



Stakeholder consultation - Industrial Sustainable Carbon Regulation



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Samenvatting

- De ministeries van I&W and EZK hebben een voorstel ontwikkeld voor een Europese Industriële Duurzame Koolstof Verordening. Deze verordening schrijft een minimum aandeel voor van duurzame koolstof in de chemische industrie voor (secundaire grondstoffen, duurzame biograndstoffen en CO₂), die kan worden behaald door rechten onderling te verhandelen.
- Om het voorstel verder te ontwikkelen en stakeholders zo vroeg mogelijk te betrekken, is een bijeenkomst georganiseerd op 27 september 2023 in Utrecht, waarbij vertegenwoordigers van chemische bedrijven, branche-organisaties, beleidsmakers, onderzoekers en een milieuorganisatie aanwezig waren.
- Het voorstel werd in zijn algemeenheid goed ontvangen en stakeholders waren positief dat ze vroeg in het proces hun commentaar konden inbrengen.
- Volgens stakeholders waren belangrijke punten om verder uit te werken:
 - Zorg voor heldere definities in het voorstel. Leg duidelijk uit aan welke voorwaarden recycled, biobased en afgevangen koolstof moeten voldoen om te kunnen bijdragen aan het behalen van de doelstelling.
 - Laat de urgentie van het voorstel zien, ook in relatie tot brandstoffen, die concurreren met material-toepassingen voor duurzame koolstof.
 - Voer een impact-analyse uit om de CO₂-winst en economische effecten van het voorstel te bepalen.
 - Ontwikkel het voorstel in coherentie met ander Europees en nationaal beleid.
 - Neem ook een derde beleidsoptie in beschouwing met een verplichting aan het begin van de waardeketen.
- Stakeholders hadden een aantal zorgen. Veel genoemd zijn risico's op weglekeffecten, gevolgen voor het gelijke speelveld met producenten van buiten de EU, administratieve lasten, beperkte handelstransacties en gebrek aan feedstock om aan de norm te voldoen.
- Een CBAM-achtig mechanisme kan de negatieve gevolgen op het gelijke speelveld verminderen en wordt door veel stakeholders als een essentiële voorwaarde beschouwd.



Summary

- The ministries of Infrastructure and Water Management (I&W) and Economic Affairs & Climate Policy (EZK) have developed a proposal for an Industrial Sustainable Carbon Regulation (ISCR) in the EU. The ISCR obligates a minimum share of sustainable carbon (recycled materials, sustainable biomass or CO₂) in the chemical industry, supported by an administrative market mechanism.
- In order to further develop the proposal and involve stakeholders at an early stage, a stakeholder meeting has been organized on 27 September 2023 in Utrecht, with representatives of chemical companies, industry organizations, policy makers, researchers and a NGO.
- The ISCR was generally well received by the stakeholders and they reacted positive to be consulted early in the process.
- Main suggestions for further development of the proposal, based on CE Delft's evaluation of stakeholder inputs, are:
 - Be very clear on definitions in the proposal. It helps to carefully explain toward which criteria recycled materials, sustainable biomass and CO₂ should adhere to become eligible under the ISCR.
 - Point out the urgency of the ISCR in relation to fuels, which compete for sustainable carbon with materials.
 - Carry out an impact analysis which shows the potential extra CO₂ emission reduction and economic impacts of an ISCR.
 - Develop the proposal in coherence with the overarching policy framework.
 - Consider and evaluate a third policy option with an obligation at the beginning of the value chain.
- Stakeholders have expressed several concerns. Most concerns are related to potential leakages, impacts on level playing field with non-EU producers, the administrative burden, limited trading and lack of feedstock availability.
- A CBAM kind of mechanism can reduce the negative impacts on the level playing field with non-EU producers and is an essential requirement according to many stakeholders.



1 Background and objective

- In order to reduce the climate impacts of the chemical value chain, the ministries of I&W and EZK have developed a proposal for an Industrial Sustainable Carbon Regulation (ISCR) in the EU.
- The ISCR obligates a minimum share of sustainable carbon (recycled materials, sustainable biomass or CO₂) in the chemical industry, supported by an administrative market mechanism.
- The Dutch government aims to put this proposal on the agenda of the new European Commission in 2024.
- In order to further develop the proposal and involve stakeholders at an early stage, a stakeholder meeting has been organized on 27 September 2023 in Utrecht, with representatives of chemical companies, industry organizations, policy makers, researchers and an NGO.
- This document summarizes the main results of this meeting (including written reactions).



2 Industrial Sustainable Carbon Regulation (ISCR)

How does the ISCR work?

- The ISCR obligates a minimum share of sustainable carbon in the chemical industry, supported by a market mechanism. Sustainable carbon is recycled material (mechanical or chemical), sustainable biomass or CO₂.
- The system is based on sustainable carbon units (SCUs; 1 SCU represents X kg of carbon), administrative units to be traded within a carbon register.
- Two types of companies are registered:
 1. Companies adhering to the obligation and producing SCUs.
 2. Companies producing SCUs, not necessarily having to adhere to obligation. These companies can trade with each other.
- A carbon register is developed as a platform for trading system. Participants can determine the most cost-effective way to adhere to their required share of sustainable carbon.

Who has to adhere to the obligation?

Two options:

1. Producers of fossil-based monomers

With this option, producers of fossil-based monomers are obliged to have a number of SCUs on their account equivalent to the minimum share of sustainable carbon. Mechanical recyclers and biobased polymer producers do not fall under this obligation but can register SCUs which can be traded.

2. Producers of basic organic chemicals and derivatives

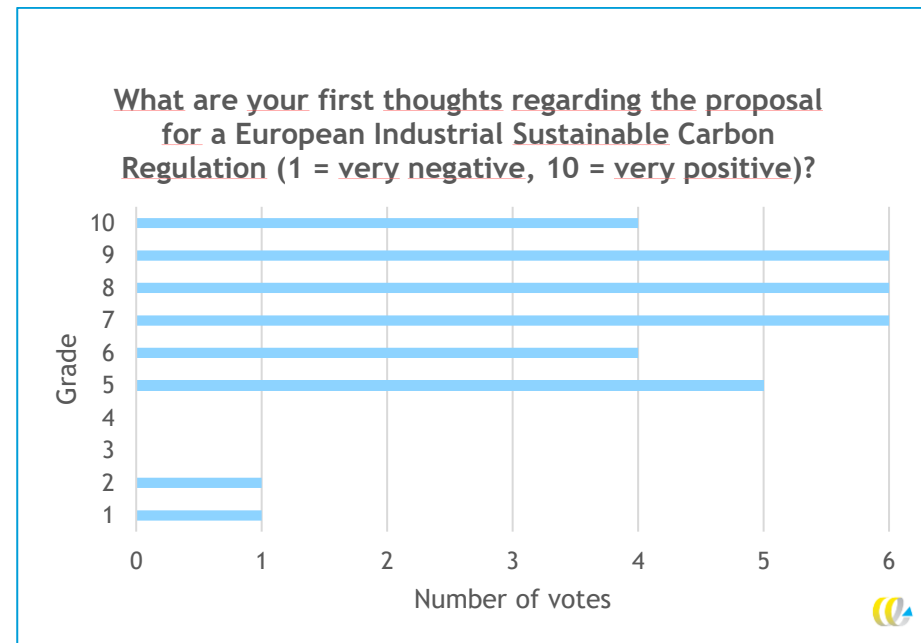
With this option, producers of basic organic chemicals and derivatives (e.g., PE, urea, benzene) are obliged to have a number of SCUs on their account equivalent to the minimum share of sustainable carbon, regardless of their current carbon source. The regulation sets up a framework for the raw materials transition in the chemical sector and requires implementing regulation per basic organic chemical.



3 Results of stakeholder meeting

First impressions

- In total 33 stakeholders were present at the stakeholder consultation, including representatives of chemical companies, industry organizations, policy makers, researchers and an NGOs.
- On average the proposal was quite well received with an average score of 7.2 out of 10. Half of the group stakeholders was very positive on the proposal (8, 9 or 10).
- However, two stakeholders were very negative (1, 2) and some concerns were expressed regarding the operationalization of the norm (presented later in this document).



Main pros and cons of policy options (according to the stakeholders)

Option 1: Producers of monomers

Pros

- Easier to implement than Option 2 (only 78 crackers in EU).
- Less administrative burden.
- Easiest to regulate upstream.

Cons

- Potentially higher risk of carbon leakage (without a good functioning CBAM).

Option 2: Producers of basic organic chemicals and derivatives

Pros

- Broad scope: embeds all products.
- It gives more ownership to the whole value chain, than just the monomers producers.

Cons

- Differentiated policy needed per product group, because multiple product groups are relevant for this policy option.
- Difficult to monitor.
- Administrative intensive.



4 Suggestions for further development of ISCR-proposal based on stakeholder input

Clear definitions

- Important to be very clear on definitions in the proposal. It helps to carefully explain toward which criteria recycled materials, sustainable biomass and CO₂ should adhere to become eligible under the ISCR.
- Be specific which ‘monomers’ (option 1) and ‘basic organic chemicals and derivatives’ (option 2) will be included and illustrate what the market share of these materials is.
- It is helpful to produce a list of products and techniques that are included in the ISCR.

Point out urgency ISCR in relation to fuels

- According to stakeholders, most sustainable carbon is used for fuels, while sustainable carbon is seldomly applied in

chemical products. Identifying how much sustainable carbon is used for respectively fuels and chemical products, will help point out the urgency of an ISCR

- The ISCR should tackle the problem that chemical products cannot compete with fuels, due to the policy framework which incentivizes the usage of sustainable carbon for fuels.
- According to stakeholders it is important to dive deeper in the market composition of sustainable carbon. What is the demand for sustainable carbon?

More research is needed on the proposed policy options and its pros/cons

- Carry out an impact analysis which shows the potential extra CO₂ emission reduction and economic impacts of an ISCR.
- This impact assessment should be carried out for several options.

Develop proposal in coherence with overarching policy framework

- Currently EU-policies focus on different areas:
 - EU climate policies focus on reducing Scope 1-emissions (ETS) and increasing production of renewable energy (RED, EED).
 - EU circular economy policies focus on reducing demand (SUP, PPWR) and reducing waste through



circular design requirements and recycling targets (PPWR, ESPR).

- Also, on a national level policies are implemented that influence sustainable carbon e.g., the plastic norm in the Netherlands.
- An in-depth analysis of European and national policies regarding sustainable carbon should be conducted to develop an ISCR that is in coherence with the policy framework.

Third policy option

- A third policy option was suggested by the participants.
- In this third policy option the obligation is put on the fossil content of (sustainable) carbon products, at the beginning of the value chain (e.g., cracker input), as there are less inputs than outputs, it might make the obligation easier to regulate.
- Some participants stressed that this third policy option should also be considered and evaluated by the ministries.



5 Concerns of stakeholders

CBAM and potential leakages

- Monomers and other basic chemical products are traded on the worldwide market, therefore there may be leakages if the ISCR distorts the competitive position of the European industry. A CBAM kind of instrument is therefore essential for a level playing field.
- To adhere to the ISCR, the price of a sustainable carbon unit should be equal or lower than the CBAM-adjusted prices, otherwise there is an incentive for companies to import products (e.g. monomers) outside of Europe.
- Presently, most of the chemical industry is not covered by CBAM to mitigate competitive impacts of EU ETS.
- Furthermore, a CBAM kind of mechanism does not address the issue of export competitiveness. Therefore, CBAM does not provide a solution for all potential leakages.

Availability of feedstock (competition with transport market)

- In the Netherlands the use of sustainable carbon in the mobility market is promoted through HBE's. Therefore, a lot of the sustainable carbon in the Netherlands is used as fuels in the transport market.

- There should be enough feedstock available to meet the obligation in the ISCR. Availability can also be stimulated by supporting policies to increase supply of waste plastics and biobased and captured carbon.

Competition for feedstock and price effects

- The feedstock of sustainable carbon is scarce. Meanwhile policies are implemented to stimulate the use of sustainable carbon in the mobility market and chemical industrial sector.
- This will (possibly) result in market power at the supply side of sustainable carbon, which leads to higher sustainable carbon prices.
- The ministries should be aware of these price effects, whereas price increases can hamper the sale of sustainable carbon (end-)products.

Risks of a bilateral market and limited trading

- It can be expected that much of the market will be dominated by bilateral contracts between companies. These bilateral contracts may be long-term, whereas:



1. Buyers will seek to hedge price and volume risks by long-term contracts.
 2. Suppliers also benefit financially from avoiding inventory surpluses and will look to secure the sale of their premium products through long-term contracts.
- As a result, the scope for certificate trading between buyers will be modest in the early years and is expected to be limited to providing flexibility when (market) conditions change unexpectedly.
 - Long-term bilateral contracts could impede the exchange of SCUs and the desired market mechanism.

Administrative burden

- If the ISCR is implemented, this will also incur administrative tasks. This will increase the administrative burden for the European industry. Governments should be aware of this burden, and try to minimize the administrative activities for the companies.
- The ISCR can incur administrative tasks for the industry in various ways. An example of this is the application of a LCA to target the right product groups. The application of a LCA will lead to a higher administrative burden. LCA-requirements are complex and can differ in their methodology.



6 Other remarks/questions of stakeholders

Integration of regulation in REDIII to acquire support

- It may be helpful to define the ISCR as a part of the REDIII.
- Member States, but also international companies, are often reluctant to embrace new and unfamiliar policies.
- Connecting the ISCR with something that is familiar, e.g. the REDIII, may increase the support for the proposal.
- However, also some risks were noted: the needs of the material and energy segments differ in many aspects, so specific considerations are needed to separate carbon used for energy applications (RED) and for material applications.

SCU methodology

- Stakeholders stress that the instrument could make the market less transparent: How desirable is it that a fossil steam cracker is being offset by mechanical recyclers SCU's (ref. public discussion around Schiphol buying farms

for its NO₂ permit)? The carbon register needs to compare apples to apples (not apples to oranges), stimulating early transition yet ensuring that the bulk of the industry transforms.

- Target setting for minimum % should be in line with availability of SCUs. Target setting needs to be consistent with targets further up in the value chain such as PPWR. More research should be performed about the SCU-mechanism.

Intermediate/dual-use goods

- The design and elaboration of the ISCR should pay attention to intermediate or so-called dual-use products.
- These are product that have both fuel and material applications. This is determined further down the value chain.
- Think, for example, of methanol that can be used in applications such as Sustainable Aviation Fuels or fuel for shipping, but can also be converted into olefins for plastics. Products could therefore change the regulatory regime under which they fall and the (compliance) requirements that accompany them.
- Extra attention should be put on these dual-use good and their embeddedness in the ISCR.



Pooled of differentiated targets?

- Stakeholders stress that it is important that the ISCR is technology agnostic and keeps enough degrees of freedom for industry to meet objectives.
- With pooled targets, the ISCR will stimulate the lowest-cost option. Hence, additional subsidies are needed to mature and scale up new and potential more expensive technologies.
- Pooled targets are now included in the proposal. If differentiated targets for CCU, recycling and biobased are considered, there is less flexibility for the industry. However, the differentiated targets incentivize all three routes, which can help to mature and scale up new technologies (such as CCU or chemical recycling).

Secure demand for sustainable carbon products

- It would be helpful to analyze how much consumers are willing to pay for sustainable carbon products relative to fossil carbon products. If there is a big difference between these product groups, it may be necessary to develop additional policies to stimulate the demand side of sustainable carbon products.
- The ISCR is implemented in the middle (monomers or organic chemicals and derivatives) of the value chain. These policies mainly focus on the supply side of sustainable carbon products. For the companies that

produce sustainable carbon and its derivative products, it is important that there is sufficient demand.

Considerations on a Regulation or Directive

- In a Regulation it is pre-defined how the ISCR should be operationalized in the Member States:
 - this will result in a uniform policy framework for the industry, which is considered important by the industry;
 - helps to retain the level-playing field in Europe.
- Through a Directive, Member States could decide how to operationalize the ISCR:
 - With this freedom, the Member States could look for the most-efficient policy option for their situation. Potentially leading to a more efficient outcome.

Indirect incentive

- In contrast with HBEs (where the supplier of renewable energy is directly stimulated), the SCU is implemented at an intermediate step in the value chain. Therefore, the advantages of the SCU have to be shared with the whole value chain. If this does not happen, it could reduce the impetus to invest in sustainable carbon technologies.
- Case of recycling: A waste collector collect and sorts waste streams but does not produce monomer or polymers out of this waste. Does a SCU on polymers/monomers puts enough incentive on waste collectors to collect waste correctly? Or are additional c.q. more direct incentives



needed to establish a complete and effective sustainable carbon value chain?

Other questions c.q. remarks made by stakeholders

- Learn from lessons from the past (RED, jaarverplichting)
- How to decide the scope of the policy options?
 - Focus on products that incur the biggest environmental fruits (80/20 rule)
 - What is scope of LCA? CO₂ reduction or broad environmental impacts?
- Current use of biobased carbon, which might not fully meet the criteria of ISCR, should not be penalized by criteria for sustainability. There should be an exemption for this product group in ISCR
- Avoid double counting in trading mechanism.
- Should RFNBOs be also considered within ISCR?
- The midstream focus of the proposal (putting an obligation on either producers of monomers or polymers and chemicals) is complementary to obligations/norms planned for the end-markets (e.g. packaging and automotive on EU-level).
- Include or exclude organic recycling as the third option (besides chemical and mechanical recycling)? Organic recycling does not get the carbon back, but biobased, compostable products could be an alternative for fossil-based products as well, in specific product markets. Organic recycling also contributes to the circular economy and helps achieving climate goals, as compost is used and incorporated in soil, bringing benefits for better soil structure, carbon storage, as well as helping the problem of soil erosion.
- What is the scope of the SCUs? Is it possible for a producer of biobased polymers in Brazil to also trade in and acquire SCUs? How does this influence the level-playing field?
- Could the norm also be put later in the value chain? Why is this option not considered? Whereas this would not warrant a CBAM.
- Policies are existent for some carbon recycling technologies, whilst not for others. For example, a recycler has a market for his product guaranteed by PPWR and on top of that gets remunerated by each ton it recycles whereas bio-based producers do not have that double incentive.
- The identified alternatives for fossil carbon are recycled carbon, sustainable biomass carbon and CO₂. The drawback of the recycled carbon is that the original carbon source still can be fossil carbon. A distinction between fossil and non-fossil carbon could be considered. In order to facilitate the transition, subsidies for some (or all) fossil fuels could be phased out. This could even go together with taxes on specific virgin fossil carbon intermediates or products.
- Regulation enforces the sustainability criteria for biomass from the REDIII. But which criteria are set for the original materials that are converted into: ‘recycled materials’?



- If those original materials are not sustainably produced we are indirectly keep promoting the production of them, which would be a negative side-effect.
- The ambitions within the ISCR can only materialize if the accessibility and availability of raw material is improved and is competitive for the industry, and if waste collection and sorting for all sources is improved to enable innovative recycling solutions.
 - There is no consideration of quality so in theory a company could produce very poor quality PCR and still be remunerated for recycling in the same way.
 - Focusing the trading system to few and homogeneous companies subject to the same obligation will inevitably lead to lack of liquidity in the market, which would lead to increasing compliance costs with no environmental benefits.
 - According one stakeholder, the denomination of SCU's is loosely and broadly tied to the emissions measurement. A lack of direct, clear relation between LCA and tons of feedstock would make SCUs problematic to serve the purposes of the regulation.
 - Based on previous experience with RED at EU level, we would advise a separate complementary regulation using the applicable approaches of RED where needed. Moreover, the needs of material and energy segments differ in many aspects, so specific considerations are needed to separate carbon used for energy applications (RED) and for material applications.
- In addition to standardization and subsidies, there is attention for border adjustment systems, IPCEIs, carbon trackers and the certification of sustainable carbons.
 - A wide variety of bio feed (1st and 2nd gen, as well as UCO, etc.), provided it is produced sustainably without negative environmental impacts, should be eligible for the ISCR. If REDIII criteria are more restrictive this should be addressed according to the stakeholders. This would reduce costs for the industry and increase availability of feedstock.



7 Conclusions

- The ISCR was generally well received by the stakeholders and they reacted positive to be consulted early in the process
- Main suggestions for further development of the proposal, based on CE Delft’s evaluation of stakeholder inputs, are:
 - be very clear on definitions in the proposal. It helps to carefully explain toward which criteria recycled materials, sustainable biomass and captured CO₂ should adhere to become eligible under the ISCR;
 - point out the urgency of the ISCR in relation to fuels, which compete for sustainable carbon with materials;
 - carry out an impact analysis which shows the potential extra CO₂ emission reduction and economic impacts of an ISCR;
 - develop the proposal in coherence with the overarching policy framework;
 - consider and evaluate a third policy option with an obligation at the beginning of the value chain.
- Some stakeholders mentioned that it may be helpful to define the ISCR as a part of the REDIII (familiar policy), although others identified risks as the needs of the material and energy segments differ in many aspects. This suggestion has therefore both advantages and disadvantages.
- Stakeholders have expressed several concerns. Most important concerns are potential leakages and impacts on level playing field with non EU producers, limited trading, the administrative burden and lack of feedstock availability.
- A CBAM kind of mechanism can reduce the negative impacts on the level playing field with non EU producers and is an essential requirement according to many stakeholders.



Colophon

Delft, CE Delft, October 2023

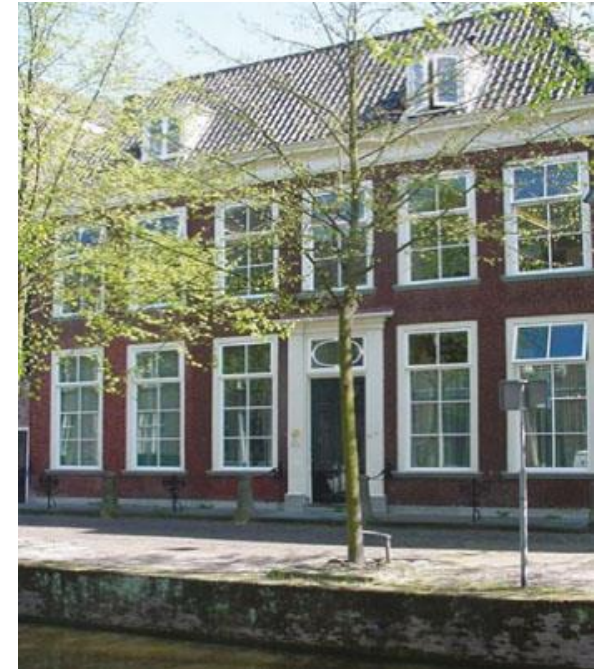
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