



Key Points and Implications of the EU Carbon Border Adjustment Mechanism Legislative Proposal

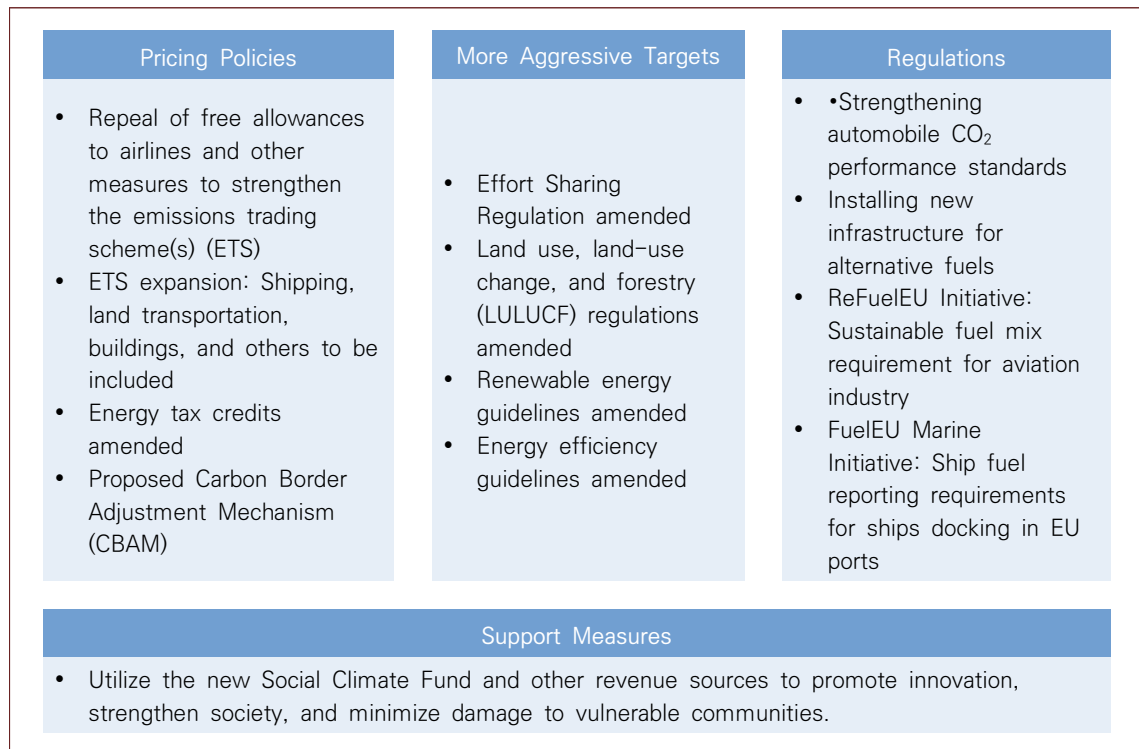
| Summary |

- On July 14, 2021, the European Commission announced its Fit for 55 package to reach the EU's climate target of cutting emissions by 55 percent by 2030. A Carbon Border Adjustment Mechanism (CBAM) legislative proposal was introduced as part of this package.
- The CBAM proposal includes details for execution and outlines a phased implementation following a transition period.
 - The proposal describes the mechanism and scope of CBAM, emissions calculation methods, and exclusions.
 - It follows the method by which Emissions Trading Schemes (ETS) operate for EU importers. During a transitional phase, imports must be accompanied by a mandatory reporting of carbon data. Starting in 2026, following the conclusion of a transitional period, importers will be required to buy certificates with carbon prices determined by the EU ETS.
 - The data reported during the transitional phase prior to 2026 is expected to enhance the effectiveness of policy implementation.
- Beginning with the EU in 2005, governments had have launched ETS at various levels, from the municipal to the national level.
 - Korea launched its own national ETS in 2015, and is currently implementing the planning phase.
 - The United States and Japan have regional emissions trading schemes in place and China will launch a national ETS this year.
- While different countries are responding in disparate ways to the EU CBAM, Korea needs to prepare a forward-looking, strategic response to the proposal based on Korea's domestic import and export structure and its climate change policy.
 - Through an examination of Korea's domestic ETS and an identification of the country's strengths we must find ways to minimize the potentially negative impacts of ETS on our domestic industries.
 - In the longer term, we must preemptively address the potential for carbon leakage along the global supply chain by fostering enhanced capabilities at small- and medium-sized subcontractor enterprises (SMEs) through technological innovation and investment. In addition, we must strengthen carbon data collection and improve system development focused on supply chain considerations.

■ **The Fit for 55 Legislative Package**

- On July 14, 2021, the European Commission announced its Fit for 55 package for reaching EU's climate targets.
 - The EU has set goals of achieving carbon neutrality by 2050 and cutting net emissions to 55 percent of 1990 levels by 2030 (the European Climate Law was ratified by the European Council in June 2021).
 - The Fit for 55 package seeks not only to help the EU achieve its climate goals but also to lead the economic, social, and industrial transitional changes necessary to achieve them.
 - To date, this is the most comprehensive climate and energy package proposed by the European Commission.
- Fit for 55 is comprised of interconnected components that strive toward a fair, competitive, and green transition.
 - A balanced approach is taken between stronger regulations and market mechanisms for climate, energy and fuels, transportation, buildings, land use, forestry, and other policy and economic fields.
 - The eight laws and institutions take the form of pricing policies, more aggressive targets, regulations, and increased support as well as five new proposed initiatives (Figure 1).
 - The CBAM(Carbon Border Adjustment Mechanism) legislative proposal was released as a component of the pricing policy.

Figure 1. EU Fit for 55 Overview



Source: European Commission(2021), *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.*

■ Fit for 55's Carbon Border Adjustment Mechanism (CBAM) Proposal

- The EU announced the CBAM as part of the European Green Deal (December 2019) which foretells of a drastic change in global climate and an equally drastic change in the global trade order. Fit for 55 constitutes a detailed legislative proposal that includes targets, an implementation schedule, methods, and other aspects of the CBAM.
 - The original CBAM proposal includes responses to weakened domestic industrial competitiveness arising from the EU's stringent climate policies and regulations. It seeks to reduce carbon leakage and induce the participation of other countries in global climate agreements.
 - Though was originally scheduled for full implementation by 2033 following an initial impact assessment and stakeholder review, the Fit for 55 package reveals a

new enforcement timeline, methodology, and other key aspects.

- Even though it is the EU's position that the CBAM is necessary to effectively respond to the global climate crisis and create an environment for fair trade competition, EU member states have encountered difficulties reaching consensus due to uncertainties about World Trade Organization (WTO) compliance and the fact that countries would be impacted differently based on the mechanism's design.
- Moreover it seems possible that the cost of emissions reductions could be transferred from developed to developing countries, reflecting a new type of trade protectionism.
- Key points of contention surrounding the design of the CMBA include: determining which products and fields will be subject to the CBAM, the complexity of the policy, the method of calculating the amount of carbon included in products, and methods for determining the fairness of climate policy.

■ **Phased-Execution for Key CBAM Issues**

- The CBAM proposal in Fit for 55 comprises eleven chapters, 36 articles, and 11 annexes with content covering general provisions as well as objectives, scope, definitions, import declarations, CBAM jurisdictional authority, CBAM certificates, execution, and other regulations (Table 1).
- Though this measure will come into effect on January 1, 2023, there will be a transition period through 2025 during which there will be no need for importers to purchase CBAM certificates. Instead, importers will be required only to report the actual direct and indirect emissions embedded in the products along with the price of carbon paid abroad every quarter.¹⁾
- The current proposal provides regulations pertaining to issues that have previously been debated, such as the form and scope of CBAM, the measurement of carbon emissions, and exemptions.

1) Though the legislative proposal deals only with direct emissions, reporting of both direct and indirect emissions are required during the transitional period. This leaves open the possibility of indirect emissions reporting requirements to be added after the transitional period begins.

Table 1. Main Articles and Key Components of the CBAM Legislative Proposal

Article	Topic	Key Components
Chapter 1 (Articles 1–3)	Subject matter, scope, and definitions	<ul style="list-style-type: none"> Objective: Prevent risk of carbon leakages Will be applied to cement, electricity, steel, and aluminum (Annex I). Countries subject are all countries outside the CBAM jurisdiction with exemptions listed in Annex II.
Chapter 2 (Articles 4–10)	Obligations and rights of authorized declarants of goods	<ul style="list-style-type: none"> Conditions for CBAM import authorization, obligations, and reporting requirements for authorized declarants of goods. (Including requirement to submit annual CBAM declaration by May 31 of each year) Principles of calculating emissions for imported products and reporting requirements; verification principles for verification by certified verifier Principles on how to consider carbon costs paid in a foreign country
Chapter 3 (Articles 11 – 19)	Competent authorities	<ul style="list-style-type: none"> Administrative installation of competent authorities, role, and information disclosure of the commission as the central governing body Key characteristics of the national registry and accounts, competent authority's decisions on import permissions
Chapter 4 (Articles 20 – 24)	CBAM certificates	<ul style="list-style-type: none"> Detailed rules covering the entire lifecycle of CBAM certificates spanning sale of certificates to return or re-purchase, and ultimately, final cancellation Certificate sales by competent authorities, calculation of certificate prices, procedures to fulfill certificate submission obligations by authorized declarants of goods, etc.
Chapter 9 (Article 31)	Coordination with free allocation of allowances under the EU ETS	<ul style="list-style-type: none"> Items to which Annex I applies may undergo adjustments during the transitional period in order to reflect EU ETS free allocations. Calculation methods for reduced obligations will be determined by the Commission.
Chapter 10 (Articles 32 – 35)	Transitional provisions	<ul style="list-style-type: none"> During the three-year transition period from January 1, 2023 to December 31, 2025, CBAM will be applied as a reporting requirement The declarant will register a quarterly emissions report for the previous quarter's imports.

Source: Compiled by the authors based on *EU Proposal for a Regulation of the European Parliament and of the Council: establishing a carbon border adjustment mechanism*, EU Commission (2021).

- **(Method)** Of the existing proposals examined, including a carbon border tax, a carbon tax (in the form of a consumption tax, an expansion of the EU ETS and the operation of a separate ETS for importers based on the EU ETS, proposal four was selected. This indicates that compliance with WTO regulations was considered.

- **(Deductions)** In order to import specific, carbon-intense items, importers must purchase CBAM certificates based on the EU ETS carbon price. If the non-EU manufacturer can prove that payment has been made for the carbon input during production of the item, this amount may be deducted. CBAM certificate prices will be calculated based on the EU ETS auction average closing price announced on the last business day of each week.
- **(Target Industries)** Cement, steel, aluminum, fertilizers, electricity, and other industries with the highest carbon intensity will be the first target industries. The number of industries subject to CBAM may expand in the future.
- **(Emissions Calculations)** Unlike the June 2021 draft, the current design only includes direct emissions in calculations of emissions embedded in the product. As such, indirect emissions, such as the emissions produced in generating the electricity used in the manufacturing of the product, is not included; nor emissions generated in the production of intermediate goods/inputs downstream.
- We can assume that the implementation schedule was adjusted to reflect the ongoing use of free allocations in the EU ETS.
 - Though the EU emphasizes that the CBAM was designed to comply with WTO regulations, if all the articles take effect while free allocations are still available on the EU ETS, EU could face criticism for essentially doubling protection of domestic industries.
 - Concerns about the EU CBAM compliance with WTO regulations stems from the EU's free allocation of carbon credits. These credits will be phased out following the proper launch of the CBAM in 2026, and will be completely discontinued by 2035.
 - In order to promote the smooth enforcement of the CBAM during the transitional phase that runs through 2025, responsibilities will be reduced for importers and exporters.

■ Emissions Trading Schemes (ETS) Globally

- ETS exist throughout the world at various jurisdictional levels, from the municipal to the multinational. The first ETS was established by the EU in 2005. Since then, various ETS have been put in place or are being considered around the world (Table 2).
- The following ETS are currently in effect: one multinational ETS, eight national ETS, 18 regional ETS, and six municipal ETS.
- About 54 percent of global Gross Domestic Product (GDP) and 16 percent of global greenhouse gas (GHG) emissions fall under an ETS. The share of GHG emissions subject to ETS has tripled since the EU adopted its ETS in 2005.²⁾
- China launched regional level ETS pilot programs starting in 2013. Trade on China's national ETS exchange commenced in earnest on July 16, 2021.
- The U.S. and Japan both have regional ETS. The U.S. RGGI, in particular, is comprised of multiple states and promotes regional cooperation initiatives.³⁾

Table 2. Operational ETS (as of January 31, 2021)

Unit	List ¹⁾
Multinational	EU member states (2005) + (Iceland, Liechtenstein, Norway)
National	New Zealand (2008), Switzerland (2013), Kazakhstan (2013), Republic of Korea (2015), Mexico (2020), England (2021), China (2021) ²⁾ , Germany (2021)
Regional government	Regional Greenhouse Gas Initiative (RGGI) [Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, Virginia (2009)], Saitama (Japan, 2011), California (U.S., 2013), Quebec (Canada, 2013), Guangdong (China, 2013), Fujian (China, 2016), Nova Scotia (Canada, 2019), Hubei (China, 2014)
Municipality	Tokyo (Japan, 2010), Beijing (China, 2013), Shanghai (China, 2013), Shenzhen (China, 2013), Tianjin (China, 2013), Chongqing (China, 2014)

Source: ICAP (2021), **ICAP Status Report 2021**, compiled by the authors.

Notes: 1) In the order of ETS launch date. Numbers in parentheses are implementation years.

2) China launched pilot ETS at the regional level first, moving on to full implementation of a national ETS in 2021.

2) ICAP(2021), *ICAP Status Report 2021*.

3) Regional Greenhouse Gas Initiative (RGGI). The first legal U.S. ETS. It applies to the GHG emissions of the electricity sector.

- Korea has operated an ETS since 2015 and is currently implementing the third planning period (2021- 2025).
 - Further ETS policy development is being pursued by transitioning from allocation through free allowances of emissions credits to expansion of purchased allowances. Grandfathering (GF) of allocations and benchmarking allocations in order to improve GHG reduction outcomes is also being investigated.
- * Grandfathering provides an allocation method based on a firm's past GHG emissions while benchmarking (BM) allocates emissions credits based on a firm's production and other factors while considering efficiency indexes.
 - In 2019, the total amount of free allocations was 554.7 million tons. The breakdown by sector is as follows: industry (314.3 million tons), energy transition (216.3 million tons), waste (17.4 million tons), buildings (4.1 million tons), transportation (1.9 million tons), and "public use and other" (600,000 tons).⁴⁾

■ **CBAM to Accelerate Change in the International Trade Order**

- The CBAM may stimulate changes in the global supply chain, which has expanded under the free trade system.
 - Specifically, CBAM may serve accelerate a transition of key values in the global supply, encouraging a transition from a focus on low prices and high efficiency to a focus on flexibility, stability, and sustainability. We can expect further efforts to reorient the value chain toward a more sustainable direction.
- The final version of the CBAM proposal announced by the EU is more flexible than the draft version. This greater flexibility is a result of industrial resistance from both domestic and foreign sources as well as the compliance burdens regarding international law. The greater flexibility of the final proposal reflects the EU's determination to implement the CBAM quickly.
 - It is expected that actual data related to CBAM execution can be acquired because

⁴⁾ Greenhouse Gas Inventory and Research Center (2021), 2019 ETS Operations Report.

- importers into the EU will have to report carbon emissions data during the transition period.
- The accumulated data can be referred to during the full implementation of the CBAM allowing for enhanced operational efficacy and stakeholder satisfaction.
 - It is necessary to look for ways to reduce clashes with international norms and work harmoniously as the international trade order transitions towards increased sustainability.
 - International agreement is necessary regarding aspects that may violate the WTO's Most Favored Nation status and national treatment guidelines as well as the core principle of the UN Framework Convention on Climate Change (UNFCCC): common but differentiated responsibilities (CBDR).

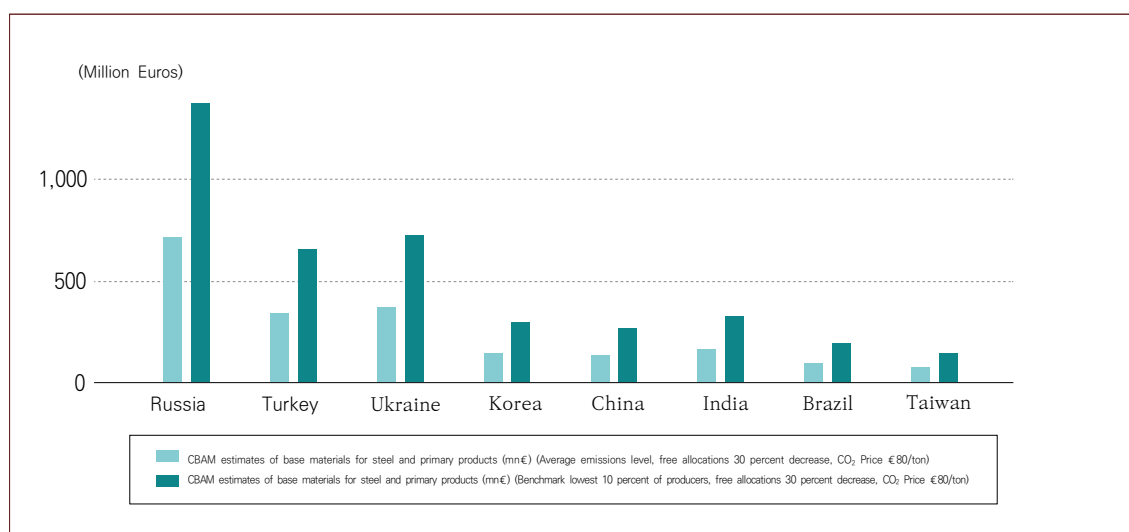
■ Varied Stances on CBAM by Country

- Different countries have clearly differentiated stances on the EU CBAM, which was planned as an expanded version of an ETS.
- Though the EU CBAM announced as part of Fit for 55 is not an ETS in itself, it does take on the form of an expanded ETS. And while CBAM is not a cap and trade system that determines permissible emissions quantities and bestows emissions rights, it does reflect ETS prices and is based on making parties purchase certificates that reflect embedded emissions in imports.
- The EU Commission's CBAM proposal was not developed using the tax revenue stipulated in EU law. This allowed the EU commission to plan the accelerated adoption of CBAM regulations through standard procedures without gaining unanimous consensus from EU member states.
- Korea needs a vigorous approach to discussions with the EU in order to minimize the negative impacts of CBAM on Korea's industries, as Korea is operating its own national ETS.
- Outside of the multinational EU ETS, there are only eight countries with ETS at the

national level. These include the U.K., Germany, and China, which launched its national ETS in 2021.

- Korea, which has been working towards emissions reductions through its national ETS, needs to develop an objective response with which to actively pursue discussions with the EU in order to ensure that Korean firms' exports are not impacted negatively.
- The current CBAM proposal by the EU will trial its effectiveness. It is expected that there will be significant resistance from countries with extensive trade with the EU, especially those with emissions-intensive industries.
 - In particular, opposition from Russia, China, Turkey, Ukraine, and others that export large amounts of fertilizer, steel, and aluminum is expected.
 - U.S. exports to the EU in industries subject to CBAM are small in scale. Consequently, the impacts on the U.S. resulting from the EU CBAM may be relatively minor. However, proposals for countervailing duties on imports from countries without effective climate policies shows the future possibility of a close connection between climate policy and trade policy.⁵⁾

Figure 2. Comparison of Countries Expected to be Most Impacted by the EU CBAM in Base Materials for Steel and the Primary Product Sectors



Source: Zimmer et al, (2021), "EU CBAM: Well Intended is not Necessarily Well Done."

5) *The New York Times*, July 14, 2021, <https://www.nytimes.com/2021/07/14/climate/carbon-border-tax.html> (Retrieved July 17, 2021)

- In Korea's case, since export amounts of base materials for steel and primary products are relatively sizable, Korea must continue to monitor impacts and design timely responses.

■ Korea's Response to the EU CBAM: Continued

- Korea must strengthen efforts to advance its domestic ETS based on examples from ETS operations in other countries.
 - Though the ratio of benchmarking (BM) allocations has increased during the ETS second planning phase, the BM standard is lower than that of the EU.
 - * When setting the BM coefficient, Korea typically applies the median emissions efficiency of the same process while the EU uses the average of the top 10 percent as its standard.
 - Though it has become more difficult to eliminate free allocations in the reform of the EU ETS during the fourth phase, the phase-out period of free allocations will continue until 2026. Therefore, in operating its ETS, Korea must increase the ratio of paid allocations and consider linkages to the international carbon market.
- With the implementation of the CBAM, Korea must identify environmental regulations and ETS trading conditions that have the potential to negatively impact Korea's exports, and compare these with Korea's ETS while preparing justification to minimize damage to Korean firms.
 - Korea must take a flexible approach in comparing and analyzing the differences in Korea's and the EU's efforts to cut emissions through ETS given different national contexts. Korea must use the results of these comparisons and analyses to prepare for discussions with the EU.⁶⁾
 - It is worth noting that Korea is applying its ETS to more types of atmospheric pollutants and to more fields than the EU.

⁶⁾ Discussions to include each country's industrial structure, GHG emission profile, foreign direct investment related to carbon leakages, and other factors.

- Along with its ETS, Korea must reexamine domestic emissions reduction policies and compare them with other countries in order to identify Korea’s comparative advantages.

Table 3. ETS Comparison of EU, Korea, and China

	EU	Korea	China (national level)
Permissible emissions (Cap)	1,610MtCO ₂ e(2021)	592MtCO ₂ e(2020) 609MtCO ₂ e(2021)	
Substances under management	CO ₂ , N ₂ O, PFCs	CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆	CO ₂
Target areas	Electricity, industry, aviation	Electricity, industry, domestic aviation, buildings, waste	Starting with electricity
Allocation method	Free allocations (BM), paid allocations (57%)	Free allocations (BM, GF), paid allocations (3%)	Free allocations (BM)
2020 average price	28.28USD	27.62USD	4.42USD*
2021, first half average price	51.88USD	15.34USD	
Comments	<ul style="list-style-type: none"> • Operated since 2005, first in the world and currently in its fourth phase • Operation linked with Switzerland starting in 2020 	<ul style="list-style-type: none"> • Operated since 2015, first in East Asia • Started third planning period in 2021: More stringent cap, improved allocation method, allowed third party participation 	<ul style="list-style-type: none"> • Operated pilot projects in seven regions starting in 2013 • National scale launch in 2021 • Expected to be the largest national-level ETS globally

Source: Author’s summary based on ICAP (2021), *ICAP Status Report 2021*, <http://data.krx.co.kr>, <https://ember-climate.org>, <https://icapcarbonaction.com/en>

Note: *2020 average emissions credit price for China is the average of regional government ETS average price.

- As Korea’s emissions credits prices tend to be volatile, we need to carefully evaluate the supply and demand of carbon credits in order to reduce volatility in the carbon price and thus promote stability in the market.
- The carbon credit price for the EU tends to reflect market supply and demand. In Korea, uncertainty in supply and demand in one case led to a price spike, as too few credits were supplied to the market.⁷⁾

7) Kim et al (2019), “Analysis of the Syntonization of Global Carbon Prices.”

- The average price of carbon credits in the EU and Korea in 2020 is similar. In the EU, the price was USD 28.3 and in Korea, the price was USD 27.6.
- However, the EU reached an average carbon credit price of USD 52.00 in the first half of 2021. The price is expected to continue to increase until 2030 based on forecasts of reform in the carbon market. Korea's carbon price for the first half of 2021 (USD 15) fell sharply from last year's price.⁸⁾

Figure 3. Carbon Credit Price Comparison between EU, Korea, and Beijing



Source: <http://data.krx.co.kr>, <https://ember-climate.org>, <https://icapcarbonaction.com/en> (Retrieved: July 16, 2021)

■ Carbon Regulations and the Supply Chain

- It is necessary to address carbon regulations across the supply chain in the long term. The possibility exists of a more comprehensive CBAM following the conclusion of the trial period.
 - In the long term, the European Commission will assess and determine whether the CBAM will cover emissions at the production stage, expand it to include emission across the entire supply chain, include only direct emissions from the production process, or include indirect emissions such as emissions from the electricity used

8) Reuters (July 14, 2021), "EU proposes world's first carbon border tax for some imports", <https://www.reuters.com/business/sustainable-business/eu-proposes-worlds-first-carbon-border-tax-some-imports-2021-07-14/> (Retrieved: 2021. 7. 17)

in production as well.

- Korea must carefully assess both the positive and negative impacts of CBAM implementation across the entire global supply chain, monitor relevant trends, and seek ways to respond.
 - If foreign companies export their most environmentally-friendly products to the EU while exporting products made with emissions-intensive processes to other countries, this will only shift the destination of exports without reducing global emissions.
 - In addition, it is highly likely that the supply chain will change as EU firms may not import products that are subject to the CBAM, but instead import similar intermediate goods in order to reduce costs.
 - As such, it is possible that the CBAM will shift emissions downstream in the global value chain and cause other negative impacts. We need to consider these potential impacts and concentrate on emissions at every stage in the global supply chain, and respond to future regulations.
 - We must enhance the emissions management capabilities of small- and medium-sized (SME) suppliers through technology innovation and investment. We must focus on the supply chain when strengthening emissions data collection and in establishing a system to account for all emissions.

Lim, Soyoun | Trade Policy Division
Research Fellow | sylim@kiet.re.kr | +82-44-287-3133

Yang, Jooyoung | Trade Policy Division
Associate Research Fellow | jyang@kiet.re.kr | +82-44-287-3123



A PUBLICATION OF THE KOREA INSTITUTE FOR INDUSTRIAL ECONOMICS AND TRADE
PUBLISHER **Ju, Hyeon**
EDITOR-IN-CHIEF **Kim, Youngsoo**
COPY EDITOR **Aaron Crossen**
370 Sicheong-daero, Sejong City, 30147, Republic of Korea
Tel. 044-287-3114 Fax. 044-287-3333 www.kiet.re.kr

This article from *i-KIET Issue & Analysis* is available for viewing and download at <http://eng.kiet.re.kr>.