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COMMISSION RECOMMENDATION (EU) 2024/1716

of 19 June 2024

setting out guidelines for the interpretation of Articles 5, 6 and 7 of Directive (EU) 2023/1791 of the European Parliament and of the Council as regards energy consumption in the public sector, renovation of public buildings and public procurement

(notified under document C(2024) 3744)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 292 thereof,

Whereas:

(1) Directive 2012/27/EU of the European Parliament and of the Council [1] introduced a requirement to achieve the headline target of at least 32,5 % energy savings at the Union level by 2030.

(2) In its 2013 Guidance notes 'Article 5: Exemplary role of public bodies' buildings' and 'Article 6: Purchasing by public bodies', the Commission provided guidance to the Member States for transposing and implementing the main provisions of Directive 2012/27/EU on the public sector, supporting them in putting in place the adequate measures, tools and methodologies in order to be able to fully tap into their energy savings potential and achieve the energy efficiency headline target.

(3) Directive (EU) 2023/1791 of the European Parliament and of the Council [2] was adopted on 13 September 2023. It recast Directive 2012/27/EU, keeping some of its provisions unchanged while, at the same time, introducing some new requirements. In particular, it significantly raised the level of ambition for 2030 in terms of energy efficiency, including as regards the public sector.

(4) Chapter II of Directive (EU) 2023/1791 on exemplary role of public sector recognises the leading role of the public sector in energy efficiency. Its Article 5 sets out new obligations to reduce the energy consumption in the public sector. Its Article 6 significantly broadens the scope of the obligation to renovate public buildings. Article 7 on public procurement adapts existing and sets out further obligations for energy efficient public procurement.

(5) Member States are to bring into force the laws, regulations and administrative provisions transposing Articles 5, 6, 7 of Directive (EU) 2023/1791 and Annex IV thereto by 11 October 2025.

(6) Member States can choose at their discretion the way of transposing and implementing the requirements regarding the exemplary role of the public sector that is best suited to their national circumstances. In this context, it would be recommended to interpret the relevant provisions of Directive (EU) 2023/1791 in a consistent way which would contribute to a coherent understanding of Directive (EU) 2023/1791 across Member States as they prepare their transposition measures.

[1] Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 14.11.2012, p. 1, ELI: http://data.europa.eu/eli/dir/2012/27/oj).

[2] Directive (EU) 2023/1791 of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955 (OJ L 231, 20.9.2023, p. 1, ELI: http://data.europa.eu/eli/dir/2023/1791/oj).

HAS ADOPTED THIS RECOMMENDATION:

Member States should follow the interpretative guidelines in the Annex to this Recommendation when transposing Articles 5, 6 and 7 of Directive (EU) 2023/1791 and Annex IV thereto into their national law.

Done at Brussels, 19 June 2024.

For the Commission
Kadri SIMSON
Member of the Commission

ANNEX

1. **INTRODUCTION**

These guidelines provide guidance to Member States on how to interpret Directive (EU) 2023/1791 when transposing it into their national legislation. It focuses on Articles 5, 6 and 7 and Annex IV to Directive (EU) 2023/1791.

Nonetheless, the binding interpretation of Union legislation is the exclusive competence of the Court of Justice of the European Union.

2. **LEGAL AND POLICY CONTEXT**

Articles 5, 6 and 7 of Directive (EU) 2023/1791 are closely interlinked, since the achievement of building renovation targets as provided for in Article 6 and energy efficient public procurement have an impact on the final energy consumption reductions which public bodies have to achieve in accordance with Article 5.

Those three Articles are also interlinked with the following Articles of Directive (EU) 2023/1791:

— Article 2 on definitions, including the definition of 'public body';

— Article 24 on the alleviation of energy poverty;

— Article 29(4) on the obligation of Member States to encourage public bodies to use energy performance contracting to overcome investment barriers;

— Article 30 on the obligation of Member States to ensure public funding and access to appropriate financing tools;

— Annex V to Directive (EU) 2023/1791 as regards the rule that measures promoting energy efficiency improvements in the public sector pursuant to Article 5 and Article 6 may be taken into account for achieving the energy savings required under Article 8(1), provided that they comply with the requirements of Annex V to Directive (EU) 2023/1791.

Article 6 is also linked to Directive (EU) 2024/1275 of the European Parliament and of the Council ([1]) on the energy performance of buildings (hereinafter 'EPBD'), in particular as concerns nearly zero-energy buildings (hereinafter 'NZEB'), zero emissions buildings (hereinafter 'ZEB'), energy performance certificates (hereafter 'EPC'), building stock overview prepared as a requirement of the national building renovation plans, database for the energy performance of buildings and renovation passports. Article 7 of Directive (EU) 2023/1791 is linked to Directives 2014/23/EU ([2]), 2014/24/EU ([3]), 2014/25/EU ([4]) and 2009/81/EC ([5]) of the European Parliament and of the Council which set out the framework for how procurement is to be undertaken with the aim of ensuring adherence to principles such as fair competition and getting the best value for taxpayers' money, whereas Article 7 of Directive (EU) 2023/1791 lays down the specific requirements for purchasing products, services, buildings and works with high energy-efficiency performance.

([1]) Directive (EU) 2024/1275 of the European Parliament and of the Council of 24 April 2024 on the energy performance of buildings (OJ L, 2024/1275, 8.5.2024, ELI: http://data.europa.eu/eli/dir/2024/1275/oj).

([2]) Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts (OJ L 94, 28.3.2014, p. 1, ELI: http://data.europa.eu/eli/dir/2014/23/oj).

([3]) Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (OJ L 94, 28.3.2014, p. 65, ELI: http://data.europa.eu/eli/dir/2014/24/oj).

([4]) Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC, (OJ L 94, 28.3.2014, p. 243, ELI: http://data.europa.eu/eli/dir/2014/25/oj).

([5]) Directive 2009/81/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of procedures for the award of certain works contracts, supply contracts and service contracts by contracting authorities or entities in the fields of defence and security and amending Directives 2004/17/EC and 2004/18/EC (OJ L 216, 20.8.2009, p. 76, ELI: http://data.europa.eu/eli/dir/2009/81/oj).

3. DEFINITION OF PUBLIC BODY IN DIRECTIVE (EU) 2023/1791

3.1. General

Articles 5 and 6 of Directive (EU) 2023/1791 apply to public bodies as defined in its Article 2, point (12): 'public bodies' means national, regional or local authorities and entities directly financed and administered by those authorities but not having an industrial or commercial character.

In contrast, Article 7 applies to contracting authorities and contracting entities as defined in in Article 2, points (14) and (15), of Directive (EU) 2023/1791, which in turn refer to the corresponding definitions as defined in Article 6(1) of Directive 2014/23/EU, Article 2(1), point (1), of Directive 2014/24/EU and Article 3(1) of Directive 2014/25/EU and in Article 7(1) of Directive 2014/23/EU and Article 4(1) of Directive 2014/25/EU.

As an essential element of the policy portfolio to ensure that the targets set in Articles 5 and 6 of Directive (EU) 2023/1791 are achieved, Member States could implement a 'target sharing mechanism' between the public bodies, which all together as a group must reduce their final energy consumption to jointly achieve the target of the Member State. How such target sharing ought to be organised depends primarily on the legal and administrative set-up of each Member State.

3.2. National, Regional or Local Authorities

National authorities

National authorities are not defined in Directive (EU) 2023/1791, nor are they defined in Directive 2014/23/EU, Directive 2014/24/EU or Directive 2014/25/EU. However, with regard to the definition of public bodies in Directive (EU) 2023/1791 and in view of recital 33 of Directive (EU) 2023/1791, which states that 'national', 'regional' and 'local' refer to the respective level of an authority in the state structure, national authorities may be understood to equate with the 'central' level of government or the 'State'. The central level of government – which in federal states is the federal level of government – covers, in particular, government ministries or departments ([6]).

The European Court of Justice (ECJ) has noted that the concept of 'state' includes all the bodies that exercise legislative, executive, and judicial powers ([7]). Examples of authorities that are part of the state (and thus national authorities) therefore also include parliaments ([8]) and the judiciary ([9]).

The list of Central Government Authorities in Annex I to Directive 2014/24/EU can thus be understood to contain contracting authorities that would fall under the notion of 'national authorities'.

The ECJ has further specified the definition of 'state' in the Beentjes case where 'state' was said to cover, at least, a body 'whose composition and functions are laid down by legislation and which depends on the authorities for the appointment of its members, the observance of the obligations arising out of its measures and the financing of contracts which it is its task to award.' ([10]) This definition was subsequently qualified to include only entities without a distinct legal personality ([11]).

Regional Authorities

In accordance with Article 2(2) Directive 2014/24/EU, 'regional authorities' include authorities listed non-exhaustively in NUTS 1 and 2 as referred to in the Regulation (EC) No 1059/2003 of the European Parliament and of the Council ([12]) on a common classification of territorial units for statistics. In federal states, the Commission understands that this definition refers to the regional level of government (including states or provinces.) and in particular to the ministries or departments of those regional governments ([13]).

([6]) Arrowsmith, The Law of Public and Utilities Procurement, vol 1 (2014) p. 342.
([7]) C-323/96, *Commission v Belgium* ECLI:EU:C:1998:411 para 27.
([8]) C-323/96, *Commission v Belgium* ECLI:EU:C:1998:411.
([9]) C-222/84, *Johnston v Chief Constable* ECLI:EU:C:1986:206.
([10]) C-31/87, *Gebroeder Beentjes BV v Netherlands* ECLI:EU:C:1988:422, para 12.
([11]) C-306/97, *Connemara Machine Turf v Coillte Teoranta* ECLI:EU:C:1998:623 and C-353/96, *Commission v Ireland* (1998) ECLI:EU:C:1998:611.
([12]) Regulation (EC) No 1059/2003 of the European Parliament and of the Council of 26 May 2003 on the establishment of a common classification of territorial units for statistics (NUTS) (OJ L 154, 21.6.2003, p. 1, ELI: http://data.europa.eu/eli/reg/2003/1059/oj).
([13]) Arrowsmith, The Law of Public and Utilities Procurement, vol 1 (2014) p. 342.

Local Authorities

In accordance with Article 2(2) Directive 2014/24/EU, 'local authorities' include all authorities of the administrative units falling under NUTS 3 as referred to in the Regulation (EC) No 1059/2003 on a common classification of territorial units for statistics, and smaller administrative units falling under Annex III to the same Regulation. They are also called 'local administrative units' (hereinafter 'LAU') ([14]).The Commission understands that this definition refers to the local or municipal level of government, including the general local authorities responsible for local affairs.

3.3. **Financing and Administration Criteria**

General

Article 2, point (12) of Directive (EU) 2023/1791 provides that '*entities*' only qualify as 'public bodies' if they are (*inter alia*) '*directly financed and administered*' ([15]) by national, regional or local authorities. The use of the term '*and*' implies that both criteria, i.e., the 'financing criterion' and the 'administration criterion', have to be met for an entity to qualify as a 'public body'. ([16])

Entities

'Entities' are delimited organisations with legal personality. Legal personality must be assessed at Member State level. However, it may generally be assumed that legal entities under public law (bodies, institutions, funds) as well as under private law (for example, corporations, associations, private foundations, cooperatives, European Companies (SE), European Economic Interest Groups (EEIG)) are entities.

Administration Criterion

As opposed to the definition of bodies governed by public law in Article 2(1), point (4) Directive 2014/24/EU and the dependency criteria stipulated therein, the definition of Public Bodies in Article 2, point (12) of Directive (EU) 2023/1791 only refers to the administration and financing criteria and not the supervision criterion. Recital 35 of Directive (EU) 2023/1791 explains that the administration criterion is met if a national, regional, or local authority has a majority regarding the choice of the entity's management. This definition differs from the one in Article 2(1), point (4) Directive 2014/24/EU since it

(i) does not provide for the case where another public body has a majority regarding the choice of the entity's management and

(ii) is limited to an entity's 'management'. Therefore, a majority of a national, regional or local authority in the choice of an entity's administrative or supervisory board only does not result in an entity being qualified as a public body.

In this context, the term '*majority*' is to be interpreted in the sense of 'more than half'. However, as opposed to the appointment criterion in Article 2(1), point (4) (c) Directive 2014/24/EU, indirect appointment rights (for example, by a body which is itself majority-appointed by a national, regional, or local authority) are not sufficient to fulfil the administration criterion, since the administration by these authorities must be direct.

Financing Criterion

Financing by a national, regional or local authority is understood to mean a contribution of funds, which may include (but not be limited to) payments, loans, grants, guarantees, subsidies or provision of personnel and material assets.

Financed by authorities means that the resources provided to the entities in question must therefore stem from the public authorities. If, on the other hand, financing is mainly provided through the collection of fees (as is the case, for example, with public broadcasters or health insurance funds) based on a corresponding statutory provision and thus not directly from national, regional or local authorities, there is no financing by public authorities and the financing criterion pursuant to Article 2, point (12) of Directive (EU) 2023/1791 would therefore not be met. The same applies when national, regional or local authorities grant the relevant entities the right to collect the respective fees themselves.

([14]) Local administrative units, see https://ec.europa.eu/eurostat/web/nuts/local-administrative-units/ .
([15]) Emphasis added.
([16]) In the Public Procurement Directives, these are alternative criteria.

Recital 35 of Directive (EU) 2023/1791 qualifies the financing criterion included in Article 2, point (12) in that it is met only if a given entity is mostly funded from public funds. '*Mostly funded*' may be interpreted as meaning 'more than half', *i.e.*, more than 50 %. Consequently, as soon as the 50 % limit is exceeded, the financing criterion of Article 2, point (12) is fulfilled.

No Industrial or Commercial Character

In line with the wording in Article 2, point (12), of Directive (EU) 2023/1791 that, in comparison with the definition of 'bodies governed by public law' in the Public Procurement Directives, the definition of Public Bodies does not require entities to be established for the specific purpose of meeting needs in the general interest to be covered by this definition. Consequently, the examination of the absence of an industrial or commercial character of the entities in question as provided by Article 2, point (12), of Directive (EU) 2023/1791 does not need to be preceded by the verification of whether these entities were established for the specific purpose of meeting needs in the general interest.

In accordance with the case law of the ECJ, all legal and factual circumstances prevailing at the time of the establishment of the entity and the conditions to which the activity of the entity is subject must be taken into account when assessing whether an activity is carried out by an entity in an industrial or commercial capacity ([17]). More generally, the ECJ has ruled that if an entity operates in normal market conditions, aims to make a profit and bears the losses associated with the exercise of its activities, it is unlikely that the activities it pursues are not of an industrial or commercial character ([18]). From that it may be derived that an entity which does not perform tasks of an 'Industrial or Commercial Character' is – in principle - an entity which does not participate in general commercial life on the relevant market in competition with private economic operators under the same conditions (i.e. in compliance with the same economic rules) and does not bear the economic risk (including insolvency risk) of its actions.

Whether such an entity, for example, operates completely under competitive conditions, is not only to be assessed with regard to its objectives (including with regard to the corporate purpose defined in the articles of association or bylaws) but above all also based on an objective assessment of the specific market in question. In this sense, it is particularly relevant whether the entity performs its tasks in a competitive situation with private companies or companies oriented towards private-sector objectives, or whether it is at least to some extent excluded from a 'competitive situation' on the market due to a special legal or factual position.

A further indication that speaks for a task of a 'non-commercial nature' is that financial losses are not to be borne by the entity itself, but a cost-bearing obligation of the state is stipulated for example, in the law or articles of association or other agreements under private law, or it appears highly probable that these are to be borne by the state - this direction was taken, for example, with regard to state prisons ([19]). In other words, the classification as a commercial activity is not applicable if the 'financial risk' does not exist.

Other arguments in favour of the existence of a 'non-commercial' activity are the likelihood that a national, regional or local authority would take steps to prevent the entity from being compulsorily liquidated or such an authority would take steps to 'rescue' an entity rather than allowing it to fail ([20]).

If an entity has any non-commercial activities (in addition to commercial activities), the non-commercial activities are decisive in assessing whether the entity in question is a Public Body even if most of its activities are commercial ([21]). This is true even where an entity's commercial activities are clearly separated from its non-commercial activities.

Public bodies in jurisprudence

In putting the definition of Public Bodies into practice, and as a possible reference for establishing the authorities and entities that fall under the scope of the definition in Article 2, point (12) of Directive (EU) 2023/1791, Member States may draw on the list of central government authorities – which are 'national authorities' in the sense of Article 2, point (12) of Directive (EU) 2023/1791– in Annex I to the Directive 2014/24/EU.

([17]) See e.g., C-567/15, LitSpecMet ECLI:EU:C:2017:736 para 43 and C-393/06, *Ing. Aigner* (2008) ECLI:EU:C:2008:213.
([18]) See e.g., C-567/15, *LitSpecMet* ECLI:EU:C:2017:736 para 44.
([19]) C-283/00, Commission v Spain ECLI:EU:C:2003:544.
([20]) C-18/01, *Korhonen et. al.* ECLI:EU:C:2003:300 para 91.
([21]) C-360/96, *Gemeente Arnhem* ECLI:EU:C:1998:525 para 55.

Examples of entities that have been qualified by case law as not having an industrial or commercial character include: ([22])

— Spanish entity concerned with providing support activities to the prison service; ([23])

— Funeral Vienna Ltd. (Bestattung Wien GmbH); ([24])

— Fernwärme Wien Gesellschaft m.b.H.; ([25])

— Telekom Austria AG; ([26])

— non-profit housing association. ([27]) ([28])

4. OBLIGATION RELATED TO ARTICLE 5

4.1. Obligation to reduce final energy consumption

Article 5 is new compared to Directive 2012/27/EU.

Article 5(1) requires Member States to ensure that the total final energy consumption of all public bodies combined is reduced by at least 1,9 % each year, when compared to the baseline year 2021.

The reduction of final energy consumption should predominantly come from energy efficiency improvements across all public services ([29]).

The Member States may choose to exempt the sectors of public transport and the armed forces from this obligation. As a result, both or one of them could be exempted. Nevertheless, it should be underlined that this is a possibility and not an obligation. The sector of armed forces is energy intensive and represents a significant share of the energy consumption of the public sector ([30]). Moreover, because of the work of the Consultation Forum on Sustainable Energy in the Defence and Security Sector ([31]), which started in 2016, the defence sector has become widely acquainted with – and generally favourable to – actions on energy efficiency. Also the public transport sector has a considerable amount of economically attractive energy efficiency potential, in particular in electrification of transport. Moreover, this is the only economic sector where energy consumption has been steadily increasing over the years. Therefore, it is recommended that Member States carefully assess the potential contribution that the armed forces and the public transport sector could make to achieving the national objectives and consider removing the regulatory and legislative obstacles to their full exploitation.

([22]) These examples can only serve as a rough reference. A case-by-case consideration is always inevitable.
([23]) C-283/00, Commission/*Spain* ECLI:EU:C:2003:544.
([24]) C-373/00, *Adolf Truley* ECLI:EU:C:2003:110.
([25]) C-393/06, *Ing. Aigner* ECLI:EU:C:2008:213.
([26]) C-324/98, *Telaustria und Telefonadress* ECLI:EU:C:2000:669.
([27]) Austrian Supreme Court OGH 31. 1. 2002, 6 Ob 236/01a.
([28]) For the interpretation of the criterion of having an industrial or commercial character, reference can further be made to e.g., Case C-373/00, ECLI:EU:C:2003:110; Case C-360/96, *Gemeente Arnhem and Gemeente Rheden v BFI Holding (1998)* ECLI:EU:C:1998:525; Case C-18/01, *Korhonen and Others (2003)* ECLI:EU:C:2003:300; and Case C-283/00, *Commission v Spain (2003)* ECLI:EU:C:2003:544.
For the interpretation of the financing criterion, reference can be made to, e.g., Case C-380/98, *R. v HM Treasury Ex p. University of Cambridge(2000)* ECLI:EU:C:2000:529; Case C-115/12 P, *France v Commission(2013)* ECLI:EU:C:2013:596; and for the differentiation from indirect financing to, e.g., Case C-337/06, *Bayerischer Rundfunk (2007)* ECLI:EU:C:2007:786; or Case C-300/07, *Hans & Christophorus Oymanns v AOK Rheinland/Hamburg (2009)* ECLI:EU:C:2009:358.
For the interpretation of the administration criterion, reference can be made to, e.g., Case C-380/98, *R. v HM Treasury Ex p. University of Cambridge (2000)* ECLI:EU:C:2000:529; Case C-237/99, *Commission v France (2001)* ECLI:EU:C:2001:70; and for the differentiation from indirect administration to, e.g., Case C-44/98, *Mannesmann/Strohal (1998)* ECLI:EU:C:1998:4.
([29]) As a reason for the obligation to reduce the final energy consumption states that 'the public sector constitutes an important driver to stimulate market transformation towards more efficient products, buildings and services, as well as to trigger behavioural changes in energy consumption by citizens and enterprises. Furthermore, decreasing energy consumption through energy efficiency improvement measures can free up public resources for other purposes. Public bodies at national, regional and local levels should fulfil an exemplary role as regards energy efficiency.' The focus is therefore on energy efficiency measures to achieve the final energy consumption reduction target.
([30]) https://eda.europa.eu/docs/default-source/brochures/05-01-24-defence-energy-factsheet.pdf.
([31]) https://eda.europa.eu/what-we-do/eu-policies/consultation-forum/.

Until the end of the transitional period, which for this provision is four years after the date of entry into force (i.e. by 11 October 2027), the final energy consumption reduction target is indicative, becoming obligatory only after that date.

Furthermore, the obligation to reduce the total final energy consumption by 1,9 % does not apply to public bodies in local administrative units with a population of less than 50 000 until 31 December 2026, and it does not apply to public bodies in local administrative units with a population of less than 5 000 inhabitants until 31 December 2029.

Final energy consumption reduction achieved by a decrease of the public service level below actual demand is not intended.

Table 1

Overview of obligations related to the public sector

Obligation	Start of obligation	Frequency
Final energy consumption reduction		
Determination of the final energy consumption baseline for the calendar year 2021	by 11 October 2027	N/A
For all public bodies except public bodies in local administrative units with a population of less than 50 000: Reduce final energy consumption by at least 1,9 %	transposition date	each year
For public bodies in local administrative units with a population of less than 50 000: Reduce final energy consumption by at least 1,9 % each year	1st January 2027	each year
For public bodies in local administrative units with a population of less than 5 000: Reduce final energy consumption by at least 1,9 % each year	1st January 2030	each year
Policy requirements related to the support of public bodies		
Ensure that all regional and local authorities establish specific energy efficiency measures in their long-term planning tools	transposition date	continuously
Ensure that all authorities, including regional and local authorities, are actively involved in the implementation of energy poverty related policies	transposition date	continuously
Support public bodies in the uptake of energy efficiency improvement measures	transposition date	continuously
Encourage public bodies to consider life cycle carbon emissions when investing in public buildings	transposition date	continuously
Encourage public bodies to improve the energy performance of buildings, including by means of replacement of inefficient heaters	transposition date	continuously
Building inventory		
Make publicly available and accessible an inventory of heated and/or cooled buildings	transposition date	N/A
Update the inventory	transposition date	Every two years
Renovation obligation		
Estimate the 3 % target based on total floor area of heated and/or cooled buildings owned by public bodies as of 1 January 2024	transposition date	N/A
Renovate 3 % of the total floor area of heated and/or cooled buildings	transposition date	Each year

Obligation	Start of obligation	Frequency
Negotiate with building owners for making the building NZEB or ZEB	transposition date	continuously
Alternative approach		
Notify the Commission projected energy savings that would be achieved by 31 December 2030 with the main approach	by 31 December 2023	N/A
Achieve an amount of energy savings which is equivalent to the one achieved with the main approach	transposition date	Each year
Issue a renovation passport to buildings representing 3% of the total floor area of heated and/or cooled buildings	transposition date	Each year
Renovate to NZEB or ZEB buildings for which a renovation passport was issued	by 2040	N/A
Energy efficiency in public procurement		
Purchase only products, services, buildings and works with high energy-efficiency performance	transposition date	continuously
Apply the energy efficiency first principle	transposition date	continuously
Consider, where appropriate, wider sustainability aspects	transposition date	continuously
When procuring service contracts with significant energy content, assess the feasibility of concluding long-term energy performance contracts	transposition date	continuously
Purchase the product package that complies with the criterion of belonging to the highest available energy efficiency class	transposition date	continuously
Consider Union green public procurement criteria or available equivalent national criteria.	transposition date	continuously
Make publicly available information on the energy efficiency impact of contracts	transposition date	continuously

4.1.1. *Determination of the baseline*

Basic principles

The final energy consumption baseline is defined as, the total final energy consumption of all public bodies in a Member State during the baseline year, against which the target achievement will be monitored in the following years. Article 5(1) of Directive (EU) 2023/1791 defines the calendar year of 2021 as the baseline year.

Article 5 of Directive (EU) 2023/1791 applies to public bodies (see section 3) as a whole.

The obligation covers the total final energy consumption from all public sectors, including therefore public buildings, healthcare, spatial planning, water management and wastewater treatment, sewage and water purification, waste management, public lighting, education and social services, ICT ([32]).

The final energy consumption of public bodies refers to the energy consumed by the activities of public bodies, for example in buildings, facilities, premises, appliances, vehicles etc. owned or used by public bodies.

([32]) In accordance with Article 2, point (6), of Directive (EU) 2023/1791, final energy consumption means all energy supplied to industry, to transport (including energy consumption in international aviation), to households, to public and private services, to agriculture, to forestry, to fishing and to other end-user sectors. However, this excludes energy consumption in international maritime bunkers, ambient energy and deliveries to the transformation sector and to the energy sector, and losses due to transmission and distribution as defined in Annex A to Regulation (EC) No 1099/2008. It also includes self-produced energy, such as heat or electricity from solar panels, hydropower or wind.

The collection of all the necessary final energy consumption data for the baseline year, as well as for the years covered by the obligation, will require comprehensive bottom-up data collection involving all public bodies in the Member State, which are within the scope of the obligation. This would include public bodies in the defence and transport sectors if a Member State chooses to count the energy reduction of these sectors towards the achievements under Article 5 of Directive (EU) 2023/1791. Existing consolidated data from energy statistics may only be available for selected segments of the public sector as defined by Article 5 of Directive (EU) 2023/1791 ([33]) and may include different entities. A transitional period of two years in addition of the two-year transposition period after the entry into force of Directive (EU) 2023/1791 will give the Member States additional time to set up the processes for the collection of final energy consumption data covering all public bodies. During this transitional period, the Member States can use estimated data for the final energy consumption baseline. After this four years' period, by 11 October 2027, when the obligation becomes effective, the Member States shall have the baseline adjusted and fully aligned with the actual final energy consumption of all public bodies. If it is discovered that individual public bodies have been omitted, the baseline shall be corrected. In any case, it is recommended to start the collection of final energy consumption data from all public bodies after the Directive's entry into force. The baseline year remains unchanged and there may be additional difficulties in collecting final energy consumption data from 2021 after several years.

Usually, public bodies will be able to obtain final energy consumption data from their invoices based on metered annual consumption data ([34]). In some cases, the information on final energy consumption is gathered in accountancy, energy book-keeping or energy monitoring systems, which are managed by public authorities.

If energy consumption of public bodies is included in the operating costs statement, for example when a public body rents a part of a building where the energy cost is initially covered by the owner and then distributed to the tenants, this final energy consumption must also be taken into account.

If the energy used in a public building or facility is consumed by another entity than the public body, for example by a tenant of a public building, such as social housing tenants, this energy consumption is not included into the final energy consumption of the public body.

With respect to PV and solar heat production, the share of self-consumption by the public authority is part of the final energy consumption ([35]). The share of PV or solar heat production that is fed into the grid or provided to external prosumers of an energy community is not counted as final energy consumption of the producing public body.

In the case of energy supply through a heat pump, only the electricity required for the operation of the heat pump ([36]) is counted. The ambient heat is not counted.

Disaggregation of final energy consumption

The final energy consumption data for the baseline year as well as for the following years should be gathered at an appropriate level of disaggregation of final energy consumption, based on the following considerations:

— Implementing sound and comprehensible adjustment procedures according to the state of the art (see section 4.1.3);

([33]) For this reason, the Commission has prepared a template software solution for the gathering and monitoring of final energy consumption data from public bodies and provides it to interested Members States.

([34]) Since the target is set on an annual basis, there is no need to collect consumption data on higher disaggregation level, such as monthly consumption data.

([35]) For the case of electricity production from PV, in most cases the amount of self-consumption can be calculated based on metered data. For the case of solar heat production, where in most cases no metered data is available, engineering estimates according to the state of the art may be used to determine the self-consumption, if the preparation of the estimates does not cause unreasonable burden.

([36]) In rare cases the heat pump may be also operated by a gas engine.

— Enabling a plausibility check of the baseline consumption and the consumption in the following years in the required reporting of Member States in accordance with Article 5(5) of Directive (EU) 2023/1791 ([37]).

While no formal minimum disaggregation is foreseen in the Directive (EU) 2023/1791 and Member States may use other ways to disaggregate the data, Table 2 shows an example of what an appropriate level of disaggregation of the final energy consumption data to be collected for each public body for the baseline year as well as for the following years could look like. The indicated disaggregation is based on the approach used in energy audits and is sufficiently detailed for the above-mentioned purposes. All this data can usually be collected from energy bills and gathered in existing energy-bookkeeping systems. Furthermore, it is recommended that all public bodies in one Member States record their final energy consumption data in the same format. The sub-sectors and activities in the first column are also sufficient to fulfil the obligation to disaggregate the public bodies' consumption by sectors under Article 5(5) of Directive (EU) 2023/1791.

([37]) Article 5(5) of Directive (EU) 2023/1791 refers to a sectoral presentation of the amount of energy consumption reduction to be achieved. Similarly, it can be assumed that the annual report should also contain a sectoral breakdown of the final energy consumption. Although Article 5(5) of that Directive does not describe in detail which sectors are to be presented, both the possible exemption for public transport and the permissible adjustments require a sufficient disaggregation of the final energy consumption data according to the state of the art.

Table 2

Data fields for the collection of final energy consumption (baseline and annual reports) per public body

Consumption sectors and public services	Electricity (1)	District heating	District cooling	Natural gas	Heating oil	Gasoline	Diesel	Pellets	Wood chips	Solid biomass fuel	Solid fossil fuel	Biogas	Other fuels	TOTAL
Energy consumption in buildings														
Office and administration buildings														
Hospitals and health care buildings														
Schools and kindergartens														
Universities														
Factory and workshop buildings														
Other public buildings (owned or rented)														
Energy consumption for processes														
Public lighting														
Water supply														
Waste water treatment														
Waste management														
Other processes														
Energy consumption for mobility services														
Public transport (2)														
Fleet of vehicles owned by public body for other purposes than public transport														
Armed forces (3)														
TOTAL														

(1) Optional extension: For electricity it would be advisable to differentiate further (for example, electricity for heating, cooling and other purposes, own consumption from PV generation), but this data may be available only where specific sub-meters were used.

(2) If a Member State wants to count final energy consumption reduction from public transport for fulfilling the obligation in line with Article 5(1) of Directive (EU) 2023/1791, a specific baseline has to be established for this sector (see section 4.1).

(3) If a Member State wants to count final energy consumption reduction from the sector of armed forces for fulfilling the obligation in line with Article 5(1), a specific baseline has to be established for this sector (see section 4.1). Furthermore, the collection of energy consumption data for the sector of armed forces may be limited to those sub-segments which are not subject to secrecy for security reasons.

Energy consumption baseline for public bodies in local administrative units with less than 50 000 and with less than 5 000 inhabitants

In accordance with Article 5(1) of Directive (EU) 2023/1791, the final energy consumption reduction obligation does not apply to public bodies in local administrative units with a population of less than 50 000 until 31 December 2026, and it does not apply to public bodies in local administrative units with a population of less than 5 000 inhabitants until 31 December 2029. For both groups, however, the baseline year is also the year 2021.

Therefore, Member States are encouraged not to wait with the collection of final energy consumption baseline data for these two groups of public bodies until the obligation starts, but to start the collection immediately after the entry into force of Directive (EU) 2023/1791. Nonetheless, more time is available for these two groups to set up the necessary procedures and to complete the collection of all required final energy consumption data.

Specific energy consumption baseline for exempted sectors

If a Member State wants to count final energy consumption reductions achieved in the sectors of public transport or armed forces towards the reduction target in accordance with Article 5(1) of Directive (EU) 2023/1791, then a specific final energy consumption baseline must be established, which serves only for the calculation of final energy consumption reduction achieved in these specific sectors. The baseline year is 2021 as for all other public bodies. The difference between the final energy consumption in the baseline year and the actual final energy consumption in a certain year gives the consumption reduction that can be counted towards the reduction target in this year. The data for the armed forces may be collected and provided at an aggregated level.

Member States are free in applying this option, and may use it for one or more years and for either one or for both sectors.

4.1.2. *Calculation of the final energy consumption reduction targets for each year*

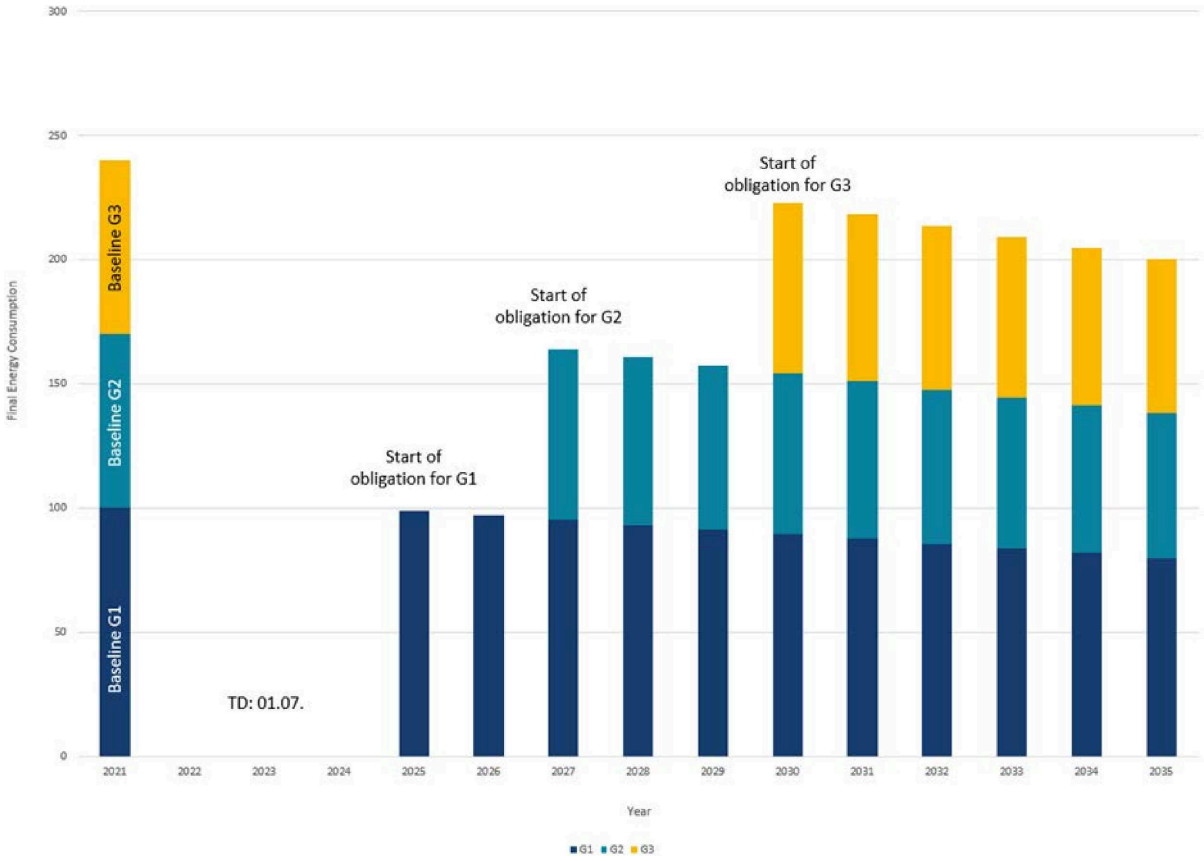
Due to the phasing in of public bodies in differently sized administrative units as described above, the final energy consumption reduction obligation has to be calculated separately for each group of public bodies.

Once the baseline is defined for each group separately, *i.e.*, for the public bodies in local administrative units with less than 5 000 inhabitants, for the public bodies in local administrative units with less than 50 000, but more than 5 000 inhabitants, then for each year the final energy consumption reduction target can be expressed as a maximum final energy consumption.

Based on assumed baseline values for the three groups of public bodies in differently sized administrative units, the Figure 1 below illustrates how the maximum final energy consumption develops over time, starting from the year 2025. In the year 2025, the obligation is a pro-rata obligation starting by the 11 October of the year of the transposition, this means that Member States do not have to achieve the full amount of 1,9 % of final energy consumption reduction compared to the baseline, but only the prorata part of the total year starting with the transposition date, that is 0,4 %. Furthermore, the targets are indicative until four years after the Directive's entry into force. Detailed formulas to calculate the final energy consumption reduction target for each year are included in Annex I to Directive (EU) 2023/1791.

Figure 1

Example for the gradual development of target values of final energy consumption (assumed values for 'Baseline Group 1' (G1) = 100 energy units; 'Baseline Group 2' (G2; public bodies in local administrative units with less than 50 000 and more than 5 000 inhabitants) = 70; 'Baseline Group 3' (G3, public bodies in local administrative units with less than 5 000 inhabitants) = 70; for the year 2025 a pro-rata target applies)



If the baseline is corrected, for example, after the transitional period when estimated values are replaced by real values, or for any other reason in the following years ([38]), the targets is to be recalculated with the new baseline values.

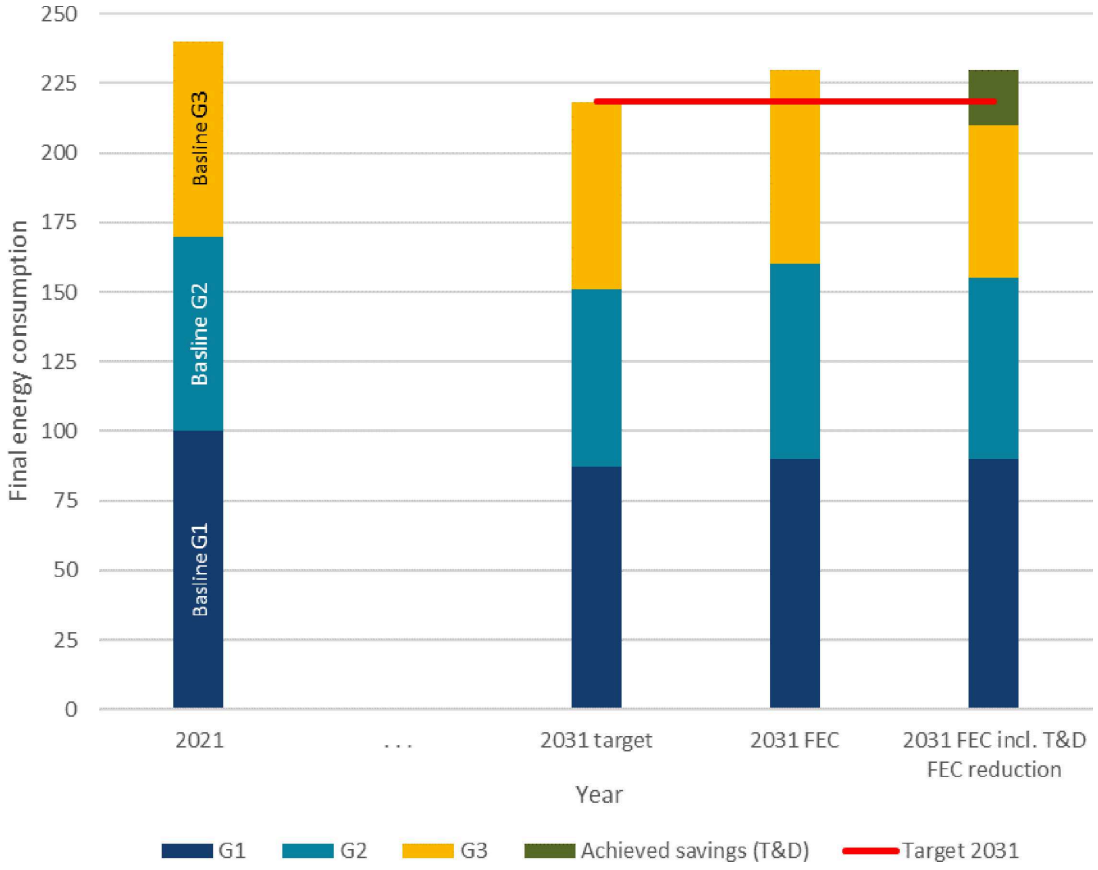
To report on the fulfilment of the obligation it is recommended to use calendar years, because the baseline is to be established for the calendar year 2021 and the National Energy and Climate Plan reporting requires reporting periods of two calendar years.

The final energy consumption reduction target in a given year is achieved, if the actual final energy consumption, possibly after adjusting some elements of the final energy consumption (see section 4.1.3), is lower than the maximum final energy consumption in that year. Figure 2 below shows the verification of target achievement using the example of the year 2031. The target to be achieved by all public bodies together in the year 2031 is the addition of the baseline values for each of the three groups of public bodies in differently sized administrative units. Furthermore, the example shows, how the inclusion of final energy consumption reductions from the sectors of public transport and armed forces can contribute to achieving the target, since they can be deducted from the actual final energy consumption in the given year.

([38]) For example, if public bodies are removed, for example because of privatization, then the removal has to be reflected in the baseline as well as in the yearly final energy consumption (see section 4.1.3).

Figure 2

Verification of target achievement using the example of the year 2031, once without and once with the consideration of final energy consumption reductions from the sectors public transport and armed forces



4.1.3. *Recording the final energy consumption reduction for each year*

Each year, starting with 2025, the Member States will have to repeat the collection of final energy consumption data of public bodies using the same methodology and data structure used to collect the data for the baseline definition. In accordance with Article 5(3) of Directive (EU) 2023/1791, data for public bodies in local administrative units with less than 50 000 inhabitants must be collected starting from 2027. For public bodies in local administrative units with less than 5 000 inhabitants, this starts from 2030. Member States may wish to evaluate whether the procedure of data collection actually works, and whether a trend towards the reduction of final energy consumption is noticeable in these public bodies. Therefore, it may be advisable to start data collection in parallel with the other public bodies for whom the reduction obligation starts in 2025.

Article 5(4) of Directive (EU) 2023/1791 explicitly allows Member States to take into account climatic variations within the Member State when calculating their public bodies' final energy consumption.

Furthermore, taking into account the overall goals of the Directive, Member States may apply further adjustments when calculating their public bodies' final energy consumption. In particular, this includes the adjustment to changing public service levels or adjustments in the case when public bodies are added, removed or restructured. Adjusting final energy consumption for these influencing factors will also help to avoid any major adverse incentives and leakages that might be caused by the obligations laid down in Article 5(1) of Directive (EU) 2023/1791, such as final energy consumption reductions achieved by outsourcing or the reduction of service levels.

Member States are not obliged to consider climatic variations or other influencing factors. If a Member State chooses to adjust the energy consumption for climatic variations or other influencing factors, it should provide sufficient information to explain how the adjustment was calculated and what impact the adjustment had on the reported final energy consumption.

According to the state of the art in adjusting final energy consumption from climatic variations, as described in particular in ISO 17742 or ISO 50049, the adjustment methodology must not be changed from one year to another. Furthermore, the adjustment approach applied must be consistent across all consumption sectors and may not be applied selectively for specific consumption segments, for example, sectors, public services or groups of public bodies.

If a Member State chooses to change the approach chosen after a certain number of reporting years, a comprehensive explanation on the reasons for any change and, for consistency reasons, a recalculation of the final energy consumption figures reported for preceding years applying the newly chosen approach across all sectors and public services would have to be provided. This shall demonstrate that the obligations of the article are consistently fulfilled also under the new methodology.

Against this background, the Appendix B to this Annex briefly describes methodological approaches for adjusting the calculations for final energy consumption which are considered appropriate according to the state of the art. Member States may deviate from the proposed procedure for good reasons and with appropriate justifications.

4.2. **Policy requirements in Article 5 of Directive (EU) 2023/1791**

Member States are free to compose the 'policy mix' intended to achieve the final energy consumption targets. Although Article 5(3), (4) and (5) of Directive (EU) 2023/1791provide a few obligatory tools, the concrete implementation paths can be designed by the Member States with a high degree of flexibility.

The following sections highlight the major requirements related to the implementation of Article 5(3), (4) and (5) of Directive (EU) 2023/1791.

4.2.1. *Requirements related to long-term planning tools*

In accordance with Article 5(6) of Directive (EU) 2023/1791, Member States shall ensure that all regional and local authorities establish specific energy efficiency measures in their long-term planning tools. This means that Member States have to implement appropriate policy measures that lead to all regions and municipalities using long-term planning tools that at least cover the topic of energy efficiency. The long-term energy efficiency plans should ideally be part of broader plans, such as decarbonisation or sustainable energy plans, where such exist or are being created.

Member States may use as starting point various forms of decarbonisation or sustainable energy plans that were developed by local authorities within relevant national and European initiatives ([39]). Usually, energy efficiency measures are already an integral part of the planning process in these initiatives. Furthermore, most of the initiatives foresee some kind of quality assurance for the long-term plans as well as for the implementation procedures. Also, some Member States have already started to incorporate sustainable energy considerations, including energy efficiency, into spatial development or urban plans which are prepared by regions and municipalities on a regular basis.

4.2.2. *Mitigation of energy poverty*

The requirements which Member States have to fulfil related to alleviating energy poverty and protecting vulnerable customers are included in Article 24 of Directive (EU) 2023/1791. In this context, Article 5(6) of Directive (EU) 2023/1791 only adds that Member States shall ensure that all authorities, including regional and local authorities ([40]), are actively involved in the implementation of energy poverty related policies. In particular, it must be ensured that the interests of priority groups (people affected by energy poverty, people living in low-income households and vulnerable groups), are taken into account when energy efficiency measures are planned and implemented, and that significant negative direct or indirect impacts of energy efficiency measures are mitigated. This applies to the long-term energy efficiency and decarbonisation plans, and in particular to social housing owned by regional or local authorities, plans and policies which can also be combined with measures and investments eligible under the Social Climate Fund.

([39]) Just to mention a few exemplary initiatives: At the European level the Covenant of Mayors has successfully introduced the tool of Sustainable Energy and Climate Action Plan (SECAP); In the DACH region initiatives such as e5 or Klimabündnis are well-know. The Netherlands have initiated a national programme on the elaboration of regional energy strategies.

([40]) Local authorities that are signatories of the EU Covenant of Mayors may receive support for their planning and implementation efforts on energy poverty. The Covenant cooperates with the JRC and the EU's Energy Poverty Advisory Hub to offer this support. For more information, please see: https://eu-mayors.ec.europa.eu/en/library/energy_poverty/.

4.2.3. *Support for public bodies in the uptake of energy efficiency improvement measures*

Article 5(7) of Directive (EU) 2023/1791 requires Member States to support public bodies, which may include financial and technical support, in the uptake of energy efficiency improvement measures, without prejudice to State aid rules.

Generally, Member States are free in designing the 'support packages' for the public bodies. However, taking up the examples provided in Article 5(6) and (7) of Directive (EU) 2023/1791, and based on practical experience, the support should include among others the following important elements: ([41])

— technical and financial support to enhance long-term planning related to sustainable energy and decarbonisation at the regional and local level;

— technical support to prepare investment projects, based on the outcomes of long-term planning ('project pipelines');

— financial support to energy efficiency, refurbishment or decarbonisation investment projects, as required by Article 30 of Directive (EU) 2023/1791 ([42]);

— support on integration of wider benefits of energy efficiency and of considerations of life cycle carbon emissions into investment appraisals, delivered for example, through capacity building programmes;

— technical assistance in applying energy performance contracting, as required by Article 29(4) Directive (EU) 2023/1791.

Furthermore, the support measures should be accessible to all public bodies. Pilot programmes and measures with a limited outreach are not sufficient.

4.2.4. *Energy performance of buildings and replacement of inefficient heaters*

Article 5(9) of Directive (EU) 2023/1791 puts a focus on the energy performance of buildings, including the replacement of old and inefficient heaters as a particularly attractive energy efficiency measure that public bodies can take. Since the obligation of Article 5(1) Directive (EU) 2023/1791 refers to final energy consumption reduction, the replacement of fossil heating boilers by (renewable) district heating, when feasible, or by heat pumps, would lead to large reductions in final energy consumption.

5. **OBLIGATIONS RELATED TO ARTICLE 6 OF DIRECTIVE (EU) 2023/1791**

Article 6 of Directive (EU) 2023/1791 replaces Article 5 of Directive 2012/27/EU. The main changes are:

— the scope of the requirement to renovate 3 % of the total floor area of heated and/or cooled buildings has been extended from buildings owned and occupied by central government to all buildings owned by public bodies as defined by Article 2 of Directive (EU) 2023/1791;

— the required renovation level has increased from minimum energy performance requirements (as defined by Article 5 EPBD) to NZEB (as defined by Article 2 point 3 EPBD) or ZEB (as defined by Article 11 EPBD) standards;

— in addition to achieving an equivalent level of energy savings every year, the alternative approach requires Member States to introduce a renovation passport for buildings representing at least 3 % of the total floor area of heated and/or cooled buildings that are owned by public bodies, as well as the renovation of those buildings to NZEB or ZEB before 2040.

([41]) For many of listed elements, there exist EU-programmes and schemes that can be addressed, such as ELENA, the LIFE, INTERREG, etc.

([42]) Commission Recommendation of 12 December 2023 on transposing Article 30 on national energy efficiency funds, financing and technical support of the Directive (EU) 2023/1791 on energy efficiency (OJ C, 19.12.2023, ELI: http://data.europa.eu/eli/C/2023/1553/oj).

To comply with Article 6 of Directive (EU) 2023/1791 Member States shall:

— ensure that at least 3 % of the total floor area of heated and/or cooled buildings, that are owned by public bodies, and which have a total useful floor area of over 250 m², is renovated each year to be transformed into at least NZEB or ZEB (default approach);

— negotiate with the owner, for buildings occupied but not owned by public bodies, with the aim of establishing contractual clauses for the building to become at least a NZEB or ZEB, in particular, when reaching a trigger point such as the renewal of rental, change of use, significant repair or maintenance;

— establish, and make publicly available and accessible, an inventory of public buildings.

Member States may decide to apply an alternative approach, which consists of achieving annual energy savings at least equivalent to those achieved via the default approach. For the purpose of applying an alternative approach, Member States shall:

— estimate the energy savings that renovations pursuant to Article 6(1) to (4) of Directive (EU) 2023/1791 would generate by using appropriate standard values for the energy consumption of reference public bodies' buildings before and after renovation into NZEB or ZEB;

— ensure that, each year, a renovation passport is introduced for buildings representing at least 3 % of the total floor area of heated and/or cooled buildings that are owned by public bodies. For those buildings, the renovation to NZEB shall be achieved by 2040 at the latest.

Buildings that are covered by Article 6 of Directive (EU) 2023/1791 are heated and/or cooled buildings owned or occupied by public bodies, with a total useful floor area over 250 m² (Article 6(1) of that Directive). Building are to be interpreted in accordance with the definition provided for in Article 2 point 1 of the EPBD where 'building' means a 'roofed construction having walls, for which energy is used to condition the indoor environment'. 'Total useful floor area' means the 'floor area of a building or part of a building, where energy is used to condition the indoor climate' (Article 2, point (13) of Directive (EU) 2023/1791). This means that buildings such as unheated garages or warehouses, for example, are excluded from the obligation. Table 3 provides an overview of the different obligations according to the building categories included in Article 6 of Directive (EU) 2023/1791.

Table 3

Scope of the different obligations of Article 6 of Directive (EU) 2023/1791

Category		Included in inventory	Included in the baseline (1)	Obligation to renovate	Contribution to target achievement of renovated to NZEB
Reference		Article 6(5)	Article 6(1-4) and 6(6)		
Occupied but not owned by public bodies		YES	NO	NO (2)	NO
Owned by public bodies	Buildings that are already NZEB as of 1 January 2024	YES	NO	NO	NO
	Social housing – NOT cost neutral to renovate	YES	NO	NO	NO
	Social housing– cost neutral to renovate	YES	YES	YES	YES
	Buildings that are not technically, economically or functionally feasible to be transformed into a NZEB (Art. 6(2)subparagraph 2)	YES	YES	NO	YES (3)

Category		Included in inventory	Included in the baseline ([1])	Obligation to renovate	Contribution to target achievement of renovated to NZEB
Reference		Article 6(5)	Article 6(1-4) and 6(6)		
	Special buildings as stipulated under Art. 6(2)(a)-(c).	YES	YES	YES	YES ([4])
	All other buildings targeted by the renovation obligation > 250 m^2	YES	YES	YES	YES
Other buildings ≤ 250 m^2		NO ([5])	NO	NO	NO

([1]) Only buildings that are owned by public bodies as of 1st January 2024 are included in the baseline. Buildings acquired by a public body after this date are not included in the baseline but can contribute to achieving the target if they are subsequently refurbished to NZEB or ZEB standard.
([2]) Obligation to negotiate contractual clauses (Article 6(1)).
([3]) Only if they are nevertheless renovated to NZEB or ZEB.
([4]) For special buildings as stipulated under Article 6(2) points (a) to (c) an energy efficiency renovation to an appropriate level set by Member States, that can be less stringent than NZEB is sufficient. The achievement of NZEB after renovation is not obligatory.
([5]) There is no obligation to include buildings smaller than 250 m^2 into the inventory according to Article 6(5), but Member States may choose to do so in order to get a complete inventory of public buildings.

The renovation and energy savings obligations set by Article 6 of Directive (EU) 2023/1791 are to be met annually by Member States, as of the transposition date by 11 October 2025. For data collecting and reporting purposes, it is recommended that Member States use the calendar year as the basis to calculate and report their obligations. During the period from the transposition date until the end of the year, the requirement concerning the m^2 to be renovated, or the energy savings to be achieved, can be calculated pro-rata, that is 0.7 % of the surface of all public bodies' buildings in 2025, in addition to the 2.3 % of the central government buildings that are to be renovated in 2025 in line with Article 5 of Directive 2012/27/EU.

The concept of energy renovation describes improving the energy performance of one or more building elements, for example the building envelope or the technical building systems, which significantly reduces the energy consumption for space heating and/or cooling, hot water, ventilation, (built-in) lighting and auxiliary energy use ([43]).

Commission Recommendation (EU) 2019/1019 ([44]) provides further detail on the notions of technical, economic and functional feasibility which are also relevant to the application of Article 6(2). It states that it is for Member States to detail the specific cases where meeting the requirements is not feasible from a technical, economic and/or functional perspective and to ensure these cases are clearly identified, framed and justified. The procedures for evaluating the feasibility may also differ between types of buildings to account for their specificities. Technical, economic and functional feasibility should be interpreted as follows:

— *Technical feasibility* – There is no technical feasibility when it is impossible to apply the requirements from a technical perspective, i.e., when the system's technical characteristics prevent the requirements from being applied.

— *Economic feasibility* – It relates to the costs of applying the requirements and whether: (i) these costs are proportionate with regards to the costs of the planned intervention (for example, system upgrade); (ii) the expected benefits outweigh the costs taking into account the expected lifetime of the system.

— *Functional feasibility* – It is functionally not feasible to apply requirements if these would lead to changes that would impair the operation of the system or the usage of the building (or building unit), taking into account the specific constraints (for example, technical regulations) that may apply to the system and/or building.

([43]) European Commission, Directorate-General for Energy, 2019, Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU : final report, Publications Office, p. 208, https://data.europa.eu/doi/10.2833/14675.
([44]) Commission Recommendation (EU) 2019/1019 of 7 June 2019 on building modernisation (OJ L 165, 21.6.2019, p. 70, ELI: http://data.europa.eu/eli/reco/2019/1019/oj).

5.1. **Obligations related to the inventory of public bodies' buildings**

In accordance with Article 6(5) of Directive (EU) 2023/1791, by the transposition date, by 11 October 2025, Member States shall set up and make publicly available and accessible an inventory of heated and/or cooled buildings, or both, that are larger than 250 m^2 and owned or occupied by public bodies. For each building, the inventory shall at least contain the floor area in m2, the Energy Performance Certificate (EPC), and, where available, the measured annual energy consumption of energy for heating, cooling, electricity and hot water. This inventory shall be updated at least every two years. The inventory supports the assessment of the obligations set by Articles 6(1) to (4) and (6) of Directive (EU) 2023/1791 by allowing Member States to calculate the total area captured under the 3 % target, and the m^2 to be renovated annually as per the default approach, or the equivalent energy savings to be achieved under the alternative approach.

The starting point for creating the inventory is to establish a list of all public bodies. It can be based on the list of public bodies necessary for Article 5 of Directive (EU) 2023/1791. It is therefore advisable to collect data required to comply with Art. 6(5) together with data required to comply with Article 5 via the same tools. For each public body, Member States shall identify all buildings that fall within the scope of the Article. While Article 6(5) of Directive (EU) 2023/1791 does not require Member States to report which bodies own or occupy the buildings, Member States will need this information for designing appropriate measures that are different for buildings owned and those occupied by public bodies. They may also use this information to comply with other requirements, such as the need to regularly update the inventory and link to the EPBD. It may also be useful to publish data concerning the ownership or occupancy, so that users of the inventory are able to identify those buildings where public bodies are directly responsible for the energy efficiency measures (including renovation).

The inventory should be set up in such a way that it is possible to uniquely identify each building. A practical approach could be to use the same unique identification used in the EPC, which may vary per Member State. For example, this could be the address and/or the building name. It should further facilitate the management of the inventory and the link with other databases required by EPBD.

Based on the categories identified in Article 6(2), points (a) to (c) of Directive (EU) 2023/1791, the inventory shall include all buildings owned or occupied by a public body, including:

— Buildings that already meet the NZEB or ZEB standards;

— Social housing; as the definition of social housing varies by Member States, the national definition should be used to determine whether a building should be included;

— Buildings belonging to the special categories identified in Article 6(2) of Directive (EU) 2023/1791.

Article 6(5) of Directive (EU) 2023/1791 requires that the inventory includes the energy performance certificate, which means an electronic version, for example, visible as a webpage, PDF or image.

The EPC includes the floor area of the building (to be understood as total useful floor area, indicated in m^2), which can be used to fill in the corresponding element of the inventory.

Article 6(5) of Directive (EU) 2023/1791 requires Member States to record measured energy consumption for each building included in the inventory when those data are available. This includes the annual energy consumption of heating, cooling, electricity and hot water. Data concerning energy consumption can usually be easily identified, as it is provided by the energy supplier. However, the following aspects need to be taken into account:

— Heating in buildings is usually provided by: electric systems (heat pumps, HVAC, resistance heaters), fuel boilers (gas, biomass etc.), heat networks, or other on-site generation (for example, solar thermal). In some cases, identifying the final heat use is relatively easy; for example, heat networks may record the amount of heat delivered to the building for billing purposes. In other cases (for example, biomass boilers), users are billed according to the amount of fuel they buy, which therefore has to be converted to kWh.

— Electricity consumption will typically include energy used by equipment that is not directly related to the building itself. For example, a building may host the servers for an entire organisation and show a very high consumption compared to the value indicated in the EPC.

— If the building does not have submetering, it may not be possible to separately indicate energy use for heating, cooling and hot water, if these are provided by electric equipment. In this case, they should be included under electricity consumption.

— For buildings with onsite renewables, the consumption of onsite generation should be added to the net amount of energy imported from the network. The total energy consumption is calculated as *total import* plus generation minus *total exports*.

— In some cases, it will not be possible to provide a complete figure for one of the subcategories of energy consumption, for example, in the case of a building where only part of the hot water needs are covered by a solar water heater. In this case, only the measurable amount of hot water generated on-site should be reported under the subcategory *hot water*.

When defining the methodology to comply with the requirements of Article 6(5) of Directive (EU) 2023/1791, Member States should provide clear instructions to public bodies on how consumption data should be reported.

To make the inventory publicly available and accessible, Member States shall ensure that the general public and any interested stakeholders can easily access and use the data. In practice Member States can comply with the requirement for example by:

— Publishing the inventory on an easily publicly accessible website;

— Allowing free access without registration, or after a simple registration process;

— Providing basic functions to users, for example, to search for a specific building or buildings owned by a specific public body, or by other available building characteristics;

— Allowing users to download all or parts of the data.

Member States may provide further functions to facilitate the use of the inventory, for example, for searching by public body or by city/region, or by address.

Member States must set up the inventory by the transposition deadline and must update it at least every two years ([45]). These updates should at least include the following modifications:

— newly constructed buildings, new buildings acquired or used by a public body;

— buildings in the database that are sold or demolished, or where the rental has ended;

— buildings that undergo modifications that change their size;

— buildings where an updated energy performance assessment was carried out, leading to a new EPC;

— buildings where an energy renovation was performed, leading to significant energy reductions.

For the purpose of updating the inventory every two years, Member States shall also update the energy consumption data for the public bodies' buildings. However, to minimise the administrative burden for Member States, it is recommended that energy consumption data is updated only if there are significant changes, for example, due to an energy renovation or change of use. To further reduce administrative burden, digital and automated solutions are recommended to facilitate the data collection. These should be developed so that requirements associated with Article 5 of Directive (EU) 2023/1791 can also be fulfilled via the same dataflow. For example, automated data readings from smart meters can be aggregated at building level and at public body level, so that both the inventory for Article 6 of Directive (EU) 2023/1791 and the database set up to comply with Article 5 of Directive (EU) 2023/1791 can be kept regularly up-to-date.

([45]) Updating the inventory will not have any effect on the baseline and annual target, which will remain the same.

Article 6(5) of Directive (EU) 2023/1791 requires Member States to link the inventory to the building stock overview done in the framework of the national building renovation plans in accordance with Article 3 EPBD and the databases set up pursuant to Article 22 EPBD. This could be achieved by linking the inventory with these datasets via the building name or ID. Where EPBD requires Member States to report the number of buildings and total floor area (m^2) for public buildings, this can be extracted from the inventory prepared for Article 6 of Directive (EU) 2023/1791. The data collected to set up the inventory required by Article 6(5) of Directive (EU) 2023/1791 can be used to populate the national building stock overview, but other data sources will be necessary.

Article 6(5), second subparagraph, of Directive (EU) 2023/1791 states that publicly available and accessible data from the inventory (about building stock characteristics, buildings renovation and energy performance) may be aggregated by the EU Building Stock Observatory (EU BSO) to ensure a better understanding of the energy performance of the building sector through comparable data. The EU BSO is a tool that monitors the energy performance of buildings across the EU ([46]). The inventory set up for Article 6(5) should contribute to improving the data and information in the EU BSO by providing data on public bodies' building stock, including energy performance certificates, NZEB buildings, and energy consumption. As a minimum, the requirement would be satisfied if Member States share inventory data with EU BSO in accordance with the modalities to be set by the Commission.

5.2. **Obligation to comply with the annual renovation target**

The 3 % renovation rate is to be calculated on the total floor area of buildings having a total useful floor area over 250 m^2 owned by public bodies and which, on 1 January 2024, are not NZEB. This means that the annual 3 % renovation target is based on a fixed value (baseline) over the full implementation period.

Member States may choose which buildings to renovate in order to comply with the 3 % renovation requirement, giving due consideration to cost-effectiveness and technical feasibility in the choice of buildings to renovate. If Member States assess that it is not technically, economically or functionally feasible for a specific building to be transformed into an NZEB and they renovate that building to a lower level, they shall not count the renovation of that building towards the fulfilment of the requirement. However, these buildings shall still be included in the list of buildings used to calculate the annual renovation requirement (i.e., in the baseline). Member States should also consider that the definition of NZEB includes the concept of cost-effectiveness.

As an exception, Member States may apply less stringent requirements than renovating to NZEB or ZEB for buildings belonging to the following categories (Article 6(2) of Directive (EU) 2023/1791):

— Protected buildings ([47]), in so far as compliance with certain minimum energy performance requirements would alter their character or appearance unacceptably;

— Buildings owned by the armed forces or central government and serving national defence purposes. This provision does not include single living quarters or office buildings;

— Buildings used as places of worship and for religious activities.

This provision means that these buildings should be included in the calculation of the baseline, and they can be counted towards the achievement of the target even if they achieve an energy performance standard other than NZEB or ZEB. The renovation of these buildings to a standard that is lower than NZEB or ZEB should be as close as possible to NZEB or ZEB standard for them to be counted towards the target, considering the special characteristics of the building. To do so, Member States should define this minimum level according to the characteristics of the building, or group of buildings with similar characteristics.

([46]) EU Building Stock Observatory, https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/eu-building-stock-observatory_en/.

([47]) Article 6 of Directive (EU) 2023/1791 refers to buildings officially protected as part of a designated environment, or because of their special architectural or historical merit, which will be in large part historic buildings.

Social housing

For the purpose of Article 6(1), third subparagraph, of Directive (EU) 2023/1791 social housing covers all buildings (including multi-apartment buildings and single houses) with a total useful floor area of over 250 m^2 owned by public bodies for the purposes of providing social housing and which, on 1 January 2024, do not meet the NZEB definition applicable in the relevant Member State. Member States should refer to the national definition of social housing. Buildings with mixed ownership should be included in the obligation to renovate, if the floor area criteria are met for the parts owned by the public body.

Member States may choose to exempt social housing from the obligation to renovate, if the renovation would lead to rent increases for people living in social housing that cannot be limited to the equivalent of the economic savings on the energy bill. For this purpose, Member States may estimate the energy bill savings resulting from social housing renovation (considering energy savings and the evolution of energy prices) and assess whether they are sufficient to cover renovation costs. When economic savings on the energy bill do not cover renovation costs, Member States may consider alternative options to avoid the entire renovation costs being passed onto residents, for example, by financing a part of the cost via public or private funding instruments, including via measures and investments eligible under the Social Climate Fund. This case should be applied in situations where the rent is charged proportionally to the value of the house and where home improvement costs (including energy renovations) are passed onto households in the form of increased rents.

Cost neutral means that the investment required to renovate the building is equal or lower than the monetary equivalent of the lifetime benefits that can be expected following the renovation. To evaluate whether this is the case, Member States should define appropriate methodologies that specify how to set the parameters required for the calculation, such as renovation costs, discount rates, future energy prices, consumption before and after the renovation, and so on.

Member States should consider other relevant costs imposed by social housing, as well as other benefits that can be achieved following a renovation to NZEB. For example, households renting social housing may benefit from (lower) tariffs designed to help priority groups (such as people affected by energy poverty, vulnerable customers, people living in low-income households and, where applicable, people living in social housing) with their energy bills, or the energy bill may be partially or entirely paid by social support schemes, or other tools that are available in each Member State, including exploring the opportunities offered by revolving funds and community-owned renewable energy projects i.e. solar energy sharing among tenants in social housing which supply green electricity at a lower price. Energy renovations would reduce the energy bill, and thus lower these indirect energy costs that may not be evident if only the energy bill is considered. Reduced maintenance costs and better living conditions after renovation are other aspects which should be considered as part of the cost neutrality assessment.

Member States should assess the cost neutrality of the intervention on the basis of estimated costs and consumption values but may consider limiting any post renovation rent increase for social housing tenants to the amount of savings achieved on the energy bill. A fictive example is the renovation of social housing that costs EUR 30 000 and saves 12 000 kWh per year in energy use. If households pay an average rate of EUR 0,25 per kWh, they would save EUR 3 000 per year, but if the household benefits from a reduced tariff, for example EUR 0,10 per kWh, annual savings would amount to EUR 1 200. Further, if the household used less than the estimated energy consumption for that dwelling, the savings realised in practice will be less than EUR 1 200. In this case, it will not be possible to recover the investment, even if very low discount rates are used; however, this is because of the socialised cost (subsidised electricity rates, in this example) and the fact that tenants underheating their homes are not properly considered. To achieve cost neutrality, Member States should consider the subsidises received by social housing providers and help them cover the renovation costs that they cannot recoup from tenants.

Member States should establish an appropriate methodology to evaluate whether the cost-neutrality condition is met. Member States should define an appropriate discount rate to actualise maintenance costs and energy bills, but this should be set at a realistic level, for example, at the cost of capital for the public body or the social discount rate ([48]). This is different from the test of economic feasibility, where it may be appropriate to include a profit margin and a higher discount rate, to reflect the remuneration of risk.

([48]) In this context, the cost of capital can be defined as the minimum rate of return that a public body must earn before generating profits. For example, it could be the cost of borrowing the money from a financial institution. The Social Discount rate is a discount rate usually applied to projects with public or social value.

The cost neutrality principle can be considered as respected where the following condition is true:

$$RC \leq \sum_{i=0}^{rl} \frac{(E_{br,i} + OC_{br,i} - OB_{br,i}) - (E_{ar,i} + OC_{ar,i} - OB_{ar,i})}{(1+r)^i}$$

Where:

RC: costs incurred for the energy renovation of the building;

E: total energy bill;

OC: other costs;

OB: other benefits;

br: before renovation;

ar: after renovation;

r: the applied discount rate;

i: the year for which costs and benefits are estimated;

rl: the remaining life of the existing building before renovation.

The right side of the equation represents the savings in the buildings' running costs that are achieved throughout the useful life, appropriately discounted. The equation is presented as a summation because Member States may want to consider changes in energy cost and other costs and benefits expected in future years.

Member States may define the details of the methodology, however, the assessment should be consistent with the definition of cost neutrality and best practice. The following aspects should be considered by Member States for the assessment:

— The assessment should not consider the actual energy costs paid by households living in social housing if those are below the market price, but a notional bill calculated on average rates and based on estimated consumption, for example, in accordance with the methodology for calculating the energy performance of buildings according to the Annex I of the EPBD. However, only energy savings actually realised by renters should be considered when estimating the increase in the rent.

— The replacement cost of buildings elements that have reached the end of their life should be considered when estimating the cost of the energy renovation. For example, if a gas boiler has to be replaced, the energy renovation cost should only include the difference in cost between an energy efficient system (for example, a heat pump) versus the most likely alternative available in the market to replace the gas boiler.

— The expected lifetime of the elements replaced should be considered in the assessment of benefits and should be estimated in a similar way as in the methodology applied to evaluate the cost-optimal level in accordance with Annex I to Commission Delegated Regulation (EU) No 244/2012 ([49]). For the calculation of the residual value of a building, Member States should refer to Annex I of the Delegated Regulation (EU) No 244/2012 establishing a comparative framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements. It states that Member States shall use a calculation period of 30 years for residential and public buildings, and a calculation period of 20 years for commercial, non-residential buildings.

— Other revenues, for example from solar photovoltaic panels, should be considered as part of the other benefits after renovation.

— Renovations can trigger additional works, either as a regulatory requirement or aimed at additional improvements to the building. For example, renovating a building may require bringing the building up to regulations concerning fire-safety, accessibility or electrical wiring; or, it may open new living areas (such as a rooftop). Member States should explain in the methodology how to remove the costs for these works from the renovation costs; however, when this is not possible, the additional benefits provided by these costs should be included as *Other benefits* after renovation.

([49]) Commission Delegated Regulation (EU) No 244/2012 of 16 January 2012 supplementing Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings by establishing a comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements for buildings and building elements (OJ L 81, 21.3.2012, p. 18, ELI: http://data.europa.eu/eli/reg_del/2012/244/oj).

Member States may also consider other aspects:

— the difference in the value of the building before and after the renovation (residual value of a building at the end of the period considered);

— an estimate of the increase in comfort for residents.

Social housing that does not meet the cost neutrality criteria may be excluded from the baseline. If Member States choose to exclude part or all of their social housing from the baseline, they shall provide a justification as to why renovating these buildings would not be cost neutral or would lead to rent increases going beyond the savings on the energy bill.

As the assessment of cost neutrality and possible exemption of social housing have an impact on the calculation of the annual renovation target, Member States should carry out the cost-neutrality assessment of the entire social housing stock before the transposition deadline. Member States can apply different methods for assessing cost neutrality in advance:

— If the social housing stock is relatively homogenous, Member States can define standard values for estimating the costs and benefits for the main housing types. These values may be related to factors such as construction year and the year of last renovation, and allow a rapid assessment of cost neutrality across the entire stock.

— If the social housing stock has significantly different characteristics, Member States should carry out a series of tailored assessments, aiming to get a sufficiently granular picture of the entire stock.

Because the assessment of cost neutrality has to be carried out in advance of the renovation work, the evaluation should consider the status of the building (including the remaining lifetime of the different building elements) at the moment in which the assessment is done.

Special categories of buildings as defined in Article 6(2), points (a) to (c) of Directive (EU) 2023/1791

Article 6(2) of Directive (EU) 2023/1791 specifies that Member States may apply requirements that are less stringent than those laid down in Article 6(1) of that Directive for some categories of buildings as defined in Article 6(2), points (a) to (c) of Directive (EU) 2023/1791). This provision should be interpreted as an obligation to renovate that can be met by renovating these buildings to a performance level other than NZEB or ZEB, although by default, whenever possible, these buildings are renovated to NZEB or ZEB. Member States must always include the buildings belonging to the special categories in the baseline for the calculation of the 3 % renovation requirement. Member States are allowed to count the renovation of these buildings towards the annual renovation quota even if they are renovated to a different standard. Whilst less stringent renovation requirements may be applied to buildings owned by the armed forces or central government and serving national defence purposes, single living quarters or office buildings for the armed forces and other staff employed by national defence authorities must be renovated up to NZEB or ZEB level in order to be counted towards the annual target.

For identifying buildings belonging to these categories, Member States should revert to already existing methodologies. For example, for officially protected buildings and places of worship and religious activities, the same methodology employed for the purposes of EPBD could be used.

Article 6(2) of Directive (EU) 2023/1791 does not impose any explicit obligation on Member States to notify the Commission concerning their approach towards the special categories of buildings, but the criteria set for protected buildings requires Member States to carry out an assessment. For armed forces or defence buildings and buildings used as places of worship and for religious activities, Member States are only required to demonstrate that these buildings belong to these categories. This can be done when counting the renovation of these buildings towards the annual renovation quota, as all buildings belonging to the special categories must be included in the baseline for calculating the annual requirement.

Member States should clearly define the energy performance level that buildings in these categories will need to achieve in order to be counted towards the annual renovation rate and justify these performance levels. The energy performance level should be in line with the aim of Article 6, *i.e.*, all measures to improve energy efficiency and transform the building into an NZEB or ZEB should be implemented, unless they affect the character or the use of the buildings, or are disproportionate.

For special buildings (Article 6(2), points (a) to (c) of Directive (EU) 2023/1791) and buildings that Member States choose not to renovate based on feasibility considerations (Article 6(2), second subparagraph of Directive (EU) 2023/1791), Member States should consider setting an appropriate methodology that allows the identification of buildings that are not feasible to renovate to NZEB or ZEB based on standard criteria. The methodology needs to consider the costs of renovation, the energy savings and the additional costs or impacts associated with the characteristics of the building that assign it to a special category. The methodology and criteria may be applied to groups of buildings, rather than at building level; for example, office space built within a certain period using the same construction process. Relevant indicators, which could be considered by Member States to assess comparability of buildings, are:

a. Building characteristics

— Type of building (for example, residential, office, educational, hospital);

— Construction year;

— Measure of physical size (for example, floor area);

— Heated and/or cooled floor area;

— External wall area;

— Energy efficiency measures (for example, airtightness, window-to-wall ratio, window types, insulation levels, double-glazing, efficient lighting, heater timers, time since last heating adjustment);

— Defective building systems (for example, heating systems, electrical installations, building envelope).

b. Climatic factors

— Climatic zone;

— Cloudiness.

c. Urban planning

— Density of neighbourhoods;

— Measures mitigating weather impacts (for example, strategic placements of vegetation).

5.2.1. *Renovation of buildings owned by public bodies*

To meet the obligation to renovate, Member States first need to establish the total useful floor area that, on 1 January 2024, falls under the obligation (baseline). Based on this figure, Member States can estimate the annual renovation target (3 % of the baseline).

To be part of the baseline, buildings are to comply with the following criteria:

— Have a total useful floor area that is larger than 250 m^2;

— Be owned by public bodies, as defined by Article 2, point (12), of Directive (EU) 2023/1791;

— Not reach NZEB standard on 1 January 2024;

Member States may exempt from the baseline social housing, where renovations would not be cost neutral or where a renovation would lead to rent increases that are not limited to the equivalent of the economic savings on the energy bill.

Once the baseline has been established, Member States shall calculate the annual renovation target they will need to fulfil. The following formula should be used to calculate the minimum annual renovation target:

$$Minimum\ annual\ renovation\ target\ (in\ m^2) = m^2_{total\ useful\ floor\ area} \times r_r$$

Where:

$m^2_{total\ useful\ floor\ area}$ is the sum of useful floor area of all buildings included in the baseline;

r_r is the renovation rate of 3 % set by Article 6(1) of Directive (EU) 2023/1791.

A numerical example is set out in Appendix C to this Annex.

The annual renovation target in terms of m² remains unchanged over the period during which Directive (EU) 2023/1791 is effective. This is a change compared to Directive 2012/27/EU in which the annual renovation target had to be calculated annually based on the floor area that did not meet the national minimum energy performance requirements. Directive (EU) 2023/1791 implies that the required annual renovation rate will be significantly higher compared to the method used in Directive 2012/27/EU. This also means that the baseline set by the end of the first reporting period, and consequently the annual renovation target, must not be updated when a building is sold, demolished, acquired or built. There are special cases which provide Member States with a certain degree of flexibility to reach the annual renovation target. These cases are explained below.

Member States shall communicate their baseline (total m² of buildings that fall in the scope of the Article) and the annual renovation target (also in m²) to the Commission in their National Energy and Climate Plans set by Regulation (EU) 2018/1999 of the European Parliament and of the Council ([50]) (see chapter 7.1). As part of this communication, Member States should also indicate the m² of buildings falling in the special categories of Article 6(2a-c). The amount of m² renovated that can be counted towards the annual requirement should be communicated by the Member States in the biennial reports in accordance with Regulation (EU) 2018/1999, distinguishing the m² of renovated buildings that fall in the special categories of Article 6(2), points (a) to (c) of Directive (EU) 2023/1791.

Front load savings

With the aim of providing an incentive for early action, Directive (EU) 2023/1791 allows Member States that renovate more than 3 % of the total floor area of their buildings in a given year to count this so-called renovation surplus towards the annual renovation rate of the following years (Article 6(3)). Until 31 December 2026, renovation surpluses achieved in a given year may be counted towards the annual renovation rate of the following three years. As of 1 January 2027, renovation surpluses achieved in a given year may only be counted towards the annual renovation rate of the following two years. In practice this means that if, for example, a Member States renovates 3,5 % of the total useful area of its building stock in year X, in year X+1 it only needs to renovate 2,5 % of the total useful area; If the Member State renovates 3 % of the total useful area also in year X+1, the 0.5 % difference can be used in year X+2 to lower the renovation requirement to 2,5 %. Spreading the overachievement over the two years (for example, 0,25 % in year X+1 and 0,25 % in year X+2) is also possible.

Demolition and replacement

In accordance with Article 6(4) of Directive (EU) 2023/1791, Member States may, under certain circumstances, count the useful floor area of a new building owned as replacement for a building demolished in any of the two previous years towards the annual renovation rate. Counting new NZEB or ZEB towards the achievement of the annual renovation rate is only allowed if two criteria are met:

— **Criterion 1** – The new building is a replacement for a public body's building demolished in any of the two previous years; and

([50]) Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council (OJ L 328, 21.12.2018, p. 1, ELI: http://data.europa.eu/eli/reg/2018/1999/oj).

— **Criterion 2** – The demolition and replacement of the current building by a new building is more cost-effective and sustainable in terms of energy use and lifecycle CO_2 emissions achieved compared to the renovation of the current building. Lifecycle CO_2 emissions include embedded and operational CO_2 emissions, and CO_2 emissions related to the demolition of the old building.

The conditions to meet the second criteria are shown in Table 4.

Table 4

Criteria for demolition and replacement

Parameters	Condition
Cost-effectiveness	Total cost of demolishing current building (in euro) + Total cost of constructing new building (in euro) < Total cost of renovating current building (in euro)
Sustainability	(Total energy use (in kWh) of the renovated building over its remaining estimated economic lifecycle + energy use (in kWh) during the renovation phase) > (Total energy use (in kWh) of a new building over the same number of years + Total energy use (in kWh) during the demolition and construction phase) AND (Lifecycle CO_2 emissions (in tCO_2e) of the renovated building over its remaining estimated economic lifecycle + Lifecycle CO_2 emissions (in tCO_2e) during the renovation phase) > (lifecycle CO_2 emissions (in tCO_2e) of the new building over the same number of years + lifecycle CO_2 emissions (in tCO_2e) during the demolition and construction phase)

The estimated economic lifecycle shall be determined by Member States in line with the EPBD. The demolished building that would be renovated and the new building should be compared over the same time period (*i.e.,* entire or remaining estimated economic lifecycle of the current building).

The sustainability condition could be fulfilled for example if a renovation with energy and CO_2 intensive materials (for example, concrete, steel) is replaced by a reconstruction in low energy and CO_2 content materials (for example, wood and biomass derived products).

In accordance with Article 6(4) of Directive (EU) 2023/1791, Member States shall clearly set out and publish the general criteria, methodologies and procedures used to identify the exceptional cases under which they may count new buildings owned as replacements for demolished buildings towards the annual renovation rate.

When establishing the methodology to assess lifecycle emissions of buildings, Member States should refer to standards and methodologies referred to by the Commission to ensure accurate estimations. For example:

— European Commission, European Platform on Life-Cycle Assessment. (https://eplca.jrc.ec.europa.eu/lifecycleassessment.html)

— EN 15978:2011 Sustainability of construction works. Assessment of environmental performance of buildings. Calculation method. (https://www.en-standard.eu/bs-en-15978-2011-sustainability-of-construction-works-assessment-of-environmental-performance-of-buildings-calculation-method/)

— ISO 14040:2006 Environmental management – Life cycle assessment – principles and framework (https://www.iso.org/obp/ui/#iso:std:iso:14040:ed-2:v1:en)

— ISO 14044:2006 Environmental management – Life cycle assessment – requirements and guidelines (https://www.iso.org/obp/ui/#iso:std:iso:14044:ed-1:v1:en).

5.2.2. *Negotiation of contractual clauses for occupied buildings*

Article 6(1), fourth subparagraph, of Directive (EU) 2023/1791 also lays down an obligation that applies specifically to buildings that are occupied but not owned by public bodies. As with the obligation to renovate buildings owned by public bodies per Article 6(1) of Directive (EU) 2023/1791, only buildings that have a total useful floor area over 250 m^2 are included in the obligation. With respect to these buildings, Member States shall ensure that public bodies negotiate with building owners, with the aim to establishing contractual clauses resulting in the transformation of rented buildings into at least NZEB or ZEB. Article 6(1), fourth subparagraph, of Directive (EU) 2023/1791 emphasises the need to take advantage of trigger points in the contract, such as renewal of rental agreements, change of use and significant repair or maintenance work, to engage in negotiations. Public bodies occupying a building may highlight to building owners how they could benefit from the renovation: it increases the value of their building, which may justify consequent rent increases; it increases the lifetime of the building through improved performance and quality of building elements; it reduces ongoing maintenance costs; it leads to compliance with national building codes and requirements (such as possible minimum energy performance standards); it attracts tenants and minimises downtime periods.

In particular to help address the issue of split incentives, when public bodies are a major occupant of the building and intend to rent the building long term, they could for example offer to pay a certain proportion of the renovation costs (either via a one-off payment or by agreeing an increase in the rent) or could consider searching for a new building, if the building owner is not willing to renovate. Another possibility is to refer to Energy Service Companies (ESCOs) ([51]), which could finance the renovation in exchange for ongoing payments from the public authority or building owner.

Other useful approaches include:

— Member States could update the procurement procedures that all public bodies are expected to follow when it comes to renting new buildings and managing the contracts of the buildings they currently own.

— Member States could provide guidance and templates to public bodies on how to formulate the rental agreements so that appropriate clauses are included in the contract.

— Member States could require all public bodies to insert appropriate mandatory clauses in their rental agreements so that the obligation to renovate becomes standard. Member States should provide concrete options to support public bodies where the private landlord does not agree to the standard conditions.

— As Member States are obliged to renovate a large share of their building stock, and given that the transformation into at least NZEB or ZEB may require substantial work, public bodies may identify those buildings owned by public bodies and currently unused or underutilised, which can be used to host bodies currently renting buildings from the private sector. The inventory discussed in the previous section, particularly if extended to collect additional data on the public bodies' building stock, will be a powerful tool to support this strategy.

5.3. **Alternative approach – Equivalent energy savings**

The alternative approach allowed for by Article 6(6), first subparagraph, of Directive (EU) 2023/1791 will lead to an amount of energy savings in public bodies' buildings at least equivalent to that required in Article 6(1) of Directive (EU) 2023/1791 (default approach). Under this approach, Member States are not obliged to renovate public bodies' buildings to reach NZEB or ZEB immediately. Instead, Member States may apply other measures in public bodies' buildings that lead to equivalent energy savings, including measures such as demand reduction, and measures that may or may not directly affect the building envelope or technical building systems.

Article 6(6) of Directive (EU) 2023/1791 is composed of two separate obligations (first subparagraph and second subparagraph, point (a)) that Member States shall meet when they decide to opt for the alternative approach.

([51]) https://publications.jrc.ec.europa.eu/repository/handle/JRC133984 .

To meet the first obligation, Member States shall:

— estimate the energy savings that would be achieved every year if the Member State had opted for the approach provided for in Article 6(1) to (4) (equivalent energy savings) (Article 6(6), second subparagraph, point (b)).

— achieve every year an amount of energy savings in public bodies' buildings that is at least equivalent to that required in Article 6(1) (Article 6(6), first subparagraph).

The second obligation set by Article 6(6), second subparagraph, of Directive (EU) 2023/1791 requires Member States to introduce each year a renovation passport for buildings representing together at least 3 % of the total floor area of heated and/or cooled buildings owned by public bodies. In addition, Member States shall ensure that the buildings for which a renovation passport has been introduced are renovated to NZEB by 2040 at the latest.

The alternative approach only concerns buildings that are owned by public bodies, with the same exceptions as those defined for the approach provided for in Article 6(1) to (4) of Directive (EU) 2023/1791. The provisions defined in the default approach also apply to the alternative approach, as equivalent energy savings are estimated according to the same baseline used to calculate the annual renovation requirement (in m^2).

5.3.1. *Achieve equivalent energy savings*

Estimating the targeted amount of energy savings

To meet this obligation, Member States shall estimate the energy savings they need to achieve every year. As a starting point, Member States should estimate the 3 % renovation requirement following the same steps defined in the approach provided for in Article 6(1) to (4) of Directive (EU) 2023/1791. This would provide a certain number of m^2 that Member States must renovate each year.

Member States shall then estimate the energy savings to be achieved via alternative measures each year. Member States should estimate the energy savings to be achieved prior to the year in which savings must be achieved, in order to plan and implement the alternative measures accordingly. To estimate the energy savings for the year, Member States:

— Should identify, among the public bodies' building stock, those buildings that they would have renovated, if they had opted for the default approach. These buildings must, in total, cover at least the same amount of m^2 identified by the renovation requirement calculated previously. Member States can estimate the savings in relation to the same buildings that were selected to be provided with the renovation passport during the year, as those correspond to the 3 % of the public bodies' building stock.

— Should establish the baseline energy use of the buildings Member States would have renovated. They shall use appropriate standard values for the energy consumption of reference public bodies' buildings before renovation. The standard values should be defined for each category or subcategory of building.

— Shall estimate the primary energy use of these buildings after the renovation, using appropriate standard values for the energy consumption of reference public bodies' buildings after renovation into NZEB.

— Should subtract the estimated consumption after renovation from the baseline consumption. The value obtained is what would be saved by renovating 3 % of the useful floor area of the buildings included in the scope of the obligation.

The formula that should be used to estimate the annual targeted amount of energy savings is the following:

$$\textit{Annual targeted amount of energy savings } (kWh) = \sum(a - b) \times c$$

Where:

The sum corresponds to the sum of all buildings that a Member State would have planned to renovate if it had opted for the approach defined under Article 6(1) to (4) of Directive (EU) 2023/1791, per category of reference public bodies' buildings.

a is the estimated energy consumption of reference buildings not meeting NZEB standard/before renovation (in kWh/m^2);

b is the estimated energy consumption of the same reference buildings after they would be transformed into NZEB (in kWh/m^2);

c is the total surface of heated and/or cooled buildings for each category of reference buildings that a Member State would have renovated if it had opted for the default approach.

For the purpose of estimating the annual amount of energy savings, Member States may use the data collected in the inventory set up as required by Article 6(5) of Directive (EU) 2023/1791. An indicative example of this estimation is indicated in the Appendix C to this Annex.

To establish the baseline energy use and estimate their buildings' energy use after renovation, Member States shall define standard values for energy consumption of reference public bodies' buildings before and after renovation to NZEB. If standard values for energy consumption are available for different types of buildings, Member States should set up different categories of reference public bodies' buildings to improve the accuracy and representativeness of energy savings. Buildings can be categorised to reflect end-uses (for example, offices, educational buildings, hospitals), climate-zones (for example, north, south, mountainous, coastal) or any other factor that effects their energy consumption.

Achieving the annual energy savings target

To comply with Article 6(6) of Directive (EU) 2023/1791 Member States may choose the measures they consider appropriate to reduce energy use in public buildings. Measures may include, for example:

— renovation of buildings to meet NZEB or ZEB standards, and renovation to meet higher or lower energy performance levels;

— energy contracting (for example, through Energy Performance Contracts) and energy management;

— replacements and upgrades of technical building systems;

— switching to energy efficient appliances;

— reducing the floor area of buildings that is heated and/or cooled;

— demand reduction;

— behavioural change measures that reduce energy consumption;

— any other non-renovation measures related to energy efficiency in the public buildings.

Selling buildings is not an energy efficiency measure. It is not equivalent to renovating buildings.

Stepwise renovations and the upgrade of technical building systems undertaken to achieve the equivalent energy savings are likely to be included in renovation passports, according to the schedule set for each building with a passport. For these measures, renovation passports can serve as a source of information for estimating the resulting energy savings.

When opting for non-structural measures (such as behavioural change), Member States should estimate the extent to which the impact of the measure may be sustained in subsequent years. In practice, this means that Member States should consider the cumulative amount of energy savings achieved by the measure in the remaining life of the building. For example, an estimate would need to be made of how long a campaign to switch off lights will have a positive effect.

Notification of alternative measures

Member States that decide to apply the alternative approach should have notified to the Commission, by 31 December 2023, projected energy savings that would be achieved by 31 December 2030, if the Member State had opted for the approach provided for in Article 6(1) to (4) (equivalent energy savings). The projected energy savings should be estimated based on the information available to Member States at the point of notification; this estimate can be updated and provided with a higher degree of precision in the first report covering the first year of implementation.

Member States can use a combination of the 'default' approach set by Article 6(1) and the 'alternative' approach set by Article 6(6). In practice, this would imply that energy savings resulting from the renovation of public bodies' buildings to NZEB or ZEB can be counted towards the annual targeted amount of energy savings. In this case, Member States would still need to comply with Article 6(6), third subparagraph.

5.3.2. *Renovation passport*

In addition to achieving an amount of energy savings that is at least equivalent to that required in Article 6(1), Member States shall annually introduce renovation passports in line with Article 12 EPBD for buildings representing together at least 3 % of the total floor area of heated and/or cooled buildings owned by public bodies.

The renovation passport will guide public bodies in deciding which actions or measures should be prioritised and in which sequence they should be implemented to allow the targeted building to reach NZEB or ZEB standard at the latest by 2040. Member States may also count the measures proposed by the renovation passport towards achieving the annual energy savings target. In practice this means that by 2040 the same amount of m^2 will have to be renovated to NZEB or ZEB (around 45 % of the baseline), but Member States that opted for the alternative approach would have to implement additional actions to ensure an equivalent level of savings throughout the period.

6. **OBLIGATIONS RELATED TO ARTICLE 7 OF DIRECTIVE (EU) 2023/1791**

Article 7 of Directive (EU) 2023/1791 replaces Article 6 of Directive 2012/27/EU. The objective of Article 7 remains to establish high energy efficiency performance as a requirement in public procurement. However, in comparison with Article 6 of Directive 2012/27/EU, the scope of application has been extended.

Article 7 of Directive (EU) 2023/1791 requires Member States to ensure that contracting authorities and contracting entities, when concluding public contracts and public concessions contracts that meet or exceed respectively the thresholds laid down in Directives 2014/23/EU, 2014/24/EU and 2014/25/EU (together: the Classical Public Procurement Directives), purchase only products, services, buildings and (now also) works with high energy-efficiency performance. 'Contracting authorities' and 'contracting entities' are defined in Article 2, points (14) and (15), of Directive (EU) 2023/1791, which in turn refers to the corresponding definitions in the Classical Public Procurement Directives. In addition, the scope of this obligation is extended compared to Directive 2012/27/EU to all public contracting authorities and all contracting entities, and to all levels of public administration.

Moreover, the article does no longer subject its obligation to conditionalities with regard to cost-effectiveness, economic feasibility, wider sustainability and sufficient competition, but 'only' to technical feasibility.

Furthermore, the obligation is expanded by (i) requiring Member States to ensure that contracting authorities and contracting entities apply the energy efficiency first principle in concluding public contracts and concessions and (ii) stipulating that the energy efficiency first principle shall also apply to public contracts and concessions for which no specific requirements are provided for in Annex IV to Directive (EU) 2023/1791.

Article 7 of Directive (EU) 2023/1791 now also

(1) provides options for public procurement to achieve the Union's decarbonisation and zero pollution objectives by the inclusion of wider sustainability, social, environmental and circular economy aspects as well as Union green public procurement or available equivalent national criteria in procurement practices when concluding contracts as referred to in paragraph 1 of that Article;

(2) requires the publication of information on the energy efficiency impact of certain contracts;

(3) enables contracting authorities to require that tenderers disclose information on the life cycle global warming potential, the use of low carbon materials and the circularity of materials used for new buildings and buildings to be renovated, in particular above 2 000 square meters;

(4) requires Member States to provide support to contracting authorities and contracting entities in the uptake of energy efficiency requirements;

(5) enables the Commission to provide further guidance to national authorities and procurement officials in the application of energy efficiency requirements in the procurement process;

(6) requires from Member States the implementation of measures to avoid contracting authorities being deterred from making investments in improving energy efficiency; and

(7) requires from Member States the removal of barriers to energy efficiency and the reporting of measures taken to do so.

In addition to excluding the application of the obligations referred to in Article 7(1) of Directive (EU) 2023/1791 to contracts for the supply of military equipment, Article 7(2) of that Directive now also provides that the application of these obligations is excluded if it undermines public security or impedes the response to public health emergencies.

6.1. **Scope of the Obligations in Article 7 of Directive (EU) 2023/1791**

For the definition of 'public contracts' see Article 2(1), point (5) of Directive 2014/24/EU and for the definition of 'concessions' see Article 5(1) of Directive 2014/23/EU. For the thresholds mentioned in Article 7(1) of Directive (EU) 2023/1791 see in the Classical Public Procurement Directives referred to there.

Despite that buildings are not covered by the Classical Public Procurement Directives, given their explicit exclusion among the listed excluded service contracts, nevertheless the thresholds set out in the Public Procurement Directives for service contracts apply to them. Therefore, building purchase or rental is subject to the Article 7 of Directive (EU) 2023/1791 but remains excluded from the public procurement rules.

High Energy Efficiency Performance

The services, products, buildings and works purchased by contracting authorities and contracting entities and concerned by Article 7(1) of Directive (EU) 2023/1791 must be of high energy efficiency performance. The energy efficiency requirements to be observed in this context are laid down in more detail in Annex IV to Directive (EU) 2023/1791 and cover:

— products covered by Energy Labelling delegated acts;

— products not covered by an Energy Labelling delegated act but covered by an implementing measure under Directive 2009/125/EC of the European Parliament and of the Council ([52]);

— products and services covered by EU green public procurement criteria (EU GPP) ([53]) or available equivalent national criteria;

— tyres, the highest fuel energy efficiency class, as defined by Regulation (EU) 2020/740 of the European Parliament and of the Council ([54]);

— buildings;

([52]) Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products (OJ L 285, 31.10.2009, p. 10, ELI: http://data.europa.eu/eli/dir/2009/125/oj).

([53]) For GPP Criteria and Requirements see link https://green-business.ec.europa.eu/green-public-procurement/gpp-criteria-and-requirements_en.

([54]) Regulation (EU) 2020/740 of the European Parliament and of the Council of 25 May 2020 on the labelling of tyres with respect to fuel efficiency and other parameters, amending Regulation (EU) 2017/1369 and repealing Regulation (EC) No 1222/2009 (OJ L 177, 5.6.2020, p. 1, ELI: http://data.europa.eu/eli/reg/2020/740/oj).

If products are covered by an Energy Labelling delegated act or by an implementing measure under the Directive 2009/125/EC and EU GPP criteria, the most ambitious energy-efficiency requirement is to be taken into account. If the EU GPP criteria are more ambitious, Member States shall take into account and make best efforts, as provided in Article 7(5) and Annex IV point (c) of the Directive (EU) 2023/1791 to use these EU GPP.

Energy labelling delegated acts

To assess, as referred to in Annex IV point (a) of the Directive (EU) 2023/1791 and Article 7(2) of Regulation (EU) 2017/1369 of the European Parliament and of the Council ([55]), which are the '(two) highest (significantly) populated class(es)' of products covered by an Energy Labelling delegated act ([56]), reference could be made to the European Product Register for Energy Labelling (EPREL) ([57]), where suppliers ([58]) are to register their products ([59]) before placing them on the market as of 1 January 2019 ([60]). EPREL enables customers - and consequently contracting authorities and contracting entities to find detailed information about energy labelled products and models ([61]), ([62]).

As an example, the following Figure shows the distribution of TV models of a certain screen size registered in EPREL in mid-2023. The target under the Article 7(2) Regulation (EU) 2017/1369 criterion would in this case be to provide incentives to the classes E and F (or higher), which are both **significantly** populated, and not to the also populated lower class G, even the latter is the most populated.

Figure 3

Distribution of selected TV models of a certain screen size registered in EPREL in mid-2023 (167 models out of a total of 17 976 models

Class	Entries	%
A	0	0,0
B	1	0,6
C	0	0,0
D	0	0,0
E	21	12,6
F	37	22,2
G	108	64,7

([55]) Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU (OJ L 198, 28.7.2017, p. 1, ELI: http://data.europa.eu/eli/reg/2017/1369/oj).
([56]) https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products_en/.
([57]) For further information, see: https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/product-database_en.
([58]) 'Supplier' means a manufacturer established in the Union, the authorised representative of a manufacturer who is not established in the Union, or an importer, who places a product on the Union market (see Article 2(14) of the Regulation (EU) 2017/1369).
([59]) This obligation applies to units of a new model covered by a delegated act (see Article 4 of the Regulation (EU) 2017/1369).
([60]) See Article 4 of Regulation (EU) 2017/1369.
([61]) EPREL also provides information on aspects other than a product's energy use, such as its possible water consumption, noise emission, extended warranty, availability of spare parts, duration or product support are also provided. All the criteria listed in EPREL may also be used as a reference source by contracting authorities and contracting entities to establish technical specifications, selection or award criteria for the procurement of specific product categories. This feature also allows contracting authorities and contracting entities to get a picture of the market and the availability of highly energy efficiency performing products per product category. This in turn enables contracting authorities and contracting entities to estimate how many bids can be expected in a corresponding tender.
([62]) Article 7(2) of Regulation (EU) 2017/1369 specifies, that when Member States provide incentives for a product specified in a delegated act, those incentives shall aim at the highest two significantly populated classes of energy efficiency, or at higher classes as laid down in that delegated act, meaning the two highest energy efficiency classes which are also significantly populated (in terms of number of products registered).

In accordance with Article 7(4) of Directive (EU) 2023/1791, when purchasing a product package that as a whole is covered by a delegated act adopted pursuant to Regulation (EU) 2017/1369 Member States may require that the energy performance of the package takes precedence over the energy performance of the individual products within that package by purchasing the product package that belongs to the highest available energy efficiency class. For example, procurers purchasing a package containing a solid fuel boiler combined with a supplementary heater, a temperature control and a solar device could require that the solar device only complies with category 'B', provided the entire package achieves the highest available category (in the best case 'A+++'). This same approach can be taken by the public buyers individually, even if they are not required to do this by their Member States.

Ecodesign implementing measures under Directive 2009/125/EC

For products covered by delegated acts adopted under Directive 2009/125/EC of the European Parliament and of the Council ([63]) ([64]), the requirement to only purchase products meeting the energy efficiency benchmarks set out in that implementing measure only applies to products that are not covered by a delegated act adopted under the Regulation (EU) 2017/1369.

EU Green Public Procurement criteria or equivalent national criteria

The concept of GPP is based on having clear, verifiable, justifiable and ambitious environmental criteria for products and services, based on a life-cycle approach and scientific evidence. Since 2008, the Commission has developed EU GPP criteria for several product categories ([65]).

When there are EU GPP criteria or available equivalent voluntary national criteria for a product or service, contracting authorities and contracting entities shall use their best endeavours to only purchase products and services that at least meet the criteria (for example, technical specifications, award criteria, performance contract clauses) with regard to energy at the 'core' level. The core criteria are those suitable for use by any contracting authority or contracting entity across the Member States. They are designed to be used with minimum additional verification effort or cost increases ([66]).

Tyres

Under Article 7 of Directive (EU) 2023/1791, contracting authorities and contracting entities will only be able to purchase tyres that achieve the highest fuel energy efficiency class, as defined by Regulation (EU) 2020/740. Point (d) of Annex IV to Directive (EU) 2023/1791 indicates that this requirement is not preventing public bodies from purchasing tyres with the highest wet grip class or external rolling noise class, where justified by safety or public health reasons.

Products Used by Service Providers

Contracting authorities and contracting entities are to require in their tenders for service contracts that service providers only use products that meet the requirements set out in points (a), (b) and (d) of Annex IV to Directive (EU) 2023/1791 when new products referred to in points (a), (b) and (d) of Annex IV to Directive (EU) 2023/1791 are acquired by service providers in whole or in part for the provision of the service in question. For example, a procurer purchasing vehicle maintenance services is not required to request that the service providers in question upgrade all their tyres to the highest fuel energy efficiency class, but only in case the new tyres, if they purchase them for the provision of the relevant service.

([63]) Article 15(3) point (a) of Directive 2009/125/EC.
([64]) https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products_en/.
([65]) https://green-business.ec.europa.eu/green-public-procurement/gpp-criteria-and-requirements_en/.
([66]) https://green-business.ec.europa.eu/green-public-procurement/gpp-criteria-and-requirements_en/.

Minimum Energy Performance Requirements for Buildings

When purchasing or entering into new rental agreements for buildings or parts of buildings that have the function of a building, contracting authorities and contracting entities are in principle to (see the exceptions below) only select buildings that comply at least with the nearly zero-energy level. In setting these requirements, Member States may differentiate between new and existing buildings and between different categories of buildings.

To comply with nearly zero-energy levels, buildings need to have a very high energy performance, as determined in accordance with Annex I of the EPBD. The nearly zero or very low amount of energy required shall be covered to a very significant extent by energy from renewable sources. In the transposition of the EPBD, Member States have identified the levels of energy performance and minimum share of renewables applicable that correspond to nearly zero-energy buildings in their territory.

Annex IV to Directive (EU) 2023/1791 indicates that compliance with Article 7 and point (f) of Annex IV to Directive (EU) 2023/1791 need to be verified by means of the energy performance certificates referred to in the EPBD. Article 19 of the EPBD states that energy performance certificates are to include the energy performance of a building and reference values such as minimum energy performance requirements in order to compare and assess energy performance.

Point (f) of Annex IV to Directive (EU) 2023/1791 allows also, as an exception, purchases of buildings that do not comply with the nearly-zero energy level, namely when contracting authorities or contracting entities purchase or rent a building to carry out deep renovation or demolition. The term 'deep renovation' is to be understood in the sense of Article 2 point 20 EPBD. In case a building is close to the 'nearly zero-energy' standard, the 'deep renovation' might mean a relatively marginal work.

Technical Feasibility

As indicated above, the general obligation in Article 7(1) of Directive (EU) 2023/1791 does not apply if it is not technically feasible. The condition of feasibility applies to all public procurement contracts regardless of which of the Directives on public procurement the contract falls under. It is up to the contracting authorities or the contracting entities to assess before launching a procurement procedure case by case and be able to demonstrate that requiring a high energy-efficiency performance in a contract or concession is not technically feasible. If this cannot be proven, contracting authorities or contracting entities must purchase available energy efficient products, services, buildings and works in accordance with the requirements referred to in Annex IV to Directive (EU) 2023/1791.

It is technically feasible when the technical characteristics of the system, for example, a building or building unit make it possible to apply the requirements. It is not technically feasible when it is impossible to apply them from a technical perspective, i.e., when the system's technical characteristics prevent the requirements from being applied.

For example, a lack of technical feasibility for procuring energetically efficient heat pumps could occur where the heat distribution system of a building is not suitable to run at the temperatures required for the efficient use of a heat pump, while the building concerned is already possessed or rented.

A well-documented assessment, that includes reasoning such as technological limitations, site-specific constraints or technical incompatibility with existing infrastructure or systems is necessary to demonstrate technical infeasibility. This assessment should be carried out in the preparation phase for a purchase and should be included in the authorities' or entities' documents and it is recommended to indicate the assessment conclusion in contract notices for transparency and equal treatment reasons. A well-documented assessment substantiated for example by a comparative analysis based on a preliminary market consultation is appropriate to demonstrate and document technical infeasibility.

Consequently, if procurers determine that all of the items belonging to an efficiency category that are to be purchased under Article 7 of Directive (EU) 2023/1791 are not technically feasible, but that other, less efficient items are technically feasible, they would be able to purchase those less efficient items.

6.2. **Obligations in Detail**

6.2.1. *Application of the Energy Efficiency First Principle*

Article 7 of Directive (EU) 2023/1791 now also contains a new provision which requires Member States to ensure that contracting authorities and contracting entities apply the energy efficiency first principle (hereinafter referred to as the 'EE1st principle') in accordance with Article 3 of Directive (EU) 2023/1791, when concluding public contracts and concessions with an estimated value ([67]) equal to or greater than the thresholds referred to in Article 7(1) of Directive (EU) 2023/1791, regardless of whether specific requirements are provided for these public contracts and concessions under Annex IV to Directive (EU) 2023/1791. Article 7 of Directive (EU) 2023/1791 is also applicable to the purchases falling into the scope of Directive 2009/81/EC, of an estimated value above the thresholds of the Classical Procurement Directives.

This requirement applies to all the public contracts and concessions mentioned in the paragraph before as there are no derogations in Directive (EU) 2023/1791 in this regard ([68]).

Further details on the EE1st principle and its application are provided in Commission Recommendation (EU) 2021/1749 ([69]).

To apply the EE1st principle means to thoroughly analyse the available alternatives and options for a procurement and assess these options not only but also in relation to energy efficiency. Before the authority or entity decides to procure all solutions and alternatives should be analysed, **where required** including a cost benefit analyses from a societal perspective taking into account the wider benefits of energy efficiency. The buyer can rely on relevant analysis (for comparable purchases, not outdated, etc.) made before in analogous situations, for example by a regional or national entity responsible for policy in the field or a central purchasing body.

The EE1st principle has to be considered as a basic principle when deciding on the way of designing a project and later on, on the products, works, services and buildings that are going to be tendered. In the procurement procedure the EE1st principle might be considered in the award criteria or in the technical specification. The documentation on the application of the EE1st principle can be done for example in the buyers' files.

6.2.2. *Public Security, Public Health Emergencies and Contracts of the Armed Forces / for the Supply of Military Equipment*

Article 7(2) of Directive (EU) 2023/1791 retains the exemption from the obligation under Article 7(1) of that Directive for contracts of the armed forces or for contracts for the supply of certain military equipment. These contracts are excluded from the application of Article 7 of Directive (EU) 2023/1791, regardless of which of the Directives on public procurement (including Directive 2009/81/EC) ([70]) the contract falls under. It also introduces another exemption from this obligation for cases where meeting it would undermine public security or impede the response to public health emergencies.

Public security and public health emergencies

Public security is commonly understood as the sphere of activity within which the State has primary responsibility to protect its territory and citizens. 'The concept of "public security", within the meaning of Article 52 of the TFEU and as interpreted by the Court of Justice, covers both the internal and external security of a Member State, as well as issues of public safety, etc. It presupposes the existence of a genuine and sufficiently serious threat affecting one of the fundamental interests of society, such as a threat to the functioning of institutions and essential public services and the survival of the population, as well as by the risk of a serious disturbance to foreign relations or the peaceful coexistence of nations, or a risk to military interests' ([71]).

([67]) In the sense of Article 5 of Directive 2014/24/EU, Article 16 of Directive 2014/25/EU and Article 8 of Directive 2014/23/EU.

([68]) Article 7(1) of Directive (EU) 2023/1791 states that the EE1st principle should be applied (without any restriction) to 'the public contracts and concessions with a value equal to or greater than the thresholds referred to in the first subparagraph […] including for those public contracts and concessions for which no specific requirements are provided for in Annex IV'.

([69]) Commission Recommendation (EU) 2021/1749 of 28 September 2021 on Energy Efficiency First: from principles to practice - Guidelines and examples for its implementation in decision-making in the energy sector and beyond (OJ L 350, 4.10.2021, p. 9, ELI: http://data.europa.eu/eli/reco/2021/1749/oj).

([70]) It is to be considered that the values mentioned in Article 7(1) of Directive (EU) 2023/1791 refer to the Classical Public Procurement Directives and not to the values mentioned in Directive 2009/81/EC.

([71]) Recital 19 of Regulation (EU) 2018/1807 of the European Parliament and of the Council of 14 November 2018 on a framework for the free flow of non-personal data in the European Union (OJ L 303, 28.11.2018, p. 59, ELI: http://data.europa.eu/eli/reg/2018/1807/oj).

While there is no formal definition of 'public health emergency' in Union legislation, it can broadly be defined as an occurrence or imminent threat of an illness or health condition, caused by bioterrorism, epidemic (for example, Gastrointestinal, Malaria, Dengue, Zika disease) or pandemic disease (for example, Avian Flu, Covid 19), or a novel and highly fatal infectious agent or biological toxin, that poses a substantial risk of a significant number of human fatalities or permanent or long-term disability.

Ultimately, if a Member State wants to invoke the 'public security' or 'public health emergency' exception, it must provide concrete evidence of the substantive argument made for a deviation from the relevant provisions of this article. National measures are not to be excluded from the application of Union law merely because they aimed at the protection of public security or national defence.

Contracts of the Armed Forces and Supply of Military Equipment

Article 7 of Directive (EU) 2023/1791 only applies to the contracts of the armed forces to the extent that its application does not cause any conflict with the nature and primary aim of the activities of the armed forces. The application of this exclusion requires a case-by-case analysis of a given contract to ascertain if there is a conflict between the obligations in Article 7 of Directive (EU) 2023/1791 and the nature and primary aim of the activities of the armed forces. This exclusion applies to all types of works, supplies, and services contracts.

In defining the term 'armed forces', a distinction has to be drawn between **armed** forces and **security** forces (see Article 28(5) of Directive 2009/81/EC the European Parliament and of the Council). While 'armed forces' basically means a Member State's military forces, usually the army, navy, and air force, 'security forces' relates to paramilitary forces, police, or other law enforcement agencies (including police or other law enforcement agencies at the regional or local level), and intelligence agencies (see also in this chapter point '*Public security and public health emergencies*' regarding the exception relating to public security). The term 'contracts of the armed forces' shall be understood broadly, as contract concluded specifically for the benefit of the armed forces and not only contracts concluded by the armed forces themselves. Such contracts could be also concluded by Ministries of Defence, army supply agencies, and any other appropriate Member States' entities. It can therefore be considered that all contracts falling within the scope of Article 2(c) of Directive 2009/81/EC as well as contracts for works and services for specifically military purposes (first half of Article 2(d) of Directive 2009/81/EC) can benefit from the exclusion if the case-by-case assessment shows that respecting the obligations in Article 7 of Directive (EU) 2023/1791 would result in compromising the primary nature or aim of the activities.

Contracts for the supply of military equipment are excluded from the application of the obligations in Article 7 of Directive (EU) 2023/1791, regardless of who the contracts are concluded by or which Directive on public procurement they fall in the scope of.

Military equipment is defined in Article 1, point (6) of Directive 2009/81/EC.

6.2.3. *Energy Performance Contracting*

'Energy performance contracting' (EnPC) is defined in Article 2, point (33) of Directive (EU) 2023/1791.

There are many advantages for public bodies to contract energy efficiency projects through EnPC instead of carrying out their implementation through a conventional contract for services or works. The latter approach requires sufficient financial and inhouse staff resources for contracting and monitoring processes, while the comprehensive expertise and guaranteed performance brought by the energy performance contract ensures the effectiveness of the investments.

Article 7(3) of Directive (EU) 2023/1791 states that contracting authorities and contracting entities are to assess the feasibility of concluding long-term energy performance contracts ([72]) that provide long-term energy savings when procuring service contracts with significant energy content. Since Article 7(3) of Directive (EU) 2023/1791 does not specify which kind of procured service contracts should be covered by this assessment, it is to be done, either individual or within a frame of a broader assessment, for every procurement of such contracts if they have a significant energy content.

([72]) Energy performance contracts are contractual arrangements between a beneficiary and a provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings, see also Article 2, point (11) of Directive (EU) 2023/1791.

Service contracts with significant energy content are, for example, service contracts for the provision of heat or transport services, service contracts for building or street lighting maintenance or service contracts for the management of energy consuming facilities.

Using specialised energy services through EnPC can (i) enable the public sector to obtain more energy savings, (ii) avoid technology lock-ins, and (iii) reduce costs compared to in-house solutions. ([73]), ([74])

6.2.4. *Wider Sustainability, Social, Environmental and Circular Economy Aspects as well as Union Green Public Procurement Criteria and Available Equivalent National Criteria*

Article 7(5) of Directive (EU) 2023/1791 sets forth, firstly, that Member States 'may' require contracting authorities and contracting entities, when concluding contracts as referred to in Article 7(1) of that Directive, to take into account, where appropriate, wider sustainability, social, environmental and circular economy aspects in procurement practices ([75]).

6.2.5. *Information on the Energy Efficiency Impact of Contracts and Information on the Life Cycle Global Warming Potential of a New Building*

In line with the principles of transparency public buyers are to make information publicly available on the energy efficiency impact of contracts with a value equal to or greater than the thresholds referred to in Article 7(1) of Directive (EU) 2023/1791.

Article 7(5) second subparagraph of Directive (EU) 2023/1791 requires that the information is to be made available through public procurement notices published on TED through the dedicated fields provided on the basis of Implementing Regulation (EU) 2019/1780 ([76]). This information is to be provided in the respective notices required to be published under the Public Procurement Directives and Implementing Regulation (EU) 2019/1780 concerning the publication of notices in TED, which is the online version of the 'Supplement to the Official Journal' of the EU ([77]). The necessary changes to TED for this notification will be provided by the Commission.

Furthermore, contracting authorities may require tenderers to disclose information on the lifecycle global warming potential, the use of low carbon materials and the circularity of materials used in a new building and a building to be renovated. If they decide to do so, this requirement could be laid down in the tender documents as well as the contract concluded with the winning bidder. Care is to be taken to ensure that failure to comply with this requirement (of providing above mentioned information) results in rejection of an offer from the respective procurement procedure or contractual consequences in case declared values are not maintained in contract implementation. Pursuant to Article 7(5), the publication of this information is particularly relevant for new buildings having a floor area ([78]) larger than 2 000 square meters.

([73]) Moles-Grueso/Bertoldi/Boza-Kiss EUR 30614 EN.

([74]) For further information on assessing the feasibility of EnPC contracting authorities and contracting entities can refer to, for example, Moles-Grueso/Bertoldi/Boza-Kiss, Energy Performance Contracting in the Public Sector of the EU – 2020 (2021) and Boza-Kiss/Zangheri/Bertoldi/Economidou, Practices and opportunities for Energy Performance Contracting in the public sector in EU Member States (2017).

([75]) Guidance on how to incorporate wider aspects in procurement can be found here:
Green Public Procurement: https://green-business.ec.europa.eu/green-public-procurement_en;
Public Buyers Community Platform: https://public-buyers-community.ec.europa.eu/about;
Commission Notice 'Buying Social - a guide to taking account of social considerations in public procurement (2nd edition)', C(2021) 3573 final, https://op.europa.eu/en/publication-detail/-/publication/47c69b3a-cfcf-11eb-ac72-01aa75ed71a1/language-en.
'Making Socially Responsible Public Procurement Work: 71 Good Practice Cases', May 2020;
Tools for public buyers: https://commission.europa.eu/funding-tenders/tools-public-buyers/social-procurement_en;
European Commission/ICLEI, Buying green! A handbook on green public procurement (2016).

([76]) Commission Implementing Regulation (EU) 2019/1780 of 23 September 2019 establishing standard forms for the publication of notices in the field of public procurement and repealing Implementing Regulation (EU) 2015/1986 (eForms) (OJ L 272, 25.10.2019, p. 7, ELI: http://data.europa.eu/eli/reg_impl/2019/1780/oj) will be adapted to provide the fields required to make transparent the energy efficiency impact in accordance with Article 7(5) second subparagraph ensuring transparency in the application of energy efficiency requirements by making publicly available the energy efficiency impact of contracts by publishing that information in the respective notices on Tenders Electronic Daily (TED).

([77]) https://ted.europa.eu/en/.

([78]) To assess this area, Member States could use the type of area they use as a reference in the energy certificate (which will, in principle, be the gross floor area).

6.2.6. *Support to Contracting Authorities and Contracting Entities*

In accordance with Article 7(5) third subparagraph of Directive (EU) 2023/1791 Member States are to support contracting authorities and contracting entities in the uptake of energy efficiency requirements.

Assessment of Lifecycle Costs

A well-known measure to support contracting authorities and contracting entities is to provide them with methodologies for assessing lifecycle costs (LCC) ([79]). Directives 2014/24/EU and 2014/25/EU provide explicitly the possibility of use of LCC in public procurement. The calculation method and the data to be provided by tenders is to be set out in the tender documents.

The use of LCC goes beyond considering the purchase price of a good or service or building or works while the purchase price typically does not reflect the full financial impact of a purchase on the budget of a buyer. Typical LCC assessment is therefore based on:

— purchasing costs and all associated costs such as delivery (transport), installation and commissioning;

— operating costs, including utility costs such as energy, water and other consumables, taxes, insurance costs, training costs, repair and maintenance costs;

— end-of-life costs such as removal, recycling or refurbishment and decommissioning costs;

— deducted residual value, which is revenue from the sale of an asset after its end of use;

— longevity and warranty time frames of an asset. ([80])

In this context, a series of sector-specific LCC calculation tools which aim to facilitate the use of LCC amongst public procurers (for example, for vending machines, indoor and outdoor lighting as well as computers and monitors) was developed ([81]). In addition, other LCC tools were developed within the 'Local Governments for Sustainability' network (ICLEI) ([82]).

Competence Support Centres

Within the framework of supporting contracting authorities and contracting entities in the uptake of energy efficiency requirements, Article 7(5) of Directive (EU) 2023/1791 further requires Member States to set up competence support centres.

The advantages of competence support centres lie in the fact that they can centralise procurement activities and tools such as (i) the organisation and performance of topic-specific trainings and workshops throughout all the regional/local territories (standalone or integrated into more general public procurement training), and (ii) the provision of manuals. For example, KEINO is a network-based Competence centre for Sustainable and Innovative public procurement in Finland. KEINO develops the know-how of pro-curers and offers advisory services regarding sustainable and innovative public procurement.

For further guidance, contracting authorities and contracting entities may also approach the European GPP-helpdesk ([83]).

Cooperation Amongst Contracting Authorities Including Across Borders

Many of the problems faced in implementing energy efficiency requirements in public procurement are common to many contracting authorities and contracting entities, and much may be gained by engaging in networking and cooperation activities with others. Member States shall therefore encourage such a cooperation (as requested by Article 7(5) of Directive (EU) 2023/1791).

([79]) https://green-business.ec.europa.eu/green-public-procurement/life-cycle-costing_en/.
([80]) Perera/Morton/Perfrement, Life Cycle Costing in Sustainable Public Procurement: A Question of Value (2009) 1 and Estevan/Schaefer/Adell, Life Cycle Costing State of the art report (2018).
([81]) https://green-business.ec.europa.eu/green-public-procurement/life-cycle-costing_en/.
([82]) E.g., for vehicle procurement in the form of the Clean Fleets LCC tool, https://iclei-europe.org/publications-tools/?c=search&uid=0IKEKnVb/.
([83]) http://ec.europa.eu/environment/gpp/helpdesk.htm/.

Various networks focusing on sustainable procurement have already been established at the national or regional level. Participation in such networks – or in any of the many other initiatives and projects being implemented across Europe – may significantly help to ensure continued political commitment and visibility for 'green' procurement. It may also help to tap into relevant funding sources ([84]).

Aggregated Procurement

Aggregated procurement means pooling the procurement activities of a group of contracting authorities or contracting entities to achieve savings through bulk purchases, lower administrative costs, technical, and market knowledge ([85]). This may be particularly valuable in the uptake of energy efficiency requirements, since energy efficiency expertise and knowledge of the market for energy efficient products, works and services may be shared. To lesser extent it may relate to buildings normally not concerned by public procurement rules, thus, consequently also not by the procurement aggregation activities. Aggregated procurement may be performed, for example, by central purchasing bodies offering central purchasing services to contracting authorities and contracting entities.

6.2.7. *Establishment of Provisions and Practices to Improve Energy Efficiency and Removal of Corresponding Barriers*

Article 7(7) and (8) of Directive (EU) 2023/1791 essentially addresses the same issue, namely the barriers deterring public procurers from investing in energy efficiency and using long-term EnPC. Such barriers are often legal or regulatory provisions or administrative practices with conflicting approaches. While Article 7(7) of Directive (EU) 2023/1791 provides for the establishment of legal and regulatory provisions, and administrative practices regarding public purchasing and annual budgeting and accounting to reduce the impact of these barriers for contracting authorities and contracting entities, Article 7(8) of Directive (EU) 2023/1791 provides for the removal of regulatory and non-regulatory barriers.

Furthermore, Article 7(8) of Directive (EU) 2023/1791 obliges Member States to report to the Commission on the measures taken to address the barriers to the uptake of energy efficiency improvements in procurement as part of their progress reports to the National Energy and Climate Plans.

In contrast to Article 7(1) of Directive (EU) 2023/1791, which only applies to public contracts and concessions with *inter alia* a value equal to or greater than the thresholds laid down in the Public Procurement Directives, Article 7(7) and (8) of Directive (EU) 2023/1791 apply to all public procurement procedures.

Examples for regulatory ([86]) and non-regulatory ([87]) barriers as referred to under Article 7(8) of Directive (EU) 2023/1791 include: ([88])

— Lack of budget;

— Legal and institutional barriers;

— Time constraints;

— Lack of interest on the part of the targeted public procurers;

([84]) In this context, it is worth noting that the Commission has recently launched the Public Buyers Community Platform, an innovative platform designed to facilitate collaboration and knowledge sharing between contracting authorities and contracting entities across Europe. This platform is a digital space where public procurement stakeholders can come together to exchange best practices, share experiences, and discuss challenges. *https://public-buyers-community.ec.europa.eu/*. Denmark facilitates the exchange of expertise, as does the French regional network for the Greater West (www.reseaugrandouest.fr). At the European level, one example is the Procura+ campaign that aims to share GPP experiences across borders and supports individual participants in local implementation (www.procuraplus.org). Information can also be found in European Commission/ICLEI, Buying green! A handbook on green public procurement (2016).

([85]) See e.g. *European Commission/ICLEI*, Buying green! A handbook on green public procurement (2016) p. 31 and *Risvig Hamer* in *Steinicke/Vesterdorf*, EU Public Procurement Law (2018) p. 444.

([86]) I.e. barriers resulting from regulation.

([87]) I.e. barriers not resulting from regulation.

([88]) *Luyckx/Pál-Hegedüs Ortega*, Public procurement of energy-efficient works, supplies and services - Support provided to projects under the Intelligent Energy Europe II programme and Horizon 2020 Energy Efficiency (2020).

— Lack of access to suppliers.

Consequently, measures that may be implemented by Member States in this regard can include

— adopting (tendering) guidelines, model contracts and interpretative communications or simplifying administrative procedures;

— developing up-to-date EnPC-demonstration examples (for example, adapted to new contracting opportunities);

— putting in further quality assurance efforts (in terms of quality of services and measurement and verification to become the norm in public sector interventions by strictly prescribing them in contracts) when assessing the use of EnPC;

— eliminating disincentives, such as a lack of energy savings policies and targets, prevalence of the split incentive, and limited implementation of the exemplary role of public buildings; ([89])

— creating incentives, such as competitions between contracting authorities and entities, whereby the contracting authority/entity that has procured the most energy-efficient products, services, works or buildings receives prizes or other benefits resulting from winning the competition ([90]).

In this context, it is worth noting that the Clean Energy Transition sub-programme of the Union's LIFE Programme, established by Regulation (EU) 2021/783 of the European Parliament and of the Council ([91]), will provide funding to support the development of Union best practices in the implementation of energy efficiency policy, addressing behavioural, market, and regulatory barriers to energy efficiency. This may support Member States in removing the above barriers.

7. **REPORTING REQUIREMENTS**

7.1. **Update of the integrated National Energy and Climate Plans**

In accordance with Article 14(2) of Regulation (EU) 2018/1999, Member States are required to submit by 30 June 2024 an update of their latest notified integrated **national energy and climate plan** (NECP). Article 14(1) of Regulation (EU) 2018/1999 requires the Member States to provide a draft update of the NECP always a year prior to the submission deadline of Article 14(2) of Regulation (EU) 2018/1999.

In addition to Regulation (EU) 2018/1999, the first sentence of Article 5(5) of Directive (EU) 2023/1791 needs to be taken into account in the update of the NECPs. It requires Member States to report to the Commission the consumption reduction achieved every year by all public bodies, disaggregated by sector. This disaggregation can be done along the lines of the data fields included in Table 2.

The presentation in the updated plan is to include the amount of energy consumption reduction to be achieved by all public bodies per sector. The final energy consumption reduction target is to be calculated in line with the rules set out in point 4.1.2, and its sectoral breakdown should include at least the following elements:

Disaggregation by the three obligatory groups that are provided for in accordance with Article 5(3) of Directive (EU) 2023/1791: public bodies in local administrative units with fewer than 50 000, but more than 5 000 inhabitants; public bodies in local administrative units with fewer than 5 000 inhabitants; all other public bodies.

Disaggregation by public service sectors, as set out in Table 2.

Disaggregation by public transport and armed forces, only if a Member State intends to count final energy consumption reductions achieved in one or both of these sectors against the final energy consumption reduction target.

([89]) Moles-Grueso/Bertoldi/Boza-KissEUR 30614 EN.
([90]) The Procura+ Awards could be taken as an example, https://procuraplus.org/awards/.
([91]) Regulation (EU) 2021/783 of the European Parliament and of the Council of 29 April 2021 establishing a Programme for the Environment and Climate Action (LIFE), and repealing Regulation (EU) No 1293/2013 (OJ L 172, 17.5.2021, p. 53, ELI: http://data.europa.eu/eli/reg/2021/783/oj).

The update of the integrated National Energy and Climate Plans are to include a description of the measures already implemented or planned to achieve the final energy consumption reduction targets in Article 5 of Directive (EU) 2023/1791 as well as the renovation target in Article 6 of that Directive. Furthermore, implemented or planned policy measures that ensure compliance with the obligations in Article 7 of Directive (EU) 2023/1791 should be included.

The presentation of energy efficiency policies and measures referred to in point 3.2 of Annex I to Regulation (EU) 2018/1999 is therefore to be expanded to include a section on measures dedicated to the public sector. Besides the policy measures, which are explicitly included in Article 5(6), (7), (8) and (9) of Directive (EU) 2023/1791, it is recommended that this section also includes a description of how the effort sharing, for example between central, regional and local authorities, is ensured when a Member State implements the obligations of Articles 5 and 6 of Directive (EU) 2023/1791.

7.2. **Progress Reporting**

Article 17 of Regulation (EU) 2018/1999 requires Member States to submit their National Energy and Climate **Progress Reports** covering all five dimensions of the Energy Union, energy efficiency being one of the dimensions.

Article 21 of Regulation (EU) 2018/1999 specifies the information to be reported on energy efficiency covering the reporting related to obligations in Articles 5, 6, and 7 of Directive (EU) 2023/1791. Member States are required to include information on national trajectories, objectives and targets, implementation on certain policies and measures as well as information further detailed in Part 2 of Annex IX to Regulation (EU) 2018/1999.

In addition to Regulation (EU) 2018/1999, Article 5(5), second sentence, and Article 7(8) of Directive (EU) 2023/1791 need to be taken into account in the National Energy and Climate Progress Reporting. Article 5(5), second sentence, of Directive (EU) 2023/1791 requires Member States to report to the Commission the consumption reduction achieved every year by all public bodies, disaggregated by sector. Article 7(8) of Directive (EU) 2023/1791 requires the Member States to report to the Commission on the measures taken to address the barriers to the uptake of energy efficiency improvements in procurement as part of their progress reports to the National Energy and Climate Plans.

For the Commission to be able to fulfil its obligation under Article 29 of Regulation (EU) 2018/1999 to assess progress, in case of a revision of the baseline definition or climate or service level adjustment, it is recommended that the information on the achievement of the final energy consumption reduction targets should as a minimum include the following elements for each year, if applicable:

— Revision of the baseline definition and of the associated target calculation, in comparison to the latest progress report, including verifiable justification of why the baseline had to be revised.

— The impact of climate adjustments per service sector and climate zone on the reported final energy consumption.

— The impact of service level adjustments on the reported final energy consumption.

If a Member State intends to take into account the energy consumption reduction in public transport or armed forces, the information should include the final energy consumption reduction achieved in public transport or armed forces.

The first National Energy and Climate Progress Reports were due 15 March 2023 after which the Member States needs to report progress biannually, apart from the requirement in Article 5(5) of Directive (EU) 2023/1791 that obliges Member States to report achieved consumption reduction by all public bodies every year.

APPENDIX A

Calculation of targets and verification of target achievement

Target calculation: Formulas to calculate the maximum public sector final energy consumption of a Member State according to the obligations of Article 5(1), (2) and (3) of Directive (EU) 2023/1791

2025, 2026

$$FEC_{max,2025} = FEC_{G1,2025}$$

$$FEC_{G1,2025} = FEC_{G1,BL} \times R_{G1,BL_{2025}}$$

$FEC_{G1,BL}$

Final energy consumption, group 1 baseline

$$R_{G1,BL_{2025}} = \left(1 - \left(\frac{82}{365}\right) \times 0,019\right) = 0,996$$

82 is the number of days from the transposition deadline by (including) 11 October 2025 until the end of 2025.

$$FEC_{max,2026} = FEC_{G1,2025} - (1 \times 0,019 \times FEC_{G1,BL})$$

2027, 2028, 2029

$$FEC_{max,2027} = FEC_{G1,2025} - (2 \times 0,019 \times FEC_{G1,BL}) + \left(FEC_{G2,BL} - (1 \times 0,019 \times FEC_{G2,BL})\right)$$

$$FEC_{max,2028} = FEC_{G1,2025} - (3 \times 0,019 \times FEC_{G1,BL}) + \left(FEC_{G2,BL} - (2 \times 0,019 \times FEC_{G2,BL})\right)$$

$$FEC_{max,2029} = FEC_{G1,2025} - (4 \times 0,019 \times FEC_{G1,BL}) + \left(FEC_{G2,BL} - (3 \times 0,019 \times FEC_{G2,BL})\right)$$

2030, 2031

$$FEC_{max,2030} = FEC_{G1,2025} - (5 \times 0,019 \times FEC_{G1,BL}) + \left(FEC_{G2,BL} - (4 \times 0,019 \times FEC_{G2,BL})\right) + \left(FEC_{G3,BL} - (1 \times 0,019 \times FEC_{G3,BL})\right)$$

$$FEC_{max,2031} = FEC_{G1,2025} - (6 \times 0,019 \times FEC_{G1,BL}) + \left(FEC_{G2,BL} - (5 \times 0,019 \times FEC_{G2,BL})\right) + \left(FEC_{G3,BL} - (2 \times 0,019 \times FEC_{G3,BL})\right)$$

For the following years (as of 2032)

$$FEC_{max,20n} = FEC_{G1,2025} - \left((n-25) \times 0,019 \times FEC_{G1,BL}\right) + \left(FEC_{G2,BL} - \left((n-26) \times 0,019 \times FEC_{G2,BL}\right)\right) + \left(FEC_{G3,BL} - \left((n-29) \times 0,019 \times FEC_{G3,BL}\right)\right)$$

where $n \in \mathbb{N}$: $n \geq 32$.

Abbreviation	Explanation
$FEC_{G1,2025} = FEC_{G1,BL} \times R_{G1,BL_{2025}}$	Maximum final energy consumption of Group 1 in the year 2025 (pro rata) (Group 1 corresponds to all public bodies with the exception of those included in groups 2 and 3; see below)

Abbreviation	Explanation
$R_{G1,BL_{2025}}$	$\left(1-\left(\frac{82}{365}\right)\times 0,019\right)996$ Reduction multiplier of the year 2025. $FEC_{G1,BL}$ is not reduced by 1,9 % in 2025 but proportionally (pro rata), corresponding to the remaining 82 days in 2025 as from the transposition day
$FEC_{G1,BL}$	Final energy consumption, Group 1 baseline; Group 1 corresponds to all public bodies with the exception of those included in groups 2 and 3.
$FEC_{G2,BL}$	Final energy consumption, Group 2 baseline; Group 2 corresponds to all public bodies in local administrative units with less than 50 000 inhabitants, but more than 5 000 inhabitants
$FEC_{G3,BL}$	Final energy consumption, Group 3 baseline; Group 3 corresponds to all public bodies in local administrative units with less than 5 000 inhabitants
n	Year in 2 digits, for example, 30 for the year 2030

Verification of target achievement: Formulas for the comparison of target and actual final energy consumption (years 2025 to 2031)

$$FEC_{real,G1,adj,2025} - RED_{T_OR_D,adj,2025} \times R_{T_OR_D_{2025}} \leq FEC_{max,2025}$$

$$FEC_{real,G1,adj,2026} - RED_{T_OR_D,adj,2026} \leq FEC_{max,2026}$$

$$FEC_{real,G1\&2adj,2027} - RED_{T_OR_D,adj,2027} \leq FEC_{max,2027}$$

$$FEC_{real,G1\&2adj,2028} - RED_{T_OR_D,adj,2028} \leq FEC_{max,2028}$$

$$FEC_{real,G1\&2adj,2029} - RED_{T_OR_D,adj,2029} \leq FEC_{max,2029}$$

$$FEC_{real,G1\&2\&3,adj,2030} - RED_{T_OR_D,adj,2030} \leq FEC_{max,2030}$$

$$FEC_{real,G1\&2\&3,adj,2031} - RED_{T_OR_D,adj,2031} \leq FEC_{max,2031}$$

Abbreviation	Explanation
$FEC_{real,G,adj,20n}$	Final energy consumption of public bodies (except transport and defence); adjusted (if applicable); with G corresponding either to G1, G1+G2 or G1+G2+G3, depending on the applicable year. s.t. $(n \in \mathrm{N}: n \geq 21)$ – for each natural number between 21 and 99
$RED_{T_OR_D,adj,20n}$	Final energy consumption reduction of the defence sector or the transport sector ("OR" means either the reduction in the Defence sector, or the reduction in the Transport sector, or the reduction in both sectors) in the year 20n; adjusted (if applicable); in comparison to the final energy consumption of the defence or transport sectors in the baseline year (2021) s.t. $(n \in \mathrm{N}: n \geq 25)$

Abbreviation	Explanation
	$\max\begin{cases} 0 & if\ FEC_{T\&D,20n} \geq FEC_{T\&D,2021} \\ (FEC_{T\&D,2021} - FEC_{T\&D,20n}) & if\ FEC_{T\&D,2021} > FEC_{T\&D,20n} \\ 0 & if\ FEC_{D,20n} \geq FEC_{D,2021} \\ (FEC_{D,2021} - FEC_{D,20n}) & if\ FEC_{D,2021} > FEC_{D,20n} \\ 0 & if\ FEC_{T,20n} \geq FEC_{T,2021} \\ (FEC_{T,2021} - FEC_{T,20n}) & if\ FEC_{T,2021} > FEC_{T,20n} \end{cases}$
	Final energy consumption, Transport sector s.t. $(n \in \mathrm{N}: \ n \geq 21)$ — for each natural number between 21 and 99
$FEC_{D,20n}$	Final energy consumption, Defence sector s.t. $(n \in \mathrm{N}: \ n \geq 21)$ — for each natural number between 21 and 99
$FEC_{T\&D,20n}$	Final energy consumption, Transport and Defence sector s.t. $(n \in \mathrm{N}: \ \geq n \geq 21)$ — for each natural number between 21 and 99
$R_{T_OR_D_{2025}}$	$\left(\frac{82}{365}\right)$ Reduction multiplier of Transport & Defence savings in the year 2025. The achieved savings of final energy consumption in the Defence and Transport sectors are counted proportionally (pro rata) for the year 2025. Corresponding to the 82 remaining days in 2025 as from the transposition day.

APPENDIX B

Adjustment for climate, changes in the public service levels and removal or addition of public bodies

Climate adjustment

The basic principles for climate adjustment of final energy consumption in accordance with Article 5(4) of Directive (EU) 2023/1791are as follows:

— Only the climate-dependent share of energy consumption is adjusted by climate variations. Usually, this refers only to the final energy consumption used for heating and cooling in buildings.

— A Member State may decide to consider its territory to be part of one or several climate zones.

— The climate adjustment is calculated for the total final energy consumption of a Member State in each public service sector for each defined climatic zone ([1]).

— Climatic variations must be captured by the state-of-the-art parameters: The most common parameters used are heating degree days for energy consumption for heating, and cooling degree days for cooling.

— A Member State may define climate zones as appropriate for the country and under the condition that for the defined climate zones the required climate parameters (heating and cooling degree days) are available ([2]). All heating and cooling final energy consumption data must be allocated to a specific climatic zone.

— To avoid the calculation of smaller climate variations which usually have very limited impacts on the energy consumption, a de-minimis-threshold of plus/minus 5 % should be applied for the climatic parameters (typically heating or cooling degree days) compared to the baseline year. This means that the climate adjustment is only conducted if the climatic parameter is 5 % higher or lower than in the baseline year ([3]).

— The climate-dependent share - i.e., final energy consumption used for heating and cooling – should be differentiated by the type of public service, average technical configuration, and climatic conditions. Furthermore, when defining the final energy consumption, only those energy carriers should be considered which are widely used for heating or cooling purposes. For heating, that will usually be: District heating, natural gas, heating oil, pellets, wood chips, solid biomass fuels, solid fossil fuels, and electricity (only the share used for heating). For cooling, that will usually be: Electricity (only the share used for cooling), and district cooling.

— If a Member State decides to apply climate adjustment for heating, then climate adjustment for cooling must also be applied, provided that the above mentioned de-minimis-thresholds are met.

— The accurate estimation of the climate-dependent share of the final energy consumption should be based on empirical evidence and/or related research. If the Member State is not able to provide meaningful estimates for the climate-dependent share of the final energy consumption of a public service based on empirical evidence, then the default values set out in Table 5 and Table 6 are considered to be appropriate average values.

([1]) Since the obligation is related to the Member States as a whole, it is not useful to conduct climate adjustment calculations at lower disaggregation levels, e.g., for every individual public body. A climate adjustment calculation at the highest possible disaggregation level – i.e., only differentiated by climate zone and public service - is sufficient and less error-prone.

([2]) Heating and cooling degree days in the EEA are published by JRC on https://agri4cast.jrc.ec.europa.eu/dataportal/.

([3]) The de-minimis-threshold of plus/minus 5 % applies to each climatic parameter separately. This means that, if in a certain year the difference in heating degree days compared to the baseline year stays below 5 %, whereas the difference in cooling degree days exceeds the threshold, in this year only the climate adjustment for cooling is applied.

Generic formula for climate adjustment of final energy consumption for heating and cooling

$$FEC_{HC,\ adj} = FEC_{HC} \times (1 - f_{adj}) + FEC_{HC} \times f_{adj} \times \left(\frac{par_{base}}{par_{rep}}\right)$$

$FEC_{HC,adj}$	Final energy consumption for heating or cooling after climate adjustment
FEC_{HC}	Final energy consumption reported from energy carriers used either for heating or for cooling ([4])
f_{adj}	Adjustment factor, corresponding to the climate-dependent share of final energy consumption, reported from energy carriers used either for heating or for cooling
par_{rep}	Value of the climatic parameter (heating or cooling degree days) in the reporting year
par_{base}	Value of the climatic parameter (heating or cooling degree days) in the baseline year 2021

([4]) As a rule, the energy consumption for heating consists of consumption reported for district heating, natural gas, heating oil, pellets, wood chips, solid biomass fuels, solid fossil fuels, and the share of electricity for heating purposes, whereas the energy consumption for cooling consists of consumption reported for district cooling and the share of electricity for cooling purposes (see Table 5 and Table 6).

Default value tables related to climate adjustment:

Table 5 presents default values for the climate-dependent share of final energy consumption used for heating or cooling differentiated by public services and average climate conditions, based on expert estimates. The default values should not be applied for climate adjustment on a building level but are meant to be applied when doing climate adjustments for the *total* energy consumption for heating or cooling of a public service sector in a given climatic zone, whereby the climatic zones must be defined by the Member State. The climate-dependent shares set out in Table 5 refer only to energy consumption used for heating on the one hand, and cooling on the other hand. The energy consumption for heating consists of consumption reported for district heating, natural gas, heating oil, pellets, wood chips, solid biomass fuels, solid fossil fuels, as well as the share of electricity used for heating purposes as shown in Table 6. The energy consumption for cooling consists of consumption reported for district cooling, as well as the share of electricity used for cooling purposes as shown in Table 6.

Table 5

Default values for the climate-dependent share of final energy consumption used for heating or cooling differentiated by public services and average climate conditions

(in %)

Public service	For average climatic conditions in Central and North Western Europe		For average climatic conditions Southern Europe		For average climatic conditions in Northern Europe	
	Energy consumption used for heating	Energy consumption used for cooling	Energy consumption used for heating	Energy consumption used for cooling	Energy consumption used for heating	Energy consumption used for cooling
Office and administration buildings	80	90	65	90	85	90
Hospitals and health care buildings	55	80	40	80	60	80
Schools and kindergartens	75	90	60	90	80	90
Universities	80	80	50	80	85	80
Factory and workshop buildings	85	90	80	90	90	90
Publicly owned residential buildings (for example, dormitories)	65	90	50	90	75	90
Other public buildings (owned or rented)	65	90	50	90	70	90

Table 6

Share of electricity consumption used for heating and cooling purposes differentiated by public services and average climate conditions ([1])

(in %)

Public service	In average climatic conditions in Central and North Western Europe		In average climatic conditions Southern Europe		In average climatic conditions in Northern Europe	
	Share of electricity consumption used for heating purposes	Share of electricity consumption used for cooling purposes	Share of electricity consumption used for heating purposes	Share of electricity consumption used for cooling purposes	Share of Electricity consumption used for heating purposes	Share of electricity consumption used for cooling purposes
Office and administration buildings	4	7	7	18	8	2
Hospitals and health care buildings	7	18	7	30	6	7
Schools and kindergartens	3	5	4	12	4	2
Universities	4	8	7	15	4	3
Factory and workshop buildings	3	7	3	15	5	4
Publicly owned residential buildings (for example, dormitories)	2	3	3	20	3	1
Other public buildings (owned or rented)	5	3	7	15	6	2

([1]) The values in the table represent default estimates. However, the share largely depends on certain characteristics of the energy system in a specific Member State, e.g., on the typical share of electric heating in heat supply or on the typical building technology used for different public services. Therefore, Member States may use more appropriate values based on statistical data.

Adjustment for major changes in the public service levels

The basic principles for an appropriate service level adjustment of final energy consumption for the purpose of Article 5(1) of Regulation (EU) 2018/1999 are as follows:

— The adjustment is made separately for the final energy consumption reported for the different public service sectors, as set out in Table 2, at the level of the Member State ([5]), because the measurement of service level requires different parameters.

— The reference parameters that are used to measure the service level must be carefully selected and must have as direct a correlation as possible with energy consumption ([6]). Table 6 presents a list of examples of appropriate reference parameters in the given context.

— Through the application of a *de-minimis*-threshold of plus/minus 5 %, only noticeable changes in service levels are taken into account. This means that the service level adjustment is only conducted if the parameter to measure service levels is 5 % higher or lower in a given year compared to the baseline year.

— If a specific public service sector requires service level adjustment *and* climate adjustment, then the two adjustment steps are carried out consecutively. Because the climate adjustment would be different for each climatic zone in a Member State, the climate adjustment would have to be carried out first and only then the service level adjustment, which should be carried out only at the level of the Member State.

Table 7

List of appropriate reference parameters for measuring the service level, differentiated by public services

Energy consumption in buildings	**Reference parameters**
Office and administration buildings	m^2 (conditioned area)
Hospitals and health care buildings	m^2 (conditioned area)
Schools and kindergartens	m^2 (conditioned area)
Universities	m^2 (conditioned area)
Factory and workshop buildings	m^2 (conditioned area)
Publicly owned residential buildings	m^2 (conditioned area)
Other public buildings (owned or rented)	m^2 (conditioned area)
Energy consumption for processes	
Public lighting	km of lighted streets or number of light points
Water supply	Water consumption annually
Waste water treatment	Waste water treated annually
Waste management	Waste generation annually
Other processes	No reference parameter (no adjustment foreseen)

([5]) Since the obligation is related to the Member States as a whole, it is not useful to conduct adjustment calculations related to changes in the service level at lower disaggregation levels, e.g., for every individual public body. It is sufficient and less error-prone, if the calculation is conducted at the Member State level, differentiated only by public service sectors.

([6]) For example, the number of pupils or children that attend schools or kindergartens has a rather indirect correlation with the energy consumption of this sector. This is because only a significant increase in the number would lead with some delay to new facilities having to be made available – and vice versa in the case of a decreasing number. The same is true for the parameter of passenger-kilometres related to the energy consumption of public transport, since up to a certain threshold an increase or decrease in the use of the transport means will have a negligible impact on energy consumption.

Energy consumption for mobility services	
Public transport	Kilometres driven per year
Fleet of vehicles owned by public body for other purposes than public transport	No reference parameter (no adjustment foreseen)

Generic formula for the adjustment of final energy consumption to changes in the service level

$$FEC_{adj} = FEC \times \left(\frac{par_{base}}{par_{rep}} \right)$$

FEC_{adj}	Final energy consumption adjusted
FEC	Final energy consumption (collected data)
par_{rep}	Value of the service level parameter in the reporting year
par_{base}	Value of the service parameter in the baseline year

This generic formula can only be applied, if the chosen parameter for measuring the service level justifies this assumption of a direct correlation between service level and energy consumption.

Adjustments for the removal and addition of public bodies

If public bodies disappear, are newly created or were omitted by mistake from the baseline, the principle 'like should be compared with like' should be applied when comparing baseline consumption and annual final energy consumption. In concrete cases this means that:

— When a public body – for whatever reason – ceases to exist, its final energy consumption should be excluded from the baseline, as well as from the final energy consumption in all following reporting years. For preceding years which have been already reported, a recalculation of adjusted results is not necessary.

— When a public body – for whatever reason – is added, its final energy consumption should be added to the baseline as well as to the final energy consumption in all following reporting years. In this case, it may be that final energy consumption data for the baseline year 2021 will not be available, so that the final energy consumption in the first year of full operation of the public body which has been added can be used as baseline consumption against which the final energy consumption in the following years will be compared.

— In the case of restructuring public bodies, comparability with the conditions of the baseline year should be achieved as far as possible, according to the general principle to compare like with like.

In all above-mentioned cases, a complete recalculation of the final energy consumption for the preceding target period starting from 2025 should be conducted ([7]).

([7]) If the Member State uses an appropriate software solution for the final energy consumption data collection as well as for reporting against the target achievement, then the complete recalculation should be done automatically by the application.

APPENDIX C

Practical examples related to Article 6 of Directive (EU) 2023/1791

1. **Meeting the renovation requirement (default approach)**

This section presents a series of illustrative examples to show how the baseline for the calculation of the annual target should be established. Three special cases illustrate how the baseline and the target change in special circumstances.

Annual renovation target

Table 8 shows how the annual target can be calculated based on data concerning the size of the buildings and their current efficiency rating.

Table 8

Baseline scenario example of a building stock on 1 January 2024

Building ID	Total useful floor area (in m^2)	NZEB	Buildings included in the baseline ([1])	Total useful floor area of buildings falling under the renovation requirement (in m^2)
1	2 000	X		-
2	10 000		X	10 000
3	7 000		X	7 000
4	1 500		X	1 500
5	30 000		X	30 000
6	3 000	X		-
7	300	X		-
8	900	X		-
9	800		X	800
10	700		X	700
11	200 ([1])			-
Total baseline useful floor area (m^2)				**50 000**
Annual renovation target (m^2)				**1 500**

([1]) Buildings that have a total useful floor area that is larger than 250 m2, are owned by public bodies on 1 January 2024 and are not renovated to NZEB standard.

Assuming that the situation on 1 January 2024, is that the annual renovation target (in m^2) is: 50 000 m^2 × 3 % = 1 500 m^2. This can be met by renovating building 4 (in the example), or by renovating multiple buildings to add up at least to the same m^2 (for example, buildings 9 and 10).

The annual renovation target remains unchanged over the period in which Directive (EU) 2023/1791 is effective, even when new buildings are added to the building stock or when buildings are demolished or sold. All new buildings owned by public bodies must be zero-emission as of 1 January 2028, as specified in Article 7 EPBD. It also specifies that new public buildings must be at least NZEB until the application of the ZEB standard.

Demolition and replacement example

Member States may add to the annual renovation rate the floor area of new buildings owned by public bodies which are replacing specific buildings demolished in any of the two previous years. An example of this exception is shown in Table 9.

Table 9

Demolition and replacement example

Building ID	Total useful floor area (in m^2)	NZEB	Buildings included in the baseline ([1])	Status	Total useful floor area of buildings below renovation requirements (in m^2)
1	2 000	X			-
2	10 000		X		10 000
3	7 000		X		7 000
4	1 500		X		1 500
5	30 000		X		30 000
6	3 000	X			-
7	300	X			-
8	900	X			-
9	800		X	Demolished	800
10	700		X		700
11	1 200	X		New building	1 200
Total baseline useful floor area (m^2)					**50 000**
Annual renovation target					**1 500**

([1]) Buildings that have a total useful floor area that is larger than 250 m2; are owned by public bodies; on 1 January 2024, are not renovated to NZEB standard.

Assuming that building 11 was built as replacement for a specific building (i.e. building 9) which was demolished in the previous two years, then the floor area of building 11 can be counted towards the target up to the size of the old building that was demolished. Counting this building will imply that the remaining target for that year is 1 500 m^2 - 800 m^2 = 700 m^2.

Counting the 800 m^2 of building 11 towards the target is only possible if the Member State can demonstrate compliance with the two conditions set in Article 6(4) of Directive (EU) 2023/1791, which are:

— **Cost effectiveness**: (Total cost of demolishing building 9 + Total cost of constructing building 11) < Total cost of renovating building 9 to NZEB or ZEB standard.

— **Sustainability:**

  — Total energy consumption of building 9 over its estimated economic life > (Total energy consumption of building 11 over its estimated economic life + Total energy during the construction phase of building 11),

  AND

  — total CO_2 emissions of building 9 over its estimated economic life > (Total emissions of building 11 over its estimated economic life + Total emissions during the construction phase of building 11).

2. **Meeting the renovation requirement (Alternative approach) – Practical examples**

Setting the annual targeted amount of equivalent energy savings

In order to set the annual targeted amount of energy savings, Member States may choose their preferred methodology, as long as the requirements of Article 6 are met. One way to achieve this is to identify, each year, the buildings to be renovated by category and the expected energy savings, based on standard values for the energy consumption of reference buildings before and after renovation. In the example indicated in Table 10 and Table 11, the Member State is obliged to renovate 230 000 m^2 per year, but this results in two different energy savings requirements for the year X and year X+1. This is because the distribution of buildings across categories varies between the two years. The figures included here are purely illustrative.

Table 10

Estimating the equivalent energy savings in year X

Types of reference buildings to be renovated in year X	Total surface of buildings to renovate in year X (in m^2)	Energy consumption before renovation (kWh/m^2)	Energy consumption after renovation (kWh/m^2)	Energy savings (kWh/m^2)	Total energy savings (kWh)
Offices	100 000	380	70	310	31 000 000
Educational buildings	50 000	400	70	330	16 500 000
Hospitals	30 000	300	70	230	6 900 000
Sport facilities	30 000	200	70	130	3 900 000
Other	20 000	350	70	280	5 600 000
Total energy savings to be achieved in year X					**63 900 000**

Table 11

Estimating the equivalent energy savings in year X+1

Types of reference buildings to be renovated in year X+1	Total surface of buildings to renovate in year X+1 (in m^2)	Energy consumption before renovation (kWh/m^2)	Energy consumption after renovation (kWh/m^2)	Energy savings (kWh/m^2)	Total energy savings (kWh)
Offices	0	380	70	310	0
Educational buildings	100 000	400	70	330	33 000 000
Hospitals	30 000	300	70	230	6 900 000
Sport facilities	50 000	200	70	130	6 500 000
Other	50 000	350	70	280	14 000 000
Total energy savings to be achieved in year X+1					**60 400 000**

Another way to achieve this is, would be to project, in a similar way to the above tables, which part of the building stock would be renovated within a certain period of time (for example, by the end of 2030) and to estimate the annual average savings over that period of time.

APPENDIX D

Other Guidance related to Article 6 of Directive (EU) 2023/1791

Inventory of public bodies' buildings

Article 6(5) of Directive (EU) 2023/1791 specifies the type of information that Member States must disclose as part of their inventory. However, Member States may also take the opportunity to collect additional information to support national buildings and energy efficiency policy aims. A more detailed inventory may be used to calculate the baseline for the target of Article 6(1) or (6) of Directive (EU) 2023/1791. For example, it may be used to develop a more effective renovation strategy at national level, by:

— Identifying the less efficient buildings to renovate;

— Grouping buildings by category and type, so that common renovation approaches can be developed;

— Prioritising more cost-effective renovations, for example based on EPC or some other buildings' characteristics.

— Prioritising unoccupied buildings, so that they can be used to house organisations while their building is being refurbished.

Below are examples of additional information that Member States may choose to collect including suggestions for the data type or multiple options in brackets:

Information useful to calculate baseline and the target of Article 6 of Directive (EU) 2023/1791:

— Building excluded from renovation baseline (YES/NO)

— Reason for exclusion from renovation baseline (Not owned/Social housing not cost effective to renovate, already NZEB on 1/1/2024)

— Efficiency level/renovation status (NZEB/ZEB/NZEB equivalent ([1]) as per Article 6(2a-c)/other)

— Renovation date (date, if NZEB/ZEB/ZEB equivalent as per Article 6 selected at previous point)

— Demolition date (date)

— Building construction date (date)

— Replacement for demolished building (YES/NO. Field available only if building date > 2026)

Further building-specific information:

— Address (string)

— Owner (either from a list of public bodies or a non-public body)

— Occupation status (self-occupied/rented out to other public body/rented out to organisations other than public bodies or to private/unoccupied)

— Public body hosted (if rented out to other public body)

— Characteristics of the building:

— Building type (for example, one category for sectors included in Article 5(5) of Directive (EU) 2023/1791 or EPC categories)

— Current energy performance as per EPC (kWh/m^2/year)

([1]) The renovation status 'NZEB equivalent' refers to buildings in the special category that, although not reaching NZEB or ZEB status, may be counted towards the annual target.

— Actual energy consumption per m^2 ($kWh/m^2/year$)

— Energy performance rating (ZEB, NZEB, A, B, C, etc.)

— Main fuels

— Limitations (protected building; building owned by the armed forces; building owned by central government and serving national defence purposes; buildings used as places of worship and for religious activities)

Renovation status:

— Building with renovation passport (YES/NO)

— Passport release year (date)

— Year by which renovation to NZEB/ZEB is foreseen

Member States may – but have no obligation to – disclose this additional information, if they choose to collect it. The publication of additional data gives information to the construction sector and ESCOs as well as to the public about the renovation needs in the public sector.

Table 12

Summary of data required and recommended for the inventory

Type	Data
Compulsory to collect and make publicly available	Floor area Energy Performance Certificate
Compulsory to collect and make publicly available, if the information is available	Metered consumption for heat, cooling, electricity and hot water
Strongly recommended to be collected to facilitate the use of the inventory	Public body hosted City/region Address Whether the building is owned or rented
Data that can allow Member States to calculate the baseline and annual target	Whether the building is included or excluded from the renovation baseline Renovation status Renovation date Demolition date Building construction date Whether the building is a replacement for demolished building
Other data useful to use the inventory as a tool to plan the renovation of the public bodies' building stock	Owner Occupation status Body hosted Characteristics of the building: Building type Current energy performance level …

Some of this information can be found on the EPC and it would be useful to transcribe it in data format if the EPC are only included as PDF. Other data may have to be collected via other means. Member States may extract it from other databases, or by conducting a survey of building owners and occupiers, with regular follow ups to ensure the information is kept up to date. Another option is to develop a database, accessible remotely, that public bodies themselves should access and update. To limit the administrative burden and improve the quality of data collected, Member States can also set up solutions that automate the data collection process, for example, through smart metering, Building Management Systems solution, Internet of Things, digitally-enabled energy systems.

To ensure consistency and accountability, Member States may consider appointing one public body to manage and keep the inventory up to date, as well as setting up the processes and tools to carry out these tasks. Such a body could also be involved in other reporting and planning tasks related to actions aimed at improving the performance of the building stock, in order to identify synergies and avoid duplications.

A link to the EPBD related data collection gives Member States the possibility to directly import data from other data repositories, and use the inventory as a policy support tool. For example, as all public buildings must have an EPC and as all the EPCs must be uploaded to a common database, Member States may be able to extract the data pertaining to public bodies and automatically compile the majority of the inventory without duplicating the work.

Member States may consider the following supporting actions to ensure the data collection is carried out quickly and effectively:

— Launching a communication campaign aimed at reaching all public bodies (and mostly targeted towards local public bodies) to inform them of the requirements concerning the reporting about the buildings they own and/or occupy.

— Creating standard templates or direct access points to the national database, prefilled where possible, that public bodies can use to report data concerning the buildings they own and/or occupy.

— Allowing public bodies to use the inventory for their own planning and reporting, for example by allowing them to see aggregated data for their building stock, averages and trends.

Article 6 puts an emphasis on the public sector because of its exemplary role – i.e., the actions of the public sector should reduce the barriers of other actors to the uptake of energy efficiency improvements and building renovations, mostly by demonstrating their feasibility, cost effectiveness and wider benefits. The renovation of public bodies' buildings will help the supply chain to develop expertise and experience, so that they are better able to advise private clients. Dissemination of relevant building renovation data is therefore important to build capacity in the construction, but also other sectors (for example financing), and the following considerations may be taken into account to fully exploit the impact of the exemplary role of public bodies' buildings:

— Use the inventory to gather data useful for the dissemination phase.

— Collect and present relevant information to stakeholders. For example, installation costs, operating costs, performance (ex-ante and ex-post estimates), or other practical considerations.

— Plan a dissemination strategy able to reach industry, businesses and residential stakeholders with relevant and effective messages.

— Identify case studies and best practices that can be shared, including ensuring physical visibility of the interventions in the renovated buildings.

Compliance with the annual renovation requirement

To drive the renovation of buildings owned by public bodies, there are several approaches that Member States should consider:

— Define a clear, long-term strategy for renovating public buildings, such as National Building Renovation Plans. Beyond financial resources, many of the bodies captured under Article 6 of Directive (EU) 2023/1791 (public bodies who own or rent buildings) could benefit from support in procuring and organising renovations efficiently and effectively.

— Assign a central authority to be in charge of prioritising and planning renovations. The central authority could be responsible for determining which buildings should be renovated first, by considering the energy consumption, current use, and current plans of the body hosted. In doing so, the central authority could exploit the data from the inventory set up in accordance with Article 6(5) of Directive (EU) 2023/1791. The authority could then work with the responsible bodies to plan the renovation so that the new building will also support the long-term strategy of the hosted body. It could also be tasked with supporting the body in identifying the funding options for the work.

— Public bodies' buildings renovations could also be prioritised in a decentralised way, based on the level of motivation of public bodies that own the buildings in question. A central authority would be responsible for setting up a funding programme to which public bodies can apply if they would like to renovate their buildings. This option should be accompanied with information campaigns to raise awareness among public bodies of the availability of the funding programme. This option may not allow Member States to reach their annual targets if insufficient public bodies apply for funding to support renovation of their buildings. This approach would also miss the opportunity to prioritise on the basis of renovating the buildings with biggest savings for the lowest cost (or some other strategic criteria) first.

— Consider alternative funding mechanisms, such as Energy Service Companies (ESCO) contracts, and support centrally public bodies that are open to such approaches.

Member States should also consider elaborating and publishing clear methodologies to:

— Identify consistently which buildings to renovate, helping public bodies to consider appropriately cost effectiveness and technical, economical and functional feasibility.

— Assist public bodies that own social housing to estimate whether renovation to NZEB can be carried out within the cost neutrality criteria. It is worth considering that Member States may still choose to renovate to NZEB or ZEB social housing that does not meet the cost neutrality criteria;

— Support public bodies to deal with buildings included in the special categories (protected buildings, buildings belonging to the armed forces or serving national defence purposes, and buildings used as places of worship and for religious activities). The methodology may help public bodies to:

  — Categorise these buildings correctly;

  — Establish the performance level, or a set of criteria, that buildings belonging to the special categories, as defined in Article 6(2) of Directive (EU) 2023/1791, must reach in order to be counted towards the renovation requirement. For example, such a methodology may establish which building elements can be altered according to the category of building;

  — Define a methodology to establish when compliance with certain minimum energy performance requirements may unacceptably alter the character or appearance of protected buildings. This methodology could be linked to how the national legislators deal with protected buildings (for example, different levels of protection) and provide clear guidelines to architects and engineers on what can be considered an acceptable level of modification;

  — Deal with cases where a building may have shared purposes (for example, religious activities but also social events).