Green Transition

Taiwan's Climate Strategy and Prospects for EU Cooperation

Edited by

Yi-Chieh Chen

Maud Descamps

Special Paper | December 2025

Institute for Security & Development Policy

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Abbreviations

AR4	Fourth Assessment Report
AR6	Sixth Assessment Report
CBAM	Carbon Border Adjustment Mechanism
CCUS	Carbon Capture Utilization and Storage
CMIP6	Coupled Model Intercomparison Project Phase 6
COP	Conference of Parties
DPP	Democratic Progressive Party
EETO	European Economic and Trade Office
EGD	European Green Deal
EU	European Union
IPCC	Intergovernmental Panel on Climate Change
LCR	Local Contentment Requirement
LNG	Liquefied Natural Gas
NCCC	National Climate Change Committee
NDC	Nationally Determined Contribution
NECPs	National Energy and Climate Plans
PPAs	Power Purchase Agreements
SMR	Small Modular Reactors
TaiESM1	Taiwan Earth System Model Version 1
TCCIP	Taiwan Climate Change Projection Information and Adaptation Knowledge Platform
TSMC	Taiwan's Semiconductor Manufacturing Company
TWYCC	Taiwan Youth Climate Coalition
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
U.S.	United States
WCRP	World Climate Research Programme
WMO	World Meteorological Organization
WTO	World Trade Organization

List of Contributors

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Chia-Wei Chao (趙家緯) received his Ph.D. degree in Graduate Institute of Environmental Engineering from National Taiwan University in 2013. His research focuses are sustainability transition and industrial ecology. Chao has been actively involved in climate and energy policy since 2007, providing evidence-based policy suggestions for environmental NGOs. He founded Taiwan Environment and Planning Association 2020 to establish

a transdisciplinary platform to maximize the synergies between ecosystem service and renewable energy development. Since 2022, five environmental NGOs have launched the Taiwan Climate Action Network initiative to accelerate net-zero policy action in Taiwan. Chao leads the research unit under the initiative. He also teaches "Pathways towards Net-Zero" at National Taiwan University.

Angeline Sanzay is a seasoned EU climate diplomacy expert with extensive experience at the intersection of foreign policy and climate action. She has dedicated her career to strengthening the EU's diplomatic leadership in this space. Her expertise is rooted in her time as Political Officer at the European Economic and Trade Office in Taipei, where she led EU-Taiwan political dialogue on climate and environment, playing a key role in advancing bilateral cooperation. During her time as Senior Policy Advisor at E3G, Angeline worked to position the EU as a global leader in climate diplomacy by embedding climate objectives into broader geopolitical strategies. Among her first assignments at E3G, she advised on EU-China climate diplomacy and contributed to shaping the EU's external climate agenda. With a strong background in international negotiations and multilateral engagement, she brings a diplomatic lens to climate action. Angeline holds Master's degrees from the College of Europe and the University of Lille.

Huang-Hsiung Hsu (許晃雄) was a professor at National Taiwan University in 1992-2011 and joined the Research Center for Environmental Changes, Academia Sinica in 2011. He is currently a distinguished research fellow and the CEO of the Anthropogenic Climate Change Center established in 2021. Hsu's research focuses on climate variation and change. Hsu was a key person in initiating and organizing Climate Changes in Taiwan: Scientific Report 2011, 2017, and 2024, which provided important scientific bases for research planning and policymaking in climate change adaptation in Taiwan. He led the development of Taiwan Earth System Model and the participation in Coupled Model Intercomparison Project phase 6 that contributed scientific bases for the Sixth IPCC Assessment Report. Hsu has been active in connecting climate science and impact studies including climate-land use

interaction, climate impacts on Taiwan water resources, and recently on the climate-related financial disclosure.

Virginie Arantes is a political scientist with a Ph.D. from the Université libre de Bruxelles (ULB). Her research focuses on environmental governance, nationalism, and sustainability in East and Southeast Asia. She is the author of *China's Green Consensus* (2022), which examines authoritarian environmentalism and civil society dynamics in China, and has published in journals such as *Journal of Contemporary China*, *Journal of Environmental Management*, and *Journal of Social Entrepreneurship*. Her current work explores how green nationalism contributes to state legitimacy and the construction of national identity amid shifting geopolitical landscapes.

Introduction: The Diverging Realities of Climate Action

Climate change remains a key issue in Taiwan and Europe, despite being undermined by geopolitical conflicts and economic challenges. The average temperature in Taiwan, Europe, and across the world reached record-high levels in 2024. During June and July 2025, Europe experienced record-breaking heatwaves, with the highest 46°C recorded in Spain and Portugal. These high temperatures not only led to wildfires and drought but also increased sea surface temperatures and sea levels. These extreme events illustrate the worsening impacts of climate change, exacerbating wildfires, disrupting ecosystems, and leading to loss of life and economic damage.

Despite growing scientific consensus and public awareness, the global political focus on climate action remains inconsistent. Nevertheless, some efforts persist. The European Commission announced the "European Green Deal" in 2019, while Taiwan announced "Taiwan's Pathway to Net-Zero Emissions in 2050" in 2022. Both aim to reach net-zero emissions by 2050. This shared goal creates a platform for Europe, Taiwan, and relevant international organizations to deepen their collaboration on research, innovation, experience sharing, and trade. However, Taiwan, an island with a unique and often constrained geopolitical position in the international space, has struggled to establish its presence within international organizations and initiate formal dialogues with other countries. At the same time, Taiwan must navigate the complex task of balancing economic growth, cross-border collaborations, and the development of local green technologies. These competing priorities pose significant challenges for policymakers and stakeholders.

For Taiwan, climate action is not only an environmental imperative but also a diplomatic opportunity. As the European Union (EU) prioritizes climate leadership, Taiwan sees potential to strengthen ties with like-minded

partners and enhance its international visibility. It is unclear to what extent this strategy will be effective, but it is an important force driving Taiwan's net-zero emission efforts.

Taiwan's current administration, led by the Democratic Progressive Party (DPP), has been dedicated to achieving net-zero emissions by 2050. However, domestic political debates over the means to reach the goal remain highly polarized. Given this context, Taiwan's path to net-zero emission is promising but challenging.

To address the aforementioned issues, this edited volume brings together researchers from both Europe and Taiwan to discuss the challenges Taiwan faces in combating climate change, as well as opportunities for deeper EU-Taiwan collaboration on this critical issue.

The first chapter, "Taiwan's Energy Transition to Net-Zero Economy," written by Chia-Wei Chao, outlines Taiwan's climate policy and its development. The contributor sheds light on the political debates within Taiwan regarding energy security and energy transition.

The second chapter, "Can Europe's Climate Diplomacy Strengthen EU-Taiwan Relations?" written by Angeline Sanzay, presents the background of EU-Taiwan ties and explores the potential for the EU and Taiwan to deepen their relations and collaborations through climate diplomacy.

The third chapter, "How Taiwan Combats Climate Change as a Non-State Actor," written by Huang-Hsiung Hsu, presents the historical background and the development of Taiwan's struggles in attempting to participate in the international space, as well as the benefits to the international community of including Taiwan in climate-related discussions.

The final chapter, "Playing on the "Right" Side in a Multipolar World: Taiwan's Climate Politics and Strategic Alignment with the EU," written by Virginie Arantes, examines how Taiwan strategically positions its climate

policy to enhance its international presence and optimize its relations with the EU.

This Special Paper is part of ISDP's Taiwan Studies Project and is undertaken by its Stockholm Taiwan Center. ISDP extends its gratitude to the contributors who brought informative insights from diverse perspectives. Additionally, we extend our gratitude to the support from the Taipei Mission in Sweden, which enabled the realization of this edited volume.

1. Taiwan's Energy Transition to Net-Zero Economy

Chia-Wei Chao

Introduction

At precisely 10 p.m. on May 17, 2025, Taiwan's Maanshan Nuclear Power Plant—the country's last operational reactor—was quietly taken offline. There was no media spectacle, no formal government ceremony, and no triumphant declarations. Nevertheless, the significance of this moment should not be underestimated. For a nation whose energy policy has long been shaped by contentious debate, this single event marked the definitive end of an era.

When Taiwan formally embarked on its energy transition, driven by the Democratic Progressive Party's (DPP) commitment to phase out nuclear power in early 2016, coal dominated the electricity generation landscape, accounting for approximately 45 percent of total supply. Nuclear energy contributed around 14 percent, whereas wind and solar combined barely reached 1 percent. Nine years later, the electricity mix has shifted dramatically. Coal's share has declined to 35 percent, nuclear has dwindled to just 3 percent, and renewable energy—primarily solar and wind—has risen significantly to approximately 14 percent. Meanwhile, liquefied natural gas (LNG) now accounts for roughly 46 percent of electricity generation over the period from January to October 2025.

Although the nuclear phase-out by 2025 dominated policy discourse from around 2016 to 2021, the solar and offshore wind industries attracted the bulk of financial, administrative, and political resources. The scope and ambition of Taiwan's climate actions broadened substantially when the government committed to achieving net-zero emissions by 2050 in 2022. The launch of the "12 Key Strategies for Net-Zero Transition," underpinned by

an unprecedented NT$900 billion (approximately US$30 billion) in climate investments through 2030, significantly accelerated decarbonization efforts, particularly within the building and transportation sectors.[1] This policy direction was further reinforced by the enactment of the Climate Change Response Act and the introduction of a carbon fee on major emitters. Even amid disruptions in the international political landscape following the outcome of the United States (U.S.) elections and the introduction of "reciprocal tariffs," the Lai administration sustained its climate commitments through enhanced medium-term emission reduction targets and additional investment.

Taiwan's energy transition, while incomplete, reflects a profound reimagining of the nation's energy landscape—not merely in terms of watts and tons, but in relation to broader concepts of sovereignty, economic competitiveness, and resilience. The transition remains deeply political. Since 2018, five energy-related questions have already been put to national referendums, and a sixth, held in August this year, asked voters to decide the fate of the Maanshan nuclear plant. The pro-nuclear camp fell short: with "yes" votes failing to reach the 5 million threshold and overall turnout below 30 percent, the proposal was defeated.

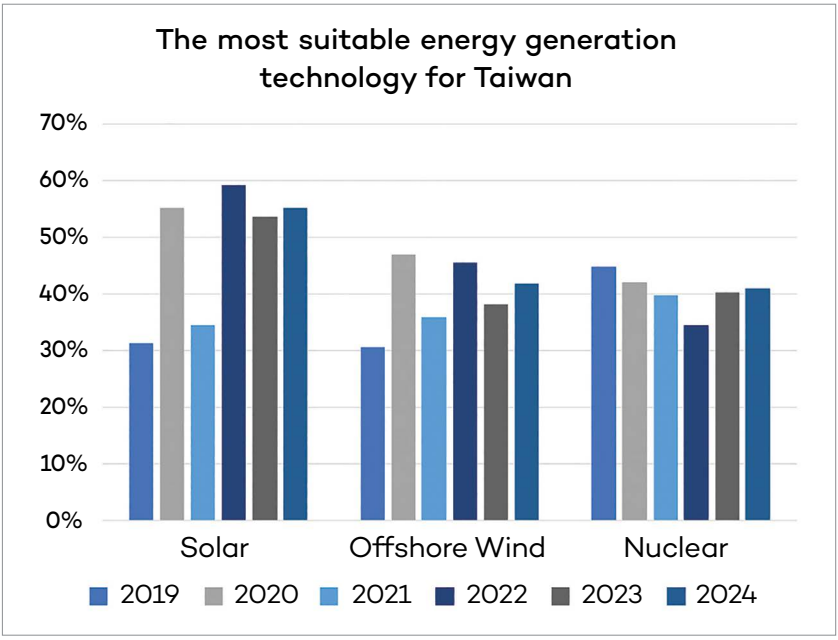
Yet a majority of the public now appear willing to accept nuclear power as one option in Taiwan's future energy mix. In response, the ruling party has given the green light for safety reviews at both the Maanshan plant and the Kuosheng plant, which was decommissioned in 2023, to assess whether those reactors could be brought back online around 2030. Thus, Taiwan's journey toward a net-zero economy has been cyclical rather than linear, characterized by policy advances, public opposition, and ideological contention.

Politically Contested Energy Transition

Climate and energy policy continue to be highly contentious subjects among Taiwan's major political parties, whether during election campaigns or parliamentary debates. Much of this discourse remains centered on the viability of nuclear energy and perceived negative consequences of renewable

energy expansion. Public trust has been severely undermined by corruption scandals associated with solar and offshore wind projects. Additionally, localized opposition—driven by concerns over farmland repurposed for solar installations and offshore wind's impact on fisheries and aquaculture—has significantly delayed project permissions. As a consequence, nuclear power is increasingly perceived by segments of society as a preferable, less disruptive energy source.

Figure 1.1 **The most suitable energy generation technology for Taiwan**
Source: Aggregated from TAISE Energy Opinion Survey



Contrary to widespread assumptions, Taiwan's nuclear phase-out decision has notably improved air quality. Between 2016 and 2024, annual average PM2.5 concentrations declined substantially from 20 μg/m³ to 12.8 μg/m³. Concurrently, Taipower—the state-owned electricity utility—achieved a remarkable 70 percent reduction in air pollutants, largely due to decreased coal use and stricter environmental regulations.

While electricity prices rose approximately 33 percent during the same period,

much of this increase can be attributed to the 2022 global energy crisis. Households and small businesses, notably, experienced only a modest 7.1 percent price increase. Crucially, the proportion of household income spent on electricity actually decreased from 1.1 percent to 0.9 percent, indicating enhanced affordability and greater fairness following subsidy reforms.

Moreover, Taiwan's grid reliability has improved markedly: the number of days per year with adequate electricity supply margins rose significantly from just 126 days in 2016 to 347 days by 2024. This increase reflects substantial investments in grid flexibility, including the deployment of battery energy storage systems totaling 1.5 GW and demand response capacity reaching 2.7 GW. These developments underscore the tangible progress made in enhancing Taiwan's overall energy resilience and security.

Emergence of the Net-Zero Transition

With climate change increasingly recognized as a critical political issue and companies facing rising pressures from international supply chains, Taiwan's government officially committed to achieving a net-zero target in March 2022. Subsequently, it unveiled the "12 Key Strategies for Net-Zero Transition," supported by an unprecedented NT$900 billion (approximately US$30 billion) investment in climate action through 2030. These strategies encompass scaling up renewable energy capacity, developing hydrogen energy and carbon capture utilization and storage (CCUS), enhancing material efficiency, and encouraging shifts in lifestyle and behavior. Collectively, these efforts signify considerable progress, demonstrating a notable advancement over prior climate policies.

Firstly, the plan represents the first instance in which multiple government ministries have collaborated strategically on climate issues, devising a comprehensive eight-year framework that integrates policy formulation and budget allocation. Secondly, the energy transition has emphasized system flexibility rather than relying on traditional baseload power, shifting toward substantial investments in energy storage. Finally, concrete measures for ensuring a just transition have been explicitly included, mandating equity

assessments across all strategic plans. This reflects a marked departure from earlier practices, which primarily focused on infrastructure and business opportunities, toward recognizing that genuine net-zero transformation involves broader social dimensions.

Moreover, the Climate Change Response Act, enacted in January 2023, legally binds Taiwan to reach net-zero emissions by 2050, making it the 18th nation globally to adopt such a legally binding target. This Act represents a significant upgrade from its predecessor—the 2015 Greenhouse Gas Reduction Act—and introduces critical tools such as a carbon fee, a strengthened governance framework, and dedicated budgetary support for the just transition. Regarding the carbon fee, an expert committee established a standard rate of NT$300 (approximately US$10) per ton, with preferential rates of NT$100 (approximately US$3.3) or NT$50 (approximately US$1.7) available to companies whose self-determined reduction plans gain approval. Around 280 companies, collectively responsible for approximately 54 percent of Taiwan's total emissions, will be required to pay this fee starting in 2026.[2]

Despite the shockwaves in the international political landscape following recent U.S. elections, the Lai administration has sustained its prioritization of climate policy. Notably, it has established a National Climate Change Committee, inviting delegates from business, academia, and civil society to quarterly discussions with the President. Additionally, the Lai administration has published Taiwan's third Nationally Determined Contribution (NDC), aiming for a 38 percent (±2%) emissions reduction by 2035 compared to 2005 levels. Although not a member of the United Nations (UN), Taiwan has voluntarily aligned itself with the Paris Agreement framework, symbolizing diplomatic self-assertion in a global context that frequently sidelines the island. Whether this third NDC becomes a credible climate commitment or merely a symbolic diplomatic gesture will depend largely on policy implementation. Nevertheless, it clearly signifies Taiwan's aspiration to participate in global climate governance.

Duality of the Green Growth Narrative

Taiwan's energy transition is also closely intertwined with corporate imperatives. Driven by international decarbonization commitments—particularly through initiatives like RE100—major corporations, notably the semiconductor giant Taiwan Semiconductor Manufacturing Company (TSMC), are demanding greater renewable electricity access than Taiwan's current energy infrastructure can adequately deliver. Corporate demand for renewable energy is projected to reach approximately 70 TWh by 2030, subsequently doubling to around 140 TWh by 2040. While official government projections estimate renewable energy generation capacities of 97.6 TWh by 2030 and 128 TWh by 2035, these figures are potentially misleading. Not all renewable energy generation capacity will necessarily be accessible via Power Purchase Agreements (PPAs), which remain the primary mechanism for corporate renewable energy procurement. Hence, actual availability may fall short of demand in the near term. Moreover, political factions advocating a revival of nuclear energy are actively pressing for lower renewable energy targets—a move that ironically could exacerbate the renewable energy supply-demand gap, further jeopardizing Taiwan's broader energy objectives.

Nonetheless, this dynamic underscores an argument that policymakers could leverage to counter anti-renewable rhetoric: renewable energy remains integral to industrial competitiveness. Yet this optimistic "green growth" narrative faces setbacks when examining Taiwan's broader decarbonization policy framework.

Taiwan's industrial sector, anchored by major semiconductor firms like TSMC, accounts for over 50 percent of the nation's carbon emissions. Despite its central role, the government has yet to articulate a comprehensive strategy specifically targeting industrial decarbonization. Instead, relevant measures remain scattered across multiple policy initiatives, complicating coordination and diluting overall impact. For instance, from the substantial NT$900 billion (approximately US$30 billion) climate investment portfolio, only minimal funds have been allocated to potentially transformative

technologies—just NT$4.6 billion (approximately US$154 million) for hydrogen and NT$3.7 billion (approximately US$125 million) for CCUS, collectively representing less than 1 percent of the total investment. Such limited funding is insufficient to drive cost competitiveness or widespread technological adoption in these critical areas.

Another illustrative example is the ongoing debate regarding the carbon fee rate. Industries advocate for lower carbon pricing to maintain profitability, citing an official policy principle that restricts impacts on gross margins to no more than 10 percent. Proponents argue that even the discounted rate of NT$100 (approximately US$3.3) per ton is challenging to meet within this threshold. However, reliance on gross margins as an indicator is problematic because margins fluctuate significantly, with many sectors experiencing margin variations of over 100 percent within the past five years alone. A more appropriate measure, production cost impacts, reveals a different narrative: a carbon fee of NT$100 (approximately US$3.3) per ton would increase production costs by approximately 0.1 percent, whereas a fee of NT$300 (approximately US$10) per ton would result in an increase of roughly 0.3 percent. Both figures are comparable to previously accepted electricity price adjustments (approximately 0.245 percent), indicating that higher carbon pricing would be economically manageable for industries.

This contradictory scenario suggests that the "green growth" narrative requires critical scrutiny. Without a comprehensive and well-coordinated policy mix explicitly designed to overcome the inertia of emission-intensive industries, Taiwan risks failing to foster genuine green competitiveness.

The Elephant in the Room: Energy Security

A distinctive aspect of Taiwan's energy security challenge is the persistent threat of geopolitical instability, particularly the potential for a naval blockade by China. As a result, energy security has emerged as a central concern, not only among pro-nuclear advocates but also among senior policymakers. Recent Chinese military exercises explicitly identified Taiwan's LNG receiving terminals as possible targets, thrusting the island's

energy transition strategy into the political spotlight. Critics argue that Taiwan's phased nuclear exit, coupled with its increasing reliance on renewable energy, has compromised national energy security. Politicians frequently assert that in the event of a maritime blockade, LNG shipments would halt, leaving Taiwan with just eight days of gas reserves—a claim often cited to illustrate perceived policy flaws. During recent drills, misinformation spread widely, including false assertions that LNG tankers had already been blocked from docking.[3]

However, the use of LNG reserve duration as a benchmark for assessing Taiwan's energy security is analytically misleading. Currently, Taiwan mandates an 11-day LNG reserve, set to increase to 14 days by 2027. This calculation is derived by dividing daily inventory measured at 8:00 a.m. by the average daily supply over the preceding year—a standard reflecting peacetime consumption patterns. In a blockade scenario, Taiwan's industrial exports would effectively cease, significantly reducing overall energy demand, potentially by as much as 50 percent. Consequently, LNG consumption would decrease substantially. Given the ongoing progress in renewable energy deployment, by 2027 Taiwan is projected to install at least 20 GW of solar power, 6.5 GW of offshore wind capacity, and more than 500 MW of geothermal energy, collectively producing over 70 TWh annually. Additionally, existing coal stockpiles, sufficient for 40 days, could generate around 11 TWh, and the 14-day LNG reserve could yield approximately 6.1 TWh. Combined, these resources could produce roughly 90 TWh per year—equivalent to about 32 percent of Taiwan's projected electricity demand for 2024.

At present, export-oriented industries account for approximately 40 percent of Taiwan's electricity usage. In a severe crisis scenario, sectors such as hospitality, entertainment, and retail—which collectively consume over 8 percent of total electricity—would likely cease operations. Residential electricity consumption could also be significantly reduced; essential household functions such as lighting, refrigeration, and cooling represent only one-third of residential energy use, leaving ample scope for demand-side adjustments.

Thus, under extreme blockade conditions, Taiwan could sustain its electricity needs for over a year, provided adaptive measures in energy consumption patterns are effectively implemented.

Calls for extending the operational lifespan of nuclear facilities, such as the Maanshan plant, which contributed around 15 TWh annually, overlook projections indicating that Taiwan's renewable energy capacity additions within the next two years will surpass 30 TWh annually. A renewed emphasis on nuclear energy risks undermining the expansion of renewable resources, thereby diminishing Taiwan's energy self-sufficiency in a genuine crisis scenario.

Proponents of nuclear power frequently frame their arguments as advocating technological neutrality. Yet, existing research indicates a fundamental trade-off between nuclear and renewable investments. According to Sovacool et al. (2020), nuclear and renewable energies often compete directly for policy attention and investment funds.[4] Consequently, allocating resources to nuclear energy diminishes investment in solar, wind, and energy storage solutions, ultimately weakening overall energy security.

Conclusion: Taiwan Striving to Become a Climate Bellwether

On May 17, hundreds gathered outside Taipower's Taipei headquarters to commemorate the shutdown of Taiwan's final nuclear reactor. Activists, students, energy experts, and international supporters from across Asia delivered a clear and significant message: Taiwan's energy policy decisions hold relevance far beyond its borders.

In many respects, Taiwan serves as an indicator of future global energy politics. As a geopolitically vulnerable island with limited natural resources, it demonstrates to the international community that achieving decarbonization without nuclear power is not only technically feasible but politically sustainable.

Taiwan's current energy trajectory—with nuclear phased out, renewables

Figure 1.2 **Photo capturing anti-nuclear sentiment in Taiwan**

Image source: Chia-Wei Chao

increasing toward 20 percent, and natural gas approaching 50 percent of the energy mix—is already yielding positive outcomes. Conversely, proposals advocating a return to nuclear energy envision scenarios with persistently high coal dependence and limited renewable expansion. Even more concerning is that these pro-nuclear factions actively seek to diminish support for rooftop solar initiatives, reduce subsidies for wind energy projects, and undermine existing energy efficiency programs.

Taiwan's energy and net-zero transition is not merely a product of policymaking or technological advancement; it is fundamentally citizen-driven. Advocacy groups have significantly influenced policy development, challenged entrenched industrial interests, and successfully integrated social justice concerns into climate discussions.

Though the path ahead remains challenging and susceptible to setbacks, Taiwan has already achieved a notable milestone: redefining the possibilities of the energy landscape in the 21st century.

Endnotes

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2. Can Europe's Climate Diplomacy Strengthen EU-Taiwan Relations?

Angeline Sanzay

Introduction

2024 was the warmest year on record,[1] and 2025 is already on track to surpass it.[2] As temperatures continue to rise and climate hazards become increasingly deadly, climate action is no longer just a moral responsibility, it is an existential necessity. With the U.S. officially withdrawing from the Paris Agreement for a second time and shirking its climate commitments, the burden of leadership now falls even more heavily on other global actors to keep the momentum alive.

As we mark the 10th anniversary of the Paris Agreement, there is reason for cautious optimism. At the time of its signing, the world was on course for a catastrophic 4°C temperature rise by 2100. A decade later, current policies have brought that trajectory down to below 3°C.[3] While this represents progress, it is far from sufficient, and the window for decisive action is rapidly closing. This shift is proof that multilateralism, though strained, is not broken; it is working. The global climate governance system, underpinned by cooperation among nations, has delivered meaningful (if insufficient) results. Yet, the pace of action still falls short of what science demands, and the window for decisive, transformative change is rapidly narrowing.

The European Union has positioned itself as a global leader in climate action, with the ambitious goal of becoming the first climate-neutral continent by 2050. As part of this effort, the EU has committed to reducing net greenhouse gas emissions by at least 55 percent by 2030 compared to 1990 levels.

Encouragingly, a 2025 assessment of the revised National Energy and Climate Plans (NECPs) indicates that the EU is on a promising path, projecting a 54

percent emissions reduction, just one percentage point shy of its target.[4]

Climate diplomacy is therefore a cornerstone of the EU's foreign policy, forging partnerships with like-minded actors to advance climate action, promote sustainable development and environmental cooperation. In this context, the EU's climate diplomacy offers a compelling avenue to strengthen ties with Taiwan, a democratic and values-aligned partner that has made climate action and environmental protection a central pillar of its international outreach.

Like Brussels, Taipei views climate diplomacy not only as a vital contribution to global sustainability but also as a strategic instrument of foreign policy. For Taiwan, it also serves as a means of asserting its international identity on the world stage.

Although Taiwan remains excluded from the United Nations Framework Convention on Climate Change (UNFCCC), it has consistently aligned its domestic climate policies with international standards. It actively participates in global climate dialogues through informal engagements, side events, bilateral initiatives, and partnerships with like-minded actors. Taiwan's Ministry of Foreign Affairs and Ministry of Environment have collaborated with global stakeholders, including European policymakers, think tanks, and academic institutions, to showcase its climate efforts and technological capabilities. Through this engagement and policy alignment, Taiwan demonstrates its commitment to contributing meaningfully to global climate governance and multilateralism.

This chapter argues that climate diplomacy can serve as a strategic platform to deepen EU-Taiwan engagement, leveraging shared values and mutual interests in climate action, sustainability, and environmental protection. However, realizing this potential requires navigating the broader geopolitical tensions, particularly those arising from EU-China relations and the shifting global order. Both the EU and Taiwan must tread cautiously, using climate diplomacy as a bridge to strengthen bilateral ties without undermining other

diplomatic relationships or compromising broader climate objectives, in particular, in light of cross-Strait tensions.

Beyond Trade: The Quiet Growth of EU-Taiwan Ties

While recent geopolitical developments have brought renewed attention to Taiwan, the EU and its member-states have gradually developed a steady, primarily economic relationship with the island. Since the late 1970s, various European countries and institutions have established non-official ties with Taiwan.[5] A notable step forward came in 2003, when the EU inaugurated the European Economic and Trade Office (EETO) in Taipei to promote economic cooperation and enhance bilateral trade and investment.[6] Climate and environmental issues are among the policy areas included in the office's priorities.

In an era defined by climate urgency and the accelerating decarbonization of the global economy,[7] deeper cooperation between the EU and Taiwan is not only beneficial for advancing climate action but also strategically prudent for both parties. For the EU, integrating climate diplomacy into its foreign and economic policies is both a strategic necessity and a reflection of its core values: promoting resilience, global engagement, and long-term security. As the clean energy transition gathers momentum, Taipei sits at the heart of this transformation. With its global leadership in advanced technologies and unmatched dominance in semiconductors, Taiwan holds many of the critical cards needed for the EU to realize its twin green and digital transition goals, initiated in 2019 and continuing to this day.[8] In this context, climate diplomacy emerges as a vital instrument for fostering cooperation, resilience, and shared progress.

Today, climate diplomacy does not operate in isolation. It is increasingly entangled in the dynamics of geopolitical rivalry and economic competition. The global race toward net-zero emissions have evolved into a contest for technological dominance, supply chain resilience, and market leadership. Climate cooperation is increasingly framed through lenses of economic competitiveness

and strategic interest. In this evolving context, climate action is no longer just a moral imperative but a driver of broader geopolitical and industrial transformations.

Since the establishment of the EETO in Taipei in 2003, the geopolitical landscape has dramatically shifted. Multilateral institutions have weakened amid intensifying great-power competition, protectionist economic policies, and rising global conflict, from Russia's invasion of Ukraine to persistent tensions in the Indo-Pacific and the Middle East. The international order has become more fragmented, with leaders increasingly distracted and prioritizing security and economic resilience over climate cooperation.

China plays a central role in shaping this context. While the EU remains engaged with China on global challenges such as climate change, the relationship has become increasingly fraught, marked by growing concerns over human rights, strategic dependencies, and trade imbalances. As the EU and China celebrate 50 years of diplomatic relations in 2025, both actors reflect on vastly different trajectories: the EU's evolution into a more cohesive political and economic union, and China's rise as a global powerhouse. The EU's 2019 China policy update naming it a "systemic rival" reflects a strategic recalibration that continues to shape EU's foreign policy today.[9] This ambivalent relationship presents both obstacles and opportunities for the EU's engagement with Taiwan.

EU-Taiwan relations have progressed significantly over the past two decades, particularly in economic and technological domains. The establishment of the EETO marked a turning point, laying the groundwork for deeper cooperation. By 2023, bilateral trade had surged by 42 percent compared to 2020,[10] with Taiwan becoming the EU's 13th largest trading partner globally.[11]

Alongside trade, climate engagement has emerged as a promising and politically feasible domain of collaboration, reflecting shared commitments to climate action, sustainable development goals and clean energy transition.

Climate diplomacy provides a low-profile yet high-impact avenue to expand collaboration.

Climate Diplomacy as a Channel for Engagement

Climate diplomacy presents a strategic opportunity for the EU and Taiwan to collaborate on shared environmental priorities and technological innovation. Taiwan has demonstrated a strong commitment to climate action, notably through its 2023 Climate Change Response Act,[12] which sets a legally binding target of net-zero emissions by 2050 and introduces a carbon fee system.

Taiwan's leadership in high-tech sectors, particularly semiconductors, aligns with the EU's objectives to develop green technologies and build more resilient, sustainable supply chains. For instance, the TSMC alone accounted for 6.4 percent of Taiwan's electricity consumption in 2021. Joint efforts to decarbonize such energy-intensive industries through energy efficiency, renewable integration, and green innovation can yield considerable mutual benefits.

In addition, energy security represents a key area of convergence. Both the EU and Taiwan face pressing challenges in securing their energy futures in the face of geopolitical risks, volatile energy markets, and climate disruptions. Accelerating the deployment of renewable energy not only supports decarbonization goals but also strengthens strategic autonomy and resilience. Cooperation on energy diversification, grid modernization, and cross-border supply chain resilience, particularly in clean energy technologies, can form a cornerstone of the bilateral climate agenda.

Moreover, early warning systems present another promising field of collaboration. Taiwan's advanced capabilities in disaster preparedness and real-time warning technologies, developed in response to frequent typhoons, earthquakes, and climate-related hazards, offer valuable insights for the EU, which faces its own increasing exposure to extreme weather events. Sharing best practices and technological tools in early warning systems, risk mapping,

and climate adaptation can contribute to the EU's climate resilience efforts, especially in vulnerable regions.

From Struggles to Synergies: Taiwan's Climate Landscape

Taiwan has taken meaningful steps to align its climate policy with international standards, positioning itself as a credible and responsible developed economy. This alignment enables deeper cooperation with the EU in areas such as green finance, climate governance, and sustainable technology.

Nevertheless, Taiwan faces considerable domestic challenges in its energy transition. Taiwan's energy transition is hindered not only by geographical and technical constraints, but also by significant political hurdles. Limited land availability constrains the scale of renewable energy projects, while offshore wind development has been slowed by environmental concerns and regulatory delays. Public engagement is also an area for improvement: surveys reveal low levels of public understanding of net-zero targets and limited citizen participation in climate policy formulation.[13]

These challenges underscore the importance of EU-Taiwan cooperation, not only in sharing best practices and technologies but also in fostering inclusive climate governance and building public awareness.

Charting a Climate Partnership for the Future

As the world faces the cascading effects of climate breakdown, the EU and Taiwan stand at a crossroads of strategic opportunity. Climate diplomacy is a central pillar of international relations, economic policy, and security planning. In this shifting geopolitical landscape, the EU and Taiwan are uniquely positioned to forge a partnership rooted not just in mutual benefit, but in shared vision and values.

Both actors bring complementary strengths to the table: the EU's leadership in environmental regulation and global climate governance, and Taiwan's dominance in high-tech innovation and disaster resilience. Together, they can

co-create global solutions to address the climate crisis: accelerating the green transition, building resilient supply chains, and setting global benchmarks for climate adaptation.

While geopolitical sensitivities, particularly concerning China, require careful and calibrated engagement, climate diplomacy provides a stabilizing, forward-looking dimension to EU-Taiwan relations. Their cooperation can thrive through flexible, multi-level engagements between public institutions, the private sector, civil society, and academia.

To elevate the EU-Taiwan climate diplomacy relationship into a more structured, resilient, and future-oriented partnership, policymakers in Brussels and Taipei should:

- **Institutionalize climate cooperation** by establishing a formal, annual EU-Taiwan climate dialogue. This platform should address climate mitigation and adaptation, clean energy innovation, supply chain resilience, and early warning systems for climate-related disasters.

- **Promote private sector engagement** by encouraging partnerships between EU and Taiwanese businesses to co-develop and upscale green technologies. Such collaboration can accelerate innovation, boost sustainable economic growth, and enhance energy and supply chain security.

- **Enhance public awareness and participation** by supporting initiatives that improve understanding of net-zero policies and the EU's global role in climate action. Also ensuring that policies are inclusive, socially just and built in tandem with local priorities and needs.

The EU and Taiwan can demonstrate that climate action is not only crucial for ensuring a livable future, but a sound economic and strategic choice that strengthens diplomacy, economic growth, competitiveness and resilience. As multilateralism bends but does not break, partnerships like this one can serve

as proof that collaboration across borders remains not only possible, but powerful. In a divided world, climate diplomacy can be the bridge, quietly but steadily advancing the shared future we cannot afford to delay.

Disclaimer: The views expressed in this article are solely those of the author and do not necessarily reflect the positions of any affiliated organization.

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3. How Taiwan Combats Climate Change as a Non-State Actor

Huang-Hsiung Hsu

Introduction

Taiwan frequently finds itself at pivotal junctures across various dimensions, including geopolitics, national identity, public health, environmental concerns, climate change, and energy transition. The exclusion from activities related to the UN, due to the contentious and often misinterpreted U.N. General Assembly Resolution 2758, continues to complicate these issues and exacerbate Taiwan's challenges.

Taiwan's Geopolitical Struggle to the Climate Fight

Since the 1992 Earth Summit in Rio de Janeiro, Taiwan has been excluded from all UNFCCC-related activities, including Conference of Parties (COP). This exclusion has significantly hindered academic activities. One recent example involved changing the affiliation address of Taiwan's contribution to climate projection effort in the final version of the Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC). Taiwan began developing the Taiwan Earth System Model version 1 (TaiESM1) in 2011 and participated in the climate simulation and projection efforts by the Coupled Model Intercomparison Project phase 6 (CMIP6) sponsored by the World Climate Research Programme (WCRP).

After 11 years of work, Taiwan provided thousands of years of climate simulations to CMIP6, which were analyzed and published in research papers cited by AR6. The address of the institute that contributed was changed from “Taiwan” to “Taiwan, China”, as noted in the corrigenda in Annex II of an AR6 draft. The team leader of Taiwan contacted the IPCC Chairman regarding this issue and suggested not following the corrigenda's suggestion. However, no official response was received, and the country name was

changed to "Taiwan, China" in the final version, despite positive responses from AR6 editors.

This was not an isolated incident. All references to "Taiwan (or county in Taiwan)" in IPCC AR6 were changed to "Taiwan (or county), China". IPCC report authorship also required affiliation changes to China. Similar issues arose at international conferences sponsored by academic unions, associations, or the UN, including purely academic ones like the International Union of Geodesy and Geophysics or WCRP Open Science Conference. Consequently, many scientists were barred from presenting their latest climate change research at key meetings.

The Taiwanese meteorological society was invited to be a signatory of the Joint International Climate Communiqué, scheduled for release in March 2021, which calls for political leaders to take rapid and ambitious action in decarbonization to reduce the risk of significant climate impacts. However, the name of the Taiwanese society became an issue, and ultimately, it was not listed among more than 40 international societies in the final release of the Communiqué. Taiwanese scientists have occasionally participated in scientific meetings related to the World Meteorological Organization (WMO) through international non-governmental associations. These associations were established to enable Taiwan's participation in key weather and climate scientific meetings. While this approach has been beneficial for research, it has been controversial, and its appropriateness has frequently been debated among Taiwanese scientists.

In the past, Taiwan's exclusion from UN's activities had impeded its meteorological agency's ability to directly access global meteorological observations, including station and satellite data, via systems such as the Global Telecommunication System. As a result, Taiwan has been compelled to obtain observational data through third parties, often incurring costs in the process. Weather forecasting, which is conducted every six hours, relies heavily on the timely procurement of extensive meteorological observations within a constrained timeframe. The inability to directly access adequate data diminishes the volume of meteorological observations utilized,

thereby adversely affecting the accuracy of weather forecasts. However, advancements in internet technology and the implementation of satellite data receivers have markedly improved this situation.

Despite being excluded from the WMO activities, Taiwan has continued to broadcast routine meteorological observations through international channels daily. Additionally, Taiwan, in collaboration with U.S. agencies, launched GPS satellites along with Low Earth Orbit satellites, called Constellation Observing System for Meteorology, Ionosphere, and Climate (COSMIC-1 in 2006 and COSMIC-2 in 2019; known as FORMOSAT-3 and FORMOSAT-7, respectively, in Taiwan). These satellites consistently observe the vertical profile of the atmosphere from the ionosphere down to the lower troposphere.[1] These efforts have enhanced understanding and improved the accuracy of space weather and traditional weather forecasts.[2]

Taiwan's Climate Change Initiative

Despite significant challenges that have affected its contributions, Taiwan has consistently endeavored to address climate change. Although its efforts are on a relatively smaller scale compared to countries with advanced climate change research such as Japan, the U.S., and European nations, Taiwan's comprehensive climate change initiative, "Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP)," has been operational since 2009. TCCIP has produced detailed climate data, including historical reconstructions and future projections at a kilometer scale, which have been extensively utilized in impact assessments.

Furthermore, TCCIP has published three national reports on Taiwan's climate changes, aligning closely with the past three releases of IPCC assessment reports from AR4 to AR6, and special scientific reports on critical climate change issues such as extreme heat, heavy rainfall, and drought in Taiwan. The most recent report, released in 2024, specifically highlighted existing gaps in adaptation research and policymaking that require urgent attention to enhance national adaptation actions effectively. These gaps include insufficient data in various fields ranging from ecology to public health,

the availability of methodologies and evaluation tools for both impact assessment and adaptation planning, and the exploration of complexities in cross-boundary adaptation.

Findings of the TCCIP have been used as the scientific basis for three phases of the National Adaptation Plan since 2012. The fourth phase of the National Adaptation Plan, set to launch in 2027, is being organized by the Ministry of Environment. Reviews of the achievements in the past three phases have identified several issues in actual adaptation actions that need urgent resolution.[3] These issues include: 1) insufficient climate change information at a county or finer scale, 2) difficulty keeping up with the cycle of updates to climate change information in sync with the releases of IPCC assessment reports, 3) methodology and knowledge gaps, and 4) confusion between disaster prevention measures and climate adaptation. Another critical issue is the limited budget and human resources for planning and implementing adaptation actions compared to the more generous budget allocated for mitigation-related efforts. These comments align with the adaptation gaps highlighted in Taiwan's 2024 national climate change report.

The Absence of Taiwanese Officials

Although Taiwan has been excluded from international climate-related activities, it has consistently made efforts to participate in COPs. Taiwanese delegates, attending as non-governmental organizations (NGO), can only engage in the Green-Zone for stakeholder activities. These delegates representing NGOs are not permitted to join Blue-Zone official events but have been working diligently to promote Taiwan's commitment to combating climate change and holding workshops and meetings with friendly countries and parties. For instance, the Taiwan Youth Climate Coalition (TWYCC) has made significant efforts to overcome political constraints on Taiwan's presence at COPs.[4] TWYCC's lack of influence on Taiwanese youth, who often show indifference toward climate change issues due to the pressures of college entrance examinations, is overshadowed by their international accomplishments.

The absence of government officials' participation in COPs may have long-term consequences that delay Taiwan's response to climate change issues. It is speculated that critical and urgent messages about climate-change policies, agreed upon and disputed at COPs, were not accurately communicated to top government officials who make key policy decisions. This lack of high-ranking governmental representatives, such as the premier and president, may have indirectly contributed to Taiwan's relatively slow action in addressing climate change and its continued prioritization of economic development over environmental impacts.

Taiwan's Pathway to Net-Zero Emissions

Better late than never. The Taiwanese government has announced a series of proactive measures in response to the urgent climate change crisis since March 2022. This began with the comprehensive blueprint "Taiwan's Pathway to Net-Zero Emissions in 2050" in March, followed by the Twelve Key Strategies Action Plan in December.[5] Subsequently, in February 2023, the Climate Change Response Act was enacted to strengthen national responsibilities and climate governance, replacing the Greenhouse Gas Reduction and Management Act implemented in 2005.[6]

In June 2024, newly elected President Lai formed the National Climate Change Committee (NCCC) to expedite and deepen the net-zero transition. Under the oversight of the NCCC, the national determined commitment for greenhouse gas emission reduction relative to the 2005 emission levels has been updated to 32 percent ± 2 percent by 2032 and 38 percent ± 2 percent by 2035, up from 28 percent by 2030. Although the government is striving to achieve these goals based on current conditions, the enhanced reduction target remains relatively incremental compared to the COP goal of 45 percent by 2030.

These initiatives are primarily motivated by anticipated economic threats, such as the Carbon Border Adjustment Mechanism (CBAM). Despite Taiwan contributing less than 1 percent to global emissions, its decarbonization efforts could potentially aid in mitigating the pace of global warming. The specific measures required to achieve the updated reduction targets for 2030

are still under development, while those for achieving net-zero emissions by 2050 remain ambiguous. Of the 28 subordinate laws necessary to support the net-zero transition, 14 have been drafted and are currently being announced in sequence. Meanwhile, forums with NGOs and academics are being held to gather comments, feedback, and critiques, which will guide further communication and revisions.

Taiwan's Net-Zero Transition: Challenges Ahead

Taiwan faces several challenges in its net-zero transition due to a lack of autonomous energy resources and limited land and ocean areas suitable for sufficient wind and solar power implementation. As noted by John Doerr, both speed and scale are crucial for reaching net-zero emissions.[7] Accelerating and expanding the deployment of renewable and innovative energy solutions remains the most significant challenge for Taiwan's net-zero transitions.

Among the challenges is the recent heated debate regarding the reactivation of decommissioned nuclear power plants. There is also growing discussion around the potential implementation of new types of nuclear power plants, such as small modular reactors (SMR), in response to the increasing electricity demand from AI and data center-related industries, which are crucial for sustaining Taiwan's economic growth. Proponents advocate nuclear power as a necessary resource to maintain economic growth, accelerate decarbonization, and reduce air pollution. Opponents point to issues such as lengthy reactivation and construction processes, potential budget overruns, newly discovered faults near decommissioned plants, uncertain availability of SMR, and the absence of both temporal and permanent storage sites for highly radioactive waste.

Moreover, the carbon fee, introduced in 2024 and effective from January 2025, has received mixed reactions. Industrial associations claim it is too high, while NGOs argue it is insufficient for impactful change. A survey supports the NGOs' view, revealing that the fee is too low to drive significant decarbonization efforts.[8] Limited renewable energy and low corporate willingness for decarbonization in Taiwan, an export-driven country, add

challenges to the upcoming European Union (EU) CBAM.

Taiwan is making all efforts to comply with international regulations and policies for mitigating global warming, despite being excluded from the UNFCCC and other climate-related international activities. These efforts include the voluntary release of carbon emission information annually, the announcement of national determined commitments in line with the COP schedule, the implementation of various acts for mitigation and adaptation, as well as the promotion of climate-change-related research and contribution of climate projection results.

The challenge of accelerating efforts for the net-zero transition is one faced not only by Taiwan but by all nations. Given Taiwan's delayed implementation of renewable energy and development of innovative energy sources (such as hydrogen energy and decarbonized methane pyrolysis), it is imperative that substantial efforts be made to expedite and scale up these initiatives. Effective collaboration with European countries on specific energy topics would prove beneficial for both parties. Adequate governmental resources would serve as the optimal incentives to enhance net-zero transition efforts and accelerate progress. Recommendations for advancing collaborations on next-generation solar power technologies, such as perovskite solar cells, and revitalizing momentum in offshore wind energy development were comprehensively examined in Chang et al. (2024) and Frost (2025), respectively.[9]

Strengthening Taiwan-Europe Cooperation for a Sustainable Climate Future

Both the Global North and South are experiencing increasing climate impacts due to advancing global warming. While countries in the Global South may suffer more severely from natural disasters, such as the century flood in Pakistan in 2022,[10] developed countries are not immune. For instance, the century flood that resulted in over 200 deaths in Valencia, Spain, in November 2024 is a devastating example.[11]

To mitigate such impacts, the UN launched the Early Warning for All

initiative at COP27 to minimize the impacts of extreme weather and climate events.[12] This effort comprises four pillars: disaster risk knowledge, observations and forecasting, dissemination and communication, and preparedness and response. Taiwan has demonstrated excellent proficiency in all four pillars. Including Taiwan in the Early Warning for All initiative could allow it to share its expertise with both developed and developing countries. Collaborative efforts between Taiwan and European countries in research and action related to early warning could expedite processes and reduce impacts efficiently.

European countries are at the forefront of developing Digital Earth for environmental monitoring and forecasts, such as Destination Earth.[13] This field is relatively new to Taiwan. Taiwan demonstrates outstanding proficiency in AI-related hardware, yet its software development remains relatively underdeveloped. Conversely, Taiwan possesses specialized expertise in generating detailed climate data for areas characterized by complex, high-altitude terrain. A close collaboration between European nations and Taiwan could accelerate the advancement of digital twin systems in both regions, particularly crucial for addressing climate change. Engaging in close collaboration with European nations that possess extensive experience in climate adaptation planning and implementation may significantly aid in addressing and mitigating the identified adaptation gaps in Taiwan.

To tackle climate change, Taiwan must act urgently by balancing adaptation and mitigation efforts for societal well-being and economic growth.[14] With global warming intensifying, Taiwan has many opportunities to explore. Proactive measures would also earn international recognition. Enhanced collaboration, especially with EU countries, will further Taiwan's contribution.

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4. Playing on the "Right" Side in a Multipolar World: Taiwan's Climate Politics and Strategic Alignment with the EU

Virginie Arantes

Introduction

Taiwan's climate engagement is not solely driven by environmental imperatives but also by the strategic use of green diplomacy to assert democratic identity, gain international recognition, and navigate geopolitical constraints. Framed as a form of green nationalism, Taiwan's climate politics reflect a dual ambition: aligning with global environmental norms while reinforcing its distinctiveness in a contested regional order. Partnerships with the European Union (EU)—particularly in offshore wind—highlight both the potential of normative alignment and the persistence of structural asymmetries. Situated between the EU's normative agenda and China's expanding ecological influence, Taiwan exemplifies how climate action becomes a terrain for identity-making and international positioning in a multipolar world.

Green Strategy in a Fragile Diplomatic Space

Taiwan's place in the global landscape is quite unique. Excluded from most international institutions and constrained by China, it has nonetheless cultivated a vibrant democratic system and emerged as a world-leading industrial economy. These particularities have enabled Taiwan to become a reliable democratic partner for the European Union in the Asia-Pacific region. Its central role in the strategic semiconductor industry has further elevated its global influence, granting it agency without formal recognition and limited military power. This distinctive status has significantly shaped how Taiwan approaches and engages with climate politics.[1] Though excluded from the Paris Agreement, it has chosen to bring its environmental policies in line with

international standards, especially those promoted by liberal democracies and key partners such as the EU.[2]

When it comes to environmental issues, its democratic nature effectively grants Taiwan a form of soft power that stands in sharp contrast to China's centralized, authoritarian top-down regime.[3] Rather than relying on conventional multilateral diplomacy, Taiwan increasingly pursues what Liu and Chao (2023) describe as "polycentric approaches," working through bilateral ties, civil society networks, and transnational partnerships.[4] These decentralized channels are thus critical for expressing agency in the realm of climate politics. Environmental engagements become far more than normative gestures, they become pragmatic strategies for gaining recognition, forging alliances, as well as securing access to global markets. These efforts are shaped as much by global regulatory frameworks, as by broader ideological divides between liberal-democratic systems (such as the U.S., EU, and Japan) and China's state-centric model.

Taiwan's climate politics, however, are not solely shaped by international constraints. Environmental issues have long intersected with party politics, social movements, and electoral agendas.[5] As Jobin (2021) argues, environmentalism in Taiwan has evolved into a form of "civic eco-nationalism", where ecological awareness, democratic ideals, and aspirations for sovereignty become deeply intertwined.[6] But this aspirational framing often clashes with structural constraints. Taiwan's "voluntary" commitment to sustainability must be balanced against the economic imperatives of remaining globally competitive, particularly in high-emission sectors like petrochemicals and semiconductors.[7]

This tension is especially clear in the island's approach to energy transition. Still heavily dependent on imported energy and fossil fuels—which made up nearly 95 percent of its energy use in 2024[8]—the government has set ambitious goals to reach net-zero emissions by 2050.[9] The major goal is to balance environmental concerns, energy security, and international climate commitments. This becomes particularly crucial as, TSMC, the country's flagship semiconductor

firm, has come under growing pressure from international clients and regulatory frameworks like the EU's Carbon Border Adjustment Mechanism (CBAM). This mechanism ties access to markets with how clean your emissions record is. It thus effectively extends EU standards beyond its borders, forcing firms to follow EU's portfolios. TSMC and others key sectors cannot afford to ignore the pressure. In response, the government is scaling up offshore wind projects, introducing carbon pricing tools, and working to position Taiwan as a credible player in green innovation. As such, climate action is not just about the environment—it is tightly bound up with industrial policy, international visibility, and the search for legitimacy on the world stage.[10]

Greening the Nation, Nationing the Green?

These intertwined dynamics of national interest and environmental legitimacy are not unique to Taiwan. A growing body of research explores how climate policy reshapes the meaning of national sovereignty, competitiveness, and legitimacy across multiple scales. In countries like India, China, and Australia, climate action is increasingly tied to national security and economic planning.[11] In China, green discourse has been mobilized to support a vision of "ecological civilization"—what I have described elsewhere as a form of "green nationalism".[12]

Though still loosely defined, "green nationalism" describes a form of nationalism that binds environmental goals to national identity and geopolitical strategy. Depending on the context, it may promote sustainability and innovation, or, conversely, entrench nationalist agendas that obstruct climate cooperation.[13] In the Gulf, for instance, Koch (2024) shows how resource-dependent regimes craft ecological narratives to legitimize extractive development without fundamentally altering their course.[14] Similar patterns can be seen among subnational actors asserting regional autonomy, such as in Spain,[15] and among sub-state nationalist movements in Europe, where minority nations like Scotland and Catalonia mobilize "green nationalism" to advance civic legitimacy and claims to autonomy.[16] Across these varied contexts, environmental politics have become powerful tools for both strategic and symbolic differentiation.

Taiwan rarely figures in these discussions, despite its distinctive position offering **a particularly intriguing case**: it is not a sovereign state in the conventional sense, but neither is it a sub-state region. Its climate engagement operates in a liminal space, where diplomatic constraints, national ambition, and geopolitical alignment all intersect. Taiwan's environmental partnerships—particularly with EU actors—have become a way to translate claims to sovereignty into forms of pragmatic cooperation. These are not just symbolic gestures. They shape how Taiwan is seen—and how it sees itself—in a world increasingly defined by both ecological urgency and political fragmentation. These alignments often bypass formal diplomacy and take the form of regulatory convergence, corporate partnerships, or shared discursive framings. One example is the "Taiwan can green" message.[17] Another is President Lai Ching-te's initiative, launched during his vice presidency, to link democracy and environmental action between Taiwan and Europe (see Figure 4.1).

Figure 4.1: **Screenshot of an X (formerly Twitter) post published by Lai Ching-te (@ChingteLai) on January 12, 2025, highlighting the link between democracy, Taiwan-EU relations, and environmental action.**

This chapter examines Taiwan's evolving relationship with the EU through the lens of green nationalism and regulatory alignment. I thus try to advance a dual perspective. On the one hand, the fact that Taiwan mobilizes green diplomacy as a strategy for international visibility and normative alignment. On the other hand, that this alignment takes place within asymmetrical structures of power, especially in the context of the European Green Deal (EGD). In doing so, it joins recent efforts to move beyond the idea that nationalism is either good or bad for the climate—and instead asks how it works, in practice, across different sites of power and constraint.[18]

Climate Politics: An Avenue for EU–Taiwan Green Cooperation?

While formally adhering to the "One China policy", the EU and Taiwan have cultivated solid relations. This is particularly evident in trade and investment: the EU is Taiwan's third-largest export destination and fifth-largest source of imports, and it is also Taiwan's largest source of Foreign Direct Investment.[19] Beyond economics, the two partners share interests in a wide range of areas like human rights, innovation, circular economy or climate actions.[20]

In recent years, partnerships have increasingly focused on green transition, where Taiwan is seen to hold a vast potential in sectors like offshore wind and ocean power.[21] Such cooperation, however, needs to cope with several challenges.[22] The global green transition is increasingly shaped by a technocratic and at times ambiguous model blending environmental drive with industrial and technological competitiveness. A case in point is the EGD, launched in 2019, through which the EU seeks to position itself as "the first climate-neutral continent by 2050".[23] The goal is to use climate policy as leverage to enhance both economic and diplomatic influence. As European Commission President Ursula von der Leyen contends: "We [EU] have a once in a generation opportunity to show the way with speed, ambition and a sense of purpose to secure the EU's industrial lead in the fast-growing net-zero technology sector. Europe is determined to lead the clean tech revolution."[24]

This shows that green cooperation is as much driven by industrial interest and technological determinism,[25] as well as by diplomacy. The EGD's role as a geopolitical project aimed at reinforcing the EU's global dominance through soft power and technocratic control can create tensions with partner countries like Taiwan,[26] which also has its own priorities in decarbonization and the green economy. These tensions are particularly evident in the growing number of World Trade Organization (WTO) disputes in the offshore wind sector, as explored below.

Offshore wind sector

Taiwan has emerged as a regional leader in offshore wind development, drawing heavily on European models of policy, technology, and financing.[27] Its energy transition has been deeply influenced by the EU's global leadership in this sector, making the offshore wind industry a cornerstone of both green development and international cooperation.[28] However, tensions arose when Taiwan introduced a localization policy in 2021 for its offshore wind projects. These measures, aimed at boosting domestic industry, were perceived by the EU as discriminatory against non-Taiwanese goods and services—posing a threat to a sector of strategic importance.[29] The dispute escalated to the WTO, highlighting the friction between industrial policy and international trade norms. Recognizing the stakes, both parties eventually reached a "mutually satisfactory" resolution: Taiwan agreed to introduce greater flexibility in its auction processes and rolled back the localization requirements.

This case highlights the complex balance countries must uphold between national interests and global cooperation in green industrial policy. While the EU seeks to protect its green tech sector, Taiwan is advancing its strategic goals in offshore wind development. These include, among others: (1) decreasing its reliance on imported fossil fuels from a limited number of regions, thereby enhancing its energy security and independence; (2) advancing its decarbonization agenda in line with global commitments; and (3) nurturing promising domestic and green sectors.[30] According to Fang, these protectionist policies created delays and the withdrawal of major international actors, doing more harm than good to the environmental agenda. In her analysis

of the Taiwan case, she questions the "murky effectiveness of LCRs [local contentment requirements] in achieving environmental and resilience-related objectives."[31] She further explores how Taiwan could leverage its geographical position to enhance climate cooperation in the region, what Hsieh (2024) defines as "green regionalism".[32]

As the EU deepens its engagement in the Indo-Pacific, Taiwan is uniquely positioned to act not only as a green partner, but also as a regional interlocutor—leveraging its democratic credentials, technological expertise, and geographic proximity to Southeast Asia. Through initiatives like the **New Southbound Policy**, recently revised under the new Lai Ching-te administration,[33] Taiwan can serve as a bridge between European ambitions and local contexts, articulating region-specific environmental needs while fostering industrial collaboration aligned with both climate goals and regional realities. In this sense, Taiwan would not merely adapt to global green norms but actively shape them from within the region—as a knowledgeable ally.

Climate Cooperation in a Geopolitical World

In short, Taiwan's engagement in global climate politics illustrates how environmental diplomacy can serve as a strategy for soft power, international recognition, and geopolitical positioning. Through offshore wind development, we see how Taiwan carefully navigates the line between aligning with EU norms and asserting its autonomy amid global expectations and regional tensions. In this light, EU–Taiwan green cooperation extends beyond shared environmental values—it is shaped by asymmetries in regulation, market access, and strategic interests. These frictions do not necessarily hinder collaboration, but they underscore the unequal terms on which climate cooperation often unfolds. They highlight the complexity of climate politics in a multipolar world, where even alliances between democratic actors are entangled with deeper questions of sovereignty, competitiveness, and geopolitical order.

As the EU continues to scale up its EGD, Taiwan will remain a critical test case—not only for the technical viability of climate cooperation, but for

understanding how green strategies are mobilized to advance multilateral engagement and political recognition. While the EU has become increasingly vocal in its support for Taiwan's participation in international dialogues and forums, it must also ensure that climate goals are meaningfully pursued in the region. As both sides share the objective of reducing economic dependence on China,[34] strategic collaboration should be strengthened—not only around national interests, but also through a shared vision of a resilient and inclusive green transition.

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Conclusion: Climate, Sovereignty, and Strategic Futures

Taiwan's climate path is emblematic of how decarbonization intersects with questions of international recognition and strategic alignment in a contested geopolitical landscape. As Chia-Wei Chao explains, the shutdown of the last nuclear power plant in 2025 is symbolic of the pivot in energy approach towards sovereignty and resilience in the scope of climate actions. Despite land constraints, local opposition, and shifting public trust, Taiwan has significantly scaled up renewable energy capacity and grid resilience while legally enshrining its net-zero commitments. However, as Chao notes, these achievements exist alongside contradictory pressures, particularly between the rising demand for green energy from industrial giants like TSMC and sufficient progress in industrial decarbonization.

Yet sustainability is not confined to domestic policy. Taiwan's international engagement extends beyond its borders. Angeline Sanzay highlights how climate diplomacy has emerged as a strategic platform for Brussels and Taipei to collaborate. Despite exclusion from the UNFCCC, Taiwan has aligned its climate policies with global standards and partnered with European actors through informal channels. For both the EU and Taiwan, climate cooperation serves a dual function: advancing sustainability and enhancing geopolitical resilience. Early warning systems, green technology innovation, and energy security are promising areas for deepening collaboration.

To further explore how exclusion from international platforms affects Taiwan's engagement with climate-related issues, Huang-Hsiung Hsu underscores the persistent scientific and diplomatic exclusion Taiwan faces, from being labelled "Taiwan, China" in IPCC reports to exclusion from official COP proceedings. Nevertheless, Taiwan continues to make substantive scientific contributions through platforms like TCCIP and the COSMIC satellite

program. In this context, diplomatic and scientific marginalization reveals how Taiwan's climate agenda cannot be separated from broader political dynamics. In the last chapter, Virginie Arantes picks up this thread and introduces the concept of "green nationalism," showing how Taiwan's climate policy functions as both an environmental strategy and a means of asserting identity. She highlights how climate engagement with the EU helps Taiwan reinforce its autonomy while navigating structural asymmetries, such as those revealed in the offshore wind WTO dispute.

From the European perspective, the evolving partnership with Taiwan presents a strategic opportunity to push for climate ambition with geopolitical resilience. The EU's Green Deal diplomacy (the use of climate policy in trade, regulation, and external action) can help recalibrate supply chains and strengthen alliances. Taiwan, as a values-aligned and technologically advanced partner, fits into this strategy. Institutionalizing a structured EU-Taiwan climate dialogue, as Sanzay proposes, could facilitate cooperation on clean energy innovation, net-zero transitions, and climate adaptation. At the same time, the EU should ensure that its regulatory reach, such as the CBAM, includes technical and financial support to partners like Taiwan, avoiding unintended asymmetries and thus unfairness. Expanding cooperation on early warning systems, digital climate modelling, and green finance mechanisms would improve not only bilateral relations but also the EU's capacity to shape global norms through pragmatic engagement.

For Taiwan, the path forward requires accelerating implementation, cross-ministerial coordination, and greater investment in transformative technologies like hydrogen and CCUS. As emphasized by Chao and Hsu, industrial emissions must be tackled head-on, and climate governance must become more inclusive and participatory. Taiwan should continue using climate diplomacy to expand its international presence while strengthening public climate literacy and domestic support for energy reforms. Building on the "polycentric" approach outlined by Arantes, Taiwan can further diversify its climate alliances, especially through the New Southbound Policy, positioning itself as a regional climate leader in Asia.

Achieving this will demand not only innovation and investment but also a compelling narrative, one that frames Taiwan as a capable, responsible, and necessary contributor to global climate governance.