



Carbon taxation will have a major cost impact on supply chains in China – firms need to act now

- As the effects of climate change grow increasingly visible and the world has become determined to take rapid action, there are significant risks and opportunities for European companies with supply chains in China.
- Many companies in European markets that have producers or suppliers in China currently do not assess carbon footprint in their supply chains. In Asia Perspective's 2021 sourcing survey, 70% of responding companies do not assess the carbon footprint for new suppliers in China.
- The European Union will start to demand carbon footprint data from 2023 and introduce a carbon border tax from January 2026. Currently, emissions are taxed much lower in China than in Europe. A likely outcome of Chinese reforms and European carbon border taxes is that costs will increase significantly for emission-intensive imports.
- Companies need to start acting now to get data for compliance 2023 and take this opportunity to assess carbon risks and mitigation actions together with suppliers.

The impact of carbon emissions and global warming are growing day by day, adding urgency to calls for companies to become more sustainable. Some companies have pioneered in committing to science-based targets and using carbon accounting standards such as the GHG Protocol. This increasing disclosure has partly been driven by investors requiring companies to disclose emissions information, and partially due to customer demands. It is often also a management decision to be proactive in being good long-term competitive companies that spend resources wisely to build shareholder value in the long run, one famous example is Volvo Cars announcing now in 2021 that they from 2030 will only sell full-electric cars (phasing out combustion engines, including hybrids)¹.

Green finance is becoming increasingly dominant, as long-term investors see environmental risk management as a fundamental success factor in securing long-term returns. From an operation and supply chain perspective, many companies have focused on tracking their operations and assets (Scope 1) and their own

¹ <https://www.media.volvocars.com/global/en-gb/media/pressreleases/277409/volvo-cars-to-be-fully-electric-by-2030>



purchased energy electricity, heating, cooling, etc. (scope 2) but have paid less attention to Scope 3. Scope 3 is “indirect emissions resulting from value

chain activities”², that is emissions that occur outside the direct organization, for example in the supply chain, at business partners, or from end-users of their sold products. Companies are increasingly being required to report on scope 3 and in the EU mechanisms are coming into force for taxing scope 3 emissions beyond EU borders. This will have a major impact on global supply chains, and we will in this article focus on the impact for companies with production or suppliers in China.

World leaders urged to accelerate actions on reducing emissions at COP26

Recently, the United Nations Climate Change Conference in Glasgow has received much attention from global business leaders. This conference marks another milestone from the Paris Agreements at COP21 as participating countries review their progress and update their action plans, also known as Nationally Determined Contributions (NDCs)³. This revision was supposed to take place in 2020 but was eventually postponed by a year due to the pandemic. At COP21 in Paris in 2015, all participating countries agreed to work together to limit global warming to well below 2 degrees and aim for 1.5 degrees Celsius, compared to pre-industrial levels. Based on this long-term temperature goal, participating countries commit to achieving net-zero emissions by 2050.

The latest UNEP Emissions Gap Report released before COP26 revealed that new and updated climate commitments fall short of what is needed to meet the goals of the Paris Agreement. According to UNEP, the world is on track for a global temperature rise of at least 2.7 degrees Celsius this century⁴. According to the report, countries’ updated NDCs only take an additional 7.5% off predicted annual greenhouse gas emissions in 2030, compared to the previous round of commitments⁵. This level is far off from achieving the temperature goals as estimates have indicated a reduction of 30% is needed to stay on the least-cost pathway for 2 degrees and 55% for 1.5 degrees Celsius.

Table 1 – Current emission level and expected emission levels to reach temperature goals

	Current level	2-degree goal	1.5-degree goal
Annual emissions (Gigaton CO2 equivalents)	60	47	32

Source: UNFCCC

² <https://ghgprotocol.org/standards/scope-3-standard>

³ <https://ukcop26.org/wp-content/uploads/2021/07/COP26-Explained.pdf>

⁴ <https://unfccc.int/news/updated-climate-commitments-ahead-of-cop26-summit-fall-far-short-but-net-zero-pledges-provide-hope>

⁵ UN’s Emission Gap Report 2021



Many national climate plans delay action until after 2030, putting the temperature goals in peril. Given the urgency of the situation, Inger Andersen, executive director of UNEP, expresses his concern that time is running out, and it’s imperative for countries to put more effort into realizing their net-zero pledges. At the COP26, the conference team urge nations to quickly implement the policies to meet their new commitments and quicken the implementation process, instead of delaying it any further.

EU is the world-leading region in following emission targets

Among all participants, the European Union shows the greatest commitment to pursuing emission targets in 2030 and 2050. Remarkably, to meet those ambitious targets, the European Commission has recently proposed the carbon border tax⁶, which aims at making it comparatively less expensive for companies to invest in decarbonizing technologies than to continue emitting carbon or importing from suppliers with high emissions.

From 2005 until now, many EU manufacturers have been paying for their carbon emissions via certificates under the EU Emissions Trading System (EU ETS), where emission rights are currently about 60 EUR per metric ton, while imports from countries with less strict climate regulations may face lower or no such cost for carbon emissions⁷. The most significant impact of introducing a carbon border tax would be on the cost of products with high-carbon inputs, such as steel, aluminum, cement, chemicals, and electricity-intensive processes. EU importers and non-EU producers of these inputs will be required to pay around 75 EUR per metric ton of CO2 emissions. Moreover, this tax rate is projected to increase to 100 EUR per metric ton by 2030, with more products being continuously added to be taxed.

The tax will be implemented in stages. From 2023 to 2025, importers of carbon-intensive inputs must calculate and report their emissions, but they will not have to pay the carbon tax yet. From January 2026, companies will have to pay taxes depending on the carbon intensity of the import and the tax rate per metric ton. To avoid double taxation, imports from countries that apply similar carbon-pricing regimes to the EU will be exempt from the levy.

Table 2 – Carbon Tax imposed on EU and Non-EU Companies

	Compliant with EU climate standards	Subject to carbon tax
EU Companies	Yes	No
Non-EU Companies	Yes	No
	No	Yes (Tax payable = carbon intensity * carbon price)

Source: European Commission

⁶ https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661

⁷ <https://www.bcg.com/publications/2021/eu-carbon-border-tax>



The EU carbon tax will also have a drastic impact on many of the exporting industries from China. Even though the added carbon tax for foreign products may not be readily reflected by the shift in the total exportation value of goods from China to the European Union, industries such as steel and aluminum exports will be affected the most. If carbon tax policies are fully implemented, the market shall expect to see the following changes:

- The average exported Chinese steel will bear a 25% cost increase in steel, with 4% higher than the average cost for European steel producers. While the industry average price for steel shall see a 16.9% increase as well, the exporters themselves will take upon an 8.1% decrease in profit margins compared to previously with no carbon tax⁸.
- If the carbon tax 2035 scenario is fully implemented, where carbon will be taxed at a rate of 60 euro/ton, taking 2019's data as an example, with the total steel products exported to Europe from China valued at 4.7 billion euros, 265 million euros will be levied.
- Aluminum exports from China will see an increase in cost of 9%, compared to producers in Europe having an increase of 7.6%. Had the carbon tax been applied in 2019, out of the total value of aluminum from China to Europe which roughly equates to 1.5 billion, 120 million euros would be allocated to paying for carbon tax⁹.
- Carbon tax will primarily cover the following five industries' direct carbon emissions: steel, aluminum, electricity, cement, and fertilizers. However, composite products from those materials, including automobiles, mechanical parts, and any aluminum products, shall not be affected as of the current carbon tax policies

China is facing a domestic energy crisis and is likely to accelerate efforts

The primary pressure for China's transformation toward its carbon neutrality goal is its manufacturing sector's hefty dependency on fossil fuel energy. Steel, metals, building materials, and petrochemicals are all energy-intensive industries, making up to 85% of the total energy consumed by the manufacturing sector¹⁰. Given that those industries' energy consumption is relatively low-added value per product and unit of GDP, it is foreseeable that those industries will be affected particularly heavily by Chinese policy changes in the future.

Energy restriction policies, effective as of September 2021, are one notable measure that the Chinese government introduced to directly combat the substantial use of power for industrial companies. Companies in multiple Chinese provinces received

⁸ <https://www.efchina.org/Blog-zh/blog-20210719-zh>

⁹ <https://www.efchina.org/Blog-zh/blog-20210719-zh>

¹⁰ <https://mp.weixin.qq.com/s/DdgErQCZ7cChT-OcS2Q8dQ>

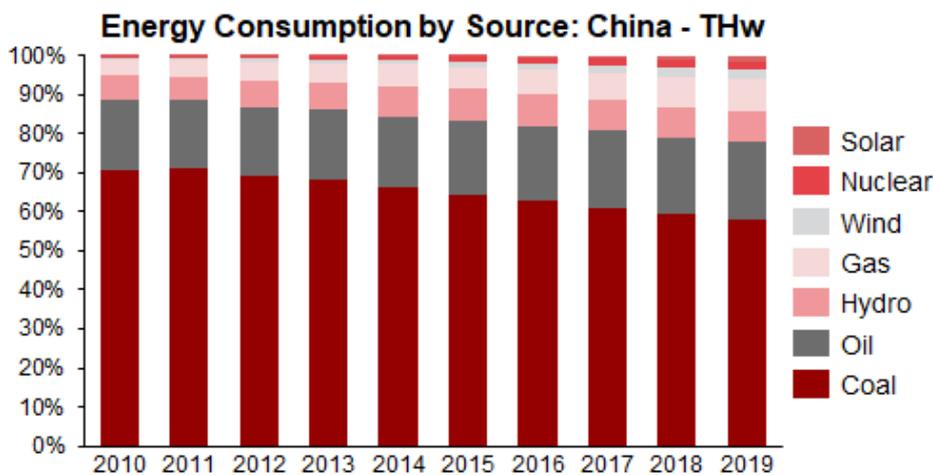


electricity blackout notices due to this. The impact of the electricity restrictions on firms varied depending on the different restriction policies from each region, with some firms reportedly losing up to 30% production capacity.

Goldman Sachs has predicted that up to 44% of China’s industrial activity could be affected by power restrictions in 2021. While the Chinese economic growth slowed down to a 7.8% growth rate, compared to the previous prediction of 8.2%, some industries are hit particularly hard by the restrictions¹¹. The chemical industry has been hit the hardest by the electricity restriction measures, with many chemical products impacted both by increase in production cost, and lack of raw material supplies.

The intensive issues with industrial power shortages further boosts efforts & incentives toward green and renewable energy. In the middle of September 2021, The National Development and Reform Commission introduced new practices to incentivize the use of renewable energy, giving regions with higher renewable energy a more favorable assessment in the national five-year plan KPIs on energy usage¹².

Figure 1 – Energy Consumption by Source: China - THw



Source: Ourworldindata.org, 2021

Source: TrendEconomy, The U.S.’s Department of Commerce’s Steel Imports Report: European Union

¹¹ <https://www.bbc.com/news/business-58733193>

¹² <http://www.gov.cn/zhengce/zhengceku/2021-09/17/5637960/files/49cb6c96c1384ed89c6e61269ee69da0.pdf>



China's plan to cut down on carbon emissions

China's extensive efforts in trying to go green can be reflected in two of its ambitious goals, known in Chinese as "Energy Consumption Dual Control":

- Achieving the country's peak of carbon emission level before 2030, following a plateau period where the emissions level should then go into a gradual decline phase
- Reaching carbon neutrality by 2060, where both direct and indirect emissions of carbon dioxide from all human activities within the Chinese territory can be fully offset by carbon absorption from afforestation and other methods, therefore, achieving the status of having net zero carbon dioxide emissions

A key way to push the transition will be China's Emissions Trading Scheme (ETS). Despite China's late start on implementing an ETS, the country has been projected to develop the largest carbon market in the world once the ETS is fully implemented. China's ETS is currently in its initial stage and focusing primarily on the electricity generation sector, constituting 40% of the nation's total annual CO₂ emissions. However, the country aims to soon expand the ETS to cover eight high-emission industries, including petrochemicals, chemicals, building materials, non-ferrous metals, papermaking, steel, power generation, and aviation.

China has successfully established its ETS and began the first day of trading in mid-July 2021. It is to note, however, that despite the initial market enthusiasm and political momentum, when a Chinese major business media Caixin made projections, the forecast was that prices could double by 2030. The carbon credits were traded at 44 Chinese yuan/ton by mid-October, 2021¹³, which was less than a tenth of the price level the EU owns on the same date, at 60 euro/ton, so even the forecasted doubling of prices would leave China pricing emissions much lower than EU.

The International Monetary Fund has estimated that for the ETS to drive down carbon emissions in China effectively, the price for carbon credits would have to reach at least \$50/ton¹⁴.

¹³ <https://mp.weixin.qq.com/s/apZgLRZ2n2OkvsAF9DsCGw>

¹⁴ <https://www.csis.org/analysis/chinas-new-national-carbon-trading-market-between-promise-and-pessimism>



European companies need to be proactive

Although the details of the carbon tax may be amended during the negotiation with the European Parliament and the 27 EU member states, there is a broad political consensus within the EU on the basic principle. Therefore, EU and non-EU companies need to become more proactive in taking the measures needed to adapt ahead of this regulatory adjustment. Asia Perspective recommend companies sourcing or producing outside Europe to:

- Understand where there are carbon-intensive activities and components in their value chain
- Set a strategy for collecting suppliers' carbon emission data, where the right data and improvement strategy is included in new supplier assessments and becomes part of the routine supplier dialogue
- Perform risk analysis on the impact of the carbon border tax and rising energy costs across their value chains, and upstream beyond tier 1 suppliers
- Monitor the carbon emission level across their supply chain and the evolving regulatory landscape in both Europe and China
- Take actions to mitigate risks and make long-term decisions that take rising costs of carbon emissions into account



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