independent experts

Member States shall ensure that the energy performance certification of buildings and the inspection of heating systems, ventilation systems, and air-conditioning systems are carried out in an independent manner by qualified and/or accredited experts, whether operating in a self-employed capacity or employed by public bodies or private enterprises.

Experts shall be accredited taking into account their competence.

Member States shall make available to the public information on training and accreditations. Member States shall ensure that either regularly updated lists of qualified and/or accredited experts or regularly updated lists of accredited companies which offer the services of such experts are made available to the public.

Article 18

Independent control system

1. Member States shall ensure that independent control systems for energy performance certificates and reports on the inspection of heating, ventilation, and air-conditioning systems are established in accordance with Annex II. Member States may establish separate systems for the control of energy performance certificates and for the control of reports on the inspection of heating, ventilation, and air-conditioning systems.

2. The Member States may delegate the responsibilities for implementing the independent control systems.

Where the Member States decide to do so, they shall ensure that the independent control systems are implemented in compliance with Annex II.

3. Member States shall require the energy performance certificates and the inspection reports referred to in paragraph 1 to be made available to the competent authorities or bodies on request.

[…]

Article 20

Information

1. Member States shall take the necessary measures to inform the owners or tenants of buildings or building units of the different methods and practices that serve to enhance energy performance.

2. Member States shall in particular provide information to the owners or tenants of buildings on energy performance certificates, including their purpose and objectives, on cost-effective measures and, where appropriate, financial instruments, to improve the energy performance and indoor climate of the building, and on replacing fossil fuel boilers with more sustainable alternatives. Member States shall provide the information through accessible and transparent advisory tools such as renovation advice and one-stop-shops.

At the request of the Member States, the Commission shall assist Member States in staging information campaigns for the purposes of paragraph 1 and the first subparagraph of this paragraph, which may be dealt with in Union programmes.

[…]

Annex IB

Common general framework for evaluating the indoor climate conditions

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1. The Commission shall establish the definition of the indoor climate condition parameters and a methodology by which these are to be calculated, in order to assess the capabilities of a building or building unit to optimise the health, indoor air quality and comfort levels of building occupants.

The indoor climate condition parameters shall cover indoor air quality, thermal comfort, lighting, and acoustics. The methodology shall take into account:

(a) measured or modelled indoor air temperature in heating season, cooling season and shoulder seasons;

(b) measured noise levels from technical building systems;

(c) measured or modelled ventilation rates or maximum CO2 concentrations in indoor air;

(d) modeled daylight factors;

(e) measured illuminance.

2. The methodology shall not negatively affect existing national energy performance certification schemes and shall build on related initiatives at national level, while taking into account the principle of occupant ownership, data protection, privacy and security, in compliance with relevant Union data protection and privacy law as well as best available techniques for cyber security.

3. The methodology shall set out the most appropriate format of the indoor climate condition indicator and shall be simple, transparent, and easily understandable for consumers, owners, and investors.

[…]

ANNEX III

Comparative methodology framework to identify cost-optimal levels of energy performance requirements for buildings and building elements

The comparative methodology framework shall enable Member States to determine the energy performance of buildings and building elements and the economic aspects of measures relating to the energy performance, and to link them with a view to identifying the cost-optimal level.

The comparative methodology framework shall be accompanied by guidelines outlining how to apply this framework in the calculation of cost-optimal performance levels.

The comparative methodology framework shall allow for taking into account use patterns, outdoor climate conditions, indoor climate conditions, improvements in health outcomes and productivity, investment costs, building category, maintenance and operating costs (including energy costs and savings), earnings from energy produced, where applicable, and disposal costs, where applicable. It should be based on relevant European standards relating to this Directive.

The Commission shall also provide:

— guidelines to accompany the comparative methodology framework; these guidelines will serve to enable the Member States to undertake the steps listed below,

— information on estimated long-term energy price developments.

For the application of the comparative methodology framework by Member States, general conditions, expressed by parameters, shall be laid down at Member State level.

The comparative methodology framework shall require Member States to:

— define reference buildings that are characterised by and representative of their functionality and geographic location, including indoor and outdoor climate conditions. The reference buildings shall cover residential and non-residential buildings, both new and existing ones,

— define energy efficiency measures to be assessed for the reference buildings. These may be measures for individual buildings as a whole, for individual building elements, or for a combination of building elements,

— assess the final and primary energy need of the reference buildings and the reference buildings with the defined energy efficiency measures applied,

— calculate the costs (i.e. the net present value) of the energy efficiency measures (as referred to in the second indent) during the expected economic lifecycle applied to the reference buildings (as referred to in the first indent) by applying the comparative methodology framework principles.

By calculating the costs of the energy efficiency measures during the expected economic lifecycle, the cost-effectiveness of different levels of minimum energy performance requirements is assessed by the Member States. This will allow the determination of cost-optimal levels of energy performance requirements.