

國家因應氣候變遷行動綱領

National Climate Change Action Guidelines

23 February 2017

壹、前言

人類活動排放的溫室氣體造成氣候變遷，促使全球平均氣溫屢創新高，對人類生存及生態環境造成重大衝擊。預估我國未來高溫天數、極端強降雨之颱風個數及劇烈降雨發生頻率可能會明顯增加，以及豐枯水期降雨愈趨極端化，將同時嚴重影響水資源、國土安全、海岸及海洋資源、糧食安全、健康醫療及生物多樣性等面向。

未來全球氣候變遷的挑戰相當嚴峻，儘管能源及產業結構調整不易，我國仍將依循「巴黎協定」及聯合國「永續發展目標」，貢獻最大努力減少溫室氣體排放，以因應氣候變遷。中央主管機關（即行政院環境保護署）依據 104 年公布施行之溫室氣體減量及管理法第 9 條第 1 項規定，擬訂國家因應氣候變遷行動綱領（以下簡稱本行動綱領）及溫室氣體減量推動方案，作為全國溫室氣體減量及施政之總方針。

期透過中央及地方政府、民間團體及全民共同合作，引導低碳永續生活行為改變，並考量跨世代衡平義務及弱勢族群權利，制定氣候變遷調適策略，降低與管理溫室氣體排放，落實環境正義，建立永續城市及全球夥伴關係，確保國家永續發展之終極目標。

I. Preface

Climate change, caused by greenhouse gas emissions from economic activities, has led to ever-rising average global temperature, impacting both humankind and the ecosystem. Taiwan is no exception; the frequency of extreme rainfalls, typhoons, days with high temperatures and volatility of precipitation in Taiwan are expected to increase significantly in the coming years. This will severely impact numerous areas, including water resources, homeland security, coastal environments, marine resources, food security, public health, and biodiversity.

Climate change is indeed posing a rigorous challenge to the entire planet. Despite the difficult challenge of transforming the energy and industrial structure, Taiwan has reiterated that it will spare no effort to reduce greenhouse gas emissions while complying with the Paris Agreement and the United Nations' Sustainable Development Goals. Pursuant to Article 9, Paragraph 1 of the Greenhouse Gas Reduction and Management Act, promulgated in 2015, the central competent authority, namely the Environmental Protection Administration of the Executive Yuan, has the responsibility to formulate the National Climate Change Action Guidelines (Action Guidelines) and the Greenhouse Gas Reduction Action Plan (Action Plan) as the general guidance for the task of reducing greenhouse gases for the whole nation.

Taiwan endeavors to reduce greenhouse gas emissions, realize environmental justice, establish global partnerships, adopt low carbon lifestyles, and achieve the ultimate goal of sustainable development. It will do so through cooperation between central and local authorities, non-governmental organizations and the general public as well as the development of climate change adaptation and mitigation strategies, which take into account intergenerational equity and the right of minority groups.

貳、願景及目標

一、願景

制定氣候變遷調適策略，降低與管理溫室氣體排放，建構能適應氣候風險之綠色低碳家園，確保國家永續發展。

二、目標

- (一) 健全我國面對氣候變遷之調適能力，以降低脆弱度並強化韌性。
- (二) 分階段達成於 139 年溫室氣體排放量降為 94 年溫室氣體排放量 50% 以下之國家溫室氣體長期減量目標。

參、基本原則

- 一、遵循「巴黎協定」，促進減緩溫室氣體排放，並依「蒙特婁議定書」吉佳利修正案，凍結及減少高溫暖化潛勢溫室氣體氫氟碳化物之使用。
- 二、決策制定與落實公開透明，並考量各種環境議題的共同效益，在最低成本精神下，推動溫室氣體減量及氣候變遷調適策略。
- 三、推動綠色金融及碳定價機制，透過溫室氣體總量管制與排放交易制度及相關稅費制度，強化或增加經濟誘因機制，促使溫室氣體減量、協助綠色產業發展及提升國家競爭力，促進社會公益。
- 四、依據非核家園目標，不以新增核能發電作為因應氣候變遷措施。
- 五、政府政策與個案開發行為，應將氣候變遷調適及減緩策略納入環境影響評估考量。

II. Prospects and Objectives

1. Prospects

Formulate adaptation strategies; reduce and manage greenhouse gas emissions; construct a green and low carbon homeland that is adaptive to climate risk; ensure sustainable development of the nation.

2. Objectives

- (1) Enhance overarching adaptability; minimize vulnerability; build-up resilience.
- (2) Gradually reduce GHG emissions to 50% of the 2005 emission level 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. Acknowledge that transparency, environmental co-benefits and cost-effectiveness should be considered in both policy formulation and implementation of mitigation and adaptation issues.
3. Implement a cap-and-trade scheme for greenhouse gases and taxation to put carbon pricing and green finance into practice and enhance economic incentives, reduce greenhouse gas emissions, assist green industrial development, 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.
5. Take mitigation and adaptation strategies into consideration while performing environmental impact assessments.

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| <p>六、強化科學基礎，建構全面預警能力，提升因應氣候變遷之調適作為及建構韌性發展。</p> <p>七、提高資源與能源使用效率，促進資源循環使用，確保國家能源安全及資源永續利用。</p> <p>八、建立中央及地方政府夥伴關係、公私部門協力關係及溝通平台，具體推動在地化之調適及減緩工作。</p> <p>九、促進國際合作及交流，秉持互利互惠原則，推動有意義之參與及實質貢獻，維護產業發展之國際競爭力。</p> <p>十、提升全民氣候變遷認知及技能，並積極協助民間團體推展相關活動及事項。</p> | <p>6. Enhance capacities with regard to basic science, early warning, adaptive response to climate change, and resilience development.</p> <p>7. Improve energy and resource utilization efficiency, boost resource recycling, and ensure national energy security and sustainable utilization of resources.</p> <p>8. Establish a communication platform on which to build partnerships between the central and local governments, as well as cooperation between public and private sectors, to practically execute localized adaptation and mitigation measures.</p> <p>9. Boost international cooperation and authentic participation, based on the principle of reciprocity, to maintain industries' international competitiveness.</p> <p>10. Increase public awareness and build the capacity to respond to climate change, and proactively assist non-governmental organizations to participate in relevant events.</p> |
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肆、政策內涵

一、氣候變遷調適

(一) 加強災害風險評估與治理

1. 落實氣候變遷災害風險評估，檢視過去極端氣候災害所突顯之脆弱度，並評估已採取調適作為是否充分降低風險與脆弱度。
2. 加強氣候變遷災害風險治理，持續強化預警與應變作為，進行情境模擬、綜合性風險評估與管理、氣候風險分擔及調適方案研擬，以因應極端氣候衝擊並提升防災韌性。

IV. Adopted Policies

1. Climate Change Adaptation

- (1) Enhance disaster risk evaluation and disaster management
 - Conduct disaster risk evaluation of climate change; review the vulnerability highlighted by previous extreme climate disasters, assess measures that have been taken, and review their effectiveness in mitigating risks and vulnerabilities.
 - Strengthen risk management of climate change; improve early warning and response mechanisms; conduct simulations of scenarios, comprehensive risk evaluation and management, climate risk sharing mechanisms, and develop an adaptation program to respond to extreme weather impacts and enhance resilience.

(二) 提升維生基礎設施韌性

1. 強化能源及給水等供給系統之建設、風險評估與檢修應變力。
2. 提升運輸、通訊及資訊系統等設施因應氣候變遷之調適能力。

(三) 確保水資源供需平衡與效能

1. 強化推動多元水資源發展，建立節水、循環用水型社會，合理調配用水標的使用量，落實水資源永續。
2. 強化水資源系統因應氣候變化之彈性，以因應極端降雨與豐枯差異變遷之衝擊。

(四) 確保國土安全、強化整合管理

1. 落實國土保育，促進國土利用合理配置，強化國土管理機制，降低災害發生風險，確保國土安全。
2. 提升城鄉韌性與土地利用永續性。
3. 推動流域治理，建立流域安全、人文、環境、生態等整合管理協調機制。

(五) 防範海岸災害、確保永續海洋資源

1. 建構適宜預防設施或機制，減低海岸災害。
2. 保護海岸生物棲地與海洋資源，促進生態永續發展。

(2) Raise resilience of infrastructure

- Strengthen the ability of construction, risk assessment and repair of energy and water supply systems.
- Improve adaptability of facilities of transport, communication and information systems against climate change.

(3) 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 water resource system against climate change, drastic increase in rainfall, and increased volatility of water levels during wet and dry seasons.

(4) Assure land use safety and strengthen land consolidation and management mechanisms

- Carry out environmental conservation; perform reasonable land conservation and restoration; strengthen land management mechanisms to assure land use safety.
- Enhance the resilience of urban and rural areas and improve land use sustainability.
- Implement river basin management policies, which include integration and harmonization of river basin safety, humans, the environment and ecology.

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

- Establish appropriate prevention facilities or mechanisms to mitigate coastal disasters.
- Protect marine resources and marine wildlife habitats; foster sustainable

3. 提升海岸災害及海洋變遷之監測及預警機制。

(六) 提升能源供給及產業之調適能力

1. 確保能源設施安全及系統穩定供應。
2. 建構氣候風險降低及調適能力增強之經營環境。
3. 提升產業之氣候風險控管及機會辨識能力，以發展具氣候韌性考量之產品與服務。

(七) 確保農業生產及維護生物多樣性

1. 維護農業生產資源、加強監測與預警機制、強化天然災害救助及保險體系、整合科技提升農林漁牧產業抗逆境能力，確保糧食安全並建構適應氣候風險的永續農業。
2. 完善自然保護區經營管理、建構長期生態監測體系、強化物種及基因之多樣性保存與合理利用。

(八) 強化醫療衛生及防疫系統、提升健康風險管理

1. 強化醫療衛生及防疫系統之預防、減災、應變及復原能力。
2. 提升健康風險監測、衝擊評估及預防之管理能力，維護全民健康並優先保障弱勢住民。

development of the ecosystem.

- Strengthen monitoring and an early warning mechanism to respond to coastal hazards and impacts of coastal change.

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

- Ensure infrastructure safety and stability of energy supply facilities.
- Build an environment that reduces climate risks and strengthens adaptive capacities.
- Elevate businesses' ability of risk management and opportunity exploration, to develop climate-resilient products and services.

(7) Secure agricultural production and ensure biodiversity

- Safeguard resources for agricultural production; strengthen the monitoring and early warning system; reinforce government subsidies and insurance system; integrate technology to improve the capacity for stress resistance in agriculture, forestry, fishery and animal husbandry; ensure food security and construct sustainable agriculture that is adaptive to climate risks.
- Refine the management of nature reserves; establish a long-term ecology monitoring system; improve preservation and reasonable application of species and genetic diversity, respectively.

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

- Strengthen the capabilities of the public health and epidemic prevention systems for prevention, mitigation, contingency and recovery.
- Improve the ability of health risk monitoring, impact assessment and prevention to protect public health and ensure the rights of minority groups.

二、溫室氣體減緩

(一) 調整能源結構與提升效率

1. 調整能源結構，發展再生能源，建構低碳能源供給系統及強化科技應用，加速提高綠能發電占比。
2. 改善能源生產、使用及輸配效率及推廣節約能源。
3. 規劃能源供應須兼顧環境品質及地區發展需求。

(二) 轉型綠色創新企業，執行永續生產及消費行動

1. 輔導產業轉型為綠色低碳企業，並發展綠能產業，以提升產品之國際競爭力。
2. 建立完善溫室氣體減量誘因，加強推動產業執行溫室氣體排放減量之措施。
3. 建立民眾永續消費習慣，促使產業調整為永續生產製程。

(三) 發展綠運輸，提升運輸系統能源使用效率

1. 發展公共運輸系統，加強運輸需求管理。
2. 建構綠色運輸網絡，推廣低碳運具使用，建置綠色運具導向之交通環境。
3. 提升運輸系統及運具能源使用效率。

2. Climate Change Mitigation

(1) Adjust the energy supply structure and improve energy efficiency

- Adjust the structure of energy supply, increase renewable energy deployment, construct a low carbon energy supply system, and accelerate the expansion of green energy within the energy mix.
- Improve the efficiency of energy generation, usage, transmission and distribution, and promote energy conservation.
- Take environmental quality and regional development into account during energy planning.

(2) Transform to green business and execute sustainable production and consumption strategies

- Provide counseling services to transform industries into green and low-carbon enterprises and boost green energy industries to raise the international competitiveness of products.
- Compose comprehensive incentives for greenhouse gas reduction and augment greenhouse gas mitigation measures taken by industries.
- Foster sustainable consumption habits and assist industries to apply sustainable production processes.

(3) Develop green transportation and improve energy efficiency of the transportation system

- Expand public transport systems and strengthen management of transportation demands.
- Construct a green transport network, promote the use of low-carbon transportation, and create a green mode-oriented environment.
- Enhance energy use efficiency of vehicles and transport systems.

(四) 建構永續建築與低碳生活圈

1. 強化建築節能法規，提升建築能源效率，推動新舊建築減量措施。
2. 推動既有建築效能分級管理及獎勵措施。
3. 推動城市綠化植林，結合地方政府及民眾共同建構低碳城市生活圈。

(五) 促進永續農業經營

1. 推動友善環境農業耕作，穩定農業生產，維護農、林、漁、牧生產環境，確保農業永續發展。
2. 推動低碳農業，促進農業使用再生能源，加強農業資源循環利用。
3. 健全森林資源管理，厚植森林資源，提高林地碳匯量，提升森林碳吸存效益。

(六) 減輕環境負荷，建立能資源循環利用社會

1. 政府政策及個案開發行為實施環境影響評估時，應考量韌性建構及溫室氣體排放減緩具體行動，並考量環境議題共同效益。
2. 落實能資源循環利用及開創共享經濟社會，提升區域能資源再利用。
3. 減少廢棄物及廢（污）水處理過程之溫室氣體排放。

(4) Construct sustainable buildings and low-carbon living areas

- Reinforce energy conservation regulations for buildings; improve energy efficiency of buildings; implement carbon reduction measures for both new and existing buildings.
- Implement energy efficiency classification and incentive mechanisms for existing buildings.
- Conduct urban afforestation and consolidate the efforts of local governments and citizens to establish low-carbon living areas.

(5) Boost the development of sustainable agriculture

- Implement eco-friendly agricultural cultivation to stabilize agricultural production; preserve the environment related to agriculture, forestry, fishery and animal husbandry to ensure sustainable development of agriculture.
- Promote low-carbon agriculture; encourage the application of renewable energy for agricultural purposes, and improve agricultural resource recycling.
- Strengthen forest resource management; increase forest resources; raise the net quantity of national carbon sinks to elevate the benefits of forests' carbon sequestration.

(6) Alleviate environmental burdens and build a society that reuses 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.
- Decrease the greenhouse gas emissions from waste and sewage treatment.

三、政策配套

- (一) 推動綠色金融，活絡民間資金運用，促進綠能產業發展及低排放韌性建構。
- (二) 落實溫室氣體排放外部成本內部化，推動總量管制及綠色稅費等碳定價制度。
- (三) 建立便於民眾取得氣候變遷相關資訊管道，提供獎勵或補助措施，促進全民行為改變及落實低碳在地行動。
- (四) 推廣氣候變遷環境教育，培育因應氣候變遷人才，提升全民認知及技能，轉化低碳生活行動力。

伍、後續推動

為健全因應氣候變遷調適能力，中央有關機關應依本行動綱領續行推動各領域調適行動方案及相關工作；為達成國家長期減量目標，中央主管機關應會商中央目的事業主管機關，訂定每五年為一期之階段管制目標及研擬溫室氣體減量推動方案，報行政院核定並定期滾動式檢討。透過氣候變遷協力合作平台，國家能源、製造、運輸、住商、農業及環境各部門之部門溫室氣體排放管制行動方案，地方政府之溫室氣體管制執行方案，進行橫向及縱向整合，推動跨部門溫室氣體排放減量有效管理，創造社會、經濟、環境永續發展及維護全民健康的共同效益。

3. Complementary Policies

- (1) Mobilize capital from the private sector through the implementation of green finance; foster the development of the green energy industry and boost resilience.
- (2) Internalize the external costs incurred by greenhouse gas emissions via the carbon pricing scheme, including green taxation and cap-and trade.
- (3) Construct channels for the general public to access relevant climate change information; provide incentives or subsidy measures to trigger behavior change and region-specific low carbon action.
- (4) 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.

V. Future Implementation

In order to reinforce adaptability to climate change, relevant central government agencies shall follow instructions of the Action Guidelines to implement adaptation action plans in various fields. To achieve the national long-term emission reduction goals, the Taiwan government will review the periodic regulatory goals every five years and examine their validity regularly. Through the implementation of the Action Plan, the Greenhouse Gas Emission Control Action Program of the energy, manufacturing, transportation, agriculture, environmental, residential and commercial sectors, along with the Greenhouse Gas Control Implementation Plan of municipality and city authorities, the vertical and horizontal integration of different bodies of the Taiwan government will comprehensively expand the capacity to combat climate change and create the co-benefits of sustainable development of society, the economy and the environment, along with public health protection.