

EXPLORATORY NOTE: A CARBON BORDER ADJUSTMENT PROPOSAL (CBA)

8 January 2020

A successful European long-term climate policy for a prosperous, modern, competitive and carbon neutral economy: from vision to policy to implementation

Key aspects:

- To successfully reach the aim of a 2050 carbon neutral economy, the EU Commission's plan for a Green Deal with the Carbon Border Adjustment is an essential basis for our future policy, avoiding carbon leakage and enabling investments in carbon neutral production IN Europe.
- For some industry sectors, ETS cannot guarantee a global level playing field anymore. Carbon costs create a big competitive disadvantage and risk carbon leakage due to increased market shares of less CO₂ efficient imports.
- Europe already started to import millions of tons CO₂ indirectly due to increased imports in base industries, creating massive carbon leakage.
- The best solution would be a global carbon price and cost for all sectors; but this is not realistic.
- A CBA can push a carbon price and emission reductions to other regions and companies, ensuring EU's global climate leadership in the fundamentally changed global political reality.
- A CBA is to be phased in gradually, mirroring the costs of the gradually decreasing ETS free allowances; hence it can complement the unchanged current regimes for free allocation. A design based on full auctioning would not be effective against importers, harming EU industry, would stop industrial and political support and risk the success of the CBA and the Green Deal ambition
- A CBA can comply with the rules of the World Trade Organization, depending on its design, particularly on how its environmental objective is defined.
- It can and should be based on environmental legislation, not fiscal/tax.

Content:

- Introduction - the need to take ambitious climate change action
- The new EU long-term climate policy requires additional measures
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INTRODUCTION – the need to continue EU leadership for ambitious climate change action

The IPCC report confirms that the world needs to limit climate change to 1.5°C to reduce the likelihood of extreme weather events. It emphasizes that emissions need to be reduced with more urgency than previously anticipated. In order to limit temperature increase to 1.5°C, net-zero CO₂ emissions at global

level needs to be achieved around 2050 and neutrality for all other greenhouse gases at a slightly later stage. It also states that limiting global temperature increase to 1.5°C is doable, provided action is taken now and we coherently use every tool at our disposal. This provides an opportunity for the EU to step up its action to show leadership and reap the benefits of first mover advantage and to achieve greenhouse gas emissions neutrality by 2050.

The EU has been at the forefront of addressing the root causes of climate change and strengthening a concerted global response in the framework of the Paris Agreement. The Paris Agreement, ratified by 181 parties, requires strong and swift global action to reduce greenhouse gas emissions, with the objective to hold global temperature increase to well below 2°C and to pursue efforts to limit it to 1.5°C.

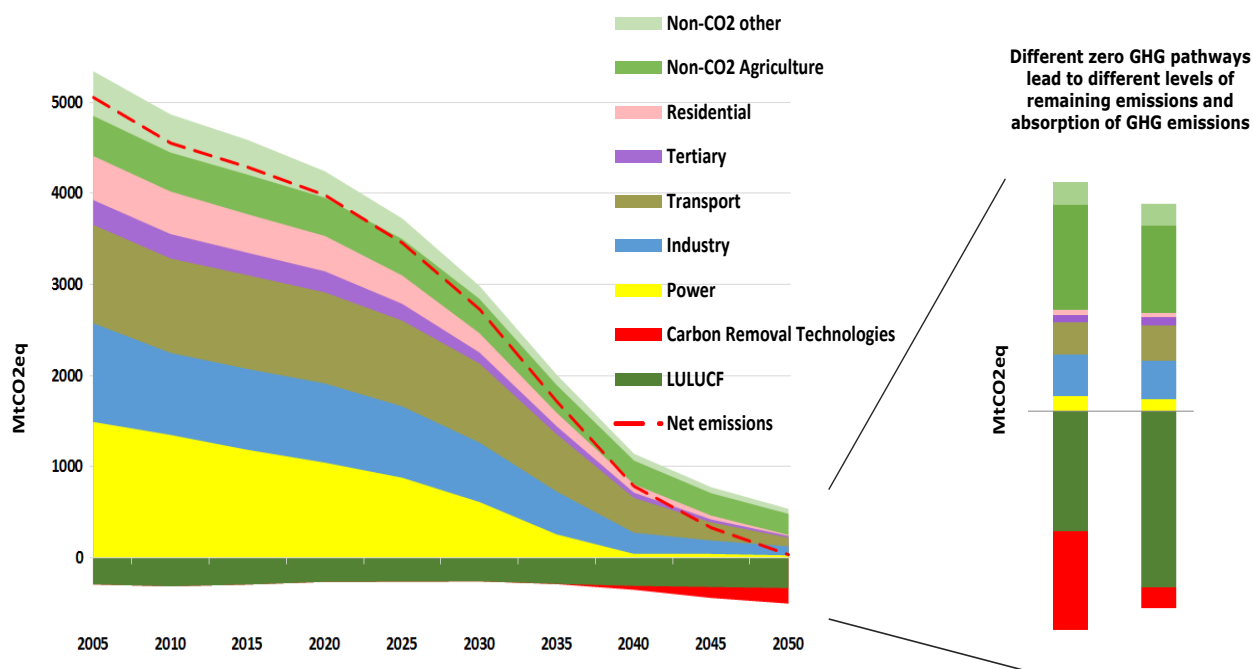
The clean energy transition has spurred modernization of the European economy, driven sustainable economic growth and brought strong societal and environmental benefits for European citizens. The EU's pursuit to achieve its 2020 energy and climate targets already delivered new industries, European jobs and increased technological innovation, driving down technology costs. The renewable energy revolution is the best example of this. The share of renewable energy in final energy consumption increased from 9% in 2005 to 17% today. EU leadership demonstrates to other parts of the world that this energy transition is both possible and beneficial beyond the fight against climate change.

The EU is advancing with its Energy Union Strategy and finalising a modern, advanced and cost-effective regulatory framework to achieve its 2030 greenhouse gas reduction targets and its clean energy transition delivering on the objective to put energy efficiency first and become a global leader in renewables. On the side of energy, the targets to improve the EU's energy efficiency by at least 32.5% and to increase renewable energy to at least 32% of the EU's final energy consumption by 2030 are set.

Combined, these climate and energy policies will deliver on the EU's contribution under the Paris Agreement to reduce emissions by at least 40% by 2030 compared to 1990. The policies put in place today will have a continued impact after 2030 with projected emissions reductions of around 60% by 2050. This is, however, not sufficient for the EU to contribute to the Paris Agreement's temperature goals and additional action and policy needs to be developed.

A successful transition on energy is underway – now policy should focus on industry

The 2050 trajectory is highly ambitious for all parts of society as shown in the graph. A major focus of the EU climate policy has been successfully aimed at the energy sector with large support programs and dedicated policy. New policy has to learn from this success and focus should now be on the industry sector transition. EU leadership on climate action will more and more be judged internationally and domestically on how it demonstrates that this transition for industry is also both possible and beneficial. This requires dedicated new policy. This paper aims to lay the basis on how to make the best suitable climate policy design to enable a successful industry transition, specifically focusing on the carbon border adjustment.



GHG emissions trajectory in a 1.5 C scenario. A huge challenge to all parts of society. Industry is in blue.

THE NEW EU LONG-TERM CLIMATE POLICY REQUIRES ADDITIONAL MEASURES

In November 2018, the European Commission launched its “Communication - A Clean Planet for all” – A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy. The aim of this long-term strategy is to confirm Europe's commitment to lead in global climate action and to present a vision that can lead to achieving net-zero greenhouse gas emissions by 2050 through a socially-fair transition in a cost-efficient manner. It underlines the opportunities that this transformation offers to European citizens and its economy, whilst identifying challenges ahead.

The proposed Strategy looks into the portfolio of options available and did not launch new policies yet. It is meant to set the direction of EU climate and energy policy, and to frame what the EU considers as its long-term contribution to achieving the Paris Agreement temperature objectives in line with UN Sustainable Development Goals, which will further affect a wider set of EU policies. The Strategy opens a thorough debate involving European decision-makers and citizens at large as to how Europe should prepare itself towards a 2050 horizon and the subsequent submission of the European long-term Strategy to the UN Framework Convention on Climate Change by 2020.

Based on the Commission’s vision, the Member States are regularly discussing what the long-term climate policy should look like. The industry ministers of 18 Member States published at the end of 2018 a declaration on the long-term climate policy. The former European Parliament agreed in 2019 on a Resolution on long term climate policy. Recently, the High Level Expert Group for energy intensive industries coordinated by the European Commission gave their recommendations in coordination with the Competitiveness Council. These proposed actions include the issue of carbon border adjustment.

The recent policy program of the Commission President Ursula von der Leyen's is bringing more clarity to this process; her proposal for a carbon border adjustment as part of the new Green Deal will hereby be worked out further to enable a thorough legislative proposal with the aim to succeed in Europe's climate neutrality.

CURRENT CLIMATE CHANGE POLICY – THE MAIN INDUSTRY ASPECTS

Huge Investment and finances needed for industry

Modernising and decarbonising the EU's economy will require significant additional investment. Today around 2% of GDP is invested in our energy system and related infrastructure. This would have to increase to 2.8% (or around € 520-575 billion annually) in order to achieve a net-zero greenhouse gas economy. This means considerable additional investments compared to the baseline, in the range of € 175 to 290 billion a year. Private business and households will be responsible for the vast majority of these investments. This can only happen in a situation in which European industry is in fair competition with its global competitors, in a level playing field. To foster such investment, it is crucial for the European Union and Member States to offer clear, long-term signals to guide investors, to avoid stranded assets, to raise sustainable finance and to direct it to clean innovation efforts most productively.

At EU-wide scale these figures are already substantial. But for energy intensive industry these costs are relatively much higher to bear and currently go beyond each business model of regular investment. It is therefore in the interest of the European environmental objectives that, similar to the energy sector, dedicated programs and policy is needed to facilitate this transition realistically.

Massive research, innovation and deployment is key from a policy and industry perspective

Today, the costs of some of the advanced low-carbon energy carriers and technologies remain high, and their availability is limited. A strong coordinated and innovation effort, built around a coherent R&D investment agenda is needed in the EU in order to ensure low and zero-carbon solutions are economically viable, bringing about new solutions to the market. In this context, a forward-looking research and innovation strategy should be guided by zero-carbon solutions that have the potential to be deployed by 2050. Climate is already at the heart of Horizon Europe, the European Union's proposal for the new EU's research and innovation programme.

It is encouraging that some industrial sectors which need the implementation of low carbon technologies quickest have been developing ambitious masterplans for the low carbon transition. The new technologies will require investment, capital and operating costs of hundreds of billion € per year. This challenge can be overcome only if private capital is supported with a consistent and coordinated framework of public funding opportunities at EU, national and regional level, while competing at a global level playing field.

A successful just transition requires both mitigation preparation and avoidance of unnecessary consequences

Overall economic impacts for society of the deep transformation can be hugely positive.. The transition will change industry and society. Further investment will create new, local, high quality employment opportunities. Actions and policies to implement the EU's 2020 climate and energy targets already added between 1% and 1.5% to the EU labour force and this trend will continue.

Whereas the number of jobs increases in construction, farming and forestry and renewable energy sectors, for a number of sectors the transition can be difficult. Particularly affected could be the regions whose economies depend on activities that either are expected to decline or will have to transform in the future.

Areas such as coal mining, oil and gas exploration are likely to be affected. Energy intensive sectors such as steel, cement and chemicals as well as car manufacturers will see a shift to new production processes with new skills required. Regions which depend economically on these sectors will be challenged. Decarbonisation should not take place, however, by decreasing jobs and production that will be replaced by jobs and production and imports from outside Europe.

Unless adequate regulatory or mitigating measures are in place, the transition bears the risk to disproportionately affect people with low income, leading to the emergence of some form of energy poverty. The social consequences of the transition cannot be addressed post factum. It is key that policies are created in a way that both guides the fair transition where needed and also avoids social impacts where these can be avoided, particularly regarding shifts of jobs and production to regions that are not pursuing ambitious climate policy, which would risk the European leadership on climate policies.

An effective European continuous global climate leadership requires additional policy

The success of EU efforts in leading a successful low-carbon transition at global level and fighting climate change ultimately depends on international cooperation. The EU's long-term strategy cannot be pursued in isolation. The EU must therefore promote worldwide uptake of policies and actions to reverse the currently unsustainable emissions trajectory, and to manage an orderly transition to a worldwide low carbon future. The EU should continue leading by example as well as foster multilateral rule-based cooperation. This remains the best means for the EU to address this inherently global challenge, underlining the importance to implement the Paris Agreement and making it a global success.

Recent trade tensions are setting a changing trade dynamic globally, particularly driven by the unilateral trade policy measures and the bilateral conflict between the US and China. Other regions are increasingly setting unilateral policies regarding trade and climate, which also have an impact on climate change pledges, actions and negotiations.

At the same time there is a big concern about the growing market share in Europe of primary industry products originating from regions with much less or none at all carbon policy costs.

Clearly, the way Europe is judged and should be leading on climate action by example is changing. It is key that the Environmental objectives of the EU are not hindered by these developments. The EU should be designing its policy differently to effectively deal with the changing international dynamics. Only then can Europe show continuous effective leadership regarding the multilateral trade system as well as concerning international climate change policy. The successful implementation of carbon emission reductions by EU industry while operating on a global level playing field, facilitated the carbon border adjustment, fits very well in this new development.

As the Commission's Communication clearly states, proactive or corrective policies may be needed to ensure a fully competitive and level playing field in line with international obligations. It is key that the Communication emphasises that to reach Europe's environmental objectives future policy should alleviate competitive pressures that could lead to carbon leakage, unwanted industrial relocation and increased imports of primary industry products. Follow up proposals are required to work this out. Clearly, in this context, the proposal for a carbon border adjustment by Commission President Ursula von der Leyen is key for Europe's future climate change success.

NEW POLICY TO INTEGRATE THE NEW BUSINESS REALITY TO REACH THE CLIMATE GOALS

Carbon reduction in industry while avoiding carbon leakage requires new policy

Carbon neutrality by 2050 will become the new norm by which all climate policies will be judged. The target is ambitious and will now require a new suitable regulatory policy instrument to be achieved in practice. It is essential that European industry succeeds in this transition. It is key for the European economic base, but also a condition for the EU to continue its global leadership in climate change. Only if the EU can demonstrate that the decarbonisation of its industry is possible without losing competitiveness or market share as a result of CO₂ abatement costs, other regions will follow. This becomes even more important as the share of EU emissions globally shrinks, while other regions are increasing their relative and absolute emissions. Avoiding carbon leakage is therefore an increased priority to succeed in the fight against climate change.

Avoiding carbon leakage has been a cornerstone of the current EU climate policy. However, the impact of ETS on industry is changing in a more costly way, while at the same time only in the EU industry has to prepare investments of low carbon technologies and associated higher operating costs, and deal with tougher international competing dynamics. New European policy will have to deal with this new business reality.

This is confirmed by the results of the analysis added to the Communication from the European Commission on its long-term vision "A clean planet for all" shows that the risks of competitiveness losses and therefore of carbon leakage are real for the exposed sectors, in absence of protective measures. According to this study, if the EU achieved carbon neutrality in 2050 by unilaterally carrying out its efforts, the level of production for example in the metallurgical sector would be 15% lower compared to the same efforts made under a global cooperative scenario.

ETS is the cornerstone of European climate change policy and remains so. It guarantees the controlled cap of European emissions and arranges the allocation on European industry. While it is supported as key policy it also does lead to costs other regions do not impose on its industry. Even with the current carbon leakage measures, an average EU producer is exposed to high carbon costs due to different elements. The distance from the benchmarks by 90% of the plants in most sectors is one element. In some sectors no plant is able to reach 100% free allocation due to benchmarks setting. In addition, the linear reduction of the benchmark steadily reduces free allocation. Currently there is the application of the cross sectoral correction factor capping free allocation, which may return in the second half of phase 4. The carbon price is increasing steadily and geared to remain so. Considering the digressive nature of the carbon leakage measures, such costs will inevitably increase in the future.

Carbon leakage measures will no longer work for some key sectors:

The EU Emissions Trading Scheme will soon no longer be able to avoid carbon leakage for the most at risk sectors. After 2020 the past surplus of free allowances in several sectors expire, resulting in huge shortages and costs. Several companies have already now millions of carbon costs. By 2020-2030, additional cost for marginal production of key industry sectors may even go to around 50€/ton, which is higher than their Ebitda/t. Clearly the outside importers are competing mostly with these marginal productions of EU industry and a border adjustment must be geared to deal with this aspect. Without a carbon border adjustment, the lowest-cost approach to reduce GHG emissions within the ETS is to import products from outside the EU. This is the clearest form of carbon leakage and that is why the priority of new policy should be to solve this problem first, with a carbon border adjustment. This situation means

likely many billions of euros costs only for European industrial companies. These costs impacts differ by sector. Therefore it is key that first solutions must be found for the sectors most at risk of carbon leakage as soon as possible.

The best solution to make the carbon neutral transition would be a global carbon price and cost for all sectors; this is not realistic unfortunately. Although there are some regions with an ETS or a carbon tax, this is often covering the energy sector and not covering the main industrial sectors.

When new policy would be introduced in the EU, and importers would be treated the same way as domestic producers, this can indirectly serve as a carbon price push for the regions where such imports originate from. It could be a substantial addition to the world climate ambition.

At the same time importers that are obliged to pay for the same carbon costs as EU companies should be pushed to see this as an incentive to reduce their carbon emission, so they can pay less. Like this, a Carbon Border Adjustment can also incentivize outside producers themselves to become more CO₂ effective.

Circumvention and imports of less carbon efficient products needs to be avoided to keep climate policy effective: carbon leakage already exists by over 20% of imports of primary products in key sectors

In other parts of the world, ETS systems mostly do not target energy intensive sectors, but the power sector and are not putting similar costs on industry production. At the same time, there are many million tons of energy intensive products imported in the EU that do not have the same ETS costs scope. Other regions in the world are fiercely protecting their market and industry with unilateral measures, while the EU is the only rather open economy. In some key energy intensive sectors, the EU imports already roughly over 20% of the market and European companies are decreasing production.

This means that EU producers absorbing the structurally higher costs of ETS and breakthrough technologies are competing against more carbon-intensive manufacturers with lower operating costs. This also means that the volume of CO₂ emissions imbedded in products is increasing substantially. These emissions are produced and emitted outside the EU ETS cap. These are mostly produced much less CO₂ efficient. It is clear that the European policy should not allow such increase of emissions worldwide.

This ongoing phenomenon is highly contra productive for the climate. It also corresponds to a recent study which estimates that about a quarter of global CO₂ emissions are embedded in products that are traded across national boundaries.¹ Hence, current provisions that avoided carbon leakage are no longer sufficient and have to be modified.

Carbon leakage and circumvention must be avoided to keep climate policy effective and credible. Circumvention can occur in two ways. EU manufacturers can move production abroad so as to avoid the cost of CO₂ emissions in the EU, or, consumers can simply import products made in countries where CO₂ policy is lighter and carbon costs are not built-in. The EU can achieve CO₂ reduction targets by allowing for circumvention. Without proper measures EU producers could risk to stop producing not only the marginal production, but even the whole upstream production of their value chain, cutting production in the EU and become producers of the next production steps in the value chain; this risks the continuation in the EU of such value chain. This trend is unfortunately already visible in some industrial sectors and should be avoided. These upstream production of the value chains mostly function as crucial investments multipliers for the EU economy. Risking these value chains is against an effective and

¹ KGM, GEI and ClimateWorks Foundation (2018), The Carbon Loophole in Climate Policy

coherent global climate change policy. For global climate change, the increase of imports into the EU is not the solution, because the EU already has a cap ceiling of emissions and also as the CO₂ footprint of imported products is mostly higher than in the EU.

Without new policy measures, unilateral ETS cost measures will therefore result in more carbon imports in materials and products, and also the losses of (up-stream) investment- and jobs.

EU industry faces both ETS- and low carbon technology development and investment costs

Considering the additional time required for their uptake and deployment, it is essential that most promising breakthrough technologies are tested and implemented at industrial scale demonstration as soon as possible. In this regard, it is important to understand that EU industry producers face not only the compliance costs of the EU ETS, but the full abatement costs, which include the costs to develop and implement the breakthrough technologies at industrial scale and increased operational cost, notably for CO₂-low energy. These costs will likely be more than 10 times the current compliance cost per ton of CO₂ abated. The overall legal framework needs to address both issues.

Many European sectors are hard hit by the current trade tensions, while global overcapacity and increasing cheap imports are driving the prices and profits of European companies down. In addition, the prices of ETS allowances are increasing. The companies are unable to pass on the carbon costs and risks and this financial disadvantage will quickly increase over time.

It is on this dire basis, only EU companies have to gather financial means to invest in very risky and expensive low carbon technologies. It is clear there is no business case to do this on the current policy basis. A global level playing field is the basis for a solution, which therefore, needs to be developed in policy as soon as possible.

Policy should start to enable long-term investment planning

To allow such investments it is key that the EU policy will allow long-term investment planning beyond 2030, as investments in most energy intensive industries will take 1 or 2 investments cycles toward 2050. This requires an investment climate that makes such long-term investments feasible in the EU already now. It is however now too difficult to make true long-term investment planning, as carbon policy and costs are unsure post 2030, but are most likely to increase very much higher.

European low-carbon technology needs to be invested in the EU, not outside.

Europe has many funding programs for research & innovation technologies. There is however no certainty which of these technologies will bring the greatest results for deep de-carbonization in an economically viable way for the steel industry. For this reason, it is key that all low carbon technology possibilities must be incentivised to have the optimal chance of success. But these technologies cannot be introduced at short-term on a wide scale to replace emissions of energy intensive industries. A wide roll out of potential breakthrough solutions on CO₂ reductions, beyond just technology, requires a lot of time, investments and financial risks and means. There are already examples of key low carbon technology, developed and paid by EU companies and tax payers will be rolled out outside the EU. A new policy that will readjust the level the playing field of competition and investment, with as basis the carbon border adjustment, will also avoid this situation.

Climate policy needs to ensure a competitive operating landscape for EU low-carbon producers

Today, technology pathways to low-carbon production lead to structurally higher input and operating costs for most industries. Clean energy input and operating costs for industry could reduce over time as

the transition to low-carbon matures, as has happened with solar and wind renewable energy inputs. Yet in the medium to long term, policy will need to ensure a competitive landscape is maintained between low-carbon and emitting production.

A fair carbon border adjustment is the main solution to these concerns

The new environmental policy framework has the objective for EU industry to remain both the material- and low carbon technology leader in the world, to keep the vital industry value chains in Europe, and deliver on its low carbon transition. For this EU industry needs the development of a policy measure that can both guarantee this international level playing field, allow incentives for the required low carbon technology investments, while continuing the environmental integrity of the EU climate policy. A fair carbon border adjustment for importers is the main instrument that can accomplish that. In addition, such a system will incentivize climate policies in third countries and can guarantee the leadership of the EU in climate field.

DESIGN OPTIONS OF THE CARBON BORDER ADJUSTMENT (CBA)

Advantages of the CBA

A carbon border adjustment will have many advantages for Europe and its environmental policy objective. As stated above, it can contribute to a better level playing field between EU products and third countries' competitors and as such functions as essential basis to plan low carbon investments. At the same time it is an effective tool of political diplomacy to foster climate ambition in third countries exporting to the EU so that deeper emission reductions are delivered globally. Depending on its design it can provide additional revenues to the EU that should be fully used for climate measures, e.g. the Commission's new proposal to transform the EIB into a "climate bank".

A carbon border adjustment is a major justification to continue with ETS over the long term, as it solves the significant problem that ETS in its current development would no longer avoid carbon leakage, but would in fact otherwise incentivise carbon leakage. By solving the carbon leakage part of ETS, a CBA makes ETS more effective and robust for future functioning.

It should be designed in compatibility with ETS over the short and long-term

It is key that a system is designed that can work in combination with the ETS at short, medium, and long term. It should function in line with the costs stemming from the ETS, following the planned ETS development regarding the linear reduction factor and the ETS correction factor. It must be able to cover the gradual decrease of free allocation, but also with longer-term situation without free allowances. The CBA levy can therefore be gradually be phased in, and the same pace and basis as the free allocation will be phased out. This will make it a powerful policy instrument allowing long-term investment planning for a long-term climate policy.

Coverage by only the main primary products will make it simple and workable

The design of the CBA is to be as simple and workable in practice as possible. Therefore, the products coverage for a border adjustment should not include end-products, which is too complicated and not needed for carbon leakage protection.

CBA could be tested on a limited scope to target homogeneous products. This will make its calculation easy. It should cover the primary products of the energy intensive industries concerned, e.g. cement or primary steel. This should cover almost completely most of the relevant imports involved, regarding the carbon intensive parts of the respective value chains. If needed to enlarge the scope the emissions

attributed to semi-primary products could be converted by fixed keys into the same primary product. The advantage is that the calculation of the actual border adjustment levy can be rather simple and workable, with a clear link from the additional ETS carbon production costs on the applicable product.

CBA will co-exist with the current agreed development of free allowances; full auctioning is detrimental

To be effective and avoid too high levies on importers, side-effects on competition between different sectors (replacement by a material subject to the ETS but not to CBAs), side-effects on downstream sectors and the losses of export competitiveness, the free allowances and compensation of indirect CO₂ costs applicable to sectors subject to CBAs will be maintained as currently existing. This also allows the testing in practice at relatively low levels and impacts. There should not be a double protection on industry, as the border adjustment will only be based of the lacking free allocation costs.

Adversaries of the CBA success propose it with full auctioning as base from te start. This would take away the political support and risk the success of the CBA and hence the ambition of the Green Deal. In case of full auctioning, the costs, impacts and the commercial risks would be too burdensome for the applicable European industry sectors and make the design counterproductive. There is absolutely no need and no reason to give up free allocation and CO₂ compensation for full auction; not from an environmental, nor legal and nor economical reason.

With full auctioning as basis of such a measure, it would be certain that the European industry will have a much higher costs than the importers. EU producers would be obliged to pay for all allowances – over the 100% of their production – while importers would have to pay that only over the relative small percentage of volumes they export to the EU.

Base industry is a high fixed costs industry. This incentivises producers worldwide to optimise the output of their facilities, exporting the marginal tonnes in oversupplied markets at prices close to their marginal, and many times variable, cost of production. Today's import volumes into EU from main importing countries represent mostly less than 1-4% of those countries' total production volumes. Hence, it is very easy for these importers to spread these costs over their whole portfolio.

In addition, importers economic rationale is to continue imports to the EU up to the last \$ or € over variable cost, or in other words as long as exports generate 1\$ contribution margin over fixed costs. It would hence be very easy for them to absorb the costs and keep on exporting to the EU market.

Full auctioning would oblige EU producers to push on the full carbon costs into their pricing, but with importers absorbing these costs and importing against lower prices, this will not be possible. This would mean that in any case European producers would be at an even worse competitive position than currently.

Full auctioning would make the whole EU industry sector uncompetitive and at risk. The whole EU production with very high given costs would be competing with these low costs imports and would be on the block for decision making. It would be too costly to produce in Europe. This could lead to massive disinvestment and increasing imports into the EU and would fully undermine the environmental aim of the measure. Full auctioning cannot lead to an effective border adjustment in the current situation and would be undermining the Green Deal ambition.

Calculation of an effective border levy

In practice, the border levy must compensate the global financial disadvantage due to ETS as precise as possible. This effectiveness of the levy is key to contribute to the environmental goal of the EU. The CBA would force importers to pay a carbon price cost equivalent to the number of allowances that a European

producer would have to buy in the EU ETS for the same quantity of product (taking into account free allocations).

This effective amount can be calculated best based on the marginal ETS sector carbon costs per ton. Because the marginal production volumes are in direct competition with the imports and take the full impact of the carbon costs. They are at highest risk of carbon leakage and are the basis of company decisions to potentially import these volumes, relocate upstream or invest and produce in the EU. This amount should also take into account possible gaming by foreign importers which have various production facilities.

The factors for this calculation are the CO₂ sector emissions, free allocation volumes, production volumes, and the official EU carbon price. Consequently, importers will be charged the same CO₂ emission cost as the marginal EU production of the same product. The data of these relevant factors is required. Where this may not be available this will have to be arranged.

In practice, CBAs do not require the purchase of actual ETS allowances. There are several design options to come to the effective levy. It can thus be implemented without disrupting the EU-ETS market or damaging its environmental integrity. One option, for example, could take the form of a "mirror" market, where importers would buy virtual allowances (thus not counting in the EU-ETS ceiling), whose price would be equal to the real price on the market EU ETS.

Depending on the design of the CBA, the funds raised from the levy could be used for carbon reduction incentives and projects. This can be in the EU, but also globally.

Importers from countries with similar effective climate policy can have a reduction

A mechanism could be included to allow importer countries to show that they have similar carbon costs and that the CO₂ intensity and costs of imported finished products is similar to the EU one determining the CBA levy. If they can prove this, the border levy can be reduced or deleted.

For this, the EU could adopt "Agreements of Equivalence" with third countries that either join with an ETS for the relevant sectors or have identical CO₂ cost constraints for their industry, in which case there will be no border adjustment for products from such countries. This aspect is a powerful incentive for third countries to join and step up their climate policy actions.

When importing a product subject to CBAs, the importer will be required to pay a carbon price cost for the amount of emissions corresponding to the difference between the relevant European emission level for equivalent products and the amount of free allocation for these products in the EU ETS.

For such countries of equivalence, the UNFCCC Paris agreement should not be used. First of all it would make the CBA ineffective as Europe would be flooded by LDC imports, as is already the origin of most imports of primary industrial goods. Moreover, a kind of precondition of demonstrating participation in a similar emission reduction mechanism has nothing to do with the Paris Agreement, as it does not require reductions. Mandated reductions in carbon emissions is a core of domestic policy, not the Paris Agreement, and it is therefore logical and necessary that the CBA is linked with a national reduction element as well, preferably linked to the sector involved. Compliance with Paris by the exporting country is therefore irrelevant for this purpose and should not be used as a limitation on what the EU can do.

An export rebate can be foreseen

Export decisions in industry are based on the production costs of their marginal tonne, which bear the full carbon cost in EU producers' business considerations. Non-EU markets competitors do not have these

costs. The main EU industry exports supplied to global markets are often high value-added products, where there is increasing global competition, and where EU producers are often market leaders today; this has to continue.

Without a rebate on carbon costs for exports, EU producers are in an unfair international competition. This rebate can work in the same way as a value-added taxation. The exporter will get reimbursed for the CO₂ costs it made in the EU for the volumes it is exporting, represented by the CBA levy based on the marginal costs.

For the environmental integrity of the system it is fair, as otherwise these exported products would possibly not been produced in the EU – under the strict EU emissions Cap - but possibly outside. It would reinforce the success of the environmental system of the EU and function as additional incentive for other regions to copy such systems.

Launch and implementation should start as soon as possible

It is important to start implementation as soon as possible. It is key to start in combination with existing carbon leakage provisions and keep free allocations, as stated above; this would keep the border adjustment at a reasonably low level. It can then be tested and improved in time. This is why one should not wait for 2025 with its introduction. In addition, fast implementation is key to avoid carbon leakage and allow long-term investment planning for the most at risk sectors. Introduction later, s will mean continuation of the current dire imports situation, more long-term investment uncertainty for European industry, higher costs, and a higher CBA levy later, which can create a shock without any test in trade with more unpredictability and possibly tensions.

The newly revised EU ETS Directive has a provision to reconsider the opportunity of setting up CBAs.. It is suggested that following the new Green Deal program, the Commission can develop and launch the legislative proposal by 2020 with introduction by 2021.

The added value of a CBA will be relatively high on the sectors where it aims to avoid carbon leakage at, while the impacts on downstream are assessed to be very low. Most downstream products in key value chains only have minor parts of the material involved and will have a negligible impact. Where there are higher volumes involved, eg steel in a car, the impact is envisaged to be very low, e.g. much below a percentage of the costs.

Sectors: start as test for the sectors which need to solve carbon leakage quickest

The implementation of CBAs could be done by steps, focusing first on the sectors for which the operational feasibility is the greatest or where the impact of imports without comparable carbon cost constraints is biggest. As stated, in order to maintain fair competition between the sectors that would initially be subject to CBAs and those that would not, the current system of carbon leakage protection (free allocation and compensation of indirect costs) should be maintained alongside CBAs.

The Commission President rightly proposes to start the CBA with the most at-risk carbon leakage sectors as soon as possible as demonstration phase. Not all sectors have to join at the same time; some sectors have much less problems with carbon leakage and needs to invest in low carbon technologies but could opt-in any time. It is suggested to start with steel, cement and potentially fertilizers asap as basis.

LEGISLATIVE / WTO ASPECTS

The establishment of a border adjustment can comply with the rules of the World Trade Organization. It depends on how it is designed and particularly on how the environmental objective is set.

It appears from a joint UNEP / WTO 2009 report on trade and climate change that border adjustment mechanisms with the aim to improve the environment and the climate, including actions against a risk of carbon leakage are compatible with international trade rules as long as it is non-discriminatory, i.e. under the conditions of Article I, Article II.2a and Article III.2 of the GATT. In addition, the GATT allows in any cases WTO members to adopt measures necessary for the protection of the environment or relating to the conservation of natural resources, even if discriminatory, provided that such measures do not constitute arbitrary discrimination between countries where the same conditions prevail or a disguised restriction on international trade. This is the application on Article XX b) and g) of the GATT.

In other words, a border adjustment may be legally valid under international rules to the extent that it is compliant with the WTO non-discrimination principle (Art. I, II, III GATT) or is compliant with environmental protection purposes (Art. XX GATT). It is key that the design of the border adjustment is designed in full understanding of the WTO law, in particular, the scope and purpose of GATT Articles III and XX.

Border adjustment may be WTO non-discriminatory

The border adjustment may be structured as an extension of the current EU ETS (purchase and surrender of allowances) but also as a duty/tax: the EU ETS can be converted into a cost per tonne of good produced and an equivalent duty/tax on the import of that good can then be applied at the border. This conversion will be complex but is doable. It is covered by recent case law, e.g. the US-Gasoline case and the EC-Asbestos case.

Regarding non-discrimination, as long as the border adjustment treats non-EU and EU products similarly (GATT Article III) and all countries in the same way (GATT Articles I), the mechanism is non-discriminatory, i.e. WTO compliant. The definition of similar ('like') products is therefore very important since the WTO non-discrimination obligation only exists in the event that domestic and imported products can be qualified as 'like' products, meaning directly competitive and substitutable products.

On this point, WTO case law (*Canada-Feed-in-Tariffs*) explained that products are not considered 'like' when the carbon footprint of one is different from another. In other words, if one steelmaker used Xt CO₂ to produce a steel product and another steelmaker use Yt CO₂ to produce the same product, therefore, the WTO says that the 2 products are not similar, i.e. no 'like' products. Hence, applying a border adjustment to non-EU products which don't have the same carbon footprint than EU products (higher CO₂ emitted than in EU) is non-discriminatory since the non-EU products and the EU are not considered as 'like' products'.

Furthermore, the GATT provisions allow border adjustment if it falls within the scope of GATT Articles II.2 (a), which allows WTO Members at any time to impose a charge on the importation of any product, on the condition that this charge is equivalent to an internal charge on products. This raises the question of whether the EU ETS is applied "on products" or, in other words, whether charges on CO₂ can be assimilated to a charge on products. Here again, the WTO caselaw (*US – Superfund*) and the WTO law (*Agreement on Subsidies and Countervailing Measures*) consider that CO₂ is an input, as "used during the production process of a product", so that CO₂ is incorporated in a product as "used to obtain the product": the CO₂ and the product cannot be distinguished from each other. Therefore, a charge on CO₂ production is a charge on product, which means that the EU ETS may be eligible for the calculation of a border adjustment.

Another point which might raise an issue regarding non-discrimination is whether the border adjustment has to be a perfect symmetrical system that the one in place in Europe, in order to respect the WTO Equal Treatment principle. It would mean that to comply with GATT Article III, the border adjustment should be an extension of the EU ETS to non-EU producers (buy and surrender allowances). The WTO caselaw (*US – Section 337 Tariff Act*; *Korea – Various Measures on Beef*; *United States – Measures on clove cigarettes*) clearly states the contrary: whatever the form of a measure imposed on non-EU products, as long as this measure does not consist in taxing in excess (disadvantaging) the non-EU products than the EU ones, it is non-discriminatory. And even more precisely, a formal different treatment applying to non-EU products may be compliant with WTO rules if such treatment aims to achieve non-discrimination.

Finally, GATT Article III provides that there is no discrimination as long as foreign products are subject to the same constraints and benefits than European products. Therefore, a mechanism to allow exporters to the EU show that their carbon costs are equivalent or better than the EU costs will allow the rectification of different treatment if that different treatment is causing unfairness to a particular exporter or to a particular country of origin.

If this is designed in the right way, this equivalent border measure does not breach GATT Articles III or I and the rectification mechanism will allow the EU to address specific factual situations which might be considered unfair.

Border adjustment is WTO compatible if it leads to protect environment

In any case, even if the border adjustment is considered as discriminatory under WTO rules, Article XX of the GATT allows the mechanism anyway, at the extent that it is necessary for the protection of the environment or relating to the conservation of natural resources.

WTO case law makes it clear that WTO members, such as the EU, have absolute discretion to determine the level of environmental protection that they consider appropriate and to determine the measure(s)/policy(ies) to be implemented to achieve it.

If this level of protection results in loss of trade opportunities (e.g. for exporters to the EU) this can be accepted by the WTO, on condition that the loss of trade opportunity is a result of a genuine effort to protect the environment and is not aimed at restricting trade (for the sole purpose of restricting trade), or to discriminate against different exporting countries (if a discrimination is not justified).

Thus, the loss of opportunity or the discrimination (between EU products and imported products or discrimination between exporting countries) must be justified on the basis of the underlying environmental objective.

The EU is entitled to introduce border measures as part of its internal environmental policy if the border measure is necessary for the coherence of its internal policy.

Therefore, if there would still be a discrimination, but the discrimination is justifiable on the basis of the policy objective, **then Article XX operates so as to allow that discrimination.**

Art.XX does include climate measures. This is not only just logical from its wording and meaning, but also case law: e.g as argued in the the Korea-Beef case, Brazil-Retreaded Tyres case, US-Gasoline case, US-Shrimp case.

In the above context, there are several legislative options in which a CBA can be designed.

This can be through two main EU policies: the European Environmental Policy under Articles 191 and 192 TFEU and the European Commercial Policy provided by Article 207 TFEU. For each policy, options could be considered such as:

- A Border cash deposit, for climate projects globally or in the EU
- A Border tax adjustment
- A Customs duty
- A Variable Customs duty based on EU standards

Alternative combinations of certain features from these options can also be envisaged.

Moreover, the combination of the EU's domestic climate policy elements – mandated emission reductions, carbon costing policy, and avoidance of carbon leakage – makes the new carbon border measure something different from a tax. A CBA should therefore not be based as tax.

Hence, the fiscal nature or a tax is just one of the options. It is clearly not the suitable and preferred option and not required.

LONGER TERM CONSIDERATION TO REACH CLIMATE NEUTRALITY

While a border adjustment based on the equivalent ETS costs can be an effective measure in the low carbon transition phase, a longer-term regulatory framework is required as well for the post-transition, i.e. when the breakthrough technologies reach sufficient market penetration and CO₂-lean steel represents a critical mass of the market. At that stage, if the EU industrial sector is successfully decarbonised, its carbon costs cannot be used anymore as a reference for the border measure as it does not capture the full decarbonisation costs, such as capital investment in new technologies and the higher costs of CO₂-low or CO₂-neutral energy vectors.

Therefore, an additional regulatory framework will be required for the longer-term. This could be for instance a carbon VAT and/or product standards that do not allow access to products with higher embedded emissions.
