European Economic and Social Committee

CCMI/167
The sectoral industrial perspective of reconciling climate and energy policies

OPINION

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The sectoral industrial perspective on reconciling climate and energy policies
[own-initiative opinion]

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1. Conclusions and recommendations

1.1 European resource- and energy-intensive industries (REIIs) are of strategic importance to EU industrial value chains. They are required by the EU's climate mitigation policy to perform a deep transformation, and massive investment, towards climate neutrality before 2050.

1.2 The purpose of the current Emissions Trading System (ETS) is to incentivise this investment by setting a price for greenhouse gas (GHG) emissions, with contradictory requirements: (1) achieving climate goals requires higher prices, but (2) the external competitiveness of REIIs requires them to align with the low or even non-existent price of external competitors.

1.3 The EESC is concerned by the risk of carbon or investment leakage (production or investment being carried out where ETS does not apply) in REIIs, and of resulting job losses, in the current situation of divergent prices for GHG emissions on global markets.

1.4 In a previous opinion[1], the EESC called for a global ETS in order to create a level-playing field in international competition between REIIs. This hope has so far been disappointed.

1.5 The EESC considers it essential to reconcile industrial and energy policies with climate policy in order to mobilise the huge investment made necessary by the transition to a zero-carbon economic model for REIIs, which should be a "just transition", with the social partners being actively involved in its definition and implementation.

1.6 Investment by the EU and the Member States should have a bearing on RDI and on deployment of low to zero-carbon technologies for REIIs, including the additional electric power generation that they require, and education and training of their workforce. Under the next Multiannual Financial Framework (2021-2027), the funding included for this purpose in the Commission's proposal for the InvestEU programme and for the other investment programmes that will be linked to it should thus be increased.

1.7 The EESC intends to contribute to the reflection on the long-term industrial strategy called for by the European Council[2], by examining the technical and legal feasibility of one among many policy options currently in the public sphere: the implementation of border adjustment measures (BAMs) for the internal price of GHG emissions, based on the GHG emissions content of the basic metals, chemicals and materials embedded in industrial goods. It points out that it drew attention to the need to examine and potentially introduce a mechanism of this kind back in 2014, in its own-initiative opinion "Market-based instruments – Low carbon economy in the EU"[3], but did not get an adequate response from the Commission or the Council.

1 OJ C 71, 24.2.2016, p.57, §1.9.

2 European Council conclusions of 22 March 2019, EUCO 1/19.

3 OJ C 226, 16.7.2014, p. 1.

1.8 The EESC advises the Commission to deepen its reflection on this and other policy options, such as a reformed ETS, carbon border adjustment[4], a VAT rate adjusted to carbon intensity[5], and to compare them in terms of:

- impact on carbon and investment leakage, in a future situation of higher prices and lower availability of ETS allowances in the EU
- legal certainty on compliance with WTO rules
- acceptability by trading partners
- technical feasibility, specifically regarding the existence of globally accepted accounting and measurement standards and of reliable and recognised databases.

1.9 The EESC also advises the Commission to engage early in consultations with the EU's main trading partners to test their views on the options considered.

2. General comments

2.1 The dilemma of climate policy applied to resource- and energy-intensive industries

Climate policy is confronted with an inherent difficulty.

2.1.1 On the one hand, the purpose of this policy is to ambitiously reduce greenhouse gas (GHG) emissions (both from the combustion of fossil fuels and from industrial processes). The target for the EU is to reach carbon neutrality by 2050, as encouraged by the Commission's Communication "A clean planet for all". With these reductions, global warming should remain well below 2°C and hopefully below 1.5°C, in a way that is compatible with agriculture that is able to feed humankind. In a market economy, a very efficient tool is to set a price for GHG emissions. In this way, economic players can either profitably invest in emissions-saving equipment or processes (including Carbon Capture and Storage/Use) or can save money by reducing their consumption of materials (e.g. by using longer-lasting products) or by switching their purchases of materials towards those that produce fewer GHG emissions (such as recycled materials). In order for this method to be effective, the price for GHG emissions must be high and predictable enough to trigger investment or behaviour change.

2.1.2 On the other hand, energy costs represent a high proportion of total costs for REIIs: 25% for steel, 22-29% for aluminium[6], 25-32% for glass[7].

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4 European Parliament resolution of 16 December 2015 on developing a sustainable European industry of base metals (2014/2211(INI)).

5 A. Gerbeti, CO_2 in goods and European industrial competitiveness, Editoriale Delfino (2014) and A. Gerbeti, A Symphony for energy: CO_2 in goods, Editoriale Delfino (2015).

6 A. Marcu, W. Stoefs: "Study on composition and drivers of energy prices and costs in selected energy-intensive industries". CEPS, 2016, available at: http://ec.europa.eu/DocsRoom/documents/20355

7 C. Egenhofer, L. Schrefler: "Study on composition and drivers of energy prices and costs in energy-intensive industries. The case of the flat glass industry", CEPS, 2014, available at: https://www.ceps.eu/system/files/Glass.pdf

2.1.3 If the energy cost is increased because of a high price allocated to GHG emissions in the EU compared with prices elsewhere, and because of large-scale and early investment in low- or zero-emissions technologies in REIIs and in the related electricity generation, transport and storage capacities needed to feed them[8], causing high amortisation costs, the external competitiveness of EU-based REIIs is jeopardised. Despite their energy-efficiency efforts, they end up producing at higher prices than their external competitors. On these markets, with very standardised products, a higher price leads to a loss of market share and related jobs. If this happens, GHG emissions are simply transferred from EU producers to producers elsewhere (who often are less energy-efficient), with (at best) no effect on global GHG emissions. This phenomenon is known as "carbon leakage". In a global competitive landscape where the price of GHG emissions is zero, this translates into the need to set the price of carbon as low as possible – and even at zero.

This phenomenon is compound by that of "investment leakage". Even with a low price for GHG emissions in the EU, the uncertainty regarding its development is already hindering investment in the maintenance and upgrade of REII industrial sites, leading to another and very worrying loss of competitiveness for EU producers. Investment leakage for EU-based REIIs would dramatically increase if the prices for GHG emissions were high in addition to being volatile.

2.1.4 The Emissions Trading System (ETS) is the current attempt on the part of the EU to set a price for GHG emissions. For the most part it has been ineffective: the price for GHG emissions has been very low for years (even if it rose recently) yet sufficiently volatile to trigger investment leakage. In addition, it is complex and full of exemptions. One structural reason for this ineffectiveness and complexity may be that the ETS system was not able to solve the inherent difficulty, outlined above, between conflicting requirements for high and low prices for GHG emissions.

There may thus be a need to solve this dilemma and reconcile the conflicting policy goals of (1) climate change mitigation and (2) the external competitiveness of Europe's REIIs, while heeding all other policy objectives, such as free and fair trade, in the framework of the long-term industrial strategy called for by the European Council.

2.2 Border remedies as a possible solution

2.2.1 The option preferred by the EU institutions to solve this dilemma would be for a single, global ETS to set a world-wide price for GHG emissions. This hope however has been disappointed. The recent geopolitical developments in the direction of unilateralism provide little hope that such a world-wide agreement would be reached in time.

The provisions set out by the European Commission (recycling ETS proceeds to industry, innovation support, free allowances, authorisation for Member States to compensate for indirect costs …) may not deliver enough safeguards against carbon or investment leakage in a situation

8 According to a study by T. Wyns ("Industrial Value Chain: A Bridge towards a Carbon Neutral Europe", VUB-IES, 2018, available at: https://www.ies.be/node/4758), mapping 11 European REIIs, the wide-scale deployment of low-CO_2 technological pathways would require between 2 980 TWh and 4 430 TWh additional electric energy per year.

of asymmetric climate policies and increasing EU climate ambitions. This is why several voices have called for alternative approaches to reconciling climate policy goals with the external competitiveness of REIIs, as a possible solution. These approaches relate to the concept of BAMs as defined by the World Trade Organisation (WTO). The purpose of this opinion is to explore the technical and legal feasibility of such an option, by means of a concrete proposal.

2.3 The legal principles of the WTO: border adjustment measures for internal taxes on consumption should not discriminate against external economic players.

2.3.1 The principle of BAMs is as follows: when an internal tax on consumption is established in a jurisdiction, there is a risk that local producers (who are subject to this tax) will be placed at a competitive disadvantage compared to their external competitors (who are not), both on the internal market (where the competition is between local producers and importers), and on export markets. The authorities of this jurisdiction are allowed to restore the fairness of competition by: (1) imposing a tax on imported goods and (2) refunding the tax on exported goods.

2.3.2 Provided they met certain conditions, product-related BAMs were accepted as legal by the WTO, without any concerns being raised regarding protectionism, following a review of such adjustments dated 1970[9] (Report by the Working Party on Border Trade Adjustments). These conditions state that they should not discriminate against external economic players (Articles II-2a, III-2 and VI-4 of the GATT agreement[10]), which means in this case that: imported goods should pay a tax no higher than that of local producers and exported goods should be refunded no more than the tax that has already been paid on the local market.

2.4 **The envisaged mechanisms: a transparent accounting system for exporters; importers pay only for the GHG emissions content of the basic materials**

2.4.1 The mechanisms envisaged to adapt the general idea of BAMs to the context of GHG emissions are the following:

- in order to determine the amount to be re-funded to exporters, a transparent accounting system keeps track of the GHG emissions incorporated in each industrial item, and brings it forward along the value chain, as an additional line in invoices;
- importers pay the GHG emissions embodied in the basic materials used to make the industrial item, but not the GHG emissions used to transform or shape them, nor of their logistical movements. It is a very good approximation, because more than 90% of the GHG emissions of an industrial item are embodied in the basic materials. It provides undisputable evidence for the customs authority to determine the tax base (the nature and weight of each material). It also gives a slight advantage to importers, so that they cannot claim that they are discriminated against.

9 GATT, "Report by the Working Party on Border Trade Adjustments", 1970, available at: https://www.wto.org/gatt_docs/English/SULPDF/90840088.pdf, specifically § 4, 11 and 14.

10 Available at: https://www.wto.org/english/res_e/booksp_e/analytic_index_e/gatt1994_e.htm.

These mechanisms are presented and discussed in greater detail below.

2.5 Refunding the price of GHG emissions incorporated in exported goods is a matter of accounting

2.5.1 The system would be as follows. When an REII has had to pay for its GHG emissions (either in the form of ETS allowances bought at a variable price per kg of CO_2eq on a market or in the form of a carbon tax at a fixed price), it must keep track of this payment (and of the underlying volume of GHG emissions) in its accounting system, and forward it to its customers in its invoicing (including an amortisation of the GHG emissions content of its equipment). This would re-use the existing, elaborate system of GHG accounting that was developed in the EU for the sake of computing free allowances for ETS, and which is a clear asset. The experience gained over the last 50+ years with regard to VAT should demonstrate the technical feasibility of such a cost-forwarding scheme.

2.5.2 The position in the supply chain at which this payment should be included in invoices remains to be defined. If it were brought forward to the final consumer, this would have the following consequences:

- it would bring the proposed scheme closer to the template of an internal tax on consumption, such as VAT or excises, for which the WTO has explicitly accepted the legitimacy of BAMs, and would thus increase legal certainty;
- it would avoid penalising intermediate companies;
- it would incentivise consumer behaviour towards more climate-friendly options.

2.5.3 When a company exports a good incorporating expenses for GHG emissions, it must then draw from its accounting system the GHG emissions content of the exported product, and have this content refunded by the state (either by re-selling the corresponding ETS allowances on the market, or by having the carbon tax paid back) for the volume of GHG emissions contained in the product.

2.5.4 If the current free allocation of ETS allowances to best-performing EU producers were maintained, this re-fund would be made at the average cost of an ETS allowance at the scale of the EU economy, based on the spot market price and the proportion of free allowances issued to EU producers.

2.5.5 This accounting system proves that the exporter is being refunded the exact cost for all the GHG emissions that had been incorporated into the product along the supply chain. The exporter is not being given an undue advantage, and the system is therefore in line with WTO requirements. This fairness is easier to prove on a case-by-case basis when the price for GHG emissions is fixed (as in a carbon tax). It is however only valid on average, between lucky and unlucky speculators on the ETS markets, and between high- and low-performing EU producers receiving different allocations of free emission rights, when the price for GHG emissions is variable (as in an ETS market).

2.6 **The remedy on imported goods can be based on the GHG emissions content of the incorporated basic metals, chemicals or materials**

2.6.1 The GHG emissions content of an industrial good can essentially be found in its materials.

The GHG emissions content of an industrial good can be split into three main components, each corresponding to different categories of value-adding operations:

- the GHG emissions content of the basic metals, chemicals and materials that make up the product, directly or indirectly (e.g. steel, ethylene, benzene, ammonia, hydrochloric acid, glass, wood, ...);
- the GHG emissions content of the industrial operations transforming and shaping the basic metals, chemicals or materials (e.g. polymerising, moulding, machining, cutting, ...);
- the GHG emissions content of the intra- and inter-site logistics between the various value-adding stages.

The vast majority of the GHG emissions content of an industrial product lies in that of the incorporated basic metals, chemicals and materials (specifically when they are non-recycled). The example of a machine-processed piece of steel, where the energy used in the process is 2.8 kWh[11], whereas the energy embodied in the material[12] is 117 kWh, i.e. 40 times more, illustrates the order of magnitude of the relative weight between these components. In the case of fertilisers, plastics, elastomers, solvents, lubricants and textile fibres, a very dominant fraction of the GHG content of the final product lies in the basic chemicals from which they were manufactured, which can be deduced from their formula. This means that the full GHG emissions content of an industrial product can be approximated by the GHG emissions content of the incorporated basic metals, chemicals and materials[13].

2.6.2 Computing the remedy applicable to imported goods

2.6.2.1 In order for the customs authorities in charge of managing the BAMs to work efficiently and with legal certainty, both for themselves and for the importing company acting in good faith, both the tax base and the tax rate must be established with minimal room for interpretation or legal dispute.

The tax rate when considering GHG emissions pricing is either a requirement to purchase ETS allowances for the volume of GHG emissions incorporated in the imported product, at the same price per ETS allowance as in the refund for exporters (in the case of a market-based system), or the carbon tax rate (when under a fixed rate regime).

11 Yohei Odaa, et al.: "Energy Consumption Reduction by Machining Process Improvement", 3rd CIRP Conference, 2012, available at: http://isiarticles.com/bundles/Article/pre/pdf/17172.pdf.

12 Inventory of Carbon and Energy (IEC), available at: http://www.circularecology.com/embodied-energy-and-carbon-footprint-database.html.

13 These emissions are generally positive. They can be negative in the case of sustainably-grown, bio-sourced materials (e.g. wood).

2.6.2.2 The tax base must be verifiable by analysing the imported good itself, which is the least disputable piece of evidence. In the case in question, the ideal tax base would be the full GHG emissions content of the imported good.

Determining the full GHG emissions content of an industrial product is difficult because of the complexity of all value-adding operations that have been performed on it along the value chain, many of which leave no trace in the product itself.

The proposed option is to use the simple but workable approximation outlined above: the full GHG emissions content of the imported good is approximated by the GHG emissions content of the incorporated basic metals, chemicals or materials, restricted to those representing more than e.g. 1% of the total mass. Micro-electronics, which generate large GHG emissions despite their small mass, would still be included in the calculation.

The total GHG emissions content of the materials present in the item is computed as follows: the mass of each kind of basic metal, chemical or material present in the item in significant proportion is multiplied by the GHG emissions intensity of this basic metal, chemical or material (i.e. the GHG emissions embedded in each kilogram of this basic metal, chemical or material).

The average GHG emission intensity at the level of each country has been determined for most basic metals, chemicals and materials. The figures are available in a range of publicly available databases (listed e.g. in the GHG Protocol[14]), based on well-developed Life-Cycle Assessment (LCA) methodologies, including for China.

2.6.2.3 In order to encourage and reward lower GHG emissions intensity in individual facilities and the divulgation of data, the following virtuous circle mechanism is proposed.

- If a producer can reliably demonstrate its real GHG emissions intensity, then this value applies to its products being imported to the EU. If, however, no such reliable data is provided, then the average GHG emissions intensity of the country of origin is used, this average being computed on the remaining production and remaining GHG emissions when those that have provided reliable data are deducted.

- Thereby, the most climate-friendly producers in a country will engage in the accounting exercise first (in order not to be penalised by application of their national average). Because of this, the national average, after these "virtuous" producers have been taken out of the computation, deteriorates over time, incentivising additional producers to provide reliable data.

14 The full list of databases providing data on GHG emissions for various materials and processes is accessible at: http://www.ghgprotocol.org/life-cycle-databases.

2.6.2.4 The EU could, in addition, provide technical support to companies abroad in setting up the reliable GHG emissions accounting systems required, and thus continue its current friendly stance towards trading partners.

2.6.2.5 In order to prevent unscrupulous players from unduly attributing the low GHG emissions intensity from one facility to the production of another one, a traceability system, e.g. based on blockchain, could be developed and used.

Brussels, 17 July 2019.

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