



Advancing lead markets for low-carbon products: The role of carbon management

Key recommendations

● Establish an enabling EU framework

Lead markets require EU low-carbon product standards, clear harmonised GHG accounting, progressive thresholds, performance-based approaches, and updated, interoperable systems to drive decarbonisation and market transparency.

● Drive downstream demand-side obligations

Some sectors may need demand-side obligations to drive low-carbon product markets. This can be done by setting quantitative targets for public and private buyers. Demand-side obligations offer a cost-effective path to drive demand while remaining consistent with precedent at the EU level and the existing framework.

● Advance government-led procurement and policy

For clean industrial production in Europe to succeed, governments must lead by example. They should apply mandatory green public procurement criteria, climate-aligned contracts, and quotas for low-carbon materials, complemented by training and financial support to overcome current barriers.

Introduction

Decarbonising the European Union (EU)'s heavy industries is imperative for achieving its climate neutrality target by 2050, but can also offer opportunities for sustainable growth.

This is reflected in [Mario Draghi's report](#) on the future of European competitiveness as well as in the [Clean Industrial Deal](#) (CID), both highlighting the compatible nature of industrial decarbonisation and a competitive European industry.

The forthcoming [Industrial Accelerator Act](#) (IAA) represents a critical opportunity to provide concrete measures to boost “EU lead markets” for decarbonised products. These will be particularly vital for heavy industries, which are investing in decarbonisation via carbon capture and storage (CCS) and carbon capture and utilisation (CCU) projects to achieve fast and effective emissions reductions.

Yet, the business case for decarbonised products in Europe is still uncertain. This makes it difficult for pioneering companies to cover the premium price gap, which, in turn, disincentivises investments in major decarbonisation projects. Lead markets are therefore essential to provide investment certainty, accelerate deployment of CCS and other decarbonisation technologies, thus supporting the decarbonisation of industries in Europe.

This policy brief identifies priority steps to kick-start lead markets through the IAA. It recommends establishing an enabling framework comprising harmonised standards, transparent certification, and financial instruments to ensure credibility, scalability, and cost-effectiveness. To create a predictable offtake for low-carbon products, the IAA should introduce strong demand-side measures. These should include downstream obligations, capable of delivering lower CO₂ content in products with a marginal price increase for consumers, as well as public procurement reforms.



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Pioneering CCS: Learnings from EU/EEA CCS market frontrunners

Developing markets for low-carbon products is key to keeping European industry competitive while reducing emissions. According to the [International Energy Agency \(IEA\)](#), CCS is one of the most cost-effective pathways, enabling low-carbon cement, steel, aluminium, and fertilisers at minimal extra cost to end users. While industrial carbon management can be a cost-effective lever to cut emissions in certain sectors, there are still a [few full-scale operating plants](#) in the world.

Brevik CCS

First-of-a-kind (FOAK) projects like [Brevik CCS](#) are now in operation and have started producing low-carbon cement, which is marketed and sold as a zero-emissions product: [evoZero](#)TM. However, in the absence of demand-side policies, these products depend entirely on voluntary uptake from buyers who, in most cases, have no obligations or incentives to purchase them.

Yara Sluiskil

Another [large-scale CCS project](#) by Yara International in the Netherlands is about to enter into operation. It plans to store 800,000 tonnes of CO₂ per year for a total of 12 million tonnes for 15 years, reducing the CO₂ footprint of hydrogen and ammonia production used in fertiliser manufacturing.

These products will have up to -75% CO₂ compared to conventional fertilisers and will be part of [Yara's Climate Choice Fertilisers](#) portfolio, which also includes agronomic advice and digital services to optimise product use. Similar to [evoZero](#)TM, low-carbon fertilisers also face hurdles to access the market, solely [depending on limited voluntary partnerships](#), despite high investments in decarbonisation projects.

The examples of Brevik and Yara Sluiskil showcase how the market appetite for low-carbon products remains uncertain across different sectors. In the past year, even in the face of industry-wide mandates such as the [FuelEU Maritime Regulation](#), FOAK projects have been [cancelled](#) on the basis of insufficient demand.

As projects like Brevik, Yara Sluiskil and Longship enter operation, ensuring sufficient demand for low-carbon materials is essential to make future projects viable in the EU. This is pivotal given the long investment cycles of industrial producers, who typically endure negative cash flow between the final investment decision (FID) and the start of operations.

Consequently, investment in major decarbonisation projects is highly dependent on the certainty of future revenues from low-carbon product sales. Securing a predictable “green premium” is therefore essential, as it determines whether projects can achieve a positive net present value and attract financing.

Supporting clean industrial production in Europe: Recommendations for the Industrial Accelerator Act

Advancing clean industrial production in Europe will depend on a set of coherent and complementary measures. The IAA must establish a robust enabling framework that secures a predictable offtake for low-carbon products, reinforced by demand-side obligations and public procurement. These three elements will be examined below.

Building the enabling framework

Creating lead markets for low-carbon products will only succeed if they rest on a credible enabling framework. Beyond demand signals, the industry requires clear rules, trusted certification, and targeted financial tools to ensure that decarbonised products can compete on a level playing field.

Establishing clear thresholds for performance

EU product standards must establish clear thresholds for “low-carbon” and “near-zero-carbon” performance, taking into account existing sector-specific mechanisms. These thresholds should tighten progressively over time, providing long-term visibility to industry and aligning with the EU’s climate neutrality targets.

Mutual recognition and tradability of certified products across the single market, supported by transparent certification, will be essential to ensure policy coherence and scalability. Additional incentives should also be considered to accelerate the commercialisation of products that outperform these thresholds.

Set performance-based standards

Standards should be performance-based rather than prescriptive to allow industry flexibility in selecting efficient decarbonisation pathways (e.g. electrification, CCS, CCU, circularity) and to accelerate the adoption of new technologies for low-carbon materials. Embedding performance-based metrics in revised sectoral legislation, such as the [Construction Products Regulation](#) and the [Fertilising Products Regulation](#), is essential to reflect the best available low-carbon innovation.

Updated standards should integrate CCS and CCU pathways, alternative binders, and other emerging technologies, including chain of custody models such as mass balance and “book and claim” systems. Ensuring standards are agile and technology-neutral will accelerate the shift to sustainable materials.

Harmonised labelling and traceability for low-carbon products

Common definitions, clear voluntary labelling schemes and interoperable digital infrastructure are required to guarantee market transparency. These must be sector-specific, science-based, and compatible with existing systems (e.g. digital product passports).

Therefore, they should disclose product carbon footprints, using harmonised, third-party verified methodologies such as life-cycle assessments used in [Environmental Product Declarations](#) (EPDs). To facilitate accurate tracking and accountability, the European Commission could develop an interoperable digital infrastructure that records, verifies, and shares data while protecting commercial confidentiality.

Kick-starting lead markets with sector-specific support

To overcome the cost premium of low-carbon products, the IAA should enable tailored support measures through sector-specific lead market plans. In agrifood, incentives under the Common Agricultural Policy could accelerate the use of low-carbon fertiliser, while tools such as VAT reductions could boost low-carbon materials in the construction sector.

Key tools include:

- **Carbon Contracts for Difference (CCfDs)** for both producers and buyers to reduce exposure to price gaps between conventional and sustainable products.
- **EU and national funding** (e.g. Industrial Decarbonisation Bank, Innovation Fund, Clean Industrial Deal State Aid Framework) to support uptake through grants or state aid.
- **Financial incentives from banks and investors**, such as favourable debt terms linked to stronger Environmental, Social, and Governance (ESG) ratings.

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Driving downstream demand-side obligations

Effective market-shaping policy must reflect sector characteristics. In value chains like agrifood, downstream actors typically have a higher ability to pay than in construction. This shows how instruments should be tailored to sectors to maximise their impact. In this context, demand-side obligations can [complement supply-side policies](#) by directly creating and shaping markets for low-carbon materials.

Demand-side obligations mandate that specific actors purchase or use minimum shares of verified low-carbon products. In doing so, they help de-risking investments, creating scaling effects and accelerating innovation. They differ from voluntary initiatives and green public procurement, because they set quantified EU-level targets applicable to both public and private actors, and rely on third-party verified certification as well as compliance mechanisms.

The mechanisms for implementing demand-side obligations should include:

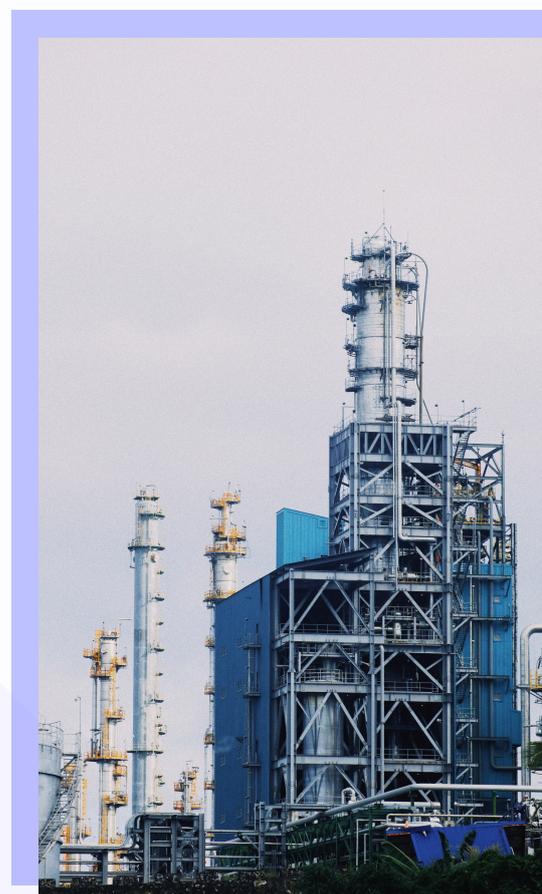
- **Quantitative targets per sector** (e.g. offtake product quotas for the EU market).
- **Material certification** (EU-wide standards and labelling systems).
- **Compliance monitoring** (annual reporting, third-party audits, performance benchmarks).
- **Incentive structures** (subsidies and financial incentives, e.g. tax credits, tax breaks, coupled with penalties for non-compliance).
- **Trading flexibility** (allowing obligated entities to trade credits and/or pool obligations).

Advance demand-side obligations can offer high impact at low additional cost

The rationale behind demand-side obligations lies in their cost-effectiveness compared to other policy instruments.

While low-carbon variants of cement, steel, and fertilisers may carry a production cost premium, the pass-through cost to end users or final products is minimal. For instance, in construction, the embodied carbon of cement or steel represents a small fraction of the total project cost (often <2%), making it possible to absorb higher material prices without affecting overall project feasibility.

By introducing demand-side obligations, policymakers can thus stimulate demand without resorting to high levels of public subsidy, while allowing market actors to absorb incremental costs gradually as technologies scale.



Ensure alignment with existing EU precedent in obligating demand

Demand-side obligations are not a novel or untested concept in European legislation. They build on a growing body of legal and regulatory precedent, particularly in sectors undergoing rapid energy and climate transition.

For example, the [Renewable Energy Directive](#) (RED) sets renewable targets for hydrogen consumers in the industry and transport sectors, while the [FuelEU Maritime Regulation](#) and [ReFuel aviation](#) mandate a gradual reduction in the greenhouse gas intensity of shipping and aviation fuels, respectively. It is based on a technology-neutral approach and focuses on a GHG emissions reduction pathway, namely from 2% in 2025 to 80% by 2050.

Similarly, the Fertiliser Products Regulation, currently [under review](#) to reflect new scientific and policy developments, offers an opportunity to accelerate the uptake of low-carbon fertilisers. Introducing a new category for circular economy-marked lower-carbon fertilisers within the Regulation could support the rollout of harmonised carbon footprint labels and align with broader sustainability goals. This expansion would be well-timed with the ongoing review process initiated in June 2025.

Importantly, well-designed demand-side obligations would complement the [Net-Zero Industry Act \(NZIA\)](#), by creating a stronger business case for emitters to invest in CCS, thereby driving additional CO₂ capture and generating demand for storage operators to meet the EU's CO₂ annual injection capacity objective.

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Made 'Clean in Europe': Advancing government-driven demand procurement and policy in the EU and EEA

In specific sectors such as cement, steel, and aluminium, governments represent a major source of demand. For instance, publicly funded cement procurement accounts for around 31% of the European market (€5.15 billion in 2019). Yet, the uptake of Green Public Procurement remains weak, limited by the absence of binding obligations for contracting authorities, legal uncertainty in applying criteria, and limited skills among procurement officials. The IAA should close this gap by making low-carbon products a priority in public procurement and aligning efforts with existing EU reforms and legislation.

Set an ambitious government-led approach to low-carbon procurement

Building on existing best practices in Green Public Procurement, governments can set clear signals to the market by making Green Public Procurement criteria and sectoral targets mandatory, grounded in transparent life-cycle carbon metrics and verified low-carbon labels. This is essential since only one-third of Member States require Green Public Procurement in specific sectors or above specific contract values, despite long-standing provisions in EU law.

The IAA should close this gap by making low-carbon products a priority in public procurement and aligning efforts with upcoming reforms, including the revision of the Public Procurement Directive, the Construction Products Regulation and the NZIA implementation.

This would require:

- **Awarding contracts based on sustainability, performance and overall cost** rather than price alone.
- **Revisiting cost thresholds** that risk undermining climate goals (e.g. 10% ceilings).
- **Phasing in restrictions** on high-carbon materials in public tenders.

Taken together, these measures will accelerate the creation of effective lead markets.

Establish mandatory minimum content quotas for low-carbon materials

Introducing minimum content quotas for low-carbon materials (e.g. steel, cement, plastics) in public procurement can accelerate market uptake and create early demand. Quotas should be carefully designed in alignment with climate targets, reflecting material availability, sector readiness, and national contexts, and consistency with existing sectoral action plans.

Minimum local content requirements for EU/EEA-produced materials will spur industrial decarbonisation, while ensuring that public spending supports both sustainability and competitiveness. However, a local content requirement should only apply if the European product has demonstrably lower lifecycle emissions than alternatives. Otherwise, it may risk locking in less sustainable production pathways and disincentivise European industrial decarbonisation.

Support for capacity building and training

A major barrier to effective green public procurement is the limited capacity and expertise of procurement offices, especially at local and regional levels where resources are often constrained. Strengthening training, guidance, and knowledge-sharing on Green Public Procurement standards can improve implementation and foster collaboration among buyers across the EU. Existing EU initiatives, such as the [Big Buyers programme](#) and the [Public Buyers Community Platform](#), should be further reinforced to build a more skilled, connected procurement community.

Conclusions

The transformation of Europe's industrial base toward climate neutrality will require more than technological solutions. While FOAK projects such as Brevik CCS and Yara Sluiskil demonstrate that decarbonised production is technically feasible, their long-term viability depends on clear and predictable demand. Without robust policy measures to create lead markets, these projects risk remaining isolated examples rather than catalysts for systemic change.

The IAA represents a key opportunity to address market failures and align Europe's climate ambition with industrial competitiveness. Harmonised EU standards, transparent certification systems, and targeted financial instruments will provide an enabling framework that ensures credibility, consumer trust and market awareness. Simultaneously, reformed public procurement and binding downstream obligations can create predictable demand for low-carbon products.

If these measures are pursued together, Europe can deliver its climate targets, while also positioning its industry at the forefront of global markets for clean materials. The transition from pioneers to lead markets is therefore not only a climate imperative but also part of an economic strategy: it will strengthen resilience, attract investment, and allow the EU to set the benchmark for sustainable, competitive industrial value chains worldwide.



Zero Emissions Platform (ZEP) is the official advisor to the EU on industrial carbon management. We provide technical work and policy advice that builds on a broad and diverse member base across the carbon management value chain.

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