EEB
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Industrial Decarbonisation Accelerator Act call for evidence

The EEB welcomes the opportunity to contribute to the development of the Industrial Decarbonisation Accelerator Act. Given the importance of the file, early views on the main topics that will be touched by IDAA (permitting, the identification of priority projects and clusters, labelling and lead markets) are provided.

Brussels, 27.6.2025

1. ***Speed up permitting procedures for industrial access to energy and industrial decarbonisation, while ensuring high environmental standards****: The impact assessment will consider different measures, including measures to improve access to energy (primarily electricity but also hydrogen) and access to carbon capture, utilisation and storage infrastructure. These measures will build on experience acquired through the EU Emergency regulation on permitting7 the Renewable Energy Directive8, the TEN-E Regulation9, the Critical Raw Materials Act10 and the Net Zero Industry Act11, while also harnessing digitalisation.*

In the spirit of keeping rules simple and predictable on the long term and not overburden public authorities and companies with continuous modifications of existing legislation, we suggest to not put additional rules regarding permitting procedures and give time to the existing legislation, which has been either reviewed or drafted ex novo in the last three years with the aim of reducing permitting timelines for a long list of sectors and streamline procedures, to be implemented and its effects to be visible. For instance:

(a) Implementation of the reviewed Renewable Energy Directive (RED III)

The RED III entered into force on November 21, 2023, with two transposition deadlines, one of which (July 1, 2024) specifically set to transpose into national legislation the main permit-granting procedural reforms.

In particular, the reviewed Directive includes (Art. 16) provisions aimed at streamlining administrative procedures for renewable energy projects and related infrastructure projects through the designation of single contact points for handling permitting procedures, the digitalisation of permit-granting procedures, the provision of adequate resources to competent authorities and new criteria for permitting process duration.

The RED III also includes shorter permitting timelines for renewable energy projects (2-3 years depending on the project) and a combined evaluation of all environmental assessments. Other streamlined procedures concern “repowering”, the “installation of solar energy equipment” in existing or future artificial structures and heat pumps.

The Directive also introduces the obligation for national competent authorities to designate “Renewable Acceleration Areas” (RAAs, Art. 15.c), where permitting for renewables will be fast-tracked through even

tighter procedural deadlines and potential exemptions to carry out a full Environmental Impact Assessments (EIAs).

The deadline for mapping areas (Art. 15.b) with the highest potential for renewable deployment was May 21, 2025, while the deadline for adopting of the plans designating RAAs is February 21, 2026[1].

State of implementation

To date, no Member State has fully transposed the REDIII in its national legislation[2], not allowing its provisions to have a clear and consistent impact on the ground[3].

However, some progress is observed in some Member States (e.g. effectively leaner and quicker authorisation procedures are observed in Germany regarding onshore and in Italy and France regarding solar PV) and can be attributed partly to the effects of the Emergency Council Regulation that was adopted in late 2022 to essentially frontload some of the RED provisions, namely those regarding accelerated permitting for mainly small-scale installations and those related to the presumption of Overriding Public Interest (OPI) for renewable energy installations and grids.

(b) Implementation of the Net-Zero Industry Act (NZIA)

The NZIA Regulation entered into force on June 13, 2024. Similarly to RED III, it includes dedicated provisions aimed at making permitting procedures faster and more streamlined for a very long list of sectors manufacturing so-called "net-zero technologies", including "transformative industrial technologies for decarbonisation" in energy-intensive industries like steel, cement and chemicals.

NZIA allows faster procedures with hard deadlines (12-18 months), includes the designation of single points of contact for handling permitting procedures, stimulates the digitalisation of procedures and the provision of adequate resources to competent authorities, as well as new criteria for conducting EIAs. Competent authorities must provide a response to the project promoter within 45 days on whether the application is complete and a detailed permit granting procedure schedule within 2 months of the receipt of the application date.

NZIA also includes a priority status and shorter permit deadlines for the so-called "strategic projects" fulfilling certain conditions and the possibility to apply the OPI clause; in those cases, the maximum duration is shortened to 9 months (<1GW capacity) or 12 months for the general case and above 1GW and maximum to 18 months for CCS projects. The Regulation also includes the possibility for Member States to set "Net-Zero Acceleration Valleys" (Art. 17) to accelerate the implementation of net-zero technology manufacturing projects, benefitting from further streamlined procedures (Art. 18).

[1] The new RED – Briefing on the transposition of the RED (EEB)

[2] In light of this, in September 2024 the European Commission opened infringement procedures against 26 out of 27 EU countries (initially sparing Denmark, although the reasons for the exception were not obvious. Denmark finally received a letter of formal notice in May 2025) for failing to meet the 1st July 2024 transposition deadline. More information is available here.

[3] Letter from the EEB to Commissioner Jorgensen on how to accelerate permitting without weakening environmental protections

There is a specific NZIA provision for innovative projects, which in the Regulation are called "Net-Zero Regulatory Sandboxes[4]", for which "*competent authorities shall consider whether to grant derogations or exemptions in national law to the extent allowed by relevant Union law*" (Art. 33.5).

The scope of NZIA goes beyond manufacturing projects and covers the full CCS value chain

Despite being theoretically targeted at securing a supply of net-zero technologies listed in its Annex, in fact NZIA's scope is broader, including also "energy-intensive industry decarbonisation projects" Art. 2.3) as defined by Art. 3.17, covering most of the energy and carbon-intensive sectors. It covers specifically projects aimed at significantly reducing GHG emissions in energy-intensive business such as in steel, aluminium, non-ferrous metals, chemicals, cement, lime, glass, ceramics, fertilisers, as well as pulp and paper sectors.

Additionally, NZIA foresees a dedicated chapter for carbon capture projects, with an injection capacity target to be achieved by 2030 and the automatic definition of "strategic projects" to all carbon capture and storage (CCS) projects. NZIA provides for accelerated procedures and priority status for the whole CCS value chain (Art. 13.3).

State of implementation

According to Art. 6, "*by 30 December 2024 Member States shall establish or designate one or more authorities as single points of contact at the relevant administrative level*". To date the following Member States have not designated their single points of contact[5]: Austria, Belgium, France, Greece, Hungary, Ireland, Italy, Romania, Slovakia and Slovenia.

Some Member State provides the email address and telephone of the relevant person to contact, even though the websites fall short of respecting the provisions in Art. 7, being in many cases only pages with general information and not specifically dedicated to NZIA provisions.

To date, 5 strategic projects have been chosen under NZIA[6], providing little evidence to assess how effective such provision is, given the limited number of cases to consider (e.g., in terms of actual duration of the permit procedure and its effectiveness in delivering a high level of environmental protection, as well as health and safety and adequate public participation).

Information regarding the state of setting of Net-Zero Acceleration Valleys and Net-Zero Regulatory Sandboxes are not available, as well as the mapping of CO2 storage sites (due by 6 months from entry into force of the Regulation).

[4] 'Net-zero regulatory sandbox' means a scheme that enables undertakings to test innovative net-zero technologies and other innovative technologies in a controlled real-world environment, under a specific plan, developed and monitored by a competent authority (art. 3.22)

[5] https://single-market-economy.ec.europa.eu/industry/sustainability/net-zero-industry-act/streamlined-permitting-and-information-project-promoters_en

[6] https://single-market-economy.ec.europa.eu/industry/sustainability/net-zero-industry-act/strategic-projects-under-nzia/overview_en

(c) Implementation of the reviewed Industrial Emissions Directive (IED)

The IED has been reviewed during the last mandate (IED 2.0) and entered into force on August 4, 2024; Member States must transpose the few updated requirements by July 1, 2026.

The Directive provides a comprehensive set of rules for permitting industrial activities at installation level, complementing other pieces of media specific environmental protection rules. Its aim is broad, including not only environmental issues as a whole, including climate protection as well as human health.

The revised rules require Member States to set up an electronic permit system by December 31, 2035. The uptake of emerging and "deep industrial transformative" techniques is encouraged with multiple flexibilities for both the operators and Member States authorities:

- Derogations to implement the updated Best Available Technologies (BAT) requirements may be granted in case of crisis due to extraordinary circumstances beyond the control of the operator and Member States (max 12 years);
- Additional 4 years to comply to IED requirements in case of "deep industrial transformation" (DIT) (art. 27.e), defined as "*implementation by industrial operators of emerging techniques or best available techniques involving a major change in the design or technology of all or part of an installation or the replacement of an existing installation by a new installation allowing an extremely substantive reduction of emissions of greenhouse gases in consistency with the objective of carbon neutrality and optimising environmental co-benefits, at least to the levels that can be achieved by techniques identified in the applicable BAT conclusions, taking into account cross-media effects*". The provision makes an explicit reference for this DIT to be set out in a transformation plan (Art. 27.d).
- Temporary derogations from IED requirements for the testing of "emerging techniques[7]" for a period not exceeding 30 months (Art. 27.b), as well as additional 2 years to comply with IED requirements (Art. 27.c).

The revised IED provides in Art 27.d for an obligation on operators of energy intensive IED activities to provide for an indicative transformation plan (IED TP) that shall contain information on how the operator will transform the installation during the 2030-2050 period to contribute to sustainable, clean, circular, resource-efficient and climate-neutral production. The delegated act setting out content and format shall be provided by 30 June 2026 by the European Commission (Art. 27d (5)).

State of implementation

To date, the novel provisions precited still have to be transposed in national legislation, or implemented through upcoming or ongoing EU BREF reviews, so it is not possible to assess their effectiveness. The IED includes additional opportunities for operators to delay the application of the BATs requirements

[7] "Emerging technique" means a novel technique for an industrial activity that, if commercially developed, could provide either a higher general level of protection of human health and the environment or at least the same level of protection of human health and the environment and higher cost savings than existing best available techniques (Art. 3.14)

but, more importantly, provides for a clear and well-established permitting system that industrial operators and Member States handle in confidence.

The main issue is linked to a delay and slow pace of updating relevant BAT Reference documents (BREFs)[8]. Whilst decarbonisation pathways are identified in the iron and steel and cement industries, the relevant BREFs are not yet under review, but it is expected that the review will take place respectively in 2026/2027. Considering that the review will in average take 4 years prior to publication, and the uptake of more up to data BAT Conclusions to be minimal 4 years, this points to the operators not having to deploy 'deep industrial transformative' / decarbonisation techniques not prior to 2034/2035 respectively, also depending on the outcome of the BAT conclusions to be determined:

The large volume inorganic chemicals BREF[9] is ongoing, whilst decarbonisation techniques are part of the data collection, no dedicated BAT Conclusions have been provided on the sector so far.

The first of the revised IED BREF under review is the ceramics production BREF. The first draft provides for very weak and generic decarbonisation options without binding BAT-AELs[10] on GHG emission; the techniques proposed and labelled as DIT (meaning 8 years of implementation period after publication) include H2 co-blending (20%) with fossil gas (considered as "emerging"), the electrification of kilns and the use of heat pumps and microwave drying.

However, some Member States are challenging the proposed level of the BAT-APEL set on energy and instead suggest to for non-binding benchmarks. The real added value for promoting decarbonisation is hence close to 0 under the current draft proposals, since techniques remain indicative and without binding performance levels on resulting GHG emissions.

Finally, a possible undermining of the definition of "deep industrial transformation" (DIT) and the promotion of uptake of 'transformative industrial technologies for decarbonisation" (Art. 3(8)) of NZIA and of "innovative net-zero technologies" (Art. 3(12)), or "other innovative technologies" (Art. 3(13)) and specifically "energy intensive industry decarbonisation projects" (Art. 3(17)) of NZIA is under way within the European Commission under the "omnibus simplification agenda", with the consideration of either removing the requirement for installation level transformation plans altogether and/or to allow operators to draft transformation plans in a non-harmonised way (not providing the delegated act on content by 30 June 2030[11]). This requirement links to the specific provision on "deep industrial transformation" of Article 27e, allowing Member States "*in the event of deep industrial transformation of the installation set out in the relevant transformation plan covering the installation*" to extend compliance deadline by 8 years.

[8] EU BREF documents

[9] See the relevant page on the EU BREF portal

[10] Best Available Techniques Associated Emission Levels

[11] Both scenarios would present a huge setback against the objectives of both the revised IED and the NZIA implementation, see Letter of Commissioner ROSWALL ARES (2025) 4372474 sent to Council of the EU on 28/05/2025 WK 6991/2025INIT

(d) Considerations on permitting instruments and the necessity of new legislation

As illustrated above, new or revised legislation on permitting is not the way forward. Stability is needed, not the legal uncertainty coming from "deregulation" or re-opening of the EU acquis, in particular those recently reviewed.

For instance, the threat of reopening the revised IED to remove the provision for operators of energy intensive industries to provide details around their transformation pathways in an integrated manner (addressing decarbonisation, circularity and wider environmental performances) is opposed to promoting concrete efforts to industrial transformation through a stable long-term legal framework.

As summarised in table 1, legislation presently into force includes many provisions aimed at accelerating permitting procedures for manufacturing and production industries and the identification of decarbonisation techniques potentially covering many value chains, as well as dedicated legal provisions promoting their uptake.

Such legislative frameworks also include specific provisions for particularly innovative projects, as well as the identification of areas where permitting and environmental requirements are even less strict and more favourable to operators. Additionally, it includes provisions aimed at digitalising permitting procedures and encouraging Member States to empower competent authorities with additional personnel.

The pieces of legislation we have analysed are young and some of their requirements are still not enforced or are waiting either for Member States to act or additional secondary legislation to define more detailed rules. Competent authorities, industrial operators and other stakeholders are getting used to this new legal framework and it is not good to change it again with new provisions, including Omnibus proposals.

The fact that certain industrial operators do not have a clear understanding of such new provisions should encourage the European Commission and Member States to provide further detailed guidance on how to apply them, as well as direct training when needed and sharing best practices. For instance, with the current legal framework and thanks to digitalisation, competent authorities in Belgium can permit IED activities in less than 150 days.

As stated even by industrial associations and operators across sectors, focus on implementation is key. For instance, RED III gives the right tools to speed up permitting but Member States are not implementing them; instead of simplifying, many have added delays, complexity and legal uncertainty[12]. What industry want is "clear implementation guidance from the Commission, and not the reopening of adopted legal texts for renegotiation[13]".

[12] https://www.linkedin.com/posts/windeurope_renewables-permitting-is-still-too-slow-activity-7338180688514281473-FjPW/?utm_source=share&utm_medium=member_desktop&rcm=ACoAACWK2ZsBffJah1BwlUogcKs5evqXsh9QnMQ&mc_cid=2aa1fa15d4&mc_eid=d222caeb56

[13]https://sustainabilitymag.com/articles/what-is-the-eus-omnibus-why-are-major-companies-against-it?mc_cid=2aa1fa15d4&mc_eid=d222caeb56

Implementation should be carefully monitored and harmonised to make laws interact and deliver their intent of speeding up projects while keeping high standards of environmental and public health protection, as well as assess their effectiveness and providing additional guidance in case of problems.

Table 1: overview of measures aimed at speeding up permitting procedures included in REDIII, NZIA and IED 2.0)

Law	RED III	NZIA	IED 2.0
Shorter deadlines	✓	✓	✓
Single point of contact	✓	✓	✓[14]
Digitalisation	✓	✓	✓
Overriding Public Interest	✓	✓	✓[15]
Resources to competent authorities	✓	✓	✗
Acceleration Areas	✓	✓	✗
Derogation for deep transformation projects	✗	✗	✓
Derogation for innovative projects	✗	✓	✓

Table 2: overview of legal frameworks where decarbonisation measures / techniques are assessed against wider environmental protection goals / promote aspects linked to deployment of renewables and energy efficiency

Law	RED III	NZIA	IED 2.0
Qualification of "deep industrial transformation"	✗	✓[16]	✓
Environmental co-benefits (air, water,	✗	✗	✓

[14] Art. 5(4) of the IED specifies that "Member States shall take the measures necessary to ensure that the conditions of, and the procedures for the granting of, the permit are fully coordinated where more than one competent authority or more than one operator is involved or more than one permit is granted, in order to guarantee an effective integrated approach by all authorities competent for this procedure." Whilst this does not strictly require a single point of contact, the predominant practice is the same.

[15] Derogations to implement the updated Best Available Technologies (BAT) requirements may be granted in case of crisis due to extraordinary circumstances beyond the control of the operator and Member States (max 12 years).

[16] Various definitions: "transformative industrial technologies for decarbonisation", "innovative net-zero technologies", "other innovative technologies", "energy intensive industry decarbonisation projects".

resources/circularity, chemicals of concern considered)			
Safety aspects considered (e.g. hydrogen)	✗	✗	✓
Energy Efficiency minimal requirements	✗	✗ [17]	✓
Renewable Energy promoted	✓	✓	✓

Recommendations

We suggest to:

- Refrain from further changes of the regulatory framework on permitting to increase stability, not cause confusion and give time to the present rules to be implemented on the ground by the competent authorities.
- Refrain from further changes of provisions aimed at accelerating the uptake of decarbonisation and deep industrial transformation techniques due to "simplification" concerns.
- Support Member States, industrial operators and local governments in the implementation phase, designate suitable renewable energy areas upfront through robust and science-based methodologies including sensitivity mapping.
- Ensure well-resourced permitting authorities via EU funding and training in line with the Commission Guidelines, as well as push for the digitalisation of permitting procedures and enforcement. Disseminate best practices.
- Carefully monitor the implementation of the new rules and intervene with guidelines and harmonised secondary legislation, when necessary.
- During the monitoring phase, ensure that the application of the current legal framework is fully consistent with an integrated approach guaranteeing a high level of environmental and human health protection, as well as decarbonisation and streamlined procedures.
- Ensure effective governance and compliance by rigorously monitoring national implementation and launching infringement procedures when necessary.

[17] Energy efficiency techniques are listed

2. ***Identify and promote priority projects and clusters:*** *The risks linked to investments in decarbonisation projects are high, therefore public intervention is often crucial to help de-risk investment in clean technologies. The impact assessment will assess relevant criteria to identify priority industrial decarbonisation projects or clusters and assess policy measures to support and promote them, including by facilitating access to funding. Policy options will also consider how to support Member States in planning and implementing an appropriate enabling environment for industrial clusters.*

We support to the prioritisation of measures when it comes to providing public support to industrial decarbonisation projects. Such prioritisation should also consider wider enabling conditions that, if not present, will prevent public support to have actual effects. The EEB has already provided its views on the conditionalities for State aid in relation to the CID (CISAF)[18].

(a) Boosting enabling conditions aimed at increasing electrification, circularity and a more efficient use of energy and materials

It should be noted that the risks linked to investments in decarbonisation are high also because of an inconsistent policy framework that does not provide clear signals to stimulate such investments.

For instance, as pointed out by DG Competition in recent State aid decisions[19] concerning the decarbonisation of steelmaking, market and regulatory signals are insufficient to override cost differences between traditional and decarbonised production methods, mentioning the EU ETS and the IED as laws not promoting the industrial transition because its enforcement is too weak or undermined by derogations or loopholes. A strict enforcement of EU legislation should be conditional to any granting of public support. EU standards shall be enforced at their full potential to assess the presence of an actual market failure instead of a mere policy failure.

Additionally, high energy prices are hampering the electrification of EU economy[20]. According to the 2025 Annual Single Market and Competitiveness Report[21], "*this can be partially explained by a persistent small differential between gas and electricity, which is not providing sufficient economic incentives to switch to electricity, despite the higher energy efficiency of electric systems*". The same report highlights that "*the EU economy still relies extensively on fossil fuels, making up two thirds of the energy mix*." Higher and effective carbon pricing, including the phase out of free allocation in the EU ETS framework, as well as a rebalanced energy taxation aimed at making the cleaner options (renewable energy) the cheapest are essential to provide incentives towards electrification, more efficient use of energy and a more resilient, more competitive and less volatile EU industry.

[18] See the EEB submission related to the CISAF public consultation
[19] See SA.104903 and SA.105337
[20] A comprehensive list of barriers to electrification can be found in the following reports: 2024, Regulatory Assistance Project, Some like it hot: moving from industrial electrification potential to practice and 2024, Fraunhofer ISI, Direct electrification of industrial process heat. An assessment of technologies, potentials and future prospects for the EU.
[21] https://data.consilium.europa.eu/doc/document/ST-5721-2025-INIT/en/pdf

Regarding circularity, the EU's progresses towards a more circular economy are insufficient. In the 2020-2023 period the EU's economy circularity, measured as the circular material use rate, increased only from 8,2% to 11,8%[21].

More needs to be done to spark the potential of circularity in industry to limit resource and energy consumption, create new businesses and supply chains based on circular materials, as well as prevent downcycling and the linked losses of value of secondary materials.

According to Material Economics[22], only 43% of the original value of steel, plastics and aluminium remains after one use cycle, representing a loss of 78 billion € per year. A large share of these materials (78%) is not recycled (particularly plastics) but put in landfills or used as fuels, the rest (22%) is recycled but with loss of quality (see figure 1).

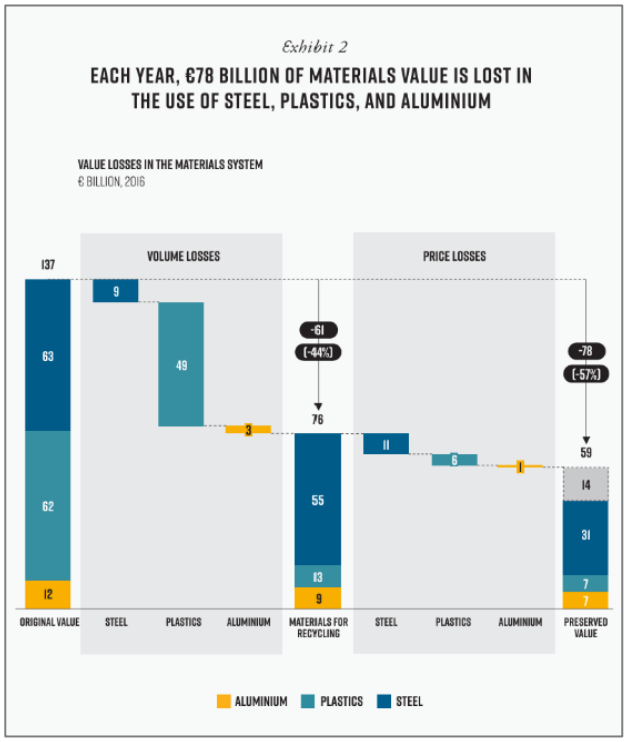

Figure 1

Another enabling condition is the development of a market for decarbonised products. We will address this later in the document (Question 3).

A further policy failure is absence of clear common view as to what is defined as "clean" product or service, in terms of performance expectations expected on the parameters of interest (for the wider public interest). Many techniques considered as deeply transformative or "net zero" are not deployed due to failure to properly internalise negative externalities of the operation of (incumbent) techniques pathways in energy intensive industries.

Going more into detail, the following list of conditions should be considered when prioritising the projects benefitting from public support:

(b) The project does not foresee the use of any fossil fuel or, in case of industrial transformation projects, has a clear fossil fuels phase out timeline consistent with the EU climate neutrality goal.

As mentioned above, reliance on fossil fuels is one the main reasons why energy prices are volatile and too high, having a direct impact on investor confidence and resulting in halting decarbonisation

[22] Material Economics, Preserving value in EU industrial materials

projects, despite being funded with public money[23]. Additionally, reliance on fossil fuels increases the vulnerability of the EU to external forces, weakening its industrial base.

Moreover, technologies based on electrification allow a more efficient use of energy than combustion-based technologies, making industry automatically more competitive. It must be reminded that primary energy from fossil fuels must not be replaced with an equivalent amount of renewable energy because more than 2/3 of all primary energy is lost as waste heat[24].

On the other hand, the impressive development of innovative fossil-free technologies and techniques in many energy-intensive industries provides solutions allowing ambitious emissions reduction in the short term; sectors once considered "hard to abate" today can be seen as "fast to abate" provided that the right policies and incentives are in place (see part of enabling conditions). Specific examples are steel and cement production:

- **Steel: prioritise circularity and electrification technologies with renewable electricity**

Steelmaking is on the brink of radically transforming. Presently, the main production route of iron-ore based steel heavily relies on coal and a carbon and energy-intensive process based on combustion.

According to Agora Industry et al.[25], near-zero CO_2 technologies, particularly those based on the direct reduction of iron with hydrogen as reducing agent (H2-DRI) and electric arc furnaces (EAF), can be deployed this decade. Such techniques deliver a substantial decrease in carbon and pollution emissions, as well as lower energy consumption and, in case of EAFs, higher circularity.

Reducing energy consumption is key to guarantee competitiveness and high environmental sustainability. EAFs using scrap steel use only 2,8 GJ/t of crude steel, while H2-DRI-based installations 10,8 GJ/t. For comparison, the present production route based on blast furnaces and coal uses 22,8 GJ/t of crude steel when coupled with carbon capture and storage (CCS). EAFs provide also the opportunity to increase the circularity of the sector, provided that the collection of high-quality steel scrap is improved to prevent downcycling (see point (a)).

Regarding GHG emissions, similarly the EAF and H2-DRI routes allow 100% emission reduction versus blast furnaces, if hydrogen is produced via electrolysis and with renewable electricity and if EAFs use renewable electricity. It is key to highlight that coal-based blast furnaces with CCS would only allow a 73% CO_2 emissions reduction[26], keep upstream GHG emissions (mainly methane due to coal extraction) unaddressed and with higher energy use which is of fossil origin.

Additionally, both routes allow flexibility in terms of gradually introducing a totally 100% renewable feedstock, being able to work also with fossil gas. Nevertheless, in such cases the project should foresee

[23] For instance, ArcelorMittal has recently put on hold their projects in Germany, Spain, France and Belgium funded with State aids (about 3 billion €).

[24] https://shorturl.at/zWg2D and https://knowledge.energyinst.org/new-energy-world/article?id=139309

[25] 2024, Agora Industry, Wuppertal Institute and Lund University: Low-carbon technologies for the global steel transformation. A guide to the most effective ways to cut emissions in steelmaking.

[26] Assuming a 90% capture rate for all CO_2 emission points.

a mandatory timeline to switch toward 100% renewables-based feedstocks (as in the State aid decisions mentioned above), with appropriate safeguards and penalties in case of incompliance.

Scrap availability should not be a concern in the EU; according to the Draft Preparatory study on iron and steel – ecodesign measures under the Ecodesign for Sustainable Products Regulation (ESPR), each year a total of 79,3 Mt of post-consumer scrap goes into steelmaking, while 17,7 Mt are exported and 3,9 Mt are imported, suggesting a total potential availability of post-consumer scrap in the supply chain of 93 Mt per year. The amount of total scrap available is constantly increasing due to the increasing recover of post-consumer scrap, which will further increase to 100Mt per year in 2050. Adding pre-consumer scrap will allow to reach 150Mt per year in 2050[27]. In a context of stagnating demand of steel (~126Mt in 2023[28]) and higher availability of scrap, ideally the entire demand of steel in the EU could be covered by recycled steel, provided that measures are taken to prevent downcycling and more granular sorting (e.g. per alloy, final use or strength) of scrap is done.

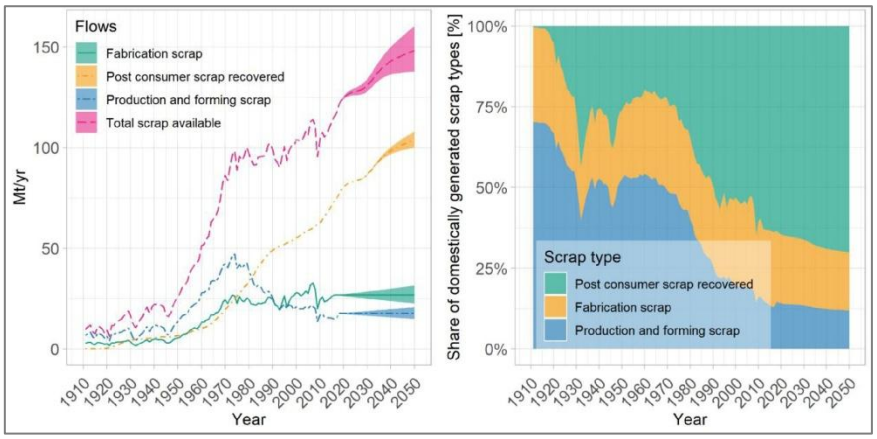

Figure 2

Another interesting direct electrification technology that will be available on the medium term[29], is Molten Oxide Electrolysis (MOE), which works without the use of reducing agents (either coal or hydrogen) but requires high amounts of electricity (12,4 – 14,8 GJ/t of crude steel) and allows 100% CO_2 emission reduction.

- **Cement and concrete: prioritise low-clinker options, lower clinker-to-cement ratios and circularity measures**

Decarbonising cement production is feasible thanks to the development of so-called low-clinker cements, a critical new paradigm able to considerably reduce the need for expensive end-of-pipe solutions as CCS.

[27] Sabine Dworak, Helmut Rechberger, Johann Fellner, How will tramp elements affect future steel recycling in Europe? – A dynamic material flow model for steel in the EU-28 for the period 1910 to 2050, Resources, Conservation and Recycling, Volume 179, 2022

[28] EUROFER, European Steel in Figures

[29] The first commercial-scale plant to produce steel is foreseen in 2030, while today a plant specifically conceived for high-value ferroalloys is under construction in Brazil (see https://www.bostonmetal.com/).

According to the Alliance for Low-Carbon Cement and Concrete (ALCCC)[30], low-clinker options can play a much bigger role in reducing GHG emissions than they do today. Existing and commercially available solutions can be scaled up at near zero costs and, when done successfully, cut the cement industry's footprint by 50%.

Other end-of-pipe decarbonisation technologies such as CCS are much more expensive and slower to deploy; giving them priority would not allow to decarbonise the industry in time to respect the EU climate targets, nor would make it more competitive, given the high costs of carbon capture compared to low-clinker technologies. Moreover, decarbonisation through CCS is rarely able to capture a significant amount of CO2, being typically far from reaching at least 95% rate[31].

The notion that low-carbon cement and concrete is more expensive is false. Several clinker substitution technologies (e.g. clinker substitutes in Portland cements, alternative cement types, clinker recycling…) have in common that they are cost competitive and readily available on the market, reducing the overall cost of cement and concrete significantly. Therefore, these should be promoted and scaled as much as possible to ensure a clean, competitive and affordable sector.

When it comes to decide the best use of public resources, the prioritisation of low-clinker cements compared to CCS-based technologies would allow supporting much cheaper projects able to deliver an equivalent product output with lower emissions, making the sector more competitive and sustainable at the same time. As an example, LC3 cement[32] provides a readily available option able to deliver cement at commercial scale and to reduce CO2 emissions by 40% thanks to a lower use of clinker in the blend. Other options provide -50% CO_2 emissions by 2030[33], while even zero-clinker products are being developed[34].

Such technologies are more cost-effective than the use of CCS to decarbonise cement production: the only CCS example known in Europe is at the Heidelberg Materials plant in Brevik, Norway, which took 20 years from planning to pilot runs and only capture 50% of CO_2 [35] (about 400.000 t per year). The project has been extensively funded by the Norwegian government with 16,8 billion NOK[36], equivalent to 1,4 billion €. The same money could have been spent for other alternative cement production options delivering significantly more pollution prevention benefits at much lower costs at much larger scale.

Regarding the clinker-to-cement ratio issue, a study by The New Climate Institute and the Environmental Coalition on Standards[37] modelled different mitigation scenarios where the clinker-to-cement ratio in Europe reaches 60%, 50%, or even 40% by 2050. The study shows a significant potential for CO_2 reduction, with annual emission savings of up to 52% in the most optimal scenario. More recent insights and research show that it is possible to go faster and further in clinker reduction in Europe, with the possibility of reaching a 40% ratio by 2030 and a 25% ratio by 2035[38].

[30] ALCCC, 2023, Fast-tracking cement decarbonisation
[31] See the analysis of the Institute for Energy Economics and Financial Analysis
[32] https://lc3.ch/
[33] https://www.ecocemglobal.com/
[34] https://shorturl.at/Rback
[35] https://unece.org/sites/default/files/2022-04/Brevik%20HeidelbergCement.pdf
[36] https://tinyurl.com/3tmkr283
[37] New Climate Institute and ECOS, 2023, Clinker Substitution in the EU Cement Sector
[38] Horizon Europe, Data to Enable Transformation and Optimisation for Concrete Sustainability

The implementation of other non-CCS decarbonisation strategies will further allow to bring emissions down, such as increasing the electrification of kilns by 70%. Circularity (e.g. reuse or repair of concrete) can also play a role in reducing emissions[39]. Even though the relative potential is lower than for other products like steel, the volume of available cement is so high that the absolute potential is still worth factoring in. Recycling Portland cement is possible and creates the first zero-emissions alternative to existing cement production[40].

(c) The project receives substantial contribution from private entities, not only financial but also able to set enabling conditions for the decarbonisation of the EU industrial ecosystem.

According to the 2025 Annual Single Market and Competitiveness Report[21] public investments have slowly trended up over the past years reaching 3,5% of Gross Domestic Product (GDP) in 2024, up from 3,1% in 2018. The 2024's EU level equals the US public spending; the main difference between the two is rather the fragmentation and the complexity of the EU funding landscape, typically divided, for instance, between national, European and even regional programmes. On the other hand, according to the same report the share of private investments is worsening, with R&D expenditure remaining stable at 2,2% of GDP, far from the >3% by 2030 goal.

Projects receiving public support should receive substantial private support as well, both in terms of funding and of contributing to setting up the enabling conditions able to decarbonise and make EU industry more competitive. For instance, projects getting public support should include provisions to make private companies contribute to setting enabling conditions for a decarbonised industrial ecosystem, such as investments in renewable energy production and grid modernisation.

Given that they are extremely expensive, do not allow the phase out of fossil fuels and alternative cheaper and more effective solutions are available, CCS projects must only be funded by **private money or, in alternative, by resources generated through a rigorous enforcement of the polluter-pays principle, as well as extended producer responsibility of CO_2 emitters.**

Further conditions on CCS projects should be applied to ensure that they deliver the highest result in terms of climate protection and do not cause fossil fuels lock-ins (see the EEB publication on the issue[41]).

(d) The project internalises negative externalities or foresees a strict enforcement of EU standards

In case of financial support, the calculation of the amount of funds should fully internalise negative externalities to include the costs that undertakings shift to society, particularly when operators do not prevent pollution to the full achievable technical potential. This also shall fully account the true societal damage cost of climate change. Even the World Bank considers that a 1,5C compatible pathway would

[39] P Gowler et al., Circular economy and reuse: guidance for designers
[40] Dunant, C.F., Joseph, S., Prajapati, R. et al. Electric recycling of Portland cement at scale. Nature 629, 1055–1061 (2024). https://doi.org/10.1038/s41586-024-07338-8
[41] See position of the EEB on CCS

set a price of 226 to 385 USD per ton of CO2 to be more appropriate, with the EU ETS falling short from setting those price levels to reflect a more honest climate debt of polluters.

According to CREA[42], the application of the strictest IED BAT-Associated Emission Level range would avoid an estimated 10.000 deaths and external costs of 28 billion € per year for the main industrial manufacturing sectors (excluding livestock).

It should be highlighted that for some IED industrial sectors the BATs come from pieces of legislation entered into force more than a decade ago[43], meaning that such techniques are commonly available on the market, if not obsolete, and can be promptly applied to ensure the lowest possible impact on the environment and public health. The application of the strictest BAT-AEL by industrial operators should be a pre-condition to receive any kind of public support. In general, negative externalities due to pollution should be calculated and subtracted from the financial support provided by public bodies.

(e) Policy options to support Member States in planning and implementing an appropriate enabling environment for industrial clusters already exist.

As shown in table 1, both NZIA and REDIII foresee measures to facilitate the creation of industrial clusters. Such provisions should be implemented by Member States in a way that they facilitate the aggregation of industries, as well as high environmental and public health standards are kept.

Recommendations

We suggest to:

- Prioritise projects promoting circularity and prevent downcycling (e.g. increasing the quality of steel scrap) and a more efficient use of energy and materials to lower the EU energy consumption while keeping production.
- Prioritise the direct electrification of industrial processes, since electrified processes do not waste energy in the form of heat and are inherently more efficient, as well as do not require intermediate agents such as hydrogen.
- Prioritise material substitution projects when such materials (e.g. cement) bring lower CO_2 emissions at a lower cost and equivalent structural performances.
- Refrain from supporting any fossil fuels-based project, including when based on carbon capture technologies.
- Oblige industrial operators benefitting from public support, either in terms of financial or administrative aid, to contribute to setting the enabling conditions (e.g. production of renewable energy, grid modernisation, additional investments, etc.) allowing to structurally

[42] https://eeb.org/library/upgrading-europes-air-how-a-strong-industrial-emissions-directive-can-save-lives-and-money/

[43] For instance, the Iron and Steel BAT Reference Document (BREF) entered into force in 2012, with techniques referring to 2008 and earlier, while the Cement, Lime and Magnesium Oxide BREF entered into force in 2013, with techniques referring to 2009 and earlier (see here the BAT-BREF page for further examples).

make the EU industrial sector climate-neutral by 2050. This includes CCS projects, provided that additional conditions are set to prevent fossil fuels lock-ins and to ensure the highest safety and standards.

- Condition the provision of public support to the application of the strictest pollution emission techniques or to the inclusion of negative externalities in the calculation of funding needs.

3. ***Create and protect European lead markets for low-carbon products****: The impact assessment will consider measures to support lead markets, including by: Promoting industrial products with a low carbon intensity, including options for an EU label. It will develop a voluntary label for steel based on ETS data and building on the EU's Carbon Border Adjustment Mechanism methodology. The impact assessment will also consider incentives for uptake of clean carbon feedstock, including carbon capture and utilisation, sustainable biomass and recycled waste.*

a) The ESPR as the reference piece of legislation when it comes to labelling

As mentioned above, it is essential that existing laws are implemented efficiently to prevent confusion arising from having different rules regulating the same issues.

When it comes to labelling and defining standards to accelerate the use of sustainable intermediate products (such as steel and cement), EU institutions came up with a very comprehensive piece of legislation in the last mandate, the Ecodesign for Sustainable Products Regulation (ESPR).

The European Commission has just published the 2025-2030 Working Plan (SWD(2025) 112 final) of the Ecodesign Forum, which includes iron and steel as priority product.

The Ecodesign framework is one of the success stories of the EU when it comes to promoting measures able to pursue different goals in a coherent way; thanks to Ecodesign, the EU has achieved a 12% reduction in final energy consumption in 2023, avoided 145 million tonnes of CO2 emissions that year, led to an increase of 346.000 jobs (2020 data) and cost savings of between EUR 182 and EUR 266 per household, a figure estimated to rise to between EUR 473 and EUR 736 per household by 2030. It has also paid off for business: 93% of consumers recognise the energy label when buying labelled products and suppliers and retailers see an increase in demand for higher performance products. Lastly, this framework has promoted more energy efficient production patterns worldwide and it has encouraged many third countries to bring in similar legislation[44].

The European Commission should prioritise the implementation of the ESPR for iron and steel to develop a comprehensive definition of "sustainable steel" and unleash its potential to drive the market towards more sustainable steelmaking rather than developing a brand-new labelling system based only on carbon emissions that will increase confusion within the market when both labelling systems will be in place.

[44] SWD(2025) 112 final

Principles to be respected by any steel labelling scheme are presented in the Annex to this document.

> ***Protecting European lead markets.*** *Policy options will consider measures to boost the single market benefits of (foreign direct) investment in innovative technologies and address industrial challenges, complementing where relevant existing trade policy instruments.*

The EEB would propose a protection of lead markets based on environmental and social standards rather than just GHG emission footprints. The EU has a responsibility to protect the environmental and social goals of the union. Protecting these goals are integral part of protecting EU industry and ensures that investments made by the EU industry towards compliance of such environmental and social legislations are rewarded by the EU in its measures and incentives to transform its industry towards climate neutrality by 2050.

If a minimum EU content criteria needs to be introduced, it should be strictly based on reciprocity of EU's environmental and social goals by another country, based on the following criteria.

The standards should therefore include all the below:

a) Products or services that have a comparable or lower or equivalent GHG emissions footprint. The minimum GHG emissions footprint must be arrived based on a separate benchmarking process of assessing the GHG emissions arising from all stages of production (using an LCA) in the EU market. The analysis cannot use the existing benchmarks provided by CBAM or the EU ETS since

- The GHG reductions listed do not cover the full scope of GHG emissions of the product and does are not adequate [45] [46] for identifying truly low carbon products in the market due to being based on "10% most energy efficient" production method, currently in use, not the technically feasible and best performing option.
- The requirements set for creating lead markets for low carbon products should align with the reduction needed for compliance with 1.5°C climate pathways.

b) Comparable products or services with equivalent environmental and GHG performances
The most effective and most protective pollution prevention at source performance levels shall be favoured when the method of production is subject to EU acquis (pollution prevention / reduction standards) for both products and manufacturing related EU policy.

To effectively protect EU lead markets, EU preference should be ensuring that all economic operators, whose products are covered in the industrial emission directive (2024/1785), should have achieved the strictest possible emissions and performance levels achieved by the recommended BAT's set for "new plant" standards in the relevant EU BREF's [47].

[45] https://ecostandard.org/wp-content/uploads/2024/02/2024-02-15_ECOS_EU-taxonomy-construction_FINAL.pdf
[46] https://sandbag.be/wp-content/uploads/2021/01/Sandbag-feedback-on-benchmarks-implementing-regulation.pdf
[47] See list of EU BREFs here https://eippcb.jrc.ec.europa.eu/reference , many are outdated by several decades and hence even the stricter BAT-AEL do no longer reflect 'state of the art' in the 2025-2035 period

EU Operators that benefit from derogations (Art 15(4) of the IED) shall be excluded from the awarding of public tenders; a first screening criterion could be the stringency of permit conditions (e.g. emission limit values applied for air and water pollutants).

A supplementary award conditionality for all economic operators could be to require the operator to provide an installation level Transformation Plan (equivalent to article 27(d) of the IED) enabling to verify whether the producer of the product (e.g. cement or steel) has promised to take reasonable efforts to contribute to circularity, climate neutrality and clean production within the 2030-2050 phase.

The integrated approach requires to ensure that the high level of environmental protection as a whole and human health is safeguarded by all economic operators. Especially for bio-based products (e.g. food, textiles, bioplastics.) negative or positive impacts on biodiversity, animal welfare and best efforts for safeguarding water resources are paramount. Nature based solutions should be favoured[48].

c) Product and services that increase circularity

A preference for products and services which lead to an overall resource use reduction, can be locally repaired, reused and refurbished and are part of a shorter supply chain with lower transport related GHG emission footprints. Similar considerations should apply to recycling and waste with shorter supply chains and recovering the highest possible value. Real measures taken at installation level for IED activities e.g. steel, cement, which would enhance circularity and resource use efficiency / waste prevention should be further described in the installation level Transformation Plan (or any such plan equivalent to article 27(d) of the IED see previous point).

d) Products and services with higher social, ethical standards for labour

The criteria for promoting industrial products under lead markets should include social and ethical standards complying with the international agreements ratified by the EU. For example, this could include the rights and prohibitions included in international human rights instruments and the prohibitions and obligations included in environmental instruments listed in the Annex of the Annex of the Corporate Sustainability Due Diligence directive (2024/1760/EC).

e) Considerations of local preference for products and services

The preference should also cover products and services that are produced entirely locally with short supply chains, taking seasonality into consideration when relevant, and toxic-free production[49]. Where appropriate, the use of eco-labelled products equivalent to the existing EU ecolabels (e.g. EU Ecolabel, Nordic Swan, the Blue Angel and the Austrian ecolabel) should be preferred.

[48] See notably https://eeb.org/wp-content/uploads/2024/03/Open-letter-to-the-President-of-the-European-Commission-on-water-resilience.pdf

[49] See more specific points on safe and sustainable by design in the EEB proposals for a modern, competitive, and sustainable future for the EU chemical industry https://eeb.org/library/action-plan-for-the-chemicals-industry-eeb-proposals-for-a-modern-competitive-and-sustainable-future-for-the-eu-chemical-industry/

ANNEX
Principles for steel labelling

The past few years have seen many labelling schemes for identifying and ranking "greener" steel production. Despite the different labels proposed, the schemes largely fall into three categories: sliding scale-based (e.g. LESS, Responsible Steel), product-based (e.g. GSCC) and the weighted pathway approach (e.g. Climate Bond initiative). Almost all these schemes focus in reality on CO2 footprint only, and hence insufficient in defining green steel. See notably JRC Report 'Defining low-carbon emissions steel: A comparative analysis of international initiatives and standards.
These labelling schemes are a source of debate with the proponents of each scheme claiming that the schemes either favour the ore-based or the scrap-based route of production.

Without delving into the details of relative advantages of each labelling scheme, we recommend 5 principles and key criteria that should be included in any steel-related labelling scheme used to determine the incentives and support from EU and potentially national public funds to future-proof European steelmaking reflecting state of the art.

We take the view that any steel label based on green claims must set principles and criteria that go beyond considerations of carbon emissions only, benefitting wider environmental and public health gains rather than being limited to climate change aspects only.

The ESPR included steel products due to their high impact and high improvement potential on several environmental indicators, including water availability and quality, carbon footprint and impact on climate change, life-cycle energy consumption, and other pollution indicators such as hazardous chemicals and air quality. A clear and consistent approach is needed, especially given the upcoming digital product passport under the ESPR, which will reflect environmental criteria like climate and circularity. The two best possible performance level classes would be eligible for state aid support schemes such as the Public Procurement (Art. 65(2) ESPR). Art. 19 of the CPR provides a harmonised approach for technical specifications in respect of use of EU markings; alternative private labels shall not impair the visibility, legibility, and meaning of CE marking. Based on our principles and criteria **we propose that the C-class cut-off point should align with the IEA Near Zero definition.**

Social aspects and conditionalities are equally supported; even though they are not explicitly foreseen under the ESPR, they are still relevant to promote a level playing field among industries at global level based on social fairness.

Principle 1: Promote fossil-free production routes The fossil-based production routes, including CCU/CCS, fossil-based reducing agents, and the use of carbon-intensive electricity, should be excluded from the two best classes of the scale.

Principle 2: Dynamic to establish a regular phase-out of the worst-performing classes in terms of GHG emissions. A dynamic system should promote the replacement of fossil-based ironmaking with electrolysis-based hydrogen-based DRI production and promote technological advancements and decarbonisation also outside of the EU. For the EAF process route it should also consider improvements such as the share of renewables, fossil free electricity, carburising elements, alloys, lime, and the substitution of fossil-based graphite.

Principle 3: Cut-off points to be derived on the basis of forward-looking emission intensities/factors (not EU ETS benchmarks) considering the full system boundaries. Cut-off points within the categories should be based on the best performing production routes (technical feasibility levels) and recent developments in iron- and steelmaking technologies. The first class or the first two classes should set a time bound target level outcome (climate neutrality) and allow for rescaling, as the EU Energy Labelling framework. The EU ETS benchmarks are currently derived according to production routes rather than products and are backwards looking and therefore currently not reflecting state of the art for all production steps within the steel value chain. The emissions coverage should include the full upstream emissions such as coal mining, but also upstream and midstream methane leakage and methane as a greenhouse gas.

Principle 4: Reward energy-saving and feedstock-saving pathways: it should reward techniques able to produce a given amount of steel with less energy, less or no intermediate feedstocks (direct vs. indirect electrification), or high use of scrap. This should also account for energy conversion loss for the production of hydrogen, both through electrolyser efficiency and through transportation including imports.

Principle 5: Reward nature and public health-neutral steelmaking (wider environmental footprint approach). As required by the ESPR framework and in coherence with the integrated approach on pollution prevention, the wider environmental co-benefits need to be accounted for. In essence: "Clean" means more than climate neutral. The following illustrative and non-exhaustive aspects are suggested: **a) mitigating the impact on water quantity (**e.g. >97% water recirculation in cooling systems and maximum use volumes of intake water) and safeguarding water quality (e.g. at the source compliance with Maximum Allowable Concentration values under the EQS Directive, maximum discharge temperature levels etc). **b) best performance in terms of air quality** (e.g. compliance with the strictest Best Available Techniques associated emission and performance values) as well as **c) substitution of chemicals of concern (as per Art. 3(27) of the ESPR) in the relevant production phases**, including upstream impacts from iron ore mining.

EEB
European
Environmental
Bureau

Contacts

Christian Schaible, Head of Zero Pollution Industry, christian.schaible@eeb.org
Jai Krishna Ranganathan, Senior Policy Officer, Lead Markets & GPP, jaikrishna.r@eeb.org
Riccardo Nigro, Senior Policy Officer, Industrial Transformation, riccardo.nigro@eeb.org