

## EVIA Position on the proposal of the Energy Efficiency Directive

EVIA, the European Ventilation Industry Association, welcomes the revision proposals for the Renewable Energy and Energy Efficiency Directives as part of the Fit for 55 legislative package.

In light of the concerted effort required to reduce emissions by at least 55% by 2030 and to subsequently attain climate neutrality by 2050, EVIA considers that an integrated approach towards buildings, drawing on the synergies between these key pieces of legislation, is imperative. This is especially the case regarding the large untapped potential for heat and cold recovery from exhaust air, which, if promoted properly, has the potential to achieve significant energy savings through a reduction of the heating and cooling energy demand of buildings.

Both the Renewable Energy Directive (RED) and the Energy Efficiency Directive (EED) have a role to play in this. We therefore recommend that ventilation heat and cold recovery is better promoted in the proposals for the EED and RED. Furthermore, we urge to consider the nexus between energy efficiency and health through implications for Indoor Environment/Air Quality (IEQ/IAQ) and recommend that the revised EED takes this into account along the lines described in this paper.

### Energy Efficiency Directive – EVIA’s positions

#### 1. Article 3: Ensure a stringent implementation of the Energy Efficiency First while avoiding negative side effects on the health and well-being of building occupants

EVIA supports the Energy Efficiency First principle (EE1) but is concerned that its implementation could potentially lead to negative outcomes for other equally important aspects, including Indoor Environment Quality (IEQ) and Indoor Air Quality (IAQ). As such, the Energy Efficiency First Principle should be a guiding principle but must be weighed against other benefits. Setting the right level of requirements will be essential in ensuring that no undesired side-effects occur.

In this respect, EVIA welcomes the ‘Recommendation and Guidelines on the Energy Efficiency First principle’<sup>1</sup> published by the European Commission and the acknowledgement therein that the relation between energy efficiency and Indoor Air Quality can also be negative depending on the ventilation extracted air level resulting from the efficiency improvements. **Ensuring an adequate mechanical ventilation extracted air level in increasingly energy efficient (and therefore air-tight) buildings is imperative if energy efficiency improvements are not to negatively impact on health. Even though they are very efficient, ventilation systems need electricity to operate and need to be provided a sufficient amount of it to perform as required.** Therefore, it must be closely monitored and ensured that the implementation of the EE1 principle by Member States does not result in negative side-effects, especially on health.

#### 2. Articles 5-7: The public sector must lead on energy performance and Indoor Air Quality

EVIA welcomes the increased efforts proposed by the Commission to ensure that public bodies and buildings lead the way in terms of energy efficiency. The introduction of a new energy saving target for the public sector and the requirement to renovate buildings occupied by public bodies to Nearly Zero Energy Building (NZEB) Standard are important steps in the right direction.

The installation of more energy efficient technical building systems (TBS) during renovations also provides an opportunity to deliver improvements in Indoor Environment Quality (IEQ) and particularly Indoor Air Quality (IAQ)

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<sup>1</sup> [Commission Recommendation on Energy Efficiency First: from principles to practice](#)

thanks to mechanical ventilation. **Specific renovation requirements should be set for the different types of buildings and especially for schools, in which Indoor Air Quality parameters have proven to be critical in the context of the Covid crisis.**

Furthermore, public procurement criteria must support the uptake of sustainable TBS in a harmonized fashion. Article 7 of the Commission’s proposal includes the option of applying ‘wider sustainability standards’ in public procurement. However, if the Member States are entitled to voluntarily apply wider sustainability criteria, i.e. life-cycle emissions there is a risk that this will result in Member States pursuing asymmetric approaches creating barriers to the single market and depriving the green transition of economies of scale. Such discussions in the contexts of Ecodesign & Energy Labelling (ErP) and of the Sustainable Products Initiative (SPI) as well as the revision of MEErP are currently insufficiently mature to deliver harmonised requirements at the EU level. Efforts at the Member State level risk undermining and delaying efforts towards harmonisation, whilst further fragmenting the internal market. As such, prior to the adoption of sustainability requirements under ErP and/or elsewhere, where they exist for specific product groups, **Member States should be required to make use of the EU Green Public Procurement (GPP) criteria** ‘core’ level specifications if they wish to apply wider sustainability criteria. If they wish to go even further, they can make use of the ‘comprehensive’ level specifications.

To promote the further uptake of sustainable TBS, the Commission should be mandated in the revised EED to adopt GPP criteria for other Technical Building Systems (TBS) by the end of 2025, i.e. heating, cooling and mechanical ventilation, and for other categories of public buildings by the end of 2025, i.e. schools, hospitals, public housing and leisure facilities. These criteria should include clear definitions, measurement and quantification methodologies for improved Indoor Environment Quality (IEQ) and Indoor Air Quality (IAQ).

### **3. Articles 23 & 24: Promote the recovery of of heat and cold from indoor air to significantly reduce the energy consumption relative to heating and cooling in buildings**

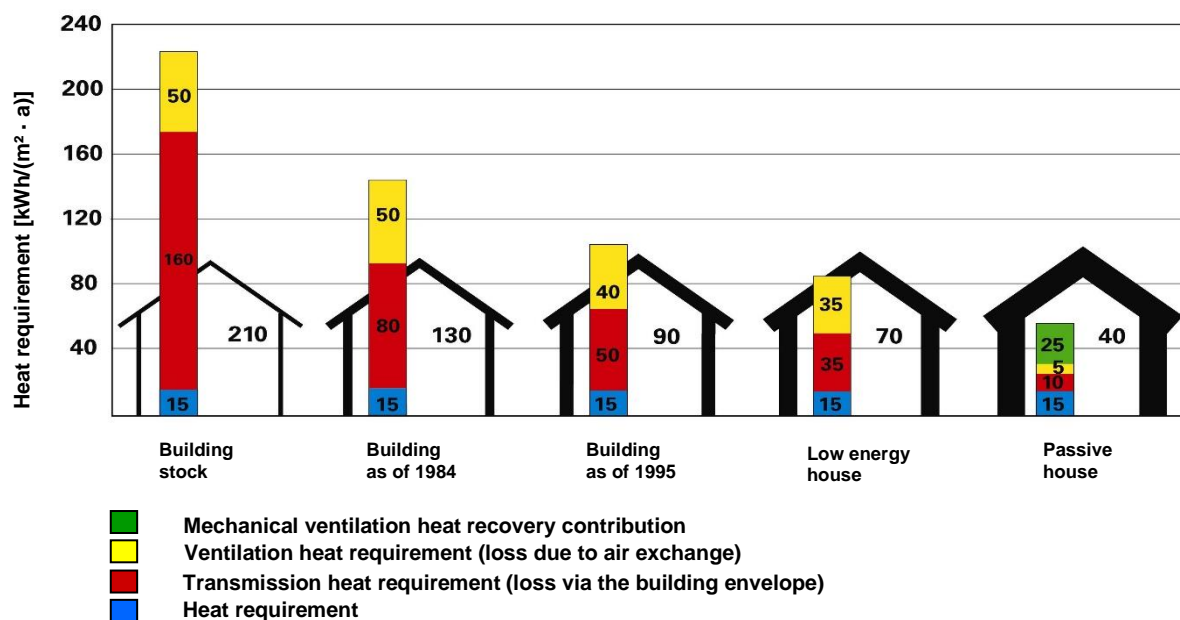
Reducing heating and cooling needs in buildings has a great potential to improve energy efficiency. It should be addressed specifically and supported accordingly. To come to a carbon neutral economy by 2050, fossil fuels in heating and cooling should be phased out as early as possible. **The recovery of heat and cold from indoor air in buildings should be promoted as it can significantly reduce the energy consumption necessary for heating and cooling in the first place, and therefore significantly facilitate the decarbonization of the sector.** An illustration of this potential is provided in Figure 1<sup>2</sup> below.

To simply illustrate the benefit of mechanical ventilation heat recovery, such a system, with a 90% efficiency heat exchanger, would allow to preheat, with an indoor air temperature of 20°C, outside 0°C incoming air, to 18°C without consuming additional electricity. The heating device of the building would then only raise the incoming air temperature by 2°C instead of 20°C. This illustrates the very significant energy consumption optimization potential of mechanical ventilation. Demand-controlled ventilation, which unlike window airing, limits thermal losses to what is strictly necessary to sufficiently renew inside air, is also particularly efficient to reduce the heating and cooling needs of buildings.

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<sup>2</sup> [Hamburgisches Weltwirtschaftsinstitut & Shell Deutschland: Shell Hauswärmestudie 2011.](#)

The recovery of heat and cold from indoor air in buildings is undoubtedly one of the most efficient means to reduce the carbon footprint of the building sector. Statistically, less than 5%<sup>3</sup> of buildings in the EU are equipped with ventilation energy recovery systems. Thus, recognising and promoting the potential of this simple measure would tap into an enormous potential and contribute significantly to reaching the EU’s climate goals, since approximately 40% of heating demand in European buildings is caused by thermal infiltration (i.e. through window airing) and ventilation losses<sup>4</sup>. Recovering energy through ventilation systems can be very effective in this regard, by reducing the primary space heating and cooling demand and, thus, energy demand, by recovering for re-use what would otherwise be wasted heat/energy. Public financing should be made available not just to non-fossil fuel heating technologies but also to heat and cold recovery technologies. **In consequence, EVIA would like to highlight that heat and cold recovery, better called energy recovery, in ventilation systems should be fully considered in the scope of Article 23 and as a contribution to reaching the renewable energy targets in the Renewable Energy Directive (RED).**



**The Comprehensive Heating and Cooling Assessments required by Article 23(1) should therefore explicitly include the energy saving potential of heat and cold recovery from all vectors, including that of air, in its scope.** Furthermore, energy recovery from ventilation systems should be added as a technology to be considered in the scope of the assessment under Annex IX, paragraph 7.

#### 4. Article 27: Energy services

It is EVIA’s view that Member States should encourage public bodies to combine energy performance contracting with services bringing additional benefits such as an appropriate indoor environment/air quality. Such combined approaches have started to be developed in some Member States, have proved very effective and ought to be spread. Examples of such extended performance contracting have been implemented for instance in Germany and Austria for some time already and are being developed also in France.

<sup>3</sup> [Review study on the Ecodesign and Energy Regulations on ventilation units ENTR Lot 6 \(2020\)](#): Phase 1.1 and phase 1.2, Final Report, Task 2 Markets, fig. 2 Residential and fig. 3 Non-residential

<sup>4</sup> [Average EU heat balance for space heating \(VHK 2014\)](#)

## **5. Article 29: Conversion factors and primary energy factors**

Member States should also be entitled to use final energy to set energy efficiency requirements and calculate energy savings. To facilitate consumer involvement in reducing energy consumption, final energy is the more suitable metric since it is more easily understandable compared to primary energy.

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### **About EVIA**

The European Ventilation Industry Association (EVI)'s mission is to represent the views and interests of the ventilation industry and serve as a platform between all the relevant European stakeholders involved in the ventilation sector, such as decision-makers at the EU level as well as our partners in EU Member States. Our membership is composed of more than 40 member companies and 6 national associations across Europe, realising an annual turnover of over 7 billion euros and employing more than 45,000 people in Europe.

EVI aims to promote highly energy efficient ventilation applications across Europe, with high consideration for health and comfort aspects. Fresh and good indoor air quality is a critical element of comfort and contributes to keeping people healthy in buildings.

**ANNEX: Amendments to the Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
on energy efficiency (recast)**

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**Proposal for a directive**

**Article 3 – paragraph 2**

*Text proposed by the Commission*

2. Member States shall ensure that the application of the energy efficiency first principle is verified by the relevant entities where policy, planning and investment decisions are subject to approval and monitoring requirements.

*Amendment*

2. Member States shall ensure that the application of the energy efficiency first principle is verified by the relevant entities where policy, planning and investment decisions are subject to approval and monitoring requirements. ***In carrying out such verification relevant entities shall make use of Commission Recommendation (EU) 2021/1749, in considering the implications for health and environmental externalities, including for indoor environmental quality.***

**Proposal for a directive**

**Article 3 – paragraph 3**

*Text proposed by the Commission*

3. In applying the energy efficiency first principle, Member States shall:

(a) promote and, where cost-benefit assessments are required, ensure the application of cost-benefit methodologies that allow proper assessment of wider benefits of energy efficiency solutions from the societal perspective;

*Amendment*

3. In applying the energy efficiency first principle, Member States shall:

(a) promote and, where cost-benefit assessments are required, ensure the application of cost-benefit methodologies that allow proper assessment of wider benefits of energy efficiency solutions from the societal perspective ***including for health;***

***Justification***

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EVIA welcomes the '[Recommendation and Guidelines on the Energy Efficiency First principle](#)' published by the European Commission and the acknowledgement therein that the relation between energy efficiency and Indoor Air Quality can also be negative depending on the ventilation extracted air level resulting from the efficiency improvements. Ensuring an adequate mechanical ventilation extracted air level in increasingly energy efficient (and therefore air-tight) buildings is imperative if energy efficiency improvements are not to negatively impact on health. Even though they are very efficient, ventilation systems need electricity to operate and need to be provided a sufficient amount of it to perform as required. Therefore, it must be closely monitored and ensured

that the implementation of the EE1 principle by Member States does not result in negative side-effects, especially on health.

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## Proposal for a directive

### Article 6 – paragraph 1

#### *Text proposed by the Commission*

1. Without prejudice to Article 7 of Directive 2010/31/EU of the European Parliament and of the Council, each Member State shall ensure that at least 3% of the total floor area of heated and/or cooled buildings owned by public bodies is renovated each year to at least be transformed into nearly zero-energy buildings in accordance with Article 9 of Directive 2010/31/EU.

Where public bodies occupy a building that they do not own, they shall exercise their contractual rights to the extent possible and encourage the building owner to renovate the building to a nearly zero-energy building in accordance with Article 9 of Directive 2010/31/EU. When concluding a new contract for occupying a building they do not own, public bodies shall aim for that building to fall into the top two energy efficiency classes on the energy performance certificate.

The rate of at least 3% shall be calculated on the total floor area of buildings having a total useful floor area over owned by public bodies of the Member State concerned and which on 1 January 2024, are not nearly zero-energy buildings.

#### *Amendment*

1. Without prejudice to Article 7 of Directive 2010/31/EU of the European Parliament and of the Council, each Member State shall ensure that at least **4%** of the total floor area of heated and/or cooled buildings owned by public bodies is renovated each year to at least be transformed into nearly zero-energy buildings in accordance with Article 9 of Directive 2010/31/EU. ***From 1 January 2027 at least 4% of such buildings shall be renovated each year to be transformed into at least zero emission buildings.***

Where public bodies occupy a building that they do not own, they shall exercise their contractual rights to the extent possible and encourage the building owner to renovate the building to ***a zero emission building, but at least to*** a nearly zero-energy building in accordance with Article 9 of Directive 2010/31/EU. When concluding a new contract for occupying a building they do not own, public bodies shall aim for that building to fall into the top two energy efficiency classes on the energy performance certificate.

The rate of at least **4%** shall be calculated on the total floor area of buildings having a total useful floor area over **200** m<sup>2</sup> owned by public bodies of the Member State concerned and which on 1 January 2024, are not nearly zero-energy buildings. ***From 1 January 2027 the rate of at least 4% shall be calculated for buildings which are not zero emission buildings.***

***Member States shall ensure that due consideration is taken of potential improvements in indoor environmental***

***quality when renovating buildings owned by public bodies.***

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**Proposal for a directive**

**Article 6 – paragraph 3**

*Text proposed by the Commission*

3. For the purposes of this Article Member States shall make publicly available an inventory of heated and/or public bodies' buildings with a total useful floor area of more than 250 m<sup>2</sup>. This inventory shall be updated at least once a year. The inventory shall contain at least the following data:

- (a) the floor area in m<sup>2</sup>;
- (b) the energy performance certificate of each building issued in accordance with Article 12 of Directive 2010/31/EU.

*Amendment*

3. For the purposes of this Article Member States shall make publicly available an inventory of heated and/or public bodies' buildings with a total useful floor area of more than **200** m<sup>2</sup>. This inventory shall be updated at least once a year. The inventory shall contain at least the following data:

- (a) the floor area in m<sup>2</sup>;
- (b) the energy performance certificate of each building issued in accordance with Article 12 of Directive 2010/31/EU.

***The Commission shall ensure publication of the data from the Member States' inventories in the EU Building Stock Observatory.***

***Justification***

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The introduction of a new energy saving target for the public sector and the requirement to renovate buildings occupied by public bodies to Nearly Zero Energy Building (NZEB) Standard are important steps in the right direction. With the introduction of the Zero-Emission Building (ZEB) Standard in the proposal for a recast Energy Performance of Buildings Directive presented by the European Commission in December 2021, the relevant provisions in Article 6 of the Energy Efficiency Directive should be aligned with the new ZEB standard.

The installation of more energy efficient technical building systems (TBS) during renovations also provides an opportunity to deliver improvements in Indoor Environment Quality (IEQ) and particularly Indoor Air Quality (IAQ) thanks to mechanical ventilation. Specific renovation requirements should be set for the different types of buildings and especially for schools, in which Indoor Air Quality parameters have proven to be critical in the context of the Covid crisis. It should be ensured that public bodies in Member States take this potential into account when renovating publicly owned buildings.

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**Proposal for a directive**

**Article 7 – paragraph 5**



*Text proposed by the Commission*

5. Member States may require that contracting authorities and contracting entities take into account, where appropriate, wider sustainability, social, environmental and circular economy aspects in procurement practices with a view to achieving the Union’s decarbonisation and zero pollution objectives. Where appropriate, and in accordance with the requirements laid down in Annex IV, Member States shall require contracting authorities and contracting entities to take into account Union green public procurement criteria.

**Proposal for a directive**

**Article 7 – paragraph 8**

*Amendment*

5. Member States may require that contracting authorities and contracting entities take into account, where appropriate, wider sustainability, social, environmental and circular economy aspects in procurement practices with a view to achieving the Union’s decarbonisation and zero pollution objectives. Where appropriate, and in accordance with the requirements laid down in Annex IV, Member States shall require contracting authorities and contracting entities to **make use of** Union green public procurement criteria.

*Text proposed by the Commission*

(NEW)

**Proposal for a directive**

**Annex IV – paragraph c**

*Amendment*

**8. To support the harmonisation of green public procurement criteria the Commission shall adopt Union green public procurement criteria for priority technical building systems, such as heating, cooling, and ventilation, and for priority categories of public buildings, such as schools, hospitals, public housing and leisure facilities by 31 December 2025.**

*Text proposed by the Commission*

In award procedures for public contracts and concessions, contracting authorities and contracting entities that purchase products, services, buildings and

works, shall:

(c) where a product or a service is covered by the Union green public procurement criteria, with relevance to energy efficiency of the product or service, make best efforts to

*Amendment*

In award procedures for public contracts and concessions, contracting authorities and contracting entities that purchase products, services, buildings and

works, shall:

(c) where a product or a service is covered by the Union green public procurement criteria, with relevance to energy efficiency of the product or service, **must make use of the**



purchase only products and services that respect at least the technical specifications set at ‘core’ level in the relevant Union green public procurement criteria including among others for data centres, server rooms and cloud services, Union green public procurement criteria for road lighting and traffic signals, Union green public procurement criteria for computers, monitors tablets and smartphones;

***relevant Union green public procurement criteria, and*** make best efforts to purchase only products and services that respect at least the technical specifications set at ‘core’ level in the relevant Union green public procurement criteria including among others for data centres, server rooms and cloud services, Union green public procurement criteria for road lighting and traffic signals, Union green public procurement criteria for computers, monitors tablets and smartphones, ***Union green public procurement criteria for office building design, construction and management;***

### ***Justification***

Public procurement criteria must support improvements in the energy efficiency and sustainability in a harmonised fashion. Article 7 of the Commission’s proposal includes the option of applying ‘wider sustainability standards’ in public procurement. However, if the Member States are entitled to voluntarily apply wider sustainability criteria, i.e. life-cycle emissions there is a risk that this will result in Member States pursuing asymmetric approaches creating barriers to the single market and depriving the green transition of economies of scale.

Such discussions in the contexts of products and Technical Building Systems (TBS) under Ecodesign & Energy Labelling (ErP) and the Sustainable Products Initiative (SPI), as well as the revision of MEErP, are currently insufficiently mature to deliver harmonised requirements at the EU level. Efforts at the Member State level risk undermining and delaying efforts towards harmonisation, whilst further fragmenting the internal market. As such, prior to the adoption of sustainability requirements under ErP and/or elsewhere, where they exist for specific product groups, Member States should be required to make use of the EU Green Public Procurement (GPP) criteria ‘core’ level specifications if they wish to apply wider sustainability criteria. If they wish to go even further, they can make use of the ‘comprehensive’ level specifications.

To date EU GPP have been put in place only for water heaters, office building and data centres. As such, the Commission should be mandated under Article 6 of the revised EED to adopt GPP criteria for other Technical Building Systems (TBS) by the end of 2025, such as heating, cooling, and ventilation, and for other categories of public buildings by the end of 2025, for example schools, hospitals, public housing and leisure facilities. These GPP criteria should also include as a factor a technology’s contribution to an adequate Indoor Environment Quality (IEQ) to ensure that energy efficiency improvements are made without a negative effect on building occupant’s health and comfort.

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## **Proposal for a directive**

### **Article 23 – paragraph 3**

*Text proposed by the Commission*

*Amendment*

3. For the purpose of the assessment referred to in paragraph 1, Member States shall carry out a cost-benefit analysis covering their territory and based on climate conditions, economic feasibility and technical suitability. The cost-benefit analysis shall be capable of facilitating the identification of the most resource and cost-efficient solutions to meeting heating and cooling needs. That cost-benefit analysis may be part of an environmental assessment under Directive 2001/42/EC of the European Parliament and of the Council.

3. For the purpose of the assessment referred to in paragraph 1, Member States shall carry out a cost-benefit analysis covering their territory and based on climate conditions, economic feasibility and technical suitability. The cost-benefit analysis shall be capable of facilitating the identification of the most resource and cost-efficient solutions to meeting heating and cooling needs, **including waste heat and cold recovery from ventilation**. That cost-benefit analysis may be part of an environmental assessment under Directive 2001/42/EC of the European Parliament and of the Council.

## Proposal for a directive

### Article 24 – paragraph 4

#### *Text proposed by the Commission*

4. In order to assess the economic feasibility of increasing energy efficiency of heat and cooling supply, Member States shall ensure that an installation level cost-benefit analysis in accordance with Annex XI is carried out where the following installations are newly planned or substantially refurbished:

(d) a data centre with a total rated energy input exceeding 1 MW level, to assess the cost and benefits of utilising the waste heat to satisfy economically justified demand, and of the connection of that installation to a district heating network or an efficient/RES based district cooling system. The analysis shall consider cooling system solutions that allow removing or capturing the waste heat at useful temperature level with minimal ancillary energy inputs.

#### *Amendment*

4. In order to assess the economic feasibility of increasing energy efficiency of heat and cooling supply, Member States shall ensure that an installation level cost-benefit analysis in accordance with Annex XI is carried out where the following installations are newly planned or substantially refurbished:

(d) a data centre with a total rated energy input exceeding 1 MW level, to assess the cost and benefits of utilising the waste heat to satisfy economically justified demand, and of the connection of that installation to a district heating network or an efficient/RES based district cooling system **or other waste heat recovery applications**. The analysis shall consider cooling system solutions that allow removing or capturing the waste heat at useful temperature level with minimal ancillary energy inputs;

**(e) collective residential and tertiary sector buildings.**

## Proposal for a directive

### Article 24 – paragraph 5

#### *Text proposed by the Commission*

5. Members may exempt the exempt from paragraph 4:
- (c) data centres whose waste heat is or will be used in a district heating network or directly for space heating, domestic hot water preparation or other uses in the building or group of buildings where it is located.

#### *Amendment*

5. Members may exempt the exempt from paragraph 4:
- (c) data centres whose waste heat is or will be used in a district heating network or ***is recovered*** directly for space heating, domestic hot water preparation or other uses in the building or group of buildings where it is located.

## Proposal for a directive

### Annex IX – Part I

#### *Text proposed by the Commission*

2. Identification, or in the case of point 2(a)(i), identification or estimation, of current heating and cooling supply:

(a) by technology, in GWh per year<sup>12</sup>, within sectors mentioned under point 1 where possible, distinguishing between energy derived from fossil and renewable sources:

(i) provided on-site in residential and service sites by:

- heat only boilers;
- high-efficiency heat and power cogeneration;
- heat pumps;
- other on-site technologies and sources;

(ii) provided on-site in non-service and non-residential sites by:

- heat only boilers;
- high-efficiency heat and power cogeneration;
- heat pumps;

#### *Amendment*

2. Identification, or in the case of point 2(a)(i), identification or estimation, of current heating and cooling supply:

(a) by technology, in GWh per year<sup>12</sup>, within sectors mentioned under point 1 where possible, distinguishing between energy derived from fossil and renewable sources:

(i) provided on-site in residential and service sites by:

- heat only boilers;
- high-efficiency heat and power cogeneration;
- heat pumps;
- ***heat recovery ventilation***;
- other on-site technologies and sources;

(ii) provided on-site in non-service and non-residential sites by:

- heat only boilers;
- high-efficiency heat and power cogeneration;
- heat pumps;

– other on-site technologies and sources;

– **heat recovery ventilation**;  
– other on-site technologies and sources

## Proposal for a directive

### Annex IX – Part III

#### *Text proposed by the Commission*

7. an analysis of the economic potential of different technologies for heating and cooling shall be carried out for the entire national territory by using the cost-benefit analysis referred to in Article 2014(3) and shall identify alternative scenarios for more efficient and renewable heating and cooling technologies, distinguishing between energy derived from fossil and renewable sources where applicable.

The following technologies should be considered:

- (a) industrial waste heat and cold;
- (b) waste incineration;
- (c) high efficiency cogeneration;
- (d) renewable energy sources (such as geothermal, solar thermal and biomass) other than those used for high efficiency cogeneration;
- (e) heat pumps;
- (f) reducing heat and cold losses from existing district networks;

#### *Amendment*

7. an analysis of the economic potential of different technologies for heating and cooling shall be carried out for the entire national territory by using the cost-benefit analysis referred to in Article 2014(3) and shall identify alternative scenarios for more efficient and renewable heating and cooling technologies, distinguishing between energy derived from fossil and renewable sources where applicable.

The following technologies should be considered:

- (a) industrial waste heat and cold;
- (b) non-residential and residential waste heat and cold recovery**;
- (c) waste incineration;
- (d) high efficiency cogeneration;
- (e) renewable energy sources (such as geothermal, solar thermal and biomass) other than those used for high efficiency cogeneration;
- (f) heat pumps;  
reducing heat and cold losses from existing district networks;

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#### **Justification**

Reducing heating and cooling needs in buildings has a great potential to improve energy efficiency. It should be addressed specifically and supported accordingly. To come to a carbon neutral economy by 2050, fossil fuels in heating and cooling should be phased out as early as possible. The recovery of heat and cold from indoor air in buildings should be promoted as it can significantly reduce the energy consumption necessary for heating and cooling in the first place, and therefore significantly facilitate the decarbonization of the sector.

To simply illustrate the benefit of mechanical ventilation heat recovery, such a system, with a 90% efficiency heat exchanger, would allow to preheat, with an indoor air temperature of 20°C, outside 0°C incoming air, to 18°C

without consuming additional electricity. The heating device of the building would then only raise the incoming air temperature by 2°C instead of 20°C. This illustrates the very significant energy consumption optimization potential of mechanical ventilation. Demand-controlled ventilation, which unlike window airing, limits thermal losses to what is strictly necessary to sufficiently renew inside air, is also particularly efficient to reduce the heating and cooling needs of buildings.

The recovery of heat and cold from indoor air in buildings is undoubtedly one of the most efficient means to reduce the carbon footprint of the building sector. Statistically, less than 5%<sup>5</sup> of buildings in the EU are equipped with ventilation energy recovery systems. Thus, recognising and promoting the potential of this simple measure would tap into an enormous potential and contribute significantly to reaching the EU's climate goals, since approximately 40% of heating demand in European buildings is caused by thermal infiltration (i.e. through window airing) and ventilation losses<sup>6</sup>. Recovering energy through ventilation systems can be very effective in this regard, by reducing the primary space heating and cooling demand and, thus, energy demand, by recovering for re-use what would otherwise be wasted heat/energy. Public financing should be made available not just to non-fossil fuel heating technologies but also to heat and cold recovery technologies. In consequence, EVIA would like to highlight that heat and cold recovery, better called energy recovery, in ventilation systems should be fully considered in the scope of Article 23 and that the Comprehensive Heating and Cooling Assessments required by Article 23(1) should therefore explicitly include the energy saving potential of heat and cold recovery from all vectors, including that of air, in its scope. Furthermore, energy recovery from ventilation systems should be added as a technology to be considered in the scope of the assessment under Annex IX, paragraph 7.

## Proposal for a directive

### Article 27 – paragraph 4

#### *Text proposed by the Commission*

4. Member States shall encourage public bodies to use energy performance contracting for renovations of large buildings. For renovations of large non-residential buildings with a useful floor area above 1000 m<sup>2</sup>, Member States shall ensure that public bodies assess the feasibility of using energy performance contracting. Member States may encourage public bodies to combine energy performance contracting with expanded energy services including demand response and storage.

#### *Amendment*

4. Member States shall encourage public bodies to use energy performance contracting for renovations of large buildings. For renovations of large non-residential buildings with a useful floor area above 1000 m<sup>2</sup>, Member States shall ensure that public bodies assess the feasibility of using energy performance contracting. Member States may encourage public bodies to combine energy performance contracting with expanded energy services including demand response and storage, **and services for indoor environmental quality.**

<sup>5</sup> [Review study on the Ecodesign and Energy Regulations on ventilation units ENTR Lot 6 \(2020\)](#): Phase 1.1 and phase 1.2, Final Report, Task 2 Markets, fig. 2 Residential and fig. 3 Non-residential

<sup>6</sup> [Average EU heat balance for space heating \(VHK 2014\)](#)

### *Justification*

Member States should encourage public bodies to combine energy performance contracting with services bringing additional benefits such as an appropriate indoor environment/air quality. Such combined approaches have started to be developed in some Member States, have proved very effective and ought to be spread. Examples of such extended performance contracting have been implemented for instance in Germany and Austria for some time already and are being developed also in France.

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### **Proposal for a directive**

#### **Article 29**

##### *Text proposed by the Commission*

1. For the purpose of comparison of energy savings and conversion to a comparable unit the net calorific values in Annex VI of Commission Implementing Regulation (EU) 2018/2066121 and the primary energy factors set out in paragraph 2 shall apply unless the use of other values or factors can be justified.
2. A primary energy factor shall be applicable when energy savings are calculated in primary energy terms using a bottom-up approach based on final energy consumption.
3. For savings in kWh electricity, Member States shall apply a coefficient in order to accurately calculate the resulting primary energy consumption savings. Member States shall apply a default coefficient of 2,1 unless they use their discretion to define a different coefficient based upon justified national circumstances.
4. For savings in kWh of other energy carriers, Member States shall apply a coefficient in order to accurately calculate the resulting primary energy consumption savings.

##### *Amendment*

1. For the purpose of comparison of energy savings and conversion to a comparable unit, ***when the final energy unit is not used***, the net calorific values in Annex VI of Commission Implementing Regulation (EU) 2018/2066121 and the primary energy factors set out in paragraph 2 shall apply unless the use of other values or factors can be justified.
2. A primary energy factor shall be applicable when energy savings are calculated in primary energy terms using a bottom-up approach based on final energy consumption.
3. For savings in kWh electricity, Member States shall apply a coefficient in order to accurately calculate the resulting primary energy consumption savings ***from the final energy ones***. Member States shall apply a default coefficient of 2,1 unless they use their discretion to define a different coefficient based upon justified national circumstances.
4. For savings in kWh of other energy carriers, Member States shall apply a coefficient in order to accurately calculate the resulting primary energy consumption savings ***from the final energy ones***.

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### *Justification*

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Member States should also be entitled to use final energy to set energy efficiency requirements and calculate energy savings. To facilitate consumer involvement in reducing energy consumption, final energy is the more suitable metric since it is more easily understandable compared to primary energy.

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#### **About EVIA**

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EVIA aims to promote highly energy efficient ventilation applications across Europe, with high consideration for health and comfort aspects. Fresh and good indoor air quality is a critical element of comfort and contributes to keeping people healthy in buildings.