Net Zero Roadmap and Carbon Pricing Policy of Taiwan

Ministry of Environment

114/7/22

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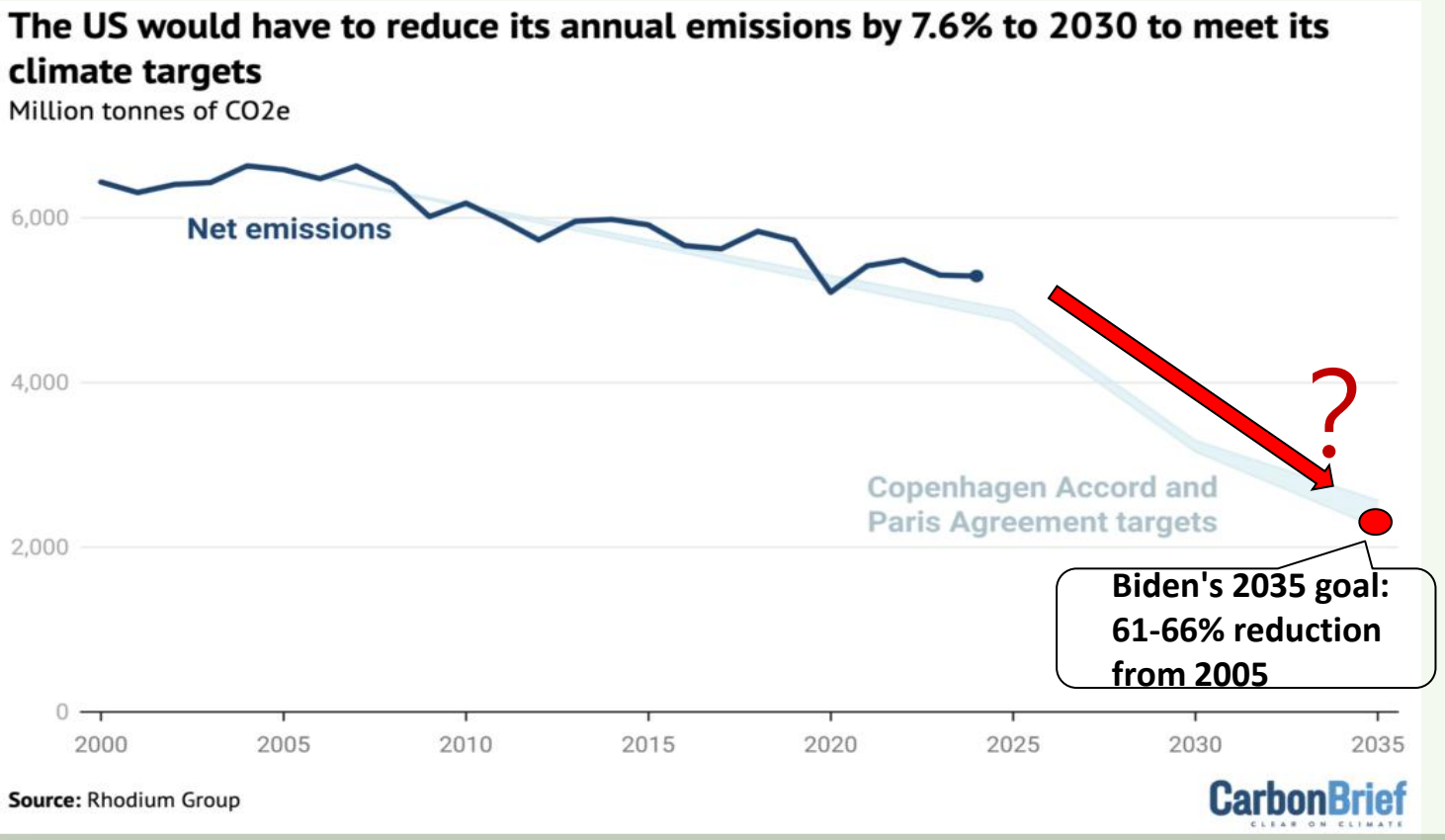
Net Zero Roadmap of Taiwan

The US withdrawal from the Paris Agreement: a new challenge for global climate governance

source：NPR

- US President Trump signed an executive order to withdraw from the Paris Agreement again at the inauguration ceremony on January 20, 2025, which is expected to take effect on January 27, 2026.
- The US is still bound by the Paris Agreement, but is expected to adopt a passive and inactive attitude.
- The US also withdrew from all financial commitments and aid under the UNFCCC

Biden administration submitted NDC 3.0 in December 2024, pledging a 61–66% reduction in emissions by 2035 compared to 2005 levels. Trump administration has not formally withdrawn this document, and there is growing attention on how the 2030 and 2035 targets will be achieved.



The Impact of US tariff policy on net zero promotion and its response

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Impact on global net-zero emissions

1. **Supply chain disruptions have led to increased costs for renewable energy equipment.**
2. **Global investor confidence in renewable energy and decarbonization efforts has been undermined.**
3. **Fossil fuels are beginning to regain a competitive advantage.**

No country have made a clear policy or new decision on these issues so far

Net-Zero Response Strategies Amid Global Tariff Pressures of Taiwan

1. **The 2050 net zero target remains unchanged, assisting industries to reduce carbon emissions and lower costs, moving towards a green and low-carbon supply chain, and providing guidance and assistance to severely impacted industries**
2. **Ensure the success of digital and green dual-axis transformation and improve competitiveness after the global tariff tsunami**
3. **Comprehensive green-collar talent training and 10 billion green growth fund investment**

Turning crisis into opportunity, the low-carbon supply chain through dual-axis transformation has become a new boost for Taiwan

GLOBAL NET ZERO COVERAGE

We include only country-level targets, excluding sub-national ones — e.g. including US states would raise GDP coverage to at least 84%, with higher population and emissions coverage.

NET ZERO NUMBERS

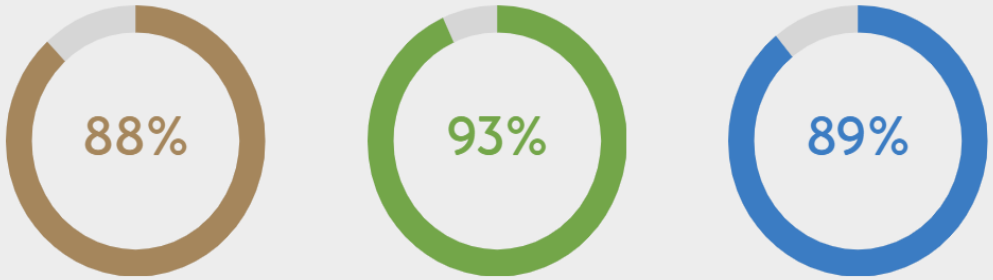
Countries	Regions
140	201
Cities	**Companies**
284	1,196

Out of 198 countries, 711 regions, 1,186 cities and 1,974 companies.

Trump was inaugurated in 2025.1.20

https://zerotracker.net/
(updated: 2025/07/06)

GLOBAL NET ZERO COVERAGE



Country-level coverage only. We do not include sub-national net zero targets in countries without a target.

NET ZERO NUMBERS

Countries	Regions
147	187
Cities	**Companies**
278	1,176

Out of 198 countries, 711 regions, 1,186 cities and 1,976 companies.

https://zerotracker.net/ (2025.1.14)

Progress towards a 2050 Net Zero Path

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Turn crises into opportunities and seize business opportunities

TAIWAN 2050 Milestone

2021 4/22	2022 3/30	2022 12/28	2023 2/15	2024 5/20	2024 12/30	2025 1/23	2025 5/6
President Tsai announces **Net-Zero Goal**	**Executive Yuan** releases **Net-Zero Pathway**	**Executive Yuan** releases **Key Strategies**	**Climate Act Goals Enshrined in Law**	**President Lai** announces **National Hope Project**	**Ministry of Environment** proposes **Draft Phase Goals**	**Presidential Office** convenes **Climate Committee**	**Executive Yuan** approves **Phase Goals**
2050 Net-Zero Transition is Taiwan's Goal	**Taiwan's 2050 Net-Zero Emissions Pathway and Strategy Overview**	**Phase Goals and 12 Key Strategies for Net-Zero Transition**	**Incorporated into 2050 Net-Zero Emissions Goals**	**Five Major Strategies for 2050 Net-Zero Transition**	**Launch Social Dialogue to Solicit Opinions**	**3rd Meeting: New Carbon Reduction Goals for 2032 and 2035**	**Serves as the Basis for Promotion by All Levels of Government in the Next 5 Years**

New national carbon reduction targets to promote progress

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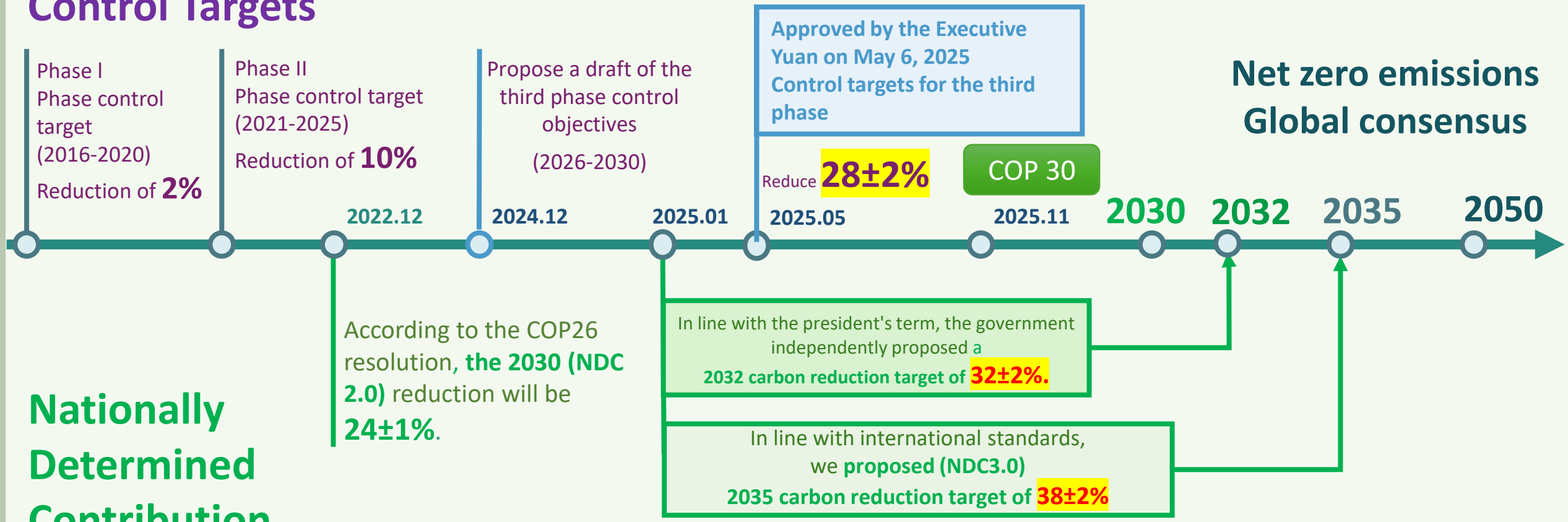
Climate Law Phased Control Targets



Nationally Determined Contribution (NDC)

22 Parties have formally submitted NDC 3.0 (including the United States)

Setting Carbon Reduction Targets

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2025.1.23 National Climate Change Committee 3rd Committee Meeting

Net greenhouse gas emissions will decrease by 4.64% in 2023 (compared to 2005)

Actively implement and show commitment and responsibility to the world

Unit：$MtCO_2e$

Phase 2 Regulatory Goal [2025]

Phase 3 Regulatory Goal [2030]

279.739

268.893

264.133

2005 net emissions (Baseline)

- 10%

-20% (2015)

-24±1% (2022)

-28±2% (2024)

-32±2%

-38±2%

280 260 240 220 200 180 160

2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035

Compared to the 2007 peak, the new target will reduce emissions

43 to 47%

-34% ~ 38% vs. 2007 (peak year) total GHG emissions

-38% ~ 41% vs. 2007 (peak year) total GHG emissions

-43% ~ 47% vs. 2007 (peak year) total GHG emissions

Phase 3 Greenhouse Gas Regulatory Goal

(Approved by Executive Yuan in 2025.5.6)

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✓ **2030 National Greenhouse Gas (Net) Emissions：28±2%** reduction compared to 2005 levels, equivalent to **34% ~ 38%** reduction compared to 2007 emission peak (198.980~188.225 $MtCO_2e$)

✓ **2030 Electricity Emission Factor Target：0.319** $kgCO_2e/KWh$

Greenhouse Gas Regulatory Goal (Phase 3)

Energy	27.300 (Mt CO_2e)	-23.1% (vs. baseline)
Transport	30.373 (Mt CO_2e)	-20.0% (vs. baseline)
Manufacturing	117.377 (Mt CO_2e)	-18.0% (vs. baseline)
Agriculture	5.226 (Mt CO_2e)	-35.1% (vs. baseline)
Business & Residence	37.331 (Mt CO_2e)	-35.0% (vs. baseline)
Environment	2.596 (Mt CO_2e)	-71.5% (vs. baseline)

Taiwan Overall Carbon Reduction Action Plan

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National Vision

Green Growth and 2050 Net-Zero Transition

Five Major Strategies of the Project

- Smart Shared Green Energy
- Dual-Axis Industrial Transformation
- Net-Zero Green Lifestyle
- Government as the Backbone of Net-Zero Transition
- Just Transition

Action Plan

Optimization

Six Major Departments 20 Key Carbon Reduction Flagship Projects

New Flagship Projects to Strengthen Carbon Reduction Efforts

Foundation Building

12 Key Net-Zero Strategies

Rolling Adjustments for Effective Implementation of Self-Reduction Measures

Six Pillars of Support

- Technological Innovation
- Financial Support
- Carbon Pricing
- Regulatory Adaptation
- Green Collar Talent
- Community Engagement

Taiwan's Action Plan on Comprehensive Carbon Reduction

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Top Down: Introduce 20 Flagship Carbon Reduction Projects for Six Major Sectors and Intensifying Carbon Reduction Efforts

Energy Sector
Ministry of Economic Affairs

- Accelerating Renewable Energy Development – Solar Photovoltaics [Ministry of Economic Affairs]
- Accelerating Renewable Energy Development – Offshore Windpower [Ministry of Economic Affairs]
- Renewable Energy Breakthrough – Geothermal [Ministry of Economic Affairs]
- Renewable Energy Breakthrough – Small hydro [Ministry of Economic Affairs]
- Energy – Storage Technology [Ministry of Economic Affairs]
- Methane Pyrolysis [Ministry of Economic Affairs]
- Supply Chain of Hydrogen energy (with Ammonia) [National Development Council]
- Carbon Capture, Utilization and Storage (CCUS) [National Development Council]

Manufacturing Sector
Ministry of Economic Affairs

- Industrial Self-regulated Emission Reduction [Ministry of Economic Affairs]
- Energy Efficiency - Manufacturing Sector [Ministry of Economic Affairs]
- State-owned Enterprise Carbon Reduction - China Steel Corporation [Ministry of Economic Affairs]
- State-owned Enterprise Carbon Reduction - CPC Corporation [Ministry of Economic Affairs]

Transport Sector
Ministry of Transportation

- Commercial Vehicle Electrification and Decarbonization [Ministry of Transportation]
- Sustainable Aviation Fuel (SAF) [Ministry of Transportation]

Residential & Commercial Sector
Ministry of the Interior

- Net-zero Buildings [Ministry of the Interior]
- Deep Energy Saving – Residential and Commercial Sectors [Ministry of Economic Affairs]

Agriculture Sector
Ministry of Agriculture

- Agricultural Ecological Resilience and Carbon Sinks [Ministry of Agriculture]
- Low-Carbon Sustainable Agriculture [Ministry of Agriculture]

Environment Sector
Ministry of Environment

- Resource Recycling [Ministry of Environment]
- Net-Zero Sustainable Green Living [Ministry of Environment]

* The Environmental Department's Flagship Program Supports Carbon Reduction in Manufacturing, Residential and Commercial, Transportation, and Agricultural Sectors.

Bottom-Up: Dynamically Adjust 12 Key Strategies and Propose 80 Sectoral Carbon Reduction Plans

Green Growth Investment Program

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Accelerate the achievement of Green Growth and the 2050 Net-Zero Transition goals

✓ 2024.11.29 MOENV proposed "**Executive Yuan National Development Fund Strengthening Investment in Green Growth Net-Zero Industries Implementation Program**" which approved by the National Dt. Fund, Executive Yuan.

✓ 2025. 2. 4 **"Operational Guidelines for the Ministry of Environment's Program to Strengthen Investment in Green Growth Net-Zero Industries"** were enacted and promulgated.

Total Allocation

NT$10 billion for **10 years** ; Investment to be made in the first 7 years, with disposition of remaining investment cases in the subsequent 3 years

Investment Targets

Domestic enterprises involved in **net-zero sustainable emerging businesses**, or overseas enterprises with primary business activities in Taiwan

Foster a net-zero emerging industry ecosystem

Leverage a multiplier effect on private capital investment

Optimize industrial structure and green transition

Create a green-collar talent market and economic growth

Green Growth Investment Program - Policy Incentives

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Co-investment Approach

National Development Fund + Venture Capital Fund Advisory Capacity = Industries upgrade& transformation

✓ **2025.5.23** Taiwan Green Growth Fund Unveiled

✓ **2025.6** Announcement for Selection of Partner Investors

Six Key Investment Areas (in emerging industries)

✓ **May increase investment ratio up to 2 : 1**

✓ **For research projects in cooperation with, commissioned by, or approved for subsidies by central competent authorities or central science and technology authorities, the investment ratio may be increased up to 3 : 1**

- Resource Recycling
- Deep Energy Saving, Improving Energy Efficiency
- Sustainable and Advanced Energy Technology Development, Technology Energy Storage
- Digital, Low (Reduced) Carbon Technology Development
- Carbon Capture, NET Development
- Climate Change Adaptation Technology Development

Expected Benefit

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Deepen four major transitions

- Energy transition is more diverse
- Industrial transition and innovation
- Low-carbon lifestyle transformation
- Resilience of social transition

Driving green growth

In 2030

Providing low-carbon energy

The electricity emission coefficient will be reduced from 0.490 in 2023 to 0.319 kgCO2e/kWh

Air pollution will be reduced by 40% compared to 2019

Increase energy independence

Dependence on imported energy will drop from 96.2% in 2023 to 90%

Create a green economy

Government budget investment exceeded NT$1 trillion

Driven private investment of NT$5 trillion

Trained 80,000 green-collar talents

source：2025/1/23National Development Council「Taiwan's National GHG Reduction Action Plan」slides

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Carbon Pricing Policy

In line with international advanced practices, Promote Carbon Pricing in Taiwan

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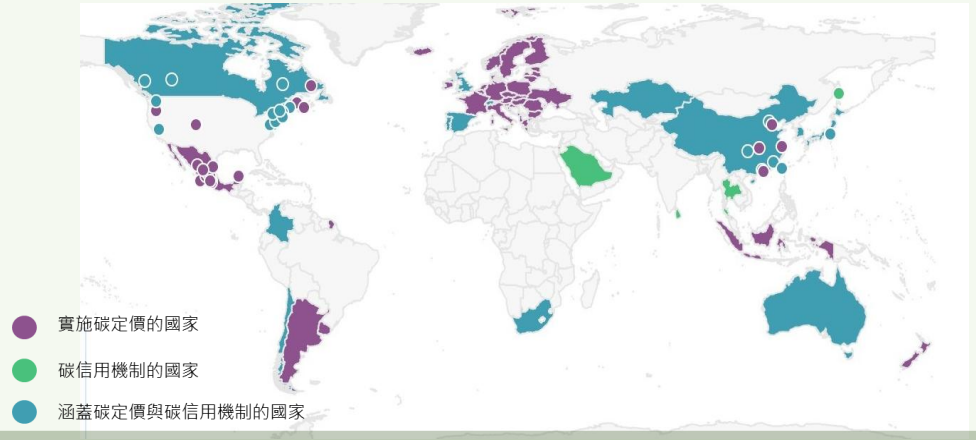
Carbon Fee First

Encourage actual emissions reduction through preferential rates, supported by voluntary emission reduction methods and the issuance of reduction credits; Drawing on international experience, a cap-and-trade scheme is planned for gradual mid- to long-term development.

Current Status of International Carbon Pricing

Carbon pricing is implemented in **80** countries or regions, covering 28% of global emissions.

- Carbon taxes ：43
- Cap-and-trade ：37



Take Asia as an example

- Already implemented: Japan, South Korea, Singapore, China, Indonesia
- Planning: Thailand, Vietnam, Malaysia

area	Carbon pricing system		Carbon price in 2024[1,2] (USD/ton)
European Union	Emissions trading, carbon tax		Sweden Carbon tax 144.62 Estonia Carbon tax 26.97 EU Emissions Trading 70.37
USA	Emissions trading (some states)		California 29.27 Massachusetts 9.3
Asia	carbon tax	Singapore Japan	Singapore 18.61 Japan 1.92
	emissions trading	Japan (Tokyo, Saitama) South Korea China (9)	Tokyo 4.00、Saitama 0.96 South Korea 6.45 Country 11.76、Beijing 12.15

source： 1. Organize from https://carbonpricingdashboard.worldbank.org/

2. Carbon price level data is updated by WB in April 2025

Ensuring Stable Implementation of Carbon Pricing Mechanisms and Alignment with International Frameworks

Carbon Fee Implementation in 2025

- Putting a Price on Carbon with Emission Reduction at the Core
- Covers ~252 enterprises; up to 37 $MtCO_2e$ reduction by 2030 (14% of 2005 emissions)

Green Growth via International Carbon Pricing

- The **Green Growth Alliance** was formed on April 24, bringing together 17 enterprises, MOEA, NSTC, FSC, and the Taiwan Carbon Exchange.
- A pilot cap-and-trade scheme is being implemented alongside the existing carbon fee, forming a dual-track carbon pricing system.

Carbon Pricing Mechanisms & Voluntary emission reduction mechanism

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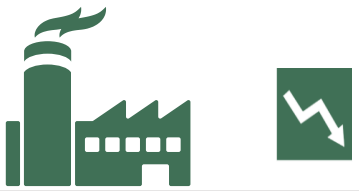
Carbon Fee + Voluntary Reduction to enhance the reduction effects

- To achieve the national target, phased implementation of Carbon Fee is being promoted
- Promoting the large (levied entities) driving the small (small emission sources) approach to create diverse incentive mechanisms

Levied entities under Carbon Fee

Facility boundaries

power and manufacturing businesses
Direct + indirect emission sources
over 25,000 tons of CO_2e/year

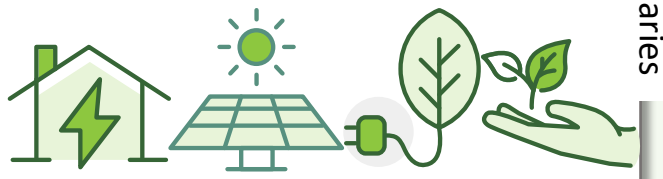


Entities not covered by CF

Project boundaries

GHG Voluntary Reduction Project

- Conversion of low-carbon fuels
- Improvement of energy efficiency
- Carbon sinks



Supplementary measure of Carbon Fee

TCX

GHG emission allowance
Emission、Reduction、Credits

Two-stage application of Voluntary Reduction Project

Application and Registration → Implementation and Monitoring of carbon reductions → Apply for credit

Comply with the quality requirements of the international voluntary reduction mechanism to ensure substantial reduction

3

- **M**easurable
- **R**eportable
- **V**erifiable

+

5

- **Additionality**
- **Conservative**
- **Permanent**
- **Avoid double counting**
- **Avoid environmental damage**

Implementation of Carbon Pricing

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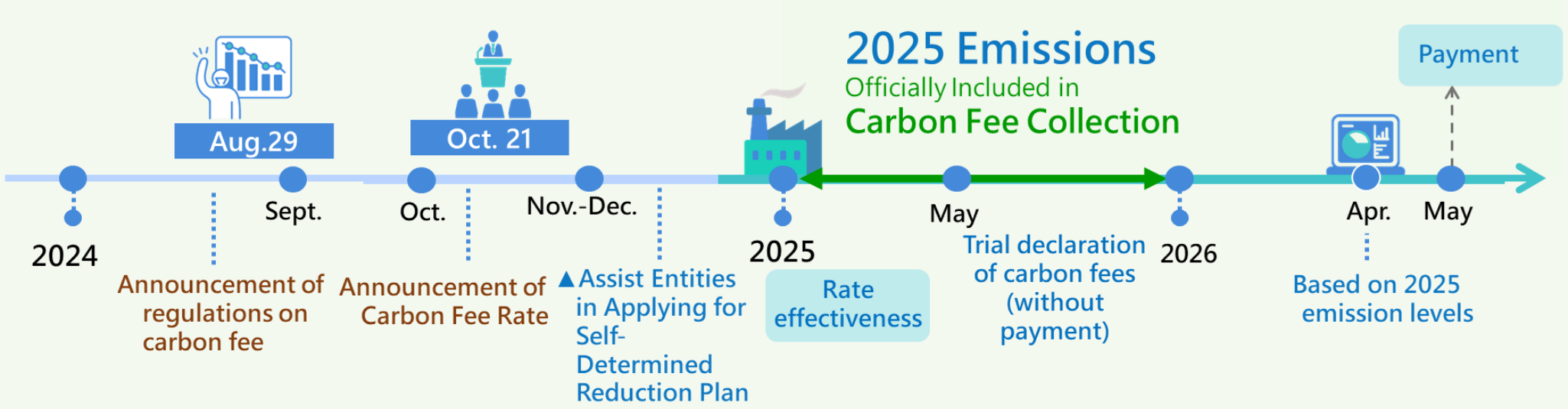
- **Entities subject to carbon fees**： **Power and gas supply industries**, as well **as manufacturing industries**, with annual emissions (scope 1+2) of 25,000 metric tons of CO_2e or more. It is estimated that around **464 entities. (from 252 companies)**
- **The carbon fee rate**(per tCO_2e)： The rates will take effect on January 1, 2025.

  Standard Carbon Fee Rate: NT$300 (US$10) ,

  Preferential Carbon Fee Rate A: NT$50 (US$1.67) , Preferential Carbon Fee Rate B: NT$100 (US$3.33)

  An entity must submit, and get approval by the MOENV, a 2030 emission reduction goal and a voluntary emissions reduction plan before the preferential carbon fee rate can be applied.
- **Payment timing**: The fee rates take effect on January 1, 2025, the payment for the 2025 emissions must pay carbon fees by the end of May 2026.



2-Month Extension for the Voluntary Carbon Reduction Plan Application

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Application Schedule/Method

30 June Submit the application form. (125 entities)

31 August Complete the proposal and information.

Submit the registration application before June 30 to retain the eligibility for preferential rates

Apply by 30 June | Complete by 31August

According to regulations, applications must be submitted before the end of June 2025, and preferential carbon fee rates will be applied.

Considering the increased uncertainty caused by the US tariff policy, it is agreed that businesses could fill out the application form by the end of June and submit the complete plan information by the end of August.

June 2025

August 2025

Taiwan's Carbon Fees are a tool for Reduction, not a Financial Tool

carbon fee payment = chargeable emissions × fee rates

More than 90% of tax recipients have proposed voluntary reduction plans

Enterprises

- No proposal of Self-Determined Reduction Plans → The carbon fee will only be levied on emissions over 25,000 metric tons CO_2e, and the Standard Carbon Fee Rate will apply.
- Proposal of Self-Determined Reduction Plans that meet Designated GHG Reduction Goal
  - at high carbon leakage risk → Carbon fee = emissions X emission adjustment coefficient value X preferential rate
    - Phase 1: 0.2
    - Phase 2: 0.4
    - Phase 3: 0.6
  - not at high carbon leakage risk → Carbon fee = (emissions - 25,000 metric tons CO_2e) X preferential rate

The Reduction Effectiveness of the Carbon Fee System

- The three regulations on carbon fees **provide businesses with a clear understanding that carbon emissions have a price**, and how they can reduce both their carbon emissions and carbon fee burden through Self-determined Reduction Plans.

Appendix 1

Industry-specific designated reduction rate

With 2030 as the target year using 2021 as the baseline year

42%

Iron & Steel 25.2%
Cement 22.3%

reference to SBTi

qualifies for

Preferential Rate A

Appendix 2

Technology benchmark designated reduction rates

With 2030 as the target year
Using 2018-2022 as the baseline years

23%

considers the emission types of each source, including fuel types, processes, and electricity usage

To achieve the 2030 Taiwan's NDC

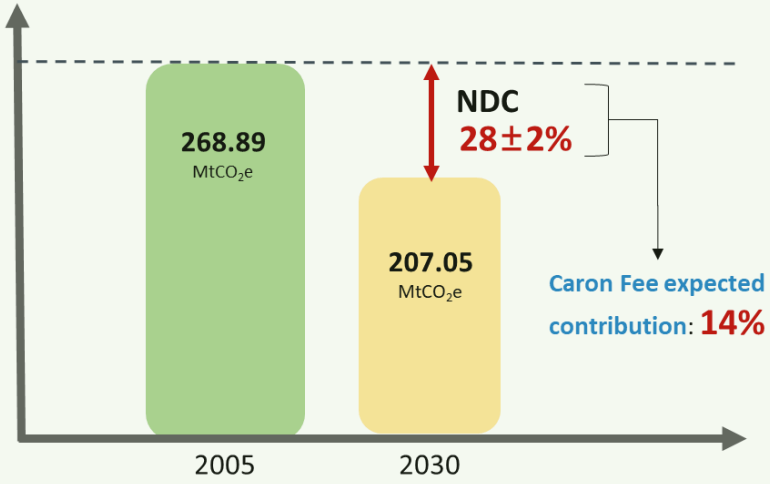
qualifies for

Preferential Rate B

NET ZERO 2050

- Entities subject to carbon fees who switch to low carbon fuels, adopt negative emission technologies, increase energy efficiency, use renewable energy or improve manufacturing processes and reaching goals designated by the central competent authority, may propose voluntary reduction plans and apply for a preferential rate from the central competent authority.

- **If** all carbon fee collection entities submit **Self-determined Reduction Plans** and meets the **Designated Reduction Goal**, it is estimated that by 2030, **CO_2e emissions could be reduced by 37 million metric tons**, equivalent to **about 14% of the 2005 emission levels**.



Carbon Fee Rate Schedule

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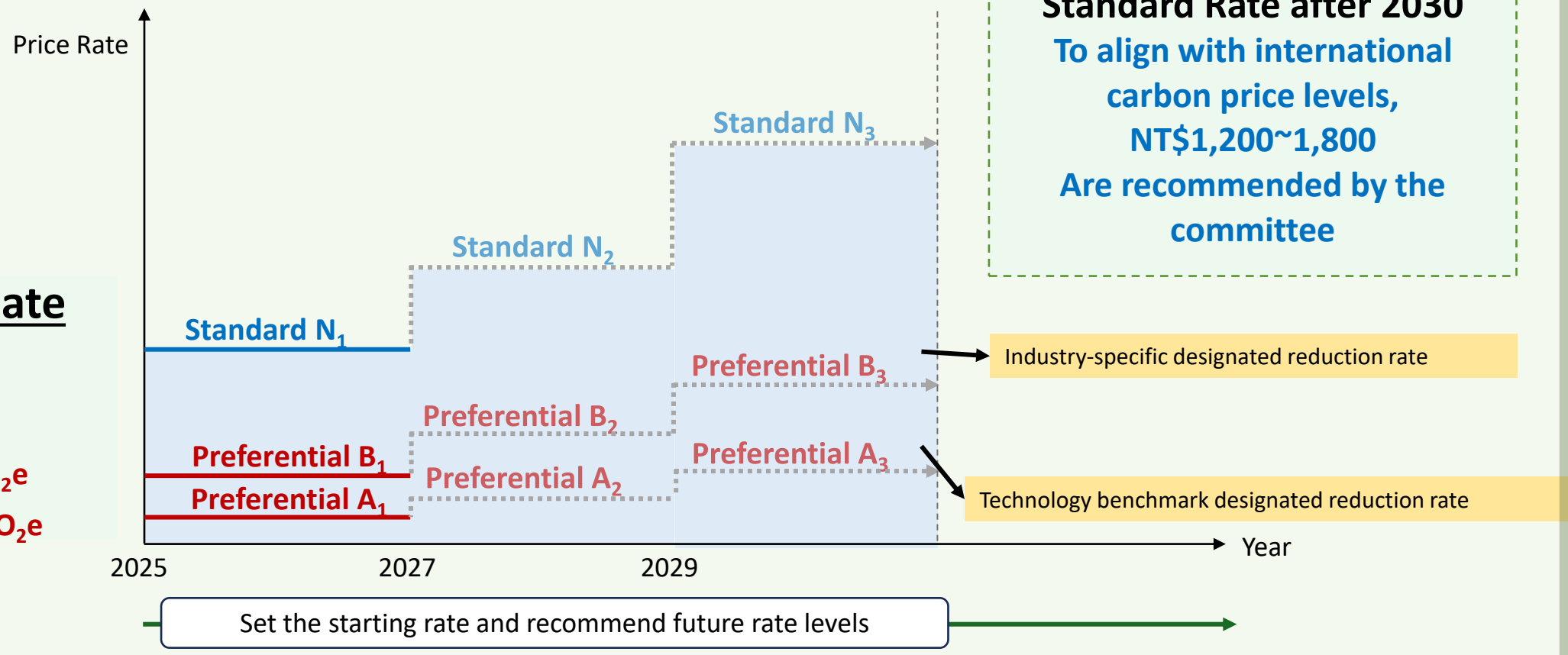
Carbon Price Rate 2025

Standard：$300/tCO2e

Preferential A：$50/$tCO_2e$

Preferential B：$100/$tCO_2e$



Standard Rate after 2030

To align with international carbon price levels, NT$1,200~1,800 Are recommended by the committee

Rate Increasing

The review committee will consider the application status of the voluntary emission reduction program and its content when reviewing the 2026 rate in 2025, and will increase the rate in stages.

High Carbon Leakage Risk Identification

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Objective Preventing carbon leakage risks and reducing the competitiveness challenges faced by regulated entities due to carbon fee policy

Approach Determine the eligibility of entities for **high carbon leakage risk discount** by considering:
(1) **industry classification** and (2) **maintaining the international competitiveness of industries**

Level 1：Industry Classification

- **Considerations and Conditions**

Referring to international practices, considering trade intensity and emission intensity, industries with a Carbon Leakage (CL) indicator exceeding a specified threshold are defined as **high carbon leakage risk industries**.

Eligibility applies through 2030 upon approval

Level 2：International Competitiveness Consideration

- **Considerations and Conditions**

Considering carbon leakage risks from **additional carbon costs** (e.g., US tariffs), regulated entities with **negative annual gross profit**, **high carbon fees relative to gross profit**, or **exposure to international dumping** may apply for a carbon leakage risk discount to protect their international competitiveness.

Subject to annual application and approval for that year

The entities should **submit and pass the review of self-determined reduction plan** to receive a carbon leakage discount to reduce carbon fee.

Carbon revenue is earmarked for its intended

Section 33 of the Climate Change Response Act

The Fund shall serve the following purpose exclusively for GHG emissions reductions and adaptation to climate change:

1. Inspect emission sources
2. Subsidize to special municipalities, counties and cities for implementation of GHG reduction
3. Subsidize to the central industry competent authorities for implementation of GHG reduction
4. Subsidize and grants to entities for investment in GHG reduction technologies
5. Providing assistance, subsidies, and grants for efforts to reduce GHG emissions other than the three items mentioned above, and research and develop GHG reduction technologies
6. Administrative affairs for holding accounts establishment in the Registry, auctions, sales and allowance trading
7. Employ staff to carry out administrative services in GHG reduction and management
8. Coordinate, plan and implement adaptation to climate change
9. Promote related matters concerning carbon footprint management mechanism
10. Educate the public and promote related matters concerning climate change and GHG reduction
11. Conduct climate change and GHG reduction related international affairs
12. Assist the central competent agency to execute just transition
13. Carry out research in climate change adaptation and GHG reduction

According to the Budget Act**,** the Executive Yuan is in the process of **revising the fund revenue and expenditure custody and use regulations.**

Regular review and disclosure of future implementation results

Voluntary reduction and trading mechanism

objects and procedures: Business or Government at all levels

Apply for voluntary reduction project → Project registration → Practical implementation of measures and monitoring of carbon reductions → Application for issuance quota

Approved Reduction Credit issued → Trade → Offset and cancellation

Approved Reduction Credit issued

As of December 2013，

- Regulations for the Management of Greenhouse Gas Offset Projects
  - ➢ **The issued quota is 26.52 million tCO2e, of which 6.88 million tCO2e has been cancelled.**
- Regulations on Greenhouse Gas Voluntary Reduction Project
  - ➢ **8 cases have been approved for registration and 36 cases are under registration review.**

Trade

- Regulations Governing the Transaction, Auction, and Transfer of Greenhouse Gas Reduction Credits
  - ➢ **In September 2024, the Taiwan Carbon Exchange was commissioned to conduct carbon trading operations and establish a trading platform.**
  - ➢ **Carbon trading was launched in October 2024.**

Offset and cancellation

Business

- Purpose of Article 26 of the Climate Change Adaptation Act
  - ➢ **Carbon Fee Deduction**
  - ➢ **Conducting incremental offsets and EIA commitment offsets**
  - ➢ **Voluntary Carbon Offset**

Launching Domestic Carbon Trading

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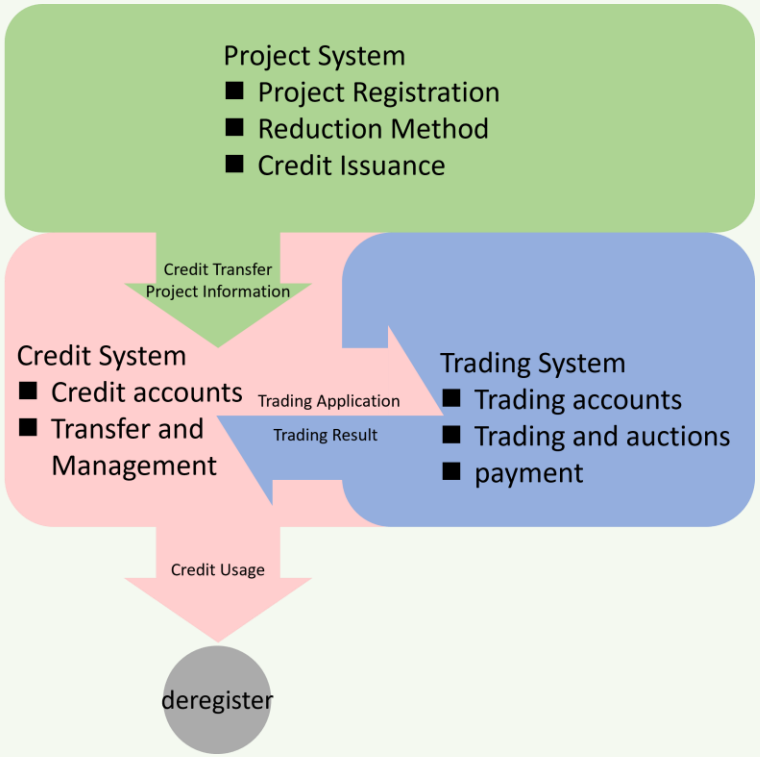
Cross-departmental, Transparency, Flexibility

Regulations for the Administration of Trading, Auctioning and Transfer of Greenhouse Gas Reduction Credits
01 July 2024

Entrust the TCX for trading business
September 2024

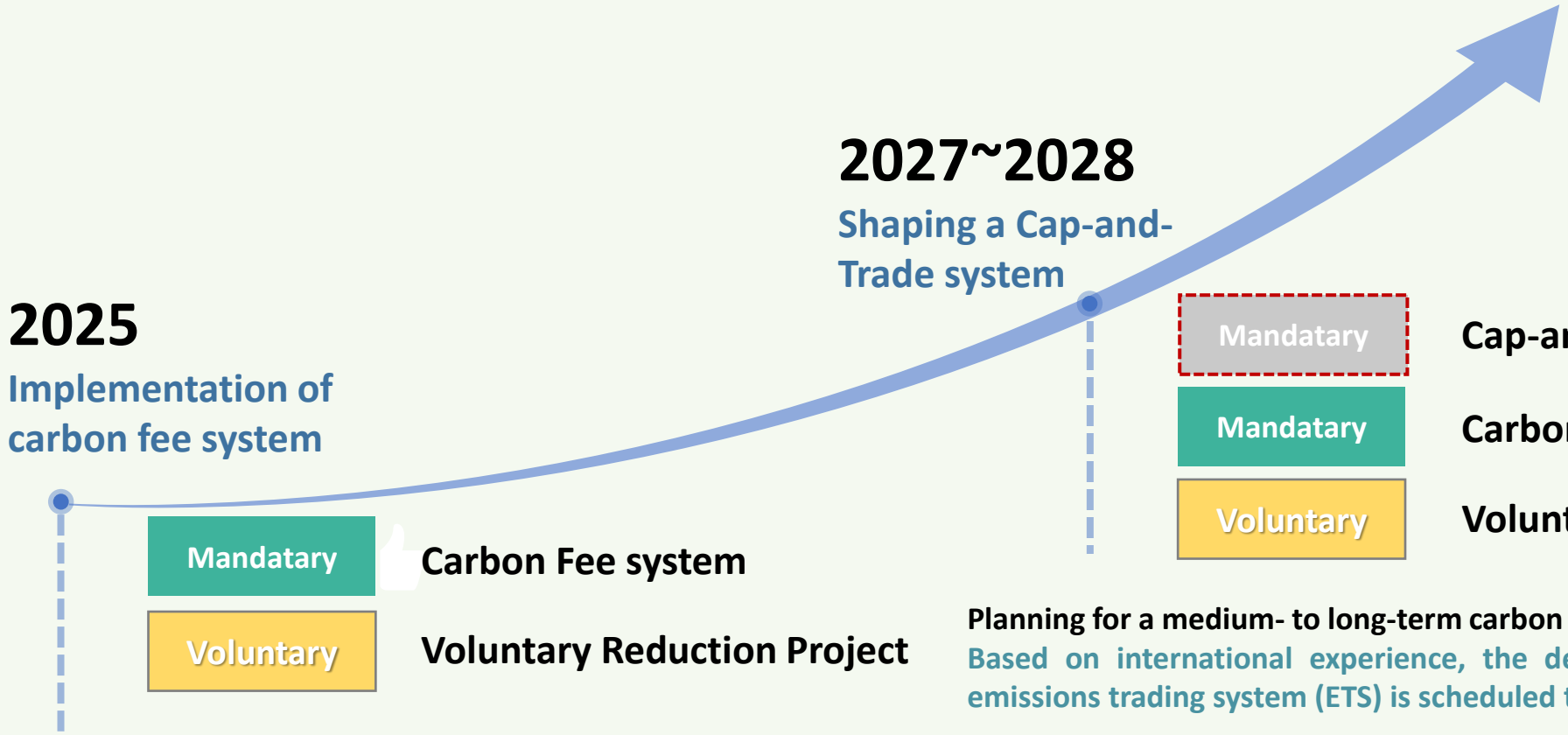
Establish a domestic reduction credit trading platform
September 2024

Trading started in October 2024



2025~2028 ETS planning

- Since 2018, Taiwan has engaged in in-depth exchanges with international partners such as Germany. In addition to learning from Germany's experience and strengthening Taiwan's MRV mechanism and carbon pricing infrastructure, **the Green Growth Alliance organized a delegation to Germany in June 2025 to study the cap-and-trade system (ETS).**



Planning for a medium- to long-term carbon pricing mechanism:
Based on international experience, the development of a cap-and-trade emissions trading system (ETS) is scheduled to begin between 2027 and 2028.

Carbon Pricing Will Become a New Engine for Green Growth in Taiwan

The government is becoming an integrator and promoter of net-zero

International sustainable competitiveness

- Industrial restructuring
- Dual-axis transformation

Green finance

Driving green investments in insurance, venture capital, and other sectors

- **Green Industries**
- **Green-collar talent**
- **Green jobs**

The Carbon Fee Mechanism Drives Market Opportunities

Entities subject to carbon fee collection that implement voluntary emission reduction plans and meet designated targets will be eligible for preferential rates.

Under the implementation of the carbon pricing system, more companies are expected to invest in related sectors.

- Use renewable energy
- Switching to low-carbon fuels
- Improve energy efficiency
- Process improvement
- negative emissions technology

Green Growth Fund

Secure NT$10 billion to establish the **"Green Growth Fund"** to drive domestic net-zero-related emerging industries and **accelerate carbon reduction**. Enhance resilience while creating job opportunities and advancing toward green growth.

Green financial innovation

Taiwan Net-zero Fund

Thanks for listening.
Please advise.

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