

POLICY BRIEFING

EEB views on the Critical Chemicals Alliance

Protecting incumbent production is not a competitiveness strategy

Executive summary

The European Union is facing a genuine strategic challenge: it is lagging behind global competitors amid insufficient investment, a widening innovation gap and persistently high energy prices. At the same time, much of Europe's chemical infrastructure is ageing and structurally dependent on energy-intensive processes and fossil feedstocks. Europe's steam crackers, for example, are on average around 47 years old, some founded one or two centuries ago. This makes the need for investment in industrial renewal and transition all the more urgent. The Critical Chemicals Alliance (CCA) is therefore right to address resilience and competitiveness.

The strategic question is how to channel investment towards a more competitive, resilient and future-proof chemicals industry. However, **the CCA is currently addressing these challenges in the wrong way**. Rather than starting from which societal functions Europe genuinely needs to secure and how to provide them safely and competitively in a transformed economy, its approach largely starts from existing production, supply dependencies and industrial importance.

This risks turning **industrial vulnerability into a justification for protecting incumbent production**, including hazardous, fossil-dependent, energy-intensive or otherwise unsustainable chemicals.

A further concern is how the methodology defines vulnerability. Factors such as high energy intensity, high CO₂ emissions and exposure to regulatory "constraints" can increase a chemical's assessed vulnerability and therefore contribute to its criticality. This creates a circular logic: production models that are particularly energy-intensive, carbon-intensive or exposed to EU health and environmental regulation can appear more "critical" precisely because they are less adapted to Europe's transition objectives. The framework risks turning the costs of transitioning an outdated production model into an argument for protecting that model.

The CCA should therefore not become a mechanism to:

- designate chemicals as critical simply because Europe currently depends on them;
- protect production that EU policy is simultaneously seeking to restrict, substitute or phase out;
- weaken health, environmental or climate safeguards in the name of competitiveness;
- subsidise energy-, carbon-, resource- or pollution-intensive production;
- or provide preferential treatment without clear transformation requirements towards zero pollution.

There is also a serious **governance and legitimacy problem**. NGOs were excluded from the CCA decision-making body from the outset, despite its recommendations potentially affecting chemicals regulation, public spending, environmental protection and public health. This creates a structural imbalance between industry interests and the public interest.

Our core recommendation

Protect essential societal functions, not incumbent production.

Criticality should be determined through a sequential approach:

1. **What essential societal function needs to be secured?**
2. **Can it be delivered through safer, more sustainable or non-chemical alternatives?**
3. **Is the chemical or production pathway compatible with EU health, environmental, climate and circular-economy objectives?**
4. **Is there a genuine resilience or supply-security risk?**
5. **If European capacity is genuinely needed, what transformation is required?**
6. **Only then should public support be considered — and only conditional on measurable transformation.**

1. The economic strategy of the report and recommendations is backwards.

Europe is unlikely to regain competitiveness by trying to preserve low-cost, energy- and resource-intensive and fossil-feedstock dependent, basic chemical production that other regions can produce more cheaply.

Europe's stronger competitive opportunity lies in:

- innovation;
- safer, cleaner and more sustainable chemistry (deeply transformative process techniques);
- circular production;
- resource efficiency;
- electrification and renewable energy;
- non-fossil feedstocks;
- advanced materials and higher-value production;
- substitution technologies; and
- innovative solutions that reduce chemical and material dependence.

Competitiveness should be built around Europe's future strengths, not around preserving yesterday's production model based on abundant and cheap petrochemicals and fossil fuels. Without such an investment today, Europe's industry will be increasingly at risk.

2. The fundamental problem: dependency is not criticality

The CCA methodology places substantial weight on **supply dependency and value-chain relevance**. These are legitimate considerations, but they do not answer the more fundamental question: **What does Europe actually need to secure?**

A chemical may be economically important because it is widely used, because Europe has lost production capacity, or because downstream industries depend on it. But this does not automatically mean that Europe should maintain production of that chemical.

A dependency can reflect historical investment, lack of substitution, excessive use of a chemical, or simply the fact that downstream products have been designed around an incumbent substance.

Dependency is not the same as criticality, and criticality is not the same as societal necessity.

This distinction matters because a critical designation can subsequently justify preferential treatment, public funding, trade measures, energy support or faster permitting:

Existing production → industrial importance → criticality → protection → continued dependency.

That is not resilience. It is **dependency preservation**.

3. The methodology risks turning transition vulnerability into criticality

The CCA methodology does not only assess dependency and value-chain relevance. It also incorporates factors that influence the vulnerability of European production. This creates a particular concern where energy intensity, CO₂ emissions and regulatory “constraints” contribute to the assessment of vulnerability.

In practice, the logic risks becoming:

Higher energy intensity → higher exposure to energy costs

Higher CO₂ emissions → higher exposure to carbon costs and decarbonisation requirements

Higher regulatory ‘constraints’ → higher exposure to EU regulatory requirements

Higher exposure → greater vulnerability

Greater vulnerability → stronger case for criticality and policy support.

This is problematic because these characteristics are not necessarily evidence that a chemical is strategically critical. They can instead be symptoms of an ageing, carbon-intensive or environmentally problematic production model that Europe needs to transform.

A production process does not become more societally necessary because it consumes more energy, emits more CO₂ or faces stronger environmental regulation. On the contrary, regulatory pressure reflects the need to reduce, transform or phase out production processes that are environmentally or socially harmful.

Yet under the current logic, the very features that make some incumbent production models increasingly uncompetitive or incompatible with Europe's climate and environmental objectives can contribute to making them appear more vulnerable, and therefore more deserving of protection.

This creates a potentially self-reinforcing cycle:

Existing production → high energy/carbon/regulatory exposure → high vulnerability → critical designation → policy support → continued existing production.

The result is the opposite of transformation. Rather than identifying where Europe needs to invest in a different industrial model, the methodology can favour the preservation of production precisely where the transition challenge is greatest.

This distinction is particularly important for chemicals whose production is structurally energy-intensive or fossil-dependent. High energy consumption is a genuine competitiveness challenge. But the policy response should be to address the underlying structural disadvantage through efficiency, electrification, renewable energy, alternative processes, circularity and feedstock substitution — not to treat the resulting vulnerability as evidence that the existing production must be protected.

The same applies to regulatory “constraints”. Environmental, health and chemicals legislation is not an arbitrary burden that should automatically be treated as a source of vulnerability. Regulation reflects societal choices to prevent pollution, reduce hazardous exposures, protect workers and consumers, and accelerate substitution towards safer technologies.

If compliance with those objectives increases the assessed vulnerability of a chemical, the methodology creates a perverse incentive: **the more problematic a production model is from a health, climate or environmental perspective, the stronger the case for protecting it.**

This is particularly concerning where EU policy is simultaneously seeking to decarbonise, detoxify or phase out a production pathway. The CCA should not convert the economic consequences of that transition into an argument for maintaining the incumbent.

Vulnerability should therefore be treated as a signal of where transformation may be needed, not as a proxy for societal criticality.

The methodology should distinguish clearly between:

- societal importance;
- supply and resilience risks;
- structural competitiveness challenges; and
- transition or regulatory exposure.

The appropriate policy question is therefore not simply “How vulnerable is existing production?” but:

“Is there a genuine societal need that Europe must secure, and what is the most resilient, sustainable and competitive way of providing it?”

Where vulnerability results from an outdated or unsustainable production model, criticality should trigger a transformation pathway rather than automatic protection.

4. Criticality lacks a health, environmental and policy-coherence safeguard

The problem is compounded by the fact that the methodology does not use hazard, pollution, climate, resource use or sustainability as effective exclusion criteria.

This means that the same production characteristics that can contribute to vulnerability are not subsequently screened out on the basis of their incompatibility with EU health, environmental and climate objectives.

This is particularly problematic for chemicals associated with:

- carcinogenicity, mutagenicity or reproductive toxicity;
- endocrine disruption;
- PFAS and other highly persistent substances;
- significant pollution;
- fossil-feedstock dependence;
- high energy use and greenhouse-gas emissions.

A chemical cannot simultaneously be a priority for phase-out and a priority for continued production support.

The CCA should therefore introduce a **Policy Coherence Test** for every molecule and site:

Is EU policy already seeking to restrict, substitute, phase out or substantially reduce this chemical, technology or production pathway?

If yes, critical designation must not undermine that objective.

5. The recommendations risk locking in an outdated industrial model

The CCA recommendations could collectively make existing production cheaper and more secure without necessarily making it cleaner or more competitive in the long term. They include:

- energy-cost support;
- continued free ETS allowances beyond 2038;
- trade protection;
- “Buy European” approaches;
- public funding;
- fast-track permitting; and
- measures addressing energy, CO₂ and regulatory costs.

If public policy reduces the cost and risk of maintaining existing production without requiring fundamental transformation, it can **lock in incumbent technologies and business models**.

Environmental, climate and chemicals regulation is not simply a cost imposed on industry. It drives safer chemistry, pollution prevention, substitution, innovation and resource efficiency. Treating regulatory compliance and carbon costs primarily as competitive disadvantages risks undermining precisely the transformation Europe needs.

There is also a striking **built-in lock-in in the CCA methodology**: once a molecule or site is designated as critical, its status is intended to remain fixed for eight years. This can apply even if safer alternatives emerge, technologies evolve, demand changes or EU policy objectives shift.

That is inconsistent with the CCA's stated ambition to promote innovation and modernisation.

If safer alternatives emerge, the framework should reward their uptake — not continue protecting the production it was designed around.

6. Critical molecule does not automatically mean critical site

The CCA assumes that if a molecule is critical, existing European sites producing it should also receive critical status.

This does not follow.

A site may be inefficient, highly polluting, technologically obsolete or incompatible with long-term EU environmental objectives, while another production route or site could provide the same function more safely.

Criticality should therefore be assessed separately at molecule, production-pathway and site level.

A critical-molecule designation must not automatically justify protecting every existing producer.

7. Examples illustrate the problem

PFAS / fluorinated production

PFAS chemicals and precursors such as PTFE and hydrofluoric acid considered as critical provide the clearest example of the policy-incoherence problem. Europe is moving towards a comprehensive PFAS restriction because of their persistence, widespread contamination and difficult-to-reverse health and environmental impacts. Yet fluorinated chemicals and related production can also be identified as critical because of industrial dependency.

The answer cannot be to preserve all existing PFAS production.

The assessment should distinguish between:

- genuinely essential societal functions;
- applications where safer alternatives exist;
- applications requiring a transition period; and
- production that should ultimately be phased out.

Criticality should support managed transition, not prolonged exemptions from transition.

Petrochemicals

A large number of petrochemicals, including benzene, toluene and xylene, are identified as critical largely on the basis of **value-chain centrality**. As one CCA member, Petrochemicals Europe, puts it, “petrochemicals are contained in 95% of all manufactured goods” and are therefore considered central, hence critical.

But **being widely used is not the same as being societally essential**. Their extensive integration reflects decades of industrial lock-in; it does not make continued production inherently desirable or indispensable.

These chemicals also raise significant health concerns, including carcinogenic and reproductive toxicity, as well as substantial climate impacts associated with fossil feedstocks and production.

The relevant question is therefore not simply how many value chains depend on them, but **which functions genuinely need them, whether demand can be reduced or safer alternatives used, and how production can be transformed away from fossil dependence.**

PVC

PVC is the clearest example of how the CCA methodology has been shaped around incumbent interests. PVC initially failed to qualify as critical under the agreed methodology. Following complaints from the PVC industry (VinylPlus) about this material not passing the criteria, the methodology was adapted to introduce a fast-track route. PVC was subsequently the only chemical/material on the critical chemicals list to qualify through this new fast track.

This raises a fundamental concern about the integrity of the exercise. If a product fails the agreed criticality test and the response is to create a new route through which it can qualify, the methodology is no longer simply identifying what is critical, it is being adjusted to accommodate incumbent products.

PVC is also a textbook example of the policy incoherence the CCA must avoid. The EU has recognised the environmental and health problems associated with PVC for decades: the Commission's 2000 Green Paper already identified serious concerns, including the extremely poor recyclability, yet meaningful regulatory action has remained limited. In 2022, PVC and its additives were again identified in the EU Restrictions Roadmap as candidates for regulatory action. ECHA's subsequent investigation confirmed significant risks from PVC and its additives and recognised the availability of alternatives across the uses assessed.

Against this background, designating PVC-related production as "critical" risks turning decades of recognised regulatory failure into a justification for continued production. The appropriate response to any genuine societal need is to identify essential uses, accelerate safer substitution and manage the transition, not to protect incumbent PVC production.

8. Public support should buy transformation

If criticality is used to justify public support, the central question should be: **What transformation does Europe receive in return?**

Support should be conditional on measurable progress towards:

- decarbonisation consistent with achieving the climate neutrality goal;
- detoxification;
- pollution prevention;
- circularity, including resource efficiency;
- reduced fossil-feedstock dependence;
- alignment with EU chemicals, climate, environmental and human health objectives.

This should apply across state aid, energy support, ETS revenues, EU funding, procurement and trade measures.

Public money should accelerate transformation, not subsidise the status quo.

Similarly, faster permitting must not mean weaker environmental or social safeguards, undermining Best Available Techniques performance requirements, control of major accidents hazards (Seveso) rules, environmental assessment or substitution requirements.

9. Governance: a serious legitimacy problem

NGOs were excluded from the CCA decision-making body from the outset, despite its recommendations affecting public health, environmental and climate protection, chemicals regulation, public spending, permitting and industrial policy.

At the same time, industry interests are structurally represented despite their obvious vested interests.

This creates an imbalance not only of interests but also of expertise. Consultation after the methodology and recommendations have been developed is not equivalent to meaningful participation in shaping them.

This is particularly concerning because many proposed solutions (trade protection, financial support, energy relief, permitting facilitation and regulatory changes) directly benefit the companies whose competitiveness is being assessed.

A body cannot credibly define Europe's strategic industrial interest if those representing health, environmental and societal interests are structurally excluded from its decision-making.

The CCA should therefore ensure there are safeguards to prevent corporate capture such as the avoidance of conflicts of interest and meaningful public-interest participation.

10. A better criticality framework

The CCA should reverse its current sequence:

Existing production → industrial importance → supply vulnerability → criticality → protection

into:

Societal need → alternatives → safeguards → resilience need → transformation → conditional support

1. Start with the societal function

Identify the essential societal function that needs to be secured, drawing on the EU Essential Use Concept.

2. Test alternatives and sustainability

Assess safer chemicals, different materials or technologies, non-chemical solutions and demand reduction.

The existence of safer and sustainable alternatives must be decisive.

The methodology should not treat bio-based production as sustainable by default, nor novelty as a proxy for sustainability or criticality. Bio-based feedstocks do not automatically make a chemical safe, circular or environmentally sustainable. Conversely, established safer technologies should not be disadvantaged simply because they are not “new”. For example, natural refrigerants can provide safer alternatives to some fluorinated gases, yet a methodology favouring “new advanced molecules” overlooks such established solutions.

Sustainability should be assessed through actual health, environmental, climate and circularity performance — not feedstock origin alone or technological novelty.

3. Apply health, environmental and policy-coherence safeguards

Assess hazards, exposure, pollution, climate impacts, fossil dependence, resource use, biodiversity, circularity and end-of-life impacts across the lifecycle.

At the same time, check whether EU policy is already seeking to restrict, substitute, phase out, reduce or decarbonise the chemical or production pathway.

Criticality must not undermine existing EU health, environmental and climate objectives.

4. Assess genuine resilience risks

Only then assess supply concentration, import dependency, geopolitical risks, substitutability, diversification, stockpiling and the minimum European capacity genuinely required.

5. Assess molecules, pathways and sites separately

A critical molecule should not automatically mean critical status for every production route or site.

The assessment should distinguish between the strategic need for a molecule, the sustainability of its production pathway and the specific resilience value of an individual site.

6. Define a transformation pathway

Where European capacity is genuinely needed, establish measurable milestones towards climate neutrality, zero pollution, safer chemistry, circularity, resource efficiency and reduced fossil dependence.

Criticality should therefore be a gateway to transformation — not a shield for incumbent production.

7. Make support conditional

Any preferential treatment or public support must be linked to demonstrable deep transformation, not simply continued production.

No deep transformation, no preferential treatment.

Conclusions

Europe needs a resilient and competitive chemicals industry. But **resilience cannot mean preserving every existing production capacity, and competitiveness cannot mean making unsustainable production cheaper.**

The CCA should distinguish between:

**what Europe needs,
what Europe currently produces,
and what Europe should build for the future.**

Its current approach risks collapsing these three questions into one.

A credible framework would instead use criticality to identify genuine societal needs, accelerate safer alternatives, address real supply vulnerabilities and direct investment towards transformed European capacity.

The key test should be: **Is this production genuinely necessary for an essential societal function, and does protecting it help Europe transition towards a safer, climate-neutral, circular and competitive chemicals industry?**

If not, critical designation should not be used to protect it.

If yes, public support should be used to **transform and future-proof that capacity**, not shield it from regulation.

Three core messages

1. PROTECT ESSENTIAL SOCIETAL FUNCTIONS, NOT INCUMBENT PRODUCTION.
2. DO NOT USE PUBLIC MONEY TO LOCK IN PRODUCTION THAT EU POLICY IS TRYING TO PHASE OUT.
3. USE CRITICALITY AS A GATEWAY TO TRANSFORMATION, NOT A SHIELD AGAINST REGULATION.