

Recast of the EU Energy Efficiency Directive (EED)

European Copper Institute position

The European Copper Institute (ECI) supports the EU's climate ambitions for 2030 and 2050 and welcomes the proposed recast of the Energy Efficiency Directive (EED). Copper is a key material for energy efficiency in all sectors and contributes significantly to the clean energy transition as a sustainable raw material that is essential to decarbonise the economy.

The copper industry **welcomes the mainstreaming of the Energy Efficiency First principle** as a driver for the uptake of energy efficient equipment, appliances, and solutions, while it believes the focus should be on cost-effective measures in particular in the sectors lagging behind.

We welcome the revised provisions on **energy audits and energy management systems** that will help small and medium-sized enterprises (SMEs) to catch up on energy efficiency measures. The proposed changes to reinforce the quality and follow-up of energy audits are helpful. However, we believe that **mandatory certification can be a barrier to the adoption of energy management systems**, and voluntary schemes based on simplified and pragmatic approaches should therefore be preferred. More direct provisions should also be included to maintain consistent and real energy performance via metering, control and automation.

The copper industry equally welcomes the stronger requirements on member states to prepare a comprehensive heating and cooling assessment, including local heating and cooling plans. This is a first step towards exploiting the **huge recovery potential of industrial excess heat** via district heating networks.

Considering buildings, we **welcome the strengthening of the exemplary role of public buildings** in driving renovation and **ask to adequately align the Energy Performance of Buildings Directive (EPBD) and the EED** to exploit the full potential of the building sector to achieve the energy efficiency targets.

Welcome Energy Efficiency First with priority given to cost-effective savings potential untapped so far

Our industry welcomes the mainstreaming of the Energy Efficiency First principle (via the new Article 3), as a driver for the uptake of energy efficient equipment, appliances, and solutions, while keeping the focus on cost-effectiveness.

We underline the importance of targeting untapped energy savings in sectors that are lagging behind, leading to a fairer distribution of efforts. A report by Waide Strategic Efficiency, prepared for ECI in 2016, gives a detailed quantified analysis that finds there is a techno-economic optimal savings potential from greater adoption of effective

energy management in the EU's industrial and service sectors of 26% of their combined energy consumption by 2035¹.

We welcome the strengthened provisions on the role of the public sector (Articles 5-6), integrating heating and cooling assessment in the National Energy and Climate Plans (Article 23), and the widening of the scope for energy audits to all companies based on their energy consumption instead of only on their size (Article 11).

SMEs need support to catch up on energy efficiency

(1) Proposed changes to reinforce the quality and follow-up of energy audits are helpful and should be maintained

Our industry strongly supports the provisions that widen the scope of energy audits, improve their quality, and increase the level of adoption of cost-effective recommendations stemming from those audits.

The proposed Article 11(2) requires the carrying out of energy audits on the basis of the average annual energy consumption (above 10TJ), rather than the size of the company, which ensures that energy savings opportunities in small but energy intensive enterprises are realized as well. It also incentivizes the implementation of the recommendations, without making it mandatory. We strongly support this approach, as we believe that voluntary schemes result in higher willingness to invest on a more continuous time horizon compared to mandatory schemes².

Article 11(3b) now stipulates that Member States must put in place quality checks to ensure the validity and accuracy of energy audits – dealing with a much reported weak spot of the current EED. Annex VI adds welcome new criteria such as the need to identify energy efficiency measures and the potential use of renewable energy.

(2) The obligation for all energy intensive industries to implement energy management is welcome, but needs adjustments

The copper industry strongly supports the introduction of an obligation for all energy-intensive industries to implement energy management practices. Energy management with simplified schemes for SMEs and based on operational metering data, should become the norm to ensure that energy efficiency is further improved in particular in industries lagging behind. However, industry must be supported in the implementation of energy management practices.

Article 11(1) introduces an obligation for all energy-intensive industries to implement *and get certified* on energy management systems. In companies without sufficient organizational capacity, such a certification obligation may not be effective in inducing tangible energy efficiency activities beyond the mere formality of compliance with the requirements. We ask for the EED recast to address this capacity problem and

¹ Waide Strategic Efficiency (2016). The scope for energy savings from energy management. Retrieved from: <https://www.slideshare.net/sustenergy/the-scope-for-energy-savings-from-energy-management-158827167>

² This is supported by: Kimura, O. Noda, F. (2014). Does regulation of energy management systems work? A case study of the Energy Conservation Law in Japan. In: Proceedings of ECEEE Industry Summer Study, Arnhem, 2-5 June.

ensure that certification does not become a barrier for the uptake of energy management.

One option to build such capacity is to support SMEs in the development of simplified and pragmatic approaches that are tailored to the type and size of the company. As a first step in that direction, ECI developed an application note on energy management tailored to SMEs, based on an extensive selection of literature on the subject. It raises awareness on the benefits of energy management for SMEs and provides clear guidelines for SMEs on how to follow the main principles of energy management systems but in a more pragmatic way without going for certification³.

We also welcome that the **definition of 'energy management systems'** (Article 2(14)) was extended with an explicit reference to 'monitoring actual energy consumption', as this shifts the focus of the EED from energy efficiency *by design* towards energy efficiency *in operation*. Energy metering technologies can provide greater certainty of the energy savings that energy efficiency measures can deliver and improve decision makers' confidence in the uptake of energy savings equipment and appliances.

In addition, as end-use electrification and intermittent renewable energy supply grow in importance, the value of energy efficiency varies increasingly by location, time of day and season. The shift towards energy savings monitoring is therefore also a driver for Demand Side Flexibility. We believe that **more direct provisions should be included to maintain consistent and real energy performance via metering, control and automation.**

Untap the significant heat recovery potential

The economically feasible supply of industrial excess heat to district heating networks and waste water heat recovery from sanitary hot water (both at the same order of magnitude) add up to over 15% of the heating demand for space heating and hot water in the EU. **It is important to take steps to unlock this vast untapped potential.**

The revised EED Article 23 requires Member States to integrate in their National Energy and Climate Plans (NECP) a comprehensive heating and cooling assessment, requiring municipalities with over 50,000 inhabitants to prepare local heating and cooling plans. This is a welcome first step that incentivises Member States to invest in infrastructure that can capture industrial excess heat and make it available to industrial and residential consumers. **Provisions should also be included to ensure that the Commission monitors the extent to which heat recovery potential is exploited in member states, and if needed, proposes further measures.**

Helpfully, the recast also promotes district heating and cooling systems based on renewables and residual heat over fuel-based heat sources (Article 24), and ensures that current technologies for waste heat utilization are taken into account (Annex X) – at least heat exchangers, heat pumps, and heat to power technologies.

³ This application note can be retrieved from: https://help.leonardo-energy.org/hc/en-us/article_attachments/4405897601042/Cu0269_AN_Energy_management_SMEs_v1.pdf

Fully exploit the energy savings potential of the building stock, with an exemplary role for public buildings

Our industry strongly welcomes the strengthening of provisions on the exemplary role of public buildings (Article 6) in line with the renovation wave strategy. Public buildings should lead the ambition to at least double renovation rates and the proposed Article 6 reinforces the existing framework. The scope of buildings covered is extended to all buildings owned by public authorities, not only those owned by central governments. The level of ambition of renovation is rightly increased to achieve the Nearly Zero-Energy Building (NZEB) standard and alternative measures not leading to renovation are removed. To ensure that public bodies only rent the most performing buildings, the public procurement rules in Article 7 should be further strengthened and better aligned by requiring that contracting authorities only make new rental agreements for buildings that are NZEB in line with the EPBD Article 9.

We ask to adequately align the EED and the Energy Performance of Buildings Directive (EPBD) to fully exploit the potential of the building sector. The building stock remains the sector with the largest untapped energy efficiency potential⁴ and Long-Term Renovation Strategies (LTRS) – required under the EPBD – are key instruments to deliver this potential. The current EPBD requires Member States to show how their LTRS contribute to achieving the 2030 energy efficiency target but a stronger framework is needed to validate the alignment and monitor progress. A specification of the expected contribution from the building sector should be introduced into the EED or the EPBD.

Copper makes a significant contribution to energy efficiency and the clean energy transition

Copper is a key material for the clean energy transition. Thanks to its excellent electrical and thermal conductivity, copper delivers energy savings and CO₂ reductions across the electricity system, in transport, buildings and industry.

As an example, copper significantly reduces the heat losses in electric motor systems, transformers, and indoor electrical installations (cables). Copper is also the key material to electrify industrial heat processes and road transport, which is inherently more energy efficient than fuel based alternatives. A third domain where copper contributes to energy savings, is by adding measurement, controls and automation (sensors, cables, actuators) to optimize the overall energy efficiency of a system. Overall, copper-enabled decarbonising technologies can abate approximately 75% of the EU GHG emissions⁵.

The additional copper demand generated by the energy transition is compatible with the move towards a circular economy. Copper can be recycled endlessly without loss of properties and already today, around 50% of copper produced in the EU is obtained through recycling. Copper also contributes to resource efficiency as a carrier metal and

⁴ <https://op.europa.eu/en/publication-detail/-/publication/b259632c-f8ba-11eb-b520-01aa75ed71a1/language-en>

⁵ Copper estimate based on the EU 2050 “High-RES” scenario of the EU 2050 energy roadmap, plus additional assumptions about the uptake of emerging technologies. https://ec.europa.eu/energy/sites/ener/files/documents/2012_energy_roadmap_2050_en_0.pdf
GHG estimate based on DecarbEurope. <https://decarbEurope.org/>

by-products of copper production include other metals needed for the energy transition like zinc, molybdenum and nickel.

About the European Copper Institute

The European Copper Institute (ECI) is the leading advocate for the copper industry in Europe and the European arm of the International Copper Association (ICA). Our members mine, smelt, refine and recycle copper for use across the economy, in the electricity system, buildings, transport and industry.