

'Fit for 55' package: Carbon border adjustment mechanism

Impact assessment SWD(2021) 643, SWD(2021) 644 (summary) accompanying a Commission proposal for a regulation of the European Parliament and of the Council establishing a carbon border adjustment mechanism (COM(2021) 564)

This briefing provides an initial analysis of the strengths and weaknesses of the European Commission's [impact assessment](#) (IA) accompanying the above proposal, submitted on 14 July 2021 and referred to the Committee on the Environment, Public Health and Food Safety (ENVI).

This initiative is part of the 'Fit for 55' package, implementing the 2019 [European Green Deal](#) which increased the EU's ambition to reduce greenhouse gas (GHG) emissions by at least 55 % compared to the level of 1990 by 2030 (IA, p. 3). As long as most international partners have less ambitious climate goals than the EU, there is a risk of carbon leakage; this occurs, as the IA puts it, 'if [...] businesses [...] transfer production to other countries with less stringent emissions constraints or imports from these countries would replace equivalent but less GHG intensive products' (IA, p. 4).¹ In such cases, non-EU emissions would increase, jeopardising achievement of the goals set by the Paris climate agreement despite strong EU climate efforts. Currently, the risk of carbon leakage is addressed by the EU's Emissions Trading System (ETS), which grants free emission allowances² to industrial sectors most at risk of carbon leakage; electricity producers, who are also covered by the ETS, buy emission allowances and can obtain compensation under EU State aid rules.³

The proposal for a carbon border adjustment mechanism (CBAM) is meant to complement these ETS arrangements – currently under [revision](#) and being assessed in a parallel [IA](#) ('ETS revision IA')⁴ – and to replace them when free allowances are entirely phased out in the sectors concerned (IA, pp. 12-13). Since the CBAM applies to imports from third countries, it needs to comply with World Trade Organization (WTO) rules and the EU's other international obligations such as free trade agreements.

The European Council of July 2020 invited the Commission to present a proposal for a CBAM in 2021, in view of the repayment of Next Generation EU funds. This was confirmed in the [roadmap](#) towards the introduction of new own resources for the EU, agreed by the European Parliament, the Council and the Commission in December 2020. However, the use of CBAM revenue is not covered by this initiative, which focuses on setting up a CBAM and is part of the 2021 Commission work programme and Joint Declaration on Legislative Priorities.

Problem definition

The IA defines the problem to be addressed as the **increasing global carbon emissions owing to carbon leakage**, caused either by relocating production or by replacing EU production by imports (IA, pp. 6-7). It considers three 'interconnected' **problem drivers**: 1) the different levels of climate achievements around the world; 2) the increased EU climate goals for 2030 (55 % reduction in GHG emissions by 2030); and 3) the current review of existing ETS carbon leakage protection mechanisms (free emission allowances and compensation for energy-intensive industries in compliance with State aid rules, IA, pp. 10-11).

The IA highlights that, despite the ongoing gradual reduction of free allowances, as much as 43 % of allowances are still allocated for free to the industrial sectors covered by the ETS (IA, pp. 9, 12). It notes advantages and disadvantages to this system, citing on the one hand the European Court of Auditors' [special report](#), which requested better targeting of free allocations, while observing on the other hand that the allocation of free allowances has addressed carbon leakage effectively so far, not only in the EU, but also in all other major emissions trading systems (California, Quebec, New Zealand and the Republic of Korea, IA, p. 9). However, the increased ambition of the European Green Deal is seen as a game-changer, and is expected to trigger growing carbon cost differences with trading partners under the **baseline scenario (status quo)**, thus increasing the need to ensure that 'the price of imports reflects more accurately their carbon content' (IA, pp. 4-5, 11). This is supported by the fact that the current nationally determined contributions of the EU's international partners 'will not [...] achieve the Paris agreement'.

Furthermore, the IA states, based on the ETS revision IA, that the increased ambition to reduce GHG emissions by 55 % by 2030 implies lowering the ETS cap ('fewer allowances may be available for free allocation') and a rising carbon price. This would weaken the current protection against carbon leakage, especially in emissions-intensive and trade-exposed EU sectors that could transfer their production to countries with 'laxer emission constraints' (IA, pp. 7-8, 11-12). The IA notes that the ETS revision IA also found decarbonisation progressed faster in the power sector (where emissions allowances are auctioned) than the relevant industrial sectors (where the vast majority of allowances are allocated for free, IA, p. 9). It concludes that giving allowances for free limits the incentives for industry to reduce embedded emissions,⁵ which hampers emission reduction in the EU.

The problem definition is concise to the point that it would have benefited from additional substantiation and explanation of certain elements, particularly in relation to the **scope** of the problem (by providing, for instance, information on the size of imported emissions in the EU).⁶ To start with, the IA is transparent about uncertainties regarding evidence for the existence of carbon leakage, noting that, depending on whether the approach taken is ex-ante or ex-post, findings differ significantly (IA, pp. 7-8 and Annex 11).⁷ It interprets the partly inconclusive evidence as being due to the less stringent climate policies before the Green Deal and to the generally successful current measures, which have limited carbon leakage so far (IA, pp. 6-8). Moreover, it substantiates the problem by drawing on OECD sources and stakeholder feedback (IA, p. 12).

According to the IA, 724 million free allowances were granted in 2020, but without being put into context the meaning of this number remains unclear (IA, p. 11). Only in the section on the options does the IA mention (but without using specified sources) that 'Commission research estimates that the CBAM would concern in its first phase 1 000 traders realising 239 000 import transactions on an annual basis from 510 production sites outside the EU' (IA, p. 28). It also reports that the selected CBAM sectors accounted for about 55 % of all industrial EU emissions and nearly 40 % of all CO₂ emissions in 2020, with iron and steel emitting most direct emissions, while aluminium generates more indirect emissions (IA, p. 43).

Generally, the relevance of free allowances and their effect on the ETS price could have been better explained, especially for non-expert readers; the same is true for the specificities of the electricity sector.⁸ The IA identifies industry, public administrations, EU citizens and least developed countries (LDCs) as key stakeholders affected by the initiative, but does not specifically analyse how these groups are affected by the problem (Annex 3, p. 18). Neither does the IA analyse national, regional or local variations of the problem mentioned in the [Subsidiarity Grid](#) accompanying the proposal.

Subsidiarity/proportionality

The IA refers to Article 192(1) and (2) of the Treaty on the Functioning of the EU, which allows for measures to protect the environment and combat climate change, including the 'polluter-pays' principle, and to Article 113 on the functioning of the internal market (IA, p. 13).⁹ It identifies the problems as clearly 'transboundary' and in need of EU legislation to complement the existing ETS, and to limit new administrative burdens (IA, p. 14).

In addition, the IA sees clear added value in addressing the discrepancies of carbon prices with third countries at EU level, pointing to the exclusive EU competence in external trade. These arguments are further developed in the Subsidiarity Grid, which states that individual national actions would be counter-productive and 'incentivise ... trade diversion'. While it pledges to keep the CBAM as manageable and proportionate as possible, by only covering sectors where emissions and the risk of carbon leakage are the highest, the IA does not specifically address proportionality as such.

No reasoned opinions were submitted by the subsidiarity deadline for national parliaments on 8 November 2021.

Objectives of the initiative

According to the IA, the **general objective** of the initiative is to fight climate change by reducing GHG emissions in the EU and globally (IA, p. 14). This is to be achieved via **five specific objectives**:

- addressing the risk of carbon leakage under increased EU climate ambitions to ensure that EU climate policies can be fully effective without increasing emissions abroad;
- contributing to the provision of a stable and secure policy framework for investments in low or zero carbon technologies;
- ensuring that domestic production and imports are subject to a similar level of carbon pricing;
- incentivising producers in third countries who export to the EU to adopt low carbon technologies;
- minimising the risk of the measure being circumvented, thus providing environmental integrity.

Contrary to the requirements of the [Better Regulation Guidelines](#), the IA does not provide clear deliverables in the form of operational objectives. The specific objectives derive from the problem definition, but remain rather broad, and it appears that the S.M.A.R.T. criteria of the Better Regulation Guidelines, according to which objectives should be specific, measurable, achievable, relevant and time-bound, are not fully met. Notably, the section in the IA presenting the monitoring and evaluation indicators refers to a different set of five objectives, omitting some of the above objectives but adding 'ensure consistency with EU policies' and 'limit administrative burden' (IA, p. 89). This could create confusion about the precise, distinct objectives of the initiative and how they will be measured.

Range of options considered

The IA describes the complex **baseline scenario** as a 'dynamic' framework between the existing climate legislation (40 % reduction in GHG emissions) and the European Green Deal (55 % reduction in GHG emissions), currently being incorporated in the revision of existing legislation (IA, pp. 15-16). For the former, it refers to the [EU Reference Scenario 2020](#) as depicted in the IA for the revision of the ETS; for the latter, it uses the MIX scenario.¹⁰ In addition, the IA uses a variant of the MIX scenario, assuming full auctioning of allowances, to compare the impact of the options to a system with fewer or no free allocations of allowances (discussed in the ETS revision IA) (IA, pp. 43, 45-46).

Before screening the policy options to tackle the problem, the IA discusses **11 horizontal 'design elements'** common to all options (IA, pp. 17-30). They relate to: 1) the **scope** of emissions to be covered (like in the ETS: CO₂, where relevant, nitrous oxide (N₂O) and perfluorocarbons (PFCs); direct emissions of installations and of electricity production; related indirect emissions excluded in the first phase);¹¹ 2) measuring of **carbon content** (actual and/or default values, based on existing ETS mechanisms); 3) the **sectors** to be covered (selected from 63 sectors based on ETS coverage, relevant trade flows and the most significant risk of carbon leakage, with a focus on basic material and basic material products: cement, iron and steel, aluminium, fertilisers, and electricity generation);¹² 4) **future-proofing** the CBAM (gradual coverage of more sectors, including downstream products at a later stage); 5) the **reference carbon price** (ETS alignment); 6) taking into

account **carbon pricing in third countries**¹³ (at the level of countries or transactions); 7) CBAM and **free allowances** (direct replacement or phasing in/phasing out, with no co-existence in the long run); 8) a **reconciliation** procedure for importers if default values are used); 9) the **institutional design** (centralised or decentralised); 10) **resource shuffling** (allocation of less emission-intensive materials towards markets with higher carbon costs, incentivising non-EU producers to redirect carbon-intensive products to non-EU markets, using three main mechanisms); 11) the treatment of **least developed countries** (targeted assistance instead of preferential treatment/exemption).

Some of these elements are discussed in detail (in terms of scope, sectoral coverage, administrative design, and interlinkages with the ETS system), while others are addressed (very) briefly.

A number of the choices made by the IA at this stage (as indicated in brackets above) are explained by referring to some of their potential impacts and providing data on the volume of industrial imports and exports. Similar information would have been welcome for the electricity sector – according to the IA, the most important sector covered by the ETS in terms of direct carbon emissions – but it is analysed separately in Annex 8; this is justified by its particularities (IA, pp. 22, 36-37).¹⁴

For the **industrial sectors**, the IA presents the following options (IA, pp. 31-36; the **preferred options, 4 and B.3**, are in grey):

Table 1: **Policy options analysed in the IA for industrial CBAM sectors**

	Depth of value chain	Coverage of the CBAM	Free allocation in the EU ETS	Type of payment	Reflection of actual * emissions in carbon pricing
Option 1	Basic materials and basic material products	Imports only	No, full auctioning	Domestic producers: ETS allowance; importers: carbon tax (collected by customs)	Yes, for domestic producers; importers pay tax (default value of EU average, with option to demonstrate actual carbon emissions)
Option 2	Basic materials and basic material products	Imports only	No, full auctioning	Domestic producers: ETS allowance; importers: import certificates (aligned with ETS allowances)	Yes, for domestic producers; importers pay default value of EU average (with option to demonstrate actual carbon emissions)
Option 3	Basic materials and basic material products	Imports only	No, full auctioning	Domestic producers: ETS allowance; importers: import certificates (like option 2)	Actual* emissions declaration for domestic producers and importers

Option 4	Basic materials and basic material products	Imports only	Gradual phase-out for CBAM sectors after 2025 over 10 years and gradual phase-in of CBAM by 2035	Domestic producers: ETS allowances needed beyond free allocation; importers: import certificates (like option 3)	Partially, for domestic producers and imports during transition; gradual declaration of actual emissions for imported products
Option 5 (variant of option 3)	Basic materials also as part of components and finished products	Imports only	No, full auctioning	Domestic producers: ETS allowances beyond free allocation; importers: import certificates	Yes, for domestic production; importers declare actual* emissions of imports
Option 6	Basic materials also as part of components and finished products	Domestic products, imports and waiving of liability for exports of EU producers	Yes, under benchmark	Domestic producers: ETS plus excise duty upon production and import, paid when product is released for consumption	Yes, for domestic production; default values for imports; exports not covered

Source: IA, author. * Default values are used when sufficient data on actual GHG emissions are not available.

Options 2 to 5 would reflect the price of the allowances under the ETS regime and involve a central CBAM authority and/or national authorities, with declaration and surrendering of certificates in an annual reconciliation exercise in the year following importation, based on trade import value. The necessary data is to be provided by the importer to the CBAM authority (IA, p. 32).

According to the IA, **option 4** implies 0 % of free allowances by 2035 at the earliest, while ensuring an equal level of free allowances for both imports and domestic production by aligning with the ETS (IA, p. 34). Option 6 covers consumption of carbon-intensive materials regardless of the place of production (IA, p. 35). Further details – for instance, on the method to calculate default values, specific institutional requirements, or actions in cases of non-compliance – are not provided. The IA does not consider alternative timelines for phasing in/out under option 4 and, as with the problem definition, the relevant elements of the ETS revision could have been more clearly indicated.

To determine a reference value for emissions embedded in **imported electricity**, the IA presents **two options** (IA, pp. 37-39):

Option A: **Average CO₂ emission intensity** as a ratio between the total amount of CO₂ emissions stemming from electricity production and the total gross electricity production in the EU over a defined period of time.

Option B: **Average CO₂ emissions factor**, depending on the way electricity is dispatched, based on the assumption that EU electricity imports from third countries are, by default, generated by price-setting coal and gas plants with a measurable footprint.

The IA presents **three variants** to establish a reference value for this footprint:

Option B1: Use of the average CO₂ factor of corresponding price-setting fossil-based generators in the EU as the EU default value to calculate the CBAM obligation (this factor is calculated in the context of State aid granted to compensate industrial consumers under the ETS).

Option B2: Third countries with a lower CO₂ emission factor than the EU default value (use these countries' lower factor to calculate the CBAM obligation).

Option B 3: Application of the CO₂ factor of the exporting country to all imports. For the other sectors, importers can claim that the carbon content of their product is below the default value or that they paid a carbon price abroad.

The IA justifies **discarding four options**, owing either to their incompatibility with the EU's international obligations or their complexity, namely: raising import duties; the extension of the ETS to all products imported into the EU; a carbon added tax at each production step for every additional tonne of CO₂; and an import tax with export reimbursement (IA, p. 42).

Assessment of impacts

Prior to the assessment of relevant impacts, the IA explains the complex modelling approach and the assumptions underlying its analysis.¹⁵ All options are assessed against three scenarios – the EU Reference Scenario 2020, MIX, and MIX full auctioning¹⁶ – in terms of their environmental, economic and social impacts, in that order and with a focus on sectoral impacts in the aluminium, fertilisers, cement (and lime), and iron and steel sectors; as noted, impacts on the electricity sector are assessed separately (and rather briefly) in Annex 8. The IA specifically discusses the impacts on trade and third countries, on administrations (businesses and authorities), on revenue generation, and the implications of a CBAM for the EU ETS. The mostly qualitative analysis is underpinned by selective quantitative cost estimates of certain compliance and administrative costs.

In terms of **environmental impacts**, the IA finds that all options would achieve more emission reductions in the EU than the MIX scenario (which would achieve 12.8 % more than the EU Reference Scenario), mostly driven by the partial or full auctioning element (IA, pp. 46-47, Annex 3; preferred option 4 would reduce GHG emissions by a further 1 % in the EU). Options 3, 4 and 5 would reduce emissions even in the rest of the world, as they take into account *actual* emissions.

As regards **preventing carbon leakage**, the IA identifies option 4 as the most effective, reducing leakage by 29 % (IA, p. 48).¹⁷ The sectoral reduction is expected to be 24 % for iron and steel, 7 % for cement, 208 % for fertilisers and 89 % for aluminium. Moreover, the IA finds that the options that take actual emissions into account increase the incentives for third-country producers to reduce emissions (options 3 and 5 have the strongest incentive, while incentives grow under option 4 with the phasing in of the CBAM, IA, pp. 53-54). The IA illustrates sector-specific impacts, depending on trade flows, carbon intensity and possibilities to substitute a product (IA, p. 49); it also discusses implications for downstream sectors, which depend on the complexity of production processes and data availability (only in view of later inclusion in the CBAM, IA, pp. 50-53).

In terms of **economic benefits**, according to Annex 3 of the IA option 4 is expected to generate **annual revenue** of €8.5 billion in 2025 and €14.7 billion in 2030, with a long-term perspective of decreasing revenue (as the CBAM aims to encourage zero or low emissions, IA, p. 81). The overall **macroeconomic impacts** of all options are expected to be 'quite limited' (e.g. a GDP contraction of -0.223 % under option 4 compared to the EU reference baseline), which the IA explains by the relatively small share of the CBAM sectors in the overall EU economy (IA, pp. 57-63). The IA distinguishes varying levels of expected output losses, depending on the sectors and the gradual phase-out of free allowances (and phase-in of CBAM) under the preferred option (IA, pp. 58-62).¹⁸

The IA also focuses on the **effects on trade**. For all options, **imports** of goods are expected to decrease by between -0.5 % (option 1) and -11.9 % (preferred option 4, which takes into account the actual emissions, which are much higher in partner countries than the EU, IA, p. 64). The IA admits and justifies¹⁹ that the risk of resource shuffling is not taken into account in the modelling, acknowledging that this could substantially lower the reduction in imports, so some uncertainty remains in this context (IA, p. 66 and Annex 10). Illustrations of the expected imports and exports under the three scenarios and all options are provided until 2030, but not beyond (IA, pp. 66-68).

Furthermore, the reduction of free allowances is expected to lead to a decrease in EU **exports**, which is, under option 4, estimated at -6.8 % (IA, pp. 65-66).

The IA expects Russia, Ukraine, Turkey, Belarus, Albania, Egypt, Algeria and Morocco to be among the most affected trading partners, depending on the sector. Annex 10 features statistics indicating Bulgaria, Italy, Slovenia, Romania, Lithuania and Estonia to be the most affected EU Member States.²⁰ Specific risks of a trade backlash, WTO complaints or retaliation measures by trading partners are not discussed, nor are details of possible deductions or exemptions from a CBAM (for countries that have their own ETS systems). The IA rejects the idea of 'blanket exemptions' for **LDCs**, arguing they account for a 'minimal share' of EU trade in the selected CBAM sectors (IA, p. 30); they are, however, listed in Annex 3 as affected stakeholders, leaving out other developing countries. To mitigate this effect, the IA suggests supporting LDCs through 'existing support channels' to avoid 'unintended economic risks' and disproportionate burdens for them, but does not provide further details.²¹

The **social impacts** of the various options on EU **employment** are expected to be limited, with preferred option 4 resulting in a slight increase in employment in the CBAM sectors (except for cement, where a decrease of -0.48 % compared to the baseline is expected by 2030, IA, p. 69). There seems to be a small contradiction with Annex 3, which notes a 'loss of employment' of -1.20 % under the preferred option in 2030. **Consumer prices** are expected to increase slightly under all options, but effects on final prices are considered 'particularly small to have a material impact on final consumers' (IA, pp. 71-73). The IA also modelled **distributional impacts**, which are expected to be very small, although options 4 and 6 are expected to have a larger impact on poorer households than the other options (IA, pp. 72-73); Annex 10.3 provides details on the impacts of each option on different income groups.

The IA discusses **administrative impacts on businesses and administrations** in detail, explaining the different cost elements of an import tax, certificate or excise duty system (IA, pp. 73-81).²² The estimates are based on similar elements in the ETS, national emissions systems, other excise duties and the United Nations' clean development mechanism (detailed explanations in Annex 6). **Compliance costs for importers** in the EU are expected to reach between €9.8 million and €14.3 million, with 'additional administrative costs for continuing to determine the level of free allocation that producers should receive' under preferred option 4 (IA, p. 75). **Authorities** in charge of the CBAM are expected to incur annual administrative and enforcement costs for a certificate-based CBAM of around €15 million, based on actual emissions, with costs for IT infrastructure to be added (IA, p. 79). According to the IA, a central CBAM authority would be necessary for certain tasks to minimise the costs of the new CBAM certificates, while a decentralised approach 'could be easier to implement'; it leaves open the question of the specific institutional set-up (to 'be closely evaluated during the finalisation of the CBAM proposal', IA, pp. 76, 78). A transitional phase is suggested, using default values, because actual emissions still need to be determined and would involve higher administrative costs. The IA admits that its cost 'approximations' aim to support comparison of the options, but do not provide exact total cost calculations, pointing to unknown factors such as possible inclusion in the Single Window for Customs or the use of default or actual emissions (Annex 6; one might add to this the uncertain institutional set-up).

For the **electricity sector**, administrative compliance costs are expected to be 'rather low', based on the 'relatively limited number of undertakings ... importing electricity' (IA, p. 80). The best **environmental impacts** are expected under option B.3, based on modelling simulations, because it reduces emission-intensive imports more than option A and reflects the specific country's carbon intensity better than the other variants (Annex 8, pp. 90-94). Other effects are not assessed for the electricity sector.

Finally, the IA compares the **effectiveness, efficiency and coherence** (but not proportionality) of all options against the MIX baseline and the full auctioning variant scenario (but not against the EU 2020 Reference Scenario, IA, pp. 83-84), and finds that option 4 has the most positive and the least negative impacts. Notably, the IA highlights the 'complex interdependence across policy tools' and

the methodological challenges of ranking options (which ‘may not be straightforward as it may not be possible to compare options through a single metric’), and stresses the need for the political level to establish ‘justifiably’ the weighting of different criteria to ensure the coherence of the whole ‘Fit for 55’ package (IA, p. 85).

SMEs/Competitiveness

Although the IA anticipates comparatively higher compliance costs for SMEs than for large companies under all options, it justifies the absence of an SME test or a targeted SME consultation by the lack of available data and the fact that most producers and importers in the CBAM sectors are large businesses (IA, pp. 45, 75, 81). A common EU framework for carbon pricing is expected to improve competitiveness inside and outside the internal market, a claim that could have been better substantiated in the IA. The long-term effect of an end to free allowances, which are currently a safeguard for the international competitiveness of EU industry, is not assessed here but in the ETS revision IA.

Simplification and other regulatory implications

The IA considers overlaps between the CBAM and the ETS, namely the risk of double-charging in the case of exported and then re-imported goods (IA, p. 55). It emphasises the need to combine the CBAM with free allocations during phasing in/out under option 4 without undermining the incentive to emit less emissions than the free allocation benchmark (it does not, however, specify ‘a method to ... avoid double counting of carbon emissions’, IA, p. 55). As noted for other sections, precise links to the ETS revision IA (and its options) would have been helpful.

The analysis of the impact of the CBAM on the ETS price, which the IA expects to be small by 2030, is rather short (IA, p. 55). The positive effects expected from overlaps between the CBAM and revision of the ETS consist of better legal clarity and synergies for efficient administrative implementation, with the potential for further simplification after a first evaluation (IA, pp. 27-28, 55, 88).

Highlighting the need for coherence under preferred option 4 with the Effort-sharing Regulation and its current revision, the IA announces that the Commission will carry out a ‘comprehensive analysis’ of the policy choices made on the interlinked files to ensure compatibility of measures. However, it does not provide further information as to when or how this horizontal analysis would be carried out (IA, p. 87).

Monitoring and evaluation

The IA presents 11 monitoring and evaluation indicators relating to five objectives (the latter partly differing from the originally defined objectives – see section on objectives above), together with the sources and tools to provide the necessary data (IA, pp. 88-89); these elements are taken up as such in the proposal. The featured indicators seem relevant, but not exhaustive, because not all of the five original specific objectives are covered (minimising the risk of circumvention, for instance, is not covered).

Reiterating the interlinkage with other initiatives, the IA suggests an evaluation of the administrative system after only 1 year ‘to identify any issues’ and, ‘when more data is available’, a potential review of the scope of the CBAM.

Stakeholder consultation

An open public consultation (consisting of 43 questions, and receiving 609 valid contributions from civil society, companies, EU and non-EU citizens and public authorities) ran from 22 July to 28 October 2020. This was complemented by targeted consultations (25 interviews) carried out by an external contractor, who also provided the (rather short) synopsis report in Annex 2 of the IA. According to the IA, ‘on average’ carbon adjustment was most favoured by citizens and public authorities, while companies were less ‘enthusiastic’ (IA, pp. 39, 54).²³

The IA is transparent about divided or uncertain stakeholder positions on several aspects, including the reasons for relocation of activities, concerns about negative social effects on poorer population groups and the increase in administrative burdens for exporters, importers and administrations (IA, pp. 12, 54, 69, 73, 80). The IA mentions stakeholder positions consistently, albeit mostly in a general and rather vague manner ('stakeholders ... somewhat agree'); Annex 2 contains sector-specific information on some of the options in the IA and a breakdown of respondents.

Supporting data and analytical methods used

The IA is underpinned by solid internal and external data and research, extensive modelling and stakeholder consultations. Although not all aspects could be assessed in depth, which is understandable from a proportionality point of view, it provides a thorough insight into the wide range of relevant potential impacts. However, it would have been useful to have a bibliography of all sources, including the specific studies on carbon leakage and several EU and national IAs, referenced throughout the IA and its annexes.

The IA is based on modelling tools with a proven track record in supporting EU policy-making, namely the (refined) JRC-GEM-E3 model, Euromod and PRIMES. It is transparent about the scarcity of some data and the partly inconclusive evidence of the existence of carbon leakage (see the problem definition above). The assumptions underlying the different parts of the analysis are transparent, including certain limitations (for instance, the reasons for not taking into account resource shuffling in the modelling exercise, IA, p. 44, Annex 10). The Commission's Modelling Inventory and Knowledge Management System ([MIDAS](#)) provides information on the models used and includes a link to the extensive [support study](#). However, the fact that some information and substantiation is scattered over several chapters and annexes does not facilitate a comprehensive overview for the reader (IA, pp. 15, 28, 37-39, 44-46).

Lastly, the crucial relevance of the free allocation of allowances for this initiative could have been better illustrated, especially under the preferred option, to increase the accessibility of the IA for readers who are not experts on the ETS and its different revisions. Both the main text and the annexes contain errors in pagination and the tables of contents.

Follow-up to the opinion of the Commission Regulatory Scrutiny Board

The RSB issued a [positive opinion with reservations](#) on the draft IA. It criticised, inter alia, a lack of information on the baseline scenario and on links to the ETS, as well as on stakeholder positions, the costs and benefits of centralised or decentralised implementation, and the impact on the competitiveness of EU exporters, including resource shuffling. The IA reports (in Annex 1) how these comments were addressed, at least partly. While the mixed stakeholder views are visible in the final IA, and transparency on assumptions and limitations seems improved, the competitiveness of EU exporters could have been addressed in more depth.

As noted, the IA's cost approximations, while useful, do not allow for a conclusive comparison of the costs and benefits of centralised or decentralised implementation. However, keeping in mind the requirement to deliver a proportionate IA, the IA duly explains certain remaining uncertainties that could not be fully anticipated ex-ante (such as resource shuffling).

Coherence between the Commission's legislative proposal and IA

The proposal follows the recommendations and preferred option of the IA, with certain operational details to be worked out during the period from 2023 to 2025 (before the start of the CBAM phase-in). Unlike the IA, it suggests an evaluation (and possible amendment) at the end of this transitional period.

While the IA kept the institutional set-up open, the proposal stipulates a decentralised system with 27 national competent authorities and the Commission in a supporting and coordinating role.

The IA is based on extensive internal and external research and modelling and covers a lot of ground relating to a variety of potential impacts, both in the main text and the annexes. It is also transparent with regard to the limitations and uncertainties of the analysis. While not all aspects could be assessed in depth, in the interest of proportionality, the IA considers the relevant impacts of the retained options, with a focus on the industrial sectors that were selected for coverage; it addresses the electricity sector much more briefly in an annex.

Although the definition of the objectives has some weaknesses, the intervention logic of the IA is clear. The IA could, though, have highlighted more clearly the trade-offs between the various options in relation to different stakeholders. Furthermore, to reach non-expert policy-makers the complex and technical analysis could have been made more accessible through additional explanations and precise links to the ETS revision.

At the end, the IA highlights the relevance of political decision-making and 'weighting' of the criteria it has presented, pointing to the need for coherence with the other initiatives in the 'Fit for 55' legislative package.

ENDNOTES

- ¹ According to the IA, carbon leakage is calculated as the emission increase in non-EU regions in a specific sector divided by the emission reduction in that sector in the EU (IA, p. 45).
- ² Up to 100 % of determined benchmarks, i.e. the average emissions per unit of the relevant product of the best 10 % of producers in the EU.
- ³ Commission communication on [Guidelines on certain State aid measures in the context of the system for greenhouse gas emission allowance trading post-2021](#) (2020/C 317/04), 25.9.2020. According to the IA, an evaluation found that only 13 Member States used these measures (IA, p. 10).
- ⁴ The quality of the ETS revision IA is analysed in a forthcoming briefing by Vettorazzi, S. with Medeiros, A., EPRS, European Parliament, 2022.
- ⁵ The IA specifies that 'embedded emissions' refers to the production of goods but that they are not physically incorporated in the goods (IA, p. 6).
- ⁶ EP resolution [P9 TA \(2021\)0071](#) cites research estimating imported CO₂ emissions at 1 317 billion tonnes in 2015, three times higher than the emissions exported by the EU.
- ⁷ According to the IA, ex-ante research, based on simulation models, found that between 10 % and 30 % of domestic emissions are offset by increased emissions in other parts of the world, whereas ex-post studies did not identify carbon leakage as the sole factor for relocation of production, citing costs like tariffs and transportation as more relevant than the carbon price (IA, Annex 11, p. 113).
- ⁸ The screening of options states that imported electricity accounts for up to 1-2 % of total EU consumption on average (IA, p. 36).
- ⁹ Article 207 (common commercial policy measures), mentioned in the [Inception impact assessment](#), was dropped. However, it is still referred to in the Subsidiarity Grid (p. 6).
- ¹⁰ The **EU Reference Scenario** assumes a continuation of free allocation of allowances and includes all current climate legislation: inter alia, the Effort Sharing Regulation, the Regulation on the inclusion of GHG emissions and removals from land use, land use change and forestry ('LULUCF'), the Energy Efficiency Directive and the Renewable Energy Directive. Some of the options in the ETS revision IA have an impact on the evolution of free allocation of allowances. According to the Commission's [technical note](#) on the main three policy scenarios used to prepare all 'Fit for 55' proposals, the **MIX scenario** combines carbon price signal extension to road transport and buildings and strong intensification of energy and transport policies; with its uniform carbon price (as of 2025), it reflects either an extended and fully integrated EU ETS or an existing EU ETS and a new ETS established for road transport and buildings with emission caps set in line with cost-effective contributions by the respective sectors.
- ¹¹ The IA states that, in the longer term, when carbon content information will be more easily available, the full carbon footprint of imported products may be considered (IA, p. 18). It also excludes transport emissions as long as they are not covered by the ETS, but indicates that, since the ETS revision IA suggests including them, they could be included in the CBAM 'when it is revised'.
- ¹² Annex 7 of the IA provides a detailed analysis of the sectors and products to be possibly covered by the CBAM, including their carbon intensity, trade flows, the expected administrative burden and the availability of defined default values; Commission Delegated Decision (EU) 2019/708 contains the list of 63 sectors for the ETS. Annex 7 also notes the importance of clear definitions of materials and product categories, given that boundaries between them are often 'flexible and subjective', and provides a list of products to include (or not, Annex 7, pp. 76-82).
- ¹³ The IA notes the existence of regulatory measures other than carbon pricing, but these are not assessed owing to the 'conceptual difficulties in determining the equivalence' between such measures (IA, p. 26).
- ¹⁴ The IA notes that electricity generation is characterised by different ways of transportation (through constrained, monopoly networks) and employment of specific production technologies. Under the ETS, the sector buys allowances through auctions on the secondary market and does not receive free allowances.
- ¹⁵ The IA assumes, inter alia, unilateral application of the CBAM and static international developments in third countries; average emissions in the exporting countries were taken as a proxy to reflect actual emissions on imports, drawn from the JRC-GEM-E3 model, which is based on the GTAP 10 database (IAA, p. 44).
- ¹⁶ The IA maintained the additional comparison to full auctioning to 'disentangle the effect of removing free allowances from the specific effects of introducing CBAM' (the RSB had noted that, as an alternative to free allowances, the comparison should be mainly with the scenario with free allowances (MIX), Annex 1, p. 5).
- ¹⁷ Under the MIX scenario, i.e. without a CBAM, leakage is estimated to be around 8 % in 2030, whereas, in the case of full auctioning, the risk of carbon leakage would jump to 42 % in 2030 (IA, pp. 45-46).
- ¹⁸ The modelling expects the impact on output to be stronger on iron, steel, cement and fertilisers than on aluminium (IA, p. 61).
- ¹⁹ The IA modelling excludes the risk of resource shuffling, which is considered 'very difficult' to quantify in the absence of relevant data, but ensures 'robustness checks' were performed, based on secondary sources (IA, pp. 43-45 and Annex 10). The JRC-GEM-E3 model was improved for this IA in relation to sectoral data processing (IA, p. 43).

- ²⁰ An [assessment by Rabobank](#) expects 'specific companies' in Bulgaria, Ireland and Greece to be affected, while agreeing with the IA as regards the overall limited (macro)economic impact of a CBAM.
- ²¹ A recent [UNCTAD analysis](#) expects a decline in exports by developing countries, who would have otherwise profited from an increase in EU carbon prices, and suggests using CBAM revenue for flanking policies.
- ²² Costs include, inter alia: the necessary IT technology; cooperation with customs to get information collected at the time of import (the IA even reflects on possibly including the CBAM in the Single Window for Customs) and with the authorities in charge of assessing declared actual emissions; the sale of CBAM certificates; and monitoring and verifying that importers surrender sufficient certificates to cover embedded emissions (IA, p. 76).
- ²³ Rabobank (see endnote 20) expects that the complexity of the CBAM would lead to considerable administrative burdens and warns that the use of default values for embedded emissions, which could simplify procedures, might also entail 'perverse incentives' for importers of high-emission products. A recent [IMF Climate Note](#) on a CBAM finds that an international carbon price floor among most emitting countries would ultimately be a more effective incentive for highly emitting third-country producers than a EU CBAM. The IA is not in contradiction to this reflection, stressing several times the need for action 'as long as' international partners do not share the EU's climate ambition (IA, pp. 4, 13).

This briefing, prepared for the European Parliament's Committee on the Environment, Public Health and Food Safety (ENVI), analyses whether the principal criteria laid down in the Commission's own Better Regulation Guidelines, as well as additional factors identified by the Parliament in its Impact Assessment Handbook, appear to be met by the IA. It does not attempt to deal with the substance of the proposal.

DISCLAIMER AND COPYRIGHT

This document is prepared for, and addressed to, the Members and staff of the European Parliament as background material to assist them in their parliamentary work. The content of the document is the sole responsibility of its author(s) and any opinions expressed herein should not be taken to represent an official position of the Parliament.

Reproduction and translation for non-commercial purposes are authorised, provided the source is acknowledged and the European Parliament is given prior notice and sent a copy.

© European Union, 2022.

eprs@ep.europa.eu (contact)

www.eprs.ep.parl.union.eu (intranet)

www.europarl.europa.eu/thinktank (internet)

<http://epthinktank.eu> (blog)

