National Climate Change Action Guidelines

(Approved Version)

Ministry of Environment

November 2023

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I. Preface

Climate change, resulting from greenhouse gas emissions originating from economic activities, has led to a continuous increase in the average global temperature, affecting both humans and the environment. The impact on younger generations may be more immediate and enduring. Taiwan is not exempt from this phenomenon; the frequency of days with high temperatures, extreme rainfalls, typhoons, and precipitation volatility in Taiwan is anticipated to experience significant growth in the coming years. This is set to have a severe impact on various sectors, encompassing water resources, homeland security, coastal environments, marine resources, food safety, public health, and biodiversity.

In response to the global challenge of the climate emergency, international carbon regulations are gradually becoming stricter. With increasing pressure on supply chains to reduce carbon emissions, achieving a 2050 net-zero transformation has become a shared goal for the world and Taiwan. As our generation pursues current prosperity, we must also consider safeguarding the future generations' right to survival. Confronted with this complex and long-term transformation project that spans generations, sectors, and nations, the government aims to establish a solid governance foundation focused on two key aspects: scientific R&D and climate laws. Additionally, the government will promote four major transformation strategies encompassing energy, industry, lifestyle, and society, supported by 12 pivotal strategic action plans. These initiatives will involve promoting international cooperation, advancing research and development in net-zero technology, expanding public discourse and social communication, and regularly assessing the net-zero pathway to meet future development needs.

Indeed, climate change presents a formidable challenge to the entire planet. Despite the daunting task of transforming the energy and industrial structure, Taiwan remains committed to reducing greenhouse gas emissions in

line with the Paris Agreement and the United Nations' Sustainable Development Goals. According to Article 9, Paragraph 1 of the *Greenhouse Gas Reduction and Management Act* promulgated in 2015, the central competent authority, namely the Ministry of Environment of the Executive Yuan, is entrusted with the responsibility of formulating the *National Climate Change Action Guidelines* ("Action Guidelines") and the *Greenhouse Gas Reduction Action Plan* ("Action Plan"). These documents serve as the overarching guidance for the nationwide effort to reduce greenhouse gas emissions.

Through concerted cooperation between central and local governments, the public, enterprises, and NGOs, Taiwan is promoting a low-carbon and sustainable lifestyle. This effort includes establishing global partnerships while considering intergenerational equality and interdisciplinary governance to enhance global resilience. The ultimate goal is to transform climate risks into opportunities for green transformation, thereby ensuring the sustainable development of the nation.

II. Prospects and Objectives

1. Prospects

   Developing adaptation strategies and a net-zero emissions pathway is essential to building a green and low-carbon homeland capable of adapting to climate risks and ensuring the nation's sustainable development.

2. Objectives

   (1) Strengthen overall adaptability to climate changes, minimize vulnerability, and bolster resilience against the impacts of climate change.

   (2) The long-term national GHG emission reduction goal shall achieve net-zero emissions of GHG by 2050.

III. General Principles

The government shall observe the following principles:

1. Comply with the provisions of the *Paris Agreement* to enhance greenhouse gas mitigation and gradually phase out the use of hydrofluorocarbons (HFCs) (which have high global-warming potential) pursuant to the Kigali Amendment to the *Montreal Protocol*.
2. Enhance intergenerational justice, environmental justice, and a just transition, while ensuring easy public access to pertinent climate change information. Consider nature-based solutions while also taking into account strategies that mutually benefit adaptation and mitigation efforts.
3. Implement a cap-and-trade scheme for greenhouse gases and taxation to put carbon pricing and green finance into practice and utilize economic incentives to expedite the reduction of greenhouse gas emissions, assist industrial transformation, improve national competitiveness, and promote social welfare.
4. Comply with the objective of a nuclear-free homeland, such that expansion in nuclear power will not be adopted as a means of combating climate change, with the goal of diminishing reliance on fossil fuels and working toward achieving renewable energy targets.
5. Take mitigation and adaptation strategies into consideration while performing environmental impact assessments.
6. Enhance capacities with regard to basic science, early warning, adaptive response to climate change, and resilience development.
7. Improve energy and resource utilization efficiency, boost resource recycling, and ensure national energy security and sustainable utilization of resources.
8. Establish a communication platform on which to build partnerships between the central and local governments, as well as cooperation between

the public and private sectors to practically execute localized adaptation and mitigation measures.

9. Boost international cooperation and authentic participation, based on the principle of reciprocity, to maintain industries' international competitiveness.
10. Raise public awareness and build the capacity to respond to climate change, and proactively assist non-governmental organizations to participate in relevant events.

IV. Adopted Policies

1. Climate Change Adaptation

Drawing from the most recent scientific research, analyses, and scenario projections both domestically and internationally, and considering climate change risk factors, it is imperative to bolster climate change adaptation capabilities, diminish vulnerability, and strengthen resilience. These efforts are vital to ensure the sustainable development of the nation and encompass climate change risk assessment, as well as the establishment of early warning mechanisms and systematic monitoring plans.

(1) Enhance resilience of infrastructure

- Integrate the resilience and adaptability of flood control and water management and enhance the response capabilities of public works.
- Improve adaptability of facilities of transport, communications, and information systems against climate change.

(2) Maintain a balance between water supply and demand

- Establish diversified water resource acquisition strategies as well as water conservation and water circulation habits; reasonably allocate water resources for different purposes to ensure sustainable usage of water.

- Strengthen the flexibility of the water resource system against climate change, so as to respond to the drastic increase in rainfall, and increased volatility of water levels during wet and dry seasons.

(3) Facilitate the rational allocation of land use and bolster national land resilience

- In light of the growing trend of extreme rainfall, both urban and rural areas shall implement a range of adaptation strategies.
- Enhance water resource storage capacity and mitigate the impact of droughts.
- In reaction to the increasing trend of extreme high temperatures, efforts will be made to enhance the adaptability of the built environment.
- Enhance the adaptation of natural ecosystems.
- Re-evaluate spatial planning and land use controls as part of departmental plans to enhance climate change resilience.

(4) Prevent coastal hazards and ensure sustainability of marine resources

- Establish appropriate prevention facilities or mechanisms to mitigate coastal disasters.
- Preserve marine resources and marine wildlife habitats and utilize nature-based solutions to enhance carbon sinks, fostering the sustainable development of the ecosystem.
- Strengthen monitoring and an early warning mechanism to respond to coastal hazards and impacts of coastal change.

(5) Improve adaptability of the energy supply system and industries

- Ensure the safety and stability of energy supply infrastructure, particularly in response to the proactive management of increased power demand during high-temperature periods.
- Build an environment that reduces climate risks and strengthens adaptive capacities.

- Enhance businesses' capabilities in risk management and opportunity exploration, with a focus on improving industrial climate risk management and the development of climate-resilient products and services.

(6) Secure agricultural production and ensure biodiversity

- Enhance the ecosystem's capacity to respond to the impacts of climate change and stabilize the foundation of agricultural production and ecological resilience.
- Enhance the agricultural sector's climate risk management capabilities and tighten regulations related to financial risks in the agricultural industry due to climate factors.
- Explore diverse agricultural opportunities in the face of climate change and optimize the economic resilience of agricultural products.

(7) Reinforce the public health and epidemic prevention system and improve health risk management

- Enhance the capabilities of the public health and epidemic prevention systems for prevention, mitigation, preparedness, and recovery in response to extreme weather conditions.
- Enhance the capacity of medical and care systems to address the consequences of climate change, strengthen health promotion capabilities, and bolster the resilience of vulnerable populations.
- Enhance the capacity for health risk monitoring, impact assessment, and prevention to mitigate the health costs of climate change.

2. Climate Change Mitigation

(1) Establish a zero-carbon energy system and enhance the stability and resilience of the power supply network.

- Revise the energy structure by advancing the development of established renewable energy sources like solar photovoltaics and offshore wind power. Additionally, focus on innovative energy applications such

as geothermal energy, biomass energy, and ocean energy, while also constructing a zero-carbon fuel supply system.

- Improve the efficiency of energy generation, usage, transmission and distribution, and promote energy conservation.
- Enhance the resilience of the energy system to ensure a stable power supply, while also considering environmental quality and the requirements of regional development.
- Establish a hydrogen energy supply and demand system, ensuring the stability of hydrogen energy supply, and improving infrastructure for transportation and storage. Additionally, promote the development and utilization of hydrogen energy technology.

(2) Encourage the green transformation of industries and embrace a sustainable production model focused on the principles of the circular economy.

- Offer advisory services to support the transformation of industries into green and low-carbon enterprises, with a goal of achieving zero emissions. Additionally, promote the growth of green energy industries to enhance the international competitiveness of products.
- Accelerate efforts to enhance the energy efficiency of industrial processes and equipment and establish intelligent energy management systems.
- Compose comprehensive incentives for greenhouse gas reduction and augment greenhouse gas mitigation measures taken by industries.
- Advance the transition to a circular economy in the industrial sector and promote the development of innovative recycling material technologies.

(3) Promote the development of smart and environmentally friendly transportation systems, encouraging the transition to zero-emission modes of transportation.

- Encourage electrification and the adoption of carbon-free transportation methods, while also enhancing the energy efficiency of transportation systems and vehicles.
- Build and enhance public transportation networks while reinforcing transportation demand management.
- Establish a human-centric and inclusive transportation environment.

(4) Build sustainable net-zero structures and promote a low-carbon transformation.

- Reinforce energy conservation regulations for buildings, improve energy efficiency of buildings, implement carbon reduction measures for both new and existing buildings.
- Promote the assessment of building performance classification and the enhancement of energy efficiency in existing public buildings.
- Enhance the energy efficiency of household appliances.

(5) Boost the development of sustainable agriculture, improve ecosystem management

- Promote environmentally friendly agriculture and establish a stable, low-carbon agricultural production system. Provide guidance on the recycling of agricultural resources, strengthen mechanisms for utilizing renewable energy, and ensure the sustainable development of agriculture.
- Strengthen the management of natural environmental resources through activities such as afforestation, soil conservation, marine resource preservation, and other relevant measures, with the aim of expanding the country's carbon sinks. This effort will increase carbon sequestration and optimize the overall benefits of ecosystem services.

(6) Alleviate environmental burdens and build a society that circulates and recycles energy and resources

- Incorporate practical actions of building resilience, greenhouse gas reduction, and environmental co-benefits when conducting environmental impact assessment of government policies and development projects.
- Perform energy and resource recycling to enhance the reuse of regional energy and resources.
- Promote the recycling and reutilization of biomass energy to minimize greenhouse gas emissions arising from waste and sewage treatment processes.
- Promote source reduction and strengthen resource circulation to reduce waste generation.

3. Complementary Policies

(1) Leverage private sector capital through the implementation of green finance to support the growth of the green energy industry and enhance the resilience of both the financial and industrial sectors. This approach will encourage a positive cycle where industries prioritize green and sustainable development, guiding the economy towards achieving net-zero emissions.

(2) Conduct a comprehensive review and enhancement of laws and regulations pertaining to renewable energy, energy management, transportation, and housing to strengthen the legal framework for addressing climate change.

(3) Internalize the external costs associated with greenhouse gas emissions through the implementation of a carbon pricing scheme, which includes mechanisms such as collecting carbon fee and implementing a cap-and-trade system.

(4) Integrate technology with humanities and social sciences to advance five key net-zero technology domains: "sustainable and forward-looking energy," "low carbon," "carbon negative," "circular economy," and "humanities and social sciences."

(5) Engage in research and development related to climate change science and adaptation to its impacts. Collaborate with meteorological authorities to research, analyze, and understand climate change trends. Compile and organize climate scenarios, climate change science, and impact data to periodically release scientific reports on climate change. Additionally, establish an early warning mechanism and a systematic monitoring system.

(6) Create diverse channels for climate change information dissemination to encourage behavioral changes and raise climate change awareness among the public. This initiative aims to build knowledge and consensus, enabling the adoption of a net-zero lifestyle that delivers co-benefits of both adaptation and mitigation.

(7) Promote climate change-related environmental education; cultivate professional personnel to respond to climate change issues; enhance the awareness and skills of the general public and convert them into daily low-carbon actions.

(8) Improve social communication and implement a "Social and Institutional Support for a Just Transition System" that encourages citizen participation. Establish a just transition committee that actively solicits input from individuals and organizations across all sectors of society.

V. Future Implementation

To accomplish the net-zero transformation, while upholding the principle of equal emphasis on mitigation and adaptation, the central competent authority shall develop this action guideline in consultation with relevant central industry competent authorities, taking into account Taiwan's economic, energy, and environmental conditions, as well as international contexts. The Action Guidelines shall be reviewed every four years.

The central industry competent authorities shall use the Action Guidelines as a basis to formulate the Greenhouse Gas Emission Reduction Action Plan

and the Climate Impact Adaptation Plans within their respective domains of authority and responsibility. These plans should be submitted to the central competent authorities for approval by the Executive Yuan, with regular rolling reviews. Furthermore, local governments shall formulate the Greenhouse Gas Reduction Implementation Plan and the Climate Change Adaptation Implementation Plan.

The integrated communication mechanism, operating vertically and horizontally across different branches of the Taiwan government, will effectively oversee the reduction of GHG emissions across various sectors. This approach aims to build a common platform for the sustainable development of society, the economy, and the environment, while also safeguarding the mutual benefits related to the public's health.