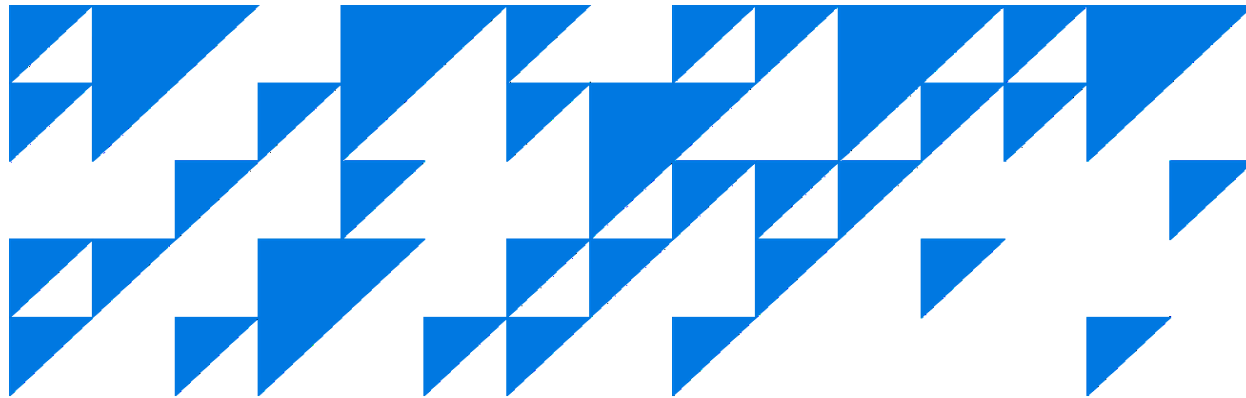




DEA, MoE, MinDev & SAEE

Energy Partnership Programme between Ukraine and Denmark

White Paper on relevant obligations from EU directives (EED, EPBD) and Danish solutions and cases

Promoting Energy Efficiency in public administrative buildings – developing of Tool kit for energy efficiency – 11th July 2025
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Viegand
Maagøe

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1 Introduction

In 2025, Ukraine continues to prioritize national energy efficiency as a fundamental pillar of its strategy for economic modernization, energy security, and climate action. This strategic emphasis is particularly crucial as Ukraine aligns itself with European Union energy policies, decarbonization commitments, and broader goals of energy security. Despite this clear strategic focus, Ukraine faces multiple barriers to achieving widespread adoption of energy-efficient practices, including the recent Russian aggression, financial constraints, regulatory complexities, technological limitations, limited access to relevant information, and the profound impact of the ongoing war.

As part of the Ukraine-Denmark Energy Partnership Programme (UDEPP), this white paper forms a deliverable under the 2025 projects on energy efficiency. The whitepaper specifically addresses the two key recasted EU directives guiding Ukraine's energy efficiency efforts – the Energy Efficiency Directive (EED) (2023/1791/EU)¹ and the Energy Performance of Buildings Directive (EPBD) (2024/1275/EU)². It provides an overview of each directive, focusing on their implications for the public sector and buildings, where EED focuses on the yearly reduction of energy consumption in the public sector and yearly renovation of public buildings and the EPBD focuses on promoting the energy performance of buildings and the building stock, aiming to achieve a zero-emission building stock by 2050. Furthermore, the paper examines practical pathways for achieving compliance with these directives, considering local conditions and existing obstacles in Ukraine. The overall objective of the project is to create a framework that not only supports the public sector in implementing energy efficiency measures but also provides a key tool in the implementation of Ukraine's strategies in the field of energy efficiency, decarbonization, and security of energy supply.

In relation to the white paper, comprehensive energy audits were conducted for four public buildings, assessing components critical to EPBD and EED compliance, such as building envelope performance, heating and ventilation systems, lighting, hot water production, and renewable energy integration. The audits also evaluated building automation systems and energy management practices — all essential for achieving Minimum Energy Performance Standards (MEPS) and targeting the worst-performing building stock as outlined in EPBD (16% by 2030, 26% by 2033). The technical findings have been documented in building-specific reports and summarized in accessible case studies.

Denmark has extensive expertise and successful experiences with energy efficiency in the public sector. Relying on these insights offer valuable inspiration and practical strategies that

¹ EED: [Directive - 2023/1791 - EN - EUR-Lex](#)

² EPBD: [Directive - EU - 2024/1275 - EN - EUR-Lex](#)

could potentially be transferred to the Ukrainian context and further develop the energy efficiency agenda. Under the Ukraine-Denmark Energy Partnership Program (UDEPP), the initial phase includes comprehensive energy audits conducted at selected public administrative buildings within the Ministry of Energy (MOE), the Ministry for Development of Communities and Territories (MinDev), and State Agency of Energy Efficiency and Energy Saving (SAEE).

Executed by local energy auditors supported by international specialists providing quality assurance, these audits will produce critical insights and practical case studies. Findings from these audits will inform the development of a comprehensive tool kit containing guidelines, best practices, and actionable recommendations. This tool kit aims to assist Ukrainian authorities in implementing robust energy management systems, achieving EU directive compliance, and strategically investing in sustainable, energy-efficient upgrades across the public sector.

2 Energy Efficiency Directive

The Energy Efficiency Directive (EED) (EU/2023/1791), first adopted in 2012 and updated in 2018 and recasted in 2023, establishes comprehensive rules and obligations to meet the EU's ambitious 2030 climate and energy efficiency targets while ensuring energy security within the EU. The 2023 recast notably raises the EU's energy efficiency ambitions significantly, introducing the Energy Efficiency First principle (EE1st) for the first time as a fundamental, legally binding component of EU energy policy. EE1st requires member states to prioritize energy efficiency in all relevant policy and major investment decisions, spanning both energy and non-energy sectors.

The directive has its overarching focus on enhancing energy efficiency across public, industrial, and production sectors, and embedding social fairness principles. This holistic approach aligns with the EU's broader agenda to ensure that the green transition is sustainable, competitive, and socially equitable. Specifically, EED 2023 more than doubles the annual energy savings obligations, setting incremental targets from 1.3% of final energy consumption by 2024, rising to 1.9% by 2028, measured as an average over the most recent three-year period prior to January 1st, 2019, up significantly from the earlier 0.8% target.

This whitepaper is focused among energy efficiency in the public sector, and a substantial element of the directive is a specific mandate requiring the public sector to achieve an annual reduction in energy consumption of 1.9% (EED 2023, art 5). EU member states are obligated to renovate annually at least 3% of the total floor area of heated and cooled buildings owned by the public administration at all governmental levels (local, regional, and national), so that the building achieves NZEB-level (nearly zero energy building) which in a Danish context refers to

energy performance level B (EED 2023, art. 6). Moreover, public buildings must consistently consider energy efficiency requirements in their procurement processes for products, services, buildings, and infrastructure. Additionally, the directive actively promotes the use of energy performance contracting, with a particular emphasis on large publicly owned buildings. To enhance transparency and accountability, member states are required to openly report on their energy efficiency investments, including details of energy performance contracts, within the established Governance Regulation framework.

Under the recasted directive, public sector buildings must now also be included as part of the energy savings obligation (EED 2023, art. 8). This means that public bodies are now obligated to actively contribute to achieving the overall national energy savings targets, whereas previously, the primary burden fell on energy suppliers and retailers. The public sector is required to lead by example, ensuring that energy efficiency improvements are actively implemented in public administration buildings and services. To ensure the effectiveness of these obligations, robust monitoring and compliance mechanisms are established at the national level. Member states must implement transparent reporting systems for obligated entities, conduct periodic assessments of achieved savings, and enforce corrective measures or sanctions in cases of non-compliance. These mechanisms are crucial in maintaining accountability and ensuring that the ambitious energy efficiency targets set out in the directive are met. By reinforcing mandatory energy savings obligations, promoting equitable energy efficiency improvements, and ensuring strong enforcement measures, the energy efficiency scheme (EEOS) or equivalent solutions play a critical role in advancing the EU's long-term sustainability and decarbonization goals.

Overall, the directive introduces obligations of mechanisms for project development assistance at national, regional, and local levels, facilitating strategic investments that enable member states to meet ambitious energy efficiency objectives.

3 Energy Performance of Buildings Directive

The Energy Performance of Buildings Directive (EPBD) (EU/2024/1275) complements the EU's overall energy efficiency framework by specifically targeting improvements in the building sector, with the ambition of achieving a fully decarbonized building stock by 2050. Buildings account for approximately 40% of the EU's total energy consumption and over one-third of its energy-related greenhouse gas emissions, making their renovation and modernization central to Europe's climate strategy.

A central aspect of the directive involves the acceleration of renovations, particularly of buildings with the poorest energy performance. To this end, EPBD introduces Minimum Energy Performance Standards (MEPS) for residential and non-residential buildings, where public buildings also are included, which are required to achieve an energy performance level set by the respective Member states by 2030, 2033, 2040, and 2050. Based on their energy performance in 2020, these buildings must be ranked by the respective Member state according to their primary energy consumption. Figure 1 illustrates an example on buildings classified as non-residential, where the lowest performing 16% of the building stock must improve their energy performance by 2030, while the bottom 26% must meet higher efficiency standards by 2033. In residential buildings the minimum demand is also 16% in 2030 and 20-22% by 2025. Each member state must perform their own ranking and targets. In Denmark, the final percentages have not yet been determined; thus, Figure 1 presented is indicative minimum requirements for non-residential buildings from the directive, pending final implementation into Danish legislation.

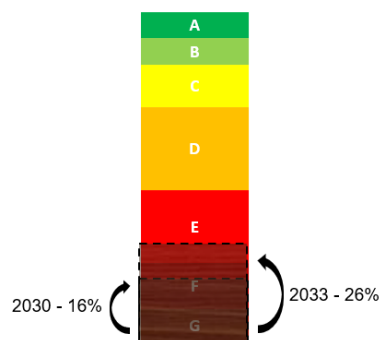


Figure 1: Energy efficiency goals in public buildings (non-residential), indicative 2030 and 2033

In practice, this means setting a minimum threshold that buildings below this standard must exceed through renovations, improvements in heating systems, ventilation and solar. Member states may exempt certain buildings under specific conditions³. The EPBD encourages the use of energy performance certification, such as the EU energy performance certificate, to identify buildings requiring upgrades. As an example in Denmark, corresponding to the indicative Figure 1, this could for instance imply that most G- and F-rated buildings (approx. 250 kWh/m² and above) must be upgraded by 2030, with approximately half of E-rated buildings requiring further improvements by 2033 if the final Danish goals are as indicated. These requirements ensure that public buildings play a pivotal role in advancing the EU's decarbonization and energy efficiency targets (EPBD, Article 9, 2024) and supports the phasing out of fossil fuels for heating and cooling by 2050. To support long-term renovation strategies, the directive

³ Exceptions (para. 6): officially protected buildings or other historic buildings, temporary buildings, agricultural buildings, buildings owned or serving national defence purpose

introduces Building Renovation Passports, detailing tailored, phased renovation plans to guide property owners toward achieving deep and efficient building upgrades (EPBD, Article 12).

The directive further mandates that new public buildings are zero-emission buildings from 2028 and all new buildings are required to comply with the new zero-emission demands by 2030 (EPBD, Article 7). By 1st of January 2027, the Member States are obligated to publish a roadmap detailing the introduction of limit values for the total cumulative GWP (global warming potential) of all new buildings throughout their life cycle and set targets for new buildings from 2030. Solar energy deployment is set to become mandatory for specific building categories, provided it is technically suitable, and economically, and functionally feasible (Article 10). This applies to both electricity and heat production from solar installations. The timeline for mandatory solar implementation includes:

- from 2027, all new public and other buildings with a usable floor area exceeding 250 m² and all existing buildings over 500 m² undergoing major renovations, roof-related works or installation of a technical building system requiring permits
- from 2028, all existing public buildings over 2 000 m²
- from 2029, all existing public buildings over 750 m²
- from 2030, all new residential buildings and covered parking facilities in proximity to buildings
- from 2031, all existing public buildings with a usable floor area of more than 250 m².

These phased requirements ensure a progressive integration of solar technologies in the public sector, reinforcing the EU's commitment to renewable energy expansion while enhancing energy resilience in state institutions.

Public bodies are required under EPBD to establish comprehensive and robust National Building Renovation Plans (NBRPs). These plans must outline clear and measurable pathways for renovating national building stocks, ensuring they contribute effectively to meeting EU-wide climate and energy goals. Member states are required to report their progress regularly, maintaining transparency and accountability (EPBD, Art. 3). EPBD also enhances transparency and standardization through improved Energy Performance Certificates (EPCs). These certificates will be digitized, updated regularly, and integrated into national databases to provide clearer information to building owners, investors, and tenants (EPBD, Art. 19-20).

Furthermore, the directive addresses the digitalization of building energy systems and promotes infrastructure supporting sustainable mobility, including the installation of charging points for electric vehicles in new and renovated buildings, particularly public buildings (EPBD, Art. 14).

Together, these measures under the EPBD aim to achieve a reduction in greenhouse gas emissions from the EU building stock of at least 60% by 2030 compared to 2015 levels, directly supporting the overarching European Green Deal's objectives of sustainability, competitiveness, and social fairness.

The combination of geopolitical instability, rising energy prices, regulatory changes, and decarbonization goals makes energy efficiency a strategic imperative for Ukraine. Energy efficiency improvements will not only reduce the societal and economic burden of high energy costs but also increase industrial competitiveness and resilience in the face of future challenges.

4 Danish solutions and cases

4.1 EEOS Energy Efficiency Obligation Schemes (EEOS)

The Energy Efficiency Directive (EED) requires each Member States (MS) to apply an energy efficiency obligation scheme (EEOs) or alternative policy measures to achieve cumulative end-use energy savings for the entire obligation period up to 2030, equivalent to new annual savings of at least 0.8% of final energy consumption up to 31st December 2023 and of at least 1.3% from 1st January 2024, 1.5% from 1st January 2026 and 1.9% from 1st January 2028. Denmark has been a pioneer in implementing EEOS, establishing its first agreement in 2006, which later served as inspiration for Article 7 of the 2012 Energy Efficiency Directive (EED) and is now further developed in the recasted EED directive. The agreement was managed by the Danish Energy Agency, which imposes energy savings obligations on power companies, district heating providers, natural gas suppliers, and oil companies.

The Energy Efficiency Obligation Schemes (EEOS) have been widely implemented across the EU, but their design and effectiveness vary among member states. While some countries rely entirely on EEOS to meet their energy savings obligations, others combine them with alternative policy measures such as financial incentives, tax rebates, and investment support to achieve cost-effective energy efficiency improvements. The schemes are particularly impactful in the building, energy, and industrial sector.

The table below highlights the percentage of national energy savings expected to be delivered through EEOS in selected EU member states:

Member State	Percentage to be delivered by EEOS
Bulgaria	100%
Denmark	100%

Poland	100%
Luxembourg	100%
France	87%
Lithuania	77%
Latvia	65%
Italy	62%
Ireland	48%
Spain	44%
Austria	42%
Croatia	41%
Slovenia	33%
UK	21%
Estonia	5%
Total (EU Average)	34%

Figure 2: National energy savings expected to be delivered through EEOS in selected EU member states 2014-2020

4.2 The inclusion of public buildings

One of the measures within the Danish implementation of articles 5 and 6 (EU/2012/Art. 5 and 6) is The Circular on Energy Efficiency in State Institutions 2021⁴, which establishes binding obligations for Danish ministries and affiliated institutions to improve the energy performance in public buildings and promote energy efficiency in procurement.

The circular applies to all ministries and their affiliated institutions whose expenses are primarily covered by state funds, where the government has a controlling influence, or where institutions have the authority to make decisions on behalf of the state. The regulations cover all energy and water consumption related to ministerial activities, including building operations and process energy.

A key objective of the circular is the reduction of energy consumption in state-owned and used buildings by at least 42 480 MWh by 2030 compared to 2020 levels. For buildings not covered by this specific obligation, e.g. high schools, universities, and museums, as well as for other energy consumption, a minimum of 10% reduction by 2030 is required.

To achieve these goals, each ministry must develop an energy efficiency plan, outlining the strategy for energy-saving initiatives. This plan must include details on organization, covered

⁴ [The Circular on Energy Efficiency in State Institutions](#)

buildings, energy consumption, heating sources, energy labels, and planned measures to improve efficiency.

Ministries are also required to adopt energy-efficient behaviour and procurement practices. They must purchase products and services that meet high energy efficiency standards, ensuring that they are cost-effective, economically viable, sustainable, and technically suitable. Whenever possible, products from the highest energy efficiency class should be prioritized, provided there is sufficient competition in the market.

Furthermore, ministries must annually report their total energy and water consumption from the previous year to a central database managed by the Danish Energy Agency. In addition, remotely readable meters for heating, district cooling, and water must be installed in state-owned buildings wherever possible. Due to this, when constructing, operating, maintaining, or renovating buildings, ministries are required to ensure that these activities are carried out in an energy-efficient manner, taking investment and operational costs into account. The use of renewable energy sources for state buildings should also be actively considered. Moreover, when entering, renewing, or renegotiating lease agreements, it must be ensured that buildings at least meet the energy performance requirements of renovation class 2 as defined in the Danish Building Regulations.

Recent years have shown that binding obligations combined with structured planning and data reporting can drive significant energy savings in public buildings. From 2020 to 2023, the Danish State reduced energy consumption in state-owned and used buildings by 158 GWh, corresponding to a 9% reduction. Among other measures, ministries have maintained behavioural interventions introduced during the 2022/23 energy crisis – such as temperature reductions, lighting control, and optimized operating hours – which have continued to contribute to these savings⁵. This experience demonstrates the importance of clear targets and institutional follow-up mechanisms. It also highlights the role of centralized reporting systems such as “Offentligt Energiforbrug” (OEF) in creating transparency and enabling follow-up. OEF is an online platform where the ministries and their underlying institutions can report their yearly energy consumption in order to track their progress.

Another of the key lessons from Denmark’s implementation of energy efficiency obligations in public buildings is the critical importance of strong inter-ministerial coordination, clear division of responsibilities, and structured energy networks. While ministries are responsible for fulfilling the energy efficiency obligations, the actual implementation of energy-saving measures often falls to other entities – such as building operators, agencies, or affiliated institutions – creating a need for close collaboration and clearly defined roles.

⁵ [KEF Almdel Bilag 424 Opgørelse over statens energiforbrug for 2023pdf](#)

A particularly illustrative case is the Ministry of Higher Education and Science. Although the ministry is accountable for the energy performance of the universities, it does not own the buildings and has limited operational oversight, as Danish universities are autonomous institutions. Building facilitation is divided between the Danish Building and Property Agency (under the Ministry of Transport), which oversees the building envelope and structural aspects, and the universities themselves, which manage internal operations and daily maintenance. This structural setup has highlighted coordination challenges, especially related to financing responsibilities. When energy efficiency improvements are identified, it is often unclear whether costs should be covered by the ministry, the agency, or the university. These ambiguities risk delaying implementation or weakening the effectiveness of planned measures.

As another example, Navitas and Dokk1 in Aarhus demonstrate how modern public buildings can combine smart design with advanced energy technologies to achieve high energy performance. Navitas, an educational and innovation hub, was built to low-energy standards and integrates 1 280 solar panels, seawater-based cooling, and a smart building management system that adjusts lighting and temperature based on real-time occupancy and usage. Dokk1, Scandinavia's largest public library, incorporates district heating, LED lighting, and seawater cooling drawn from Aarhus Harbour to reduce its overall energy consumption. Both projects highlight the importance of strategic planning, cross-sector collaboration, and early integration of sustainable solutions in public building projects. They serve as leading examples of how energy efficiency can be embedded in both design and daily operations.^{6 7}

4.3 The energy- and building analysis

Municipalities play a significant role in Denmark's energy efficiency strategy for public buildings, and with the official inclusion in recasted directives, their role in achieving these targets will become even more prominent. Voluntary agreements aimed at systematically reducing energy consumption in municipal buildings have been central to facilitating this effort, encouraging municipalities to proactively pursue energy efficiency improvements.

Since 2007, these initiatives were initially driven by voluntary campaigns, notably the Climate Commitment for Municipalities, then came the Climate Alliance and DK2020. The Climate Commitment initiative focused on achieving an energy reduction goal of 2% yearly. The Climate Alliance was established to promote ambitious climate action at the local level, while DK2020 provided a structured approach for municipalities to develop comprehensive climate action plans aligned with the Paris Agreement goals. Although these voluntary initiatives did not initially

⁶ [DK-Navitas.pdf](#)

⁷ [dokk1_baeredygtighed_a5_6s_web_0.pdf](#)

receive direct government funding, they successfully encouraged municipalities to set ambitious energy reduction targets, typically ranging from 2-4% annually. To achieve these objectives, municipalities can utilize various financial mechanisms, including state-subsidized funding pools allocated through Denmark's national budget (Finansloven), partly financed through EU transfer revenues, low-interest loans via KommuneKredit, and Energy Service Company (ESCO) models, which enable renovations financed through subsequent energy savings.

Central to supporting municipal energy efficiency efforts is the Energy and Building Analysis (EBA) tool. Originally developed as an analytical tool through collaboration among five pioneering municipalities, its initial purpose was to evaluate and analyse municipal building stock systematically. Over time, EBA has evolved into a comprehensive digital platform managed and financed by the Danish Energy Agency. Today, EBA integrates multiple data sources into a cohesive analytical system, simplifying the analysis and enhancing decision-making processes related to energy performance improvements in public buildings.

The platform utilizes centralized, interconnected databases, aggregating extensive building data from Denmark's Building and Housing Register (BBR), including building types, dimensions, and heating systems. Furthermore, EBA incorporates data from EmoWeb, Denmark's mandatory energy labelling database for buildings. Energy labelling of public buildings, a requirement under Danish and EU law, has significantly improved transparency and consistency in energy management, enabling municipalities to systematically monitor and enhance the energy efficiency of their building portfolios.

Additional critical sources of information within EBA include Plandata for geographic mapping of district heating infrastructure, Denmark's Address Register (DAR) for precise location referencing, and the CVR registry for insights into commercial property occupants, including industry classification and company size. Further enrichment is achieved through property registries detailing ownership, and land registry codes, thereby providing an extensive, nuanced view of energy-related characteristics and ownership details across municipal buildings.

In practice, EBA is widely used by various municipal professionals such as climate coordinators, business and energy consultants, GIS experts, heat planners, and property and operational managers. Its intuitive design promotes the democratization of data, significantly expanding the range of stakeholders capable of engaging meaningfully in energy efficiency planning, without the traditionally high resource requirements associated with such detailed analyses.

Municipalities frequently leverage EBA's capabilities to launch targeted energy efficiency initiatives and develop specialized digital outreach programs designed explicitly for homeowners and commercial building operators. Furthermore, municipalities systematically

analyse energy usage and emissions through EBA, enabling evidence-based decision-making to optimize energy performance within the public building sector.

By establishing data uniformity and interoperability across municipal borders, EBA significantly enhances local governments' ability to pursue ambitious energy efficiency objectives, consistent with Denmark's national and EU-wide energy commitments. Previously, municipalities encountered difficulties in effectively comparing and analysing energy performance due to variations and inconsistencies in their datasets. With EBA, municipalities now have access to uniform and standardized data, enabling consistent measurement, meaningful comparisons, and informed management decisions across municipal boundaries. The EBA is currently managed and financed by the Danish Energy Agency.

4.4 The policy strategy in implementing the adjusted EED and EPBD

The recasted Energy Efficiency Directive (EED) and the Energy Performance of Buildings Directive (EPBD) were officially adopted by the European Union in late 2023 and early 2024, respectively, setting forth frameworks aimed at significantly enhancing energy efficiency and reducing greenhouse gas emissions across Member States.

The latest recast of the EED has been approved and is currently being implemented into Danish law no later than October 11th, 2025. Danish municipalities and public building owners are advised to proactively prepare for these regulatory changes to ensure compliance with forthcoming energy efficiency requirements⁸. The latest EPBD recast must be fully transposed into national legislation by May 29th, 2026⁹. In Denmark, the implementation process for EPBD is coordinated by the Ministry of Climate, Energy and Utilities (KEFM) and the Ministry of Social Affairs and Housing (SBM). A legislative proposal to incorporate EPBD into Danish law is expected to be presented to the Danish Parliament in January 2026, following external consultations planned for the autumn of 2025.

5 Strategy and compliance in Ukraine

5.1 Geopolitical context

Ukraine's unique position as an EU candidate country presents both opportunities and significant challenges in implementing the Energy Efficiency Directive (EED) and the Energy Performance of Buildings Directive (EPBD). While aligning with EU climate and energy goals is

⁸ [Energy Forum Denmark: Energy Efficiency Directive \(EED\)](#)

⁹ [DEA and DASSH: Energy Performance of Buildings Directive \(EPBD\)](#)

essential for Ukraine's long-term economic and environmental stability, the country must also carefully balance its energy transition against the backdrop of an ongoing war and post-war reconstruction.

The geopolitical crisis caused by Russia's invasion has profoundly affected Ukraine's energy security, infrastructure, and economic priorities. Given the extensive damage to the energy generation, electricity grid, and heating infrastructure, immediate priorities have centred on ensuring reliable energy supply and rapid restoration of damaged facilities rather than deep energy efficiency measures. However, as Ukraine continues its war transition and prepares for post-war reconstruction, integrating EED and EPBD principles from the outset could provide long-term economic resilience and energy independence.

A key challenge is balancing short-term emergency energy needs – such as rapid electricity generation and grid repairs and ensuring heating for populations – with medium- and long-term energy efficiency obligations. This means that early-stage reforms should focus on critical sectors and strategic pilot projects, prioritizing buildings and industries that can demonstrate the feasibility and benefits of energy efficiency while addressing immediate needs.

5.2 Current status

This chapter provides a detailed overview of Ukraine's current status in terms of legislative alignment, strategic planning, practical implementation, and ongoing initiatives relevant to energy efficiency improvements in public buildings. It highlights recent achievements, identifies existing gaps, and addresses the practical challenges Ukraine faces in implementing these ambitious reforms effectively.

5.2.1 Strategies, treaties and plans

Since receiving EU candidate status in 2022¹⁰, Ukraine has made considerable progress in aligning its energy and climate legislation with EU directives relevant to public buildings presented in the strategies and laws below and further described:

- The National Energy and Climate Plan (NECP2030)
- Energy Efficiency Action Plan until 2030 (NEEAP2030)
- Long-Term Strategy for the Thermal Modernization of buildings
- Association Agreement between Ukraine and the European Union and the Treaty establishing the Energy Community
 - Implementing energy labelling systems and eco-design requirements
 - Adopting MEPS and energy efficiency labelling for appliances and equipment used in public buildings

¹⁰ [Ukraine - European Commission](#)

The National Energy and Climate Plan (NECP2030)¹¹ and the National Energy Efficiency Action Plan until 2030 (NEEAP2030)¹² sets out concrete goals and strategic directions for enhancing energy performance across all key sectors, including public buildings. These plans sets specific targets and actions to improve energy performance, aligning with the country's obligations under the Energy Community Treaty and its aspirations for EU integration. NEEAP2030 sets ambitious targets to reduce energy consumption, aiming for primary energy consumption to not exceed 91.5 million tons of oil equivalent (toe) and final energy consumption to be capped at 50.5 million toe by 2030. At the same time, NECP2030 sets forth a modified set of obligations: primary energy consumption should not exceed 72.2 million toe and final energy consumption should not exceed 42.2 million toe. Achieving these targets involves implementing energy efficiency measures across various sectors, including public buildings¹³.

To ensure full compliance with its obligations under the EU-Ukraine Association Agreement and the Energy Community Treaty, Ukraine is actively implementing energy labelling systems and eco-design requirements consistent with EU standards. At present, Ukraine has adopted two overarching technical regulations, whereas The State Agency for Energy Efficiency (SAEE) has been instrumental in adopting MEPS and energy efficiency labelling for appliances and equipment used in public buildings¹⁴. These standards are harmonized with European Union regulations, ensuring that new installations and retrofits in public buildings meet stringent energy efficiency criteria.

At the end of 2023, the Ukrainian government adopted the long-term Strategy for Thermal Modernisation of Buildings for the period until 2050 and important step towards Ukraine's European integration.¹⁵ The Strategy sets clear intermediate targets for 2030 to improve energy performance in the building sector. These include reducing annual energy consumption in government buildings by 1% per m² of relevant buildings, implementing energy management systems in at least 90% of communities, and cutting final energy use in the building sector by 15%. Additionally, the strategy aims for at least 36% of residential and public buildings to meet minimum energy efficiency standards, and for 10% of public buildings to comply with near-zero energy building (NZEB) requirements. The strategy also establishes target metrics for enhancing energy efficiency within 16% reduction in final energy consumption in public buildings.

¹¹ [National Energy and Climate plan 2030](#)

¹² [National Energy and Climate plan 2030](#)

¹³ [The Government of Ukraine adopted the National Action Plan for Energy Efficiency until 2030 – EUEA - European-Ukrainian Energy agency](#)

¹⁴ [Ecodesign and energy labeling: special labeling of equipment has been introduced in Ukraine](#)

¹⁵ [Strategy for thermal modernisation of buildings in Ukraine until 2050 approved | Cabinet of Ministers of Ukraine](#)

5.2.2 Laws, supporting projects and initiatives

- Law on Energy Efficiency of Ukraine (LEEU)
 - Targeted energy audits
- The Law on Energy Efficiency of Buildings (LEEB)
 - An inventory of public buildings to near-zero energy consumption
 - "Energy Efficiency in Public Buildings in Ukraine" program

The adoption of the Law on Energy Efficiency of Ukraine (LEEU)¹⁶ in November 2021 laid the groundwork for a legal, institutional, and economic framework to promote energy efficiency, which transposes key provisions from the EU's Energy Efficiency Directive (2012/27/EU).

Ukraine's energy efficiency legislation is largely aligned with the EU Energy Efficiency Directive, and notable progress was made during 2023 with the adoption of more than 30 implementing acts, significantly strengthening the legislative framework. In December 2023, Ukraine took further steps by approving the Strategy for Thermal Modernisation of Buildings until 2050, accompanied by corresponding Action Plan and the Concept of the State Targeted Economic Programme supporting building modernisation up to 2030. The Programme itself has already been developed and is expected to be adopted shortly. All these acts have to ensure effective implementation of its long-term building renovation goals.

Additionally, Ukraine is in progress developing and adopting sector-specific concepts for state programmes aimed at enhancing energy efficiency. State Targeted Programme for the Energy Modernisation of Water Supply and Wastewater Enterprises in State or Municipal Ownership was approved in November 2024. The State Target Programme for the Energy Modernisation of Heat Supply Enterprises in State or Municipal Ownership is currently under approval. However, the country still needs to adopt specific regulations to improve efficiency within the district heating sector.

5.2.3 Energy performance of public buildings

Ukraine has transposed some of the EU's Energy Performance of Buildings Directive (2010/31/EU) into national law through its Law "On Energy Efficiency of Buildings." This legislation introduces minimum energy performance standards for buildings, mandates energy certification and regular inspections of building systems, and establishes certification requirements for energy auditors. Consistent with this framework, Ukraine has also adopted policies designed to significantly increase the share of public buildings achieving near-zero energy consumption. Given Ukraine's substantial reconstruction needs, it is particularly crucial to achieve full alignment with recasted EPBD and effectively enforce minimum energy

¹⁶ [Law of Ukraine "On Energy Efficiency" - Verkhovna Rada of Ukraine](#)

performance requirements. To support these ambitions, different initiatives e.g. the Energy Efficiency Fund (EEF), continue facilitating investments in thermal renovations of multi-apartment buildings. For over a year, the EEF has been implementing a programme promoting the integration of renewable technologies, such as photovoltaics and efficient heat pumps, into housing projects. Nevertheless, the EEF remains dependent on continued funding from the state budget. In January 2024, Ukraine established the Decarbonization Fund within its national budget to further bolster financial support for energy efficiency initiatives and renewable energy programs¹⁷.

The Ministry for Development of Communities and Territories of Ukraine has launched the fourth phase of project selection under the "Energy Efficiency in Public Buildings in Ukraine" programme, focusing on thermal renovations, repairing war-damaged buildings, and implementing renewable energy solutions¹⁸. The program is supported by the European Investment Bank (EIB), the Eastern Europe Energy Efficiency and Environment Partnership (E5P), and the EU Neighbourhood Investment Platform (NIP).

Over the course of three application rounds, 51 municipalities submitted a total of 99 project proposals. Due to various factors - such as the inability to secure loan approval from the Ministry of Finance, changes in budget revenue projections, and damage to buildings caused by Russian aggression – 5 municipalities withdrew from the Programme, affecting 27 projects.

As a result, 72 projects with a total value of €73,069,410.55 are currently participating in the Programme:

- Round 1: 18 municipalities applied with 45 projects; 3 municipalities withdrew entirely (9 projects), and 1 municipality partially (1 project).
- Round 2: 24 municipalities applied with 40 projects; 3 municipalities withdrew (3 projects).
- Round 3: 9 municipalities applied with 14 projects.

According to the results of the first stage, the communities of Kovel and Novoyavorivsk were the first to complete the process.

5.2.4 **Energy audits and management systems**

The introduction of an energy audit system in industry and transport represents is also a key measure for enhancing energy efficiency and supporting evidence-based decision-making in these critical sectors. However, the methodology of local energy planning still needs to be modified, and energy management systems require strengthening institutional capacity and

¹⁷ [Enlargement-report EU Commission 2024](#)

¹⁸ ["Energy Efficiency in Public Buildings in Ukraine" program has been extended - PU "UFEES"](#)

developing human capital. Meanwhile, no tangible progress has been made regarding the introduction of mandatory energy efficiency criteria in public procurement.

Public authorities in Ukraine must implement energy management systems according to a resolution adopted by the Cabinet of Ministers. For local self-government authorities, this procedure is recommended.

Municipalities in Ukraine are required to develop local energy plans, within which they should assess their energy consumption, potential for energy efficiency and renewable energy, and set corresponding targets¹⁹. Although lack of experience and resources (both financial and human) makes developing such plans challenging for many municipalities, this process provides a solid foundation for implementing Article 5 of Directive 2023/1791 on the public sector leading on energy efficiency.²⁰

In 2024, the Ministry of Energy of Ukraine proactively initiated some targeted energy audits to establish accurate baseline data on energy use and to identify priority areas for immediate efficiency improvements. Complementing this initiative, the Ministry for Development is developing state policy instruments in the field of energy efficiency of buildings, in particular, the mechanism of exemplary role of state buildings and mapping the country's building stock to assess the needs and potential for energy efficiency upgrades across public buildings. And as of April 1, 2025, Ukraine has introduced the NZEB standard for new and renovated buildings, requiring high energy efficiency and the use of renewable energy. In support of this, SAEЕ is compiling a national inventory of public buildings to identify those with the greatest renovation potential and to guide NZEB-aligned upgrades in the public sector²¹.

5.2.5 Public procurement and sustainability criteria

Beyond legislation, operational practices such as public procurement also play a key role in driving efficiency. The Law of Ukraine "On Public Procurement" allows the use of non-price in evaluation criteria, where environmental characteristics, social responsibility can be taken into account in addition to price, the term of performance, guarantees and payment terms.

The price criterion must constitute at least 70% of the overall evaluation, while other criteria can account for up to 30%. Examples of criteria already applied in practice include an environmental management certificate, environmental management system certificate and a quality management system certificate.

At the same time, despite Ukraine's significant progress in introducing energy labelling of products, the practice of applying energy efficiency criteria is not widespread, and the legislative

¹⁹ [Resolution of the Cabinet of Ministers of Ukraine "About implementation of systems of energy management"](#)

²⁰ [Enlargement-report EU Commission 2024](#)

²¹ [New energy efficiency requirements for buildings have been introduced in Ukraine — the NZEB standard is now in effect! | Державне агентство з енергоефективності та енергозбереження України](#)

framework needs further improvement, in particular, in terms of introducing standards and methodologies for assessing life cycle costs, assessing greenhouse gas emission potential, global warming, etc. Procurement using non-price criteria in Ukraine accounts for about 0.5%²² of all procurement. Among many reasons, some of the key reasons are the lack of knowledge and methodological recommendations, complexity of preparation and fear of challenging conditions.

5.3 Prioritizing Implementation: What are the next steps?

Despite significant legislative progress and implementation efforts, several barriers continue to pose challenges for Ukraine's energy efficiency ambitions. Key obstacles include distortions in tariff structures, a shortage of qualified personnel for project identification and execution, limited access to funding, high upfront investment costs, and insufficient sustainable state co-financing. To overcome these, Ukraine must prioritize capacity building, financial innovation, regulatory reforms, and streamlined governance structures. Addressing these barriers comprehensively will not only accelerate energy efficiency improvements in public buildings but also ensure full alignment with EU directives, paving the way toward energy independence, resilience, and sustainable economic growth.

Ukraine can strategically phase in EED and EPBD implementation by identifying sectors and buildings where energy efficiency investments yield the highest impact while remaining politically and financially feasible. Several key areas stand out as both compliant with national strategies and aligned with the obligations in the EU directives.

Investing in energy efficiency in public buildings is crucial. According to Fedunyshyn and Sokil (2024)²³, public buildings such as schools, hospitals, and administrative offices account for approximately 28.5% of Ukraine's total energy consumption – around 13 601 thousand tons of oil equivalents. These sectors require urgent reconstruction, and integrating high efficiency building standards and renewable energy systems from the outset is critical.

Denmark's experience offers valuable lessons in this regard, presented in this report and outlined as recommendations below:

- Clear legal mandates and Energy Efficiency Plans for ministries, as implemented through Denmark's circular on energy efficiency in state institutions, can guide Ukraine in requiring public institutions to adopt structured energy-saving strategies. A centralized system like Denmark's "Offentligt Energiforbrug" (OEF data platform) could be developed to enable

²² <https://me.gov.ua/Documents/Detail?lang=uk-UA&id=1d7a6fab-c721-412d-9189-e41abc64de60&title=OqliadZakupivelnPraktikiSchodoZastosuvanniaNetsinovikhKriteriivOtsinki>

²³ ²³ [Investment opportunities in the energy efficiency of public buildings in Ukraine](#)

annual reporting of energy and water use, improving accountability and performance tracking.

- Building reconstruction in Ukraine should prioritize modernized insulation, heat pumps, and improved district heating. Denmark's integration of advanced technologies in public buildings – such as seawater cooling and intelligent energy management in the Navitas building – demonstrates how smart design can yield long-term savings.
- District heating systems, particularly in war-damaged areas, should be rebuilt using decentralized, renewable-based models rather than outdated gas infrastructure. This approach can significantly enhance energy security and reduce dependency on imported fossil fuels. Prioritizing renewable-based district heating—such as biomass, solar thermal, geothermal energy, and the utilization of excess heat from industrial processes—offers long-term cost-effectiveness, local economic benefits, and resilience. Harnessing industrial excess heat, in particular, represents a valuable, often untapped resource that can contribute substantially to sustainable heat supply. To ensure scalability, such systems should be designed with interoperability in mind, enabling future integration into regional or national heating infrastructure.
- Electricity systems in critical sectors such as healthcare can benefit from pilot microgrid projects at the municipal level, as demonstrated in Denmark. These decentralized energy systems integrate local renewable sources, storage solutions, and intelligent load management, improving reliability and autonomy during crises or grid disruptions. However, such systems must be designed to ensure compatibility with future large-scale grid infrastructure through coordinated, strategic energy planning.
- Institutional clarity is essential. Denmark's coordination between ministries and operators (e.g., between the Ministry of Higher Education and Science and the Danish Building and Property Agency) shows the importance of assigning clear roles and financing responsibilities. Ukraine should formalize such arrangements early to avoid delays and ensure smooth implementation. In line with EPBD requirements, Ukraine can progressively upgrade state-owned infrastructure, setting an example for the broader market. Further develop local energy service companies (ESCOs)²⁴ or other funding and financial mechanisms applicable to the Ukrainian context will further support implementation of energy performance contracting in public buildings.

²⁴ [UNDP and Business Development Fund introduce ESCO-Fund to support sustainable development and energy efficiency | United Nations Development Programme](#)

- Additionally, Denmark's experience with energy networks and cross-sectoral working groups shows that structured collaboration enhances alignment, knowledge sharing, and policy coherence. Ukraine can benefit by institutionalizing similar energy coordination platforms at both national and regional levels.
- As Ukraine moves forward, the development of digital tools like Denmark's Energy and Building Analysis (EBA) can support evidence-based planning. EBA integrates multiple datasets, enabling municipalities to identify the worst-performing buildings and prioritize renovations effectively.
- Ukraine should also promote simple and cost-effective behavioural energy-saving measures, as done in Denmark. These include lowering indoor temperatures during winter, turning off unnecessary lighting, and adjusting operating hours of HVAC systems. During Denmark's 2022/23 energy crisis, such behavioural adjustments played a key role in achieving measurable savings across ministries and institutions. Introducing guidelines and awareness campaigns in public institutions can deliver quick wins and foster a broader energy efficiency culture.

Ukraine's path to fulfilling EED and EPBD obligations must be carefully sequenced, balancing immediate post-war recovery with the foundation for long-term efficiency. Initial efforts should focus on high-impact sectors such as public buildings, housing, and industry, while ensuring that governance reforms, anti-corruption safeguards, and institutional capacity are in place. Ensuring coherence between emergency recovery and long-term energy strategies will not only enhance security and efficiency but avoid fragmented infrastructure solutions. Ukraine's post-war planning should prioritize scalability, integration with regional energy strategies, and alignment with EU climate objectives to ensure reconstruction efforts are resilient, cost-effective, and future proof.