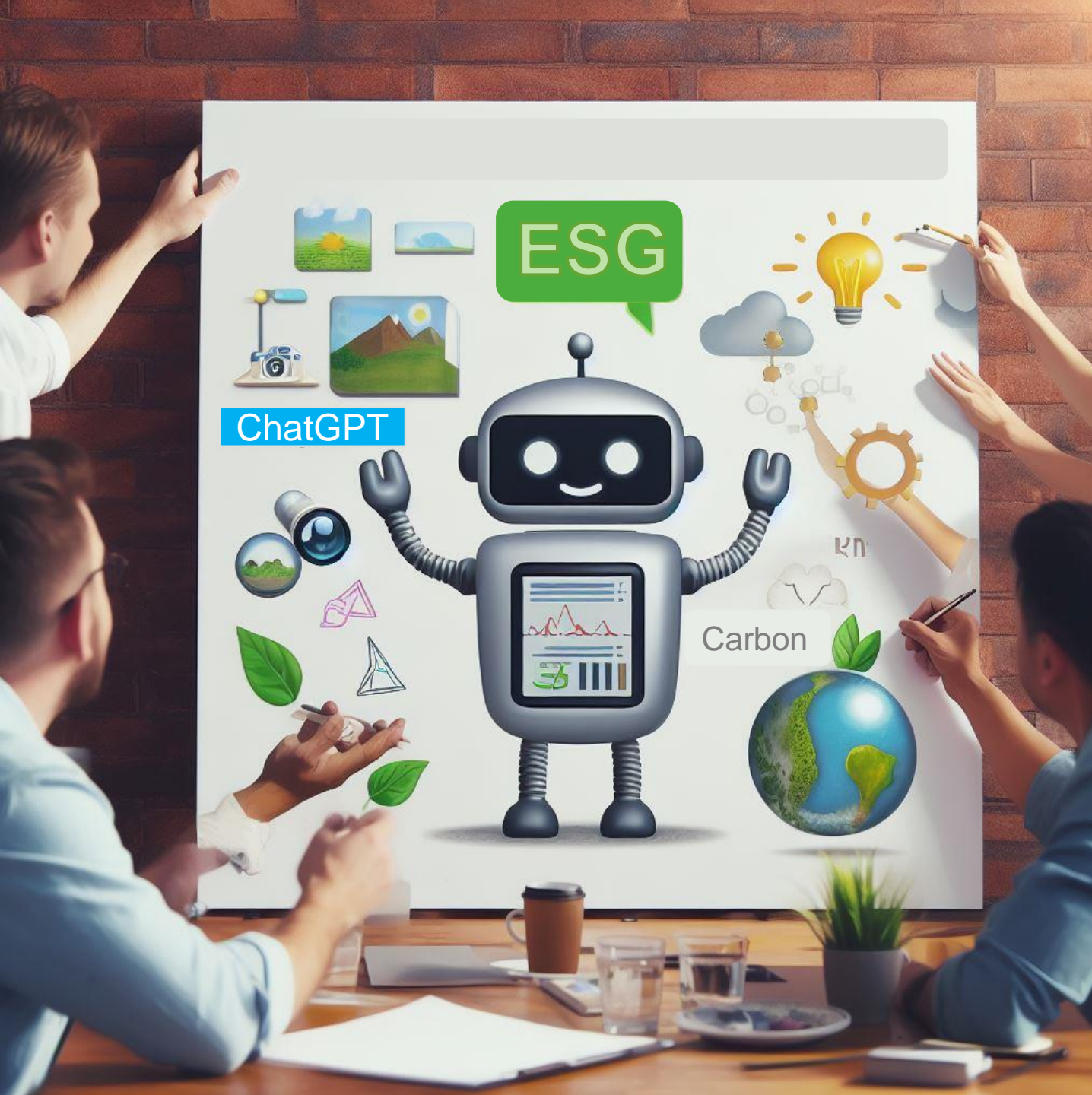


# When ESG meets ChatGPT

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# The origin of ESG

The concept of ESG (Environmental, Social, and Governance) management can be traced back to Against the backdrop of opposition to apartheid policies (1), some social movements and investors began to take divestment actions against companies cooperating with the South African regime. They believed that investors should not support companies that played a role in maintaining social injustice policies and systems. The core idea of this movement was that capital could be a tool for driving social change and improving social justice.

Due to the success of this movement, the foundation of ESG's core values was laid. Companies began to consider environmental, social, and governance factors and incorporate them into investment decisions to promote sustainable and socially responsible investment practices.

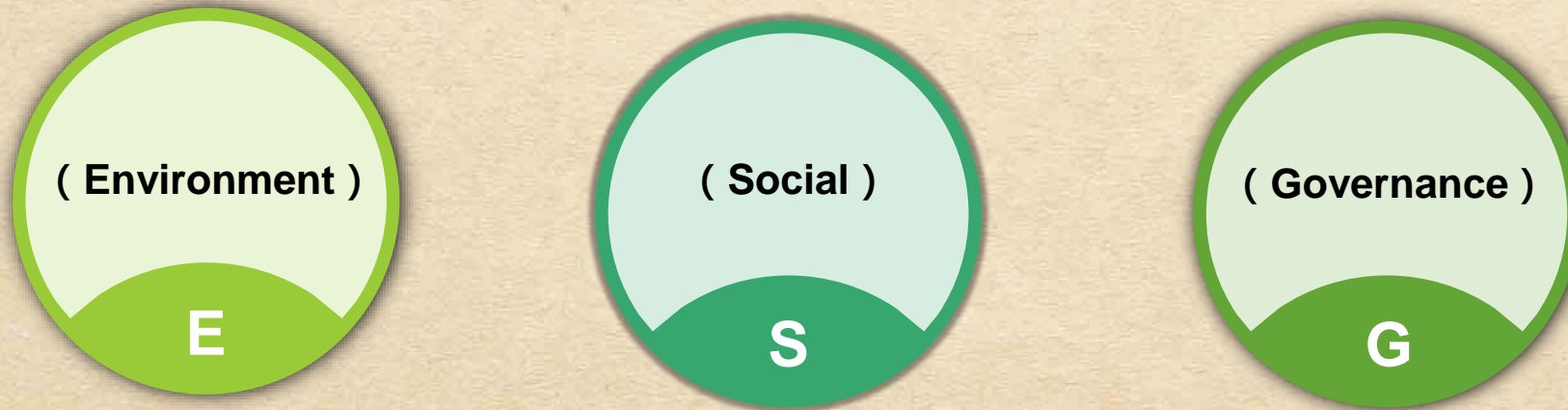
Over time, the concept of ESG investment has gradually evolved and expanded to include broader social and environmental issues. Investors are increasingly focused on using capital to drive social and environmental change and expect to achieve sustainable investment returns simultaneously.

(1) <https://combogic.com/blog/esg-history.html>





# What does ESG stand for?



The concept proposed by the United Nations Global Compact in 2004 is considered an indicator for evaluating a company's operations<sup>(1)</sup>.

ESG stands for three major dimensions: Environment, Social, and Governance, abbreviated as "ESG"<sup>(2)</sup>.

ESG represents Environmental protection (Environment), Social responsibility (Social), and Corporate governance (Governance).

(1) <https://unglobalcompact.org/library/255>

(2) <https://www.dnb.com.tw/Thoughts/What-is-esg/>

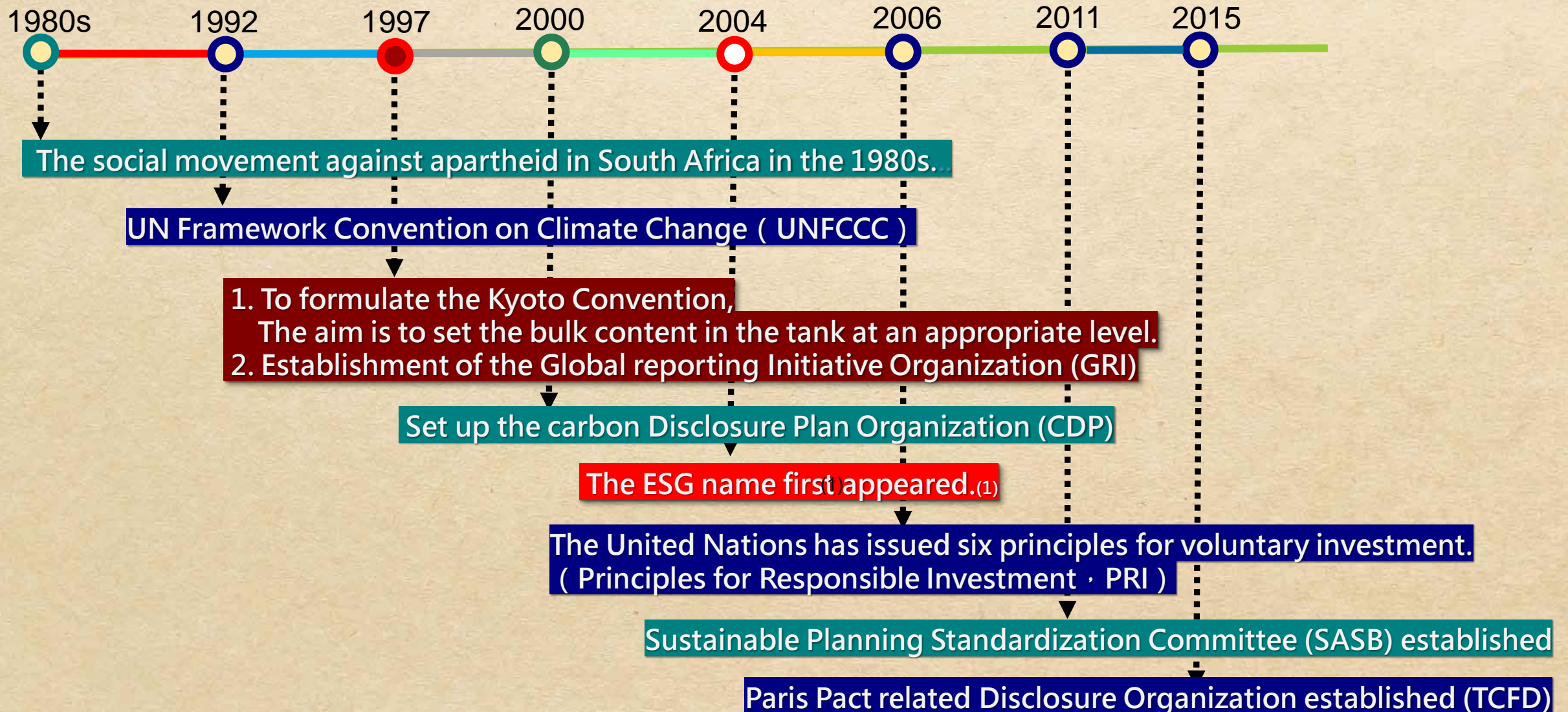
# The importance of ESG issues

- **Environmental protection ( Environment )** : Companies need to focus on "environmental" performance, and therefore evaluate their environmental response measures, such as greenhouse gas emissions, sewage management, and biodiversity. <sup>(1)</sup>
- **Social responsibility ( Social )** : Enterprises need to pay attention to the performance of "social orientation", whether they have fulfilled their social responsibilities, such as: labor relations, product quality, consumer rights and interests, community planning, supplier management, etc.
- **Corporate governance ( Governance )** : Businesses need to pay attention to the performance of their operations and evaluate how they are managed. Such as: business ethics, shareholder rights, information transparency, corporate compliance, risk management, etc.

(1) <https://www.kdanmobile.com/zh-tw/blog/product/esg/>



# A major milestone for ESG



(1) In 2004, the report on the joint publication of "Who Cares Wins" by the UN and the Swiss government proposed the concept of ESG for the first time.



# ESG's carbon emission issues

The "E" in ESG stands for environmental protection, and past environmental protection issues have focused on how to prevent pollution from related emissions and the impact of housing on the environment. At present, carbon emissions have become a major issue of concern, because carbon emissions have more and more impact on the climate of the earth and human society.

Carbon emissions refer to the impact of greenhouse gases, such as carbon dioxide, methane, nitrous oxide, generated by human activities on the atmosphere. Greenhouse gases absorb and reflect heat from the Earth's surface, creating the greenhouse effect, which leads to an increase in the Earth's average temperature, resulting in global warming and climate change.

Global warming has gradually led to severe consequences, including extreme weather, rising sea levels, reduced biodiversity, and crises in food and water resources.

Therefore, to stop the planet from warming, action to reduce carbon emissions is imperative. At present, more than 130 countries have put forward the declaration and action of "net zero emissions 2050" <sup>(1)</sup>

(1) <https://www.ey.gov.tw/Page/5A8A0CB5B41DA11E/7a65a06e-3f71-4c68-b368-85549fbca5d1>





# Types of carbon bargaining

Carbon pricing is a market mechanism that sets a cap on total emissions and allows the trading of carbon allowances among emitters to achieve emission reduction goals. The unit of carbon pricing is per ton of carbon dioxide equivalent (tCO<sub>2</sub>e). This unit is used to express the impact of emissions of different greenhouse gases on global warming.

For instance, one ton of methane emissions is equivalent to 28 tons of carbon dioxide emissions, so the carbon pricing unit for one ton of methane is 28 tCO<sub>2</sub>e.

There are two main types of carbon bargaining:

**Carbon Tax :** Carbon tax means that the government imposes certain taxes on the sources of carbon emissions. It is a kind of government intervention. By imposing certain taxes on emitters, emitters can bear the cost of carbon emissions,

**Emissions Trading System, ETS :** The carbon emission trading system (ETS) means that the government sets a cap on carbon emissions and issues corresponding carbon emission rights for market participants to buy, sell and trade.

The purpose of carbon bargaining is to allow the costs and impacts of carbon emissions to be reflected in market prices, thereby steering industry and consumers towards greener options and stimulating innovation and investment in low-carbon technologies.



# Types of carbon rights trading

According to the Ministry of Economic Affairs, the "carbon right" is simply the "right to emit carbon" and is usually calculated in units equivalent to 1 metric ton of carbon dioxide (CO<sub>2</sub>). Industries can obtain carbon rights to comply with government carbon regulations or to respond to the carbon neutrality requirements of international supply chains and initiatives <sup>(1)</sup>

## There are three main types of carbon trading

**Voluntary reduction of carbon trading** : If an enterprise puts forward a special project of self-regulation, and it is approved and implemented by the Department of Security, it can get the quota, that is, the so-called carbon rights.

**Incremental swap transaction** : If the scale of the enterprise subject to EIA is given greater responsibility for carbon reduction, carbon exchange can also be conducted with EIA units through carbon exchange in the future.

**Foreign carbon rights trading** : The carbon Exchange buys foreign carbon rights and sells them in Taiwan's carbon trading market.

The carbon rights exchange was unveiled on August 7, and its operating projects are divided into three major categories: domestic carbon rights trading, foreign carbon rights trading and carbon consulting. Carbon trading is expected to hit the road in 2024.

(1) <https://csr.cw.com.tw/article/43288>



# The difference between carbon tariff and carbon tax

Carbon Tax and carbon tariff are not the same concept, they have the following differences :

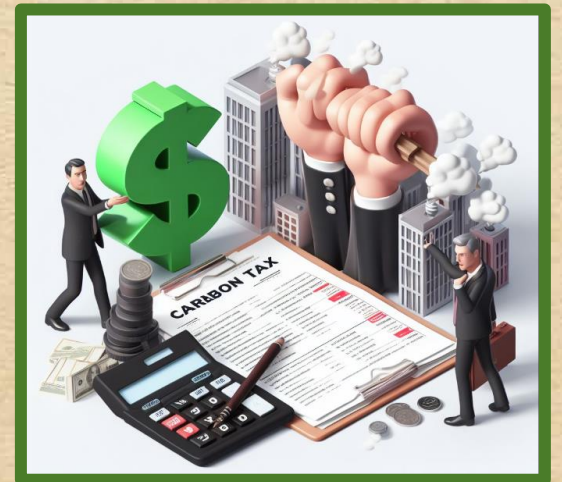
- **A carbon tax is a government levy on the source of carbon emissions:**

For example, taxing the use of fuel, electricity or other energy sources aims to make the cost and impact of carbon emissions reflected in the market price, thus guiding industries and consumers to turn to greener choices and stimulating innovation and investment in low-carbon technologies.

- **Carbon tariff refers to a special tariff imposed on imported products with high carbon emission:**

The purpose is to prevent carbon leakage, that is, to avoid the transfer of industries with high carbon emissions to countries without carbon pricing due to domestic emission reduction policies, thus reducing the effect of emission reduction.

The relationship between carbon tax and carbon tariff is that if the importing country has implemented carbon tax or other carbon pricing mechanism, and its carbon price is equivalent to that of the exporting country, then the importing country does not need to impose carbon tariff on the product, so as to avoid double taxation or unfair trade barriers.





# SMEs face the problem of carbon emissions

## The main impact faced by SMEs:

The EU implement the Carbon Border Adjustment Mechanism (CBAM) in 2023 to impose carbon tariffs on imported high-carbon products, which will affect the export competitiveness and market share of SMEs. In addition, SMEs may also need to face carbon emission limits or pricing, which will increase operating costs and reduce profit margins.

## The main response of SMEs on the issue of carbon emissions:

Actively carry out carbon screening<sup>(1)</sup>, understand their own carbon emissions and carbon footprint, and try to find opportunities and ways to reduce emissions.

Through carbon inspection and carbon sequestration, we can not only improve energy efficiency and reduce costs, but also improve product quality, increase market competitiveness, and attract more consumers and investors.

(carbon emissions are divided into three categories: direct emissions, off-line emissions and other emissions, and carbon emissions are calculated according to international standards and emission variables.)

## SMEs can use Taiwan Province carbon trading platform. :

By understanding the relevant information of carbon rights trading, and purchasing carbon rights at home and abroad, to reduce the cost of carbon fees or increase the credibility of carbon neutrality.



(1) <https://esg.businesstoday.com.tw/article/category/180687/post/202211210023>



# What is the EU 'carbon tariff' CBAM?

As early as 2005, the EU began to impose a carbon fee on EU enterprises that emit carbon dioxide <sup>(1)</sup>, but foreign manufacturers importing goods or services into the EU do not have to pay a carbon fee, resulting in unfair competition. So the EU has launched the world's first Carbon Border Adjustment Mechanism (CBAM). To impose carbon fees on goods or services imported across the border to the EU, also known as the "European carbon tariff". The EU is the second largest commodity market in the world, so the CBAM mechanism of the EU has a great impact, especially for Taiwan's exporters to the EU.

In accordance with the regulations of the CBAM, it will be implemented on October 1, 2023, and the collection of carbon will officially begin in 2027. Importers are required to apply for the carbon emissions of the relevant products and at the same time issue a "CBAM Certificate" (CBAM certificate) to the EU to pay for the carbon emissions of the imported products. The scope of application of CBAM will initially focus on seven items, including: steel, cement, cement, chemical fertilizer, power, and other downstream products (such as screws, bolts, etc.).

After the League calls for the formal implementation of CBAM in 2026, all specific products exported to the Union must bear the same carbon cost as those exported to the Union. Following the League, the Clean Competition Act (CCA) Act of the United States begins to collect carbon dioxide in 2024, which means that carbon dioxide becomes another force, and enterprise carbon becomes the inevitable road!

(1) <https://esg.businesstoday.com.tw/article/category/180687/post/202302060020>



# Key differences between the EU CBAM & U.S. CCA

	Europe Fit for 55 (EU Parliament approved proposal)	U.S. Clean Competition Act
Initial Sectors Covered	<ul style="list-style-type: none"><li>Aluminum, ammonia, cement, electricity, fertilizers, hydrogen, iron and steel, organic chemicals, plastics, and complex goods that use these products as inputs</li></ul>	<ul style="list-style-type: none"><li>Fossil fuels, refined petroleum products, petrochemicals, fertilizer, hydrogen, adipic acid, cement, iron and steel, aluminum, glass, pulp and paper, and ethanol</li></ul>
Emissions Price	<ul style="list-style-type: none"><li><a href="#">Calculated</a> based on the weekly average of the ETS auctions (currently approximately <a href="#">84 euros</a> per ton)</li></ul>	<ul style="list-style-type: none"><li>\$55 per ton and increase by 5 percent above inflation each year</li></ul>
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# Key differences between the EU CBAM & U.S. CCA

## Structure for Calculations for Carbon Border Charge

- [Requires](#) importers of covered industries to buy CBAM certificates priced by the ETS allowances
- Exporter countries would have submit a [CBAM certificate](#) per ton of embedded emissions in the goods
- Importers into the United States would pay a price on emissions per ton that is equivalent to the difference of a country's emissions intensity and the U.S. [baseline](#) for emissions intensity established by the U.S. industry average
- [For countries without reliable data](#): ratio of the level of the emissions intensity of the economy of the country of origin to the level of emissions intensity of U.S. economy
- [For countries with reliable data](#): ratio of the average emissions intensity of the industry in the country of origin to the emissions intensity of that industry in the United States



# Key differences between the EU CBAM & U.S. CCA

## Domestic Industry Impact

- The [ETS](#) creates the domestic carbon market that establishes a domestic price for carbon
- CBAM proposal includes [methodology](#) for calculating emissions and differentiates between industrial products and electricity production
- Domestic producers would pay a price on emissions per ton that is greater than the [baseline](#) of emissions established by the industry average
- The baseline will be computed by the Treasury Department and would calculate the average emissions capacity under Scope 1 and 2 emissions for each of the covered industries
- The [baseline](#) would decline by 2.5 percent a year from 2025 to 2028 and 5 percent after that

## Export Rebates

- The CBAM would include export rebates based on the share of production exported and applied to covered industries
- Commission would assess how to make this WTO compliant in a report by 2025
- Domestic producers of raw materials covered by the proposed U.S. CBAM would receive export rebates
- The Senate proposal claims it complies with WTO rules



# Key differences between the EU CBAM & U.S. CCA

Implementation Period	<ul style="list-style-type: none"><li>• The CBAM would be launched in 2027</li><li>• There would be a phase out of all free ETS allowances in sectors covered by the CBAM between 2027 and December 2032</li></ul>	<ul style="list-style-type: none"><li>• In 2024, there would be a phase-in for goods listed above</li><li>• In 2026, coverage would expand to include imported finished goods containing at least 500 pounds of covered energy-intensive primary goods</li><li>• In 2028, the threshold for coverage would be lowered to 100 pounds</li></ul>
Revenue Use	<ul style="list-style-type: none"><li>• <a href="#">Revenues</a> would be divided 75 percent to the EU budget and 25 percent to member state governments to be used for climate action</li><li>• All <a href="#">revenue</a> specifically raised from goods imported from least developed countries would be used for decarbonization efforts in those countries</li></ul>	<ul style="list-style-type: none"><li>• 75 percent of revenues would be used to fund investment in decarbonization in the effected industries</li><li>• 25 percent of revenues would be used to fund investment in decarbonization in least developed countries</li></ul>
Least Developed Countries (LDCs)	<ul style="list-style-type: none"><li>• The EU CBAM would apply to all countries importing into the European Union</li></ul>	<ul style="list-style-type: none"><li>• The CCA would exempt LDCs</li></ul>



# NLP and GPT

NLP(Natural Language Processing) is a subject that studies how to make computers understand and generate the language that human beings use to communicate. The purpose of NLP is to enable computers to use natural language to perform various tasks like human beings, such as machine translation, speech recognition, emotion analysis, text summarization, etc.

LLM(Large Language Model) is a deep learning model. With more than 100 billion parameters, NLP system can identify, summarize, translate, predict and generate words and other contents from massive knowledge through a large number of text training. In 2018, Google launched the BERT language model, which caused a sensation in the NLP field.

The GPT (Generative Pre-Training Transformer) is a branch of LLM. The history of GPT can be traced back to 2018, when OpenAI launched the first GPT language model. GPT is a pre-trained language generation model based on Transformer architecture. It is pre-trained by a large amount of text data, and then can be further fine-tuned to perform various specific natural language processing tasks, such as language generation, text classification, machine translation and so on.

There are several versions of GPT models, such as GPT-1,GPT-2 and GPT-3. These models have made remarkable breakthroughs in natural speech processing tasks, and have made remarkable achievements in automatic text generation. At present, GPT-3 has been widely used in the field of natural language processing.





# ChatGPT Background

The development of ChatGPT can be traced back to 2017, when the Google Brain team launched the Transformer model. The Transformer model is a new type of neural network architecture that can effectively process sequence data. In 2018, OpenAI <sup>(1)</sup> launched a generative pre training converter model (GPT-1 model with 117 million parameters) based on the Transformer model. The GPT-1 model can generate realistic text, translate languages, and write different types of creative content.

OpenAI then launched the GPT-3 model large-scale language model with 17.5 billion parameters in 2020, which is 15 times more than the GPT-1 model. The GPT-3 model has shown excellent performance in various aspects, and its ability to generate human like Q&A and dialogue responses has sparked the development of ChatGPT.

OpenAI launched ChatGPT on November 30, 2022. ChatGPT is based on the GPT-3.5 and GPT-4 models, and uses supervised learning and reinforcement learning fine-tuning based on human feedback. The GPT-3.5 model is an improved version of the GPT-3 model, with 137 million parameters.

<sup>(1)</sup> OpenAI is an artificial intelligence research laboratory and company founded in 2015, with founders including Elon Musk, Sam Altman, Ilya Sutskever, Greg Brockman, and others.



# What is ChatGPT?

## Source of ChatGPT :

A group of OpenAI academics and engineers worked together to build ChatGPT (Chat Generative Pre-trained Transformer). The ChatGPT model is based on the GPT-3 architecture created by Alec Radford, Jeffrey Wu, Rewon Child, and David Luan.

## Features of ChatGPT:

ChatGPT is an artificial intelligence chat machine human program, which mainly interacts with users through text. In addition to using human natural conversation, it can also be used to perform complicated speech tasks, including automatic text generation, automatic question answering, automatic summary, and other tasks.

For example, in terms of automatic text generation, ChatGPT can automatically generate similar words (manuscripts, songs, plans, etc.) based on input text, and ChatGPT can automatically generate answers to questions based on input questions.

## The use of ChatGPT:

GPT-3.5 is currently only available as a free version, and GPT-4 is available for paid ChatGPT Plus members.

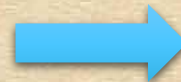




# How can ChatGPT assist ESG?

The difficulties for enterprises to implement ESG often come from different laws and regulations, different standards, and how to produce specific evaluations and how to judge whether or not what behaviors meet the requirements of laws and regulations. ChatGPT, as a powerful generative AI, can provide users with diversified and reliable ESG-related materials through conversation after analyzing a large number of ESG-related materials and documents, thus helping users to understand and deal with ESG issues better and faster.

<https://lulab.stat.nycu.edu.tw/askdb/search/>



## ESG相關資訊諮詢幫手

碳中和是什麼?

提交

碳中和是指在一定的時間內，碳排放量與碳吸收量之間達到平衡，從而使人類活動所產生的碳排放不再對大氣中的溫室氣體濃度增加，從而減緩全球氣候變化的進程。碳中和通常通過減少溫室氣體排放、增加碳吸收以及其他方法來實現。許多國家和組織都制定了碳中和的目標，希望在特定的年限內實現碳中和，以應對氣候變化帶來的挑戰。碳中和的實現需要政府、企業、學術界和個人的共同參與和努力。文件來源：carbon\_trade.txt



# ESG data available from ChatGPT

## 1. ESG indicators of different enterprises and rating data

ESG indicators and rating materials of different enterprises, including the estimation of environmental carbon emissions, social and corporate governance assessment. These materials can help investors and companies understand how ESG's performance of specific enterprises.

## 2. Provides industry trends and best practice on ESG

Provide information about the industry trends and best practices about ESG issues. These information helps companies understand which ESG issues are the most critical in specific industries, and the practices and successful cases of leading companies in the industry.

## 3. Relevant reports and studies

Provide relevant reports, research and white paper on ESG issues. Many natural language AI that can interpret text has assisted many companies for sustainable evaluation already.

## 4. Regulatory and policy information

Provides regulatory and policy information on ESG issues, including national and regional requirements and guidance for ESG performance. This information can help companies understand the relevant regulations and legal frameworks to ensure that their ESG performance meets the corresponding requirements.



# A web page providing carbon emission data using ChatGPT(I)

## Web page search functions

<https://lulab.stat.nycu.edu.tw/consult/?lang=zh>

### 1. Search for carbon emission data using ChatGPT


Enter either the vehicle or the type of carbon source, ChatGPT will estimate the annual carbon emissions of that source.

### 2. Built-in web search function

At the same time, system use the search engine to find the webpage related to the carbon emission source information.

### 3. Message board function

Allows users to leave data and upload data



The screenshot shows a web interface titled "Carbon Emissions Consulting". At the top left, there is a magnifying glass icon with a blue arrow pointing to a search input field labeled "Enter the emission source". To the right of this field is a blue "Search" button. Below the search field, there is a text prompt: "such as motorcycles, cars, diesel generators to query annual CO2 emission...". In the center of the page is a "Message board" section, which includes a large white text area for messages. Below the text area is a file upload section labeled "Upload files :" with a "瀏覽..." (Browse...) button and the text "未選擇檔案。" (No file selected). A blue "send" button is located below the upload section. At the bottom of the page, there is a "Related page >" section with two buttons: "Carbon information consulting" and "Estimate carbon emissions...".



# Calculation of carbon emission function of gas, water, electricity, gasoline and diesel oil(II)

Input the usage of gas, water, gas, gasoline and diesel, and use the calculation formula<sub>(1)</sub> to estimate the total amount of CO<sub>2</sub> emission.

## The carbon emission coefficient

Materials and energy	KgCO <sub>2</sub> e
Gas	1.879 / KWh
Tap Water	0.0554/ KWh
Electricity	0.509 / KWh
Gasoline	2.36 / liter
Diesel	2.65 / liter

<https://lulab.stat.nycu.edu.tw/compute/?lang=zh>

Estimate carbon emissions by natural gas, electricity usage, and water, gasoline, diesel consumption

Total natural gas consumption (KWh): 1000

Total electricity consumption (KWh): 30

Total tap water consumption (KWh): 20

Total gasoline consumption (Liter): 10

Total diesel consumption (Liter): 500

Estimate


Total CO<sub>2</sub> emissions: 3243.98Kg

(1) [https://www.taipeigas.com.tw/CSR/Faq/faq\\_more?id=22](https://www.taipeigas.com.tw/CSR/Faq/faq_more?id=22)  
<https://www.taipower.com.tw/tc/page.aspx?mid=204&cid=156&cchk=570dff8b-cd5b-43f6-8a98-6136b979635d>  
[https://www.water.gov.taipei/News\\_Content.aspx?n=30E4EDA27F6D9953&sms=87415A8B9CE81B16&s=A82FC62D5CECBA69](https://www.water.gov.taipei/News_Content.aspx?n=30E4EDA27F6D9953&sms=87415A8B9CE81B16&s=A82FC62D5CECBA69)




# ChatGPT search for carbon emission data screen :


<https://lulab.stat.nycu.edu.tw/consult/?lang=zh>

 **Carbon Emissions Consulting**


such as motorcycles, cars, diesel generators to query annual CO2 emission...



There is no single answer to this question as the amount of carbon emissions produced by diesel generators varies greatly depending on the size of the generator, the type of fuel used, and the amount of time it is used. Generally, diesel generators produce between 0.3 and 0.6 tons of carbon dioxide per kilowatt-hour (kWh) of electricity produced. This means that a 10 kW diesel generator running for 8,000 hours per year would produce approximately 24 to 48 tons of carbon dioxide annually.....

 **Carbon Emissions Consulting**

such as motorcycles, cars, diesel generators to query annual CO2 emission...



The exact amount of carbon emissions from motorcycles per year is difficult to estimate, as it depends on the type of motorcycle, the fuel used, the driving habits of the owner, and other factors. However, the U.S. Environmental Protection Agency (EPA) estimates that motorcycles emit approximately 1.4 metric tons of carbon dioxide per year, on average.....



# The screen of the search results of the relevant web page:

<https://lulab.stat.nycu.edu.tw/consult/?lang=zh>

Other related information, put in the references for Carbon emission estimate.

The Carbon-Footprint of Diesel Generators

Estimation of Carbon Footprints from Diesel Generator ...

Annual Carbon Footprint From Local Electricity Generation ...

Energy consumption & CO2 emissions baseline

The Carbon-Footprint of Diesel Generators - LinkedIn

How to Calculate Carbon Dioxide Emissions from a Diesel Generator

Comparing Costs and Carbon Dioxide Emissions of Diesel ...

U.S. Energy Information Administration - EIA - Independent ...

Estimation of carbon footprints from diesel generator emissions



# Use ChatGPT to establish ESG's local knowledge base

## Why do I need to establish a local knowledge base?

- Using ChatGPT's strong natural language comprehension ability, we can extract important relevant information from existing internal files, networks, or other data on the local side to provide internal queries in the enterprise.
- According to some professional knowledge or secret data in the enterprise, AI chat robot is trained and customized to answer questions in specific fields.
- Combined with other advanced LLM models and embedding technologies such as gpt-3.5-turbo or LLaMA, the ability of retrieving knowledge base is enhanced.
- Through self-defined indexes and knowledge databases, implement low-latency and high-performance data updates and queries in the enterprise internal network, and protect the confidentiality of data at the same time.
- It is convenient to use fine-tuning to create customized models that suit your own needs and make them adapt to specific tasks and scenarios.



# Web page for establishing ESG local knowledge base

<https://lulab.stat.nycu.edu.tw/askdb/search/>

## ESG相關資訊諮詢幫手

輸入問題...

提交

溫室氣體排放分成哪幾種?

汽油的碳排係數是?

碳盤查的原因是?

碳中和是什麼?

ESG是什麼?

柴油的碳排放係數是?

什麼是氣候中和?

什麼是碳交易市場?

碳權交易的類型?



# Query the ESG's local knowledge base - query result1

<https://lulab.stat.nycu.edu.tw/askdb/search/>

Enter a question and  
search the local side

## ESG相關資訊諮詢幫手

ESG是什麼?

Find answers from your  
local knowledge base

ESG是指環境 ( Environmental )、社會 ( Social ) 和公司治理 ( Governance ) 三個方面的評估指標。這個評估指標最初由聯合國在2005年的《Who Cares Wins》報告中提出，旨在評估企業是否符合永續發展目標。E代表環境，指的是企業在環境生態和氣候等方面的處理措施；S代表社會，指的是企業在社會面向的表現，包括員工健康與安全、勞工權益、平等的工作環境、與客戶的關係等；G代表公司治理，指的是企業經營面向的表現，包括內部管控、股東權益、保障利害關係人利益、資訊透明等。ESG評估指標的提出是為了讓企業不僅以財務報表評估優劣，而是能兼顧環境和社會發展，並讓投資人根據該企業的ESG評量分數評估其前景發展。文件來源：carbon\_trade.txt



# Query the ESG's local knowledge base - query result2

<https://lulab.stat.nycu.edu.tw/askdb/search/>

Enter a question and  
search the local side

什麼是碳交易市場?

Find answers from your  
local knowledge base

碳交易市場是一種基於碳排放權的交易機制，旨在減少溫室氣體排放並達到減碳目標。在碳交易市場中，政府或相關機構會核發碳排放權給企業或機構，這些權益代表了一定量的溫室氣體排放。企業可以在市場上買賣這些碳排放權，以達到減碳的目的。這樣的交易機制可以提供企業減碳的經濟誘因，同時也促進了低碳技術和創新產業的發展。碳交易市場的建立有助於推動綠色經濟發展，並為實現氣候變遷目標做出貢獻。 文件來源: carbon\_trade.txt



# Query the ESG's local knowledge base - query result3

<https://lulab.stat.nycu.edu.tw/askdb/search/>

## ESG相關資訊諮詢幫手

什麼是碳權？

碳權是指溫室氣體的排放權利。碳權的產生方式有兩種，一是國家根據碳排放管制的總量與減碳目標，核發各家企業或政府單位碳排放的配額，這些配額就是碳權；另一種方式是企業自行訂立減量額度，透過減碳專案向國內外機構申請認證取得碳權，再利用這些碳權抵換企業的碳排放量，達成減碳目標。企業可以透過各種減碳專案，如造林、碳捕捉等機制，向環保署溫室氣體自願減量暨抵換資訊平台提出減碳申請，或是到碳權交易平台申請碳權認證。碳權交易分為強制性市場和自願性市場，企業可以根據法規要求或自訂的減碳目標購買碳權抵銷碳排放量。碳權交易所能協助企業抵銷碳排放量，但應視為最後手段，企業應該先努力進行自身的減碳行動，確保作業流程、供應鏈及產品使用方式脫碳後，再考慮碳權交易。文件來源：carbon\_trade.txt

柴油的碳排係數是多少

柴油的碳排放係數是0.74公升(L) (未燃燒，2012)、3.42公升(L) (於固定源使用，2012)、3.45公升(L) (於移動源使用，2012年)、0.76公升(L) (未燃燒，2013)、3.46公升(L) (於固定源使用，2013)、3.49公升(L) (於移動源使用，2013)。文件來源：carbon\_coefficients1.txt



# Query the ESG's local knowledge base - query result4

<https://lulab.stat.nycu.edu.tw/askdb/search/>

## ESG相關資訊諮詢幫手

碳盤查的程序是?

碳盤查的程序如下：1. 界定碳盤查目標和範疇：確認盤查的範圍，可以是一個企業、公司、大樓或特定製程和產品。同時，需要了解有哪些供應鏈參與其中。2. 確認系統邊界和優先順序：了解產品或服務生命週期的排放源頭，鑑別產品類別和碳排放源的優先順序。這有助於確定在碳盤查中應該優先考慮的項目。3. 採集數據：進行碳排放數據的收集，確保數據的準確性和碳排放項目的完整性。這可能需要收集各種數據，如能源使用量、產品製造過程中的排放量等。4. 計算碳足跡：使用各種計算工具，如碳排估算工具或事業溫室氣體排放量資訊平台，來計算碳足跡。這可以通過用電量粗估碳排量，但實際的計算方式應該以國際間常用的工具程式為準。5. 製作碳足跡盤查報告：根據碳盤查的過程和結果，製作碳足跡盤查報告。報告應該清楚地闡述碳盤查的步驟、數據和結果，以便進一步的分析和改善。以上是碳盤查的一般程序，企業或組織可以根據自身需求和目標進行相應的調整和改進。文件來源：carbon\_trade.txt

碳交易的種類是什麼?

根據內文所提到的資訊，碳交易的種類包括自願減量額度交易、增量抵換交易和國際碳權買賣。其中，自願減量額度交易和增量抵換交易屬於國內碳權交易，而國際碳權買賣則是指國際間的碳權交易。文件來源：carbon\_trade.txt



# Query the ESG's local knowledge base - query result5

<https://lulab.stat.nycu.edu.tw/askdb/search/>

## ESG相關資訊諮詢幫手

碳交易與碳盤查有何不同?

碳交易和碳盤查是兩個不同的概念。碳交易是指通過買賣碳排放權來達到減少溫室氣體排放的目的。在碳交易市場上，企業或國家可以購買或出售未使用的碳排放權，以達到減少碳排放的目標。這種交易機制可以促使企業或國家進行能源轉型，減少溫室氣體的排放量。碳盤查則是指對企業、公司、大樓或特定製程和產品進行碳排放量的盤查和評估。通過碳盤查，可以了解產品或服務的生命週期中碳排放的來源和總量，從而制定相應的減排措施。碳盤查是一個評估和管理碳足跡的過程，可以幫助企業實現碳中和或減少碳排放的目標。總結來說，碳交易是一種碳排放權的買賣交易機制，而碳盤查則是對碳排放量進行評估和管理的過程。碳交易可以作為碳盤查的一種手段，通過購買碳排放權來實現減排目標。文件來源: carbon\_trade.txt

什麼是碳稅?

碳稅是一種政府對於碳排放的課徵費用。它是一種經濟手段，旨在鼓勵企業和個人減少溫室氣體排放，以應對氣候變化。碳稅通常根據排放的碳含量計算，企業或個人需要支付一定金額的稅款，以彌補其對環境的負面影響。這種稅收可以用於支持綠色能源發展、環境保護項目或其他減碳措施。碳稅的目的是通過經濟激勵措施，促使企業和個人轉向更環保的行為，減少溫室氣體排放，達到減少碳足跡和保護環境的目標。文件來源: carbon\_trade.txt



# Conclusion

**Overall, combining ESG and ChatGPT can achieve the following results:**

- 1. Provide sustainable development information :** The combination of ESG's knowledge and ChatGPT's intelligent response capabilities provides users with more comprehensive and immediate sustainability information. ChatGPT can answer questions on environmental, social and corporate governance issues to help users understand their company's sustainability performance and related issues.
- 2. Promote ESG investment and decision :** ChatGPT can be used as a query tool for investors, businesses, and managers, providing advice on ESG investments and decisions. It can analyze a large number of ESG data and related information, and help users to evaluate the sustainability levels and values of enterprises, so as to make more informed decisions and decisions.
- 3. Strengthen ESG education and awareness :** ChatGPT can be used in ESG education and advocacy to raise public awareness and awareness of sustainable development. It answers questions about ESG principles, sustainability goals and best practices, and provides resources and advice to encourage individuals and organizations to actively engage in sustainable development.





Q & A